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| CHANGE REQUEST |
| Meeting ID:\* | SDS#42 |
| Source:\* | Dale Seed, Convida, Seed.Dale@convidawireless.com |
| Date:\* | 2019-09-23 |
| Reason for Change/s:\* | See the introduction. |
| CR against: Release\* | Release 4 |
| CR against: WI\* | [x]  Active WI-0083 (oneM2M Service Subscribers and Users)[ ]  MNT maintenance / < Work Item number(optional)>Is this a mirror CR? Yes [ ]  No [x] mirror CR number: [ ]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0001 v4.2.0 |
| Clauses \* | Various |
| Type of change: \* | [ ]  Editorial change[ ]  Bug Fix or Correction[ ]  Change to existing feature or functionality[x]  New feature or functionalityOnly ONE of the above shall be ticked |
| Other TS/TR(s) impacted | TS-0004 |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES [x]  NO [ ] This CR may break backwards compatibility with the last approved version of the TS? YES [ ]  NO [x]  |
| 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.

If this is a correction, and the change applies to previous releases, a separate “mirror CR” should be posted at the same time as 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. Include any changes to references, definitions, and abbreviations in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar.

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 proposed new clause is 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 the 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

R02 – During initial review we agreed to change the M2M-SS-ID examples to remove things that looked like personally identifying information. (Bob and John)

WI-0089 focuses on adding awareness for M2M Service Subscribers and M2M Service Users in the oneM2M system.

In support of this work item, this contirbution proposes to add identifiers for M2M Service Subscribers and M2M Service Users.

* M2M Service Subscriber Identifier (M2M-SS-ID)
* M2M Service User Identifier (M2M-SS-ID)

This contirbution also updates the definition of the existing M2M Service Subscription Identifier (M2M-Sub-ID) to define its format since it was undefined in prior releases of oneM2M.

Definition of these identifiers is critical for enabling support of M2M Service Subscribers and Users in the oneM2M system. For example, M2M Service Subscriber and User based authorization, charging and statistics collection.

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

# 7 M2M Entities and Object Identification

## 7.1 M2M Identifiers

### 7.1.0 Overview

This clause provides a list of identifiers required for the purpose of interworking within the oneM2M architectural model.

An M2M identifier is a sequence of characters used to refer to an entity (such as CSE or an AE), a resource (such as defined in clause 9) or an object (such as an M2M Service Provider or an M2M Node) defined in oneM2M. An M2M identifier has a consistent meaning when applied (i.e. it refers consistently to the same resource, entity or object for the duration of their lifetime, as defined in the clause 7.2) in a particular context.

### 7.1.1 M2M Service Provider Identifier (M2M-SP-ID)

An M2M Service Provider shall be uniquely identified by the M2M Service Provider Identifier (M2M-SP-ID). This is a static value assigned to the Service Provider.

### 7.1.2 Application Entity Identifier (AE-ID)

An Application Entity Identifier (AE-ID) uniquely identifies an AE resident on an M2M Node, or an AE that requests to interact with an M2M Node. An AE-ID shall identify an Application Entity for the purpose of all interactions within the M2M System.

The AE-ID is globally unique and when used internally within a specific M2M SP domain, it is sufficient to be unique within that M2M Service Provider domain. It is extended to become globally unique when used outside the M2M Service Provider boundaries. The IN-CSE shall perform this task of adding or removing identifier portions (identifying the M2M SP) according to clause 7.2.

 the AE-ID, when used in the context of a specific CSE where the AE is registered, it is sufficient to be unique within the scope of that specific CSE. It is extended to become M2M Service Provider unique when used outside such specific CSE.

The Hosting CSE of the AE shall perform this task of adding or removing the identifier portions according to clause 7.2.

### 7.1.3 Application Identifier (App-ID)

An Application Identifier (App-ID) uniquely identifies an M2M Application in a given context. More precisely, there are two types of App-ID: registration authority defined App-ID (registered App-ID) and non-registered App-ID. The establishment of the registered App-ID is guaranteed to be globally unique; the non-registered App‑ID is not guaranteed to be globally unique. The detail format is described in clause 7.2.

### 7.1.4 CSE Identifier (CSE-ID)

A CSE shall be identified by a unique identifier, the CSE-ID, when instantiated within an M2M Node in the M2M System.

The CSE-ID is unique in an M2M Service Provider Domain. It becomes globally unique when the M2M-SP-ID is added in front.

The CSE-ID in a resource identifier (e.g. the ***To*** parameter) indicates the Hosting CSE of the resource.

### 7.1.5 M2M Node Identifier (M2M-Node-ID)

An M2M Node, hosting a CSE and/or Application(s) shall be identified by a globally unique identifier, the M2M‑Node‑ID.

The M2M System shall allow the M2M Service Provider to set the CSE-ID and the M2M-Node-ID to the same value.

The M2M-Node-ID enables the M2M Service Provider to bind a CSE-ID to a specific M2M Node.

Examples of allocating a globally unique M2M-Node-ID include the use of Object Identity (OID) and IMEI. For details on OID, see annex H.

### 7.1.6 M2M Service Subscription Identifier (M2M-Sub-ID)

The M2M-Sub-ID enables the M2M Service Provider to bind a M2M Service Subscriber, M2M Service Users, application(s), M2M Nodes, CSEs and services identified by service identifiers, as well as administrative information, such as billing address, etc., to a particular M2M Service Subscription between an M2M Service Subscriber and the M2M Service Provider. The M2M-Sub-ID is unique for every M2M Service Subscriber.

The M2M Service Subscription Identifier has the following characteristics:

* is assigned by the M2M Service Provider;
* identifies the subscription to an M2M Service Provider;
* enables communication with the M2M Service Provider;
* can differ from the M2M Underlying Network Subscription Identifier.

There can be multiple M2M Service Subscription Identifiers per M2M Underlying Network subscription.

When used internally within the M2M Service Provider Domain that assigned it, a M2M-Sub-ID is sufficient to be unique within that M2M Service Provider Domain. When used externally outside the M2M Service Provider Domain that assigned it, a M2M-Sub-ID shall be globally unique by including the M2M-SP-ID within the M2M-Sub-ID.

