IEEE P802.11
Wireless LANs

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| --- |
| Resolution for CID 10674 |
| Date: 2022-07-10 |
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Abstract

This submission proposes resolution for CID 10674 received in LB266 (11be D2.0).

***TGbe editor: The baseline for this document is 11be D2.0***

**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 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.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **Pg/Ln** | **Comment** | **Proposed Change** | **Resolution** |
| 10674 | Duncan Ho | 9.4.2.316 | 251.40 | Currently, the standard lacks a fast way to convey dynamic QoS info (e.g., delay deadline of the HOL packet). Add a more dynamic mechanism for QoS reporting | Add a more dynamic mechanism for QoS reporting. Contribution to follow | **Revised**Agree with the comment. We define a dynamic mechanism to allow the STA to report the head-of-line (HOL) packet delay information in terms of packet enqueue time with respect to the TSF time. TGbe editor, please implement changes as shown in 11-22/1454r0 tagged as 10674 |

### Proposed Text:

9.2.4.6 HT Control field

9.2.4.6.4 HE variant

***TGbe editor: Please make the following changes in Table 9-25 (Control ID subfield values) :***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| Control ID value |

 |

|  |
| --- |
| Meaning |

 |

|  |
| --- |
| Length of the Control Information subfield (bits) |

 |

|  |
| --- |
| Content of the Control Information subfield |

 |
| … | … | … | … |
| 10 | Delay Status Report (DSR) (#10674) | TBD | See 9.2.4.7.11 (DSR Control) |
| 11-14 | Reserved |  |  |
| 15 |

|  |
| --- |
| Ones need expansion surely (ONES) |

 | 26 |

|  |
| --- |
| Set to all 1s |

 |

***TGbe editor: add the following subclause in subcaluse 9.2.4.7 (Control subfield variants of an A-Control subfield)***

9.2.4.7.11 DSR Control (CID 10674)

The Control Information subfield in a DSR Control subfield contains reported head-of-line (HOL) delay information for frames queued for transmission by a STA in the uplink. The format of the subfield is shown in [Figure 9-w (Control Information subfield format in a DSR Control subfield)](#bookmark2)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | TID | Queue Size Scaling Factor | Low Latency Queue Size | TSF Time Encoding | HOL Packet Enqueue Time |
| Bits | 4 | 2 | 6 | 1 | 9 |

 [Figure 9-w Control Information subfield format in a DSR Control subfield](#bookmark2)

The TID subfield indicates the TID whose delay is reported.

The Queue Size Scaling Factor subfield indicates the unit SF, in octets, of the Low Latency Queue Size subfield. The encoding of the Queue Size Scaling Factor subfield is shown in Table 9-y (Queue Size Scaling Factor subfield encoding).

The Low Latency Queue Size subfield indicates the amount of low latency buffered traffic, in units of SF octets, reported for the TID identified by the TID subfield to be delivered to the STA identified by the receiver address of the frame containing the DSR Control subfield. A queue size value of 254 in the Low Latency Queue Size subfield indicates that the amount of buffered traffic is greater than 254 × SF octets. A queue size value of 255 in the Low Latency Queue Size subfield indicates that the amount of buffered traffic is unspecified.

Table 9-y —Scaling Factor subfield encoding

|  |  |
| --- | --- |
| **Queue Size Scaling Factor subfield**  | **Scaling factor, SF (octets)** |
| 0 | 16 |
| 1 | 256 |
| 2 | 2048 |
| 3 | 32768 |

The TSF Time Encoding subfield indicates the encoding of the relevant TSF value at which the HOL packet was enqueued. The TSF Time Encoding subfield is set according to Table 9-z (TSF Time Encoding subfield)

The HOL packet enqueue time subfield specifies the relevant TSF value, in reference to the TSF time of the transmitting link, at which the STA has received the corresponding HOL packet at the local MAC SAP. The lowest bit of the HOL Packet Enqueue Time subfield corresponds to the starting bit of the relevant TSF value. The starting bit is indicated by the TSF Time Encoding subfield (Bit S).

