IEEE P802.11
Wireless LANs

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| Resolution for CIDs in clause 11.1.4 |
| Date: March 12, 2019 |
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 Abstract

This submission proposes resolutions for comments received for TGax LB238 (9):

~~20257~~, 20032, 20491, 20033, 20272, 20080, 20271, 20035, 20025

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Updates based on feedback when the doc was presented 3/12/19 PM2
	+ CID 20257 – removed (resolved in another doc from Jarkko)
	+ CID 20080 and 20035 deferred for further discussion
	+ Updated resolution for CID 20025
* Rev 2: Updated resolution for CID 20035, 20025 and 20080 based on offline feedback

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. This introduction is 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 of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

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| **CID** | **Commenter** | **Section** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 20491 | Mark RISON | 11.1.4.3.2 | 275 | 47 | "indicated in the SSID List and/or Short SSID List" -- the "and/or" is not clear. It might be read as indicating the STA can just choose to ignore one or the other list | Clarify | **Revised**Agree with the comment.**TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20491** |
| 20032 | Abhishek Patil | 11.1.4.3.2 | 275 | 18 | Changes from 11-19/61r7 are missing (CR motion 782). | Please include approved changes from doc 11-19/61r7 (CR motion 782). It may be better to check all previously approved contributions to make sure other changes were not missed. | **Revised**The instruction to the editor in doc 11-19/61r7 were not clear (implied adding a new paragraph). The editor had incorporated the change at the correct location – bullet d. No further changes are needed. |
| ~~20257~~ | ~~Jarkko Kneckt~~ | ~~11.1.4.3.4~~ | ~~275~~ | ~~65~~ | ~~D4.0 has implemented wrong reference number. The submission 19/0061r7 contains a reference to the clause 27.16.1a.1 (Out of the band discovery of 6GHz BSS) which discusses how the 6 GHz BSSs are advertised in 2.4 and 5 GHz bands. D4.0 has a reference to "scanning in 6 GHz". The reference should be to the "out of the band discovery" clause, because this clause defines how 6 GHz BSS information is present in the lower bands.~~ | ~~Please change the reference at the end of the steps 2a and 6 to 26.17.2.4 (Out of band discovery of a 6 GHz BSS), as should be implemented based on the accepted CR motion #782.~~ | **~~Revised~~**~~Agree with the comment.~~**~~TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20257~~** |
| 20271 | Joseph Levy | 11.1.4.3.4 | 276 | 1 | It isn't necessary to restrict the STA behavior to include dot11SSIDListImplemented is true. If the STA received a SSID List element in the Probe Request frame it should check if the SSID of the STA's BSS is in that element independent of if dot11SSIDListImpemented is true. | Delete the addition and edit and return the text to the base line wording: "The SSID List element is present in the Probe Request frame and includes the SSID of the STA's BSS." | **Reject**Implementation of SSID List feature is option. However, at present, there is no indication of whether an AP supports reception and responding to a Probe Request frame carrying SSID List element. The (new) MIB dot11SSIDListImplemented is added to indicate this support |
| 20033 | Abhishek Patil | 11.1.4.3.4 | 276 | 19 | REVmd recently discussed and updated this sub-clause to cover the case of Probe Response in a multiple BSSID set. The approved changes appear in D2.1. | Remove bullet L | **Revised**Agree with the comment. REVmd D2.1 provides the same rules as 11ax – i.e., in a multiple BSSID set, only the TxBSSID responds to a probe (see doc 11-19/0146r3). Therefore, 11ax doesn’t need to repeat the rule.**TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20033** |
| 20272 | Joseph Levy | 11.1.4.3.4 | 276 | 33 | Deletion of the 4th paragraph (which is really the 5th paragraph in the base line) changes the base line FILS behavior. I don't believe this paragraph should be deleted. If this behavior is not desired for HE STAs then a restriction should be added. | Delete the deletion of the paragraph | **Revised**The changes in 11ax spec that only TxBSSID responds to a probe request are applicable to any multi-BSS AP (i.e., not limited to HE AP, therefore applicable to FILS AP too). Further, REVmd has deleted this paragraph as a resolution to CID 2010 which proposes the same rules as 11ax (only TxBSSID responds to a probe). See doc 11-19/0146r3. Therefore, the instruction for deleting this paragraph should be removed from 11ax draft. **TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20272** |
| 20080 | Abhishek Patil | 26.17.2.3.3 | 432 | 5 | An AP operating in 6GHz should be mandated to follow the additional rules described in 11.1.4.3.4 (P2132L8) when responding to a Probe Request carrying FILS Request Parameter element. | As in comment | **Revised**Agree with the comment. FILS Request Parameters element carries criteria that an AP needs to meet in order to respond to a probe request frame. Mandating these rules will reduce unwanted probe response frames on 6 GHz. Further, if a Beacon frame is queued for transmission, an AP can respond with a Beacon frame as described in 11.1.4.3.4**TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20080** |
| 20025 | Abhishek Patil | 9.4.2.177 | 155 | 8 | Are HT and VHT values valid when probing in 6GHz? Spec should clarify. | As in comment | **Revised**Added text to prohibit a STA from setting the value to HT or VHT when probing in 6GHz band.**TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20025** |
| 20035 | Abhishek Patil | 11.1.4.3.10 | 276 | 34 | Update the list in 11.1.4.3.10 to include dynamic parameters that 11ax added. | Add MU-EDCA Parameter set, Spatial Reuse Parameter Set, HE BSS Load, Quiet Time Parameter and any other relavent ones to the list. | **Revised**Agree with the comment.**TGax editor, please make changes as showing in 11-19/0436r2 with the tag CID 20035** |

