IEEE P802.11
Wireless LANs

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| CR for CID 22204 |
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Abstract

This submission proposes comments resolution of the following 4 CIDs received for TGbe Draft 5.0:

CIDs:

22204

Revisions:

* Rev 0: Initial version of the document.

***TGbe editor: The baseline for this document is IEEE 802.11be D5.0***

1. **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 introduction and the explanation of the proposed changes are not part of the adopted material.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause**  | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 22204 | Osama Aboulmagd | 35.2.1.2.3 | 494.29 | On behalf of Yunbo Li P2P buffer report is still missing for now. Without a P2P buffer report mechanism, an AP will hard to determine how much resource will be allocated to a P2P transmission through MU-RTS TXS TF with Triggered TXOP Sharing Mode 2. | add the P2P buffer report mechanism | RevisedAgree with the commenter. A P2P buffer report mechanism is introduced for short term P2P buffer report. Bandwidth subfield is added in QoS Characteristics element for long term medium request of P2P traffic.TGbe editor to make changes in 11-24/0359r1 under CID 22204 |

1. **Proposed spec 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) : (#22204)***

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 | Medium Resource Request (MRR) | 26 | See 9.2.4.7.12 (MRR 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) (#22204)***

9.2.4.7.12 MRR Control

The Control Information subfield in a MRR Control subfield contains information related to the requested medium resource for TXOP sharing for the STA transmitting frames to another STA (see 35.2.1.2 Triggered TXOP sharing (TXS) procedure). The format of the subfield is shown in [Figure 9-x (Control Information subfield format in a P2P BSR Control subfield)](#bookmark2)

 B0 B3 B4 B6 B7 B13 B14 B25

|  |  |  |  |
| --- | --- | --- | --- |
| TID | Bandwidth | Medium Time | Reserved |

 Bits: 4 3 7 12

 [Figure 9-x Control Information subfield format in a P2P BSR Control subfield](#bookmark2)

The TID subfield indicates the TID for which medium time is requested.

The Bandwidth subfield is defined in Table 9-y (Bandwidth subfield encoding) and indicates the maximum bandwidth for which the medium time is requested.

The Medium Time subfield indicates the medium time, in units of 256 microseconds, requested for TXOP sharing on the link on which the MRR Control subfield is transmitted based on the bandwidth specified in the Bandwidth subfield.The total requested medium resource for TXOP sharing is the product of the medium time (in microseconds) and the maximum bandwidth (in MHz).

Table 9-y — Bandwidth subfield encoding

|  |  |
| --- | --- |
| Value | Meaning |
| 0 | 20 MHz |
| 1 | 40 MHz |
| 2 | 80 MHz |
| 3 | 160 MHz |
| 4 | 320 MHz |
| 5 to 7 | Reserved |

***TGbe editor: Please make the following changes in 9.4.2.312.2.3 (Common Info field of the Basic Multi-Link element) (#22204)***

**9.4.2.312.2.3 (Common Info field of the Basic Multi-Link element)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 B4 | B5 | Bx | B7 B15 |
|  | Operation Parameter Update Support | Recommended Max Simultaneous Links | NSTR Status Update Support | Medium Resource Request Support | Reserved |
| Bits: | 1 | 4 | 1 | 1 | 9 |

Figure 9-1072l—Extended MLD Capabilities And Operations subfield format

Table 9-417k—Subfields of the Extended MLD Capabilities And Operations subfield

|  |  |  |
| --- | --- | --- |
| Subfield | Definition | Encoding |
| … | … | … |
| NSTR Status Update Report | Indicates support of NSTR status update procedure. | Set to 1 if dot11NSTRStatusUpdateImplemented is true. Set to 0 otherwise. See 35.3.16.2 (MLD capability and operation signaling) |
| Medium Resource Request Support | For an AP, indicates support of receiving frames with an MRR Control subfield. For a non-AP STA, indicates support of transmitting frames with an MRR Control subfield.  | Set to 1 if dot11MediumResourceRequestImplemented is true. Set to 0 otherwise.See 35.2.1.2.3 (Non-AP STA behavior) |

***TGbe editor: add the following paragraphs at the end of 35.2.1.2.3 (Non-AP STA behaviour):*** ***(#22204)***

35.2.1.2.3 Non-AP STA behavior

A non-AP STA with dot11EHTTXOPSharingTFOptionImplemented equal to true that has received the EHT Capabilities element with the Medium Resource Request Support subfield in the Multi-Link element equal to 1 from its associated AP may transmit to its associated AP an MPDU with MMR Control subfield to assist the AP in allocating resources for TXOP sharing between the non-AP STA and another STA. If the MPDU is a QOS Null frame then it may be transmitted in response to a BSRP Trigger frame.

NOTE 3 — When a non-AP STA reports a P2P BSR Control subfield to its associated AP, if the value of the TID subfield in the P2P BSR Control subfield matches the TID of an established SCS stream, then the report of P2P BSR Control subfield doesn’t change the parameters of the SCS stream, i.e., the requested medium time of the P2P BSR Control subfield is expected to be considered by the AP as an additional resource request.

