IEEE P802.11
Wireless LANs

|  |
| --- |
| Text Proposal for EBCS Request ANQP-element |
| Date: July 6, 2021 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Pei Zhou | OPPO |  |  | zhoupei1@oppo.com |
| Lei Huang |  |  | huang.lei1@oppo.com |
| Chaoming Luo |  |  |  |
| Liuming Lu |  |  |  |

Abstract

This contribution intends to modify the EBCS Request ANQP-element to support the negotiation for the extension of an EBCS traffic stream for non-AP STAs without association.

Note: The changes shown are based on 802.11bc draft 1.02.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Some modifications are made to the ANQP-Request element format.
* Rev 2: Change Requested Time to Termination subfield to 0 or 3 octets. Add Clause 11.100.5 EBCS negotiation procedure for unassociated STAs. Revised based on the comments from TGbc members.
* Rev 3: Minor changes are made according to Stephen McCann’s revision.
* Rev 4: Modifications are made based on online discussion.

##### 9.6.5.31 Enhanced Broadcast Services Request ANQP-element

The Enhanced Broadcast Services Request ANQP-element transmits a register (or unregister) request from

a STA to a peer STA to receive (or stop receiving) enhanced broadcast services that are available from the

peer STA. The format of the Enhanced Broadcast Services Request ANQP-element is defined in Figure 9-

839g (Enhanced Broadcast Services Request ANQP-element format).

|  |  |  |
| --- | --- | --- |
| Info ID | Length | Enhanced Broadcast Services Request Tuples |

Octets: 2 2 variable

**Figure 9-839g**—**Enhanced Broadcast Services Request ANQP-element format**

The Info ID and Length fields are defined in 9.4.5.1 (General).

The Enhanced Broadcast Services Request Tuples field contains one or more Enhanced Broadcast Services

Request Tuple fields as shown in Figure 9-839h (Enhanced Broadcast Services Request Tuple field

format).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Enhanced Broadcast Services Request Control | Broadcast Action | Content ID | Broadcaster MAC Address(optional) | Requested Time To Termination(optional) |
| Octets: | 1 | 1 | 1 | 0 or 6 | 0 or 3 |

**Figure 9-839h**—**Enhanced Broadcast Services Request Tuple field format**

The format of the Enhanced Broadcast Services Request Control subfield is defined in Figure 9-xx (Enhanced Broadcast Services Request Control format).

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 | B1 | B2 B7 |
|  | Broadcaster MAC Address Present | Requested Time To Termination Present | Reserved |
| Bits: | 1 | 1 |  6 |

**Figure 9-xx – Enhanced Broadcast Services Request Control format**

A value of 1 in the Broadcaster MAC Address Present subfield indicates that a Broadcaster MAC Address subfield is present in the Enhanced Broadcast Services Request Tuple field; otherwise the Broadcaster MAC Address subfield is not present.

A value of 1 in the Requested Time To Termination Present subfield indicates that a Requested Time To Termination subfield is present in the Enhanced Broadcast Services Request Tuple field; otherwise the Requested Time To Termination subfield is not present.

The Broadcast Action subfield values are defined in Table 9-340d:

**Table 9-340d – Broadcast Action field values**

|  |  |
| --- | --- |
| **Value** | **Description** |
| 0-1 | Reserved |
| 2 | Register to receive broadcast identified by Content ID |
| 3 | Unregister from receiving broadcast identified by Content ID |
| 4-255 | Reserved |

The Content ID subfield indicates the identifier of the content.

The Broadcaster MAC Address subfield includes the MAC address of the AP from which the EBCS traffic

stream is currently being received.

The Requested Time To Termination subfield, if present, indicates the number of beacon intervals during which transmission of the EBCS traffic stream identified in the Content ID subfield is requested. The value 0 is reserved.

##### 11.100.4 EBCS negotiation procedure for associated STAs

An associated EBCS STA shall transmit an EBCS Request frame to its associated EBCS AP to request one or more EBCS traffic streams provided by the EBCS AP. To request one or more EBCS traffic streams that an EBCS AP has indicated require association, an unassociated EBCS STA shall associate with the EBCS AP and subsequently transmit an EBCS Request frame. A single EBCS Request frame may contain requests for EBCS traffic streams that do and do not require association. When requesting an EBCS traffic stream using an EBCS Request frame, an EBCS STA may request an EBCS traffic stream with a certain time to termination as indicated in the Time To Termination field included in the EBCS Request frame. This element optionally allows the non-AP STA to provide the MAC address of the AP currently serving the EBCS traffic stream, which might not be the same as the one receiving the request.

After receiving an EBCS Request frame from an associated EBCS STA, an EBCS AP shall respond with an EBCS Response frame. If the EBCS AP indicates in the EBCS Response frame that the request for an EBCS traffic stream is successful, it may include a Time To Termination field to indicate the time to termination for the EBCS traffic stream. It may also include EBCS service period information and the frequency of the EBCS service periods for the EBCS traffic stream in the EBCS Response frame.

NOTE—The EBCS AP has the authority to determine the time to termination of the EBCS traffic stream.

##### 11.100.5 EBCS negotiation procedure for unassociated STAs

An unassociated EBCS STA may transmit an Enhanced Broadcast Services Request ANQP-element to an EBCS AP to request one or more EBCS traffic streams provided by the EBCS AP that the EBCS AP has indicated do not require association. When requesting an EBCS traffic stream using an Enhanced Broadcast Services Request ANQP-element, an EBCS STA may request a specific time to termination using the Requested Time To Termination subfield.

After receiving an Enhanced Broadcast Services Request ANQP-element from an unassociated EBCS STA, an EBCS AP shall respond with Enhanced Broadcast Services Response ANQP-element and Enhanced Broadcast Services ANQP-element. If the EBCS AP accepts a request for an EBCS traffic stream, it may include a Time To Termination subfield in the Enhanced Broadcast Services ANQP-element to indicate the time to termination for the EBCS traffic stream.

NOTE—The EBCS AP has the authority to determine the time to termination of the EBCS traffic stream. ANQP-elements received from unassociated STAs are not protected and hence the EBCS AP might exercise caution in accepting certain requested durations. An EBCS AP evaluates certain criteria before responding to the EBCS service request from an unassociated STA from which it receives an Enhanced Broadcast Services Request ANQP-element. Such criteria might include, but are not limited to, limiting the time duration and/or frequency of EBCS traffic stream requests. The evaluation of the criteria might be based on local policies installed at the EBCS AP, which is out of scope of this standard.

##### 11.100.6 EBCS Termination Notice Procedure