|  |  |
| --- | --- |
| CHANGE REQUEST | |
| Meeting ID:\* |  |
| Source:\* |  |
| Date:\* |  |
| Reason for Change/s:\* |  |
| CR against: Release\* |  |
| CR against: WI\* | Active <WI 0003>  MNT maintenance / < Work Item number(optional)>  Is this a mirror CR? Yes  No  mirror CR number:  STE Small Technical Enhancements / < Work Item number (optional)>  Only ONE of the above shall be ticked |
| CR against: TS/TR\* |  |
| Clauses \* |  |
| Type of change: \* | Editorial change  Bug Fix or Correction  Change to existing feature or functionality  New feature or functionality  Only ONE of the above shall be ticked |
| Other TS/TR(s) impacted | None |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES  NO  This CR may break backwards compatibility with the last approved version of the TS? YES  NO |
| Template Version: January 2019 (do not modify) | |

**oneM2M Notice**

The document to which this cover statement is attached is submitted to oneM2M. Participation in, or attendance at, any activity of oneM2M, constitutes acceptance of and agreement to be bound by terms of the Working Procedures and the Partnership Agreement, including the Intellectual Property Rights (IPR) Principles Governing oneM2M Work found in Annex 1 of the Partnership Agreement.

GUIDELINES for Change Requests:

Provide an informative introduction containing the problem(s) being solved, and a summary list of proposals.

Each CR should contain changes related to only one particular issue/problem.

In case of a correction, and the change apply to previous releases, a separate “mirror CR” should be posted at the same time of this CR

Mirror CR: applies only when the text, including clause numbering are exactly the same.

Companion CR: applies when the change means the same but the baselines differ in some way (e.g. clause number).

Follow the principle of completeness, where all changes related to the issue or problem within a deliverable are simultaneously proposed to be made E.g. A change impacting 5 tables should not only include a proposal to change only 3 tables. Includes any changes to references, definitions, and acronyms in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar to the extent practicable.

Use Change bars for modifications.

The change should include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change. Additions of complete clauses need not show surrounding clauses as long as the proposed clause number clearly shows where the new clause is proposed to be located.

Multiple changes in a single CR shall be clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.

When subsequent changes are made to content of a CR, then the accepted version should not show changes over changes. The accepted version of the CR should only show changes relative to the baseline approved text.

## Introduction

Initial Conversion to md

<https://git.onem2m.org/specifications/ts/ts-0011/-/merge_requests/4>

<https://git.onem2m.org/specifications/ts/ts-0011/-/merge_requests/4/diffs?commit_id=83610c201813ff2c402ac4ef5e69bf08503b93c5>

----------------------- Start of change 1 -----------------------

---/dev/null  
+++b/TS-0011-Common\_Terminology.md

@@ -0,0 +1,671 @@

![~~CAPTION~~](media/logo.png) |

+----------------------------------------------------------------+

|\*\*oneM2M\*\* \*\*Technical\*\* \*\*Specification\*\* |

+:================+:=============================================+

|Document Number |TS-0011-V4.1.1 |

+-----------------+----------------------------------------------+

|Document Name: |Common Terminology |

+-----------------+----------------------------------------------+

|Date: |2019 December 16 |

+-----------------+----------------------------------------------+

|Abstract: |This TS contains a collection of specific |

| |technical terms (definitions and |

| |abbreviations) used within oneM2M. |

+-----------------+----------------------------------------------+

|Template Version:23 February 2015 (Do not modify) |

+----------------------------------------------------------------+

This Specification is provided for future development work within oneM2M only. The Partners accept no liability for any use of this Specification.

The present document has not been subject to any approval process by the oneM2M Partners Type 1. Published oneM2M specifications and reports for implementation should be obtained via the oneM2M Partners' Publications Offices.

<br />About oneM2M

The purpose and goal of oneM2M is to develop technical specifications which address the need for a common M2M Service Layer that can be readily embedded within various hardware and software, and relied upon to connect the myriad of devices in the field with M2M application servers worldwide.

More information about oneM2M may be found at: http//www.oneM2M.org

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# Contents

# 1 Scope

The present document contains a collection of specialist technical terms, definitions and abbreviations referenced within the oneM2M specifications.

Having a common collection of definitions and abbreviations related to oneM2M documents will:

- ensure that the terminology is used in a consistent manner across oneM2M documents;

- provide a reader with convenient reference for technical terms that are used across multiple documents.

The present document provides a tool for further work on oneM2M technical documentation and facilitates their understanding. The definitions and abbreviations as given in the present document are either externally created and included here, or created internally within oneM2M by the oneM2M TP or its working groups, whenever the need for precise vocabulary is identified or imported from existing documentation.

In addition in oneM2M Technical Specifications and Technical Reports there are also clauses dedicated for locally unique definitions and abbreviations.

