IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11bn PDT Joint Trigger Frame | | | | |
| Date: December 24, 2024 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Alice Chen | Qualcomm Technologies, Inc | 5775 Morehouse Dr, San Diego, CA 92131, USA |  | alicel@qti.qualcomm.com |
| Alfred Asterjadhi | Qualcomm Technologies, Inc |  |  | aasterja@qti.qualcomm.com |
| Dongguk Lim | LG Electronics |  |  | dongguk.lim@lge.com |
| Hanqing Lou | InterDigital |  |  | Hanqing.Lou@interdigital.com |
| Jiyang Bai | TCL |  |  | jiyangbai@gmail.com |
| Laurent Cariou | Intel |  |  | laurent.cariou@intel.com |
| Juan Fang | Intel |  |  | juan.fang@intel.com |
| Leonardo Lanante | Ofinno |  |  | llanante@ofinno.com |
| Mahmoud Hasabelnaby | Huawei |  |  | mahmoud.hasabelnaby@huawei.com |
| Mahmoud Kamel | InterDigital |  |  | mahmoud.kamel@interdigital.com |
| Manasi Ekkundi |  |  |  | emanzee@gmail.com |
| Mengshi Hu | Huawei |  |  | humengshi@huawei.com |
| Ming Gan | Huawei |  |  | ming.gan@huawei.com |
| Pei Zhou | TCL |  |  | zhoupei36@gmail.com |
| Ross Jian Yu | Huawei |  |  | ross.yujian@huawei.com |
| Shengquan Hu | MediaTek |  |  | shengquan.hu@mediatek.com |
| Shubhodeep Adhikari | Broadcom |  |  | shubhodeep.adhikari@broadcom.com |
| Vishnu Ratnam | Samsung |  |  | vishnu.r@samsung.com |
| Xiandong Dong | Xiaomi |  |  | dongxiandong@xiaomi.com |
| Xiaofei Wang | InterDigital |  |  | Xiaofei.Wang@interdigital.com |
| Xiaogang Chen | Spreadtrum |  |  | Xiaogang.chen1@unisoc.com |
| Yan Zhang | Apple |  |  | yan\_zhang999747@apple.com |
| Ying Wang | InterDigital |  |  | Ying.Wang@interdigital.com |
| Youhan Kim | Qualcomm Technologies, Inc. |  |  | youhank@qti.qualcomm.com |
| You-Wei Chen | MediaTek |  |  | you-wei.chen@mediatek.com |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains Proposed Draft Text (PDT) for the Trigger Frame subclause of the proposed TGbn (UHR, Ultra High Reliability) amendment to the 802.11 standard.

**Revision information**

The following is a summary of the important changes that occurred within each revision of this document:

|  |  |
| --- | --- |
| **Revision** | **Major changes** |
| 0 | Initial revision. Added contents based on relevant motions in 11-24/0171r26. |
| 1 | Revised based on offline comments before presentation. r1 was presented in the TGbn Joint meeting on 01/13/2025. |
| 2 | Added a few DRU DBW related passed motions. Added reference of passed motions in the spec text changes. Added green or cyan markers to highlight contents aligned with or different from the latest Draft Text on DRU 11-24/2046r4. Added “(TBD)” to changes related to spatial reuse in the UHR TB PPDU. Added “(TBD)” to changes in row 4 of Table 9-46a and NOTE2 after Table 9-46a per discussion in the TGbn Joint meeting on 01/13/2025. |
| 3 | Incorporated spec text from PDT MAC Coexistence 11-24/2040r9. Used markers to highlight contents aligned with or different from 11-24/2040r9. |
|  |  |
|  |  |

**Introduction**

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 TGbe Draft. The abstract, revision information, introduction, explanation of the proposed changes and references sections are not part of the adopted material.

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

**Explanation of the proposed changes:**

The proposed changes to the 802.11 TGbn draft within this document are based on the following motions adopted by the TGbn task group:

**Relevant passing motions:**

All the passing motions up to and including those in the 1/15/2025 TGbn Joint call (see [1] and [4]).

[Motion #22, [1] and [38]]

* “PHY version identifier” is set to 1 in U-SIG field for UHR PPDUs.

[Motion #20, [1] and [36]]

* In a non-punctured 80 MHz PPDU, the following DBW modes are allowed for DRU
  + 80 MHz
  + 20 MHz + 20 MHz + 40 MHz (or 40 MHz + 20 MHz + 20 MHz)

[Motion #64, [1] and [166]]

* DRU DBW of 60 MHz is defined in an 80 MHz frequency subblock (with the highest 20 MHz subchannel unallocated) in a UHR TB PPDU
* No allocation is made in the highest 20 MHz subchannel

[Motion #87, [1] and [173]]

* For 80 MHz PPDU where one of the 20 MHz channels is punctured, the following DBW mode is allowed for DRU
* 20 MHz + 40 MHz (or 40 MHz + 20 MHz) mode

[Motion #88, [1] and [173]]

* For 160 MHz and 320 MHz PPDUs, in an 80 MHz frequency subblock where one of the 20 MHz channels is punctured, the following distribution bandwidth mode is allowed for DRU
  + 20 MHz + 40 MHz (or 40 MHz + 20 MHz) mode

[Motion #89, [1] and [173]]

* For 160 MHz and 320 MHz PPDUs, in an 80 MHz frequency subblock where one of the 40 MHz channels is punctured (i.e., either 1100 or 0011 case), the following DBW mode is allowed for DRU
  + 40 MHz mode

[Motion #90, [1] and [173]]

* For a 40 MHz PPDU, the following DBW mode is allowed for DRU
  + Only 40 MHz mode

[Motion #128, [1] and [195-198, 200, 202]]

* When transmitting a Trigger frame on the NPCA Primary channel, the NPCA AP shall signal the RU index considering the NPCA Primary channel as the reference primary channel
  + The Trigger frame shall explicitly indicate that it is transmitted via the NPCA Primary channel (details TBD)

[Motion #135, [1] and [207, 208, 157, 117, 118, 122, 123, 108, 115, 124, 158]]

* The sharing AP, that transmits a Trigger frame as part of a transmission sequence in a Multi-AP coordinated transmission scheme, identifies the shared AP via an AP ID carried in the AID12 field of the User Info field of the frame
  + Note: the name of "sharing AP" and "shared AP" are TBD
  + Note: Multi-AP coordinated transmission schemes are Co-SR, Co-BF and Co-TDMA

[Motion #159, [1] and [104, 108-110, 112-115, 156, 117, 118, 122-125, 225-227]]

* As part of the Co-TDMA procedure, to share a time portion of its TXOP, a sharing AP shall send a MU-RTS TXS Trigger frame to another non-collocated AP.
  + The Allocation Duration field of the frame indicates the duration of that time portion.
  + The Duration field of the frame is set to the time required to transmit the solicited response frame plus one SIFS.

[Motion #12, [1] and [31, 19]]

* TGbn defines a way in 11bn to include in an initial control frame (ICF) an intermediate FCS for UHR STA(s) that precedes padding and the FCS field.

[Motion #47, [1] and [99, 31, 126-128, 100, 129-130]]

* If an ICF includes an intermediate FCS for UHR STA(s) that precedes padding and the FCS field, the intermediate FCS has the size of 32 bits.

