IEEE P802.11
Wireless LANs

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| 802.11bc LB255 – Discussion on 9.4.5.100 |
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Abstract: This submission presents discussion material to address comments from the LB252 on section 9.4.5.100.

1. **9.4.5.100 Enhanced Broadcast Services ANQP-element**
2. The Enhanced Broadcast Service~~s~~ ANQP-element provides a list of one or more enhanced broadcast
3. services that are available from the STA transmitting this element. The format of the Enhanced Broadcast
4. Service~~s~~ ANQP-element is defined in Figure 9-bc12.

|  |  |  |  |
| --- | --- | --- | --- |
| Info ID | Length | Next InfoFrameTx time [no CID] | Enhanced Broadcast Services Tuples |

Octets: 2 2 2 variable

**Figure 9-bc12 - EBCS Response Info Control subfield format**

1. The Info ID and Length fields are defined in 9.4.5.1 (General).
2. The Next Info Frame Tx Time field indicates the number of TBTTs until the beacon interval in which the next Info frame is transmitted. [no CID]
3. The Enhanced Broadcast Services Tuples field contains one or more Enhanced Broadcast Services Tuple
4. fields as shown in Figure 9-bc14.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Control | Content ID | Request Method | Next Tx Schedule (Optional) [CID1612] | Time To Termination (Optional) [CID 1215] | Authentication Algorithm[no CID] |
| Octets | 1 | 1 | 1 | 0 or 8 | 0 or 2 | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
| Content ~~Destination~~ Address Type (Optional)[no CID] | Content ~~Destination~~Address (Optional)[no CID] | Title Length (Optional) | Title (Optional) |

Octets: 0 or 1 variable 0 or 1 variable

17 **Figure 9-bc14 - Enhanced Broadcast Services Tuple field format**

1. The Control field defines which of the optional fields are present in the Enhanced Broadcast Services Tuple
2. field and is defined in Figure 9-bc15~~a:~~[CID 1562]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 | B5-B7 |
|  | Next Tx Schedule Present [CID1612] | Time To Termination Present | Content AddressPresent | Title Present | Association Required | Reserved |
| Bits | 1 | 1 | 1 | 1 | 1 | 3 |

**Figure 9-bc15 Control field format**

1. ~~The Broadcaster MAC Address Present subfield is set to 1 by a STA to indicate that the Enhanced Broadcast~~
2. ~~Services Tuple field contains a Broadcaster MAC Address field. This subfield is set to 0 to indicate that~~
3. ~~there is no Broadcaster MAC Address field.~~
4. The Next Tx Schedule Present subfield is set to 1 by a STA to indicate that the Enhanced Broadcast
5. Service~~s~~ Tuple field contains a Next Tx Schedule field. This subfield is set to 0 to indicate that there is no
6. Next Tx Schedule field. [CID 1612]
7. The Time To Termination subfield is set to 1 by a STA to indicate that the Enhanced Broadcast Service~~s~~
8. Tuple field contains a Time To Termination field. This subfield is set to 0 to indicate that there is no Time
9. to Termination field.[CID1215]
10. The Content ~~Destination~~ Address Present subfield is set to 1 by a STA to indicate that the Enhanced
11. Broadcast Service~~s~~ Tuple field contains Content ~~Destination~~  Address Type and Content ~~Destination~~
12. Address fields. This subfield is set to 0 to indicate that there are no Content ~~Destination~~ Address Type and
13. Content ~~Destination~~ Address fields.
14. The Title Present subfield is set to 1 by a STA to indicate that the Enhanced Broadcast Service~~s~~ Tuple field
15. contains a Title Length field and a Title field. This subfield is set to 0 to indicate that there are no Title
16. Length and Title fields.
17. ~~The EBCS TxRx field indicates if the service identified in this Enhanced Broadcast Services Tuple field is being transmitted (when set to 0) or received (when set to 1) by the STA sending this Enhanced Broadcast Service ANQP-element.~~ ***~~[CID 1046/1047/1011]~~***
18. The Content ID subfield indicates the identifier of the content.
19. The Request Method subfield indicates the request method to solicit the transmission of an EBCS identified
20. by the content ID contained in the Content ID subfield. The encoding of the Request Method subfield is
21. defined in Table 9-bc3 (Request Method subfield encoding).
22. **Table 9-bc3—Request Method subfield encoding**

|  |  |  |
| --- | --- | --- |
| **Negotiation Method subfield value** | **Meaning** | **Notes** |
| 0 | No negotiation |  |
| 1 | Request using eBCS Request frames | eBCS request by STAs that are associated with the broadcaster |
| 2 | Request using eBCS Request ANQP-elements | eBCS request by STAs that are not associated with the broadcaster |
| 3 | Request as defined in Info frame[no CID] | Out of band request, the mechanism and address is indicated in the Info frame |
| 4-255 | Reserved [CID 1451] |  |

