IEEE P802.11
Wireless LANs

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| Proposal to correct “STA is an Ap” throughout 802.11 |
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Abstract

During the drafting of IEEE P802.11be text in the baseline specification that states “a STA is an AP” was used to justify the use of this wording in the draft. This wording is very misleading as an STA can never be an AP, as an AP consists of an STA and a DSAF. Text is provided to improve the clarity of the specification and replacing these misleading statements with more correct statements.

r1: Wording changed based on discussion during the TGmf Ad Hoc meeting 2024-11-11 PM2. I have also updated wording, added some PCP related corrections, and provided some editorial changes based on off-line comments received from Mark Hamilton and Juni Malinen. Editorial changes are highlighted in green. The non-editorial changes are highlighted in yellow, as they were in the r0 version.

**Introduction/background:**

A STA is never an AP. The definition of an AP clearly states: “**access point:** [AP] An entity that contains one station (STA) and provides access to the distribution system services, via the wireless medium (WM) for associated STAs. An AP comprises a STA and a distribution system access function (DSAF).” [1]. An AP contains a STA, and when a STA contained in an AP does specific actions or behaves in a specific way the specification should make it clear that such a STA is contained in an AP. Unfortunately, in multiple locations throughout the [1] the phrase “the STA is an AP” is used to identify the specific STA as being contained in an AP. This is very misleading and poorly stated. It is much clear to state that “the STA is contained in an AP”.

Also, this same error has been made for PCPs as a PCP also contains a STA and is never a STA and for mesh gates and proxy mesh gates as mesh gate contains a mesh STA and DASF and is never a STA.

**Text Proposal for [1]:**

206.41

**Replace:** “**source mesh station (STA):** [source mesh STA] A mesh STA from which a medium access control (MAC) service data unit (MSDU) enters the mesh basic service set (MBSS). A source mesh STA is either a mesh STA that is the source of an MSDU or a proxy mesh gate that receives an MSDU from a STA outside of the MBSS and forwards the MSDU on a mesh path.”

**With:** “**source mesh station (STA):** [source mesh STA] A mesh STA from which a medium access control (MAC) service data unit (MSDU) enters the mesh basic service set (MBSS). A source mesh STA is either a mesh STA that is the source of an MSDU or contained in a proxy mesh gate that receives an MSDU from a STA outside of the MBSS and forwards the MSDU on a mesh path.”

223.60

**Replace:** “NOTE—An EBCS relaying station (STA) can be an access point (AP) that has established its own infrastructure basic service set (BSS) or a STA that provides a relaying service without establishing an infrastructure BSS.”

**With:** “NOTE—An EBCS relaying station (STA) can be contained in an access point (AP) that has established its own infrastructure basic service set (BSS) or a STA that provides a relaying service without establishing an infrastructure BSS.”

227.33

**Replace:** “**geolocation database dependent (GDD) geolocated non-access point (non-AP) station (STA):** [GDD geolocated non-AP STA] A STA that is not an AP and is authorized by a geolocation database (GDB) to operate at its current location.”

**With:** “**geolocation database dependent (GDD) geolocated non-access point (non-AP) station (STA):** [GDD geolocated non-AP STA] A STA that is not contained in an AP and is authorized by a geolocation database (GDB) to operate at its current location.”

227.37

**Replace:** “**geolocation database dependent (GDD) non-access point (non-AP) station (STA):** [GDD non-AP STA] A STA that is not an AP but operates under the control of a GDD enabling STA.”

**With:** “**geolocation database dependent (GDD) non-access point (non-AP) station (STA):** [GDD non-AP STA] A STA that is not contained in an AP but operates under the control of a GDD enabling STA.”

237.17

**Replace:** “**non-personal basic service set (BSS) control point (non-PCP) station (STA):** [non-PCP STA] A STA that is not a personal BSS control point (PCP).”

