IEEE P802.11
Wireless LANs

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| 802.11bc LB255 – Supporting document for CIDs 1011, 1012, 1046, 1047 and 1069 |
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Abstract: This submission presents discussion material to partially address comments with CID 1011, 1012, 1046, 1047, 1069. This contribution complements contribution with DCN 314r1.

IEEE 802.11bc D1.0 included in the Enhanced Broadcast Service ANQP-element the option to include information on the AP used by a STA to receive a certain service, this information may be used to optimize the network, obtaining information on what services in a certain AP could be, i.e., shutdown, because they were not being consumed by any STA. This was found problematic due to the fact that an AP requesting this information from STAs may cause a broadcast storm. To provide such functionality without the problem of broadcast storms, this contribution adds the Broadcaster MAC Address field to the different frames used to request the starting of a service. In this way, STAs can provide this information in the request to the network side, without requiring the AP to actively asking for it.

Text in red indicates changes to the specification, related CIDs per red text are not provided since the changes are related to all the CIDs indicated above.

**9.4.2.301 eBCS Request element**

1. The eBCS Request element is used by an eBCS STA to request one or more eBCSs from its associated AP.
2. The format of this element is shown in Figure 9-bc6 (eBCS Request element).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Element ID | Length | Element ID Extension | eBCS Request Information Set |
| Octets | 1 | 1 | 1 | Variable |

**Figure 9-bc6 - eBCS Request element format**

1. The Element ID, Length, and Element ID Extension fields are defined in 9.4.2.1 (General).
2. The eBCS Request Information Set field contains one or more eBCS Request Info subfields.
3. The format of the eBCS Request Info subfield is shown in Figure 9-bc7 (eBCS Request Info subfield).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | EBCS Request Info Control | Content ID | Broadcaster MAC Address | Requested Time To Termination |
| Octets | 1 | 1 | 0 or 6 | 0 or 4 |

**Figure 9-bc7 - eBCS Request Info subfield format**

1. The format of the eBCS Request Info Control subfield is shown in Figure 9-bc8 (eBCS Request Info
2. Control subfield).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Requested Time To Termination Present | Broadcaster MAC Address present | Reserved |
| Bits | 1 | 1 | 6 |

**Figure 9-bc8 – eBCS Request Info Control subfield**

1. A value of 1 in the Requested Time To Termination subfield indicates that a Requested Time To
2. Termination subfield is present in the same eBCS Request Info subfield.
3. A value of 1 in the Broadcaster MAC Address present indicates the presence of the Broadcaster MAC Address
4. subfield in the same eBCS Request Info subfield.
5. The Content ID indicates the ID of the eBCS being requested.
6. The Broadcaster MAC Address subfield includes the MAC address of the AP from which the EBCS traffic
7. stream is currently being received.
8. The Requested Time To Termination subfield indicates the period in number of TBTTs during which the
9. eBCS identified by the Content ID included in the same eBCS Request Info subfield is being requested.

**9.4.5.101 Enhanced Broadcast Request ANQP-element**

1. The Enhanced Broadcast Request ANQP-element transmits a register (or de-register) request from a STA
2. to a peer STA to receive (or stop receiving) enhanced broadcast services that are available from the peer
3. STA. The format of the Enhanced Broadcast Request ANQP-element is defined in Figure 9-bc20
4. (Enhanced Broadcast Request ANQP-element format).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Info ID | Length | Enhanced Broadcast Service~~s~~ Request Tuples |
| Octets | 2 | 2 | variable |

**Figure 9-bc20 – Enhanced Broadcast Request ANQP-element format**

1. The Info ID and Length fields are defined in 9.4.5.1 (General).
2. The format of the Enhanced Broadcast Services Request Tuples field is defined in Figure 9-bc21
3. (Enhanced Broadcast Services Request Tuples).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Broadcast Action | Content ID | Broadcaster MAC Address |
| Octets | 1 | 1 | 0 or 6 |

 **Figure 9-bc21 – Enhanced Broadcast Services Request Tuples format**

1. The Broadcast Action field values are defined in Table 9-bc5:
2. **Table 9-bc5 – Broadcast Action field values**

|  |  |
| --- | --- |
| **Value** | **Description** |
| 0-1 | Reserved |
| 2 | Register to receive broadcast |
| 3 | Unregister from receiving broadcast |
| 4 | Register with Broadcast Service identified by Content ID |
| 5 | Unregister Broadcast Services identified by Content ID |
| 6-7 | Reserved |

1. The Content ID subfield indicates the identifier of the content.
2. The Broadcaster MAC Address subfield includes the MAC address of the AP from which the EBCS traffic
3. stream is currently being received.

 **11.22.3.3.100 Enhanced Broadcast Service procedures**

1. Enhanced Broadcast Services may be advertised using the Enhanced Broadcast Services ANQP-element
2. (see 9.4.5.100). The element provides a list of zero or more enhanced broadcast services that are available
3. from a peer STA. Each broadcast service advertisement may contain the time and duration of transmission,
4. together with an identifier of the broadcast service, a content ID, and other information relevant to the
5. broadcast service.
6. A STA may use the Enhanced Broadcast Request ANQP-element to register (or de-register) from a peer
7. STA transmitting an enhanced broadcast service. This ANQP-element optionally allows the STA to provide the
8. MAC address of the AP currently serving the EBCS traffic stream, this may be used to indicate the network of
9. the current status of STAs consuming services and the AP they are consuming it from.

**11.100.4 eBCS Negotiation Procedure for Associated STAs**

1. An eBCS STA may transmit an eBCS Request frame to its associated eBCS AP to request one or more
2. eBCSs provided by the eBCS AP. If an eBCS AP has indicated that one or more eBCSs require
3. association, an eBCS STA shall associate with the eBCS AP and subsequently transmit an eBCS Request
4. frame to request one or more of such eBCSs. A request for one or more eBCSs that does not require
5. association may also be included in the same eBCS Request frame. When requesting an eBCS using an
6. eBCS Request frame, an eBCS STA may request an eBCS with a certain time to termination as indicated in
7. Time To Termination field included in the eBCS Request frame. This frame optionally allows the STA to
8. provide the MAC address of the AP currently serving the EBCS traffic stream, this may be used to indicate the
9. network of the current status of STAs consuming services and the AP they are consuming it from.
10. After receiving an eBCS Request frame from an associated eBCS STA, an eBCS AP shall respond with an
11. eBCS Response frame. If the eBCS AP indicates in the eBCS Response frame that the request for an eBCS
12. is successful, it may include a Time of Termination field to indicate the time to termination for the eBCS. It
13. may also include eBCS service period information and the frequency of the eBCS service periods for the
14. eBCS in the eBCS Response frame.
15. NOTE—The eBCS transmitter of an eBCS has the authority to determine the time to termination of the
16. eBCS.