IEEE P802.11
Wireless LANs

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| Resolutions for some comments on 11me/D4.0 (initial SA ballot) |
| Date: 2023-10-12 |
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Abstract

This submission proposes resolutions for various CIDs on 11me/D4.0. Green indicates material agreed to in the group, yellow material to be discussed, red material rejected by the group and cyan material not to be overlooked. The “Final”/“No Markup” view should be selected in Word (this means Word comments can be disregarded by the Editor).

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| Identifiers | Comment | Proposed change |
| CID 6401Mark RISON | "assumes" -- the standard should not assume, it should require | Make the changes highlighted in red under CIDs 1397/1398/1794 in 22/0353r10 |

Discussion:

As it says in the comment. However, there are concerns about “shall”s for entities that are not specified by 802.11.

Proposed changes:

Make the changes indicated at the following locations:

171.32: In this document, the word *shall* is used to indicate a mandatory requirement. The word *should* is used to indicate a recommendation. The word *may* is used to indicate a permissible action. The word *can* is used for statements of possibility and capability. The words *need(s) to* are used to indicate a requirement on an entity outside the scope of this standard.

342.16: In order for the MAC to operate properly, ~~this standard assumes that~~ the DS needs to meet~~s~~ the MSDU (“object”) reordering requirements of IEEE Std 802.1AC-2012 [B17].

2630.51: In an infrastructure BSS, the Interworking element contains signaling for HeSSs(M12). The HESSID is a (#2047)MAC address that identifies the HeSS(M12). The HESSID value shall be the universal MAC address of one of the APs(#1347) in the HeSS(M12) and all BSSs in the HeSS use the same value. Thus, it is a globally unique identifier that, in conjunction with the SSID, may be used to provide network identification for an SSPN.

NOTE 1—T~~his standard assumes that t~~he HESSID field in the Interworking element ~~is~~needs to be administered ~~consistently~~to have the same value across all BSSs in an HeSS(M12).

2663.22: NOTE—~~This standard assumes that all APs in an ESS are configured consistently for QMF service~~ All APs in an ESS need to have the same QMF settings when GQMF has been enabled for use by associated non-AP STAs.

2884.10: When the IEEE 802.1X authentication completes successfully, ~~the standard assumes that~~ the STA’s IEEE 802.1X Supplicant and the IEEE 802.1X AS share a secret, called an MSK and used to generate a PMK.

2900.41: Upon a successful authentication, the R0KH shall delete any prior PMK-R0 security association for this mobility domain pertaining to this S0KH. The R0KH shall also delete all PMK-R1 security associations derived from that prior PMK-R0 security association.

***<para break>***

The R0KH generates the PMK-R1s ~~are generated by the R0KH~~ and ~~are assumed to be delivered from the R0KH~~ delivers them to the R1KHs within the same mobility domain. The PMK-R1s are used for PTK generation. Upon receiving a new PMK-R1 for an S0KH, an R1KH deletes the prior PMK-R1 security association and PTKSAs derived from the prior PMK-R1.

~~It is assumed by this standard that the PSK is specific to a single S0KH and a single R0KH.~~

2901.39: The distribution of keys from the R0KH to the R1KHs is outside the scope of this standard. ~~It is assumed that t~~The PMK-R1s are distributed from the R0KH to the R1KHs following the requirements specified in 13.2.2 (Authenticator key holders).

2975.48: Each R0KH-ID and R1KH-ID ~~is assumed to be expressed as~~ needs to be a unique identifier within the mobility domain.

2976.24: The R0KH and the R1KH ~~are assumed~~need to have a secure channel between them that can be used to exchange cryptographic keys without exposure to any intermediate parties. The cryptographic strength of the secure channel between the R0KH and R1KH ~~is assumed~~needs to be greater than or equal to the cryptographic strength of the channels for which the keys are used. T~~his standard assumes that t~~he key transfer includes the PMK-R1, the PMK-R1 PMKSA, the PMK-R1 context, and the associated key authorizations.