“**non-personal basic service set (BSS) control point (non-PCP) station (STA):** [non-PCP STA] A STA that is not a personal BSS control point (PCP).” “**non-personal basic service set (BSS) control point (non-PCP) station (STA):** [non-PCP STA] A STA that is not contained in a personal BSS control point (PCP).”

322.46

**Replace:** “Since each STA within a PBSS can operate as a PCP, each STA in the PBSS is capable of providing the PCPS, if it becomes the PCP of the PBSS.”

**With:** “Since each STA within a PBSS can operate as a STA contained in a PCP, each STA in the PBSS is capable of providing the PCPS, if it becomes the PCP of the PBSS.”

326.26

**Replace:** “An important difference between the IBSS and the PBSS is that, within the PBSS, Beacon frames are not transmitted by every STA and instead only a single STA, namely the PCP, is responsible for DMG Beacon frame transmission.”

**With:** “An important difference between the IBSS and the PBSS is that, within the PBSS, Beacon frames are not transmitted by every STA and instead only the single STA contained in the PCP, is responsible for DMG Beacon frame transmission.”

360.59

**Replace**: “An initiator STA discovers a peer STA’s RSNA policies through the DMG Beacon frames from the peer STA if the peer STA is the PCP or through the Probe Response or Information Response frames from the peer STA”

**With:** Replace: “An initiator STA discovers a peer STA’s RSNA policies through the DMG Beacon frames from the peer STA if the peer STA is contained in the PCP or through the Probe Response or Information Response frames from the peer STA”

692.48

**Replace:** “Equal to 0 if the STA is an AP, mesh STA, or IBSS STA.”

**With:** “Equal to 0 if the STA is a mesh STA, an IBSS STA, or is contained in an AP.

693.2

**Replace:** “The AID13 subfield is equal to 0 if the STA is an AP or is in an IBSS.”

**With:** “The AID13 subfield is equal to 0 if the STA is contained in an AP or is in an IBSS.”

733.1

**Replace:**

“1) If the STA is an AP with dot11MultiBSSIDImplemented set to false, then this address

is the BSSID.

2) If the STA is an AP with dot11MultiBSSIDImplemented set to true and the Address 1 field is not set to the broadcast address, then this address is the BSSID of the AP’s BSS (which is either the transmitted BSSID or a nontransmitted BSSID).

3) If the STA is an AP with dot11MultiBSSIDImplemented set to true and the Address 1 field is set to the broadcast address, then this address is the transmitted BSSID.”

**With:**

“1) If the STA is contained in an AP with dot11MultiBSSIDImplemented set to false, then this address

is the BSSID.

2) If the STA is contained in an AP with dot11MultiBSSIDImplemented set to true and the Address 1 field is not set to the broadcast address, then this address is the BSSID of the AP’s BSS (which is either the transmitted BSSID or a nontransmitted BSSID).

3) If the STA is contained in an AP with dot11MultiBSSIDImplemented set to true and the Address 1 field is set to the broadcast address, then this address is the transmitted BSSID.”

733.27

**Replace:** “i) If the STA is an AP or PCP, the Address 3 field is the same as the Address 2 field.”

**With:** “i) If the STA is contained in an AP or PCP, the Address 3 field is the same as the Address 2 field.”

737.52

**Replace:** “Indicates the QMF policy parameters of the transmitting STA. The QMF Policy element is present when dot11QMFActivated is true and the transmitting STA is an AP or a mesh STA. This element is not present otherwise.”

**With:** ““Indicates the QMF policy parameters of the transmitting STA. The QMF Policy element is present when dot11QMFActivated is true and the transmitting STA is a mesh STA or is contained in an AP. This element is not present otherwise.”

