IEEE P802.11
Wireless LANs

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| Proposed Text to Separate MAC and MLME |
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Abstract

This document describes the text proposal to separate MAC and MLME.

# Proposed text

**The baseline is D4.0.**

***Add new subclause 10.x as follows:***

### 10.x EBCS DL operation

### 10.x.1 General

The EBCS traffic streams are handled differently than other traffic. The operation for EBCS DL traffic streams is described the following subclauses.

### 10.x.2 EBCS AP operation

EBCS DL operation is enabled in an EBCS AP if the length of the dot11EBCSTrafficStreamTable is greater than 0. The EBCS traffic streams to be transmitted are specified in dot11EBCSTrafficStreamTable. An EBCS content ID and EBCS content MAC address shall be assigned by the EBCS traffic stream mapper to identify each different traffic stream of content. Each content ID shall be unique in the EBCS AP group if the EBCS AP belongs to an EBCS AP group, otherwise each content ID shall be unique in the EBCS certificate group. The content ID shall be nonzero.

NOTE—The content ID is contained in the EBCS content MAC address. The value 0 is not used to avoid duplication of the EBCS content MAC address and the EBCS info MAC address.

An EBCS AP that has enabled EBCS DL may use an AP certificate. An EBCS AP using an AP certificate shall belong to an EBCS certificate group, otherwise it shall not belong to an EBCS certificate group. An EBCS AP that has enabled EBCS DL may belong to an EBCS AP group. An EBCS AP group is a subgroup in an EBCS certificate group. Each EBCS AP group is identified by a 2 octet EBCS AP group ID in the range of 00-01 to 7F-FF indicated in dot11EBCSAPGroupID.

NOTE—The EBCS AP group ID that is encoded in the EBCS content MAC address (Address 1 field in MAC header) helps EBCS receivers to filter undesired frames. If the EBCS AP group ID is unique, then the EBCS receiver can omit the corresponding Address 1 filter and hence avoid performing unnecessary authentication steps.

When an EBCS AP is an HE AP:

— The BSS color of EBCS Info frames shall be 0.

— The BSS color of EBCS Data frames shall be 0 if association is not required to consume EBCS traffic streams, otherwise the BSS color of EBCS Data frames shall be the same as that indicated in the HE Operation element in the most recent Beacon frame.

MSDUs with a non-null EBCS content ID in the MA-UNITDATA.request shall bypass IEEE 802.1X filtering. If the destination address in the MA-UNITDATA.request is an EBCS content MAC address, the MAC shall process the request as an EBCS request, otherwise the MAC shall process the request as a non- EBCS request. For an MA-UNITDATA.request for EBCS content, the MAC shall use one of the following three frame authentication mechanisms according to the content ID that is encoded in the EBCS content MAC address (11.55.2 (EBCS addressing)).

— PKFA (12.14.2 (EBCS public key frame authentication (PKFA)))

— HCFA (12.14.3 (EBCS hash chain frame authentication (HCFA)))

— HLSA (12.14.4 (No frame authentication with mandatory higher layer source authentication (HLSA)))

EBCS traffic streams are carried by EBCS Data frames. The EBCS AP shall set the RA of the EBCS Data frame to the EBCS content MAC address, the TA to its MAC address and the SA to the group address assigned to the EBCS traffic stream by the EBCS DL content server according to the HLP destination address, as described in 11.55.2 (EBCS addressing).

If dot11EBCSTrafficStreamPHYType is not 255, an EBCS AP shall generate a PHY-TXSTART.request primitive with the transmission rate information specified by the dot11EBCSTrafficStreamPHYType and dot11EBCSTrafficStreamTxRate for each MPDU according to the EBCS content ID. if dot11EBCSTrafficStreamPHYType is 255, the AP shall select a transmission rate following the rules specified in 10.6.5.4 (Rate selection for other group addressed Data and Management frames).

NOTE—Rate selection for each EBCS traffic stream provides flexibility of operation. For example, one stream that provides a video streaming service can use HE for high throughput. Another stream that provides a directory of the venue can use HT to cover a large area.

When dot11EBCSTrafficStreamBufferableActivated for an EBCS traffic stream is true, an EBCS AP shall buffer the EBCS Data frames for that EBCS traffic stream and shall signal buffered EBCS Data frames via the EBCS TIM field or the EBCS TIM element (see (The EBCS AP Group ID field contains the EBCS AP Group ID of the AP.)) instead of the TIM element. An EBCS AP shall select the Bitmap Mode value in the EBCS TIM field or EBCS TIM element that results in a smaller size of the Content ID Bitmap field. The EBCS AP shall transmit the buffered EBCS Data frames after transmitting the EBCS Info frame or the Beacon frame that contains the EBCS TIM field or the EBCS TIM element indicating the EBCS traffic stream. 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 are buffered at the AP, otherwise the More Data subfield shall be set to 0.

When dot11EBCSTrafficStreamBufferableActivated for an EBCS traffic stream is false, an EBCS AP shall

not buffer the EBCS Data frames and 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 or the TIM element.

EBCS DL content servers are distributing group addressed traffic streams ~~by IP multicast on IP network~~. Each EBCS DL content server can distribute multiple traffic streams that can be identified by the source MAC address and the destination MAC address. If a traffic stream is an IP multicast traffic, the traffic stream is identified by the source IP address, the destination IP address and the destination UDP port.