* **Acquiring synchronization, scanning**
* **Active scanning**
* **Active scanning procedure for a non-DMG STA**

***TGax Editor: Please make changes as shown below to the following paragraphs in this subclause***

***Change item b), c) and d) in the 2nd paragraph as follows:(#15057)***

For each channel to be scanned:

* If the STA is a FILS STA, set the FILSProbeTimer to 0 and starts the FILSProbeTimer. While the FILS ProbeTimer is less than dot11FILSProbeDelay the STA may skip a probe request transmission and proceed to step i) after setting the ActiveScanningTimer to 0 and starting the ActiveScanningTimer, if one of the following conditions matches:
* The STA receives a broadcast addressed Probe Request frame that the SME considers to be suitable to discover a candidate AP for association.
* The STA receives one or more of Probe Response, Beacon, Measurement Pilot, or FILS Discovery frame that identify an AP that the SME considers a suitable candidate for association.
* The STA successfully sent a Probe Request frame by following the UORA procedure as defined in 26.5.5 (UL OFDMA-based random access (UORA)).

NOTE—How an SME considers a probe request or AP suitable is outside the scope of this standard.

* Perform the basic access procedure as defined in 10.3.4.2 (Basic access). While waiting for access to WM, STA may send one or more Probe Request frames by following the UORA procedure and proceed to step i)
* Send a probe request to the broadcast destination address. The probe request is sent with the SSID and BSSID from the received MLME-SCAN.request primitive. When either the SSID List or Short SSID List or both are present in the MLME-SCAN.request primitive, send one or more Probe Request frames, each with ~~an SSID~~ one or more SSIDs indicated in either the SSID List or Short SSID List or both, and the BSSID from the MLME-SCAN.request primitive***(#15651)***[20491]
* **Criteria for sending a response**

***TGax Editor: Please make changes as shown below to the following paragraphs in this subclause***

***Change item g) in the first paragraph and add item l) as follows:***

A STA that receives a Probe Request frame shall not respond if any of the following apply:

* The STA is not a mesh STA and none of the following criteria are met:
* The SSID in the Probe Request frame is the wildcard SSID.
* The SSID in the Probe Request frame matches the SSID of the STA’s.
* dot11ColocatedRNRImplemented is true, the SSID in the Probe Request frame matches the SSID of an AP that is co-located with the STA and the AP is reported by the STA in a Reduced Neighbor Report element in Beacons and Probe Responses according to the rules defined in [20257]26.17.2.4 (Out of band discovery of a 6 GHz BSS).
* ~~The~~ dot11SSIDListImplemented is true, the SSID List element is present in the Probe Request frame and includes the SSID of the STA’s BSS.
* dot11ColocatedRNRImplemented is true, the dot11SSIDListImplemented is true, the SSID List element is present in the Probe Request frame and includes the SSID corresponding to an AP that is co-located with the STA and the AP is reported by the STA in a Reduced Neighbor Report element in Beacons and Probe Responses according to the rules defined in 26.17.2.4 (Out of band discovery of a 6 GHz BSS).
* dot11ShortSSIDListImplemented is true, the Short SSID List element is present in the Probe Request frame and includes the Short SSID corresponding to the SSID of the STA's BSS.
* dot11ColocatedRNRImplemented is true, dot11ShortSSIDListImplemented is true, the Short SSID List element is present in the Probe Request frame and includes the Short SSID corresponding to the SSID of an AP that is co-located with the STA and the AP is reported by the STA in a Reduced Neighbor Report element in Beacons and Probe Responses according to the rules defined in [20257]26.17.2.4 (Out of band discovery of a 6 GHz BSS).