1910.48

**Replace:** “b) The STA is an AP that has an S1G relay STA associated to it and all the conditions below are satisfied:”

**With:** “b) The STA is contained in an AP that has an S1G relay STA associated to it and all the conditions below are satisfied:”

2167.15

**Replace:** “e) If the Address Extension Mode is “Address4” (see Table 9-35 (Valid values for the Address Extension Mode subfield)) and the recipient mesh STA is a proxy mesh gate and if the Mesh TTL value has not reached zero and if dot11MeshForwarding is true, the MSDU is forwarded according to 14.12.3.2.”

**With:** “e) If the Address Extension Mode is “Address4” (see Table 9-35 (Valid values for the Address Extension Mode subfield)) and the recipient mesh STA is contained in a proxy mesh gate and if the Mesh TTL value has not reached zero and if dot11MeshForwarding is true, the MSDU is forwarded according to 14.12.3.2.”

2176.13

**Replace:** “— The STA is an AP or PCP and the value of the CBAP Only field is equal to 1 and the value of the CBAP Source field is equal to 1 within the DMG Parameters field of the DMG Beacon frame that allocates the CBAP”

**With:** “— The STA is contained in an AP or PCP and the value of the CBAP Only field is equal to 1 and the value of the CBAP Source field is equal to 1 within the DMG Parameters field of the DMG Beacon frame that allocates the CBAP”

2422.43

**Replace:** “— The STA is an AP to which the S1G relay STA of the S1G relay is associated and the S1G relay STA has successfully transmitted to the AP a STA Information Announcement frame containing the AID that the S1G relay AP of the S1G relay has assigned to the next hop non-AP STA.”

**With:** “— The STA is contained in an AP to which the S1G relay STA of the S1G relay is associated and the S1G relay STA has successfully transmitted to the AP a STA Information Announcement frame containing the AID that the S1G relay AP of the S1G relay has assigned to the next hop non-AP STA.”

2476.14

**Replace:** “1) The STA is an AP.”

**With:** “1) The STA is contained in an AP.”

2476.21

**Replace:** “5) The STA is a PCP.”

**With:** “5) The STA is contained in a PCP.”

2476.50

**Replace:** “3) The STA is an AP that is in the same colocated AP set as a 6 GHz AP, the SSID in the Probe Request frame matches the SSID of the 6 GHz AP, and the STA reports the colocated 6 GHz AP in Beacon and Probe Response frames (see 11.53).”

**With:** “3) The STA is contained in an AP that is in the same colocated AP set as a 6 GHz AP, the SSID in the Probe Request frame matches the SSID of the 6 GHz AP, and the STA reports the colocated 6 GHz AP in Beacon and Probe Response frames (see 11.53).”

2476.61

**Replace:** “6) dot11SSIDListImplemented is true, the STA is an AP that is in the same colocated AP set as a 6 GHz AP, the SSID List element is present in the Probe Request frame and includes the SSID corresponding to the colocated 6 GHz AP, and the AP reports the colocated 6 GHz AP in Beacon and Probe Response frames (see 11.53).

**With:** “6) dot11SSIDListImplemented is true, the STA is contained in an AP that is in the same colocated AP set as a 6 GHz AP, the SSID List element is present in the Probe Request frame and includes the SSID corresponding to the colocated 6 GHz AP, and the AP reports the colocated 6 GHz AP in Beacon and Probe Response frames (see 11.53).

2477.8

**Replace:** “8) dot11ShortSSIDListImplemented is true, the STA is an AP that is in the same colocated AP set as a 6 GHz AP, the Short SSID List element is present in the Probe Request frame and includes the short SSID corresponding to the SSID of the 6 GHz AP, and the AP reports this 6 GHz AP in its Beacon and Probe Response frames (see 11.53).”

**With:** “8) dot11ShortSSIDListImplemented is true, the STA is contained in an AP that is in the same colocated AP set as a 6 GHz AP, the Short SSID List element is present in the Probe Request frame and includes the short SSID corresponding to the SSID of the 6 GHz AP, and the AP reports this 6 GHz AP in its Beacon and Probe Response frames (see 11.53).”

