IEEE P802.11
Wireless LANs

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| LB266 CR on Measurement Report for Low-latency Traffic |
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Abstract

This submission contains proposed comment resolutions to comments on P802.11be D2.0. The following CIDs are resolved:

12334, 10906, 10908, 12290

Revisions:

- Rev 0: Initial version of the document.

- Rev 1: Revised based on the offline discussion

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| **CID** | **Commenter** | **Clause** | **Page.****Line** | **Comment** | **Proposed Change** | **Resolution** |
| 12334 | Guogang Huang | 35.3.22 | 478.29 | Similar to the 5G cellular network, a measurement report should be defined to monitor the experienced packet delivery ratio given the delay bound of uplink transmissions belonging to a TID. | Please define a measurement to monitor the packet delivery ratio | RevisedAgreed in principle. The current Transmit Stream/Category Measurement Request/Report is modified to address the measurement for the low-latency traffic.Instructions to the editor:Please make the changes to the spec as shown in 11/22-1213r1 |
| 10906 | Akira Kishida | 9.4.2.316 | 251.40 | The QoS Characteristics element contains requirements of QoS expectations of a traffic flow as defined; however, there is no mechanism to notify measurement results of the set of parameters corresponding to the contents of the QoS Characteristics element. Therefore, some mechanisms should be determined to know whether the traffic flow fulfills the requirements of the QoS Characteristic element or not. | A new element such as the "QoS Characteristic report element" should be created to notify the results of measurements of each component in the QoS Characteristic element. | RevisedAgreed in principle. The current Transmit Stream/Category Measurement Request/Report is modified to address the measurement for the low-latency traffic.Instructions to the editor:Please make the changes to the spec as shown in 11/22-1213r1 |
| 10908 | Akira Kishida | 35.9 | 510.51 | A mechanism for how an AP confirms whether the requirements described in the QoS Characteristics element are fulfilled or not should be defined in 35.9 and 35.3.22. | As in the comment. | RevisedAgreed in principle. The current Transmit Stream/Category Measurement Request/Report is modified to address the measurement for the low-latency traffic.Instructions to the editor:Please make the changes to the spec as shown in 11/22-1213r1 |
| 12290 | KENGO NAGATA | 9.4.2.316 | 251.40 | The QoS Characteristics element contains requirements of QoS expectations of a traffic flow as defined; however, there is no mechanism to notify measurement results of the set of parameters corresponding to the contents of the QoS Characteristics element. Therefore, some mechanisms should be determined to know whether the traffic flow fulfills the requirements of the QoS Characteristic element or not. | A new element such as the "QoS Characteristic report element" should be created to notify the results of measurements of each component in the QoS Characteristic element. | RevisedAgreed in principle. The current Transmit Stream/Category Measurement Request/Report is modified to address the measurement for the low-latency traffic.Instructions to the editor:Please make the changes to the spec as shown in 11/22-1213r1 |

9.4.2.20.11 Transmit Stream/Category Measurement Request

***TGbe editor: modify the first paragraph in subclause 9.4.2.20.11 of Draft REVme 1.0 as:***

The Transmit Stream/Category Measurement applies to TIDs for traffic streams associated with TSPECs, to TIDs for traffic categories for QoS traffic without TSPECs or with QoS Characteristics elements. The Measurement Request field corresponding to a Transmit Stream/Category Measurement request is shown in Figure 9-252 (Measurement Request field format for Transmit Stream/Category Measurement Request).

***TGbe editor: modify the following figure in subclause 9.4.2.20.11 of Draft REVme 1.0 as:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 B7 |
|  | Average | Consecutive | Delay | MSDU Delivery Ratio | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 4 |

**Figure 9-256 Trigger Condition bit-field format**

***TGbe editor: add the following bullet in subclause 9.4.2.20.11 of Draft REVme 1.0 as:***

* The Average bit is set to 1 to request that a Transmit Stream/Category Measurement report be generated when the number of MSDUs for the TC or TS given by the TID that are discarded out of the number of preceding MSDUs specified in Measurement Count is greater than or equal to the value given in Average Error Threshold. MSDUs discarded due to the number of transmit attempts exceeding dot11ShortRetryLimit, or due to the MSDU lifetime having been reached, are counted.
* The Consecutive bit is set to 1 to request that a Transmit Stream/Category Measurement report be generated when the number of MSDUs for the TC or TS given by the TID that are discarded in succession is greater than or equal to the value given in Consecutive Error Threshold. MSDUs discarded due to the number of transmit attempts exceeding dot11ShortRetryLimit, or due to the MSDU lifetime having been reached, are counted.
* The Delay bit is set to 1 to request that a Transmit Stream/Category Measurement report be generated when the number of consecutive MSDUs for the TC or TS given by the TID that experience a transmit delay greater than or equal to the value specified in the Delay Threshold subfield is greater than or equal to the value given in Delayed MSDU Count. Delay is measured from the time the MSDU is passed to the MAC until the point at which the entire MSDU has been successfully transmitted, including receipt of the final Ack frame from the peer STA if the QoSAck service class is being used.
* The MSDU Delivery Ratio bit is set to 1 to request that a Transmit Stream/Category Measurement report be generated when the resulting MSDU delivery ratio for the TC, given by the TID, is lower than the value specified in the MSDU Delivery Ratio field in the relevant QoS Characteristics element.

