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Foreword

This Technical Specification (TS) has been produced by ETSI Partnership Project oneM2M (oneM2M).

1 Scope

The present document defines security solutions applicable within the M2M system.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

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The following referenced documents are necessary for the application of the present document.

[1] ETSI TS 118 101: "oneM2M; Functional Architecture (oneM2M TS-0001)".

[2] ETSI TS 118 111: "oneM2M; Common Terminology (oneM2M TS-0011)".

[3] Void.

[4] ETSI TS 118 104: "oneM2M; Service Layer Core Protocol Specification (oneM2M TS-0004)".

[5] IETF RFC 5246: "The Transport Layer Security (TLS) Protocol Version 1.2".

[6] IETF RFC 6347: "Datagram Transport Layer Security Version 1.2".

[7] ETSI TS 102 225 (V11.0.0): "Smart Cards; Secured packet structure for UICC based applications (Release 11)".

[8] ETSI TS 102 226 (V11.0.0): "Smart Cards; Remote APDU structure for UICC based applications (Release 11)".

[9] 3GPP TS 31.115 (V10.1.0): "Secured packet structure for (Universal) Subscriber Identity Module (U)SIM Toolkit applications (Release 10)".

[10] ETSI TS 131 116 (V10.2.0): " Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Remote APDU Structure for (U)SIM Toolkit applications (3GPP TS 31.116 version 10.2.0 Release 10)".

[11] 3GPP2 C.S0078-0 (V1.0): "Secured Packet Structure for CDMA Card Application Toolkit (CCAT) Applications".

[12] 3GPP2 C.S0079-0 (V1.0): "Remote APDU Structure for CDMA Card Application Toolkit (CCAT) Applications".

[13] ETSI TS 133 220: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Generic Authentication Architecture (GAA); Generic Bootstrapping Architecture (GBA) (3GPP TS 33.220)".

[14] 3GPP2 S.S0109-0: "Generic Bootstrapping Architecture (GBA) Framework".

[15] IETF RFC 4279: "Pre-Shared Key Ciphersuites for Transport Layer Security (TLS)".

[16] Void.

[17] Void.

[18] IETF RFC 5705: "Keying Material Exporters for Transport Layer Security (TLS)".

[19] IETF RFC 3629: "UTF-8, a transformation format of ISO 10646".

[20] "Unicode Standard Annex #15; Unicode Normalization Forms", Unicode 5.1.0, January 2008.

NOTE: Available at http://unicode.org/reports/tr15/.

[21] GlobalPlatform® Device Technology TEE Management Framework (TMF) Version 1.

[22] GlobalPlatform® Device Technology TEE System Architecture, Version 1.1.

[23] ETSI TS 102 671: "Smart Cards; Machine to Machine UICC; Physical and logical characteristics".

[24] ETSI TS 102 221: "Smart Cards; UICC-Terminal interface; Physical and logical characteristics".

[25] ETSI TS 102 484: "Smart Cards; Secure channel between a UICC and an end-point terminal".

[26] ISO/IEC 7816-4: "Identification cards -- Integrated circuit cards -- Part 4: Organization, security and commands for interchange".

[27] ETSI TS 101 220: "Smart Cards; ETSI numbering system for telecommunication application providers".

[28] Void.

[29] Void.

[30] Void.

[31] IETF RFC 6655: "AES-CCM Cipher Suites for Transport Layer Security (TLS)".

[32] IETF RFC 5289: "TLS Elliptic Curve Cipher Suites with SHA-256/384 and AES Galois Counter Mode (GCM)".

[33] IETF RFC 2104: "HMAC: Keyed-Hashing for Message Authentication".

[34] IETF RFC 5280: "Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile".

[35] IETF RFC 6960: "X.509 Internet Public Key Infrastructure Online Certificate Status Protocol - OCSP".

[36] IETF RFC 6961: "The Transport Layer Security (TLS) Multiple Certificate Status Request Extension".

[37] IETF RFC 7250: "Using Raw Public Keys in Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)".

[38] IETF RFC 7252: "The Constrained Application Protocol (CoAP)".

[39] Federal Information Processing Standard (FIPS) 186-4: "Digital Signature Standard (DSS)".

NOTE: Available at https://csrc.nist.gov/publications/detail/fips/186/4/final.

[40] IETF RFC 6920: "Naming Things with Hashes".

[41] IETF RFC 4648: "The Base16, Base32, and Base64 Data Encodings".

[42] IETF RFC 5487: "Pre-Shared Key Cipher Suites for TLS with SHA-256/384 and AES Galois Counter Mode".

[43] IETF RFC 4492: "Elliptic Curve Cryptography (ECC) Cipher Suites for Transport Layer Security (TLS)".

[44] IETF RFC 6066: "Transport Layer Security (TLS) Extensions: Extension Definitions".

[45] IETF RFC 7251: "AES-CCM Elliptic Curve Cryptography (ECC) Cipher Suites for TLS".