[Motion #139, [1] and [210-212, 215]]

* TGbn uses BSRP Trigger frame as a UHR ICF sent:
  + From an AP for soliciting response in TB PPDU format from one or more scheduled STAs to allow a Multi-STA BA frame to be included in the TB PPDU sent by the UHR scheduled STAs in response, when carrying unavailability information
    - BSRP Trigger frame follows baseline rules for the solicited TB PPDU

[Motion #152, [1] and [224, 212]]

* An individually addressed BSRP Trigger, used as an ICF, can indicate whether the responding PPDU is a non-HT (duplicate) PPDU and contains a multi-STA BA?
  + The indication (TBD whether reserved value or a reserved bit) is carried in the Common Info field of the BSRP Trigger frame

[Motion #154, [1] and [31, 100]]

* If a UHR non-AP MLD operates in the eMLSR mode, then its associated UHR AP MLD, that supports transmitting intermediate FCS, shall include an intermediate FCS, if needed by the non-AP MLD, in every Initial Control Frames for eMLSR transmitted to the non-AP MLD through its affiliated APs on the eMLSR links
  + Mandatory/optional support for transmitting intermediate FCS is TBD
  + The field that carries the Intermediate FCS shall be designed to be ignored by legacy STAs if they are scheduled in the same initial control frame
  + Note: intermediate FCS may not be needed, for instance, if the STA requires no padding.

[Motion #61, [1] and [164]]

* Use 4-bit bitmap in Common Info field (B56-B59) for DRU indication
  + 1 bit/80MHz to indicate each 80MHz is used for DRU or RRU

[Motion #62, [1] and [164]]

* Re-purpose 2 bits of SS Allocation subfield in User Info field for DBW indication if DRU

[Motion #174, [1]]

* Add a 1-bit 2xLDPC subfield in the UHR variant User Info field in Trigger Frame, MU-MIMO and non-MU-MIMO User field formats in UHR-SIG
* The 2xLDPC subfield is set to 1 to indicate 2xLDPC (nominal codeword size of 3888) is used, or set to 0 to indicate it’s not used, if the coding scheme is LDPC
* In the MU-MIMO or non-MU-MIMO User field formats, the 2xLDPC subfield is set to 1 and treat as Validate if Coding is BCC (0)
* In the UHR Variant User Info field in Trigger Frame, the 2xLDPC subfield is set to 1 and reserved if UL FEC Coding Type is BCC (0)

[Motion #186, [1]]

* TGbn defines the UHR variant of Trigger Frame.
  + Reuse the EHT variant of Trigger Frame format for the UHR variant of Trigger Frame, with one Special User Info field immediately after the Common Info field
* Differentiate EHT and UHR variant by the value of the PHY Version Identifier in the Special User Info field being 0 or 1
* Reuse the EHT variant Common Info field and Special User Info field for UHR
  + B60-B62 in the UHR variant common info field are “UHR Reserved”
* Reserved bits in the UHR variant Common Info field and Special User Info field may be used for other UHR features
* The UHR variant of Trigger frame includes the UHR variant User Info field.
  + It has the same length as the EHT variant User Info field

[Motion #187, [1]]

* For a UHR TB PPDU transmission, there exists a 5-bit UL UHR MCS in a User Info field for UHR variant of Trigger frame.

[Motion #188, [1]]

* Use the following UHR variant User Info field design

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B11 | B12 | B19 | B20 | B21 | B25 | B26 | B27 | B31 | B32 | B38 | B39 |  |
|  | AID12 | | RU Allocation | | UL FEC Coding Type | UL UHR-MCS | | 2xLDPC | SS Allocation | | UL Target Receive Power | | PS160 | Trigger Dependent User Info |
| Bits: | 12 | | 8 | | 1 | 5 | | 1 | 5 | | 7 | | 1 | variable |
| **Figure 4-1: UHR variant User Info field format** | | | | | | | | | | | | | | | |

* The SS Allocation subfield design depends on RRU or DRU
  + Repurpose 1 bit in the SS Allocation subfield in the UHR variant User Info field to indicate NSS (1SS or 2SS) in the case of DRU

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 |  | B2 | B3 | B4 |
|  | Starting Stream Index | | | Number Of Spatial Streams | |
| Bits: | 3 | | | 2 | |
|  | **Figure 4-2: SS Allocation subfield format of a UHR variant User Info field in the case of RRU** | | | | |
|  |  |  |  |  |  |
|  | B0 | B1 | B2 | B3 | B4 |
|  | Distribution BW | | Reserved | | Number Of Spatial Streams |
|  |
| Bits: | 2 | | 2 | | 1 |
|  | **Figure 4-3: SS Allocation subfield format of a UHR variant User Info field in the case of DRU** | | | | |

[Motion #197, [4]]

* Incorporate the proposed text changes in 11-24/2046r4 to the latest TGbn draft (TGbn D0.1).

[Motion #256, [4]]

* Incorporate the proposed text changes in 11-24/2040r9 to the latest TGbn draft (TGbn D0.1).

[Motion #212, [4]]

* An AP transmitting a BSRP Trigger frame as an ICF which is addressed to at least a UHR non-AP STA that has enabled a dynamic unavailability operation mode, shall ensure that the UL Length field is set to a sufficient length so that the PPDU that contains a Multi-STA BA as an ICR, includes unavailability information in the Multi-STA BA in addition to other baseline requirements

[Motion #253, [4]]

* In Coordinated Spatial Reuse:
  + A sharing AP that intends to initiate a Coordinated Spatial Reuse transmission shall transmit a Trigger frame to initiate concurrent CSR transmissions with one (whether to allow more is TBD) other AP within its obtained TXOP BW;
  + When all addressed non-AP STAs are UHR STAs, the concurrent CSR transmission starts SIFS after the Trigger frame
  + Which trigger frame is TBD

[Motion #254, [4]]

* In Coordinated Spatial Reuse, the following information shall be carried in the Trigger frame that initiates concurrent CSR transmissions of the 2 APs
  + The duration of the data PPDU transmitted by the sharing AP and of the data PPDU transmitted by the shared AP, which are the same, after the Trigger frame
  + Other parameters TBD

**Legends:**

* Yellow marker: Instructions to TGbn editor.
* Green marker: Contents aligned with Draft Text on DRU [2] and PDT MAC Coexistence [3].
* Cyan marker: Contents different from Draft Text on DRU [2].
* Pink marker: Contents different from PDT MAC Coexistence [3].

**Text to be adopted begins here.**

***TGbn editor: Please add the following text of 9.3.1.22 Trigger frame format to the 802.11bn draft D0.1:***

# 9. Frame Formats

## 9.3 Format of individual frame types

### 9.3.1 Control frames

#### 9.3.1.22 Trigger frame format

##### 9.3.1.22.1 General

***TGbn editor: Change the seventh paragraph as follows:***

[M#186] There are four variants for the User Info field: Special User Info field (see [9.3.1.22.3 (Special User Info](#_bookmark70) [field)](#_bookmark70), HE variant User Info field (see [9.3.1.22.4 (HE variant User Info field)](#_bookmark75)), EHT variant User Info field (see [9.3.1.22.5 (EHT variant User Info field)](#_bookmark82)) and UHR variant User Info field (see 9.3.1.22.6 (UHR variant User Info field)).

***TGbn editor: Change the nineth paragraphs, Table 9-46a and the following NOTEs as follows:***

[M#186] A User Info field that is addressed to a non-AP STA is one of an HE variant, an EHT variant or a UHR variant. The User Info field is an HE variant addressed to a non-AP EHT or UHR STA if B39 of the User Info field is set to 0 and B54 of the Common Info field is set to 1 in the Trigger frame; otherwise, it is an EHT or UHR variant, depending on the PHY Version Identifier subfield in the Special User Info field. It is an EHT variant if the PHY Version Identifier subfield in the Special User Info field is set to 0, or a UHR variant if the PHY Version Identifier subfield in the Special User Info field is set to 1. B39 of an HE variant User Info field is reserved for a non-EHT HE STA. B39 is set to 0 for an HE variant User Info field by an EHT or UHR AP, and is the PS160 subfield for an EHT or UHR variant User Info field. [Table 9-46a (Valid combinations of](#_bookmark60) [B54 and B55 in the Common Info field, B39 in the User Info field, and solicited TB PPDU format)](#_bookmark60) defines valid combinations of B54 and B55 in the Common Info field, B39 in the User Info field, the presence of the Special User Info field in the Trigger frame, the variant of a User Info field, and the corresponding TB PPDU type.