2976.33: The PMK-R1 distribution from the R0KH to the R1KHs within the same mobility domain shall satisfy the following ~~assumptions~~:

2976.45: The S0KH and S1KH ~~are entities that are assumed to~~ ~~physically~~ reside in the Supplicant.

2977.23: NOTE—~~It is assumed by this standard that t~~The Fast BSS Transition Policy bits in the MDE ~~are administered consistently~~need to be the same across the mobility domain.

Proposed resolution:

REVISED

Make the changes shown under “Proposed changes” for CID 6401 in <this document URL>, which address the locations identified in the comment, using “needs to” for entities not specified by 802.11.

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| Identifiers | Comment | Proposed change |
| CID 6268Mark RISON | There are ~16 "MAC layer"s but these should be "MAC sublayer" | As it says in the comment |

Discussion:

It was discussed during LB that the MAC is a sublayer, not a layer (unlike the PHY, which is a layer).

Proposed changes:

Change as follows:

282.56: From the data delivery point of view, ~~it appears as if all STAs in a mesh BSS are directly connected at the MAC layer~~ the MAC service of a STA in an MBSS appears to provide the exchange of MSDUs directly to any other STA in the MBSS, even if the STAs are not within range of each other.

311.57: The deauthentication notification is provided ~~to (#3469)IEEE Std 802.1X-2020 via the MAC layer~~ by the MLME to the SME. The SME then notifies the 802.1X Authenticator or Supplicant, and the 802.1X entity blocks the IEEE 802.1X Controlled Port from passing any further general data traffic.

314.3: When a non-AP STA searches for, and connects to, an infrastructure BSS, IBSS, or PBSS or attempts to discover services on a network preassociation, it ~~defines the addressing of its MAC layer~~ selects a MAC address for the particular connection.

322.22: In 4.3.23 (Mesh BSS), the concept of the MBSS LAN was introduced. It was noted that, using the multi-hop capability ~~it appears as if all mesh STAs are directly connected at the MAC layer~~, the MAC service of a STA in an MBSS appears to provide the exchange of MSDUs directly to any other STA in the MBSS, even if the STAs are not within range of each other. This is different from an IBSS, where STAs cannot communicate if they are not within range of each other.

Unlike the IBSS, an MBSS might have access to the DS. An MBSS connects through one or more mesh gates to the DS. Since in an MBSS it appears ~~as if all mesh STAs are directly connected at the MAC layer~~ at the MAC service interface as if all mesh STAs provide the direct exchange of MSDUs, the MBSS can be used as a DSM. APs, a portal, and mesh gates might use the MBSS as a DSM to provide the DSS. Thus, different infrastructure BSSs can unite over the MBSS to form an ESS for example.

693.28: The maximum length of the Frame Body field can be determined from the maximum MSDU length plus the length of the Mesh Control field (if present) plus any overhead from encapsulation for encryption (i.e., it is always possible to send a maximum length MSDU, with any encapsulations provided by the MAC ~~layer~~ within a single Data frame).

2340.43: In this example, the upper layer of the originator uses the MA-UNITDATA.request primitive to pass MSDUs to the MAC ~~layer~~ for delivery to the recipient.

2341.1: Delete the “Layer”s highlighted in purple in Figure 10-166:



2459.50: TSPECs and DMG TSPECs are constructed at the SME, from application requirements supplied via the SME, and with information specific to the MAC ~~layer~~.

2536.50: Access delay is measured by the AP’s or PCP’s MAC ~~layer~~ being the average medium access delay for transmitted frames

2578.13: The WNM log event report is intended to capture PHY and MAC ~~layer~~ events ~~related to the operation of those layers~~

4450.6: The PHY layer shall issue a PHY-TXSTART.confirm primitive to the MAC in response to the PHY-TXSTART.request(TXVECTOR) primitive when it is ready to receive an MPDU/A-MPDU from the MAC ~~layer~~.