[20033][20272]***(#15058)***

26.17.2.3.2 Fast passive scanning

***TGax editor, please update the last paragraph in this subclause as shown below:***

An AP operating in the 6 GHz band that transmits a FILS Discovery frame or broadcast Probe Response frame in an HE SU PPDU, shall set the TXVECTOR parameter CH\_BANDWIDTH to CBW20. An AP operating in the 6 GHz band that transmits a FILS Discovery frame shall set the Primary Channel Indicator subfield in FILS Discovery frame to 0. [20025]An HE AP operating in 6 GHz band when transmitting FILS Discovery frame carrying FD Capability field shall set the PHY Index subfield to 4.

***TGax editor, please update the last paragraph in this subclause as shown below:***

[20080]A 6 GHz AP shall not respond to a Probe Request frame if the frame carries FILS Request Parameters element and the AP is unable to satisfy the response time constraint specified in the Max Channel Time field in the element (see 11.1.4.3.4 (Criteria for sending a response)). A 6 GHz AP shall respond with the next Beacon frame if the conditions specified in 11.1.4.3.4 (Criteria for sending a response) for beacon response are satisfied. When a 6 GHz AP sends a Probe Response frame in response to a Probe Request frame with the broadcast destination address, the response shall be sent to the broadcast destination address.

* Non-AP STA scanning behavior

***TGax editor, please add the following sentence as the last paragraph in this subclause:***

[20025]When a non-AP STA sends a Probe Request frame in 6 GHz band carrying FILS Request Parameters element, it shall set the value of PHY Support Criteria subfield in the element to either 0 or 3.

**26.17.2 HE BSS operation in the 6 GHz band**

**26.17.2.1 General**

***TGax Editor: Please add the following sentence at the end of this subclause***

[20080]A 6 GHz AP shall set the dot11FILSOmitReplicateProbeResponses to true.

* **Enhanced FILS active scanning to preferred AP**[20035]

***TGax Editor: Please make changes as shown below to the following paragraphs in this subclause***

A FILS non-AP STA may maintain one or more BSS Configuration Parameter Sets. A BSS Configuration Parameter Set is obtained from a preferred AP by using a preferred AP determination process that is out of scope of this standard. Each BSS Configuration Parameter Set may be different according to the preferred AP’s capabilities. A BSS Configuration Parameter Set is a set of elements of the Beacon frame or the Probe Response frame. The following dynamic information elements are excluded from a BSS Configuration Parameter Set:

* TIM element
* Quiet element
* BSS Load element
* EDCA Parameter element
* BSS Average Access Delay element
* BSS Available Admission Capacity element
* BSS AC Access Delay element
* Time Advertisement element
* Emergency Alert Identifier element
* Beacon Timing element
* QLoad Report element
* Extended BSS Load element
* Quiet Channel element
* Reduced Neighbor Report element (see Note 1)
* CAG Number element
* AP-CSN element
* Differentiated Initial Link Setup element
* Fragment element (see Note 2)
* TWT element
* MU-EDCA Parameter Set element
* NDP Feedback Report Parameter set element
* UL OFDMA-based Random Access (UORA) Parameter Set element
* Spatial Reuse Parameter Set element
* HE BSS Load element
* Quiet Time Parameter element
* Vendor Specific element

NOTE 1—The Reduced Neighbor Report element is excluded from the BSS Configuration Parameter Set based on the principle that an element is excluded from the BSS Configuration Parameter Set if that element has no impact on a FILS STA’s ability of using AP-CSN to make a decision of initiating an association procedure with an AP without receiving Beacon or Probe Response frame from the AP.

NOTE 2—Any change in a Fragment element is considered under the context of the element being fragmented by the Fragment element.