# 2 References

## 2.1 Normative references

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

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

Not applicable.

## 2.2 Informative references

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

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- <a name="\_ref\_i.1">[i.1]</a> Recommendation ITU-T X.800 (1991): "Security architecture for open system interconnection for CCIT applications".

- <a name="\_ref\_i.2">[i.2]</a> Recommendation ITU-T X.800/Amd.1 (1996): "Security architecture for open systems interconnection for CCITT applications. Amendment 1: Layer Two Security Service and Mechanisms for LANs".

- <a name="\_ref\_i.3">[i.3]</a> ISO/IEC 27001 (2005): "Information technology - Security techniques - Information security management systems - Requirements".

- <a name="\_ref\_i.4">[i.4]</a> ISO/IEC 27002 (2005): "Information technology - Security techniques - Code of practice for information security management".

- <a name="\_ref\_i.5">[i.5]</a> IETF RFC 4949 (2007): "Internet Security Glossary, Version 2".

- <a name="\_ref\_i.6">[i.6]</a> NIST SP800-57 Part 1 (07/2012): "Recommendation for Key Management - General, Rev3".

- <a name="\_ref\_i.7">[i.7]</a> NIST SP800-57 Part 1 (05/2011): "Recommendation for Key Management - General, Rev3".

- <a name="\_ref\_i.8">[i.8]</a> ISO/IEC 13888-1 (07/2009 - 3rd edition) Information technology - Security techniques - Nonrepudiation - Part 1: General".

- <a name="\_ref\_i.9">[i.9]</a> ISO/IEC 24760-1 (12/2011 - 1st edition): "Information technology - Security techniques - A framework for identity management - Part 1: terminology and concepts".

- <a name="\_ref\_i.10">[i.10]</a> ISO/IEC 27004 (12/2009 - 1st edition): "Information technology - Security techniques - Information security management - Measurement".

- <a name="\_ref\_i.11">[i.11]</a> ISO/IEC 9798-1 (07/2010 - 3rd edition): "Information technology - Security techniques - Entity authentication -. Part 1: General".

- <a name="\_ref\_i.12">[i.12]</a> ISO/IEC TR 15443-1:2012: "Information technology - Security techniques - Security assurance framework - Part 1: Introduction and concepts".

- <a name="\_ref\_i.13">[i.13]</a> IEEE 802.15.4TM-2003: "IEEE Standard for Local and metropolitan area networks - Part 15.4: Low-Rate Wireless Personal Area Networks (LR-WPANs)".

- <a name="\_ref\_i.14">[i.14]</a> OMA OMA-TS-LightweightM2M-V1-0-20141111-D: "Lightweight Machine to Machine Technical Specification".

# 3 Definitions

## 3.0 General Information

> NOTE 1: Whenever in the present document a term "M2M Xyz" (e.g. M2M Application, M2M Solution, etc.) is used, then the prefix "M2M" should indicate that - unless otherwise indicated - the term identifies an entity Xyz that complies with oneM2M specifications.

> NOTE 2: For better readability of the present document the prefix "M2M" is ignored when definitions are alphabetically ordered.

## 3.1 0-9

Void.

## 3.2 A

\*\*Abstract Information Model:\*\* Information Model of common functionalities abstracted from a set of Device Information Models

\*\*Abstraction:\*\* process of mapping between a set of Device Information Models and an Abstract Information Model according to a specified set of rules

\*\*Access Control Attributes:\*\* set of parameters of the originator, target resource, and environment against which there could be rules evaluated to control access

> NOTE: An example of Access Control Attributes of originator is a role. Examples of Access Control Attributes of Environment are time, day and IP address. An example of Access Control Attributes of targeted resource is creation time.

\*\*Access Control Policy:\*\* set of privileges which represents access control rules defining allowed entities for certain operations within specified contexts that each entity has to comply with to grant access to an object

\*\*Access Control Role:\*\* security attribute associated to an entity defining the entity's access rights or limitations to allowed operations

> NOTE: One or more operations can be associated to an Access Control Role. An Access Control Role can be associated to one or more entities and an entity can assume one or more Access Control Roles.

\*\*Access Decision:\*\* authorization reached when an entity's Privileges are evaluated

\*\*Analytics:\*\* processing which makes use of data to provide actions, insights and/or inference

\*\*M2M Application:\*\* applications that run the service logic and use M2M Common Services accessible via a set of oneM2M specified open interfaces

> NOTE: Specification of M2M Applications is not subject of the current oneM2M specifications.

\*\*Application Dedicated Node:\*\* contains at least one Application Entity and does not contain a Common Services Entity

> NOTE: There may be zero or more ADNs in the Field Domain of the oneM2M System.