Care should be taken (e.g. proper configuration of ACPs) to not expose the M2M-Sub-ID to untrusted entities.

### 7.1.7 M2M Request Identifier (M2M-Request-ID)

The M2M-Request-ID tracks a Request initiated by an AE over the Mca reference point, and by a CSE over the Mcc reference point, if applicable, end to end. It is also included in the Response to the Request over the Mca or Mcc reference points.

To enable an AE to track Requests and corresponding Responses over the Mca reference point, AEs shall include a distinct M2M Request Identifier per request over the Mca Reference point to the CSE for any initiated request.

The CSE shall make such M2M Request Identifier unique by prepending the AE-ID-Stem (see clause 7.2) and slash ('/') in front of it (e.g. C190XX7T/001).

If the CSE creates an M2M Request Identifier, then the CSE shall maintain a binding between the M2M Request Identifier received from the AE and the M2M Request Identifier it created in its interactions towards other peer CSEs. The CSE shall include the M2M Request Identifier received from the AE in its Response to the AE. This binding shall be maintained by the CSE until the Request message sequence is completed. Note that the Request initiated by the CSE could be the result of an application Request, or a request initiated autonomously by the CSE to fulfil a service.

In case an IN-CSE needs to send a request to a receiving CSE or ADN-AE that is not reachable over any of the underlying networks, the IN-CSE initiates the procedure for "waking up" the Node hosting the receiving CSE or ADN-AE by using procedures such as device triggering over the Mcn reference point. For Device Triggering, the triggering reference number to co‑relate device triggering response is independent of the M2M Request Identifier. An IN-CSE may use the same value of an M2M-Request-Identifier in an incoming request for the triggering reference number in its interaction with the underlying network.

A CSE receiving a Request from a peer CSE shall include the received M2M Request Identifier in all additional Requests unspanned (i.e. 1:1) it has to generate (including propagation of the incoming Request) and that are associated with the incoming Request, where applicable.

If a Receiver CSE receives a request from an Originator for which another request with the same Request Identifier is already pending, the request shall be rejected. Otherwise - even if the same Request Identifier was already used by the same Originator sometime in the past, the request shall be treated as a new request.

### 7.1.8 M2M External Identifier (M2M-Ext-ID)

The M2M-Ext-ID is used by an M2M Service Provider (M2M SP) when services targeted to a M2M Device, are requested from the Underlying Network.

The M2M External Identifier allows the Underlying Network to identify the M2M Device (e.g. ADN, ASN, MN). To that effect, the Underlying Network maps the M2M-Ext-ID to the Underlying Network specific Identifier it allocated to the target M2M Device. In addition, the M2M SP shall maintain the association between the CSE-ID or AE-ID, the M2M-Ext-ID and the identity of the Underlying Network.

Both pre-provisioned and dynamic association between the M2M-Ext-ID with the CSE-ID or ADN AE-ID are supported.

NOTE 1: For each CSE-ID or ADN AE-ID, there is only one M2M-Ext-ID for a specific UNetwork-ID. Hence an M2M SP interworking with multiple Underlying Networks has different M2M-Ext-IDs associated with the same CSE-ID or ADN AE-ID, one per Underlying Network and selects the appropriate M2M-Ext-ID for any service request it initiates towards an Underlying Network.

NOTE 2: The mapping by the Underlying Network of the M2M-Ext-ID to the M2M Device is Underlying Network specific.

NOTE 3: The Underlying Network provider and the M2M Service Provider collaborate for the assignment of an M2M-Ext-ID to each M2M Device. At the same time, the Underlying Network provider maintains association of the M2M-Ext-ID with the Underlying Network specific Identifier allocated to the M2M Device that hosts such CSE.

For pre-provisioned M2M-Ext-IDs, the M2M-Ext-ID along with the associated CSE-ID or ADN AE-ID shall be made available at the Infrastructure Node. The CSE or AE at M2M Device does not need to have knowledge of the M2M-Ext-ID assigned to it.

For dynamic M2M-Ext-IDs, the M2M-Ext-ID specific to the Underlying Network shall be made available at the M2M Device in the Field Domain. Such M2M-Ext-ID shall be conveyed to the IN-CSE during Registration.

The M2M-Ext-ID is to be used by the underlying network to identify an AE for verification when an AE retrieves the location information of a remote M2M device from a network-based location server of the underlying network (e.g. the 3GPP location server GMLC).

NOTE 4: The mapping by the Underlying Network of the M2M-Ext-ID to the AE is Underlying Network specific. And how the underlying network performs the privacy control is out of the scope

NOTE 5: When the M2M-Ext-ID is targeted to an AE, the format is defined by the Underlying Network.

### 7.1.9 Underlying Network Identifier (UNetwork-ID)

The UNetwork-ID is used for identifying an Underlying Network. UNetwork-ID is a static value and unique within a M2M Service Provider domain.

One or more Underlying Networks may be available at an M2M Node offering different sets of capabilities, availability schedules etc. Based on the "policy" information at the Node and the capabilities offered by the available Underlying Networks, appropriate Underlying Network can be chosen by using UNetwork-ID. For example, based on "policy", scheduling of traffic triggered by a certain event category in certain time periods may be allowed over Underlying Network "WLAN" but may not be allowed over Underlying Network "2G Cellular".

### 7.1.10 Trigger Recipient Identifier (Trigger-Recipient-ID)

The Trigger-Recipient-ID is used when device triggering services are requested from the Underlying Network, to identify an instance of an ASN/MN-CSE or ADN-AE on an execution environment, to which the trigger is routed.

EXAMPLE: When 3GPP device triggering is used, the Trigger-Recipient-ID maps to the Application-Port-Identifier (3GPP TS 23.682 [i.14]).

NOTE 1: For pre-provisioned M2M-Ext-IDs, Trigger-Recipient-ID is provisioned at the Infrastructure Node along with the M2M-Ext-ID and the associated CSE-ID or ADN AE-ID.

NOTE 2: For dynamic M2M-Ext-IDs, Trigger-Recipient-ID specific to the Underlying Network is provisioned at each M2M Device in the Field Domain. Such Trigger-Recipient-ID is conveyed to the IN-CSE during Registration.

