IEEE P802.11
Wireless LANs

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| 802.11bc Resolution for CIDs in 9.4.2.300 (LB 252) |
| Date: January 10, 2021 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Abhishek Patil | Qualcomm Inc. |  |  | appatil@qti.qualcomm.com |

 Abstract

This submission proposes resolutions for the following 30 comments submitted during LB 252 for 11bc D1.0 clause 9.4.2.300:

1402, 1262, 1007, 1200, 1403, 1263, 1404, 1405, 1256, 1477, 1062, 1594, 1086, 1598, 1484, 1266, 1552, 1553, 1596, 1439, 1112, 1267, 1127, 1064, 1257, 1479, 1212, 1272, 1485, 1555

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revised based on offline feedback from various members
* Rev 2:
	+ Additional changes to be in line with discussion on January 11th 2021 session
		- Replaced the term ‘forward’ with ‘deliver’
		- Replace the term ‘remote’ with ‘specified’
		- “… an EBCS AP delivers the contents of the higher layer payload to the specified destination …”
	+ Resolved additional comment: CID 1485
* Rev 3:
	+ Minor updates based on offline feedback
	+ Resolved additional comment: CID 1555
* Rev 4:
	+ Live edits made while the document was presented on January 12th 2021 AM1 session
		- Includes replacing the term ‘deliver’ to ‘relay’
		- “… an EBCS AP relays the contents of the higher layer payload to the specified destination …”