`EXAMPLE: Physical mapping: an Application Dedicated Node could reside in a constrained M2M Device.`

\*\*Application Entity:\*\* represents an instantiation of Application logic for end-to-end M2M solutions

\*\*M2M Application Infrastructure:\*\* equipment (e.g. a set of physical servers of the M2M Application Service Provider) that manages data and executes coordination functions of M2M Application Services

> NOTE: The Application Infrastructure hosts one or more M2M Applications. Specification of Application Infrastructure is not subject of the current oneM2M specifications.

\*\*Application (App) Registrants:\*\* entities seeking to obtain a registered App-ID

\*\*M2M App-ID Registration Authority (ARA):\*\* legal entity that manages/administers the App-ID database used to issue unique global identifiers consistent with oneM2M specifications

\*\*M2M Application Service:\*\* realized through the service logic of an M2M Application and is operated by the User or an M2M Application Service Provider

\*\*Application Service Node (ASN):\*\* contains one Common Services Entity and contains at least one Application Entity

> NOTE: There may be zero or more ASNs in the Field Domain of the oneM2M System.

`EXAMPLE: Physical mapping: an Application Service Node could reside in an M2M Device.`

\*\*M2M Application Service Provider:\*\* entity (e.g. a company) that provides M2M Application Services to the User

\*\*M2M Area Network:\*\* form of an Underlying Network that minimally provides data transport services among M2M Gateway(s), M2M Device(s), and Sensing&Actuation Equipment

> NOTE 1: M2M Local Area Networks can use heterogeneous network technologies that may or may not support IP access.

> NOTE 2: An M2M Area Network technology is characterized by its physical properties (e.g. IEEE 802.15.42003 <a href="#\_ref\_i.13">[i.13]</a> 2\_4GHz), its communication protocol and potentially a profile.

\*\*Authentication [i.7]:\*\* process that establishes the source of information, or determines an entity's identity

\*\*Authorization [i.1]:\*\* granting of rights, which includes the granting of access based on access rights

## 3.3 B

Void.

## 3.4 C

\*\*M2M Common Services:\*\* set of oneM2M specified functionalities that are widely applicable to different application domains made available through the set of oneM2M specified interfaces

\*\*Common Services Entity (CSE):\*\* represents an instantiation of a set of Common Service Functions of the M2M environments. Such service functions are exposed to other entities through reference points

\*\*Common Services Function (CSF):\*\* informative architectural construct which conceptually groups together a number of subfunctions

> NOTE: Those sub-functions are implemented as normative resources and procedures. A set of CSFs is contained in the CSE.

\*\*Confidentiality [i.1]:\*\* property that information is not made available or disclosed to unauthorized individuals, entities, or processes

\*\*Content Sharing Resource:\*\* resource of specific type that contains application data to be shared across applications

\*\*Credentials:\*\* secure data which are used to uniquely identify an entity and which are used in security procedures

> NOTE: Credentials are a typical kind of sensitive data.

\*\*Credential-ID:\*\* globally unique identifier for a credential that was used to establish a Security Association between entities (CSEs and/or AEs)

> NOTE: The Credential-ID can be used to determine the identifying information about the authenticated entity, such as the CSE-ID or AE-ID(s) or App-ID(s).

## 3.5 D

\*\*Data:\*\* in the context of oneM2M the term "Data" signifies digital representations of anything

> NOTE: Data can or cannot be interpreted by the oneM2M System and/or by M2M Applications. See also Information.

\*\*M2M Device:\*\* physical equipment with communication capabilities, providing computing and/or sensing and/or actuation services

> NOTE: An M2M Device hosts one or more M2M Applications or other applications and can contain implementations of CSE functionalities.

`EXAMPLE: Physical mapping: A M2M Device contains an Application Service Node or an Application Dedicated Node.`

\*\*Device Information Model:\*\* Information Model of the native protocol for the physical device

\*\*Direct Dynamic Authorization:\*\* procedure in which a Hosting CSE interacts directly with a Dynamic Authorization System Server to obtain Dynamic Authorization

\*\*Dynamic Authorization:\*\* procedures for dynamically authorizing additional access to resources on a Hosting CSE without changing the &lt;accessControlPolicy> resources configured to the Hosting CSE

\*\*Dynamic Authorization System (DAS):\*\* technology, external to oneM2M, which enables Dynamic Authorization

\*\*Dynamic Authorization System Server:\*\* server configured with policies for Dynamic Authorization, and provided with credentials for issuing Tokens

\*\*Dynamic Device/Gateway Context:\*\* dynamic metrics, which may impact the M2M operations of M2M Devices/Gateways

## 3.6 E

\*\*Edge/Fog Deployment:\*\* oneM2M System that can be deployed as a hierarchical collection of oneM2M nodes capable of supporting the following types of functionality:

- Dynamic instantiation/installation (i.e. orchestration) of oneM2M Services (i.e. CSEs, CSFs, CSs and AEs) onto the nodes in the oneM2M System in an automated and coordinated fashion such that operational requirements of the oneM2M system are satisfied.

