IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| Resolution Text for EBCS TIM Related Comments | | | | |
| Date: 2022-01-19 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Hitoshi Morioka | SRC Software | Fukuoka, JAPAN |  | hmorioka@src-soft.com |
|  |  |  |  |  |

Abstract

This document describes the resolutions related to the EBCS TIM element.

**The baseline is D2.0.**

# Suggested resolution

### 9.6.7.54 EBCS Info frame format

***Replace Figure 9-909al at P62L22 as follows:* [TXTiming]**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Category | Public Action | EBCS Info Sequence Number | EBCS Info Timestamp | EBCS Info Control | EBCS Info Authentication Algorithm | EBCS Info Interval |
| Octets: | 1 | 1 | 4 | 8 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | EBCS TIM Length | EBCS TIM | Fragment Hash Values | Certificate Length | Certificate | Content Information Number | Content Information List | Certificate |
| Octets: | 0 or 1 | variable | *n* x 32 | 0 or 2 | variable | 1 | variable | variable |

Figure 9-909al---EBCS Info frame Action field format

***Replace Figure 9-909am at P62L53 as follows:* [TXTiming]**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 B2 | B3 B5 | B6 | ~~B6~~ B7 |
|  | Number Of Fragments | Fragment Index | EBCS TIM Present | Reserved |
| Bits: | 3 | 3 | 1 | ~~2~~1 |

Figure 9-909am---EBCS Info Control field format

***Insert the following paragraph at P63L4:* [TXTiming]**

The EBCS TIM Present subfield is set to 1 if the EBCS TIM Length field and the EBCS TIM field are present and is set to 0 otherwise.

***Insert the following paragraph at P63L44:* [TXTiming]**

The EBCS TIM Length field indicates the length of the EBCS TIM field.

The EBCS TIM field contains the EBCS TIM element (9.4.2.297 EBCS TIM element) excluding the Element ID field and the Length field.

***Replace Figure 9-909ao at P65L1 as follows:* [TXTiming]**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 | B5 | ~~B5~~B6 B7 |
|  | Time Of Termination Present | Next Tx Schedule Present | Service URL Present | Vendor Specific Data Present | Content With Restriction | Buffered Traffic | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | ~~3~~2 |

Figure 9-909ao---Content Information Control subfield format

***Insert the following paragraph at P65L22:* [TXTiming]**

The Buffered Traffic subfield is set to 1 if the frames for the traffic are buffered at the AP and use the EBCS TIM field in the EBCS Info frame or the EBCS TIM element in the Beacon frame to signal whether the frames are buffered or not. This field is set to 0 otherwise.

### 11.55.2.2 EBCS DL operation at an EBCS AP

***Replace the paragraph at P78L10 as follows:* [TXTiming]**

~~An EBCS AP shall signal buffered EBCS Data frames via the EBCS TIM element (see Figure 9.4.2.297 (EBCS TIM element)) instead of the TIM element.~~

When the dot11EBCSTrafficStreamBuffered of an EBCS traffic stream is true, an EBCS AP shall buffer the EBCS Data frames that contain the EBCS traffic stream and shall signal buffered EBCS Data frames via the EBCS TIM element (see 9.4.2.297 (EBCS TIM element)) instead of the TIM element. The EBCS AP shall transmit the buffered EBCS Data frames in the period specified by the EBCS TIM element. The EBCS AP shall set the More Data subfield in the Frame Control field in the EBCS Data frame to 1 if more EBCS Data frames of the same EBCS traffic stream that will be transmitted in the same period are remaining, otherwise the More Data subfield is set to 0.

When the dot11EBCSTrafficStreamBuffered of an EBCS traffic stream is false, an EBCS AP shall transmit the EBCS Data frames that contain the EBCS traffic stream as soon as possible and shall not signal via the EBCS TIM element. The EBCS AP shall set the More Data subfield in the Frame Control field in the EBCS Data frame to 0.

An EBCS AP shall transmit the EBCS TIM element in Beacons if the dot11EBCSTIMInBeacon is true, otherwise in EBCS Info frames.

### C.3 MIB detail

***Insert the following instruction and line at P99L13:* [TXTiming]**

***Add the following entry to the end of the “dot11smt”:***

-- dot11EBCSTrafficStreamTable ::= { dot11smt <ANA> }

***Remove the following line at P99L19:* [TXTiming]**

~~dot11EBCSContentList TruthValue,~~

***Insert the following line at P99L29:* [TXTiming]**

dot11EBCSRelayingServiceSupported TruthValue,

dot11EBCSTIMInBeacon TruthValue

}

***Remove the dot11EBCSContentList at P99L47:* [TXTiming]**

~~dot11EBCSContentList OBJECT-TYPE~~

~~SYNTAX OCTET STRING~~

~~MAX-ACCESS read-write~~

~~STATUS current~~

~~DESCRIPTION~~

~~“This is a control variable.~~

~~It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation. This attribute specifies the EBCS traffic streams. This list contains zero or more Enhanced Broadcast Servises Tuple fields as described in 9.4.5.30 (Enhanced Broadcast Service ANQP-element).”~~

~~::= { dot11StationConfigEntry <ANA+10> }~~

***Insert the following element at P101L52:* [TXTiming]**

dot11EBCSTIMInBeacon OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This attribute, when true, indicates the EBCS TIM element in the Beacon frame is used to signal EBCS buffered traffic streams instead of using the EBCS TIM field in the EBCS Info frame.”

