IEEE P802.11
Wireless LANs

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| Spec Text for eBCS Service Advertisement Frame |
| Date: 2020-06-23 |
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Abstract

This document describes a draft text proposal for eBCS Service Advertisement frames.

TGbc Editor: please modify Clause 9 of the TGbc Specification Framework Document as contained in 11-20/677r1 as follows:

## 9.4.2 Elements

#### 9.4.2.1 General

***Insert the following new rows into Table 9-77 (Element IDs) (header row shown for convenience):***

Table 9-77 -- Element IDs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Element ID** | **Element ID Extension** | **Extensible** | **Fragmentable** |
| eBCS Parameters | 255 | <ANA> | Yes |  |
| E-BCS UL Capabilities | 255 | <ANA> | Yes | No |
| E-BCS Container | 255 | <ANA> | Yes |  |
| ***eBCS Service Announcement Information*** | 255 | <ANA> |  |  |

***Insert the following subclauses:***

***9.4.2.<ANA> eBCS Service Announcement Information element***

The eBCS Service Announcement Information element contains information of the current eBCS services available to be transmitted by the STA.

The eBCS Service Announcement Information element consists of 2 fields, the Number of eBCS Service Descriptions field and the eBCS Service Description field. See Figure <ANA>.1 (eBCS Service Announcement Information element).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Element ID | Length | Element ID Extension | Number of eBCS Service Descriptions | eBCS Service Description |
| Octets | 1 | 1 | 1 | 1 | variable |

Figure <ANA>.1: eBCS Service Announcement Information element

The Element ID and Length fields are defined in 9.4.2.1 (General).

The Number of eBCS Service Descriptions fields, is used to indicate the number of eBCS Service Description fields that the element includes.

The eBCS Service Description field contains the description of a service available for broadcasting. The field contains 11 fields, the eBCS Service Info Control, the eBCS Service ID, Title Length, Title, Time to Termination, Negotiation Method, Negotiation Address Type, Next Schedule, URL Length and URL fields. See Figure <ANA>.2 (eBCS Service Description field).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | eBCS Service Info Control | eBCSService ID | Title Length | Title | Time to Termination | Negotiation Method |
| Octets | 1 | variable | 0 or 1 | variable | 2 | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Negotiation AddressType | Negotiation Address | Next Schedule | URL Length | URL |
| Octets | 0 or 1 | variable | 2 | 1 | variable |

Figure <ANA>.2: eBCS Service Description field

The eBCS Service Info Control field is 1 byte in length and may contain indications whether certain broadcast information is contained in the Broadcast Service Description field. eBCS Service Info Control field may have the same format as shown in Figure <ANA>.3.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Title Presence Indicator | Negotiation Address Presence Indicator | Association Required | Next Schedule Presence Indicator | URL Presence Indicator | Reserved |
| Bits | 1 | 1 | 1 | 1 | 1 | 3 |

Figure <ANA>.4: eBCS Service Info Control field

The value 1 in the Title Presence Indicator subfield indicates that a Title Length subfield and a Title subfield are present in the same eBCS Service Termination Info subfield. The value 0 indicates that a Title Length subfield and a Title subfield are not present in the same eBCS Service Description field.

The value 1 in the Negotiation Address Presence Indicator subfield indicates that a Negotiation Address Type subfield and a Negotiation Address subfield are present in the same eBCS Service Description field. The value 0 indicates that a Negotiation Address Type subfield and a Negotiation Address subfield are not present in the same eBCS Service Description field.

The value 1 in the Association Required subfield indicates that association is required to consume the eBCS service identified by the eBCS Service ID contained in the eBCS Service ID subfield. The value 0 indicates that association is not required to consume the eBCS service identified by the eBCS Service ID ID contained in the eBCS Service ID subfield.

The value of 1 in the Next Schedule Presence Indicator subfield indicates that a Next Schedule subfield is present in the same eBCS Service Description field. The value of 0 indicates that a Next Schedule subfield is not present in the same eBCS Service Description field.

The value of 1 in the UR: Presence Indicator subfield indicates that an URL Length and an URL fields are present in the same eBCS Service Description field. The value of 0 indicates that an URL Length and an URL fields are not present in the same eBCS Service Description field.

The eBCS Service ID subfield is 1 octet in length and indicates the ID of the eBCS service advertised.

The Title Length subfield is 1 octet in length indicates the length of the Title subfield in octets.

The Title subfield indicates the Title in UTF-8 format of the eBCS Service identified by the eBCS Service ID contained in the eBCS Service ID subfield.

The Time to Termination subfield is 2 octets in lengths and indicates the number of TBTTs until the eBCS Service identified by the eBCS Service ID contained in the eBCS Service ID subfield is terminated. The value 0 indicates that the eBCS Service identified by the eBCS Service ID in the same eBCS Service ID subfield has no specific termination time.

