IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | CR of CID 13754 | | | | | | Date: 2018-1-1 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | Email | | Zhou Lan | Broadcom Ltd. | 250 Innovation Drive San Jose CA 95134 | (+1) 408 543 3450 | [zhou.lan@broadcom.com](mailto:zhou.lan@broadcom.com) | | Chunyu Hu | Broadcom Ltd. | 250 Innovation Drive San Jose CA 95134 |  | [chunyu.hu@broadcom.com](mailto:chunyu.hu@broadcom.com) | | Matthew Fischer | Broadcom Ltd. | 250 Innovation Drive San Jose CA 95134 |  | [matthew.fischer@broadcom.com](mailto:matthew.fischer@broadcom.com) | | Xiaofei Wang | InterDigital Communication Inc. | 2 Huntington Quadrangle  Melville, NY 11747 |  | [Xiaofei.wang@interdigital.com](mailto:Xiaofei.wang@interdigital.com) | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

Comment resolution with proposed changes to TGax D2.0 for CIDs from the WG LB for TGax related to CID 13754.

The CID list is:

13754

The proposed changes on this document are based on TGax Draft 2.0.

**REVISION NOTES:**

R0: Initial draft with comments from group.

**END OF REVISION NOTES**

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 TGax Draft. This introduction is not part of the adopted material.

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

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

**CIDs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 13754 | Xiaofei Wang | 58.08 | 9.2.4.6.4.1 | The current A-Control subfield will have problems with future expansion; if a STA encounters an unknown Control ID, effectively, it cannot parse any of the remaining control fields because it will have no idea how long the first Control ID would be. | Address this issue so that even if a STA encounters a unknown control ID, it still can parse the remainder of the A Control subfield | Revised-  Per Draft 2.0, the only possible unknown Control IDs are the reserved values. So if a Control subfield with Control ID set to reserved value present in between other control subfields, the receiver has issue to parse the following Control subfield. Therefore, if a control field with reserved value is present, it shall be the last and only one such control subfield. In addition, a null value control subfield is proposed for the receiver to be able to completely ignore the a control field in the case that the transmitter didn’t have valid value to put in the a control field while the frame has already been created.  TGax editor makes changes as shown in 11-18/088r0 that are marked with CID 13754 |

**Discussion:**

Per Draft 2.0, the only possible unknown Control IDs are the reserved values. So if a Control subfield with Control ID set to reserved value present in between other control subfields, the receiver has issue to parse the following Control subfield. Therefore, if a control field with reserved value is present, it shall be the last and only one such control subfield. In addition, a mechanism is needed for the receiver to be able to completely ignore the a-control field in the case that the transmitter didn’t have valid value to put in the a control field while the frame has already been created. There are several options proposed as follows,

**Option 1:**

Take one reserved value and create a null value. 7 for example.

**Pros:** Easy and straightforward to implement.

**Cons:** Burn one value from the remaining 9 reserved values.

**Option 2:**

Using all **zero** to indicate this a control that can be ignored.

**Pros:** No need to burn one reserved value.

**Cons:** Need to change the definition of the current HE TB PPDU Length field. Risk to be misinterpreted as a UMRS.

“The HE TB PPDU Length subfield indicates the length of the HE TB PPDU response and is set to the number of OFDM symbols in the Data field of the HE TB PPDU ~~minus 1~~.”

**Option 3:**

Using all **ones** to indicate this a control that can be ignored.

**Pros:** No need to burn one reserved value. Value 15 can be still used in the future for other purpose assuming all one setting will be an invalid setting for control ID 15.

**Cons:**

**Option 1:**

**Proposed Changes to Draft Text of TGax D2.0:**

TGax editor: change section Table 9-18a as follows

……

**Table 9-18a—Control ID subfield values**

|  |  |  |  |
| --- | --- | --- | --- |
| **Control ID value** | **Meaning** | **Length of the Control Information subfields (bits)** | **Content of the Control Information subfield** |
| 0 | UL MU response scheduling (UMRS) | 26 | See 9.2.4.6.4.2 (UMRS Control) |
| 1 | Operating mode (OM) | 12 | See 9.2.4.6.4.3 (OM Control) |
| 2 | HE link adaptation (HLA) | 26 | See 9.2.4.6.4.4 (HLA Control) |
| 3 | Buffer status report (BSR) | 26 | See 9.2.4.6.4.5 (BSR Control) |
| 4 | UL power headroom (UPH) | 8 | See 9.2.4.6.4.6 (UPH Control) |
| 5 | Bandwidth query report (BQR) | 10 | See 9.2.4.6.4.7 (BQR Control) |
| 6 | Command Control Indication | 8 | See 9.2.4.6.4.8 (CAS Control)) |
| 7 | Null value | 26 | See 9.2.4.6.4.8 (Null value) |
| ~~7~~8-15 | Reserved |  |  |

The Control subfield with Control ID subfield set to 8 to 15 (Reserved value), if present, follows the last Control subfield with Control ID subfield set to a non-reserved value. Only one such Control subfield is allowed per A-Control subfield.

The Padding subfield, if present, follows the last Control subfield and is set to a sequence of zeros so that the length of the A-Control subfield carried in the HT Control field is 30 bits.

TGax editor: insert the following section as section 9.2.4.6.4.8

**9.2.4.6.4.8 Null value**

If the Control ID subfield is 7, the Control Information subfield is set a sequence of zeros.

Note- A STA that received a A-Control field with Control ID subfield equals to 7 can ignore the content of the Control Information subfield.

**End of proposed changes.**

**Option 2:**

**9.2.4.6.4 A-Control**

TGax editor: change the following section as follows

The Padding subfield, follows the last Control subfield, if any is present, and is set to a sequence of zeros so that the length of the A-Control subfield carried in the HT Control field is 30 bits.

**9.2.4.6.4.2 UMRS Control**

TGax editor: change the following section as follows

If the Control ID subfield is 0, the Control Information subfield is nonzero and contains UL MU response scheduling (UMRS) information for an HE TB PPDU that follows the HE MU PPDU containing this Control Information subfield (see 27.5.3.2 (Rules for soliciting UL MU frames)). The format of the subfield is shown in Figure 9-15c (Control Information subfield format when Control ID subfield is 0).

……

The HE TB PPDU Length subfield indicates the length of the HE TB PPDU response and is set to the number of OFDM symbols in the Data field of the HE TB PPDU ~~minus 1~~. The duration of the HE TB PPDU is calculated as defined in 28.4.3 (TXTIME and PSDU\_LENGTH calculation).

……

**10.9 HT Control field operation**

TGax editor: change the following section as follows

If an A-Control subfield is present in a frame then it may contain zero or more Control subfields, and each Control subfield shall be present in the A-Control subfield only if it is supported by the receiving STAs; otherwise the Control subfield shall not be present.

An HE STA that receives an A-Control subfield shall ignore a Control field with a Control ID subfield whose value is not recognized or is not supported by the STA.

For any Control ID value only one Control subfield shall be present in the A-Control subfield of QoS Data, QoS Null, or Management frames carried in an (A-)MPDU.

NOTE—An A-Control field that is present in a frame contains only the Padding subfield when the A-Control field is a sequence of zeros.

**Option 3:**

**9.2.4.6.4 A-Control**

TGax editor: change the following section as follows

The Padding subfield, if present, follows the last Control subfield and is set to a sequence of zeros so that the length of the A-Control subfield carried in the HT Control field is 30 bits.

A STA that received a A-Control field set to all ones shall ignore the content of the Control Information subfield.