###### [M#186] Table 9-46a—Valid combinations of B54 and B55 in the Common Info field, B39 in the User Info field, and solicited TB PPDU format

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Common Info field B54** | **Common Info field B55** | **User Info field B39** | **Presence of Special User Info field** | **User Info field variant** | **TB PPDU type** |
| 1 | 1 | 0 | No | HE variant | HE |
| 0 | 0 | 0 | Yes | EHT/UHR variant | EHT/UHR |
| 0 | 0 | 1 | Yes | EHT/UHR variant | EHT/UHR |
| 1 | 0 | 1 | Yes | EHT/UHR(TBD) variant | EHT/UHR(TBD) |
| 1 | 0 | 0 | Yes | HE variant | HE |

[M#186] NOTE 1—For example, if an EHT or UHR AP sends a Trigger frame that intends to solicit an EHT TB PPDU with a 4×996-tone RU from an EHT STA or UHR STA, or a UHR AP sends a Trigger frame that intends to solicit a UHR TB PPDU with a 4×996-tone RU from a UHR STA, then the AP sets B54 and B55 of the Common Info field to 0 and sets B39 to 1 in the User Info field addressed to the STA.

[M#186] NOTE 2—Although the last two rows in [Table 9-46a (Valid combinations of B54 and B55 in the Common Info field,](#_bookmark60) [B39 in the User Info field, and solicited TB PPDU format)](#_bookmark60) are not used by an EHT AP (see 35.5.2.1 (General)) or a UHR AP (TBD) (see 37.TBD (General)), a non-AP EHT or UHR(TBD) STA might respond to a Trigger frame with B54 in the Common Info field equal to 1 and with B55 in the Common Info field equal to 0 based on the two rows.

##### 9.3.1.22.2 Common Info field

***TGbn editor: Change the first paragraph as follows:***

[M#186] A non-EHT non-AP HE STA interprets the Common Info field as an HE variant Common Info field. A non-AP EHT STA interprets the Common Info field as an HE variant Common Info field if B54 and B55 in the Common Info field are equal to 1; and interprets the Common Info field as an EHT variant Common Info field otherwise. A non-AP UHR STA interprets the Common Info field as an HE variant Common Info field if B54 and B55 in the Common Info field are equal to 1; and interprets the Common Info field as an EHT or UHR variant Common Info field according to the PHY Version Identifier subfield in the Special User Info field (see 9.3.1.22.1 (General)).

***TGbn editor: Insert the following paragraphs and Figure 9-90x after the fourth paragraph (“NOTE 1— …"):***

[M#61, M#186] The UHR variant Common Info field is defined in [Figure 9-90x (UHR variant Common Info field](#_bookmark63) [format)](#_bookmark63).

B0 B3 B4 B15 B16 B17 B18 B19 B20 B21 B22 B23 B25

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Trigger Type | UL  Length | More TF | CS  Required | UL BW | GI And HE/ UHR-LTF Type/ TXS Mode | Reserved | Number Of HE/ UHR-LTF  Symbols |

Bits: 4 12 1 1 2 2 1 3

B26 B27 B28 B33 B34 B35 B36 B37 B52 B53 B54

Bits: 1 1 6 2 1 16 1 1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Reserved | LDPC Extra Symbol Segment | AP Tx  Power | Pre-FEC  Padding Factor | PE  Disambiguity | UL Spatial Reuse | Reserved | HE/UHR P160 |

B55 B56 B59 B60 B61 B62 B63

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Special User Info Field Flag | DRU/RRU Indication | IFCS Present | UHR Reserved | Reserved | Trigger Dependent Common Info |

Bits: 1 4 1 2 1 variable

###### [M#61, M#186, M#256] Figure 9-90x—UHR variant Common Info field format

[M#61, M#186, M#256] NOTE 2—For backward compatibility with the HE or EHT variant Common Info field, a UHR AP sets B22, B26, B53, and B63 to 0 and sets B61–B62 to 1 in the UHR variant Common Info field.

***TGbn editor: Change the paragraph that begins with “The HE variant Common Info field, the EHT variant …” as follows:***

[M#186] The HE variant Common Info field, the EHT variant Common Info field and the UHR variant Common Info field use the same encoding method for the Trigger Type, UL Length, More TF, CS Required, LDPC Extra Symbol Segment, AP TX Power, Pre-FEC Padding Factor, PE Disambiguity, and Trigger Dependent Common Info subfields.

***TGbn editor: Change the paragraph that begins with “The UL Length subfield of …” as follows:***

[M#186] The UL Length subfield of the Common Info field indicates the value of the L-SIG LENGTH field of the solicited TB PPDU. The UL Length subfield is set:

* As defined in 26.5.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield) if the solicited PPDU is an HE TB PPDU.
* As defined in 35.5.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield) if the solicited PPDU is an EHT TB PPDU.
* As defined in 37.TBD (Allowed settings of the Trigger frame fields and TRS Control subfield) if the solicited PPDU is a UHR TB PPDU.

***TGbn editor: Change the paragraph that begins with “The CS Requied subfield of …” as follows:***

[M#186] The CS Required subfield of the Common Info field is set to 1 to indicate that the STAs identified in the User Info fields are required to use ED to sense the medium and to consider the medium state and the NAV in determining whether or not to respond. The CS Required subfield is set to 0 to indicate that the STAs identified in the User Info fields are not required to consider the medium state or the NAV in determining whether or not to respond. See 26.5.2.3 (Non-AP STA behavior for UL MU operation), 26.5.2.5 (UL MU CS mechanism), 35.5.2.3 (Non-AP STA behavior for UL MU operation), 35.5.2.4 (UL MU CS mechanism for EHT STAs), 37.TBD (Non-AP STA behavior for UL MU operation), 37.TBD (UL MU CS mechanism for UHR STAs) for details.

***TGbn editor: Change the paragraph that begins with “The UL BW subfield of the EHT variant …” and three following paragraphs and a table as follows:***

[M#186] The UL BW subfield of the EHT variant Common Info field along with the UL BW Extension subfield of the Special User Info field indicates the bandwidth in the U-SIG field of the EHT TB PPDU, the UL BW subfield of the UHR variant Common Info field along with the UL BW Extension subfield of the Special User Info field indicates the bandwidth in the U-SIG field of the UHR TB PPDU, and are defined in [Table 9-46g (UL Bandwidth Extension subfield encoding)](#_bookmark72).

[M#186] NOTE 3—80+80 MHz is not defined for an EHT TB PPDU (see 36.1 (Introduction)) or a UHR TB PPDU (see 38.1 (Introduction)).

[M#186] If the Trigger Type subfield (B0–B3) indicates an MU-RTS Trigger frame, then B20–B21 of the HE, EHT or UHR variant Common Info field is the TXS Mode subfield. Otherwise, B20–B21 of the HE variant Common Info field is the GI And HE-LTF Type subfield, B20–B21 of the EHT variant Common Info field is the GI And HE/EHT-LTF Type subfield, and B20–B21 of the UHR variant Common Info field is the GI And HE/UHR-LTF Type subfield. The GI And HE-LTF Type subfield, GI And HE/EHT-LTF Type subfield or GI And HE/UHR-LTF Type subfield of the Common Info field indicates the GI and HE/EHT/UHR-LTF type of the HE, EHT or UHR TB PPDU response. The GI And HE-LTF Type subfield or GI And HE/EHT-LTF Type subfield is present in a Trigger frame that solicits a TB PPDU response and its encoding is defined in [Table 9-46d (GI And HE/EHT -LTF](#_bookmark66) [Type subfield encoding)](#_bookmark66).