1. The Time Of Termination subfield indicates the number of TBTTs until the content identified by the
2. content ID contained in the Content ID subfield is terminated. A value of 0 indicates that the content
3. identified by the content ID in the Content ID subfield ~~will be~~ is terminated at the following TBTT. A value
4. of 65535 indicates that the content identified by the content ID in the Content ID subfield has no specific
5. termination time. [no CID]
6. The Next Tx Schedule subfield indicates the number of TBTTs until the beacon interval in which the next frame
7. belonging to the EBCS traffic stream, identified by the Content ID subfield, is transmitted. A value of 0
8. indicates that this transmission occurs in the beacon interval that starts at the next TBTT. A value of 1 indicates
9. that it occurs in the beacon interval that follows that beacon interval. A value of 65535 indicates that there is no
10. specific transmission time. [CID1612]
11. The Authentication algorithm field indicates the authentication algorithm used for this eBCS. The
12. Authentication Algorithm subfield is defined in Table 9-bc8 (eBCS Info frame Authentication Algorithm field).
13. The Content ~~Destination~~ Address Type subfield is defined in Table 9-bc4 (Content Destination Address
14. Type subfield). ~~The value of 2, indicating a UDP or hostname, shall only be used for EBCS UL frames.~~
15. ~~The other values are used for both EBCS DL and UL frames.~~ [no CID]
16. **Table 9-bc4 Content ~~Destination~~ Address Type subfield**

|  |  |
| --- | --- |
| **Value** | **Higher Layer Protocol** |
| 0 | UDP/IPv4 |
| 1 | UDP/IPv6 |
| ~~2~~ | ~~UDP/hostname (UL only)~~[no CID] |
| 2 | MAC Address |
| 3-255 [CID1452] | Reserved |

1. The Content Destination Address subfield indicates the destination of the content. [no CID]
2. If the Content Destination Address Type subfield is UDP/IPv4, the format of the Content Destination
3. Address subfield is shown in Figure 9-bc16 (Content Destination Address subfield format for UDP/IPv4).

Destination Port

Destination IPv4 Address

Octets 4 2

1. **Figure 9-bc16 Content Destination Address subfield format for UDP/IPv4**
2. The Destination IPv4 Address subfield indicates the IPv4 address used as destination (typically a
3. multicast IPv4 address) in the broadcast frames for the EBCS identified by the Content ID field. The
4. Destination Port subfield indicates the UDP port associated with the IPv4 address indicated in the
5. Destination IPv4 Address subfield.[CID 1501/1500/1499]
6. NOTE---The UDP port and IP address are encoded per the conventions defined in 9.2.2.
7. If the Content Destination Address Type subfield is UDP/IPv6, the format of the Content Destination
8. Address subfield is shown in Figure 9-bc17 (Content Destination Address subfield format for UDP/IPv6).

Destination Port

Destination IPv6 Address

Octets 16 2

1. **Figure 9-bc17 Content Destination Address subfield format for UDP/IPv6**
2. The Destination IPv6 Address subfield indicates the IPv6 address used as destination (typically a
3. multicast IPv6 address) in the broadcast frames for the EBCS identified by the Content ID field. The
4. Destination Port subfield indicates the UDP port associated with the IPv6 address indicated in the
5. Destination IPv6 Address subfield. [CID 1501/1500/1499]
6. NOTE---The UDP port and IP address are encoded per the conventions defined in 9.2.2.
7. ~~If the Content Destination Address Type subfield is UDP/hostname, the format of the Content Destination~~
8. ~~Address subfield is shown in Figure 9-bc18 (Content Destination Address subfield format for~~
9. ~~UDP/hostname). The Hostname Length subfield indicates the length of the Hostname subfield. The~~
10. ~~Hostname subfield is the hostname as a UTF-8 string.~~

|  |  |  |
| --- | --- | --- |
| ~~Hostname Length~~ | ~~Hostname~~ | ~~Destination UDP Port~~ |

1. ~~Octets 1 variable 2~~
2. **~~Figure 9-bc18 Content Destination Address subfield format for UDP/hostname (CID 53)~~**
3. [no CID]
4. If the Content Destination Address Type subfield is MAC Address, the Content Destination Address
5. subfield contains a MAC address. [CID 1514].
6. The Title Length field indicates the length of the following Title field in octets.
7. The Title field is a human readable title of the content as a UTF-8 string.