IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 320MHz BQR | | | | |
| Date: 2022-07-11 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Yunbo Li | Huawei |  |  | liyunbo@huawei.com |
| Jian Yu |  |  |  |  |
| Ming Gan |  |  |  |  |
| Yuchen Guo |  |  |  |  |
| Guogang Huang |  |  |  |  |
| Yousi Lin |  |  |  |  |
| Zhenguo Du |  |  |  |  |
| Stephen McCann |  |  |  |  |
| Edward Au |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Clause** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 13536 | Jian Yu | 9.2.4.6.5 | 122.47 | Define BQR for 320 MHz | As in comment | Revised  The 320MHz BQR related frame format and procedures are added.  TGbe editor to make changes in this document under CID 13536 in 22/1050r2 |
| 13719 | Yunbo Li | 9.2.4.6.4 | 122.47 | extend BQR to support 320MHz. | as in comment. | Revised  The 320MHz BQR related frame format and procedures are added.  TGbe editor to make changes in this document under CID 13536 in 22/1050r2 |

The followings apply for BQR Control subfields in A-Control subfield in R2.

* When there are two BQR control subfields in A-Control subfield, the 1st BQR Control is used to indicate the primary 160 MHz, the 2nd BQR Control is used to indicate the secondary 160 MHz.
* When there is one BQR control subfield in A-Control subfield, the BQR Control is used to indicate the primary 160 MHz.

[Motion 135, #SP220, [48] and [170]]

**Discussion:**

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.

***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).***

1. **Proposed spec text**

The baseline for this text is TGbe D2.0 and REVme D1.0.

***Gbe editor: Please change below paragraphs in subclauses 9.4.2.313.2 (EHT MAC Capabilities Information field) as follows:***

9.4.2.313.2 EHT MAC Capabilities Information field

The format of the EHT MAC Capabilities Information field is defined in [Figure 9-1002ae (EHT MAC Capa](#bookmark116) [bilities Information field format](#bookmark116)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 B7 |
| NSEP 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 | Maximum MPDU Length |
| 1 | 1 | 1 | 1 | 1 | 1 | 2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| B8 | B9 | B10 | B11 | B12 - B15 |
| Maximum A-MPDU Length Exponent Extension | EHT TRS Support | TXOP Return Support In TXOP Sharing Mode 2 | Two BQRs Support (#13536) | Reserved |
| 1 | 1 | 1 | 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](#bookmark117) [EHT MAC Capabilities Information field)](#bookmark117).

**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. |
| Two BQRs Support (#13536) | For an AP, indicates support for receiving a frame with two BQR Control subfields. For a non-AP STA, indicates support for generating a frame with two BQR Control subfields. | For an EHT AP:  If the +HTC-HE Support subfield is 1:  Set to 1 to indicate that the AP is capable of receiving a frame with two BQR Control subfields.  Set to 0 otherwise.  Reserved if the +HTC-HE Support subfield is 0.  For an non-AP EHT STA:  If the +HTC-HE Support subfield is 1:  Set to 1 to indicate that the non-AP EHT STA is capable of transmitting a frame with two BQR Control subfields.  Set to 0 otherwise.  Reserved if the +HTC-HE Support subfield is 0. |

***TGbe editor: Please change below paragraphs in subclauses 9.2.4.7.6 (BQR Control) as follows:***

**9.2.4.7.6 BQR Control**

The Control Information subfield in a BQR Control subfield contains the bandwidth query report (BQR) used for bandwidth query report operation to assist HE MU transmission (see 26.5.2 (UL MU operation)). The format of the subfield is shown in Figure 9-32 (Control Information subfield format in a BQR Control subfield).

The Available Channel Bitmap subfield contains a bitmap indicating the subchannels available at the STA transmitting the BQR. When there is one BQR Control subfield in an A-Control subfield, the Available Channel Bitmap subfield is applied to either:

* the operating channel width when the operating channel width is no more than 160 MHz, or
* the primary 160 MHz when the operating channel width is 320 MHz.