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbc Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbc Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGbc Editor: Editing instructions preceded by “TGbc Editor” are instructions to the TGbc editor to modify existing material in the TGbc draft. As a result of adopting the changes, the TGbc editor will execute the instructions rather than copy them to the TGbc Draft.***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Page** | **Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1402 | Michael Montemurro | 5.00 | 5 | 9.4.2.300.1 | An AP advertises informaiton as opposed to declaring information in IEEE 802.11 protocols. | Change "declares" to "advertises" | **Revised**Agree with the comment. The sentence is revised to clarify that an eBCS AP advertises its capabilities by including this element in the Beacon and Probe Response frame.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1402 |
| 1262 | Mark RISON | 24.00 | 5 | 9.4.2.300.1 | "An eBCS AP declares support for forwarding service and capabilities related to that forwarding service by 5including the E-BCS Parameters element in Beacon and Probe Response frames it transmits. " -- the next subclause suggests it does other stuff with the element too (and even if not it's a candidate for spec rot), and the second half is duplicative of the MMPDU content tables above (except that this sentence suggest the inclusion is conditional while the tables say it's always included) | Delete this sentence | **Revised**The sentence is revised to clarify that this element is always included in the Beacon and Probe Response frame transmitted by an eBCS AP and provides the capabilities of the transmitting AP.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1262 |
| 1007 | Abhishek Patil | 24.00 | 5 | 9.4.2.300.1 | An eBCS AP may support only the UL broadcast (forwarding service), or only the DL broadcast service or both. The E-BCS Parameter element is common to both and has fields that carry attributes for each case. Hence, the support for forwarding service should not be tied to the inclusion of the element in the Beacon or Probe Response frame. | Make AP UL Control as an optional field and add a description as follow: "An eBCS AP declares support for forwarding service and provides capabilities related to that forwarding service by including the AP UL Control field in E-BCS Parameters element." In addition, replace the cited paragraph with the following: "An eBCS AP includes the E-BCS Parameters element in Beacon and Probe Response frames it transmits if it support forwarding service or transmits eBCS Info frames at period intervals. Otherwise this element is not included in the Beacon and Probe Response frame.". | **Revised**Agree in principle with the comment. The sentence is revised to clarify that an eBCS AP advertises its capabilities by including this element in the Beacon and Probe Response frame. The AP Control field is updated to include bit that indicates whether the Next EBCS Info frame field is present or not.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1007 |
| 1200 | Jouni Malinen | 24.00 | 21 | 9.4.2.300.2 | E-BCS Parameters element is claimed to be extensible, but the optional field at the end of the E-BCS Parameters subfield in frames transmitted by an AP does not allow extensibility since the receiver cannot determine whether that optional subfield is present and as such, where a possible future extension would start. | Add an explicit indication for the presence of the Next eBCS Info frame subfield into the the AP Control field using one of the reserved bits. In Figure 9-bc3, add a new one bit subfield B5 "Next eBCS Info frame present" updating the Reserved subfield to B6..B7. At P25L19, replace "If the STA does not transmit eBCS Info frames, this subfield is not used" with "This subfield is present when the Next eBCS Info frame present subfield" is one; otherwise not present.. | **Revised**Agree in principle with the comment. The AP Control field is updated to include a subfield (EBCS Info Frame Tx Countdown Present) that indicates whether the EBCS Info Frame Tx Countdown field is present or not.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1200 |
| 1403 | Michael Montemurro | 24.00 | 7 | 9.4.2.300.1 | It looks as if E-BCS Parameters element is an optional element. If it is, it would be good to state it more directly. | Change "An eBCS non-AP STA advertises the E-BCS Parameters element in an UL eBCS frame if it intends for an AP to append additional information to the packet before forwarding it to a remote destination. Otherwise, an eBCS non-AP STA does not include this element in the eBCS UL frame"to"An eBCS non-AP STA optionally includes the E-BCS Parameters element in a UL eBCS frame to provide additional information to the eBCS AP. The eBCS AP forwards the additional information with the payload of the received frame to the remote destination. | **Revised**Agree in principle with the comment. The paragraph is updated to clarify that the element is optionally carried in the UL eBCS frameTGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1403 |
| 1263 | Mark RISON | 24.00 | 7 | 9.4.2.300.1 | "An eBCS non-AP STA advertises the E-BCS Parameters element in an UL eBCS frame if it intends for an 7AP to append additional information to the packet before forwarding it to a remote destination. Otherwise, 8an eBCS non-AP STA does not include this element in the eBCS UL frame. " -- this is behaviour not format. Also "UL eBCS" v "eBCS UL" | Delete this para | **Revised**Agree in principle with the comment. The paragraph is simplified to say that the element is optionally carried in the UL eBCS frame with a reference to clause 11 which provides details on the behavioral aspect.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1263 |
