IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 802.11bc LB257 – Resolution for CIDs 2035, 2125, 2137, 2163, 2279, and 2010 | | | | |
| Date: January 31, 2022 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Antonio de la Oliva | Interdigital Ltd, UC3M |  |  | aoliva@it.uc3m.es |
|  |  |  |  |  |

Abstract

This submission proposes resolutions for the following CIDs submitted during LB257 for 11bc D2.0: **2035, 2125, 2137, 2163, 2279, and 2010**

This contribution uses D2.1 as baseline.

##### 11.22.3.3.17 Enhanced Broadcast Services procedures

2

3 EBCS traffic streams may be advertised using the Enhanced Broadcast Services ANQP-element (see [9.4.5.30](#_bookmark87)

4

1. [(Enhanced Broadcast Services ANQP-element)](#_bookmark87)). The element describes a set of zero or more EBCS traffic
2. streams that are available from an AP. Each broadcast service advertisement may contain the time and duration
3. of transmission, together with an identifier of the broadcast content (a content ID) and other information
4. relevant to the broadcast service. The information present in each broadcast service advertisement is indicated
5. in a Control field.

10

11

1. ~~If the Negotiation Method subfield is set to 1, the Association Required subfield of the Control field indicates if~~
2. ~~association is required to receive the EBCS traffic stream. For other negotiation methods, the Association~~
3. ~~Required subfield indicates if association is required to request and receive the EBCS traffic stream.~~ [CID 2035]

15

16

17

1. NOTE—An EBCS traffic stream signaled in an Enhanced Broadcast Services ANQP-element might be provided by a
2. malicious user, since the ANQP-element might be unsecured. The origin authentication methods described
3. in~~[Clause](#_bookmark224)~~ [12.14 (Frame authentication for EBCS)](#_bookmark224) might be used to authenticate the origin of EBCS traffic streams.

21

22

1. If the content is authenticated in the MAC layer (nonzero values of the Content Authentication Algorithm field
2. as defined in [Table 9-340b (Content Authentication Algorithms)](#_bookmark94)) or requires negotiation (any of the EBCS Content
3. Request Frame, EBCS Request ANQP Element or Out Of Band Request bits of the Negotiation Method subfield, as defined in
4. 9.4.5.30, set to 1)~~(nonzero values of the Negotiation Method subfield as defined in [Table 9-340a (Negotiation Method subfield encoding)](#_bookmark92))~~ [CID2035], the information provided by the Enhanced Broadcast Services ANQP-element
5. needs to be augmented with additional information to receive the traffic stream. The information on the authentication and negotiation method may be obtained in the next EBCS Info frame as indicated by the Content Authentication Algorithm field and in the Negotiation Method field included in the EBCS Broadcast Services ANQP-element.

28

31

1. If the content follows the authentication scheme defined in [12.14.4 (No frame authentication with mandatory](#_bookmark256)
2. [higher layer source authentication (HLSA))](#_bookmark256) as indicated by the Content Authentication Algorithm subfield

34

1. equal to 0 as defined in [Table 9-340b (Content Authentication Algorithms)](#_bookmark94), the information provided is enough
2. to receive the traffic stream.

37

1. If the Enhanced Broadcast Service Request ANQP-element is one of the permitted negotiation methods, a STA
2. may use it to request registration (or unregistration) from a peer STA. This ANQP-element optionally allows

40

1. the STA to provide the MAC address of the AP currently serving the EBCS traffic stream, which might not be
2. the same as the one receiving the ANQP request.

43

44 NOTE—The requesting STA can be either an EBCS AP or an EBCS non-AP STA.

##### ------------------------------------

##### 11.55.5 EBCS negotiation procedure for unassociated STAs

39

40 An unassociated EBCS STA may transmit an Enhanced Broadcast Services Request ANQP-element to an

41

1. EBCS AP to register for one or more EBCS traffic streams when that AP has indicated that it does not require
2. an association. When registering for an EBCS traffic stream using an Enhanced Broadcast Services Request
3. ANQP-element, an EBCS STA may request a specific time to termination using the Requested Time To
4. Termination subfield and may indicate the MAC address of the AP it is currently receiving the service from,
5. using the Broadcaster MAC Address subfield. This last element, optionally
6. allows the non-AP STA to provide the MAC address of the AP currently serving the EBCS traffic stream,
7. which might not be the same as the one receiving the request. This information may be used to distribute the EBCS load transmitted by different EBCS APs in a certain area [CID 2010].