### 7.1.11 Void

### 7.1.12 Void

### 7.1.13 M2M Service Profile Identifier (M2M-Service-Profile-ID)

An M2M Service Profile Identifier defines applicable rules governing the AEs registering with M2M Nodes and the AEs residing on these nodes. Every M2M Service Profile is allocated an identifier so it can be retrieved for verification purposes.

The M2M-Service-Profile-ID enables the M2M Service Provider to bind AE(s), applicable rules to these AEs, as well as M2M Service Roles to M2M nodes.

An M2M-Service-Profile-ID shall be allocated to every M2M Node.

The M2M Service Profile Identifier has the following characteristics:

* belongs to the M2M Service Provider;
* identifies applicable rules governing AEs registering with an M2M node.

### 7.1.14 Role Identifier (Role-ID)

A Role identifier (Role-ID) is an identifier that a request originator may use in order to allow the CSE to enforce access control for resources. An originator may only use a Role-ID that is allowed by his service subscription profile.

### 7.1.15 Token Identifier (Token-ID)

A Token identifier (Token-ID) is the identifier for a Token. The Token-ID is assigned by the issuer of the Token.

Token-IDs shall meet the following criteria.

* A Token-ID shall identify the issuer of the Token.
* The Token-ID’s uniqueness shall be global, with the proviso that a Token-ID value assigned to a Token may be assigned to another Token once the former Token has expired.

### 7.1.16 Local Token Identifier (Local-Token-ID)

A local token identifier (Local-Token-ID) is an identifier for a Token which can be assigned by a Hosting CSE making an accessing decision when it receives a request from an Originator which includes that Token or Token-ID in the request parameters (see clause 11.5.3).

In these scenarios, the request from the Originator included either the Token or the Token’s Token-ID assigned by the Token’s Issuer (see clause 7.1.15). In the latter case the Hosting CSE retrieves the Token using the Token-ID. The Hosting CSE assigns a Local-Token-ID to the Token. In the corresponding response message, the Hosting CSE provides the Originator with the mapping from the Local-Token-ID to the corresponding Token-ID. In subsequent requests to the Hosting CSE, the Originator can provide the Local-Token-ID in the place of the corresponding Token-ID or Token. – The intention is that the Local-Token-ID would be significantly shorter than the Token or issuer-assigned Token-ID in order to reduce the size of the subsequent request messages. For more details regarding the use of Local-Token-ID, see clause 11.5.3.

Local-Token-IDs shall meet the following criteria

* The Local-Token-ID shall be assigned by the Hosting CSE making access decisions using the corresponding Token.
* The Local-Token-ID’s uniqueness shall be local to the Hosting CSE, with the proviso that a Local-Token-ID value assigned to a Token may be assigned to another Token once the former Token has expired.

### 7.1.17 M2M Service Subscriber Identifier (M2M-SS-ID)

A M2M Service Subscriber is a stakeholder that establishes a M2M Service Subscription with a M2M Service Provider. A M2M-SS-ID uniquely identifies a M2M Service Subscriber and shall be assigned by a M2M Service Provider. A M2M-SS-ID uniquely identifies a M2M Service Subscriber within the M2M Service Provider Domain of the M2M Service Subscriber. When used in a different M2M Service Provider Domain, a M2M-SS-ID shall be extended to make it globally unique by pre-pending the M2M-SP-ID of the M2M Service Subscriber’s M2M Service Provider. Note, a M2M Service Subscriber may also be assigned a M2M-User-ID such that the M2M Service Subscriber can function as a M2M Service User and take advantage of user-based operations in the oneM2M system (e.g. user-based access control privileges). For simplicity, the M2M-User-ID of a M2M Service Subscriber may be configured with the same value as its M2M-SS-ID.

### 7.1.18 M2M Service User Identifier (M2M-User-ID)

A M2M Service User is a stakeholder that is authorized by a M2M Service Subscriber to use M2M Services offered by the M2M Service Subscriber’s M2M Service Provider. A M2M-User-ID uniquely identifies a M2M Service User and shall be assigned by a M2M Service Provider. A M2M-User-ID uniquely identifies a M2M Service User within the M2M Service Provider Domain of the M2M Service User. When used in a different M2M Service Provider Domain, a M2M-User-ID shall be extended to make it globally unique by pre-pending the M2M-SP-ID of the M2M Service User’s M2M Service Provider.

## 7.2 Identifier formats

As a general rule, the identifiers of AEs, CSEs, Service Subscriptions, Service Subscribers, Service Users and resources are globally unique. In order to optimize their use, the identifiers shall be shortened when their scope can be derived from their context of use by the CSEs and the AEs. Such shortened identifiers are defined as 'relative' formats of the identifiers.

TheM2M system shall use the identifiers M2M-SP-ID, CSE-ID, App-ID, AE-ID, M2M-Sub-ID, M2M-SS-ID, M2M-User-ID and resource identifiers according to the formats and the rules specified in the following table (table 7.2-1).

Table 7.2-1: Identifier formats and rules of use

| IdentifierName | Absolute &Format-Designator orRelative &Format-Designator & Context | Format | Rule of use |
| --- | --- | --- | --- |
| M2M-SP-ID  | AbsoluteM2M-SP-ID | The M2M-SP-ID shall conform to the FQDN format defined in the IETF RFC 1035 [i.7] prefixed by '//'The format then has the structure of//{FQDN}Where {FQDN} is a placeholder for the Fully Qualified Domain Name of the M2M Service Provider Domain Examples:* //www.m2mprovider.com
* //globalm2m.org

