Use Identity as Raw Public Key in EAP-TLS

https://datatracker.ietf.org/doc/draft-chen-emu-eap-tls-ibs/

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First Presentation in IETF109

Comments received since IETF109

1、What scenario is it for ?

Internet of things devices, especially passive long-life devices.

2、Is it related to IBE ?

No, only use IBS signature to solve the identity authentication problem

3、any running code ?

Coding eap-tls-ibs based on eap-tls1.2 using ECCSI

4、Any cross scope of IOT OPS?

No

Updates from -00 to -02

2 updates

Abstract: Add the reference of draft-ietf-tls-dtls13

Introduction: In the draft draft-ietf-emu-eap-tls13 reads certificates can be of any type supported by TLS including raw public keys. In RFC7250[RFC7250] it assuming that an out-of-band mechanism is used to bind the public key to the entity presenting the key.

Key distribution is out of scope in my draft, if you are interested , you can consider further.

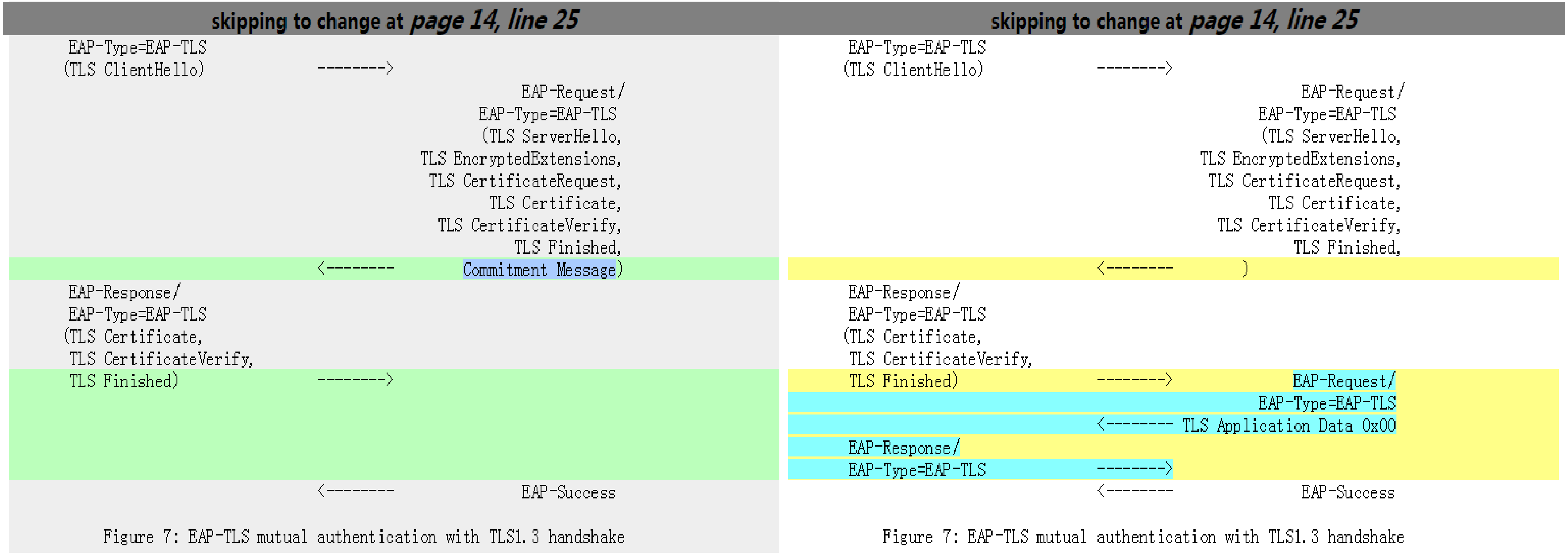
2 new adds

IANA considerations: This document registers the following item in the "Method Types" registry under the "extensible Authentication Protocol(EAP) Registry" heading.

Use case of the EAP-TLS-IBS:

- Used for authentication of Internet of Things devices
- Used for systems that do not support CA certificates

Update process
add a round trip interaction based on
draft-ietf-emu-eap-tls13-18



```
skipping to change at page 14, line 25

      EAP-Type=EAP-TLS
     (TLS ClientHello)          -------->
                                              EAP-Request/
                                          EAP-Type=EAP-TLS
                                          (TLS ServerHello,
                                  TLS EncryptedExtensions,
                                   TLS CertificateRequest,
                                          TLS Certificate,
                                    TLS CertificateVerify,
                                             TLS Finished,
                                <--------      Commitment Message)
      EAP-Response/
      EAP-Type=EAP-TLS
     (TLS Certificate,
      TLS CertificateVerify,
      TLS Finished)             -------->
                                <--------          EAP-Success

        Figure 7: EAP-TLS mutual authentication with TLS1.3 handshake
```

```
skipping to change at page 14, line 25

      EAP-Type=EAP-TLS
     (TLS ClientHello)          -------->
                                              EAP-Request/
                                          EAP-Type=EAP-TLS
                                          (TLS ServerHello,
                                  TLS EncryptedExtensions,
                                   TLS CertificateRequest,
                                          TLS Certificate,
                                    TLS CertificateVerify,
                                             TLS Finished,
                                <--------         )
      EAP-Response/
      EAP-Type=EAP-TLS
     (TLS Certificate,
      TLS CertificateVerify,
      TLS Finished)             -------->         EAP-Request/
                                              EAP-Type=EAP-TLS
                                <-------- TLS Application Data 0x00
      EAP-Response/
      EAP-Type=EAP-TLS          -------->
                                <--------          EAP-Success

        Figure 7: EAP-TLS mutual authentication with TLS1.3 handshake
```

- Welcome and Thanks to Russ Housley

would do the ASN.1 structures for pyasn1-modules when it becomes an RFC. will review the ASN.1 portions of the specification to make sure they are clear.

To Do

- Call for Adoption
- Comments and co-authors are welcome!
- Defines The key derivation based on EAP-TLS-IBS
- EAP-TLS based type needs to add a new type for EAP-TLS-IBS