IEEE P802.11
Wireless LANs

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| FILS-Capabilities-Indications & IP Address assignment |
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Abstract

Normative text for FILS capability indications. FILS capability indications should be sent in beacons sent by APs that have dot11FILSActivated set to true. Current text only describes amendments to the standard 802.11 beacon, probe request, and probe response.

Note: Similar amendments may be needed in the FILS beacon which will be incorporated in future revisions.

The text builds on edits proposed in 11-12-1164-02-00ai-fils-auth-protocol.docx.

The editing instructions are shown in ***bold italic***. Four editing instructions are used: ***change, delete, insert, and replace***. Change is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~strikethrough~~ (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editorial notes will not be carried over into future editions because the changes will be incorporated into the base standard.

This amendment’s baseline is IEEE 802.11-2012

8. Frame formats

* 1. Format of individual frame types

8.3.3 Management frames

* + - 1. Beacon frame format

***Modify table 8-20 in section 8.3.3.2 by inserting the rows shown below:***

 (11k)

|  |
| --- |
| Table 8-20 -- Beacon frame body   |
| Order | Information | Notes |
| <ANA>(11n) | FILS Indication | The FILS Indication is present if dot11FILSActivated (#1005)is(#1217) true(#1535). |

* + - 1. Probe Response frame format

***Modify table 8-27 in section 8.3.3.10 by inserting the rows shown below:***

|  |
| --- |
| Table 8-27 - Probe Response frame body   |
| Order | **Information** | **Notes** |
| <ANA>(11n) | FILS Indication | The FILS Indication is present if dot11FILSActivated (#1005)is(#1217) true(#1535). |

8.4.2 Information elements

8.4.2.1 General(#28)

***Create section 8.4.2.ai1***

|  |
| --- |
| Table 8-54 - Element IDs   |
| (#1684)Element | Element ID | Length (in octets) | Extensible |
| FILS Indication (see 8.4.2.ai1) | <ANA> | 8 to 257 |  |

8.4.2.ai1 FILS Indication

The FILS Indication element information related to FILS Capabilities of the AP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Element ID | Length | FILS Information  | Domain Information fields (3 Octets per domain) Optionally present (see discussion) |
| **Octets:** | 1 | 1 | 1 | Variable |

**Figure ai1 - FILS Indication**

The definitions of fields are as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | FILS Security Type | IP Address Type | Number of Domains | Reserved |
| **Bits:** | B0 B1 | B2-B3 | B4-B6 | B7 |
| **Figure ai2 - FILS Information** |

Table 8-ai1 – FILS Indication Element Field Sttings

|  |  |  |
| --- | --- | --- |
| FILS Security type (B0 B1) | IP Address type (B2 B3) | Number of Domains indication (B4-B6) |
| ‘00’: EAP-RP with no PFS | Reserved | 000 to 111 |
| ‘01’: EAP-RP with PFS | Reserved | 000 to 111 |
| ‘10’: Non-TTP with PFS | Reserved | 000 to 111 |
| ‘11’: Reserved | Reserved | Reserved |

Table 8-ai1 shows the possible field values for the FILS security indication element.

When the FILS Security type is EAP-RP (with or without PFS) or with Non-TTP type security, information on IP address type is carried in the domain information fields.

When FILS Security type is EAP-RP (with or without PFS), if B4-B6 is between 0 and 6, it indicates between 1 and 7 domains available. A 3 octet information field per domain is present in the FILS indications when B4-B6 takes values from 0 to 6.

 If B4-B6 indicates a value of 7, it indicates that more than 7 domains are available. Per domain information is absent in FILS indication Element if B4-B6 indicate a value of 7. The STA shall use ANQP to obtain domain information if B4-B6 is set to 7.

The domain information field is a 3 octet field formatted as shown in Figure 8-ai3. The domain information field is only present when when EAP-RP is used, i.e., when FILS security type is set to “00” or “01”.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Hashed Domain name |  IP Address TypeSee <Table 8-ai2> | Reserved |
| **Bits:** | B0-B15 | B16- B17 | B18-B23 |

Figure 8-ai3: Domain Name Field

Table 8-ai2 – IP Address Type Element

|  |  |
| --- | --- |
| Bit values | IP Address type |
| ‘00’ | IPv4 only |
| ‘01’ |  IPv6 only |
| ‘10’  | IPv4 & IPv6 |
| ‘11’ | Reserved |

**10. MLME**

***Create section 10.ai1 and its component subsections***

10.ai1 Management Frame Fast Initial Link Setup procedures

**10.ai1.ai1 FILS Indication Element**

In Beacon and Probe Response frames, a FILS indication element is included by an AP with dot11FILSActivated set to true. FILS indication element indicates properties of the FILS authentication protocol used and also indicates if concurrent IP address assignment is performed by the AP. The IP address type is also indicated.

For an AP supporting upto 7 network domains, the FILS indication element carries hash of the network domain name. The hash of the domain name is produced by using the first three octets of the hash of the network domain name.

 Hashed Domain Name = CRC-16(Domain Name) )

For each domain, the type of IP address available is also indicated ( Table 8-ai1).

**Motion-1:** To authorize the Editor to incorporate the text changes proposed in contribution 11-13-00xxr0 to the draft TGai Draft Specification Document.

Yes: \_\_\_\_\_\_\_\_\_\_\_\_; No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; Abstain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_