2482.11

**Replace:** “NOTE 1—A STA might determine that a peer STA is within range by, for example, receiving a frame from that peer STA or, if the peer STA is an AP, by receiving a frame from another AP that corresponds to a colocated BSS of the AP.”

**With:** “NOTE 1—A STA might determine that a peer STA is within range by, for example, receiving a frame from that peer STA or, if the peer STA is contained in an AP, by receiving a frame from another AP that corresponds to a colocated BSS of the AP.”

2902.50

**Replace:** “An MM-SME coordinated STA shall be MMSL cluster capable, except for an MM-SME that coordinates two STAs where one STA is a member AP or member PCP in a centralized AP or PCP cluster and the other STA is associated to the S-AP of the centralized AP or PCP cluster.”

**With:** “An MM-SME coordinated STA shall be MMSL cluster capable, except for an MM-SME that coordinates two STAs where one STA is contained in a member AP or member PCP in a centralized AP or PCP cluster and the other STA is associated to the S-AP of the centralized AP or PCP cluster.”

3299.36

**Replace:** “External MAC address of the active proxy information that is not longer usable and for which the mesh STA is the proxy mesh gate”

**With:** “External MAC address of the active proxy information that is no longer usable and for which the mesh STA is contained in the proxy mesh gate”

3305.51

**Replace:** “The mesh STA is a mesh gate not sending PREQ element or RANN element with the Gate Announcement field equal to 1 and dot11MeshGateAnnouncements is true. The mesh STA shall transmit the Gate Announcement frame at every dot11MeshGateAnnouncementInterval.”

**With:** “The mesh STA is contained in a mesh gate not sending PREQ element or RANN element with the Gate Announcement field equal to 1 and dot11MeshGateAnnouncements is true. The mesh STA shall transmit the Gate Announcement frame at every dot11MeshGateAnnouncementInterval.”

4056.23

**Replace:** “— The PPDU is either a VHT MU PPDU or an HE MU PPDU with the RXVECTOR parameter UPLINK\_FLAG equal to 0, and the STA is an AP.”

**With:** “— The PPDU is either a VHT MU PPDU or an HE MU PPDU with the RXVECTOR parameter UPLINK\_FLAG equal to 0, and the STA is contained in an AP.”

4134.9

**Replace:** “— If the TWT responding STA is an AP then it may set the Responder PM Mode subfield to 1 only if all non-AP STAs that are associated to it indicate support of TWT and the AP has set the TWT Required subfield to 1 in the HE Operation element it transmits; otherwise, it shall set the Responder PM Mode subfield to 0.”

**With:** “— If the TWT responding STA is contained in an AP then it may set the Responder PM Mode subfield to 1 only if all non-AP STAs that are associated to the AP indicate support of TWT and the AP has set the TWT Required subfield to 1 in the HE Operation element it transmits; otherwise, it shall set the Responder PM Mode subfield to 0.”

4163.64

**Replace:** “2) The most recently received Spatial Reuse Parameter Set element from its associated AP had the Non-SRG OBSS PD SR Disallowed subfield equal to 0, or the non-AP STA has not received a Spatial Reuse Parameter Set element from its associated AP, or the STA is an AP and its most recently transmitted Spatial Reuse Parameter Set element had the Non-SRG OBSS PD SR Disallowed subfield equal to 0, or the STA is an AP and has not transmitted a Spatial Reuse Parameter Set element.”

**With:** “2) The most recently received Spatial Reuse Parameter Set element from its associated AP had the Non-SRG OBSS PD SR Disallowed subfield equal to 0, or the non-AP STA has not received a Spatial Reuse Parameter Set element from its associated AP, or the STA is contained in an AP and its most recently transmitted Spatial Reuse Parameter Set element had the Non-SRG OBSS PD SR Disallowed subfield equal to 0, or the STA is a contained in an AP and has not transmitted a Spatial Reuse Parameter Set element.”