- Remote provisioning and configuration of oneM2M Services installed on oneM2M nodes (e.g. configure IDs, credentials, settings, etc.).

- Management and control of oneM2M services installed on oneM2M nodes (e.g. activate, deactivate, reset, etc.).

- Collection of operational status and statistics (e.g. KPIs) of oneM2M Services running on oneM2M nodes.

- Discovery of oneM2M Service capability information for the individual nodes in the oneM2M System.

- Management of oneM2M Service continuity and migration across the nodes in the oneM2M System.

- Dynamic de-installation/removal (de-orchestration) of oneM2M Services from the individual nodes in the oneM2M System such that node and network resources (e.g. compute, storage, memory, bandwidth, etc.) can be freed up and made available for use by other services.

\*\*Edge/Fog Node:\*\* oneM2M field node (i.e. MN, ASN or ADN) that can be deployed in a manner consistent with the definition of an Edge/Fog Deployment.

\*\*Edge/Fog Management Functionality:\*\* functionality that enables the deployment and management of oneM2M Services (i.e. CSEs, CSFs, CSs and AEs) on Edge/Fog Nodes in a manner consistent with the definition of Edge/Fog Deployment

\*\*Edge/Fog Service:\*\* CSE, CSF(s), CS(s) and/or AE(s) hosted on a Edge/Fog Node managed in a manner consistent with the definition of Edge/Fog Deployment

\*\*Encryption [i.6]:\*\* process of changing plaintext into ciphertext using a cryptographic algorithm and Key

\*\*End-to-End Certificate-based Key Establishment (E2EKey):\*\* interoperable framework for two end-points to use certificates for establishing symmetric keys for use in End-to-End Security of Data or End-to-End Security of Primitives

\*\*End-to-End Certificate-based Key Establishment Initiating End-Point:\*\* AE or CSE initiating the End-to-End Certificate-based Key Establishment procedure

\*\*End-to-End Certificate-based Key Establishment Terminating End-Point:\*\* AE or CSE with which an End-to-End Certificate-based Key Establishment Initiating End-Point intends to establish a symmetric key using End-to-End Certificate-based Key Establishment procedure

\*\*End-to-End Security of Data (ESData):\*\* interoperable framework for protecting data that ends up transported using oneM2M reference points, in order that so transited CSEs do not need to be trusted with that data

\*\*End-to-End Security of Primitives (ESPrim):\*\* interoperable framework for securing oneM2M primitives so CSEs (forwarding the primitive) do not need to be trusted with the confidentiality and integrity of the primitives

\*\*Event:\*\* interaction or occurrence related to and detected by the oneM2M System

\*\*Event Categories:\*\* set of indicators that specify the treatment of Events for differentiated handling, based on policies

## 3.7 F

\*\*Field Domain:\*\* consists of M2M Devices, M2M Gateways, Sensing and Actuation (S&A) Equipment and M2M Area Networks

## 3.8 G

\*\*M2M Gateway:\*\* physical equipment that includes, at minimum, the entities and APIs of a Middle Node

\*\*Geo-fence:\*\* virtual perimeter for real-time geographical area to detect whether an object is entering into or leaving from

## 3.9 H

\*\*Heterogeneous Identification Service:\*\* service that supports various identification systems, and allows the mapping between identifiers, and the retrieval of the identification schema information

## 3.10 I

\*\*Identification [i.9]:\*\* process of recognizing an entity in a particular domain as distinct from other entities

> NOTE 1: The process of identification applies verification to claimed or observed attributes.

> NOTE 2: Identification typically is part of the interactions between an entity and the services in a domain and to access resources. Identification may occur multiple times while the entity is known in the domain.

\*\*Identification System:\*\* set of self-consistent rules sufficient for generating and using identifiers:

- a relevant authority is responsible for the generation, assignment and management of the identifiers

- an identifier is unique in one identification system

\*\*Implementation:\*\* the instantiation of devices, gateways, platforms, cloud servers, modules, software packages, development kits or all other kinds of entities developed to comply to oneM2M specification

\*\*Indirect Dynamic Authorization:\*\* procedure in which an Originator obtains Dynamic Authorization from a Dynamic Authorization System Server, and provides the Hosting CSE with a Token or Token-ID representing that Dynamic Authorization

\*\*Information:\*\* in the context of oneM2M "Information"signifies data that can be interpreted by the oneM2M System

> NOTE: Information has a defined syntax and semantic within the oneM2M System. See also Data.

\*\*Information Model:\*\* abstract, formal representation of entities that may include their properties, relationships and the operations that can be performed on them

\*\*Infrastructure Domain:\*\* consists of Application Infrastructure and M2M Service Infrastructure

\*\*Infrastructure Node (IN):\*\* contains one Common Services Entity and contains zero or more Application Entities

> NOTE: There is exactly one Infrastructure Node in the Infrastructure Domain per oneM2M Service Provider.