The following two M2M-SP-IDs could be used to separate two service segments: //automotive.m2m.telematics-service-company.com//building-management.m2m.telematics-service-company.com | Whenever The M2M-SP-ID is used, only an Absolute format of the M2M-SP-ID defined herein applies |
| CSE-ID  | RelativeSP-relative-CSE-IDContext: M2MService Provider Domain of the CSE | The SP-relative-CSE-ID begins with a slash character '/' and is followed by a sequence of characters that may include any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.10].The SP-relative-CSE-ID is unique within the context of the M2M-SP Domain hosting the CSE.The M2M-SP is assigning the SP-Relative-CSE-ID and is responsible for guaranteeing that the SP-Relative-CSE-ID is unique in the context of the hosting M2M-SP Domain.Examples:* /123A38ZZY
* /CSE090112
* /3ace4fd3
 | On the Mca and Mcc reference points: to refer to CSEs that are in the same M2M Service Provider Domain of the Receiver CSE. |
|  | AbsoluteAbsolute-CSE-ID | Concatenation according to the format{M2M-SP-ID}{SP-relative-CSE-ID}where {M2M-SP-ID} and {SP-relative-CSE-ID} are placeholders for the M2M-SP-ID and the SP-relative-CSE-ID format of the CSE-ID, respectively.The Absolute-CSE-ID complies with what is specified in clause 3 of IETF RFC 3986 [i.10] under "hier-part".Examples:* //www.m2mprovider.com/C3219
* //m2m.thingscompany.com/ab3f124a
 | On Mca, Mcc and Mcc’ reference points: to refer to CSEs that are in different M2M Service Provider Domains |
| AE-ID  | Relative AE-ID-StemContext:* Registrar CSE of the AE or
* M2MService Provider Domain of the AE
 | The AE-ID-Stem is a sequence of characters that may include any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.10].The first character of the AE-ID-Stem has a specific meaning and its value shall be as follows:1. Fist character of AE-ID-Stem is 'C'The AE-ID-Stem is assigned by the Registrar CSE of the AE. In this case, the AE-ID-Stem shall be unique within the context of the Registrar CSE of the AE. The Hosting CSE is responsible for guaranteeing that the AE-ID-Stem is unique in the context of the Hosting CSE.Examples:
	* C190XX7T
	* Ca3e3f3ab
2. Fist character of AE-ID-Stem is 'S':The AE-ID-Stem is assigned by the M2M-SP. In this case, the AE-ID-Stem shall be unique within the context of the M2M-SP Domain. The M2M-SP is responsible for guaranteeing that the AE-ID-Stem is unique in the context of the M2M-SP Domain. Examples:
	* S190XX7T
	* Sa3e3f3ab

Use of other values for the first character of AE-ID-Stem is reserved.Which of the cases above shall apply will be determined during the AE registration procedure. The details of the process how an AE-ID-Stem unique within the M2M-SP Domain is assigned by the M2M-SP are described in the AE registration procedure description. | On the Mca reference point: to refer to AEs that registered to the Receiver CSE. |
|  | RelativeSP-relative-AE-IDContext: M2M Service Provider Domain of the AE | 1. In the case the AE-ID-Stem starts with the letter 'C', the SP-relative-AE-ID is a concatenation according to the format{SP-relative-CSE-ID}/{AE-ID-Stem}where {SP-relative-CSE-ID} and {AE-ID-Stem} are placeholders for the SP-relative-CSE-ID of the Registrar CSE of the AE and the AE-ID-Stem format of the AE-ID, respectively.Examples:
	* /CSE090112/C190XX7T
	* /3ace4fd3/Ca3e3f3ab
2. In the case the AE-ID-Stem starts with the letter 'S', the AE-ID-Stem is unique within the M2M-SP Domain. In that case the SP-relative-AE-ID is a concatenation according to the format/{AE-ID-Stem}where {AE-ID-Stem} is a placeholder for the AE-ID-Stem format of the AE-ID.Examples:
	* /S190XX7T
	* /Sa3e3f3ab

The SP-relative-AE-ID begins with a slash character '/', and it complies with what is specified in clause 4.2 of IETF RFC 3986 [i.10] under "absolute-path reference". | On the Mca and Mcc reference points: to refer to AEsin the same M2M Service Provider Domain. |
|  | AbsoluteAbsolute-AE-ID | The Absolute-AE-ID format of the AE-ID is a concatenation according to the format:{M2M-SP-ID}{SP-relative-AE-ID}where {M2M-SP-ID} and {SP-relative-AE-ID} are placeholders for the M2M-SP-ID and the SP-relative-AE-ID format of the AE-ID, respectively.The absolute AE-ID complies with what is specified in clause 3 of IETF RFC 3986 [i.10] under "hier-part".Examples:* //m2m.prov.com/CSE3219/C9886
* //m2m.things.com/ab3f124a/Ca2efb3f4
* //m2m.things.com/S98821
 | On the Mca, Mcc and Mcc’ reference points: to refer to AEs that are in different M2M Service Provider Domains  |
| Resource identifier  | RelativeUnstructured-CSE-relative-Resource-IDContext: CSE hosting the Resource | An Unstructured-CSE-relative-Resource-ID is a sequence of characters that may include any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.10].An Unstructured-CSE-relative-Resource-ID is unique in the context of the CSE hosting the resource.The Hosting CSE of the resource is responsible for guaranteeing that Unstructured-CSE-relative Resource-IDs are unique in the context of the Hosting CSE.Examples:* container123
* a1b2c3d4b0b00f0fa66a123456789abc
* xxyz1234
 | On the Mca and Mcc reference point: to refer to resources that are hosted by the CSE which is the Registrar CSE of the Originator. |
|  | RelativeStructured-CSE-relative-Resource-IDContext: CSE hosting the resource | A Structured-CSE-relative-Resource-ID is a sequence of characters that may include any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.10], as well as the slash character. It shall not start with the slash character.A Structured-CSE-relative Resource-ID is unique in the context of the CSE hosting the resource. The structure represents a chain of parent-child-relationships using resource IDs or resource names of parents and resource names of their children for segments that are separated by the '/' character. The first segment is one of the following:1. the resource name of <CSEBase> resource,
2. the character "-" (dash) as a shortcut for the resource name of <CSEBase> resource,
3. the Unstructured-CSE-relative-Resource-ID of a parent resource on the Hosting CSE. When this is used, the second segment shall be the resourceName of a virtual resource.