9.4.2.21.11 Transmit Stream/Category Measurement Report

***TGbe editor: modify the first paragraph in subclause 9.4.2.21.11 of Draft REVme 1.0 as:***

The Transmit Stream/Category Measurement report applies to TIDs for Traffic Streams associated with TSPECs, to TIDs for Traffic Categories for QoS traffic without TSPECs or with QoS Characteristics elements. The format of the Measurement Report field corresponding to a Transmit Stream/Category Measurement report is shown in Figure 9-310 (Measurement Report field format for Transmit Stream/Category Measurement report).

***TGbe editor: modify the following figure in subclause 9.4.2.21.11 of Draft REVme 1.0 as:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 B7 |
|  | Average Trigger | Consecutive Trigger | Delay Trigger | MSDU Delivery Ratio | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 4 |

**Figure 9-311 Reporting Reason field format**

***TGbe editor: add the following bullet in subclause 9.4.2.21.11 of Draft REVme 1.0 as:***

* The Average Trigger bit set to 1 indicates that the Transmit Stream/Category Measurement report was generated as a triggered report due to the Average Error trigger.
* The Consecutive Trigger bit set to 1 indicates that the Transmit Stream/Category Measurement report was generated as a triggered report due to the Consecutive Error trigger.
* The Delay Trigger bit set to 1 indicates that the Transmit Stream/Category Measurement report was generated as a triggered report due to the delay exceeding the Delay Threshold.
* The MSDU Delivery Ratio Trigger bit set to 1 indicates that the Transmit Stream/Category Measurement report was generated as a triggered report due to the MSDU delivery ratio for the TC, given by the TID, being lower than the value specified in the MSDU Delivery Ratio field in the relevant QoS Characteristics element.

***TGbe editor: modify the following paragraphs in subclause 9.4.2.21.11 of Draft REVme 1.0 as:***

The Transmitted MSDU Count field contains the number of MSDUs for the TC or the TS specified by the TID that were successfully transmitted. For the TC with a QoS Characteristics element, the Transmitted MSDU Count field contains the number of MSDUs, specified by the TID, that were successfully transmitted within the delay bound specified in the Delay Bound field in the relevant QoS Characteristics element.

The MSDU Discarded Count field contains the number of MSDUs for the TC or the TS, specified by the TID, that were discarded due either to the number of transmit attempts exceeding dot11ShortRetryLimit, or due to the MSDU lifetime having been reached. For the TC with a QoS Characteristics element, the MSDU Discarded Count field contains the number of MSDUs, specified by the TID, that were discarded due to the number of transmit attempts exceeding dot11ShortRetryLimit, or due to the delay bound or the MSDU lifetime having been reached, respectively specified in the Delay Bound and the MSDU Lifetime fields in the relevant QoS Characteristics element.

**11.10.9.8 Transmit Stream/Category Measurement report**

***TGbe editor: modify the first paragraph in subclause 11.10.9.8 of Draft REVme 1.0 as:***

The Transmit Stream/Category Measurement applies to TIDs for Traffic Streams associated with TSPECs and also to TIDs for Traffic Categories for QoS traffic without TSPECs or with QoS Characteristics elements.

**9.4.2.313.2 EHT MAC Capabilities Information field**

***TGbe editor: modify the following figure in subclause 9.4.2.313.2 as:***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 | B5 | B6 |
|  | EPCS Priority Access Supported | EHT OM Control Support | Triggered TXOP Sharing Mode 1 Support | Triggered TXOP Sharing Mode 2 Support | Restricted TWT Support | SCS Traffic Description Support | Traffic Stream/Category Measurement Report Support |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B7 B8 | B9 | B10 | B11 | B12 B15 |
|  | MaximumMPDU Length | MaximumA-MPDU Length Exponent Extension | EHT TRS Support | TXOP Return Support In TXOP Sharing Mode 2 | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 |

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

***TGbe editor: insert the following row after “SCS Traffic Description Support” in Table 9-401j as:***

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

|  |  |  |
| --- | --- | --- |
| Subfield | Definition | Encoding |
| Traffic Stream/Category Measurement Report Support | Indicates support for transmission of Radio Measurement Request/Report frames containing a Transmit Stream/Category Measurement Request/Report element. | Set to 1 by an EHT STA that supports transmission of Radio Measurement Request/Report frames containing a Transmit Stream/Category Measurement Request/Report element.Set to 0 otherwise. |

**35.3.22 Multi-link SCS procedure**

***TGbe editor: Add the following paragraph in the end of subclause 35.3.22:***

The traffic stream/category measurement report allows a non-AP EHT STA to provide the experienced QoS info to assist the EHT AP’s scheduling. An EHT STA that supports traffic stream/category measurement has dot11EHTTrafficStreamCategotyMeasurementReportOptionImplemented set to true and shall set the Traffic Stream/Category Measurement Report Support subfield in the EHT capability element it transmits to 1.

***TGbe editor:Add the following MIB Variables in Annex C***

Dot11EHTStationConfigEntry ::=
SEQUENCE {

|  |  |
| --- | --- |
| dot11EHTPPEThresholdsRequired dot11TIDtoLinkMappingActivated dot11EHTEPCSPriorityAccessActivated dot11MSDTimerDuration dot11MSDTXOPMAX  | TruthValue,TruthValue,TruthValue,Unsigned32,Unsigned32, |
| dot11EHTTrafficStreamCategotyMeasurementReportOptionImplemented | TruthValue} |

dot11EHTTrafficStreamCategotyMeasurementReportOptionImplemented OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is a capability variable. Its value is determined by device
capabilities.
This attribute, when true, indicates that the STA implementation is
capable of providing traffic stream/Category measurement report. The capability is disabled otherwise."
DEFVAL { false }
::= { dot11EHTStationConfigEntry 6 }