4510.43

**Replace:** “When the SSSW\_DIR is set to Initiator, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to intended recipient in which case this field contains a random value in the range 0 to 255.

When the SSSW\_DIR is set to Responder, contains the AID of the STA that transmits the Short SSW

PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID or

the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Source AID field in the received Short SSW PPDU during the preceding ISS.”

**With:** “When the SSSW\_DIR is set to Initiator, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to intended recipient in which case this field contains a random value in the range 0 to 255.

When the SSSW\_DIR is set to Responder, contains the AID of the STA that transmits the Short SSW

PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID or

the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Source AID field in the received Short SSW PPDU during the preceding ISS.”

4511.12

**Replace:** “When the SSSW\_DIR is set to Initiator, contains the AID of the STA addressed by the Short SSW PPDU, except if the addressed STA is a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to the intended recipient in which case this field contains a random value in the range 0 to 255.

When the SSSW\_DIR is set to Responder, contains the AID of the STA that transmits the Short SSW

PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Destination AID field in the received Short SSW PPDU during the preceding ISS.”

**With:** “When the SSSW\_DIR is set to Initiator, contains the AID of the STA addressed by the Short SSW PPDU, except if the addressed STA is contained in a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to the intended recipient in which case this field contains a random value in the range 0 to 255.

When the SSSW\_DIR is set to Responder, contains the AID of the STA that transmits the Short SSW

PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Destination AID field in the received Short SSW PPDU during the preceding ISS.”

4701.40

**Replace:** “Corresponds to TXVECTOR parameter SSSW\_SOURCE\_AID. In an ISS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to intended recipient in which case this field contains a random value in the range 0 to 255.

In an RSS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Source AID field in the received Short SSW PPDU during the preceding ISS.”

**With:** “Corresponds to TXVECTOR parameter SSSW\_SOURCE\_AID. In an ISS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to the intended recipient in which case this field contains a random value in the range 0 to 255.

In an RSS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Source AID field in the received Short SSW PPDU during the preceding ISS.”

4701.54

**Replace:** “Corresponds to TXVECTOR parameter SSSW\_DESTINATION\_AID. In an ISS, contains the AID of the STA addressed by the Short SSW PPDU, except if the addressed STA is a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to the intended recipient in which case this field contains a random value in the range 0 to 255.

In an RSS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265 (EDMG Operation element(11ay))) or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Destination AID field in the received Short SSW PPDU during the

preceding ISS.”

**With:** “Corresponds to TXVECTOR parameter SSSW\_DESTINATION\_AID. In an ISS, contains the AID of the STA addressed by the Short SSW PPDU, except if the addressed STA is contained in a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265) or the transmitting STA is not associated to the intended recipient in which case this field contains a random value in the range 0 to 255.

In an RSS, contains the AID of the STA that transmits the Short SSW PPDU, except if the transmitting STA is contained in a PCP or an AP in which case this field contains the BSS AID (see 9.4.2.265 (EDMG Operation element(11ay))) or the transmitting STA is not associated to the intended recipient in which case this field contains the value contained in the Destination AID field in the received Short SSW PPDU during the

preceding ISS.”

4969.31

**Replace:** “NOTE 1—An EBCS relaying STA can be an AP that has established its own infrastructure BSS or a STA that provides a relaying service without establishing an infrastructure BSS.”

**With:** “NOTE 1—An EBCS relaying STA can be contained in an AP that has established its own infrastructure BSS or a STA that provides a relaying service without establishing an infrastructure BSS.”

5618.42

**Replace:** “"This is a control variable used only if the STA is an AP. It is set to true by an AP that advertises MU EDCA parameters so that its associated STAs use MU EDCA parameters."”

**With:** “"This is a control variable used only if the STA is contained in an AP. It is set to true by an AP that advertises MU EDCA parameters so that its associated STAs use MU EDCA parameters."”

**References:**

 [1] IEEE P802.11-ReVme/D7.0, August 2024.