IEEE P802.11
Wireless LANs

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| TGaq Clause 4.5.9 updates |
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Abstract

This document suggests updates to clause 4.5.9 based on IEEE 802.11aq D3.1

It addresses all the CIDs in tab “Clause 4.5.9” of the LB216 comment resolution spreadsheet.

#### 4. General description

###### **4.5 Overview of the services**

**4.5.9 Interworking with external networks**

***Change as follows:***

An overview of the interworking functions addressed in this standard is provided below:

* Network discovery and selection

— Discovery and selection of a suitable IEEE Std 802.11 infrastructure using advertisement protocols (e.g.

 access network query protocol - ANQP) in a PBSS, BSS, or an external network.

— Selection of an SSPN or external network with its corresponding IEEE Std 802.11

 Infrastructure

* Pre-association discovery (PAD) [CID 2264]

— Discovery of services offered by a PBSS, BSS, or an external network. [CIDs 2284,

 2003, 2149]

* Emergency services

— Emergency Call and Network Alert support at the link level

* QoS Map distribution
* SSPN interface service between the AP or PCP and the SSPN

***Insert the following new clauses:***

* + - 1. **Pre-association Discovery (PAD)**

PAD is a service provided by a PBSS or BSS to allow non-AP STAs, in a pre-association state, to discover information concerning services that are available to STAs that are already associated with the PBSS or BSS. This information may allow a (non-AP??) STA to choose during network selection, which PBSS or BSS (i.e. a network) to associate with to obtain services.

[CIDs 2103, 2287]

* + - * 1. **Architecture**

[Figure 4-11a (Pre-association Discovery Architecture [CIDs 2013, 2289])](#_bookmark10) shows the functional flow of MAC messaging and service information between a Service Information Client (SIC) and a Service Information Registry (SIR). These entities are described below.



**Figure 4-11a —** **Pre-association Discovery Architecture [CIDs 2013, 2289]**

* + - * 1. **Service Information Entities**

Service information entities (e.g. the client and registry) are used to exchange information between higher layer resources above both the non-AP STA and the AP or PCP. The PAD and ANQP service discovery procedures operate between these entities.

Entities are used to encapsulate service relevant information (e.g. a service name), and then exchange that information between the SIC and SIR. As shown in [Figure 4-11a (Pre-association Discovery Architecture [CIDs 2013, 2289](#_bookmark10)]), PAD signaling is opaque to the service relevant information because it is handled by these entities in the STA and AP or PCP. [CIDs 2051, 2052, 2235, 2353]

* + - * 1. **Service Information Registry**

The Service Information Registry (SIR) is a logical entity that contains caches of information about services that may be available via the PBSS or BSS, for the STA to connect to after it associates with the AP or PCP. How the service information registry obtains the information about services is outside the scope of this standard.

There is typically one SIR assigned to each ESS and it is a distributed logical entity. It can be reached by each AP and each service within that ESS. It includes supporting service discovery requests and responses from the PBSS or BSS. [CIDs 2048, 2050, 2104, 2105, 2233]

The SIR communicates with the ANQP Server that is also available via the PBSS or BSS.

* + - * 1. **Service Information Client**

The Service Information Client (SIC), also shown in [Figure 4-11a (Pre-association Discovery Architecture [CIDs 2013,](#_bookmark10) [2289]),](#_bookmark10) is a logical entity that initiates STA service discovery. [CIDs 2015, 2046, 2288, 2231].

 The SME determines whether to use unsolicited PAD, solicited PAD or ANQP. The SME also creates the contents of the probe requests and ANQP requests.