IEEE P802.11
Wireless LANs

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| CR for out of band discovery |
| Date: 2019-11-11 |
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Abstract

This document provides CR for CIDs: 24149 24150 24430 24535 24056 24258

R0: presented version

R1: new resolutions for CID #24056, #24258 and 24535

1. **Introduction**

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 TGax Draft. The introduction and the explanation of the proposed changes are not part of the adopted material.

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

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result o***

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| **CID** | **Commenter** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 24114 | Patil, Abhishek | 307.25 | 11.5 | 11ax expanded the format of RNR and extended its functionality to 6 GHz discovery and advertisement of nonTxBSSID profiles. Therefore, it is likely that an AP is unable to fit all the information in a single RNR IE. | Update the spec (11.50 and frame formats) to allow more than one RNR IE in relevant mgmt. frames. Provide clear rules to prevent abuse (e.g., an AP shall include more than one RNR only if it is unable to carry information of its co-located 6 GHz AP(s), nonTxBSSIDs, and/or neighboring AP(s) in a single RNR element). |  |
| 24149 | McCann, Stephen | 462.28 | 26.17.2.4 | The cited sentence in summary states "An AP that .... is in the same co-located AP set as one or more6 GHz APs shall .... support responding with a Neighbor Report ANQP element",but then the note below states"NOTE 1--The Neighbor Report ANQP-element can also carry Neighbor Report elements .... that are not in the same co-located AP set."which contradicts the first sentence. | Change the cited sentence to read "An AP that operates in the 2.4 GHz or 5 GHz band and has neighbor information about one or more6 GHz APs shall include the Advertisement Protocol element in Beacon and Probe Response frames that ittransmits and shall support responding with a Neighbor Report ANQP element". | Reject – the shall requirement in the normative text applies only to the APs in the same co-located AP set. The note simply recalls that it is possible to also provide information for other APs, but there is no shall statements there. |
| 24150 | McCann, Stephen | 462.06 | 26.17.2.4 | Does the cited sentence "If an AP operating in the 2.4 GHz or 5 GHz band is in the same co-located AP set as a 6 GHz AP andhas a different SSID....", assume that the different SSIDs are within the same ESS? | Add the following note at P462L15 "Note - It is recommended that the different SSIDs belong to the same ESS". | Reject – there is no mention of an ESS in this paragraph. APs with different SSIDs can be part of the same co-located AP set, which is the scenario we are in in this paragraph. |
| 24430 | RISON, Mark |  | 26.17.2.4 | [Resubmission of comment withdrawn on D5.0] CID 20804. The resolution seems to be trying to make a distinction between a "recommendation to the internal implementation" and "a normative ["should"] behavior from the standard's perspective". I don't think there is any such distinction. If there is a distinction between "NOTE it is recommended" and "should", please point me at the IEEE style guide or similar document that describes the distinction | Change "NOTE 2--It is recommended that the AP responds with a GAS comeback delay of zero." to "The AP should respond with a GAS comeback delay of zero." in the referenced subclause | Revised – Change "NOTE 2--It is recommended that the AP responds with a GAS comeback delay of zero." to "NOTE 2- The AP might respond with a GAS comeback delay of zero." |
| 24535 | Hamilton, Mark | 165.18 | 9.4.2.36 | How does a reporting STA know whether "the reported AP is part of an ESS where all the APs that operate in the same channel as the reported AP and that might be detected by a STA receiving this frame have dot11UnsolicitedProbeResponseOptionActivated equal to true"? Same problem in the RNR. Same thing for "Member Of ESS With 2.4/5 GHz Co-Located AP subfield" in the NR and RNR. | Either need to remove these subfields from the respective NR and RNR frames, or add a MIB attribute that can be set by an external entity to tell an AP that it is part of such an ESS, and use the new MIB attribute to set these subfields. | Revised – modify the dot11UnsolicitedProbeResponseOptionActivated MIB variable description to refer to an AP that is part of an ESS where all APs schedule for transmissions probe request every 20 TUs. Apply the changes marked as #24535 |
| 24056 | Inoue, Yasuhiko | 43.45 | 3.2 | "detected access point (AP): An AP might be detected by a station (STA) if the STA and the AP are on the same channel and in range."I do not think we need a definition for such a general term. | Remove the definition of detected access point. | Revised – remove the duplications in the spec and reference the definition to avoid ambiguities. Apply the changes marked as #24056  |
| 24258 | Seok, Yongho | 43.45 | 3.2 | The terminology of the detected AP is not referred in current draft.There is no reason to have it in the definition. | Remove the definition of the detected AP. | Revised – remove the duplications in the spec and reference the definition to avoid ambiguities. Apply the changes marked as #24258 |
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1. **Proposed changes**

**9.4.2.36 Neighbor Report element**

**TGax editor: modify the following sentence** **(**#24056, #24258)

The Co-Located With 6 GHz AP subfield is set to 1 to indicate that the AP reported by the Neighbor Report element is in the same co-located AP set as a 6 GHz AP and that the 6 GHz AP can be discovered by receiving Management frames (as described in subclause 26.17.2.3 (Scanning in the 6 GHz band) and 26.17.2.4 (Out of band discovery of a 6 GHz BSS)) sent by the reported AP. It is set to 0 otherwise.

**TGax editor: modify the following paragraph starting P165 L15 in D6.0 (**#24056, #24258)

The Unsolicited Probe Responses Active subfield is set to 1 if the reported AP is part of an ESS where all the APs that operate in the same channel as the reported AP and that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2 (Definitions specific to IEEE 802.11) have dot11UnsolicitedProbeResponseOptionActivated equal to true and so are transmitting unsolicited Probe Response frames every 20 TUs or less (see 26.17.2.3 (Scanning in the 6 GHz band)). It is set to 0 otherwise or if the reporting AP does not have that information.