Note: In case of C above, for conveninence it is called a hybrid resource identifier.The Hosting CSE of the resource is responsible for guaranteeing that resource names - which are used to construct Structured-CSE-relative-Resource-ID formats - are unique in the context of a set of sibling resources sharing the same parent resource on the Hosting CSE.Examples:* bigCSE025/mainStreet/house5432/livingRoom/temperatureThis example is the Structured-CSE-relative-Resource-ID of a <*container*> resource, where "bigCSE025" is assumed to be the name of the <*CSEBase*> resource, followed by four "/"-separated segments with names of <*container*> resources that are nested child resources thereof.
* CSE-Building-A3/HVAC-AE/WaterTemp/sample0098This example is the Structured-CSE-relative-Resource-ID of a <*contentInstance*> resource, where "CSE-Building-A3" is assumed to be the name of the <*CSEBase*> resource, followed by "/" plus the name "HVAC-AE" of an <*AE*> child resource, followed by "/" plus the name "WaterTemp" of a <*container*> child resources, followed by "/" plus the name "sample0098" of a child <*contentInstance>* resource.
* ./HVAC-AE/WaterTemp/sample0098This example is the Structured-CSE-relative-Resource-ID of a <*contentInstance*> resource, where the dash symbol "-" is used as a shortcut for the name of the <*CSEBase*> resource, followed by "/" plus the name "HVAC-AE" of an <*AE*> child resource, followed by "/" plus the name "WaterTemp" of a <*container*> child resource, followed by "/" plus the name "sample0098" of a child <*contentInstance>* resource.
* 000AFE030003/sample0098This example is the Structured-CSE-relative-Resource-ID of a <*contentInstance*> resource, where "000AFE030003" is assumed to be the Unstructured-CSE-relative-Resource-ID of a <*container*> resource, followed by "/" plus the name "sample0098" of a child <*contentInstance>* resource.
 | On the Mca and Mcc reference point: To refer to resources that are hosted by the CSE receiving a request targeting a resource. |
|  | RelativeSP-relativeResource-IDContext: M2MService Provider Domain hosting the resource | Concatenation according to the format:{SP-relative-CSE-ID}/{Unstructured-CSE-relative Resource ID}{SP-relative-CSE-ID}/{Structured-CSE-relative Resource ID}where {SP-relative-CSE-ID}, {Unstructured-CSE-relative Resource ID}, {Structured-CSE-relative Resource ID} are placeholders for the SP-relative-CSE-ID format of the CSE-ID and the Unstructured-CSE-relative-Resource-ID or a Structured-CSE-relative-Resource-ID format of the Resource ID, respectively.The SP-relative-Resource-ID begins with a slash character, and it complies with what is specified in clause 4.2 of IETF RFC 3986 [i.10] under "absolute-path reference".The SP-relative Resource ID is unique in the context of the Service Provider.Examples:* /CSE987776/a234361

This example is the SP-relativeResource-ID of a resource – not assuming any specific resource type – where the resource is hosted on a CSE with the SP-relative-CSE-ID "/CSE987776" and where the Unstructured-CSE-relative-Resource-ID is "a234361".* /CSE00030F003A/CSE-Building-A3/HVAC-AE/WaterTemp/sample0098This example is the SP-relativeResource-ID of a <*contentInstance*> resource, where the targeted resource is hosted on a CSE with the SP-relative-CSE-ID "/CSE00030F003A" and where the CSE-ID is followed by "/" plus the name "CSE-Building-A3" of the <*CSEBase*> resource, followed by "/" plus the name "HVAC-AE" of an <*AE*> child resource, followed by "/" plus the name "WaterTemp" of a <*container*> child resource, followed by "/" plus the name "sample0098" of the targeted child <*contentInstance>* resource.
* /CSE00030F003A/./HVAC-AE/WaterTemp/sample0098This example is the SP-relativeResource-ID of a <*contentInstance*> resource, where the targeted resource is hosted on a CSE with the SP-relative-CSE-ID "/CSE00030F003A" and where the CSE-ID is followed by "/" plus the dash symbol "-" as a shortcut for the name of the <*CSEBase*> resource, followed by "/" plus the name "HVAC-AE" of an <*AE*> child resource, followed by "/" plus the name "WaterTemp" of a <*container*> child resource, followed by "/" plus the name "sample0098" of the targeted child <*contentInstance>* resource.
* /CSE00030F003A/000AFE030003/sample0098This example is the SP-relativeResource-ID of a <*contentInstance*> resource, where the targeted resource is hosted on a CSE with the SP-relative-CSE-ID "/CSE00030F003A" and where the CSE-ID is followed by "/" plus the Unstructured-CSE-relative-Resource-ID "000AFE030003" of a <*container*> resource, followed by "/" plus the name "sample0098" of the targeted child <*contentInstance>* resource.
 | On the Mca and Mcc reference points: to refer to resources that are hosted by the CSE in the same M2M Service Provider Domain as the Originator. |
|  | AbsoluteAbsolute Resource ID | Concatenation according to the format: {M2M-SP-ID}{SP-relative Resource ID}where {M2M-SP-ID} and {SP-relative Resource ID} are placeholders for the M2M-SP-ID and the SP-relative Resource ID format of the Resource ID, respectively.The Absolute-CSE-ID complies with what is specified in clause 3 of IETF RFC 3986 [i.10] under "hier-part".Examples:* //www.m2mprovider.com / CSE987776/a234361