`EXAMPLE: Physical mapping: an Infrastructure Node could reside in an M2M Service Infrastructure.`

\*\*Inner Primitive:\*\* oneM2M Primitive being secured by End-to-End Security for Primitives

\*\*Integrity [i.3], [i.4]:\*\* safeguarding the accuracy and completeness of information and processing methods

\*\*Interworking Proxy Application Entity (IPE):\*\* specialized AE that facititates interworking between Non-oneM2M Nodes (NoDN) and the oneM2M System. An IPE maps data of the NoDN into oneM2M resources

> NOTE: It invokes operations in the NoDN when the related oneM2M resources are modified and modifies oneM2M resources based on the output of NoDN operations.

## 3.11 J

Void.

## 3.12 K

\*\*Key [i.6]:\*\* parameter used in conjunction with a cryptographic algorithm that determines its operation in such a way that an entity with knowledge of the Key can reproduce or reverse the operation, while an entity without knowledge of the Key cannot

## 3.13 L

\*\*LWM2M Client [i.14]:\*\* application that manages and controls things that are represented as LWM2M objects

\*\*LWM2M Client Endpoint Name [i.14]:\*\* identifier for a LWM2M Client

\*\*LWM2M Object [i.14]:\*\* LWM2M representation of a thing. LWM2M Objects are identified through a URI

\*\*LWM2M Server [i.14]:\*\* application that manages and controls LWM2M Clients

## 3.14 M

\*\*Management Authority (MA):\*\* legal entity that will supervise the issuance of unique global App-IDs under given Authority IDs, and potentially contract with an organization that will issue such unique global identifiers

\*\*Middle Node (MN):\*\* contains one Common Services Entity and contains zero or more Application Entities

> NOTE 1: There may be zero or more Middle Nodes in the Field Domain of the oneM2M System.

> NOTE 2: The CSE in a Middle Node communicates with one CSE residing in a Middle Node or in an Infrastructure Node and with one or more other CSEs residing in Middle Nodes or in Application Service Nodes. In addition, the CSE in the Middle Node can communicate with AEs residing in the same MN or residing in an ADN.

`EXAMPLE: Physical mapping: a Middle Node could reside in an M2M Gateway.`

\*\*Mutual Authentication [i.11]:\*\* entity authentication that provides both entities with assurance of each other's identity

## 3.15 N

\*\*Network Operator:\*\* entity (e.g. a company) that operates an Underlying Network

\*\*Node:\*\* logical entity that is identifiable in the oneM2M System

## 3.16 O

\*\*oneM2M Feature:\*\* oneM2M-defined procedure used for the instantiation of a M2M Common Service, which may not be further decomposed/divided, used for the purpose of testing and certification

\*\*oneM2M Feature Set:\*\* collection of oneM2M Features that jointly need to be supported by M2M Common Service, used for the purpose of testing and certification

\*\*oneM2M System:\*\* system developed by the oneM2M global initiative that enables deployable M2M Solutions

\*\*Outer Primitive:\*\* primitive used to transport an Inner Primitive secured using End-to-End Security of Primitives

## 3.17 P

\*\*Privacy [i.2]:\*\* right of individuals to control or influence what information related to them may be collected and stored and by whom and to whom that information may be disclosed

\*\*Privilege:\*\* qualification given to an entity that allows a specific operation (e.g. Create/Retreive/Update/Delete, etc.) on a specific resource within a specified context

\*\*Product Profile:\*\* defined by a collection of Features or Feature Sets that need to be supported by a oneM2M Implementation for the purpose of testing and certification

## 3.18 Q

Void.

## 3.19 R

\*\*Registrar:\*\* legal entities that will directly interface with App Developers seeking App-IDs and can assign unique IDs

\*\*Remote Security Provisioning:\*\* process of providing a credential into a secure environment of a Node deployed in the field

\*\*Repudiation:\*\* denial by an entity of a claimed event or action

> NOTE: This definition applies to the security context only.

\*\*Role-Based Access Control [i.3] (RBAC):\*\* permissions attributed to an Access Control Role granting access to an object

## 3.20 S

\*\*Secure [i.12]:\*\* not vulnerable to most attacks, are able to tolerate many of the attacks that they are vulnerable to, and that can recover quickly with a minimum of damage from the few attacks that successfully exploit their vulnerabilities

\*\*Security [i.5]:\*\* system condition that results from the establishment and maintenance of measures to protect the system

\*\*Security Association:\*\* set of shared security attributes necessary to perform secure communication between two entities (CSEs and/or AEs) which have performed Mutual Authentication

> NOTE: The security attributes include a description of the algorithms to be applied, and derived keys which are applied for the lifetime of the security association.

