IEEE P802.11 Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed Clarifications for Handling FILS Authentication Failures | | | | |
| Date: 2013-09-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Lei Wang | InterDigital Communications | 781 Third Ave., King of Prussia, PA 19406 | 1 858 205 7286 | leiw@billeigean.com |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes clarifications for handling FILS authentication failures, as a proposed resolution to a comment submitted to IEEE 802.11 Working Group Technical Letter Ballot 198 for 802.11ai Draft 1.0.

# Introduction

As a response to IEEE 802.11 Working Group Technical Letter Ballot 198 for 802.11ai Draft 1.0, the following comment is submitted:

***Comment****: line 55 on page 104, Section 11.11.2.4*

*In section 11.11.2.4, Key confirmation for FILS authentication, there are multiple cases that "authentication shall be deemed a failure". However, the current spec does not have any text specifying what the AP should do in this case. Note that the Key confirmation for FILS authentication uses Association request / response frames. There may be multiple choices, e.g.,*

1. *AP does nothing, then leave the STA to be timeout for waiting for the Association Response; then the SAT follows the existing procedure to handle such a timeout;*
2. *AP sends an Association Response frame with status code setting to a proper value as defined in Table 8-42 in 802.11mc/D1.5. If there is no suitable value, then a corresponding status code should be added.*

*propose to use 2).*

This contribution proposes a resolution to the above comment.

# Conventions

In this contribution, the proposed 802.11ai Specification Document text will be presented as changes to the current TGai draft specification, 11ai/D1.0[Ref-2]. The following format conventions are used:

1. The new added text is marked as blue underline text;
2. The deleted text is marked as ~~red strikethrough text~~;
3. The unchanged baseline standard text stays in black text in the context of proposed TGai specification text;
4. The editorial instruction is marked as *italic text highlighted by Yellow*; and
5. Any other text, e.g., discussions, proposed motions, etc., is in black text, but not in the context of proposed TGai specification text.

# Discussions of the Proposed Resolution

The proposed resolution includes:

1. During the Key Confirmation process using Association Request / Response message exchange, if the authentication is deemed a failure, the AP sends an Association Response message with status code set to “Association denied due to FILS authentication failure”;
2. Introduce a new status code, called “Association denied due to FILS authentication failure”, into the Status Code definition table, Table 8-42.

The detailed changes to 802.11ai/D1.0 [Ref-2] are described in Section 4 of this contributions.

# Proposed Changes to 802.11ai/D1.0 Specification Text

*Instructions to Editor: change the paragraph in line 10 on page 105 as follows.*

If authentication is a failure, the KCK2, KEK2, KCK, KEK, and TK shall be irretrievably destroyed, and the AP shall construct an Association Response frame with the Status Code field set to the value indicating "Association denied due to FILS authentication failure". Otherwise, the AP shall then construct an 802.11 associate response frame confirming the selected ciphersuite and the FILS AKM, and containing the FILS KDE Container, and its own Key-Auth.

*Instructions to Editor: insert the following text in line 3 page 33.*

**8.4.1.9 Status Code field**

*Insert the following row to the contents of Table 8-42 with appropriate adjustment to numbering in following row:*

**Table 8-42—Status codes**

|  |  |  |
| --- | --- | --- |
| **Status** | **Name** | **Meaning** |
| <ANA> |  | Association denied due to FILS authentication failure |

*Instructions to Editor: change the paragraph in line 58 on page 105 as follows.*

The STA shall process the received 802.11 Association Response frame as follows: if its Status Code field indicates "Association denied due to FILS authentication failure", then authentication shall be deemed a failure; otherwise perform the following:

# References

1. IEEE Std 802.11mc/D1.5
2. IEEE Std 802.11ai/D1.0