### IEEE P802.11 Wireless LANs

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| PDT BW Extension field in trigger frame for EHT | | | | |
| Date: 2021-03-22 | | | | |
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Abstract

We propose draft text based on 802.11be Draft 0.4

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 subsequent TGbe Draft. This introduction is 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).***

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

**Discussion:**

**Do you agree to modify the UL BW extension field for an R1 STA**

**-        An R1 EHT AP shall not use these two new entries in EHT Trigger frames it transmits**

**-        An R1 EHT non-AP STA shall be able to parse these two new entries of the UL BW extension field**

|  |  |  |  |
| --- | --- | --- | --- |
| **UL BW**  **(2 bits)** | **Bandwidth for HE TB PPDU, MHz** | **UL BW Extension (2 bits)** | **Bandwidth for EHT 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~~ 160 |
| 2 | 80 | 2 | reserved |
| 2 | 80 | 3 | reserved |
| 3 | 160 | 0 | ~~reserved~~ 80 |
| 3 | 160 | 1 | 160 |
| 3 | 160 | 2 | 320 -1 |
| 3 | 160 | 3 | 320-2 |

The SP result: Yes/No/Abstain: 61/26/61/115, the ratio is about 70.11%

**Propose:**

### Trigger frame format

***TGbe editor: Please modify the subclause 9.3.1.22.1.3 Special User Info field as follows:***

### 9.3.1.22.1.3 Special User Info field

If the Special User Info field is included in the Trigger frame then the Special User Info field present subfield of the EHT variant of the Common Info Field is set to 0, otherwise it is set to 1.

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 AP.

NOTE—An EHT AP does not use the value 2007 as an AID for any STA associated to it (see 35.4.1 (UL MU operation).

NOTE - The length of the Special User Info field is equal to the length of the other User Info fields present in the same Trigger frame, except when the Trigger frame is an MU-BAR Trigger frame, since the lengths of the User Info fields in the MU-BAR are not necessarily the same.

The Special User Info field, if present, is located immediately after the Common Info field of the Trigger frame and carries the non-derived subfields of the U-SIG field of a solicited EHT TB PPDU, and the Special User Info Field Present subfield of the Common Info Field is set to 0.

If HE/EHT P160 subfield of the Common Info field is set to 0 then a User Info field addressed to an EHT STA is an EHT variant User Info field. The addressed EHT STA responds to the Trigger frame with an EHT TB PPDU as defined in 35.4.1 (UL MU operation), except for an MU-RTS in which case the EHT STA responds to the Trigger frame with a non-HT duplicate PPDU. *(the text with yellow color is TBD)*

If HE/EHT P160 subfield of the Common Info field is se to 1 then a User Info field addressed to an EHT STA is an HE variant User Info field. The addressed EHT STA responds to the Trigger frame with an HE TB PPDU as defined in 26.5.2 (UL MU operation), except for an MU-RTS in which case the EHT STA responds to the Trigger frame with a non-HT duplicate PPDU *(the text with yellow color is TBD)*

The format of the Special User Info field is defined in the Figure 9-64e2.

**Figure 9-64e 2— Special User Info field format**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B11 | B12   B14 | B15          B16 | B17 B20 | B21   B24 | B25 B36 | B37 B39 |  |
|  | AID12 | PHY Version ID | UL Bandwidth Extension | Spatial Reuse 1 | Spatial Reuse 2 | U-SIG Disregard And Validate | Reserved | Trigger Dependent User Info |
| Bits: | 12 | 3 | 2 | 4 | 4 | 12 | 3 | variable |

The PHY Version ID subfield indicates the PHY version. The PHY Version ID subfield is set to 0 for EHT.

The UL BW Extension subfield, together with the UL BW subfield in the Common Info field, indicates the bandwidth of the solicited TB PPDU from the addressed EHT STA (i.e., the bandwidth in the U-SIG of the EHT TB PPDU). The UL BW Extension subfield is defined in Table 9-29j3 (UL Bandwidth Extension subfield encoding).

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 9-29j3—UL BW Extension subfield encoding** | | | |
| **UL BW** | **Bandwidth for HE TB PPDU (MHz)** | **UL BW Extension** | **Bandwidth for EHT 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 | 160 |
| 2 | 80 | 2 | Reserved |
| 2 | 80 | 3 | Reserved |
| 3 | 160 | 0 | 80 |
| 3 | 160 | 1 | 160 |
| 3 | 160 | 2 | 320-1 |
| 3 | 160 | 3 | 320-2 |

The Spatial Reuse *n* subfield, 1 <= *n* <= 2, is set to the same value as its corresponding subfield in the U-SIG of the EHT TB PPDU, which are defined in Table 36-22 (U-SIG field of an EHT TB PPDU).