\*\*Security Association Establishment:\*\* procedure for establishing a Security Association between two entities (CSEs and/or AEs)

\*\*Security Pre-Provisioning:\*\* process of providing a credential into a secure environment of the Node prior to device deployment, e.g. during manufacturing

\*\*Security Provisioning:\*\* process of configuring a credential into a secure environment of a Node to enable access to a service provided by a target entity, such as communication services or M2M Services

> NOTE: This involves putting in the device and target entity the security Credentials that will be used for Mutual Authentication.

\*\*Sensing and Actuation (S&A) Equipment:\*\* equipment that provides functionality for sensing and/or influencing the physical environment by interacting with one or more M2M Application Services

> NOTE: Sensing and Actuation Equipment can interact with the oneM2M System, however does not host an M2M Application. The specification of S&A Equipment is not considered in the current oneM2M specifications. S&A Equipment may, but does not need to, be co-located with an M2M Device.

\*\*Sensitive Data:\*\* classification of stakeholder's data that is likely to cause its owner some adverse impact if either:

- It becomes known to others when not intended.

- It is modified without consent of the affected stakeholder.

\*\*M2M Service:\*\* consists of one or more M2M Application Services and one or more M2M Common Services

\*\*M2M Service Administrative State of a M2M Device:\*\* indicates whether the M2M Service is enabled by the M2M Service Provider to be run for this device

\*\*M2M Service Infrastructure:\*\* physical equipment (e.g. a set of physical servers) that provides management of data and coordination capabilities for the M2M Service Provider and communicates with M2M Devices

> NOTE: An M2M Service Infrastructure may communicate with other M2M Service Infrastructures. An M2M Service Infrastructure contains a CSE. It can also contain M2M applications.

\*\*M2M Service Operational Status of a M2M Device:\*\* indicates whether the M2M Service is currently running for this device

\*\*M2M Service Provider:\*\* entity (e.g. a company) that provides M2M Common Services to a M2M Service Subscriber

\*\*M2M Service Subscriber:\*\* M2M Stakeholder that subscribes to a M2M Service Provider to consume its M2M Service(s)

\*\*M2M Service Subscription:\*\* agreement between a M2M Service Provider and a M2M Service Subscriber for consumption of M2M Services for a period of time

> NOTE: An M2M Service Subscription is typically a commercial agreement.

\*\*M2M Service User:\*\* entity authorized by a M2M Service Subscriber to use M2M Services

\*\*M2M Session:\*\* service layer communication relationship between endpoints managed via M2M Common Services consisting of session authentication, connection establishment/termination, transmission of information and establishment/termination of Underlying Network services

\*\*M2M Solution:\*\* set of deployed systems satisfying all of the following criteria:

1. it satisfies the end-to-end M2M communication requirements of particular entities; and

1. some part of the M2M Solution is realized by including services compliant to oneM2M specifications.

\*\*Static Device/Gateway Context:\*\* static metrics, which may impact the M2M operations of M2M Devices/Gateways

\*\*M2M Stakeholder:\*\* entities who facilitate and/or participate in the legitimate operation of the oneM2M system

> NOTE: Examples of stakeholders, in alphabetical order, are:

- M2M Application Service Provider;

- Manufacturer of M2M Devices and/or M2M Gateways;

- Manufacturer of oneM2M system and its components;

- M2M Device/Gateway Management entities;

- M2M Service Provider; Network Operator;

- M2M Service Subscribers;

- M2M Service Users;

- etc.

## 3.21 T

\*\*Time Series Data:\*\* sequence of data points which typically consist of successive measurements made over a time interval

\*\*Thing:\*\* element which is individually identifiable in the oneM2M system

\*\*Trust [i.8]:\*\* relationship between two elements, a set of activities and a security policy in which element x trusts element y if and only if x has confidence that y will behave in a well defined way (with respect to the activities) that does not violate the given security policy

## 3.22 U

\*\*Underlying Network:\*\* functions, networks, busses and other technology assisting in data transportconnectivity services

## 3.23 V

\*\*Verification [i.10]:\*\* confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

\*\*Virtual Device:\*\* logical device (implemented as software) that acts similar to physical M2M Device and provides derived data

`EXAMPLE: Average temperature of a room, number of vehicles that passed during the last minute.`

## 3.24 W

Void.

## 3.25 X

Void.

## 3.26 Y

Void.

## 3.27 Z

Void.

# 4 Abbreviations

## 4.1 0-9

`3GPP 3rd Generation Partnership Project`

## 4.2 A

`ACL Access Control List`

`ADN Application Dedicated Node`

`AE Application Entity`

`API Application Programming Interface`

`AR Application Registrants`

`ARA M2M App-ID Registration Authority`

`ASN Application Service Node`

## 4.3 B

`BBF Broadband Forum`

## 4.4 C

`CHA Continua Health Alliance`

`CPU Centralized Processing Unit`

`CSE Common Services Entity`

`CSF Common Services Function`

## 4.5 D

`DAS Dynamic Authorization System`

`DM Device Management`

## 4.6 E

`E2EKey End-to-End Certificate-based Key Establishment`

`ESData End-to-End Security of Data`

`ESPrim End-to-End Security of Primitives`

## 4.7 F

Void.

