IEEE P802.11
Wireless LANs

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| Clean up of FILS Container  |
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Abstract

The submission cleans the editorial challenges and poor structure of the FILS Container element, FILS Container TLV and element defragmentation.

The revision 1 also cleans up the clauses 8.4.2.1 and 10.44.3.1 Higherlayer setup using higher layer packet encapsulation.

**8.4.2 Information elements**

**8.4.2.1 General**

***Change the next to last paragraph of 8.4.2.1 as follows:***

The frame body components specified for many management subtypes result in elements ordered by ascending Element ID, with the exception of the MIC Management element (8.4.2.54 (Management MIC element)) and the Fragment element ( 8.4.2.189 (Fragment element)). If present, the MIC Management element appears at the end of the robust management frame body. See 9.24.6 (Element parsing) on the parsing of elements. If present, the Fragment element appears after ~~another~~  the element that it is fragmenting, or after the previous Fragment element. See 9.33(Element fragmentation).

**8.4.2.186 FILS ~~Secure~~ Container element**

***Instructions to the Editor. Make the changes to the clause 8.4.2.186 as shown below. The orginal text is 802.11ai D1.2.***

FILS ~~Secure~~ Container element includes one ~~or more~~ FILS ~~Secure~~ Container ~~Type Length Value(s) (~~TLV~~) (s)~~. The FILS Container element is shown in figure 8-401db(FILS Container element format).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Element ID | Length | FILS Container TLV |
| Octets: | 1 | 1 | Variable |

Figure 8-401db—FILS Container element format

The Element ID and Length fields are defined in 8.4.2.1 (General).

FILS Secure Container TLV carries out various purposes such as IP address assignment and GTK transfer. A FILS Container TLV encoding consists of three fields: Type, Length, and Value field as shown in Figure 8-401dc~~v~~ (FILS Container TLV format).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Type | Length | Value |
| Octets: | 1 | 2 | Variable |

Figure 8-401dc~~b~~—FILS ~~Secure~~ Container TLV format

The ~~first field,~~ Type field~~,~~ specifies the type of the data carried by the V~~v~~alue field, and it is unique within the FILS ~~Secure~~ Container TLVs~~element~~. The values of the Type field are shown in Table Table 8-183d—FILS Secure Container TLV.The ~~second field,~~ Length field~~,~~ specifies the actual length of the V~~v~~alue field in octets. The ~~third field,~~ Length field~~,~~ contains the data representing the value for the T~~t~~ype field.

If a FILS Container TLV is too large to fit into a single FILS Container element, the FILS Container element is fragmented as described in 9.33 (Element Fragmentation).

**Table 8-183d—FILS ~~Secure~~ Container TLV**

|  |  |  |  |
| --- | --- | --- | --- |
| ~~Type~~ Name of TLV | Type ID | Length (octets) | Extensible |
| FILS HLP Wrapped data | 1 | ~~variable but limited~~~~by MPDU~~ Up to 65535 | No |
| FILS IP Address Request | 2 | 4 to 255 | No |
| FILS IP Address Assignment | 3 | 4 to 255 | No |
| FILS DNS Information | 4 | 4 to 255 | No |
| KEY RSC | <ANA> | 19 | No |
| KDE Container | <ANA> | 4 to 255 | No |

|  |  |  |  |
| --- | --- | --- | --- |
|  | ~~Element ID~~ | ~~Length~~ | ~~FILS Secure Container TLV~~ |
| ~~Octets:~~ | ~~1~~ | ~~1~~ | ~~Variable~~ |

~~Figure 8-401db—FILS Secure Container element format~~

~~FILS Secure Container TLVs are used to carry out various purposes such as IP address assignment and GTK transfer.~~

~~If a FILS Secure Container TLV is too large to fit into a single element, the FILS Secure Container element is fragmented by using the Fragment elements (see 8.4.2.189 (Fragment element)).~~

**8.4.2.189 Fragment element**

***Instructions to the Editor. Make the changes to the clause 8.4.2.189 as shown below. The orginal text is 11-14-0003r2***

The payload of e~~E~~ach ~~information~~ element is limited to a maximum of 255 octets since their L~~l~~ength field is a single octet (Figure 8-104). If data to be represented in an element ~~IE~~ is too large ~~and the generic advertisement service (GAS) is not used~~, it is necessary to fragment the data (see section 9.33 and 9.34). The format of the Fragment element ~~IE~~ is indicated in Figure 8-183dx (Fragment element format ~~IE~~).