This example is the AbsoluteResource-ID of a resource – not assuming any specific resource type – where the resource is hosted within the domain of the M2M-Service Provider with the M2M-SP-ID "//www.m2mprovider.com" on a CSE with SP-relative-CSE-ID "/CSE987776" and where the Unstructured-CSE-relative-Resource-ID of the targeted resource is "a234361".* //www.m2mprovider.com /CSE00030F003A/CSE-Building-A3/HVAC-AE/WaterTemp/sample0098This example is the AbsoluteResource-ID of a <*contentInstance*> resource, where the targeted resource is hosted within the domain of the M2M-Service Provider with the M2M-SP-ID "//www.m2mprovider.com" on a CSE with the SP-relative-CSE-ID "/CSE00030F003A" and where the CSE-ID is followed by "/" plus the name "CSE-Building-A3" of the <*CSEBase*> resource, followed by "/" plus the name "HVAC-AE" of an <*AE*> child resource, followed by "/" plus the name "WaterTemp" of a <*container*> child resource, followed by "/" plus the name "sample0098" of the targeted child <*contentInstance>* resource.
 | On Mca, Mcc and Mcc’ reference **points**: to refer to resources that are hosted by the CSE in a different M2M Service Provider Domain than the Originator’s. |
| APP-ID | App-ID | App-ID is either registered with the M2M App‑ID Registration Authority or non-registered.Registered App-IDs shall be in the format:R{authority‑ID}.{reverseDNS}.{applicationName}The {reverseDNS} part shall be a string value following 'reverse DNS notation', which is constructed in the reverse order of domain name components (see IETF RFC 1035 [i.7])Non-registered App-IDs shall be in the format:N{non-registered-App-ID}Examples:* Ra01.com.company.smartcity
* Nk836-t071-fc022
 | AE Registration Procedure described in clause 10.2.2.2.The first character of the App-ID shall be a capital letter of ‘R’ for registered and ‘N’ for non-registered. |
| M2M-Sub-ID | RelativeSP-relative-M2M-Sub-IDContext: M2M Service Provider Domain of the M2M Service Subscriber | The SP-relative-M2M-Sub-ID begins with a slash character '/' and is followed by a sequence of characters that includes any of the unreserved characters defined in clause 2.3 of the IETF RFC 3986 [i.10].The SP-relative-M2M-Sub-ID is unique within the context of the M2M Service Provider Domain of the M2M Service Subscriber.The M2M Service Provider assigns the SP-relative-M2M-Sub-ID and is responsible for guaranteeing that it is unique within the context of the M2M Service Proivder’s Domain.Example:* /subscription783567
 | Uniquely identifies a M2M Service Subscription within the M2M Service Provider Domain of the M2M Service Subscriber.  |
| AbsoluteAbsolute-M2M-Sub-ID | Concatenation according to the format{M2M-SP-ID}{SP-relative-M2M-Sub-ID}where {M2M-SP-ID} and {SP-relative-M2M-Sub-ID} are placeholders for the M2M-SP-ID and the SP-relative-M2M-Sub-ID format of the M2M-Sub-ID respectively. | Uniquely identifies a M2M Service Subscription within a different M2M Service Provider Domain than the M2M Service Subscriber’s. |
| M2M-SS-ID | RelativeSP-relative-M2M-SS-IDContext: M2M Service Provider Domain of the M2M Service Subscriber | The SP-relative-M2M-SS-ID begins with a slash character '/' and is followed by a sequence of characters that includes any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.10].The SP-relative-M2M-SS-ID is unique within the context of the M2M Service Provider Domain of the M2M Service Subscriber.The M2M Service Provider assigns the SP-relative-M2M-SS-ID and is responsible for guaranteeing that it is unique in the context of the M2M Service Provider’s Domain.Examples:* /SS123ABC
* /7689ayx
 | On the Mca and Mcc reference points: Uniquely identifies a M2M Service Subscriber within the M2M Service Provider Domain of the M2M Service Subscriber |
|  | AbsoluteAbsolute-M2M-SS-ID | Concatenation according to the format{M2M-SP-ID}{SP-relative-M2M-SS-ID}where {M2M-SP-ID} and {SP-relative- M2M-SS-ID} are placeholders for the M2M-SP-ID and the SP-relative-M2M-SS-ID format of the M2M-SS-ID respectively. | On the Mca, Mcc and Mcc’ reference points: Uniquely identifies a M2M Service Subscriber within a different M2M Service Provider Domain than the M2M Service Subscriber’s. |
| M2M-User-ID | RelativeSP-relative-M2M-User-IDContext: M2M Service Provider Domain of the M2M Service User | The SP-Relative-M2M-User-ID begins with a slash character '/' and is followed by a sequence of characters that includes any of the unreserved characters defined in the clause 2.3 of the IETF RFC 3986 [i.4].The SP-relative-M2M-User-ID is unique within the context of the M2M Service Provider Domain of the M2M Service User.The M2M Service Provider assigns the SP-Relative-M2M-User-ID and is responsible for guaranteeing that it is unique in the context of the M2M-SP Domain.Examples:• /supervisor• /homeowner1 | On the Mca and Mcc reference points: Uniquely identifies a M2M Service User within the M2M Service Provider Domain of the M2M Service User. |
| AbsoluteAbsolute-M2M-User-ID | Concatenation according to the format{M2M-SP-ID}{SP-relative-M2M-User-ID}where {M2M-SP-ID} and {SP-relative- M2M-User-ID} are placeholders for the M2M-SP-ID and the SP-relative-M2M-User-ID format of the M2M-User-ID respectively. | On the Mca, Mcc and Mcc’ reference points: Uniquely identifies a M2M Service User within a different M2M Service Provider Domain than the M2M Service User’s. |

The format (i.e. CSE-relative, SP-relative or absolute) of resource identifier (e.g. the ***To*** parameter, *accessControlPolicyIDs* attribute) shall be correctly set by the Originator in an initial request, while the format of AE-ID or CSE-ID in the ***From*** parameter shall be set in a shortest format by the Originator in the initial request and it shall be converted in another format by the Registrar CSE or IN-CSE as the following.

When an AE is the Originator, the ***From*** parameter shall be in AE-ID-Stem. When the Registrar CSE receives the request, it shall convert the format into SP-relative AE-ID in case the stem is CSE-relative and the ***To*** parameter refers to a resource hosted by a different CSE.

When an CSE is the Originator, the ***From*** parameter shall be in SP-relative CSE-ID.

The IN-CSE shall convert the format of the ***From*** parameter in a request that is received from SP-relative to absolute if the ***To*** parameter refers to a resource is hosted by a CSE in a different M2M Service Provider Domain.