## 4.8 G

`GBA Generic Bootstrapping Architecture`

`GSM Global System for Mobile communications`

`GSMA GSM Association`

## 4.9 H

Void.

## 4.10 I

`IN Infrastructure Node`

`IP Internet Protocol`

`IPE Interworking Proxy application Entity`

## 4.11 J

Void.

## 4.12 K

Void.

## 4.13 L

`LWM2M Lightweight M2M.`

## 4.14 M

`M2M Machine to Machine`

`MA Management Authority`

`MN Middle Node`

`MSISDN Mobile Subscriber Integrated Services Digital Network-Number`

`MTC Machine Type Communications`

## 4.15 N

`NSE Network Service Entity`

## 4.16 O

`OMA Open Mobile Alliance`

## 4.17 P

Void.

## 4.18 Q

`QoS Quality of Service`

## 4.19 R

`RBAC Role-Based Access Control`

## 4.20 S

`S&A Sensing and Actuation`

`SDO Standards Developing Organization`

`SMS Short Message Service`

## 4.21 T

`TR Technical Report`

`TS Technical Specification`

## 4.22 U

`UICC Universal Integrated Circuit Card`

`USIM Universal Subscriber Identity Module`

`USSD Unstructured Supplementary Service Data`

`URI Universal Resource Identifier`

## 4.23 V

Void.

## 4.24 W

`WAN Wide Area Network`

## 4.25 X

Void.

## 4.26 Y

Void.

## 4.27 Z

Void.

# Annex A (informative):<br />Bibliography

- oneM2M TR-0005: "Roles and Focus Areas".

# History

+-------------------------------------------------------------------------------------+

|\*\*Publication history\*\* |

+:======+:==========+:================================================================+

|V1.2.1 |30 Jan 2015|Release 1 - Publication |

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|V2.4.1 |30 Aug 2016|Release 2 - Publication |

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|V2.8.1 |12 Mar 2018|Release 2A - Publication |

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|V3.0.1 |Feb 2019 |Release 3 - Publication |

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|V4.1.1 |Aug 2023 |Partners pre-processing done by \*\*\_editHelp\_!\_\*\*<br />e-mail: |

| | |e-mail: [edithelp@etsi.org](edithelp@etsi.org) |

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# Draft History

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|\*\*Draft history\*\* (to be removed on publication) |

+:======+:==========+:================================================================+

|V4.0.0 |23 Mar 2018|Initial Release 4 version. Incorporated changes agreed in |

| | | TP-2018-0118-CR\_Pack\_for\_TS-0011 |

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|V4.1.0 |16 Dec 2019|This version incorporates the approved CR in |

| | |TP-2019-0208-TP43\_TS\_0011\_CR\_Pack |

+-------+-----------+-----------------------------------------------------------------+

|V4.1.1 |2024-03-01 |Editorial changes |

+-------+-----------+-----------------------------------------------------------------+

----------------------- End of change 1 -----------------------

----------------------- Start of change 2 -----------------------

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![logo](media/image1.png)

|oneM2M<br/>Technical Specification |oneM2M<br />Technical Specification |

|-|-|

|Document Number |TR-00xx-V-x.y.z |

|Document Name: |The name of the document<br /> |

|Date: |&lt;20yy-mm-dd> |

|Abstract: |&lt; An abstract of the specification and information that may be used in subsequent electronic searches> |

|Template Version: | January 2020 (do not modify) |

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<br />About oneM2M

The purpose and goal of oneM2M is to develop technical specifications which address the need for a common M2M Service Layer that can be readily embedded within various hardware and software, and relied upon to connect the myriad of devices in the field with M2M application servers worldwide.

More information about oneM2M may be found at: http//www.oneM2M.org

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# Contents

# 1 Scope

The present document ...

`EXAMPLE: The present document provides the necessary adaptions to the endorsed document.`

<mark>The Scope \*\*shall not\*\* contain requirements.</mark>

# 2 References

## 2.1 Normative references

<mark>The following text block applies.</mark>

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

<mark>Clause 2.1 only shall contain normative (essential) references which are cited in the document itself. These references have to be publicly available and in English.</mark>

The following referenced documents are necessary, partially or totally, for the application of the present document. Their use in the context of this TS is specified by the normative statements that are referring back to this clause.

- Use the \*\*EX\*\* style, enclose the number in square brackets and separate it from the title with a tab (you may use sequence fields for automatically numbering references, see clause A.4: "Sequence numbering") (see example).