~~The length of the all but the final Fragment element shall be 255. The length of the final Fragment element depends on the amount of fragmented data left over. The length of a Fragment element shall always be nonzero.~~

|  |  |  |  |
| --- | --- | --- | --- |
|  | Element ID | Length | Fragmented Data |
| Octets: | 1 | 2 | Variable |

Figure 8-183dx—Fragmented Data element format

**9.34 Element ~~Reassembly~~ Defragmentation**

***Instructions to the Editor. Make the changes to the clause 9.34 as shown below. The orginal text is 11-14-0003r2***

Elements which have had their information fields fragmented are those that are followed by one or more Fragment elements. To reconstruct the original data the chunk of data from the leading element is concatenated, in order, with the chunks of data from the series of Fragment elements that follow it. The defragmentation ~~reassembly~~ procedure finishes when any element other than a Fragment element is encountered or the end of the MMPDU is reached.

**10.44.3.1 Higherlayer setup using higher layer packet encapsulation**

***Instructions to the Editor. Make the changes to the clause 10.44.3.1 as shown below. The orginal text is 802.11ai D1.2***

The FILS Container element contains FILS Container TLV as described in the 8.4.2.186(FILS Secure Container). The values of the FILS Container TLV are described in Table 8-183d(FILS Container TLV). The FILS Container TLV name as ~~The~~ FILS HLP wrapped data TLV ~~in the FILS Secure Container element (8.4.2.186.1)~~ is used for encapsulating higher layer protocol (HLP) frame~~(s)~~.

If a non-AP STA uses the higher layer frame encapsulation, the non-AP STA constructs the FILS HLP wrapped data TLV(s). When the non-AP STA transmits multiple HLP frames in a Association or Reassociation Request frame, the non-AP STA shall construct one ~~multiple~~  FILS Container element with FILS Container TLV of name FILS HLP wrapped data TLV~~s~~ for each HLP frame and include the FILS Container elements to the transmitted frame.~~s . Then the non-AP STA transmits the Association/ or Reassociation Request frame including the FILS HLP wrapped data TLV in FILS Secure Container element~~. The FILS ~~Secure~~ Container element may be fragmented as described in 9.33 (Element Fragmentation)~~by Fragment element (8.4.2.189)~~ ~~if required~~. The encapsulation procedure is following.

1 The non-AP STA prepares HLP MSDU(s) to transmit.

2) The non-AP STA fills FILS Container TLV of name FILS HLP wrapped data TLV(s) by the destination MAC address, the source MAC address and the HLP MSDU for each HLP MSDUs.

3) The non-AP STA encapsulates the FILS Container TLV of name FILS HLP wrapped data TLV~~(s)~~ into the FILS ~~Secure~~ Container element (8.4.2.186) and ~~F~~fragments the FILS Container element~~(s)~~ if required.

…

If the AP receives HLP frames with the STA's MAC address, multicast address or broadcast address as the destination address from the network before transmitting Association/Reassociation Response, the AP transmits Association/Reassociation Response frame including the HLP frame(s) in the FILS Container element containing FILS Container TLV of name FILS HLP Wrapped dataTLV ~~of the FILS Secure Container element~~. The encapsulation procedure is described previously. If the AP does not receive HLP frames from the network targeted to the STA before transmitting Association/Reassociation Response, the AP transmits Association/Reassociation frame without FILS Container element including FILS Container TLV of name HLP Wrapped data TLV. The status code of Association/Reassociation Response is not affected whether or not the HLP frame is included in the Association/Reassociation Response frame.

When the non-AP STA receives Association/Reassociation Response with FILS Container element including FILS Container TLV of name HLP Wrapped data TLV, the non-AP STA decapsulates the HLP(s) and generates MA-UNITDATA.indication primitive for each HLP MSDU(s).