[M#152, M#186] The GI And HE/UHR-LTF Type subfield is present in a Trigger frame that solicits a TB PPDU response and its encoding is defined in [Table 9-A (GI And HE/UHR-LTF Type subfield encoding)](#_bookmark66). If the GI And HE/UHR-LTF Type subfield is set to 3 in an individually addressed BSRP Trigger frame, then the PPDU sent in response to the BSRP Trigger frame is a non-HT (duplicate) PPDU that contains a Multi-STA BlockAck frame. If the GI And HE/UHR-LTF Type subfield is set to a value different than 3 in a BSRP Trigger frame, then the PPDU send in response to the BSRP Trigger frame is using TB PPDU format.

###### [M#152, M#186] Table 9-A—GI And HE/UHR-LTF Type subfield encoding

|  |  |
| --- | --- |
| **GI And HE/UHR-LTF Type subfield value** | **Description** |
| 0 | 1 HE/UHR-LTF + 1.6 µs GI |
| 1 | 2 HE/UHR -LTF + 1.6 µs GI |
| 2 | 4 HE/UHR -LTF + 3.2 µs GI |
| 3 | The responding PPDU format is non-HT (duplicate) PPDU format that contains a Multi-STA BlockAck |

[M#186] The encoding of TXS Mode subfield in an HE, EHT or UHR variant Common Info field is shown in [Table 9-46n (TXS Mode subfield encoding)](#_bookmark90). The TXS Mode subfield is defined in [9.3.1.22.9](#_bookmark89) [(MU-RTS Trigger frame format)](#_bookmark89).

[M#186] The MU-MIMO HE-LTF Mode subfield of the HE variant Common Info field indicates the HE-LTF mode for an HE TB PPDU that has an RU that spans the entire bandwidth and that is assigned to more than one non-AP STA (i.e., for UL MU-MIMO) when the GI And HE-LTF Type subfield of the HE variant Common Info field indicates either 2 HE-LTF + 1.6 µs GI or 4 HE-LTF + 3.2 µs GI, as defined in [Table 9-46e](#_bookmark67) [(MU-MIMO HE-LTF Mode subfield encoding)](#_bookmark67). Otherwise, this subfield is set to indicate HE single stream pilot HE-LTF mode. B22 of the EHT or UHR variant Common Info field is reserved and is set to 0.

***TGbn editor: Change the paragraph that begins with “In an HE variant Common Info field with the Doppler …” as follows:***

[M#186] In an HE variant Common Info field with the Doppler subfield set to 0 or in an EHT or UHR variant Common Info field, the Number Of HE-LTF Symbols And Midamble Periodicity subfield of the HE variant Common Info field, the Number Of HE/EHT-LTF Symbols subfield of the EHT variant Common Info field or the Number Of HE/UHR-LTF Symbols subfield of the UHR variant Common Info field indicates the number of HE-LTF symbols present in the HE TB PPDU, EHT-LTF symbols present in the EHT TB PPDU, or UHR-LTF symbols present in the UHR TB PPDU, respectively, and is encoded as follows:

* 0 for 1 HE-LTF or EHT-LTF or UHR-LTF symbol
* 1 for 2 HE-LTF or EHT-LTF or UHR-LTF symbols
* 2 for 4 HE-LTF or EHT-LTF or UHR-LTF symbols
* 3 for 6 HE-LTF or EHT-LTF or UHR-LTF symbols
* 4 for 8 HE-LTF or EHT-LTF or UHR-LTF symbols
* 5–7 is reserved

***TGbn editor: Change the paragraph that begins with “B26 of the EHT …” and a following paragraph as follows:***

[M#186] B26 of the EHT or UHR variant Common Info field is reserved and is set to 0.

[M#186] The LDPC Extra Symbol Segment subfield of the Common Info field indicates the status of the LDPC extra symbol segment. It is set to 1 if the LDPC extra symbol segment is present in the solicited HE, EHT or UHR TB PPDUs and set to 0 otherwise.

***TGbn editor: Change the paragraph that begins with “The Pre-FEC Padding Factor …” and the following table as follows:***

[M#186] The Pre-FEC Padding Factor and PE Disambiguity subfields are defined in [Table 9-46f (Pre-FEC Padding](#_bookmark68) [Factor and PE Disambiguity subfields)](#_bookmark68) and have the same encoding as in their respective subfields in HE-SIG-A (see Table 27-21 (HE-SIG-A field of an HE MU PPDU)), as in their respective subfields in EHT-SIG (see Table 36-33 (Common field for OFDMA transmission)), or as in their respective subfields in UHR-SIG (see Table 38-A (Common field for OFDMA transmission)).

###### [M#186] Table 9-46f—Pre-FEC Padding Factor and PE Disambiguity subfields

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Description** | **Encoding** |
| Pre-FEC Padding Factor | Indicates the pre-FEC padding factor | Set to 0 to indicate a pre-FEC padding factor of 4 Set to 1 to indicate a pre-FEC padding factor of 1 Set to 2 to indicate a pre-FEC padding factor of 2 Set to 3 to indicate a pre-FEC padding factor of 3 |
| PE Disambiguity | Indicates PE disambiguity | When an HE TB PPDU is solicited, set to 1 if the condition in Equation (27-118) is met; otherwise, it is set to 0  When an EHT TB PPDU is solicited, set to 1 if the condition in Equation (36-94) is met; otherwise, set to 0  When a UHR TB PPDU is solicited, set to 1 if the condition in Equation (38-B) is met; otherwise, set to 0 |

***TGbn editor: Change the paragraph that begins with “When the Trigger frame solicits an EHT …” and four following paragraphs as follows:***

[M#186] When the Trigger frame solicits an EHT or UHR(TBD) TB PPDU, each Spatial Reuse *n* subfield, 1  *n*  4 , of the EHT or UHR(TBD) variant Common Info field is determined based on either the EHT/UHR(TBD) Spatial Reuse 1 subfield or the EHT/UHR(TBD) Spatial Reuse 2 subfield of the Special User Info field (see [9.3.1.22.3 (Special User Info field)](#_bookmark70)) as described below.

[M#186] When the Trigger frame solicits a 20 MHz EHT or UHR(TBD) TB PPDU, each Spatial Reuse *n* subfield, 1  *n*  4 , of the Common Info field is set to the value of the EHT/UHR(TBD) Spatial Reuse 1 subfield of the Special User Info field.

[M#186] When the Trigger frame solicits a 40 MHz EHT or UHR(TBD) TB PPDU, the Spatial Reuse 1 subfield and the Spatial Reuse 3 subfield of the Common Info field are set to the value of the EHT/UHR(TBD) Spatial Reuse 1 subfield of the Special User Info field and the Spatial Reuse 2 subfield and the Spatial Reuse 4 subfield of the Common Info field are set to the value of the EHT/UHR(TBD) Spatial Reuse 2 subfield of the Special User Info field.

[M#186] When the Trigger frame solicits an 80 MHz EHT or UHR(TBD) TB PPDU or a 160 MHz EHT or UHR(TBD) TB PPDU, the Spatial Reuse 1 subfield and the Spatial Reuse 2 subfield of the Common Info field are set to the value of the EHT/UHR(TBD) Spatial Reuse 1 subfield of the Special User Info field and the Spatial Reuse 3 subfield and the Spatial Reuse 4 subfield of the Common Info field are set to the value of the EHT/UHR(TBD) Spatial Reuse 2 subfield of the Special User Info field.