When there are two BQR Control subfields in an A-Control subfield, the Available Channel Bitmap subfield in the first and second BQR Control subfields are applied to the primary 160 MHz and the secondary 160 MHz, respectively. (#13536)

For a HE non-AP STA, or an EHT non-AP STA that associated with a HE AP, each bit in the bitmap corresponds to a 20 MHz subchannel within the operating channel width of the BSS in which the STA is associated, with the LSB corresponding to the lowest numbered operating subchannel of the BSS. The bit in position X in the bitmap is set to 1 to indicate that the subchannel X + 1 is idle; otherwise it is set to 0 to indicate that the subchannel is busy or unavailable. The availability of each 20 MHz subchannel is based on the ED-based CCA defined in 27.3.20.6.5 (Per 20 MHz CCA sensitivity) and is reported for the 20 MHz subchannels located in the operating channel of the reporting STA, when the WM is idle as defined in 10.3.2.1 (CS mechanism) and in 26.5.2.5 (UL MU CS mechanism).

For an EHT non-AP STA that associated with an EHT AP, each bit in the bitmap corresponds to a 20 MHz subchannel within the operating channel width of the BSS in which the STA is associated, with the LSB in the first BQR Control subfield (or the only BQR Control subfield) corresponding to the lowest numbered operating subchannel of the primary 160 MHz (or of the BSS), and with the LSB in the second BQR Control subfield, if present, corresponding to the lowest numbered operating subchannel of the secondary 160 MHz. The bit in position X in the bitmap is set to 1 to indicate that the subchannel X + 1 is idle; otherwise it is set to 0 to indicate that the subchannel is busy or unavailable. The availability of each 20 MHz subchannel is based on the ED-based CCA defined in 36.3.20.6.4 (Per 20 MHz CCA sensitivity) and is reported for the 20 MHz subchannels located in the operating channel of the reporting STA, when the WM is idle as defined in 10.3.2.1 (CS mechanism) and in 35.5.2.4 (UL MU CS mechanism for EHT STAs).

***TGbe editor: Please add below subclause in subclause 35.5 (MU operation) as follows:***

**35.5.3 Operation of the two BQR Control subfields** (#13536)

An EHT STA with dot11TwoBQRsOptionImplemented equal to true shall set the Two BQRs Support subfield in the EHT MAC Capabilities Information field in the EHT Capabilities element it transmits to 1; otherwise the EHT STA shall set the Two BQRs Support subfield to 0.

An EHT STA with dot11TwoBQRsOptionImplemented equal to true shall set the BQR Support subfield in the HE MAC Capabilities Information field in the HE Capabilities element it transmits to 1.

The EHT STA may report the channel availability information as specified in 36.3.20.6.4 (Per 20 MHz CCA sensitivity) to its associated AP in two BQR Control subfields of frames it transmits if the AP has indicated its support in the Two BQRs Support subfield of its EHT Capabilities element; otherwise the STA shall not report the channel availability information in the two BQR Control subfields.

NOTE—An EHT STA is an HE STA and as such inherits all the functionalities defined in 26.5.6 (Bandwidth query report operation).

***TGbe editor: Please change below paragraphs in subclauses C.3 (MIB Detail) as follows:***

C.3 MIB Detail

Dot11StationConfigEntry ::= SEQUENCE

{dot11StationID MacAddress,

…

dot11BSSMaxIdlePeriodIndicationByNonAPSTA, TruthValue,

dot11EHTOptionImplemented, TruthValue,

dot11EHTBaseLineFeaturesImplementedOnly, TruthValue,

dot11EHTTXOPSharingTFOptionImplemented TruthValue,

dot11EHTNSTRMobileAPMLDImplemented TruthValue,

dot11RestrictedTWTOptionImplemented TruthValue,

dot11TwoBQRsOptionImplemented TruthValue

}

dot11TwoBQRsOptionImplemented 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 the ability of the EHT STA to support two BQR Control operation. If the attribute is false, the EHT STA does not support the two BQR Control operation."

::= { StationConfigEntry <Last assigned + 1> } (#13536)

***End of change***