|  |
| --- |
|  |

|  |
| --- |
| CHANGE REQUEST |
| Meeting ID:\* | TST#30 |
| Source:\* | Maciej Goluch, ORANGE, maciej.goluch@orange.com,Pawel Srzemecki, ORANGE  |
| Date:\* | 2017-07-13 |
| Reason for Change/s:\* | Add essential content of the Procedures and call flows |
| CR against: Release\* | Rel-3 |
| CR against: WI\* | [x]  Active <WI-0054> [ ]  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\* | TR-0039 ‘Developer guide: Interworking Proxy using SDT’ |
| Clauses \* | 8 |
| 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 |
| 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) |

**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.

## Introduction

This document proposes additional content to the developer’s guideline TR-0039 on how to implement SDT and IPE via a simple example. The main changes are proposed for section 8 “Procedures and call flows”.

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

# 8 Procedures and call flows

## 8.1 Introduction

The deployment of the oneM2M standard in the present use case requires procedures that are classified as follows:

* **Registration:** AE registration with CSE: IPE-AE with MN-CSE, ADN-AE with IN-CSE.
* **Resources creation:** a set of <*flexContainer*> resources creation to represent SDT Device in a resource tree.
* **Discovery of resources with filter criteria:** discovery of resources with given containerDefinition attribute filtered with filter criteria to receive associated URI.
* **Discovery of children resources:** discovery of a resource tree associated with particular SDT Device to get access to particular ModuleClass, DataPoint, Action.
* **Change resource:** changing a DataPoint value or triggering an Action throughsendingUPDATE request.

In this developer guide there is an assumption that MN-CSE is registered with IN-CSE. More assumptions are listed in 9.2 clause.

## 8.2 Call Flows from perspective of device adapter developer

### 8.2.1 IPE-AE registration with MN-CSE

The procedure to register device adapter (IPE-AE) with gateway (MN-CSE) is as follows:

* Device adapter (IPE-AE) sends register request to Gateway (MN-CSE)
* Gateway (MN-CSE) responds with status of the registration and Content-Location for the registered entity



Figure 8.2.1-1: AE registration with CSE request

### 8.2.2 SDT Device resource tree creation in MN-CSE

The procedure to create resource tree for particular SDT Device (deviceLight in this use case) is as follows:

* Device adapter (IPE-AE) sends a CREATE request to gateway (MN-CSE) to create <*flexContainer*> for SDT Device.
* Gateway (MN-CSE) responds with URI of the new <*flexContainer*> for SDT Device.
* Device adapter (IPE-AE) sends a CREATE reqest to gateway (MN-CSE) to create a <*flexContainer*> for a single Module with associated customAttributes (DataPoints). Please note that there is sended one such request per each Module.
* Gateway (MN-CSE) responds with URI for created Module.
* Device adapter (IPE-AE) sends a CREATE request to gateway (MN-CSE) to create <*flexContainer*> for a single Action. The <*flexContainer*> which represents Action is set as a child of <*flexContainer*> which represents Module.
* Gateway (MN-CSE) responds with URI for created Action.



Figure 8.2.2-1: Creation of resource tree for SDT Device

## 8.3 Call flows from perspective of utility application developer

### 8.3.1 Application Entity registration in IN/MN-CSE

The procedure to register utility application (ADN-AE-1) with server (IN-CSE) is as follows:

* Utility application (AND-AE-1) sends register request to gateway (IN-CSE)
* Server (IN-CSE) responds with status of the registration and Content-Location for the registered entity



Figure 8.3.1-1: AE registration with CSE request

### 8.3.2 Discovery Requests

The procedure to discover SDT Device is as follows:

* Utility application (AND-AE-1) sends a RETRIEVE request to server (IN-CSE) including filter criteria conditions, especially it could be a *containerDefinition* attribute
(e.g. org.onem2m.home.moduleclass.binaryswitch)
* Server (IN-CSE) responds with list of URIs of the discovered resources, if any (especially URI for deviceLight which represents a bulb).



Figure 8.3.2-1: Discovery of SDT Device with filter criteria

### 8.3.3 Control & monitor devices

### 8.3.3.1 Getting URLs for resources

The procedure to retrieve needed URIs for Modules which are associated with particular Device is as follows:

* Utility application (ADN-AE-1) sends a request to server (IN-CSE) with URI of the Device.
* Server (IN-CSE) responds with a list of the Modules URIs.



**Figure 8.3.3.1-1: Discovery of Modules related to SDT Device**

### 8.3.3.2 DataPoint value changing

The procedure to change DataPoint value is as follows:

* Utility application (AND-AE-1) sends an UPDATE request to server (IN-CSE) with <*flexContainer*> which contains the new value of the DataPoint.
* Server (IN-CSE) responds with status of DataPoint UPDATE operation

 

**Figure 8.3.3.2-1: Change value of a DataPoint**

### 8.3.3.3 Action triggering

The procedure to trigger an Action is as follows:

* Utility application (AND-AE-1) sends an UPDATE request to server (IN-CSE) with empty <*flexContainer*>.
* Server (IN-CSE) responds with status of UPDATE operation



**Figure 8.3.3.3-1: Action triggering procedure**

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