The Member Of ESS With 2.4/5 GHz Co-Located AP subfield is set to 1 if the reported AP is part of an ESS where each AP in the ESS and operating in the same band as the reported AP (irrespective of the operating channel in that band) that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11) has dot11MemberOfColocated6GHzESSOptionActivated equal to true and also has a corresponding AP operating in the 2.4 GHz or 5 GHz bands that is in the same co-located AP set as that AP. It is set to 0 otherwise or if the reporting AP does not have that information. It is reserved if the reported AP is operating in the 2.4 GHz or 5 GHz bands.

NOTE—This subfield indicates that the reported AP is part of an ESS that has no 6 GHz-only APs that might be detected by a STA receiving this frame. This means that all APs operating in the 6 GHz band that are part of that ESS that might be detected by a STA receiving this frame can be discovered in the 2.4 GHz and/or 5 GHz bands.

**TGax editor: modify the following paragraph starting P172 L55 in D6.0 (**#24056, #24258)

The Member Of ESS With 2.4/5 GHz Co-Located AP subfield is set to 1 if the reported AP is part of an ESS where each AP in the ESS and operating in the same band as the reported AP (irrespective of the operating channel in that band) that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11) has dot11MemberOfColocated6GHzESSOptionActivated equal to true and also has a corresponding AP operating in the 2.4 GHz or 5 GHz bands that is in the same co-located AP set as that AP. It is set to 0 otherwise or if the reporting AP does not have that information. It is reserved if the reported AP is operating in the 2.4 GHz or 5 GHz bands.

NOTE—This subfield indicates that the reported AP is part of an ESS that has no 6 GHz-only APs that might be detected by a STA receiving this frame. This means that all APs operating in the 6 GHz band that are part of that ESS that might be detected by a STA receiving this frame can be discovered in the 2.4 GHz and/or 5 GHz bands.

The Unsolicited Probe Responses Active subfield is set to 1 if the reported AP is part of an ESS where all the APs that operate in the same channel as the reported AP and that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11) have dot11UnsolicitedProbeResponseOptionActivated equal to true and are transmitting unsolicited Probe Response frames every 20 TUs or less (see 26.17.2.3 (Scanning in the 6 GHz band)). It is set to 0 oth-erwise or if the reporting AP does not have that information.

**TGax editor: modify the following paragraph starting P461 L14 in D6.0 (**#24056, #24258)

— Otherwise, if the STA has discovered the presence of an AP in that channel through means that are out of scope of the standard and the AP might be detected by the STA (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11), then the STA may send a Probe Request frame to the broadcast destination address in that channel, with the Address 3 field set to the BSSID of that AP starting from step c) of 11.1.4.3.2 (Active scanning procedure for a non- DMG STA)

— Otherwise, if the FILSProbeTimer reaches dot11FILSProbeDelay and the channel is a PSC, then the STA may, subject to the other rules in this subclause, send a Probe Request to the broadcast destination address in that channel, starting from step c) of 11.1.4.3.2 (Active scanning procedure for a non- DMG STA),

— Otherwise, the STA shall not send a Probe Request frame to the broadcast destination address in that channel.

NOTE 1—The STA might send an individually addressed Probe Request frame to an AP for reasons other than active scan (e.g. to obtain an updated EDCA parameter set) even if it has already received a FILS Discovery, Probe Response or Beacon frame from that AP.

**TGax editor: modify the following paragraph starting P462 L57 in D6.0 (**#24056, #24258)

An AP may set the Unsolicited Probe Responses Active subfield to 1 for a reported AP in a Reduced Neigh-bor Report element or Neighbor Report element in a frame it transmits if all 6 GHz APs of the same ESS as the reported AP that operate in the same channel as the reported AP and that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11) have dot11UnsolicitedProbeResponseOptionActivated equal to true and so are trans-mitting unsolicited Probe Response frames every 20 TUs (see 26.17.2.3.2 (AP behavior for fast passive scanning)). Otherwise, the AP shall set the Unsolicited Probe Responses Active subfield to 0.

An AP may set the Member Of ESS With 2.4/5 GHz Co-Located AP subfield to 1 in a Reduced Neighbor Report element in a frame it transmits, if the reported AP operates in the 6 GHz band and is part of an ESS where each AP in the ESS that is operating in the same band as the reported AP and that might be detected by a STA receiving this frame (see detected access point (AP) definition in 3.2(Definitions specific to IEEE 802.11) (irrespective of the operating channel), has dot11MemberOfColocated6GHz- ESSOptionActivated equal to true and also has a corresponding AP operating in the 2.4 GHz or 5 GHz band that is in the same co-located AP set as that AP.

NOTE—This subfield indicates that the reported AP is part of an ESS that has no 6 GHz-only APs that might be detected by a STA receiving this frame. This means that all APs operating in the 6 GHz band that are part of that ESS that might be detected by a STA receiving this frame can be discovered in the 2.4 GHz and/or 5 GHz bands.

**TGax editor: modify the following paragraph starting P747 L25 in D6.0 (**#24535)

dot11UnsolicitedProbeResponseOptionActivated OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This is a control variable.

This attribute, when true, indicates that the station implementation is an AP and is part of an ESS where all the APs operating at 6 GHz in a predetermined range schedule for transmission unsolicited Probe Response frames every 20 TUs or less (see 26.17.2.3.2 (AP behavior for fast passive scanning)). The capability is disabled otherwise."