[M#186] When the Trigger frame solicits a 320 MHz EHT or UHR(TBD) TB PPDU, each Spatial Reuse *n* subfield, 1  *n*  4 , of the Common Info field is set to the smaller of the values of the EHT/UHR(TBD) Spatial Reuse 1 subfield and the EHT/UHR(TBD) Spatial Reuse 2 subfield of the Special User Info field.

***TGbn editor: Change the paragraph that begins with “B53 of the EHT …” as follows:***

[M#186] B53 of the EHT or UHR variant Common Info field is reserved and is set to 0.

***TGbn editor: Change the paragraph that begins with “An HE/EHT P160 subfield …” and a following paragraph as follows:***

[M#186] An HE/EHT P160 subfield of the EHT variant Common Info field is set to 0 to indicate that the solicited TB PPDU in the primary 160 MHz is an EHT TB PPDU. An HE/UHR P160 subfield of the UHR variant Common Info field is set to 0 to indicate that the solicited TB PPDU in the primary 160 MHz is a UHR TB PPDU. An HE/EHT P160 subfield of the EHT variant Common Info field or an HE/UHR P160 subfield of the UHR variant Common Info field is set to 1 to indicate that the solicited TB PPDU in the primary 160 MHz is an HE TB PPDU.

[M#186] The Special User Info Field Flag subfield is always set to 0 in an EHT or UHR variant Common Info field, indicating that a Special User Info field is included in the Trigger frame that contains the EHT or UHR variant Common Info field.

***TGbn editor: Insert the following paragraphs and table before the last paragraph that begins with “The Trigger Dependent Common Info subfield …”:***

[M#61, M#186] B56-B62 of the EHT variant Common Info field are EHT Reserved and set to all 1s.

[M#61] The DRU/RRU Indication subfield indicates whether distributed RU (DRU) or regular RU (RRU) transmission is solicited in each 80 MHz frequency subblock. The format of the DRU/RRU Indication subfield is defined in Figure 9-90y (DRU/RRU Indication subfield format). If UL BW is 20 MHz, 40 MHz or 80 MHz, then B1-B3 in the DRU/RRU Indication subfield are reserved. If UL BW is 160 MHz, then B2-B3 in the DRU/RRU Indication subfield are reserved. To solicit a UHR TB PPDU using DRU transmission in an 80 MHz frequency subblock, the corresponding bit in the DRU/RRU Indication subfield is set to 0. Otherwise, it is set to 1.

B0 B1 B2 B3

|  |  |  |  |
| --- | --- | --- | --- |
| DRU/RRU Indication for the lowest 80 MHz frequency subblock | DRU/RRU Indication for the second lowest 80 MHz frequency subblock | DRU/RRU Indication for the second highest 80 MHz frequency subblock | DRU/RRU Indication for the highest 80 MHz frequency subblock |

Bits: 1 1 1 1

###### [M#61] Figure 9-90y—DRU/RRU Indication subfield format

[M#256] The IFCS Present subfield of the UHR variant Common Info field indicates whether the IFCS is present or not.

* Set to 0 to indicate the IFCS is present.
* Set to 1 to indicate the IFCS is not present.

[M#186] B61-B62 of the UHR variant Common Info field are UHR Reserved and set to all 1s.

##### 9.3.1.22.3 Special User Info field

***TGbn editor: Change the second and third paragraphs as follows:***

[M#186] The Special User Info field is identified by an AID12 value of 2007 and is optionally present in a Trigger frame that is generated by an EHT or UHR AP.

[M#186] NOTE 1—An EHT or UHR AP does not use the value 2007 as an AID for any STA associated to it (see 35.15.1 (Basic EHT BSS operation) and 37.3 (UHR BSS operation)).

***TGbn editor: Change the sixth paragraph as follows:***

[M#186] The Special User Info field, if present, is located immediately after the Common Info field of the Trigger frame and carries information for the U-SIG field of a solicited EHT or UHR TB PPDU.

***TGbn editor: Change Figure 9-90d and a following paragraph as follows:***

B0 B11 B12 B14 B15 B16 B17 B20 B21 B24 B25 B36 B37 B39

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AID12 | PHY  Version Identifier | UL  Bandwidth Extension | EHT/UHR(TBD) Spatial Reuse 1 | EHT/UHR(TBD) Spatial Reuse 2 | U-SIG  Disregard And Validate | Reserved | Trigger Dependent User Info |

Bits: 12 3 2 4 4 12 3 variable

###### [M#186] Figure 9-90d—Special User Info field format

[M#186] The PHY Version Identifier subfield indicates the PHY version of the solicited TB PPDU that is not an HE TB PPDU. The PHY Version Identifier subfield is set to 0 for EHT or set to 1 for UHR. The values from 2 to 7 are reserved.

***TGbn editor: Change Table 9-46g and two following paragraphs as follows:***

###### [M#186] Table 9-46g—UL Bandwidth Extension subfield encoding

|  |  |  |  |
| --- | --- | --- | --- |
| **UL BW** | **Bandwidth for HE TB PPDU (MHz)** | **UL**  **Bandwidth Extension** | **Bandwidth for EHT/UHR TB PPDU (MHz)** |
| 0 | 20 | 0 | 20 |
| 0 | 20 | 1 | Reserved |
| 0 | 20 | 2 | Reserved |
| 0 | 20 | 3 | Reserved |
| 1 | 40 | 0 | 40 |
| 1 | 40 | 1 | Reserved |
| 1 | 40 | 2 | Reserved |
| 1 | 40 | 3 | Reserved |
| 2 | 80 | 0 | 80 |
| 2 | 80 | 1 | Reserved |
| 2 | 80 | 2 | Reserved |
| 2 | 80 | 3 | Reserved |
| 3 | 160 | 0 | Reserved |
| 3 | 160 | 1 | 160 |
| 3 | 160 | 2 | 320 (for 320 MHz-1 defined in 36.3.24.2 (Channelization for 320 MHz channel)) |
| 3 | 160 | 3 | 320 (for 320 MHz-2 defined in 36.3.24.2 (Channelization for 320 MHz channel)) |

[M#186] The EHT/UHR(TBD) Spatial Reuse *n* subfield, 1  *n*  2 , carries the values to be included in the corresponding Spatial Reuse *n* subfield in the U-SIG field of the EHT or UHR(TBD) TB PPDU. The values for the EHT/UHR(TBD) Spatial Reuse *n* subfields are defined in Table 36-31 (U-SIG field of an EHT TB PPDU) and Table 38-C (U-SIG field of a UHR TB PPDU)(TBD).

[M#186] The U-SIG Disregard And Validate subfield carries the values to be included in the Disregard and Validate subfields of the U-SIG field of the solicited EHT or UHR TB PPDUs. The U-SIG Disregard And Validate subfield is further divided into three subfields as shown in [Figure 9-90e (U-SIG Disregard And Validate subfield for-](#_bookmark73) [mat)](#_bookmark73). The mapping from the subfields in the U-SIG Disregard And Validate subfield to subfields in the U- SIG field for an EHT or UHR TB PPDU is defined in [Table 9-46h (Mapping from Special User Info field to U-SIG-](#_bookmark74) [1 and U-SIG-2 fields in the EHT or UHR TB PPDU)](#_bookmark74). The Validate In U-SIG-2 subfield is set to 1. The values of the Disregard In U-SIG-1 and Disregard In U-SIG-2 subfields are defined in 35.5.2.2.4 (Allowed settings of the Trigger frame fields and TRS Control subfield).