The Negotiation Method subfield is 1 octet in length and indicates the negotiation method for starting/stoping or extending the eBCS service identified by the eBCS Service ID contained in the eBCS Service ID subfield. The encoding of the Negotiation Method subfield is defined in Table 9-xxx (Negotiation Method subfield encoding).

|  |
| --- |
| Table 9-xxx—Negotiation Method subfield encoding |
| Negotiation Method subfield value | Meaning |
| 0 | No Negotiation |
| 1 | Negotiation through eBCS Service Request frames |
| 2 | Negotiation through ANQP/GAS eBCS Service Request frames |
| 3 | Negotiation through IP Request |
| 4-7 | Reserved |

The Negotiation Address Type subfield is 1 octet in length and indicates the type of the address included in the Negotiation Address subfield. The encoding of the Negotiation Address Type subfield is defined in Table 9-xxx (Negotiation Address Type subfield encoding).

|  |
| --- |
| Table 9-xxx—Negotiation Address Type subfield encoding |
| Negotiation Address Type value | Meaning |
| 0 | MAC Address |
| 1 | UDP/IPv4 Address |
| 2 | UDP/IPv6 Address |
| 3 | UDP/Hostname |
| 4-7 | Reserved |

The Negotiation Address subfield indicates the address to be used for negotiating the starting/stopping or for the extension of the eBCS service identified by the eBCS Service ID contained in the eBCS Service ID subfield. The format and the length of the Negotiation Address subfield depends on the value contained in the Negotiation Address Type subfield.

The Negotiation Address subfield contains a MAC address if the Negotiation Address Type is equal to 0.

The format of the Negotiation Address subfield when the Negotiation Address Type is equal to 1 is shown in Figure 9-xxx (Negotiation Address subfield format if the Negotiation Address Type is equal to 1).

|  |  |  |
| --- | --- | --- |
|  | IPv4 Address | Destination UDP Port  |
| octets: | 4 | 2 |
|  | Figure 9-xxx—Negotiation Address subfield format if the Negotiation Address Type is equal to 1 |

The IPv4 Address subfield indicates an IPv4 address used for negotiating the extension of the eBCS service.

The Destination UDP Port subfield indicates the UDP Port associated with the IPv4 address indicated in the IPv4 Address subfield in little endian format.

The format of the Negotiation Address subfield when the Negotiation Address Type is equal to 2 is shown in Figure 9-xxx (Negotiation Address subfield format if the Negotiation Address Type is equal to 2).

|  |  |  |
| --- | --- | --- |
|  | IPv6 Address | Destination UDP Port  |
| octets: | 16 | 2 |
|  | Figure 9-xxx—Negotiation Address subfield format if the Negotiation Address Type is equal to 2 |

The IPv6 Address subfield indicates an IPv6 address used for negotiating the extension of the eBCS service.

The Destination UDP Port subfield indicates the UDP Port associated with the IPv6 address indicated in the IPv6 Address subfield in little endian format.

The format of the Negotiation Address subfield when the Negotiation Address Type is equal to 3 is shown in Figure 9-xxx (Negotiation Address subfield format if the Negotiation Address Type is equal to 3).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Hostname Length | Hostname  | Destination UDP Port |
| octets: | 1 | Variable | 2 |
|  | Figure 9-xxx—Negotiation Address subfield format if the Negotiation Address Type is equal to 3 |

The Hostname Length subfield indicates the length of the Hostname subfield in octets.

The Hostname subfield indicates the host name for negotiating the eBCS service in UTF-8 format.

The Destination UDP Port subfield indicates the UDP Port associated with the host name indicated in the Hostname subfield in little endian format.

The Next Schedule subfield is 2 octets in length and indicates the number of TBTTs until the eBCS Service identified by the eBCS Service ID contained in the eBCS Service ID subfield is transmitted again. The value 0 indicates that the eBCS Service identified by the eBCS Service ID in the same eBCS Service ID subfield is continuously transmitted.

The URL Length subfield is 1 octet in length and is set to 1 plus the number of octets in the URL subfield.

The URL subfield is a variable length field (as indicated in the URL Length subfield) that indicates the URL at which information relevant to the advertised service, might be retrieved. The URL field is formatted in accordance with IETF RFC 3986.

9.6 Action frame format details

9.6.7 Public Action details

9.6.7.1 Public Action frames

*Insert the following new row into Table 9-363 (Public Action field values) in numeric order:*

**Table 9-363 – Public Action field values**

|  |  |
| --- | --- |
| Public Action field value | Description |
| <ANA> | E-BCS Service Advertisement frame |

**9.6.7.<ANA> eBCS Service Announcement frame format**

The format of the eBCS Service Announcement frame Action field is defined in Table 9-<ANA> (eBCS Service Announcement frame Action field).

**Table 9-<ANA> eBCS Service Announcement frame Action field**

|  |  |
| --- | --- |
| **Order** | **Information** |
| 1 | Category |
| 2 | Public Action |
| 3 | eBCS Service Announcement Information element |