| 1404 | Michael Montemurro | 24.00 | 12 | 9.4.2.300.1 | Using an element and a field with the same name can get very confusing. Consider changing the name of one or the other to distinguish between the two. | Change "E-BCS Parameters" field to "E-BCS Info" field, and propagate through the remainder of the document. | **Revised**Agree with the comment. The name E-BCS Info may create confusion with eBCS Info frame. Therefore, the field name is renamed to EBCS Parameter Advertisement field.TGbc editor please make global replacement of the field name E-BCS Parameters to EBCS Parameter Advertisement field. Some of the changes are shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1404. |
| 1405 | Michael Montemurro | 24.00 | 24 | 9.4.2.300.2 | An AP STA is really just an AP | Change "AP STA" to "AP" | **Accept** |
| 1256 | Mark RISON | 24.00 | 18 | 9.4.2.300.2 | "E-BCS AP Parameters for an AP STA " is duplicative. Also it's a field name | Delete the first "AP", add " field" after "Parameters" | **Revised**TGbc editor please change the title to: “EBCS Parameters Advertisement field for an AP” |
| 1477 | Stephen McCann | 24.00 | 18 | 9.4.2.300.2 | The title does not need to mention AP STA, as AP is a recognised term | Change the clause title to "eBCS AP Parameters for an AP" | **Revised**TGbc editor please change the title to: “EBCS Parameters Advertisement field for an AP” |
| 1062 | Antonio DeLaOlivaDelgado | 24.00 | 18 | 9.4.2.300.2 | The title of thr section is "E-BCS AP Parameters for an AP STA", there are no E-BCS AP Parameters. I suggest changing this title to "E-BCS Parameters transmitted by an AP STA" | As the comment indicate | **Revised**TGbc editor please change the title to: “EBCS Parameters Advertisement field for an AP” |
| 1594 | Xiaofei Wang | 24.00 | 18 | 9.4.2.300.2 | the title "E-BCS AP Parameters for an AP STA" is a bit confusing. | change "E-BCS AP Parameters for an AP STA" into "EBCS Parameters when transmitted by an AP". | **Revised**TGbc editor please change the title to: “EBCS Parameters Advertisement field for an AP” |
| 1086 | Bahareh Sadeghi | 24.00 | 25 | 9.4.2.300.2 | There is inconsistency in the name of "AP UL Control" field in figure 9.bc2 and the text and the caption of figure 9.bc3 | Make the naming of the field consistent. | **Revised**The field name and figure title is fixed to be consistent with the description text. The field name is updated to say AP Control field since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1086 |
| 1598 | Xiaofei Wang | 25.00 | 3 | 9.4.2.300.2 | Caption of Figure 9-bc3 says AP control field, please make it either "AP UL Control field" or "AP Control field" and use it consistently | as in comment | **Revised**The field name and figure title is fixed to be consistent with the description text. The field name is updated to say AP Control field since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc)  tagged as 1598 |
| 1484 | Stephen McCann | 21.00 | 25 | 9.4.2.300.2 | Figure 9-bc2 has a "AP UL Control" field which is not defined. | Change the field "AP UL Control" in Figure 9-bc2 to "AP Control". The same change needs to be made on P24L25 | **Accept** |
| 1266 | Mark RISON | 24.00 | 25 | 9.4.2.300.2 | "The format of AP Control" should be "The format of the AP Control field" (2 fixes) | As it says in the comment | **Accept** |
| 1552 | Tomoko Adachi | 24.00 | 25 | 9.4.2.300.2 | "The format of AP Control is shown in Figure 9-bc3 (AP UL Control field format)." The "AP Control" should be "AP UL Control" following Figure 9-bc2. | As in comment. | **Revised**The field name in the figure is updated to remove the term ‘UL’ since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1552 |
| 1553 | Tomoko Adachi | 25.00 | 3 | 9.4.2.300.2 | The figure title should be corrected to "Figure 9-bc3 - AP UL Control field format" following Figure 9-bc2. | As in comment. | **Revised**The field name and the title reference to the figure in the description text is updated to remove the term ‘UL’ since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1553 |
| 1596 | Xiaofei Wang | 24.00 | 25 | 9.4.2.300.2 | "AP Control" should be "AP UL Control subfield" | as in comment | **Revised**The field name and the title reference to the figure in the description text is updated to remove the term ‘UL’ since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1596 |
| 1439 | Osama Aboulmagd | 25.00 | 3 | 9.4.2.300.2 | Figure 9-bc3 - AP Control field format. It should be AP UL Control field format | As in comment | **Revised**The field name and the title reference to the figure in the description text is updated to remove the term ‘UL’ since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1439 |
| 1112 | Fumihide Goto | 25.00 | 3 | 9.42.300.2 | "AP Control field format" should be "AP UL Control field format" | as comment | **Revised**The field name and the title reference to the figure in the description text is updated to remove the term ‘UL’ since the contents of the field are not limited to UL only.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1112 |