***TGbe editor: please modify section 9.4.2.316 (QoS Characteristics element) as follows: (#22204)***

* + - 1. **QoS Characteristics element**

The QoS Characteristics element contains a set of parameters that define the characteristics and QoS expec- tations of a traffic flow, in the context of a particular non-AP EHT STA, for use by the EHT AP and the non- AP EHT STA in support of QoS traffic transfer using the procedures defined in 11.25.2 (SCS procedures) and 35.8 (Restricted TWT (R-TWT)).

The QoS Characteristics element format is defined in [Figure 9-1001au (QoS Characteristics element for-](#_bookmark260) [mat)](#_bookmark260).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element ID | Length | Element IDExtension | Control Info | Minimum Service Interval | Maximum Service Interval | Minimum Data Rate |

Octets: 1 1 1 4 4 4 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Delay Bound | Maximum MSDUSize | Service Start Time | Service Start Time LinkID | Mean Data Rate | Delayed Bounded Burst Size | MSDULifetime |

Octets: 3 0 or 2 0 or 4 0 or 1 0 or 3 0 or 4 0 or 2

Medium Time Info

MSDU

Delivery Info

Octets: 0 or 1 0 or 2

**Figure 9-1001au—QoS Characteristics element format**

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 B11 | B12 B14 | B15 |
|  | Medium Time | Bandwidth | Reserved |
| Bits: | 12 | 3 | 1 |
| Figure 9-1002xx – Medium Time Info field format |

[…]

The Medium Time Info field is present only if the Direction subfield is set to 2 (Direct link). The Medium Time Info field contains the medium time and bandwidth information.

The Medium Time subfield contains an unsigned integer that specifies the medium time, in units of 256 micro- seconds per second, requested by the STA for direct link transmissions on the link corresponding to the LinkID subfield as the average medium time needed in each second based on the bandwidth indicated in the Bandwidth subfield. The four MSB of the Medium Time field are reserved. The values 0, 3906 to 4095 are reserved.

The Bandwidth subfield specifies the maximum bandwidth the STA can operate for direct link transmissions on the link corresponding to the LinkID subfield. This subfield is used to compute the medium time requested in the Medium Time subfield and this subfield is encoded as shown in Table 9-y (Bandwidth subfield encoding). The total resource requested is the product of the medium time (in microseconds) and bandwidth (in MHz).

NOTE 1 — If the actual bandwidth scheduled is half of what is specified in the Bandwidth subfield, the scheduled medium time needs to be doubled that of the Medium Time subfield to maintain the same medium time bandwidth product.

[…]

***TGbe editor: please modify section 35.17 (EHT SCS procedure) as follows: (#22204)***

35.17 EHT SCS procedure

[…]

The QoS Characteristics element is a reference for the EHT AP’s scheduling. An EHT AP should schedule transmission of downlink frames such that the delay bound and minimum data rate requested are met for the downlink Data frames if the Direction subfield of the QoS Characteristics element indicates downlink. An EHT AP should enable the transmission of uplink frames from the EHT STA with an interval that falls between the requested minimum and maximum service intervals and the AP should meet the minimum data rate requested if the Direction subfield of the QoS Characteristics element indicates uplink. An EHT AP should enable the transmission of direct link frames from the EHT STA to another STA on the link specified in the LinkID subfield of the Control Info field with an interval that falls between the requested minimum and maximum service intervals and the AP should meet the medium time and bandwidth product requested if the Direction subfield of the QoS Characteristics element indicates direct link.

***TGbe editor: Please make the following changes in C.3 (MIB Detail)***

C.3 MIB Detail

Dot11EHTStationConfigEntry ::=

SEQUENCE {

dot11EHTPPEThresholdsRequired TruthValue,

dot11TIDtoLinkMappingActivated TruthValue,

dot11EHTEPCSPriorityAccessActivated TruthValue,

dot11MSDTimerDuration Unsigned32,

dot11MSDTXOPMax Unsigned32,

dot11MultiLinkActivated TruthValue,

dot11MLDAssociationSAQueryMaximumTimeout Unsigned32, dot11EHTMCSFeedbackOptionImplemented INTEGER,

dot11EHTEMLSROptionImplemented TruthValue,

dot11EHTEMLSROptionActivated TruthValue,

dot11EHTEMLMROptionImplemented TruthValue,

dot11EHTEMLMROptionActivated TruthValue,

dot11OperationParameterUpdateImplemented TruthValue, dot11EHTLinkReconfigurationOperationActivated TruthValue, dot11MultiLinkTrafficIndicationActivated TruthValue,

dot11NSTRStatusUpdateImplemented TruthValue,

dot11MediumResourceRequestImplemented TruthValue

}

dot11 MediumResourceRequestImplemented 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 station implementation is capable of supporting medium resource request)."

DEFVAL { false }

::= { dot11EHTStationConfigEntry 17 }