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| CHANGE REQUEST |
| Meeting ID:\* | TP-39 |
| Source:\* | Poornima Shandilya, C-DoT, poornima@cdot.in Anupama Chopra, anupama@cdot.inSuman Sheoran, ssheoran@cdot.in Kapil Badwal, kapil@cdot.in  |
| Date:\* | 2019-02-14 |
| Reason for Change/s:\* | Refer to Introduction section. |
| CR against: Release\* | Release 3 |
| CR against: WI\* | [ ]  Active <Work Item number> [x]  MNT maintenance / WI-0083Is this a mirror CR? Yes [ ]  No [x] mirror CR number: (Note to Rapporteur - use latest agreed revision)[ ]  STE Small Technical Enhancements Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TR-0054 Version 0.3.0 |
| Clauses \* | 7.2.2.2 |
| 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) | N.A. |
| 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 [ ]  |
| Template Version: January 2017 (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

There are existing requirements mentioned but the solution is not linked for them. Example: limits on the number and/or types of applications and devices allowed to register, the number of resources that can be created etc.

The CR propose to add activation date and deactivation date as restrictions for a M2M Service Subscription in Potential Requirements. The CR also proposes to add a new section for Profile Restrictions, detailing the restrictions that could be applied to Service Subscription, as mentioned in the Potential Requirements and how to link them to Service Subscription.

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

## M2M Service Subscription Limitations

##  Description

oneM2M currently define an M2M Service Subscription in clause 6.6 of TS-0001[i.1]. It is defined as the technical part of the contract between an M2M Service Subscriber and an M2M Service Provider. oneM2M defines three resource types in support of the M2M Service Subscription functionality. These resource types are the <*m2mServiceSubscriptionProfile*>, <*serviceSubscribedNode*> and <*serviceSubscribedAppRule*>. The relationship between these resources is shown in Figure 6.1.1-1 as defined in clause 9.6.19 of TS-0001 [i.1].



**Figure 6.1.1-1: Relationship among M2M Service Subscription related resources**

The current M2M Service Subscription functionality defined thus far in oneM2M is limited to the following:

* Defining which CSEs and AEs are hosted on which Nodes
* Defining which AEs are authorized to register to a particular CSE

Currently, the only oneM2M procedure defined that makes use of the M2M Service Subscription functionality is the AE Registration procedure. When an AE registers, the Registrar CSE can check the applicable <*m2mServiceSubscribedNode*> and <*serviceSubscribedAppRule*> resources to determine if the AE is allowed to register.

The M2M Service Subscription functionality is currently not used by any other oneM2M procedures.

The following are some limitations of the existing M2M Service Subscription functionality:

* Lacks the capability to identify a M2M Service Subscriber (i.e. the entity that establishes a M2M Service Subscription with a M2M Service Provider). This prevents the oneM2M System from supporting M2M service subscriber based functionality such as:
	+ M2M Service Subscriber based charging such as defining charging events, collecting statistics and generating charging records per M2M Service Subscribers.
	+ M2M Service Subscriber based access control involving access control policy privileges based on M2M Service Subscribers.
	+ M2M Service Subscriber based enrolment involving an enrolment of authorized users, devices (i.e. node) and applications (i.e. AEs) associated with a M2M Service Subscriber
	+ Support for a profile which defines policies or preferences of the M2M Service Subscriber such as limits on the number and/or types of applications and devices allowed to register, the number of resources that can be created, default access control policies, etc.
* Lacks the capability to identify a M2M Service Subscription (i.e. a unique identifier of the M2M Service Subscription that the M2M Service Subscriber establishes between itself and a M2M Service Provider).

NOTE: oneM2M currently defines a M2M Subscription identifier (M2M-Sub-ID ) which could serve as the identifier of a M2M Service Subscription however this identifier is not linked with the existing M2M Service Subscription functionality (i.e. resources and procedures).

Editor’s Note: It is FFS whether both a M2M Service Subscription Identifier and a M2M Service Subscriber Identifier are required

* Lacks the capability to identify an authorized user of a M2M Service Subscriber (e.g. a family member or friend authorized to use a M2M Service Subscriber’s devices, applications and resources). This prevents the oneM2M System from supporting M2M Service User based functionality such as user based charging, user based access control and user based profiles as defined above for a M2M Service Subscriber.

##  Potential Requirements

1. The oneM2M System shall support identification of M2M Service Subscribers and associating a M2M Service Subscriber with a M2M Service Subscription to a M2M Service Provider.
2. The oneM2M System shall support identification of M2M Service Users and associating a M2M Service User with a M2M Service Subscriber.
3. The oneM2M System shall support charging event detection, statistics collection and charging records generation mechanisms based on M2M Service Subscriber and M2M Service User identification.
4. The oneM2M System shall support access control and authorization mechanisms based on M2M Service Subscriber and M2M Service User identification.
5. The oneM2M System shall support M2M Service Subscriber-based enrolment comprised of enrolment of M2M Devices and M2M Applications and M2M Service Users associated with a M2M Service Subscriber.
6. The oneM2M System shall support M2M Service Subscriber and M2M Service User profiles specifying their restrictions (e.g. privacy restrictions, max number and/or types of applications and devices the M2M Service Subscriber and its authorized M2M Service Users are allowed to register to the M2M System, the maximum number of resources or bytes of data that the M2M Service Subscriber can store in the M2M System, etc.) and their default configurations (e.g. access control policies, expiration times, max number of content instances, etc.).
7. The oneM2M System should support activation/deactivation date as restrictions for M2M Service Subscriber and M2M Service User.