| 1267 | Mark RISON | 25.00 | 13 | 9.4.2.300.2 | "Throttling schemefor all destinations" is not correct as there might not be any throttling | Change to "Uniform" and change the next cell down to "Per Destination" | **Revised**Agree with the proposed changes. In addition, the term ‘forwards’ and ‘remote’ are replaced with ‘relay’ and ‘specified’ respectively to be in line with the discussion that occurred during the TGbc session on January 11th 2021 and AM1 session on January 12th 2021. These changes were also applied to the text in Table 9-bc1 and the following paragraphTGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1267 |
| 1127 | Hitoshi Morioka | 25.00 | 20 | 9.4.2.300.2 | Which value is used when eBCS Info frames are not transmitted? | The value for the commented case shuold be defined. | **Revised**Agree with the comment that the description is not clear. Updated the paragraph on Next eBCS Info frame to clarify that the field is included in the element only if the AP transmits eBCS Info frames at regular intervals.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1127 |
| 1485 | Stephen McCann | 21.00 | 25 | 9.4.2.300.2 | The "Next eBCS Info frame" is an interval to the next frame and this is not obvious from the sub-field name | Change the field "Next eBCS Info frame" to "eBCS Info frame interval" | **Revised**Agree with the comment. The field name is changed to EBCS Info Frame Tx Countdown.TGbc editor please make global replacement for field name ‘Next eBCS Info frame’ to ‘EBCS Info Frame Tx Countdown’. Some of the changes are shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1485 |
| 1064 | Antonio DeLaOlivaDelgado | 25.00 | 21 | 9.4.2.300.3 | Wrong title of section, "eBCS Capabilities for a non-AP STA", it should be "eBCS Parameters for a non-AP STA" | As the comment indicate | **Revised**TGbc editor, please update the subclause title as: “EBCS Parameters Advertisement field for a non-AP STA” |
| 1257 | Mark RISON | 25.00 | 21 | 9.4.2.300.3 | " eBCS Capabilities for a non-AP STA " is not what this subclause is about | Change to "EBCS Parameters field for a non-AP STA" | **Revised**TGbc editor, please update the subclause title as : “EBCS Parameters Advertisement field for a non-AP STA” |
| 1479 | Stephen McCann | 26.00 | 1 | 9.4.2.300.3 | Figure 9-bc4 is redundant and should be removed. Figure 9-bc5 is adequate to define the sub-field format. | Remove figure 9-bc4 and change references to Figure 9-bc4 in the text to Figure 9-bc5 | **Revised**Figure 9-bc4 is removed and title and number for the subsequent figure is updated as “9-bc4 - Format of EBCS Parameters Advertisement field for a non-AP STA”TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1479 |
| 1212 | Kazuto Yano | 26.00 | 5 | 9.4.2.300.3 | Figure 9-bc5 includes "No Forwarding without Embedding subfield". On the other hand, it is represented as "No Forwarding Without Embedding subfield" (i.e., "Without" begins with capital) in the main text. | Please make consistent the notation of the subfield. | **Revised**Field name fixed to have without with upper case ‘w’. Consistent with 802.11 style guide. Further the name of the field is changed to ‘Do Not Relay Without Metadata Embedding’ based on discussion during the 11bc session on January 11th 2021 and AM1 session on January 12th 2021.TGbc editor please make global replacement of the field name “No Forwarding Without Embedding” with “Do Not Relay Without Metadata Embedding’”. Some of the changes are shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1212 |
| 1272 | Mark RISON | 26.00 | 9 | 9.4.2.300.3 | "The Metadata Embedding Requested subfield is set to 1 to indicate that the non-AP STA transmitting the 9element is requesting an eBCS AP to forward its content to a remote destination after appending metadata 10information." -- it is not clear what "its content" is referring to here. I don't think it's the content of the element that is to be forwarded with metadata appended | Change to "The Metadata Embedding Requested subfield is set to 1 to indicate that the non-AP STA transmitting the element is requesting that an eBCS AP append metadata information when forwarding a frame from the non-AP STA to a remote destination." | **Revised**The paragraph is updated to clarify that the AP is requested to append additional information (metadata) before relaying the contents to the specified destination. Changes were applied to the next paragraph.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1272 |
| 1555 | Tomoko Adachi | 26.00 | 12 | 9.4.2.300.3 | Can't the eBCS non-AP STA know prior to sending the eBCS Capabilities to the eBCS AP whether the AP can append metadata by checking the Metadata Embedding Supported subfield sent from the AP? Then, why is this Metadata Embedding Requested subfield needed? | Revisit the need of the Metadata Embedding Requested subfield. | **Revised**The relay service provided by EBCS is best effort. An eBCS non-AP STA can broadcast an UL eBCS frame in unassociated state without monitoring the wireless medium (WM). Therefore, it is possible that a non-AP STA transmits a frame without discovering AP(s) that support forwarding. Non-AP STA with sufficient power/capability could monitor the medium to make an informed decision on when to transmit an UL eBCS frame. This field would be useful for the case where a non-AP STA decides to scan the medium to discover suitable APs. A NOTE is added to clarify this.TGbc editor please make changes as shown in [https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-(part-1).doc](https://mentor.ieee.org/802.11/dcn/21/11-21-0064-04-00bc-lb252-resolutions-for-cids-assigned-to-abhi-%28part-1%29.doc) tagged as 1272 |