46

47

1. After receiving an Enhanced Broadcast Services Request ANQP-element from an unassociated EBCS STA, an
2. EBCS AP shall respond with Enhanced Broadcast Services Response ANQP-element and Enhanced Broadcast
3. Services ANQP-element indicating the acceptance or rejection of the request to start transmitting each EBCS
4. indicated in the Enhanced Broadcast Services Request ANQP-element [CID2137]. If the EBCS AP accepts a
5. request for an EBCS traffic stream, it may include a Time To Termination subfield in the Enhanced Broadcast
6. Services ANQP-element to indicate the time to termination for the EBCS traffic stream.

53

1. NOTE—The EBCS AP has the authority to determine the time to termination of the EBCS traffic stream. ANQP-
2. elements received from unassociated STAs are not protected and hence the EBCS AP might exercise caution in
3. accepting certain requested durations. An EBCS AP evaluates certain criteria before responding to the EBCS service
4. request from an unassociated STA from which it receives an Enhanced Broadcast Services Request ANQP-element.
5. Such criteria might include, but are not limited to, limiting the time duration and/or frequency of EBCS traffic stream
6. 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.

##### 11.55.4 EBCS negotiation procedure for associated STAs

2

3 To request one or more EBCS traffic streams provided by an EBCS AP, with which an EBCS non-AP STA is

4

1. associated, the STA shall transmit an EBCS Content Request frame to the EBCS AP. To request one or more
2. EBCS traffic streams that an EBCS AP has indicated require association, an unassociated EBCS non-AP STA
3. shall associate with the EBCS AP and subsequently transmit an EBCS Content Request frame. A request for
4. one or more EBCS traffic streams that does not require association may also be included in the same EBCS
5. Content Request frame. When requesting an EBCS traffic stream using an EBCS Content Request frame, an

10

1. EBCS non-AP STA may request an EBCS traffic stream with a certain time to termination as indicated in the
2. Requested Time To Termination field included in the EBCS Content Request frame. In addition, the STA may indicate the MAC address of the AP it is currently receiving the service from, using the Broadcaster MAC Address subfield. 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. This information may be used to distribute the EBCS load transmitted by different EBCS APs in a certain area [CID 2010].
3. ~~This element optionally~~
4. ~~allows the non-AP STA to provide the MAC address of the AP currently serving the EBCS traffic stream,~~
5. ~~which might not be the same as the one receiving the request.~~

15

1611

1. After receiving an EBCS Content Request frame from an associated EBCS non-AP STA, an EBCS AP shall
2. respond with an EBCS Content Response frame. If the EBCS AP indicates in the EBCS Content Response
3. frame that the request for an EBCS traffic stream is successful, it may include a Time To Termination field to
4. indicate the time to termination for the EBCS traffic stream. It may also include EBCS SP duration and the
5. EBCS SP interval for the EBCS traffic stream in the EBCS Content Response frame.

22

23

1. An EBCS non-AP STA that receives an EBCS Content Response frame may negotiate for the extension of an
2. EBCS traffic stream if the EBCS traffic stream indicated in one of the EBCS Response Info subfields
3. terminates earlier than desired. The EBCS STA may negotiate the extension of the EBCS traffic stream by
4. transmitting another EBCS Content Request frame to its associated AP by including a desired value in the

28

1. Requested Time To Termination subfield in the EBCS Request Info subfield whose Content ID subfield
2. corresponds to the EBCS traffic stream.

31

1. NOTE 1—Which values of a received Time To Termination subfield are considered desirable is determined by the
2. receiving EBCS non-AP STA and is beyond the scope of this standard.

34

1. NOTE 2—The EBCS transmitter of an EBCS traffic stream has the authority to determine the time to termination of the
2. EBCS traffic stream. 37