`EXAMPLE:`

- <a name="\_ref\_1">[1]</a> ETSI TR 102 473: "&lt;Title>".

## 2.2 Informative references

<mark>The following text block applies.</mark>

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

<mark>Clause 2.2 shall only contain informative references which are cited in the document itself.</mark>

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- Use the \*\*EX\*\* style, add the letter "i" (for informative) before the number (which shall be in square brackets) and separate this from the title with a tab (you may use sequence fields for automatically numbering references).

- <a href="#\_ref\_i.1">[i.1]</a> oneM2M Drafting Rules (http://www.onem2m.org/images/files/oneM2M-Drafting-Rules.pdf)

<mark>Delete from the below heading the word(s) which is/are not applicable.</mark>

# 3 Definition of terms, symbols and abbreviations

## 3.1 Terms

<mark>Clause numbering depends on applicability.</mark>

<mark>- A definition shall not take the form of, or contain, a requirement.</mark>

<mark>- The form of a definition shall be such that it can replace the term in context. Additional information shall be given only in the form of examples or notes (see below).</mark>

<mark>- The terms and definitions shall be presented in alphabetical order.</mark>

For the purposes of the present document, the [following] terms and definitions [given in ... and the following] apply:

<mark>Definition format</mark>

&lt;defined term>: &lt;definition>

<mark>If a definition is taken from an external source, use the format below where [N] identifies the external document which must be listed in Section 2 References.</mark>

&lt;defined term>[N]: &lt;definition>

example 1: text used to clarify abstract rules by applying them literally

> NOTE: This may contain additional information.

## 3.2 Symbols

<mark>Clause numbering depends on applicability.</mark>

For the purposes of the present document, the [following] symbols [given in ... and the following] apply:

<mark>Symbol format</mark>

&lt;symbol> &lt;Explanation>

&lt;2nd symbol> &lt;2nd Explanation>

&lt;3rd symbol> &lt;3rd Explanation>

## 3.3 Abbreviations

<mark>Abbreviations should be ordered alphabetically.</mark>

<mark>Clause numbering depends on applicability.</mark>

For the purposes of the present document, the [following] abbreviations [given in ... and the following] apply:

<mark>Abbreviation format</mark>

&lt;ABREVIATION1> &lt;Explanation>

&lt;ABREVIATION2> &lt;Explanation>

&lt;ABREVIATION3> &lt;Explanation>

# 4 Conventions

The key words "Shall", "Shall not", "May", "Need not", "Should", "Should not" in this document are to be interpreted as described in the oneM2M Drafting Rules <a href="#\_ref\_i.1">[i.1]</a>

# 5 User defined clause(s) from here onwards

&lt;Text>

## 5.1 User defined subdivisions of clause(s) from here onwards

&lt;Text>

<mark>The following text is to be used when appropriate:</mark>

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<mark>&lt;PAGE BREAK></mark>

## <mark>Annexes</mark>

<mark>Each annex shall start on a new page (insert a page break between annexes A and B, annexes B and C, etc.).</mark>

<mark>Use the Heading 9 style for the title and the Normal style for the text.</mark>

# Annex &lt;A> (Informative/Normative):<mark>Remove Informative or Normative as appropriat</mark> Title of annex <mark>(style H9)</mark>

&lt;Text>

<mark>&lt;PAGE BREAK></mark>

# Annex &lt;B> (Informative/Normative):<mark>Remove Informative or Normative as appropriat</mark> Title of annex <mark>(style H9)</mark>

&lt;Text>

## B.1 First clause of the annex <mark>(style H1)</mark>

&lt;Text>

### B.1.1 First subdivided clause of the annex <mark>(style H2)</mark>

&lt;Text>

<mark>&lt;PAGE BREAK></mark>

<mark>The following text is to be used when appropriate:</mark>

# Annex &lt;y>:<br />Bibliography

<mark>The annex entitled "Bibliography" is optional.</mark>

<mark>It shall contain a list of standards, books, articles, or other sources on a particular subject which are not mentioned in the document itself</mark>

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<mark>Use the Heading 9 style for the title and B1+ or Normal for the text.</mark>

- &lt;Publication>: "&lt;Title>".

OR

&lt;Publication>: "&lt;Title>".

<mark>&lt;PAGE BREAK></mark>

# History

<mark>This clause shall be the last one in the document and list the main phases (all additional information will be removed at the publication stage).</mark>

|Publication history |Publication history |Publication history |

|-|-|-|

|V1.x.x |&lt;yyyy-mm-dd > |&lt;Milestone> |

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|Draft history (to be removed on publication) |Draft history (to be removed on publication) |Draft history (to be removed on publication) |

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|V1.x.x |&lt;yyyy-mm-dd > |&lt;CR ID> applied - &lt;Summary of changes> |

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----------------------- Start of change 3 -----------------------

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