IEEE P802.11
Wireless LANs

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| Clause 10.25.3.4 Comment Resolutions |
| Date: 2015-07-15 |
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Abstract

This document provides proposed comment resolutions for all comments documented in document 947r0

Proposed resolution:

Instruction to the Editor: Replace Section 10.25.3.4 and 10.26 (as in D1.2) with the following text below. Also, renumbering the cf 10.25.3.4.4 in the approved doc 890r1 accordingly (i.e. 10.26.5).

#### 10.26 Preassociation discovery (PAD) procedures

#### 10.26.1 General

When dot11UnsolicitedPADActivated or dot11SolicitedPADActivated is true, a non-AP STA may use PAD procedures to discover the availability of services offered in a BSS without the need of being associated with the AP. While the specification of service-specific information is outside the scope of this standard, the services offered in the BSS are proxied to the AP through a logical proxy, which may be collocated with the AP.

There are two types of PAD procedures: unsolicited and solicited. The unsolicited PAD procedure is described in 10.26.2 and the solicited PAD procedure is described in 10.26.3. Both unsolicited PAD and solicited PAD procedures may be followed by ANQP-SD procedures, which is described in 10.26.4.

##### 10.26.2 Unsolicited PAD procedure

When dot11UnsolicitedPADActivated is true, an AP shall include a Service Hint element or Service Hash element or both in Beacon frames. Each service shall be advertised using either Service Hash element or Service Hint element, but not both, in the same Beacon frame. A Service Hint element is used to advertise the presence of one or more services with a probability of false positive as indicated in False Positive Probability Range field of the Service Hint element. A Service Hash element is used to advertise the presence of one or more services with a negligible probability of false positive. The selection of Service Hash or Service Hint element to advertise a particular service is beyond the scope of this standard.

When dot11UnsolicitedPADActivated is true, a non-AP STA shall follow the following steps:

1. Determine if a Service Hash or Service Hint or both elements are included in the received Beacon frames.
2. Construct the Service hash value of the service in which the non-AP STA is searching, or determine the bit positions of the Bloom Filter Bit Array field in which the non-AP STA is searching, or both.
3. Verify if there are any matching services based on:
	1. The service hash value in the Service Hash field of the Service Hash element matches to the corresponding service hash value constructed in step 2.
	2. The bit positions of the of the Bloom Filter Bit Array field of the Service Hint element matches to the corresponding bit positions of the Bloom Filter Bit array set in step 2

If the non-AP STA determines that there is a matching service, the non-AP STA may determine to proceed with solicited PAD procedure (10.26.3), ANQP-SD procedure (10.26.4), or authentication and association procedure (10.3) based on the perceived false positive probability and the nature of the service (see examples illustrated in Annex ZA.3), the details of which are out of the scope of this standard.

##### 10.26.3 Solicited PAD procedure

When dot11PADSolicitedActivated is true, a non-AP STAsends a Probe Request with a Service Hash element, which includes one or more service hashes generated from the service name(s) of the service(s) that the non-AP STA is requesting, to the AP, in preassociated state.

When dot11SolicitedPADActivated is true, an AP shall verify if there are any matching services through the received Probe Request. The matching of service is based on the service hash value in the Service Hash field of the Service Hash element matches to the corresponding service hash value of the service in which the AP is offering. If the AP determines there is one or more matching services, the AP shall respond with a Probe Response frame with the Service Advertisement element containing a Basic Service Information Descriptor field for each matching service. The requesting non-AP STA shall process the Service Advertisement element in the received Probe Response frame to determine if any received service name matches with a service name that the non-AP STA is requesting. If there is a matching service name, the non-AP STA may determine to proceed with ANQP-SD procedure (10.26.4) or authentication and association procedure (10.3) based on the nature of the service (see examples illustrated in Annex ZA.3), the details of which are out of the scope of this standard.

**10.26.4 ANQP-SD procedure**

When dot11UnsolicitedPADActivated or dot11SolicitedPADActivated is true, a non-AP STA sends an ANQP-SD request with a Service Information Request ANQP-element (see 8.4.4.20) to obtain more information about a matching service from the AP. The Service Information Request ANQP-element shall include the Service Name field and may include a Service Information Query Request field that is service-specific. A non-AP STA shall not transmit an ANQP-SD request to an AP unless the ANQP-SD Advertisement Protocol ID is included in the Advertisement Protocol element in a Beacon or Probe Response frame from that AP.

When dot11UnsolicitedPADActivated or dot11SolicitedPADActivated is true, an AP shall respond to the ANQP-SD request with the ANQP-SD response with Service Information Response ANQP-element (see 8.4.4.21). The Service Information Response shall include the Service Name field, one or more Service Instance Name fields, and the may include one or more corresponding Service Information Query Response fields that are service-specific.

Based on the Service Information Response ANQP-element in the received ANQP-SD response, the non AP STA may determine to proceed with authentication and association procedure (10.3) (see examples illustrated in Annex ZA.3), the details of which are out of the scope of this standard.