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| CHANGE REQUEST |
| Meeting ID:\* |  SDS #57 |
| Source:\* | Poornima Shandilya, C-DOT, poornima@cdot.inNeeta Meshram, C-DOT, neeta@cdot.in Miguel Angel Reina Ortega, ETSI,Andreas Kraft, DT, A.Kraft@telekom.de  |
| Date:\* | 2022-11-1 |
| Reason for Change/s:\* | Interface correction for CSE-Relative resource ID |
| CR against: Release\* | Release 4 |
| CR against: WI\* | [ ]  Active WI-xxxx[x]  MNT maintenance / < Work Item number(optional)>Is this a mirror CR? Yes [ ]  No [ ] mirror CR number: (Note to Rapporteur - use latest agreed revision)[ ]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0001 4.16.1 |
| Clauses \* | 7.2 |
| Type of change: \* | [ ]  Editorial change[x]  Bug Fix or Correction[ ]  Change to existing feature or functionality[ ]  New feature or functionalityOnly ONE of the above shall be ticked |
| Impacted other TS/TR(s) |  |
| 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 2017 (Do not modify) |

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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

The interface mentioned for CSE-Relative Resource ID in clause 7.2 is incorrect.

#### 5.2.2.2 Mcc Reference Point

Communication flows between two Common Services Entities (CSEs) cross the Mcc reference point. These flows enable a CSE to use the services supported by another CSE.

And, CSE-Relative Resource ID cannot be used between two Common Services Entities (CSEs) since without CSE-ID or Domain in Resource ID, CSE would not know where to forward the request.

The CR proposes to correct the text for interface description of Structured and unstructured CSE-relative resource ID in clause 7.2.

R01:

The CR was discussed in TP 57 and SDS 57.5 and a corresponding issue is created in GIT for it:

[Issue in identifier formats and rule of use (#164) · Issues · ISSUES / Issues · GitLab (onem2m.org)](https://git.onem2m.org/issues/issues/-/issues/164)

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 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 should 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.

The M2M 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 table 7.2-1.

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| **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 clause 2.3 of the IETF RFC 3986 [18].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 [18] 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 orM2MService Provider Domain of the AE | The AE-ID-Stem is a sequence of characters that may include any of the unreserved characters defined in clause 2.3 of the IETF RFC 3986 [18].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, the *From* parameter of the request refers 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 [18] under "absolute-path reference". | On the Mca and Mcc reference points, the *From* parameter of the request refers to AEs in 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 [18] 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, the *From* parameter of the request refers 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 clause 2.3 of the IETF RFC 3986 [18].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, the *To* parameter of the request refers to resources that are hosted by the CSE receiving a request targeting a resource. |

Table 7.2-1: Identifier formats and rules of use

| **IdentifierName** | **Absolute &Format-Designator orRelative &Format-Designator & Context** | **Format** | **Rule of use** |
| --- | --- | --- | --- |
|  | 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 clause 2.3 of the IETF RFC 3986 [18], 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 convenience 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, the *To* parameter of the request 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 [18] 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, the *To* parameter of the request refers to resources that are hosted by any 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 [18] 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/sample0098
* This 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,** the *To* parameter of the request refers to resources that are hosted by any CSE in any M2M Service Provider Domain. |
| 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 [18].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 clause 2.3 of the IETF RFC 3986 [18].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 clause 2.3 of the IETF RFC 3986 [18].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.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*