The U-SIG Disregard and Validate subfield carries the value to be included in the Disregard and Validate subfield of the U-SIG field of the solicited EHT TB PPDUs.TheMapping from the U-SIG Disregard and Validate subfield to bits in the U-SIG field for a TB PPDU is defined in Table 9-31l (Mapping from U-SIG Disregard and Validate subfield to bits in the U-SIG field for a TB PPDU).

|  |  |  |
| --- | --- | --- |
| **Table 9-31l-Mapping from Special User Info field to U-SIG-1 and U-SIG-2 fields in the TB PPDU** | | |
| **Bits in Special User Info field** | **Action at Receiving STA** |
| B25-B30 | Copy to B20-B25 of the U-SIG-1 field (Disregard subfield) |
| B31 | Copy to B2 of the U-SIG-2 field (Validate subfield) |
| B32-B36 | Copy to B11-B15 of the U-SIG-2 field (Disregard subfield) |

The presence and length of the Trigger Dependent User Info subfield in the Special User Info field depends on the variant of the Trigger frame. When present, the length and the subfields of the Trigger Dependent User Info subfield are as follows:

* The length is one octet and all the subfields are reserved in a Basic Trigger frame and in a BFRP Trigger frame,
* The length is 4 octets and all the subfields, except for the BAR Type subfield, are reserved in an MU-BAR Trigger frame and a GCR MU-BAR Trigger frame. The BAR Type subfield is set to indicate a Compressed BAR in an MU BAR Trigger frame and is set to indicate a GCR BAR in a GCR MU BAR Trigger frame.

### 35.4 MU operation

### 35.4.2 UL MU operation

### 35.4.2.2 Rules for soliciting UL MU frames

***TGbe editor: Please modify the subclause 35.4.2.2.1 Allowed settings of the Trigger frame fields and TRS Control subfield as follows:***

### 35.4.2.2.1 Allowed settings of the Trigger frame fields and TRS Control subfield

An EHT AP may transmit a Trigger frame that solicits an HE TB PPDU from an HE STA and/or an EHT STA subject to the rules defined in 26.5.2.2 (Rules for soliciting UL MU frames).

An EHT AP may transmit a Trigger frame that solicits an EHT TB PPDU from an EHT STA subject to the rules defined in 26.5.2.2 (Rules for soliciting UL MU frames) and the additional rules defined below.

If thedot11EHTBaseLineFeaturesImplementedOnly is equal to true, then an EHT AP shall not transmit a Trigger frame that solicits both an HE TB PPDU and an EHT TB PPDU.

If the dot11EHTBaseLineFeaturesImplementedOnly is equal to true, then an EHT AP shall not set UL BW field to 2 and UL BW Extension field to 1 in a Trigger frame that it transmits.

If the dot11EHTBaseLineFeaturesImplementedOnly is equal to true, then an EHT AP shall not UL BW field to 3 and UL BW Extension field to 0 in a Trigger frame that it transmits.

An EHT AP shall include a Special User Info field immediately after the Common Info field of a Trigger frame to indicate that the Trigger frame is soliciting an EHT TB PPDU. The AID12 subfield of the Special User Info field shall be set to 2007. An EHT AP that includes the Special User Info field in a Trigger frame shall set Special User Info Field present to 0. An EHT AP that includes the Special User Info field in a Trigger frame shall set HE/EHT P160 subfield of the Common Info Field of the Trigger frame to 0. An EHT AP that includes the Special User Info field in a Trigger frame shall set HE/EHT P160 subfield of the Common Info Field of the Trigger frame to 0. *(the text with yellow color is TBD)*

An EHT AP shall not assign an AID value of 2007 to any STA

An EHT AP shall set the UL Length subfield of a transmitted Trigger frame that solicits an EHT TB PPDU to the value given by Equation (27-11) with m = 2.

NOTE—This is the same rule as that of an AP that transmits a Trigger frame that solicits an HE TB PPDU (see 26.5.2.2.4).An EHT non-AP STA that transmits a TB PPDU shall satisfy the conditions defined in 26.5.2.3 (Non-AP STA behavior for UL MU operation). If HE/EHT P160 subfield of the Common Info field in the Trigger frame is set to 1*)*then the TB PPDU shall be an HE TB PPDU; otherwise, the TB PPDU shall be an EHT TB PPDU. *(the text with yellow color is TBD)*

An EHT non-AP STA shall not send an EHT TB PPDU unless it is explicitly triggered by an AP in one of the operation modes described in 26.5.2.3 (Non-AP STA behavior for UL MU operation) and the operation modes described in 35.4.2.3.3.

An EHT non-AP STA shall not send an HE TB PPDU on the secondary 160MHz.

An EHT non-AP STA shall be able to parse the UL BW Extension subfield as defined in Table 9-29j3 (UL Bandwidth Extension subfield encoding).