::= { dot11StationConfigEntry <ANA+11> }

***Insert the following instruction and table at P101L52:* [TXTiming]**

***Insert the following table after “dot11WURStationConfig TABLE” section:***

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* dot11EBCSTrafficStreamTable TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

dot11EBCSTrafficStreamTable OBJECT-TYPE

SYNTAX SEQUENCE OF Dot11EBCSTrafficStreamEntry

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This table of attributes is a set of all of the EBCS traffic stream information.”

::= { dot11smt <ANA> }

dot11EBCSTrafficStreamEntry OBJECT-TYPE

SYNTAX Dot11EBCSTrafficStreamEntry

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“An entry in the dot11EBCSTrafficStreamTable.

::= {dot11EBCSTrafficStreamTable 1 }

Dot11EBCSTrafficStreamEntry ::=

SEQUENCE {

dot11EBCSTrafficStreamID Unsigned32,

dot11EBCSTrafficStreamAuthenticationAlgorithm INTEGER,

dot11EBCSTrafficStreamAddressType INTEGER,

dot11EBCSTrafficStreamAddress OCTET STRING,

dot11EBCSTrafficStreamTitle OCTET STRING,

dot11EBCSTrafficStreamPHYType Unsigned32,

dot11EBCSTrafficStreamTXRate OCTET STRING,

dot11EBCSTrafficStreamNegotiationMethod INTEGER,

dot11EBCSTrafficStreamNextTXSchedule Unsigned32,

dot11EBCSTrafficStreamTimeToTermination Unsigned32,

dot11EBCSTrafficStreamBuffered TruthValue

}

dot11EBCSTrafficStreamID OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable is used to identify the EBCS traffic stream.”

::= { dot11EBCSTrafficStreamEntry 1 }

dot11EBCSTrafficStreamAuthenticationAlgorithm OBJECT-TYPE

SYNTAX INTEGER {

HLSA(0),

PKFA(1),

HCFAWithoutInstantAuthentication(2),

HCFAWithInstantAuthentication(3)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the authentication algorithm of the EBCS traffic stream. The following values can be used here.

Value = 0: HLSA

Value = 1: PKFA

Value = 2: HCFA without instant authentication

Value = 3: HCFA with instant authentication”

::= { dot11EBCSTrafficStreamEntry 2 }

dot11EBCSTrafficStreamAddressType OBJECT-TYPE

SYNTAX INTEGER {

UDPIPv4(0),

UDPIPv6(1),

MACAddress(2)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the address type of the dot11EBCSTrafficStreamAddress. The following values can be used here.

Value = 0: UDP/IPv4

Value = 1: UDP/IPv6

Value = 2: MAC address”

::= { dot11EBCSTrafficStreamEntry 3 }

dot11EBCSTrafficStreamAddress OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(10..34))

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the source and destination address of the EBCS traffic stream encoded in the Content Address subfield format in 9.4.5.30 (EBCS ANQP-element).”

::= { dot11EBCSTrafficStreamEntry 4 }

dot11EBCSTrafficStreamTitle OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0..255))

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the human readable title of the EBCS traffic stream encoded in UTF-8.”

::= { dot11EBCSTrafficStreamEntry 5 }

dot11EBCSTrafficStreamPHYType OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the transmission PHY type of the EBCS traffic stream encoded in the PHY Type subfield value in Table 9-340d (PHY Type subfield).”

::= { dot11EBCSTrafficStreamEntry 6 }

dot11EBCSTrafficStreamTXRate OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(1..3))

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the transmission rate of the EBCS traffic stream encoded as in the TX Rate subfield format in 9.4.5.30 (EBCS ANQP-element).”

::= { dot11EBCSTrafficStreamEntry 7 }

dot11EBCSTrafficStreamNegotiationMethod OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(1))

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the negotiation method of the EBCS traffic stream encoded as in Table 9-340a (Negotiation Method subfield encoding).”

::= { dot11EBCSTrafficStreamEntry 8 }

dot11EBCSTrafficStreamNextTXSchedule OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the next transmission timing of the EBCS traffic stream in unit of TBTT. A value of 0 indicates that this transmission occurs in the beacon interval that starts at the next TBTT. A value of 1 indicates that it occurs in the beacon interval that follows that beacon interval. A value of 65535 indicates that there is no specific transmission starting time.”

::= { dot11EBCSTrafficStreamEntry 9 }

dot11EBCSTrafficStreamTimeToTermination OBJECT-TYPE

SYNTAX Unsigned32 (0..65535)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable specifies the transmission termination timing of the EBCS traffic stream in unit of TBTT. A value of 0 indicates that this transmission occurs in the beacon interval that starts at the next TBTT. A value of 1 indicates that it occurs in the beacon interval that follows that beacon interval. A value of 65535 indicates that there is no specific transmission termination time.”

::= { dot11EBCSTrafficStreamEntry 10 }

dot11EBCSTrafficStreamBuffered OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

“This is a control variable.

It is written by an external entity or the SME. Changes take effect as soon as practical in the implementation.

This variable, when true, the EBCS traffic stream is buffered and transmitted in EBCS DTIM period.”

::= { dot11EBCSTrafficStreamEntry 11 }

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

-- \* End of dot11EBCSTrafficStreamTable TABLE

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

***Remove the following line at P101L61:* [TXTiming]**

~~dot11EBCSContentList,~~

***Insert the following line at P102L6:* [TXTiming]**

dot11EBCSRelayingServiceSupported,

dot11EBCSTIMInBeacon

}