5705.6: TSPECs are constructed at the SME from application requirements supplied via the SME and with information specific to the MAC ~~layer~~.

5757.31: The EDCA and HCCA mechanism defined in 10.23 (HCF) provide QoS control at the MAC sublayer.

Proposed resolution:

REVISED

Make the changes shown under “Proposed changes” for CID 6268 in <this document URL>, which reword the instances of “MAC layer”.

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| Identifiers | Comment | Proposed change |
| CID 6366Mark RISONC.3 | dot11GroupAddressesTable should also mention the broadcast address where relevant, since this address does not appear in the table | As it says in the comment |

Discussion:

In generic locations the broadcast address is explicitly covered:

1777.33: when the Address 1 field or DA field contains a group address, address filtering is performed by (#1815)comparing the value in the Address 1 field or DA field to all values in the dot11GroupAddressesTable and the broadcast address value

1827.65: the value in the Address 1 field matches any value in the dot11GroupAddressesTable or is the broadcast address(#3522)

In GCR locations not, but GCR uses non-broadcast multicast addresses, e.g.:

1922.20: When using the GCR unsolicited retry retransmission policy for a group address, an AP or mesh STA may retransmit an MPDU to increase the probability of correct reception at the STAs that are listening to this group address (i.e., the group address is in their dot11GroupAddressesTable).

Proposed resolution:

REJECTED

Where a broadcast address might be used, this is already covered. In GCR contexts the broadcast address is not mentioned since GCR does not use the broadcast address.

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| Identifiers | Comment | Proposed change |
| CID 6320Mark RISON | CID 4114 follow-up: there are also references to PHY (or PHY SAP) sublayers, but the PHY is a layer not a sublayer. Search for "sublayer-to-sublayer", "PLME SAP sublayer", "between the two sublayers", "the ERP sublayers" and fix those | As it says in the comment |

Discussion:

We agreed that the MAC is a sublayer (of the Data Link layer) but the PHY is a layer.

Proposed resolution:

REVISED

In 6.2 change “The management information specific to each layer is represented as a MIB for that layer. The MLME and PLME are viewed as “containing” the MIB for that layer. […] The invocation of a SET.request primitive might require that the layer entity perform certain defined actions.” to “The management information specific to each of the MAC sublayer and PHY layer is represented as a MIB for each. The MLME and PLME are viewed as “containing” the MIB for each. […] The invocation of a SET.request primitive might require that the entity perform certain defined actions.”

In 8.3.3 change “support sublayer-to-sublayer interactions” to “support interactions between the MAC sublayer and the PHY layer”.

In 8.3.4.2 change “the primitives for sublayer-to-sublayer interactions” to “the primitives for interactions between the MAC sublayer and the PHY layer”.

In the caption for 15.4.1, 16.3.1, 17.4.1, 19.4.1, 20.11.1, 21.4.1, 22.4.1 24.10.1, 25.14.1, change “PLME SAP sublayer management primitives” to “PLME SAP layer management primitives”.

In 17.2.3 change “The MAC and PHY use this value to determine the number of octet transfers that will occur between the two sublayers during the transfer of the received PSDU.” to “The MAC and PHY use this value to determine the number of octet transfers that will occur between them during the transfer of the received PSDU.”

In 18.4.1 change “Subclauses 18.4.2 (Regulatory requirements) to 18.4.7 (PHY transmit specifications) provide general specifications for the ERP sublayers.” to “Subclauses 18.4.2 (Regulatory requirements) to 18.4.7 (PHY transmit specifications) provide general specifications for the ERP.”

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| Identifiers | Comment | Proposed change |
| CID xxxMark RISON |  |  |

Discussion:

Proposed changes:

Proposed resolution:

REVISED

Make the changes shown under “Proposed changes” for CID xxx in <this document URL>, which xxx

**References:**

802.11me/D4.0 except where otherwise specified

**References:**