## 7.3 M2M Identifiers lifecycle and characteristics

Table 7.3-1: M2M Identifiers lifecycle and characteristics

| Identifier | Assigned by | Assigned to | Assigned during | Lifetime | Uniqueness | Used during | Remarks |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M2M Service Provider Identifier | Out of scope | AE, CSE | Out of scope | Out of scope | Global | Provisioning |  |
| Application Entity Identifier | AE or Registrar CSE | AE | AE start-up | Application Entity Registration | Global | - Application Entity Registration- Security Context Establishment- All other operations initiated by the AE  | Security requirements apply for Security Context Establishment |
| Application Identifier | Out of scope | Out of scope | Pre-provisioned | Out of scope | Specific to M2M service deployment | - Application Entity registration |  |
| CSE Identifier | M2M SP | CSE  | Security Provisioning | Life of the CSE | Global | - Information flows (clause 10)- Security Context Establishment | Security requirements apply for Security Context Establishment |
| M2M Node Identifier | Out of Scope | All M2M Nodes | Pre-provisioned | Life of the M2M Node | Global | - Device Management | Needs to be Read Only |
| M2M Subscription Identifier | M2M SP, Out of Scope  | Application Entities, and one or more CSEs belonging to the same M2M subscriber  | At service signup  | Life of the M2M Service Subscription with the M2M Service Provider | Global | - Charging and Information Recorded- Role based access control - Authentication | Multiple CSEs can be allocated the same M2M Subscription Identifier |
| M2M Service Profile Identifier | M2M SP | Every M2M Node  | At service signup  | Life of M2M Service Subscriptions with the M2M Service Provider | Global for roaming cases otherwise local | Information Flows (clause 10) | The ID has to be pre-provisioned after signup, but may need to be updated during the subscription lifetime due to changes in the subscribed services |
| M2M-Request-ID | **Mcc:** CSE **Mca:** Application Entity | A request initiated by an AE or CSE | **Mcc:** When a request is initiated by a CSE, or handling of a request received by a CSE.**Mca:** When a request is initiated by an AE | Equal to the lifetime of the Request and its corresponding Response | **Mcc:** Global**Mca:** Local or global | Requests and corresponding responses |  |
| External Identifier | Jointly between the Underlying Network provider and M2M SP. | M2M Node belonging to a CSE or ADN-AE that wants to utilize services of the Underlying Network. | Administrative Agreement. | Life of the CSE or ADN-AE. | Local or global, decided by the specific Underlying Network provider | Requests initiated by a CSE over the Mcn reference point, where applicable.Querying the location information of a remote node from the underlying network. | **Pre-Provisioned Mode:**Made available at the Infrastructure Node.**Dynamic Mode:**Made available at M2M device. Conveyed to IN-CSE during CSE or AE Registration. |
| Underlying Network Identifier | M2M SP | Underlying Networks | Pre-provisioned | Life of the agreement by the M2M SP with the Underlying Network | Local to M2M SP domain | UL Network selection |  |
| Trigger Recipient Identifier | Execution Environment | ASN/MN-CSE or ADN-AE | ASN/MN-CSE or ADN-AE start-up or wake-up | Life of the CSE or ADN-AE | Execution Environment-wide | Device Triggering procedures, where applicable | **Pre-Provisioned Mode:** Made available at Infrastructure Node along with M2M-Ext-ID.**Dynamic Mode:** Made available at M2M device. Conveyed to IN-CSE during CSE or AE Registration along with M2M-Ext-ID. |
| M2M Service Identifier | M2M Service Provider, Out of Scope | A service defined by the M2M Service Provider which consists of a set of functions defined by the present document. | Out of Scope | Out of Scope | Local to the M2M Service Provider | For M2M Service Subscription |  |
| Role-ID | M2M Service Provider | Application Entities, and one or more CSEs belonging to the same M2M subscriber | Out of scope | Out of scope | Local to M2M SP domain | Access Control Policy |  |
| Token-ID | Token Issuer | Token | Token Assignment | Specified by Token | Global | Dynamic Authorization |  |
| Local-Token-ID | A Hosting CSE making access decisions with the corresponding token  | Token | After Hosting CSE has been provided with Token  | Specified by Token | Local to the Hosting CSE | Indirect Dynamic Authorization | See clause 11.5.3 |
| M2M Service Subscriber Identifier | M2M Service Provider | M2M Service Subscriber | At service subscriber signup | Life of M2M Service Subscription with the M2M Service Provider | Local or global. Dependent on M2M service deployment | Service Subscriber based operations:- Enrolment- Charging and Information Recording |  |
| M2M Service User Identifier | M2M Service Provider | M2M Service User | At service user signup | Life of M2M Service User with the M2M Service Provider | Local or global. Dependent on M2M service deployment | Service User based operations:- Access control- Authentication |  |

### -----------------------End of Change 1 ---------------------------------------------

### -----------------------Start of Change 2 ---------------------------------------------

### 9.6.19 Resource Type *m2mServiceSubscriptionProfile*

…

Table 9.6.19-2: Attributes of *<m2mServiceSubscriptionProfile>* resource

| Attributes of *<m2mServiceSubscriptionProfile>* | Multiplicity | RW/RO/WO | Description |
| --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. |
| *resourceID* | 1 | RO | See clause 9.6.1.3. |
| *resourceName* | 1 | WO | See clause 9.6.1.3. |
| *parentID* | 1 | RO | See clause 9.6.1.3. |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3.  |
| *creationTime* | 1 | RO | See clause 9.6.1.3. |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *M2M-Sub-ID* | 1 | WO | The identifier assigned by the M2M Service Provder for this M2M Service Subscription. |
| *M2M-SS-ID* | 0..1 | RW | The identifier assigned by the M2M Service Provder to the M2M Service Subscriber associated with this M2M Service Subscription. |

### -----------------------End of Change 2 ---------------------------------------------

### -----------------------Start of Change 3 ---------------------------------------------

## 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

2G Second Generation

3GPP 3rd Generation Partnership Project

3GPP2 3rd Generation Partnership Project 2

A/AAAA IPv4/IPv6 DNS records that are used to map hostnames to an IP address

AAA Authentication, Authorization, Accounting

AAAA Authentication, Authorization, Accounting and Auditing

ACA Accounting Answer

ACP Access Control Policy

ACR Accounting Request

ADN Application Dedicated Node

ADN-AE AE which resides in the Application Dedicated Node

AE Application Entity

AE/CSE Application Entity/Common Services Entity

AE-ID Application Entity Identifier

AID Addressing and Identification

Annc Announced

API Application Program Interface

App-ID Application Identifier

AS Application Server

ASCII American Standard Code for Information Interchange

ASM CSF Application and Service Layer Management CSF

ASM Application and Service Layer Management

ASN Application Service Node

ASN/MN Application Service Node/Middle Node

ASN-AE Application Entity that is registered with the CSE at Application Service Node

