IEEE P802.11
Wireless LANs

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| Responses to Suggested Changes to P802.11ai Draft |
| Date: 2014-03-18 |
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Abstract

These are issues with our draft that were not covered by ballot comments but would be beneficial to resolve before going to ballot again. One the nature of the issue is presented here, in each case a submission will be required to propose a specific solution.

**During the 802.11ai ad hoc meeting 17.3.2014 the issues 1 and 3 were assigned to Jarkko Kneckt.**

**This submission proposes a resolution for those issues.**

1. Page 10, line 27 (P802.11ai D1.3): the Description for "APConfigurationChangeCount" isn't really a description of this parameter.

 **A proposed description is required**.

**Proposed Resolution:**

***Instruction to the Editor: Add the following sentence to the beginning of the Description text to the Page 10, line 27 (P802.11ai D1.3):***

“Indicates the configuration sequence number for the static information fields and elements as described in the 10.1.4.3.6(AP Configuration Information Set).”

1. Page 38, line 28 ("The TBTT Information Length subfield.."): In P802.11af, " A value of 0 indicates one TBTT Information field is present.", but in P802.11ai, " The TBTT Information Count subfield value is nonzero." Is the difference intentional? Neither seems to be right (a value of 0 would seem to indicate would there are none of these fields rather than one, but the 11ai version indicates that such fields would never exist).

**A proposed resolution is required.**

**This issue was assigned to Santosh Pandey and will not be solved with this submission.**

1. Table 8-221f—FILS Discovery frame format (according to the text and title) is supposed to define the format of the frame, but it doesn't follow the style of any other format descriptions (always done with a figure followed by descriptive text).

**Need submission to show what it should be.**

**Proposed Resolution:**

***Instruction to the Editor: Delete the table 8.221f. Make the following changes to the clause 8.5.8.34.***

**8.5.8.34 FILS Discovery frame format**

The FILS Discovery (FD) frame uses Action frame format. The format of its Action field is shown in Figure

8-XXX (FILS Discovery frame format).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Category | Public Action | FD Frame Control | Service Set Identifier | FD Capability (Conditional) | AP's Next TBTT Offset (ANTO) (Conditional) | AP Configuration Sequence Number (AP-CSN) (Conditional) |
| Octets: | 1 | 1 | 2 | 1 - 32 |  0 or 2 | 0 or 1 | 0 or 1 |
| Access Network Options (ANO) (Conditional) | Primary Channel (Conditional) | Channel Center Frequency Segment 1 | RSN Information (Conditional) | Reduced Neighbor Report Element (Optional) | FILS Indication Element (Optional) | Vendor Specific Element (Optional) |
| 0 or 1 | 0 or 1 | 0 or 1 | 0 or 4 | 0 or variable | 0 or variable | 0 or variable |

**Figure 8-XXX—FILS Discovery frame format**

The Category field indicates the public category, as specified in Table 8-38 (Category values) in 8.4.1.11 (Action field).set to the value for public action defined in Table 8-43 (Category values).

The The Public Action field indicates the value of the FILS Discovery frame, as specified in Table 8-210 (Public Action field values) in 8.5.8.1 (Public Action frames).

The format of the 2-octet FD Frame Control field is shown in 8-502k (FD Frame Control field format).

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**Figure 8-502k—FD Frame Control field format**

The 5-bit SSID Length field indicates the length of the SSID field in the FD frame, in unit of octets. The value of this field plus 1 is equal to the length of the SSID field.

The Capability presence indicator is 1 bit in length. If it is set to 1, it indicates the FD Capability field is present in the FD frame; otherwise, it indicates the FD capability field is not present in the FD frame.

The ANTO presence indicator is 1 bit in length. If it is set to 1, it indicates the ANTO field is present in the FD frame; otherwise, it indicates the ANTO field is not present in the FD frame.

The AP-CSN presence indicator is 1 bit in length. If it is set to 1, it indicates the AP-CSN field is present in the FD frame; otherwise, it indicates the AP-CSN field is not present in the FD frame.

The ANO presence indicator is 1 bit in length. If it is set to 1, it indicates the ANO field is present in the FD frame; otherwise, it indicates the ANO field is not present in the FD frame.

The CCFS-1 presence indicator is 1 bit in length. If it is set to 1, it indicates the 1-octet Channel Center Frequency Segment 1 field is present in the FD frame; otherwise, it is not present.