Table 9-z —TSF Time Encoding subfield

|  |  |
| --- | --- |
| **TSF Time Encoding subfield** | **Starting bit of the relevant TSF value (Bit S)** |
| 0 | 10 |
| 1 | Reserved |

***TGbe editor: Please modify the paragraphs in 9.4.2.313.2(EHT MAC Capabilities Information field) as follows (CID 10674):***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 |
|  | EPCS Priority Access Supported | EHT OM Control Support | Triggered TXOP Sharing Mode 1 Support | Triggered TXOP Sharing Mode 2 Support | Restricted TWT Support |
| Bits | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B5 | B6 B7 | B8 | B9 | B10 |
|  | SCS Traffic Description Support | Maximum MPDU Length | Maximum A-MPDU Length Exponent Extension | EHT TRS Support | TXOP Return Support in TXOP Sharing Mode 2 |
| Bits | 1 | 2 | 1 | 1 | 1 |
|  |  |  |  |  |  |
|  | B11 | B12 B15 |  |  |  |
|  | Delay Status Report (DSR) Support | Reserved |  |  |  |
| Bits | 1 | 4 |  |  |  |
|  |  |  |  |  |  |

**Figure 9-1002ae—EHT MAC Capabilities Information field format**

The subfields of the EHT MAC Capabilities Information field are defined in Table 9-401k (Subfields of the EHT MAC Capabilities Information field).

**Table 9-401k—Subfields of the EHT MAC Capabilities Information field**

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| … | … | … |
| TXOP Return Sup-port In TXOP Shar-ing Mode 2 | Indicates support for receiving a frame with the RDG/More PPDU sub-field in the CAS Control subfield of the HE variant HT Control field from a non-AP STA in TXOP Sharing Mode 2 (see 35.2.1.2 (Triggered TXOP sharing procedure)). | For an EHT AP:Set to 1 to indicate that the AP is capable of receiving a QoS Data or QoS Null frame with the RDG/More PPDU subfield in the CAS Control subfield of the HE variant HT Control field from a non-AP STA in TXOP Sharing Mode 2. Set to 0 otherwise.For an non-AP EHT STA:Reserved. |
| Delay Status Report (DSR) Support | Indicates support for receiving or generating a frame with the DSR Control subfield of the HE variant HT Control field | For an EHT AP:Set to 1 to indicate that the AP is capable of receiving a QoS Data or QoS Null frame with the DSR Control subfield of the HE variant HT Control field from a non-AP EHT STA.Set to 0 otherwise.For a non-AP EHT STA:Set to 1 to indicate that the non-AP EHT STA is capable of generating a QoS Data or QoS Null frame with the DSR Control subfield of the HE variant HT Control field.Set to 0 otherwise. |

***TGbe editor: Please insert the following clause under 35.5.2 EHT UL MU operation as follows (CID 10674):***

**35.5.2.x Delay Status Report Operation**

A non-AP STA delivers delay status reports (DSRs) to assist its AP in allocating UL MU resources. The

non-AP STA can either implicitly deliver DSRs in the DSR Control subfield of QoS Data or QoS Null frames transmitted to the AP (unsolicited DSR) or explicitly deliver DSRs in QoS Data or QoS Null frames sent to the AP in response to a BSRP Trigger frame (solicited DSR). The delay status reported in the DSR Control subfield is provided in 9.2.4.7.11 (DSR Control). A non-AP STA shall set the HOL Packet Enqueue Time subfield in the DSR Control subfield to TSF [Bit S:Bit S+8], where TSF corresponds to the HOL packet enqueue time. The TSF timer at which the HOL packet was enqueued has bits 0 to S-1 equal to zero and bits S+9 to 63 equal to the same value as the respective bits in the current TSF timer.

An EHT STA shall set the Delay Status Report (DSR) Support subfield in the EHT Capabilities element it transmits to 1 if dot11EHTDSRControlImplemented is true; otherwise, the EHT STA shall set the Delay Status Report (DSR) Support subfield to 0.

A non-AP EHT STA with dot11EHTDSRControlImplemented set to true may report the HOL packet delay status in the DSR Control subfield of QoS Data or QoS Null frames it transmits if the AP has indicated its support in the Delay Status Report (DSR) Support subfield of its EHT Capabilities element; otherwise, a non-AP EHT STA shall not report the DSR in the DSR Control subfield.