***TGbn editor: Change Table 9-46h as follows:***

###### [M#186] Table 9-46h—Mapping from Special User Info field to U-SIG-1 and U-SIG-2 fields in the EHT or UHR TB PPDU

|  |  |
| --- | --- |
| **Subfields in the Special User Info field** | **Corresponding subfield of U-SIG field in elicited EHT or UHR TB PPDU (see 35.5.2.3.2 (TXVECTOR parameters for EHT TB PPDU response to Trigger frame) and 37.TBD (TXVECTOR parameters for UHR TB PPDU response to Trigger frame))** |
| Disregard In U-SIG-1 (B0–B5) | Disregard subfield of U-SIG-1 field (B20–B25 of U-SIG-1 field) |
| Validate In U-SIG-2 (B6) | Validate subfield of U-SIG-2 field (B2 of U-SIG-2 field) |
| Disregard In U-SIG-2 (B7–B11) | Disregard subfield of U-SIG-2 field (B11–B15 of U-SIG-2 field) |

##### 9.3.1.22.4 HE variant User Info field

##### 9.3.1.22.5 EHT variant User Info field

***TGbn editor: Insert a new child subclause of 9.3.1.22 as follows:***

##### [M#186] 9.3.1.22.6 UHR variant User Info field

***TGbn editor: Insert the following paragraphs, figures, and tables:***

[M#186, M#188] The UHR variant User Info field is defined in [Figure 9-C (UHR variant User Info field format)](#_bookmark83) for all Trigger frame variants except the NFRP Trigger frame and the MU-RTS TXS Trigger frame.

B0 B11 B12 B19 B20 B21 B25 B26 B27 B31 B32 B38 B39

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AID12 | RU  Allocation | UL FEC  Coding Type | UL UHR- MCS | 2xLDPC | SS Allocation | UL Target Receive Power | PS160 | Trigger Dependent User Info |

Bits: 12 8 1 5 1 5 7 1 variable

###### [M#174, M#186, M#187, M#188] Figure 9-C—UHR variant User Info field format

[M#188] The AID12 subfield of a UHR variant User Info field is encoded as defined in [Table 9-46i (AID12 subfield](#_bookmark77) [encoding)](#_bookmark77) and has a value between 1 and 2006.

[M#188] The RU Allocation subfield in a UHR variant User Info field in a Trigger frame that is not an MU-RTS Trigger frame, along with the UL BW subfield in the Common Info field, the UL BW Extension subfield in the Special User Info field, and the PS160 subfield in the UHR variant User Info field, identifies the size and location of an RU or MRU.

[M#188] If the RU Allocation of the User Info field indicates the assigned RU is located in an 80 MHz frequency subblock where the corresponding bit in the DRU/RRU Indication subfield in the UHR variant Common Info field is set to 1, or located in more than one 80 MHz frequency subblocks where the corresponding bits in the DRU/RRU Indication subfield in the UHR variant Common Info field are set to all 1s, the assigned RU is an RRU or an MRU.

* The mapping of B7–B1 of the RU Allocation subfield along with the settings of B0 of the RU Allocation subfield and the PS160 subfield in the UHR variant User Info field is defined in [Table 9-46l (Encoding of the PS160 and RU Allocation subfields in a UHR variant User Info field)](#_bookmark84), where the bandwidth is obtained from the combination of the UL BW subfield and UL Bandwidth Extension subfields as defined in [Table 9-46l (Encoding of the PS160 and RU Allocation subfields in an EHT variant User](#_bookmark84) [Info field)](#_bookmark84), and *X1* and *N* are obtained from [Table 9-46m (Lookup table for X1 and N)](#_bookmark85). See 9.3.1.22.5 (EHT variant User Info field).
* The values of the PS160 subfield and B0 of the RU Allocation subfield indicate the 80 MHz frequency sub-block in which the RU or MRU is located for 26-tone RU, 52-tone RU, 106-tone RU, 242-tone RU, 484- tone RU, 996-tone RU, 52+26-tone RU, and 106+26-tone RU. The 80 MHz frequency subblock is derived based on the corresponding PHY RU or MRU index column in [Table 9-46l (Encoding of the PS160 and RU](#_bookmark84) [Allocation subfields in an EHT variant User Info field)](#_bookmark84).
* The values of PS160 subfield indicates the 160 MHz segment in which the RU or MRU is located for 2996-tone RU, 996+484-tone MRU, and 996+484+242-tone MRU.
* For 4996-tone RU, 2996+484-tone MRU, 3996-tone MRU, and 3996+484-tone MRU, the description of RU or MRU index is the same as that of the PHY RU or MRU index for the 320 MHz channel.
* If the bandwidth indicates 20 MHz, the mapping of the PHY RU index to RU 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) in increasing order.
* If the bandwidth indicates 40 MHz, the mapping of the PHY RU index to RU is defined in Table 27-9 (Data and pilot subcarrier indices for RUs in a 40 MHz HE PPDU and in a non-OFDMA 40 MHz HE PPDU) in increasing order.
* If the bandwidth indicates 80 MHz, the mapping of the PHY RU index to RU is defined in Table 36-5 (Data and pilot subcarrier indices for RUs in an 80 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 160 MHz, the mapping of the PHY RU index to RU is defined in Table 36-6 (Data and pilot subcarrier indices for RUs in a 160 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 320 MHz, the mapping of the PHY RU index to RU is defined in Table 36-7 (Data and pilot subcarrier indices for RUs in a 320 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 20 MHz, the mapping of the PHY MRU index to MRU is defined in Table 36-8 (Indices for small size MRUs in an OFDMA 20 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 40 MHz, the mapping of the PHY MRU index to MRU is defined in Table 36-9 (Indices for small size MRUs in an OFDMA 40 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 80 MHz, the mapping of the PHY MRU index to MRU is defined in Table 36-10 (Indices for small size MRUs in an OFDMA 80 MHz EHT PPDU) and Table 36-13 (Indices for large size MRUs in an OFDMA 80 MHz EHT PPDU and in a non-OFDMA 80 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 160 MHz, the mapping of the PHY MRU index to MRU is defined in Table 36-11 (Indices for small size MRUs in an OFDMA 160 MHz EHT PPDU) and Table 36-14 (Indices for large size MRUs in an OFDMA 160 MHz EHT PPDU and in a non-OFDMA 160 MHz EHT PPDU) in increasing order.
* If the bandwidth indicates 320 MHz, the mapping of the PHY MRU index to MRU is defined in Table 36-12 (Indices for small size MRUs in an OFDMA 320 MHz EHT PPDU) and Table 36-15 (Indices for large size MRUs in an OFDMA 320 MHz EHT PPDU and in a non-OFDMA 320 MHz EHT PPDU) in increasing order.

[M#188] If the RU Allocation of the User Info field indicates the assigned RU is located in an 80 MHz frequency subblock where the corresponding bit in the DRU/RRU Indication subfield in the UHR variant Common Info field is set to 0, the assigned RU is a DRU.

