IEEE P802.11
Wireless LANs

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| Proposed Draft Texts of BSR Enhancement follow-up |
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Abstract

This submission proposes to amend draft text of BSR enhancement in 11bn D0.1. The baseline is 11bn D0.1

Revision History:

* Rev 0: Initial version of the document.

**Discucssion**

TBD

**Motions in 11bn**

Motion 13

* TGbn enables per-TID buffer size reporting of a larger queue in UHR.
	+ Note: It is an optional feature.
	+ Note: In the baseline, the maximum approximate per-TID queue size to report is 2,147,328 octets

Motion 257

* Define an Enhanced BSR Control subfield in A-ctrl to report a larger per TID queue size
	+ The Enhanced BSR Control subfield consists of at least a TID subfield and an unsigned value subfield to report the larger queue size (QS) of the TID
	+ The reported QS is equal to 2147328 Octets + the value reported in the Queue Size field of the defined Enhanced BSR Control subfield
	+ When the QoS Control with the same TID as the Enhanced BSR Control subfield is present in the same MPDU, the QS subfield of the QoS Control is set to value 254
	+ TBD if the Enhanced BSR Control subfield shares the control ID with other Control subfield proposals in UHR
	+ Note: The baseline rules which regulate HT control field to be the same in all MPDUs of the same frame type in an A-MPDU do not change
	+ Note: Encoding of the baseline QS subfield in QoS Control does not change.
	+ Note: Length of the Enhanced BSR Control subfield allows to aggregate the UPH in the same A-Control subfield

**Reference Documents**

11-23/2007 Enhancement of BSR

11-24/0963 Enhancement of BSR follow-up

11-24/2022 PDT MAC BSR Enhancement

**Proposed Draft Texts (PDT)**

***TGbn editor: Please modify the following subclause 9.2.4.6.4 HE variant***

**9.2.4.6.4 HE variant
*Change Table 9-25 (Control ID subfield values) as follows:***

**Table 9-25—Control ID subfield values**

|  |  |  |  |
| --- | --- | --- | --- |
| **ControlID value**  | **Meaning** | **Length of theControlInformationsubfield (bits)** | **Content of the Control Informationsubfield** |
| **…** |  |  |  |
| 10 | Multi-link power management (MLPM) | TBD | See 9.2.4.7.12 (MLPM Control) |
| 11 | Enhanced buffer status report (EBSR) | 14 | See 9.2.4.7.12 (EBSR Control) |
| 12–14~~7–14~~ | Reserved |  |  |
| 15  | Ones need expansion surely (ONES)  | 26  | Set to all 1s |

***TGbn editor: Please add the following subclause 9.2.4.7.x EBSR Control after 9.2.4.7.12 MLPM Control***

**9.2.4.7.x EBSR Control**

The Control Information field in an Enhanced buffer status report (EBSR) Control field contains buffer status information used for UL MU operation (see 26.5.2 (UL MU operation)) and Enhanced BSR operation (see 37.4 (Enhanced BSR operation) when the per TID bufferred taffic is larger than the maximum amount that the QoS Control field or the BSR Control field can indicate.

The format of this field is shown in Figure 9-33xx (Control Information field format in an EBSR Control field.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  B0 B3 | B4 B11 | B12 B13 |
|  | TID | Queue Size Unscaled Value  | Reserved |
| Bits: | 4 | 8 | 2 |

**Figure 9-33xx—Control Information field format in a EBSR Control field**

The TID field indicates the traffic identifier (See 9.2.4.5.2 (TID subfield)) for which the buffer status is reported.

The Queue Size Unscaled Value (QSUV) field indicates the amount of buffered traffic for the TID identified by the TID field that is intended for the STA identified by the receiver address of the frame containing the EBSR Control field.

The queue size, QS, is the approximate total size in octets, of all MSDUs and A-MSDUs buffered at the STA (including the MSDUs or A-MSDUs in the same PSDU as the frame containing the EBSR Control field) in the delivery queue used for MSDUs and A-MSDUs with TID values equal to the value in the TID field of this EBSR Control field.

A STA obtains the amount of queue size in octets from a received Queue Size Unscaled Value field in the EBSR Control field, as follows:

***TGbn editor: Please change the subclause as follows:***

* UHR MAC Capabilities Information field

The format of the UHR MAC Capabilities Information field is defined in Figure9-aa5 (UHR MAC Capabilities Information field format). [TBD]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B4 | B5 | B6 Bx |
|  | DPS Support | DPS Assisting Support | Multi-Link Power Management | NPCA Supported | Enhanced BSR Support | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 | 3 |
| * UHR MAC Capabilities Information field format
 |

The subfields of the EHT MAC Capabilities Information field are defined in Table9-130a (Subfields of the UHR MAC Capabilities Information field).

|  |
| --- |
| * Subfields of the UHR MAC Capabilities Information field (continued)
 |
| Subfield | Definition | Encoding |
| … | … | … |
| Enhanced BSR Support | For an AP, indicates support for receiving a frame with an EBSR Control field. For a non-AP STA, indicates support for transmitting a frame with an EBSR Control field. | If the +HTC-HE Support subfield is 1:Set to 1 if supported.Set to 0 otherwise.Reserved if the +HTC-HE Support subfield is 0. |

***TGbn editor: Please change the subclause as follows:***

**37.4 Enhanced Buffer status report operation**

A UHR STA shall set the Enhanced BSR Support field in the UHR Capabilities element transmitted by the STA to 1 if dot11UHREBSRImplemented is true; otherwise, the UHR STA shall set the Enhanced BSR Support field to 0.

A UHR non-AP STA may provide buffer status reports to assist its associated AP in allocating UL MU resources (see 26.5.5 Buffer status report operation). When the queue size for a given TID is greater than can be indicated in the QoS Control field or in the BSR Control field, the UHR non-AP STA may deliver the queue size in an EBSR Control field of a frame to the AP so that the AP can allocate accurate resources to the non-AP STA.

A UHR non-AP STA shall not transmit a frame with the Enhanced BSR field to an AP unless the UHR non-AP STA has received from the AP a UHR Capabilities element with the Enhanced BSR Support field equal to 1.

A UHR non-AP STA reports the buffer status in the EBSR Control field transmitted to its associated AP, in a QoS Data, a QoS Null, or a Management frame as defined below.

•For a TID indicated in the TID field of the EBSR Control field, the UHR non-AP STA shall indicate the queue size for the TID in the Queue Size Uunscaled Value field of the EBSR Control field; the non-AP STA may set the Queue Size Unscaled Value field to 255 to indicate a queue size greater than 35,570,688 octets for that TID.

•If there is a Queue Size subfield in a QoS Control field transimitted together with an EBSR Control field in the same frame, when the TID indicated in the TID subfield of the QoS Control field is the same as the TID indicated in the TID field of the EBSR Control field, the value of the Queue Size subfield shall set to 254.

NOTE: A UHR non-AP STA is allowed to report buffer status of two different TIDs by a QoS Control field and an EBSR field in the same frame, respectively.

NOTE: A UPH Control subfield is allowed to be aggregated with an EBSR Control field in an A-Control subfield.

***TGbn editor: Please change the subclause as follows:***

Annex C

(normative)

## ASN.1 encoding of the MAC and PHY MIB

### C.3 MIB Detail

dot11UHREBSRImplemented 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 supports Enhanced BSR operation."

::= { dot11UHRStationConfigEntry TBD }