The Primary Channel presence indicator is 1 bit in length. If it is set to 1, it indicates the Primary Channel field is present in the FD frame; otherwise, it indicates the Primary Channel field is not present in the FD frame.

The RSN Information presence indicator is 1 bit in length. If it is set to 1, it indicates the RSN information field is present in the FD frame; otherwise, it indicates the RSN information field is not present in the FD frame.

The FD Capability field contains the information that advertises the capabilities of the STA transmitting the FD frame. Its length is 2 octets. The format of the FD Capability field is shown in Figure 8-502l (Format of the FD Capability field).

The SSID field is a variable length field with length between 1 and 32 octets, as specified by the 5-bit SSID Length field in the FD Frame Control of the FD frame. See 8.4.2.2 (SSID element).

The FD Capability field contains the information that advertises the capabilities of the STA transmitting the FD frame. Its length is 2 octets. The format of the FD Capability field is shown in Figure 8-502l (Format of the FD Capability field).



**Figure 8-502l—Format of the FD Capability field**

The subfields ESS and Privacy are interpreted as specified in 8.4.1.4.

A value of 1 in the 1-bit Multiple BSSIDs present field indicates that the Multiple BSSID element is included in the Beacon frame.

The 3-bit Operating Channel Bandwidth subfield indicates the channel bandwidth of the AP, as coded in Table 8-221g (Operating Channel Bandwidth).

**Table 8-221g—Operating Channel Bandwidth**



The 3-bit Nss subfield indicates the number of spatial streams, as coded in Table 8-221h (Number of spatial streams (Nss)).

**Table 8-221h—Number of spatial streams (Nss)**



The 3-bit PHY Type subfield is defined as in Table 8-221i (PHY Type subfield).

**Table 8-221i—PHY Type subfield**



The 3-bit FILS Minimum Rate subfield specifies the minimum rate used by the AP transmitting the FD frame to communicate with FILS STAs.

Depending on the PHY Type subfield values specified in Table 8-221i (PHY Type subfield), the FILS minimum rate is represented as a bit rate value or as an MCS value in Table 8-221j (FILS Minimum Rate subfield). If an MCS value is provided, then the FILS Minimum Rate can be derived from the MCS value and the PHY Type in the FD Capability field.

**Table 8-221j—FILS Minimum Rate subfield**



AP's Next TBTT Offset(ANTO) field indicates the time offset in number of TUs, between the transmission of the FD frame and the transmission of the next Beacon frame. It is an optional field, and its presence is indicated by an 1-bit ANTO presence indicator in the FD Frame Control. See 8.4.2.126 (DMG BSS Parameter Change element)

AP Configuration Sequence Number (AP-CSN) field is of the format defined in 8.4.2.184. It is an optional field, and its presence is indicated by an 1-bit AP-CSN presence indicator in the FD Frame Control.

Access Network Options (ANO) field is of the format as specified in Figure 8-352 in 8.4.2.94. It is an optional field, and its presence is indicated by an 1-bit ANO presence indicator in the FD Frame Control.

Primary Channel field is present and set to the channel number of the primary channel (See 10.16.2 (Basic 20/40 MHz BSS functionality)) if the FD frame is transmitted as a non-HT duplicate PPDU, otherwise the field is not present. The presence of the field is indicated by a 1-bit Primary Channel presence indicator in the FD Frame Control field.

Channel Center Frequency Segment 1field is present and set to the channel center frequency of the frequency segment 1 for an 80+80 MHz VHT BSS, if the FD frame is transmitted as a non-HT duplicate PPDUs at an 80+80 MHz channel bandwidth; otherwise the field is not present. The presence of the field is indicated by a 1-bit Channel Center Frequency Segment 1 Presence Indicator in the FD Frame Control field.

RSN Information field is an optional field and its presence is indicated by an 1-bit RSN Presence Indicator in the FD Frame Control. The format of the 4-octet FD RSN information field is shown in Figure <ANA-11ai-a> (Format of the FD RSN Information field).

Reduced Neighbor Report element is optionally present and format of the element is specified in 8.4.2.176(Reduced Neighbor Report element).

FILS Indication element is optionally present and the format of the element is specified in 8.4.2.179 (FILS Indication element).

One or more Vendor Specific elements are optionally present and their format is specified in 8.4.2.25( Vendor Specific element).