* The mapping of B7–B1 of the RU Allocation subfield along with the settings of B0 of the RU Allocation subfield and the PS160 subfield in the UHR variant User Info field is defined in Table 9-46x1 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 20MHz) for DBW 20MHz, Table 9-46x2 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 40MHz) for DBW 40MHz, and Table 9-46x3 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 80MHz) for DBW 80MHz, where the bandwidth is obtained from the combination of the UL BW subfield and UL Bandwidth Extension sub-fields as defined in Table 9-46x1 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 20MHz), Table 9-46x2 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 40MHz) and Table 9-46x3 (Encoding of the PS160 and RU Allocation subfields in a UHR variant User Info field for DBW 80MHz), and *X1* and *N* are obtained from Table 9-46m (Lookup table for X1 and N). The values of the PS160 subfield and B0 of the RU Allocation subfield indicate the 80 MHz frequency sub-block in which the DRU is located for 26-tone RU, 52-tone RU, 106-tone RU, 242-tone RU and 484-tone RU. The 80 MHz frequency subblock is derived based on the corresponding PHY RU or MRU index column in [Table 9-46l (Encoding of the PS160 and RU](#_bookmark84) [Allocation subfields in an EHT variant User Info field)](#_bookmark84).
* If the bandwidth indicates 20 MHz, the mapping of the PHY DRU index to DRU is defined in Table 38-C (Data and pilot subcarrier indices for Distributed-tone RUs (DRUs) in a 20 MHz UHR TB PPDU) in increasing order.
* If the bandwidth indicates 40 MHz, the mapping of the PHY DRU index to DRU is defined in Table 38-D (Data and pilot subcarrier indices for Distributed-tone RUs (DRUs) in a 40 MHz UHR TB PPDU) in increasing order.
* If the bandwidth indicates 80 MHz and the DRU Distribution BW subfield indicates 80 MHz distribution bandwidth, the mapping of the PHY DRU index to DRU is in Table 38-E (Data and pilot subcarrier indices for Distributed-tone RUs (DRUs) in an 80 MHz UHR TB PPDU) in increasing order.
* If the bandwidth indicates 80 MHz, 160 MHz or 320 MHz and the DRU Distribution BW subfield indicates 20 MHz distribution bandwidth, the mapping of the PHY DRU index to DRU is defined in Table 9-46x1 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 20MHz) and Equation (38-x) through the frequency shift in Table 38-y1 (Constant shift value *Kshift* for DRU on a frequency subblock of wide bandwidth).
* If the bandwidth indicates 80 MHz, 160 MHz or 320 MHz and the DRU Distribution BW subfield indicates 40 MHz distribution bandwidth, the mapping of the PHY DRU index to DRU is defined in Table 9-46x2 (Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 40MHz) and Equation (38-x) through the frequency shift in Table 38-y1 (Constant shift value *Kshift* for DRU on a frequency subblock of wide bandwidth).
* If the bandwidth indicates 160 MHz or 320 MHz and the DRU Distribution BW subfield indicates 80 MHz distribution bandwidth, the mapping of the PHY DRU index to DRU is defined in Table 9-46x3 (Encoding of the PS160 and RU Allocation subfields in a UHR variant User Info field for DBW 80MHz) and Equation (38-x) through the frequency shift in Table 38-y1 (Constant shift value *Kshift* for DRU on a frequency subblock of wide bandwidth).
* If the bandwidth indicates 80 MHz, 160 MHz or 320 MHz and the DRU Distribution BW subfield indicates 60 MHz distribution bandwidth, the mapping of the PHY DRU index to DRU is TBD.

###### [M#188] Table 9-46x1 Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 20MHz

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PS160 subfield** | **B0 of the RU Allocation subfield** | **B7-B1 of the RU Allocation subfield** | **Bandwidth (MHz)** | **DRU Size** | **DRU index (corresponding to Table 38-x1 for DBW20)** | **20MHz frequency subblock index (l)** | **PHY DRU index** |
| 0-3: 80 MHz frequency subblock where the DRU is located | | 0-8 | 20, 80, 160, or 320 | 26 | DRU1 to DRU9 | 4xN + 0 | 37xN + DRU index |
| 9-17 | 80, 160, or 320 | DRU1 to DRU9 | 4xN + 1 | 37xN +9+DRU index |
| 18 | 80, 160, or 320 | Reserved | Reserved | Reserved |
| 19-27 | 80, 160, or 320 | DRU1 to DRU9 | 4xN + 2 | 37xN +19+DRU index |
| 28-36 | 80, 160, or 320 | DRU1 to DRU9 | 4xN + 3 | 37xN +28+DRU index |
| 37-40 | 20, 80, 160, or 320 | 52 | DRU1 to DRU4 | 4xN + 0 | 16xN + DRU index |
| 41-44 | 80, 160, or 320 | DRU1 to DRU4 | 4xN + 1 | 16xN + 4+ DRU index |
| 45-48 | 80, 160, or 320 | DRU1 to DRU4 | 4xN + 2 | 16xN + 8+ DRU index |
| 49-52 | 80, 160,or 320 | DRU1 to DRU4 | 4xN + 3 | 16xN + 12+ DRU index |
| 53, 54 | 20, 80, 160, or 320 | 106 | DRU1 and DRU2 | 4xN + 0 | 8xN + DRU index |
| 55, 56 | 80, 160,or 320 | DRU1 and DRU2 | 4xN + 1 | 8xN + 2 + DRU index |
| 57, 58 | 80, 160,or 320 | DRU1 and DRU2 | 4xN + 2 | 8xN + 4 + DRU index |
| 59, 60 | 80, 160,or 320 | DRU1 and DRU2 | 4xN + 3 | 8xN + 6 + DRU index |
| 61-127 | Reserved | Reserved | Reserved | Reserved | Reserved |

###### [M#188] Table 9-46x2 Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 40MHz

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PS160 subfield** | **B0 of the RU Allocation subfield** | **B7-B1 of the RU Allocation subfield** | **Bandwidth (MHz)** | **DRU Size** | **DRU index (corresponding to Table 38-x2 for DBW40)** | **40MHz frequency subblock index (l)** | **PHY DRU index** |
| 0-3: 80 MHz frequency subblock where the DRU is located | | 0-17 | 40, 80, 160, or 320 | 26 | DRU1 to DRU18 | 2xN + 0 | 37xN + DRU index |
| 18 | 80, 160, or 320 | Reserved | Reserved | Reserved |
| 19-36 | 80, 160, or 320 | DRU1 to DRU18 | 2xN + 1 | 37xN + 19 + DRU index |
| 37-44 | 40, 80, 160, or 320 | 52 | DRU1 to DRU8 | 2xN + 0 | 16xN + DRU index |
| 45-52 | 80, 160,or 320 | DRU1 to DRU8 | 2xN + 1 | 16xN + 8 + DRU index |
| 53-56 | 40, 80, 160, or 320 | 106 | DRU1 to DRU4 | 2xN + 0 | 8xN + DRU index |
| 57-60 | 80, 160,or 320 | DRU1 to DRU4 | 2xN + 1 | 8xN + 4 + DRU index |
| 61, 62 | 40, 80, 160, or 320 | 242 | DRU1 and DRU2 | 2xN + 0 | 4xN + DRU index |
| 63, 64 | 80, 160, or 320 | DRU1 and DRU2 | 2xN + 1 | 4xN + 2 + DRU index |
| 65-127 | Reserved | Reserved | Reserved | Reserved | Reserved |

###### [M#188] Table 9-46x3 Encoding of the PS160 and RU Allocation subfields in an UHR variant User Info field for DBW 80MHz

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PS160 subfield** | **B0 of the RU Allocation subfield** | **B7-B1 of the RU Allocation subfield** | **Bandwidth (MHz)** | **DRU Size** | **DRU index (corresponding to Table 38-x3 for DBW80)** | **80MHz frequency subblock index (l)** | **PHY DRU index** |
| 0-3: 80 MHz frequency subblock where the DRU is located | | 0-36 | Reserved | Reserved | Reserved | Reserved | Reserved |
| 37-52 | 80, 160, or 320 | 52 | DRU1 to DRU16 | N | 16xN + DRU index |
| 53-60 | 80, 160, or 320 | 106 | DRU1 to DRU8 | N | 8xN + DRU index |
| 61-64 | 80, 160, or 320 | 242 | DRU1 to DRU4 | N | 4xN + DRU index |
| 65, 66 | 80, 160, or 320 | 484 | DRU1 and DRU2 | N | 2xN + DRU index |
| 67-127 | Reserved | Reserved | Reserved | Reserved | Reserved |

[M#188] The UL FEC Coding Type subfield of the User Info field indicates the code type of the solicited UHR TB PPDU. The UL FEC Coding Type subfield is set to 0 to indicate BCC and set to 1 to indicate LDPC.