ASN-CSE CSE which resides in the Application Service Node

BBF BroadBand Forum

CDR Charging Data Record

CF Configuration Function

CHF Charging Function

CM Conditional Mandatory

CMDH Communication Management and Delivery Handling

COSEM Companion Specification for Energy Metering

CRUD Create Retrieve Update Delete

CRUDN Create Retrieve Update Delete Notify

CSE Common Services Entity

CSE-ID Common Service Entity Identifier

CSE-PoA CSE Point of Access

CSF Common Services Function

DCF Device Configuration Function

DDMF Device Diagnostics and Monitoring Function

DFMF Device Firmware Management Function

DIS CSF Discovery CSF

DIS Discovery

DM Device Management

DMG CSF Device Management CSF

DMG Device Management

DMR Data Management and Repository

DNS Domain Name Server

DTMF Device Topology Management Function

ESN Electronic Serial Number

FQDN Fully Qualified Domain Name

GMG CSF Group Management CSF

GMG Group Management

GPRS General Packet Radio Service

GPS Global Positioning System

GSMA GSM Association (Global System for Mobile Communications Association)

HA/LMA Home Agent/Local Mobility Agent

HAAA Home AAA

HLR Home Location Register

HTTP HyperText Transfer Protocol

ID Identifier

IETF Internet Engineering Task Force

IMEI International Mobile Equipment Identity

IMS IP Multimedia System

IMSI International Mobile Subscriber Identity

IN Infrastructure Node

IN-AE Application Entity that is registered with the CSE in the Infrastructure Node

IN-CSE CSE which resides in the Infrastructure Node

IN-DMG Infrastructure Node Device ManaGement

IN-DMG-MA Infrastructure Node Device ManaGement Management Adapter

IP Internet Protocol

IPE Interworking Proxy application Entity

ISO International Organization for Standardization

ITU-T ITU Telecommunication Standardization Sector

IWF InterWorking Function

JNI Java Native Interface

JSON JavaScript Object Notation

LOC CSF Location CSF

LOC Location

LWM2M Lightweight M2M

M2M Machine to Machine

M2M-IWF M2M InterWorking Function

M2M-Sub-ID M2M Service Subscription Identifier

M2M-SS-ID M2M Service Subscriber Identifier

M2M-User-ID M2M Service User Identifier

MA Mandatory Announced

MAF M2M Authentication Function

MBMS Multimedia Broadcast Multicast Service

Mca Reference Point for M2M Communication with AE

Mcc Reference Point for M2M Communication with CSE

Mcc' Reference Point for M2M Communication with CSE of different M2M Service Provider

Mch Reference Point for M2M Communication with external charging server

Mcn Reference Point for M2M Communication with NSE

Mcs Reference Point to access functions and data protected within local secure environmentsMEID Mobile Equipment Identifier

MIP Mobile IP

MN Middle Node

MN-AE Application Entity that is registered with the CSE in Middle Node

MN-CSE CSE which resides in the Middle Node

MQTT Message Queuing Telemetry Transport

MSISDN Mobile Subscriber International Subscriber Directory Number

MTC Machine Type Communications

NA Not Announced

NAT Network Address Translation

NoDN Non-oneM2M Node

NSE Network Service Entity

NSSE CSF Network Service Exposure, Service Execution and Triggering CSF

NSSE Network Service Exposure, Service Execution and Triggering

OA Optional Announced

OID Object Identifier

OMA Open Mobile Alliance

OMA-DM Open Mobile Alliance Device Management

OWL Web Ontology Language

PDP Packet Data Protocol

PDSN Packet Data Serving Node

PMIP Proxy Mobile IP

PoA Point of Access

PPP Point to Point Protocol

QoS Qualify of Service

RAM Random Access Memory

RDF Resource Description Framework

REG CSF Registration CSF

REG Registration

RFC Request for Comments

RO Read Only

RPC Remote Procedure Calls

RW Read Write

SCA CSF Service Charging and Accounting CSF

SCA Service Charging and Accounting

SCEF Service Capability Exposure Function

SCS Services Capability Server

SDO Standards Developing Organization

SE Secure Environment

SEA Security Association Endpoint

SEC CSF Security CSF

SEC Security

SLA Service Level Agreement

SMF Software Monitoring Function

SMI Semantic Mashup Instance

SMJP Semantic Mashup Job Profile

SMS Short Messaging Service

SP Service Provider

SPARQL SPARQL Protocol and RDF Query Language

SP-ID Service Provider Identifier

SSM Service Session Management

SUB CSF Subscription and Notification CSF

SUB Subscription and Notification

TLS Transport Layer Security

TMG CSF Transaction Management CSF

TP Traffic Patterns

TR Technical Report

TS Technical Specification

Tsms Interface between Short Message Entity (SME) and Short Message Service Center (SMS SC)

Tsp Interface between Service Capability Server (SCS) and Machine Type Communication (MTC) InterWorking Function

UE User Equipment

UL UpLink

URI Uniform Resource Identifier

URL Uniform Resource Locator

URN Uniform Resource Name

UTRAN Universal Terrestrial Radio Access Network

UUID Universally Unique Identifier

WLAN Wireless Local Area Network

WO Write Once

XML Extensible Markup Language

XSD XML Schema Definition

### -----------------------End of Change 3 ---------------------------------------------

CHECK LIST

* Does this Change Request include an informative introduction containing the problem(s) being solved, and a summary list of proposals.?
* Does this CR contain changes related to only one particular issue/problem?
* Have any mirror CRs been posted?
* Does this Change Request make **all** the changes necessary to address the issue or problem? E.g. A change impacting 5 tables should not include a proposal to change only 3 tables?Does this Change Request follow the drafting rules?
* Are all pictures editable?
* Have you checked the spelling and grammar?
* Have you used change bars for all modifications?
* Does the change 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.)
* Are multiple changes in this CR 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.?