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

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

## Profile Restrictions

### Solution Applicability

The oneM2M system should support M2M Service Subscriber and M2M Service User profiles specifying their restrictions. oneM2M currently does not mention the possible set of applicable restrictions and how they should be implemented. For example: Each Service Subscription should support a maximum number of devices for a Service Subscriber. Any request for a device to be included in a Service Subscription exceeding this number should not be allowed.

### Solution Description

Profile Restrictions should enable the M2M Service Provider to apply restrictions on the M2M Service Subscriber based on the M2M Service Subscription agreement between the M2M Service Provider and the M2M Service Subscriber. These restrictions should be applicable as mentioned in the Service Subscription and should allow M2M Service Provider to restrict the usage of Services by the M2M Service Subscriber based on them.

For each M2M Service Subscription, these restrictions could be added as attributes of the corresponding Service Subscription Profile. The M2M-Subscription-ID is unique for every M2M Service Subscriber and enables the M2M Service Provider to identify the service subscription. Thus, the restrictions applicable for each Service Subscriber should be linked through the M2M-Subscription-ID, that is uniquely associated with a M2M Service Subscription Profile.

The following restrictions could be part of the Service Subscription:

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| --- | --- |
| **Restriction Name** | **Description** |
| Activation Date | Date from which the Service Subscription should be active |
| De-activation Date | Date from which the Service Subscription should be deactivated |
| Maximum Number of Applications | Maximum number of Application Entity Instances that should be allowed to register against a Service Subscription |
| Maximum Number of Nodes | Maximum number of Field Nodes (ADN/ASN/MN) that should be allowed against a Service Subscription |
| Maximum bytes of data | Maximum size of data that should be allowed to be stored against a Service Subscription |
| Maximum Number of Users | Maximum number of Subscriber Service User that should be allowed against a Service Subscription |

The *<m2mServiceSubscriptionProfile>* resource represents an M2M Service Subscription though the *M2M-Subscription-ID* attribute. All the Profile Restrictions can be added as attributes to the <*m2mServiceSubscriptionProfile>* resource. This provides the capability to retrieve all restrictions that are applicable to a M2M Service Subscription as part of the agreement.

Table 7.4.2-1: New *<m2mServiceSubscriptionProfile>* resource attributes

| Attributes of *<m2mServiceSubscriptionProfile>* | Multiplicity | RW/RO/WO | Description |
| --- | --- | --- | --- |
| *activationDate* | 0..1 | RW | Date from which the Service Subscription should be active |
| *deactivationDate* | 0..1 | RW | Date from which the Service Subscription should be deactivated |
| *maxNumberOfAEs* | 0..1 | RW | Maximum number of Application Entity Instances that should be allowed to register against a Service Subscription |
| *maxNumberOfNodes* | 0..1 | RW | Maximum number of Field Nodes (ADN/ASN/MN) that should be allowed against a Service Subscription |
| *maxBytes* | 0..1 | RW | Maximum size of data that should be allowed to be stored against a Service Subscription |
| *maxNumberOfUsers* | 0..1 | RW | Maximum number of Subscriber Service User that should be allowed against a Service Subscription |

For each M2M Service User, these restrictions could be added as attributes of the corresponding Service Subscribed User Profile.

The <*serviceSubscribedUserProfile*> resource contains user profile information for a given M2M Service User such as its M2M-User-ID. Each M2M Service User could be assigned a different set of restrictions based on the attributes as mentioned below:

Table 7.4.2-2: New *< serviceSubscribedUserProfile>* resource attributes

| Attributes of *<m2mServiceSubscriptionProfile>* | Multiplicity | RW/RO/WO | Description |
| --- | --- | --- | --- |
| *activationDate* | 0..1 | RW | Date from which the Service Subscribed User should be active |
| *deactivationDate* | 0..1 | RW | Date from which the Service Subscribed User should be deactivated |
| *maxNumberOfAEs* | 0..1 | RW | Maximum number of Application Entity Instances that should be allowed to register against a Service Subscribed User |
| *maxNumberOfNodes* | 0..1 | RW | Maximum number of Field Nodes (ADN/ASN/MN) that should be allowed against a Service Subscribed User |
| *maxBytes* | 0..1 | RW | Maximum size of data that should be allowed to be stored against a Service Subscribed User |

### -----------------------End of change 2---------------------------------------------

No mixed AND/OR filter operation will be supported.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.?