***TGbc editor: The baseline for the proposed changes is 802.11bc D1.0***

**9.4.2.300 E-BCS Parameters element**

***TGbc editor: please make changes to this clause as shown below:***

**9.4.2.300.1 General**

An eBCS AP advertises its EBCS capabilities and operational parameters by including the E-BCS Parameters element in Beacon and Probe Response frames that it transmits.[1402, 1262, 1007]

[1403, 1263]An eBCS non-AP STA optionally includes the E-BCS Parameters element in an UL eBCS frame (see 11.100.3.3 (eBCS UL operation at an eBCS non-AP STA)).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Element ID | Length | Element IDExtension | EBCS Parameters Advertisement [1404] |

Octets: 1 1 1 variable

 **Figure 9-bc1 - E-BCS Parameters element format**

The format of the E-BCS Parameters element is shown in Figure 9-bc1 (E-BCS Parameters element format).

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

The content of the [1404]EBCS Parameters Advertisement field is defined in 9.4.2.300.2 when the element is transmitted by an eBCS AP and defined in 9.4.2.300.3 when the element is transmitted by an eBCS non-AP STA.

* + - * 1. **EBCS Parameters Advertisement field for an AP**

[1404, 1405, 1477, 1256, 1062, 1594]

The format of an [1404]EBCS Parameters Advertisement field when transmitted by an eBCS AP is shown in Figure 9-bc2 (Format of [1404]EBCS Parameters Advertisement field for an AP).

|  |  |  |
| --- | --- | --- |
|  | AP Control | EBCS Info Frame Tx Countdown (optional) |

Octet: 1 0 or 2

**Figure 9-bc2 - Format of EBCS Parameters Advertisement field for an AP**

[1404, 1086, 1598, 1484, 1552, 1553, 1596, 1439, 1112, 1485]

The format of the AP Control field is shown in Figure 9-bc3 (AP Control field format).[1086, 1598, 1484, 1266, 1552, 1553, 1596, 1439, 1112]

B0 B1 B2 B3 B4 B5 B6 B7

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ULAuthentication Mode | ULLimiting Mode | Metadata Embedding Supported | EBCS Info Frame Tx Countdown Present | Reserved |

Bits: 2 2 1 1 2

 **Figure 9-bc3 - AP Control field format**[1262, 1007, 1200]

The encoding of the UL Authentication Mode subfield is shown in Table 9-bc1 (Encoding of UL Authentication Mode subfield).

**Table 9-bc1 - Encoding of UL Authentication Mode subfield**[1267]

|  |  |  |
| --- | --- | --- |
| Subfield value | Definition | Encoding |
| 0 | No Authentication | AP relays the HLP payload carried in an UL eBCS frame to the destination specified in the frame without authenticating the transmitter of the frame. |
| 1 | Per Destination | AP relays the HLP payload carried in an UL eBCS frame only if it is able to authenticate the transmitter of the frame based on an established relationship with the destination specified in the frame. |
| 2 – 3 | Reserved |  |

The encoding of the UL Limiting Mode subfield is shown in Table 9-bc2 (Encoding of UL Limiting Mode subfield).

**Table 9-bc2 - Encoding of UL Limiting Mode subfield**[1267]

|  |  |  |
| --- | --- | --- |
| Subfield value | Definition | Encoding |
| 0 | Uniform | AP applies no restrictions or allows a fixed amount or frequency of uplink data from a non-AP STA to be relayed to a specified destination, independent of the destination. |
| 1 | Per destination | AP applies limits to the amount or frequency of uplink data from a non-AP STA to be relayed to a specified destination, based on a relationship established with the destination. |
| 2 – 3 | Reserved |  |

[1267]The Metadata Embedding Supported subfield is set to 1 if the AP supports embedding of metadata (such as location, date/time, etc. based on the relationship with the destination), when a non-AP STA requests embedding, before relaying the HLP payload carried in an UL eBCS frame to the specified destination. Otherwise, the subfield is set to 0.

[1555]NOTE – An EBCS non-AP STA that transmits an UL eBCS frame is not required to first discover APs that provide the relaying service, or whether they support metadata embedding (see 11.100.3.3).

[1262, 1007, 1200, 1127, 1485]If the AP transmits eBCS Info frames (see 9.6.7.101 (eBCS Info frame format)) at fixed intervals, the EBCS Info Frame Tx Countdown Present subfield of the AP Control field is set to 1 and the EBCS Info Frame Tx Countdown subfield in the element indicates the number of TBTTs until the transmission of the next eBCS Info frame. The value 1 indicates that the frame is transmitted following the next TBTT (see 11.100.2.2). The value 0 is reserved. Otherwise the EBCS Info Frame Tx Countdown Present subfield of the AP Control field is set to 0 and the EBCS Info Frame Tx Countdown subfield is not included in the element.

* + - * 1. **EBCS Parameters Advertisement field for a non-AP STA**

[1404, 1064, 1257]

The format of an [1404]EBCS Parameters Advertisement field when transmitted by an eBCS non-AP STA is shown in Figure 9-bc4 (Format of [1404]EBCS Parameters Advertisement field for a non-AP STA).

[1479]

B0 B1 B2 B7

Bits: 1 1 6

|  |  |  |  |
| --- | --- | --- | --- |
|  | Metadata Embedding Requested | Do Not Relay Without Metadata Embedding [1212] | Reserved |

**Figure 9-bc4 - Format of EBCS Parameters Advertisement field for a non-AP STA**[1404]

[1272]The Metadata Embedding Requested subfield is set to 1 to indicate that the non-AP STA transmitting the element is requesting an eBCS AP to append additional information (such as location, date and time, etc.) prior to relaying the HLP payload carried in the non-AP STA’s UL eBCS frame to the specified destination. Otherwise, the subfield is set to 0.When the Metadata Embedding Requested subfield is set to 1, the [1212]Do Not Relay Without Metadata Embedding subfield is set to 1 to indicate that the AP can discard the UL eBCS frame received from a non-AP STA without relaying the HLP payload carried in the frame to the specified destination if it is unable to append metadata. Otherwise, the subfield is set to 0 to indicate that AP can relay the content to the destination specified in the non-AP STA’s uplink frame even if it is unable to append any metadata.

NOTE – The AP might be unable to append metadata because it does not support the feature, or because it does not have metadata to append.