[M#187, M#188] The UL UHR-MCS subfield of the User Info field indicates the UHR-MCS of the solicited UHR TB PPDU. In a UHR variant User Info field, the encoding of the UL UHR-MCS subfield is defined in 38.3.10 (UHR modulation and coding schemes (UHR-MCSs) and Unequal modulation (UEQM)) and is set as defined in 37.TBD (UHR UL MU operation).

[M#174, M#188] If the UL FEC Coding Type subfield is set to 1, the 2xLDPC subfield of the User Info field indicates whether nominal LDPC codeword length of 3888 is used:

* Set to 0 to indicate the nominal LDPC codeword length of 648, 1296 or 1944 is used.
* Set to 1 to indicate the nominal LDPC codeword length of 3888 is used.

[M#174] If the UL FEC Coding Type subfield is set to 0, B26 is reserved and set to 1.

[M#188] If the RU Allocation of the User Info field indicates the assigned RU is located in an 80 MHz frequency subblock where the corresponding bit in the DRU/RRU Indication subfield in the UHR variant Common Info field is set to 1, or located in more than one 80 MHz frequency subblocks where the corresponding bits in the DRU/RRU Indication subfield in the UHR variant Common Info field are set to all 1s, the SS Allocation subfield of the UHR variant User Info field associated with an RRU indicates the spatial streams of the solicited UHR TB PPDU and the format is defined in [Figure 9-D (SS Allocation subfield format of a UHR variant](#_bookmark86) [User Info field associated with an RRU)](#_bookmark86).

B0 B2 B3 B4

Number Of Spatial Streams

Starting Spatial Stream

Bits: 3 2

###### [M#188] Figure 9-D—SS Allocation subfield format of a UHR variant User Info field associated with an RRU

[M#188] The Starting Spatial Stream subfield indicates the starting spatial stream and is set to the starting spatial stream minus 1 (see 37.TBD (TXVECTOR parameters for UHR TB PPDU response to Trigger frame)) with a maximum value of 7 for the Starting Spatial Stream subfield (see 38.1.1 (Introduction to the UHR PHY)). The Starting Spatial Stream subfield is set to 0 if the corresponding RU or MRU is not allocated for MU-MIMO.

[M#188] The Number Of Spatial Streams subfield indicates the number of spatial streams, and is set to the number of spatial streams minus 1 with a maximum value of 3 (see 38.1.1 (Introduction to the UHR PHY)).

[M#62, M#188] If the RU Allocation of the User Info field indicates the assigned RU is located in an 80 MHz frequency subblock where the corresponding bit in the DRU/RRU Indication subfield in the UHR variant Common Info field is set to 0, the SS Allocation subfield of the UHR variant User Info field associated with a DRU indicates the DRU distribution bandwidth and spatial streams of the solicited UHR TB PPDU and the format is defined in [Figure 9-90z (SS Allocation subfield format of a UHR variant](#_bookmark86) [User Info field associated with a DRU)](#_bookmark86), where B2-B3 are reserved and set to 0.

B0 B1 B2 B3 B4

|  |  |  |
| --- | --- | --- |
| DRU Distribution BW | Reserved | Number Of Spatial Streams |

Bits: 2 2 1

###### [M#62, M#188] Figure 9-90z—SS Allocation subfield format of a UHR variant User Info field associated with a DRU

[M#20, M#62, M#64, M#87, M#88, M#89, M#90] The DRU Distribution BW subfield indicates the distribution bandwidth of the assigned DRU and is encoded as follows:

* + 0 for a distribution bandwidth of 20 MHz.
  + 1 for a distribution bandwidth of 40 MHz.
  + 2 for a distribution bandwidth of 80 MHz.
  + 3 for a distribution bandwidth of 60 MHz.

[M#188] The Number Of Spatial Streams subfield indicates the number of spatial streams, and is set to the number of spatial streams minus 1 with a maximum value of 1 (see 38.1.1 (Introduction to the UHR PHY)).

[M#188] The UL Target Receive Power subfield indicates the expected receive signal power, measured at the AP’s antenna connector and averaged over the antennas, for the UHR portion of the UHR TB PPDU transmitted on the assigned RU and is defined in [Table 9-46k (UL Target Receive Power subfield in Trigger frame)](#_bookmark81).

[M#188] If the size of RU or MRU is smaller than or equal to 2996-tones, then the PS160 subfield is set to 0 to indicate that the RU or MRU allocation applies to the primary 160 MHz channel and set to 1 to indicate that the RU or MRU allocation applies to the secondary 160MHz channel. Otherwise, the PS160 subfield is used to indicate the RU or MRU index along with the RU Allocation subfield. The PS160 subfield is set as defined in [Table 9-46l (Encoding of the PS160 and RU Allocation subfields in an EHT variant User Info field)](#_bookmark84).

[M#188] The Trigger Dependent User Info subfield is set as defined in [9.3.1.22.4 (HE variant User Info field)](#_bookmark75).

***TGbn editor: Change the subclause number of Basic Trigger frame format from 9.3.1.22.6 to 9.3.1.22.7 as follows:***

##### [M#186] 9.3.1.22.7 Basic Trigger frame format

***TGbn editor: Change the subclause number of BFRP Trigger frame format from 9.3.1.22.7 to 9.3.1.22.8 as follows:***

##### [M#186] 9.3.1.22.8 BFRP Trigger frame format

***TGbn editor: Change the subclause number of MU-BAR Trigger frame format from 9.3.1.22.8 to 9.3.1.22.9 as follows:***

##### [M#186] 9.3.1.22.9 MU-BAR Trigger frame format

***TGbn editor: Change the subclause number of MU-RTS Trigger frame format from 9.3.1.22.9 to 9.3.1.22.10 as follows:***

##### [M#186] 9.3.1.22.10 MU-RTS Trigger frame format

***TGbn editor: Change the subclause number of BSRP Trigger frame format from 9.3.1.22.10 to 9.3.1.22.11 as follows:***

##### [M#186] 9.3.1.22.11 BSRP Trigger frame format

***TGbn editor: Change the subclause number of GCR MU-BAR Trigger frame format from 9.3.1.22.11 to 9.3.1.22.12 as follows:***

##### [M#186] 9.3.1.22.12 GCR MU-BAR Trigger frame format

***TGbn editor: Change the subclause number of BQRP Trigger frame format from 9.3.1.22.12 to 9.3.1.22.13 as follows:***

##### [M#186] 9.3.1.22.13 BQRP Trigger frame format

***TGbn editor: Change the subclause number of NFRP Trigger frame format from 9.3.1.22.13 to 9.3.1.22.14 as follows:***

##### [M#186] 9.3.1.22.14 NFRP Trigger frame format

***TGbn editor: Change the subclause number of Ranging Trigger frame format from 9.3.1.22.14 to 9.3.1.22.15 as follows:***

##### [M#186] 9.3.1.22.15 Ranging Trigger frame format

**Text to be adopted ends here.**

**References:**

1. [11-24/0171r26](https://mentor.ieee.org/802.11/dcn/24/11-24-0171-26-00bn-tgbn-motions-list-part-1.pptx): 11-24-0171-26-00bn-tgbn-motions-list-part-1, Alfred Asterjadhi (Qualcomm Inc.)
2. [11-24/2046r4](https://mentor.ieee.org/802.11/dcn/24/11-24-2046-04-00bn-draft-text-on-dru.docx): Draft Text on DRU, Jianhan Liu (MediaTek)
3. [11-24/2040r9](https://mentor.ieee.org/802.11/dcn/24/11-24-2040-09-00bn-pdt-mac-coexistence.docx): PDT MAC Coexistence, Laurent Cariou (Intel)
4. [11-25/14r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0014-03-00bn-tgbn-motions-list-part-2.pptx): 11-25-0014-03-00bn-tgbn-motions-list-part-2, Alfred Asterjadhi (Qualcomm Inc.)