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| CHANGE REQUEST |
| Meeting ID:\* | SDS 54 |
| Source:\* | Miguel Angel Reina Ortega, ETSI, MiguelAngel.ReinaOrtega@etsi.org  |
| Date:\* | 2022-05-13 |
| Reason for Change/s:\* | Resource identifier format conversion |
| CR against: Release\* | Rel-4  |
| CR against: WI\* | [x]  Active < WI-0077> [ ]  MNT maintenance / < Work Item number(optional)>Is this a mirror CR? Yes [x]  No [ ] mirror CR number: SDS-2022-0022R01-TS-0001\_resourceIdentifiers\_format\_conversion\_R3[ ]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0001 v4.14.0 |
| Clauses \* | 9.6.26.1, 10.2.13.5, 10.2.13.9, 10.2.13.11 |
| Type of change: \* | [x]  Editorial change[ ]  Bug Fix or Correction[ ]  Change to existing feature or functionality[ ]  New feature or functionalityOnly ONE of the above shall be ticked |
| Other TS/TR(s) impacted | None |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES [x]  NO [ ] This CR may break backwards compatibility with the last approved version of the TS? YES [ ]  NO [ ]  |
| Template Version: January 2019 (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

This CR proposes a clarification for the format conversion of resource identifiers contained in resource attributes as explained in <https://git.onem2m.org/issues/issues/-/issues/13>

## ----------------------- Start of Change 1--------------------------------------------

#### 9.6.26.1 Overview

A resource can be announced to one or more remote CSEs to inform the remote CSEs of the existence of the original resource. An announced resource can have a limited set of attributes and a limited set of child resources from the original resource. The announced resource includes a link to the original resource hosted by the original resource‑Hosting CSE.

In case that the original resource is deleted, all announced resources for the original resource shall be deleted, except for *<AEAnnc>* resources that were created during the registration of an AE with AE-ID-Stem starting with "S", which shall not be deleted. If the announced resource is not deleted promptly (e.g. the announced resource is not reachable), the announced resource can be deleted later either by the original resource Hosting CSE or by the expiration of the announced resource itself. The original resource shall store the list of links for the announced resources for those purposes.

Synchronization between the attributes announced by the original resource and the announced resource shall be the responsibility of the original resource Hosting CSE and announced resource Hosting CSE depending on the value of the *announceSyncType* attribute. There shall not be any synchronization for unannounced children created at the original resource and the announced resource. The access control policy for the announced resource shall synchronize with the one from the original resource. In case that the attribute *accessControlPolicyIDs* is not present in the original resource it is the responsibility of the original resource Hosting CSE to choose the appropriate value depending on the policy for the original resource (e.g. take the parent *accessControlPolicyIDs* value).

The original resource shall have at least *announceTo* attribute present if the resource itself has been announced. If any of the Optional Announced (OA) attributes are also announced, then *announcedAttribute* attribute shall also be present. An AE or other CSE can request the original resource Hosting CSE for announcing the original resource to the list of CSE‑IDs or the address(es) listed in the *announceTo* attribute in the announcing request. An Update to the *announceTo* attribute will trigger new resource announcement(s) or the de-announcement(s) of the announced resource. After a successful announcement procedure the attribute *announceTo* contains only the list of address(es) of the announced resources.

In order to announce an attribute marked as **OA**(see clause 9.5.0), the attribute shall be included in the *announcedAttribute* attribute list at the original resource. The attributes included in the *announcedAttribute* attribute are announced to the announced resource. On successful announcement of the resource, such attributes shall be created at the announced resource; otherwise they shall not be present in the announced resource. Update to the *announcedAttribute* attribute in the original resource will trigger new attribute announcement or the de-announcement of the announced attribute(s). Synchronization between the value of the announced attributes at the original resource and the announced resource is the responsibility of the original resource Hosting CSE and announced resource Hosting CSE depending on the value of the *announceSyncType* attribute. If an attribute in the original resource has an identifier type (i.e. CSE-ID, AE-ID, resource identifier), the original resource Hosting CSE shall convert the value of this attribute to an identifier format (see table 7.2-1) required by the Receiver CSE.

If an announced resource is updated by an entity other than the original resource Hosting CSE and the *announceSyncType* attribute of the announced resource has a value of "Bi-directional synchronization", then the announced resource Hosting CSE shall update the original resource to synchronize the values of the announced resource attributes to the original resource. In this case, the original resource Hosting CSE shall UPDATE all other announced resource(s) listed in the *announceTo* attribute. If an updated announced attribute has an identifier type (i.e. CSE-ID, AE-ID, resource identifier) the announced resource Hosting CSE shall convert the value of this attribute to an identifier format (see table 7.2-1) required by the original resource Hosting CSE.

An announced resource may have child resources. In general, a child resource of an announced resource shall be of one of the resource types that are specified as possible child resource types for the original resource or of one of their associate announced resource types. However, for specific announced resource types, specific exceptions apply regarding which child resource types can occur. The details on which child resources are specified for each announced resource type are summarized in table 9.6.26.1-1.

Child resources of the original resource can be announced independently as needed. In this case, the child resources at the announced resource shall be of the child resource's associated announced type. When a child resource at the announced resource is created locally at the remote CSE, the child resource shall be of ordinary – i.e. not-announced – child resource type.

When a Hosting CSE of an original resource is initiating an announcement, it shall first check if the parent resource is announced to the announcement target CSE by checking the *announceTo* attribute of the parent resource and if so, create the announced resource as a child of the announced parent resource. If the parent resource is not announced, the Hosting CSE shall check if <CSEBaseAnnc> exists into the announcement target CSE. If it does not exist, the Hosting CSE shall create a <CSEBaseAnnc> resource as a child of the <CSEBase> resource of the announcement target CSE. The Hosting CSE shall then create the announced resource as a child resource of the <*CSEBaseAnnc*> resource.

When a Hosting CSE of an original resource is initiating an announcement, the *From* parameter of the announce request shall contain either a SP-relative-CSE-ID of the Hosting CSE of the original resource if the announcement target CSE resides in the same SP domain or an Absolute-CSE-ID of the Hosting CSE of the original resource if the announcement target CSE resides in a different SP domain.

If an attribute is marked as **RO** and also marked as **MA** or **OA**, then only the attribute of the original resource shall be interpreted as **RO**. The corresponding attribute of the announced resource shall be always writable to the original resource hosting CSE to allow it to properly announce and de-announce the attribute and keep the announced attribute synchronized with the original one. Only the original resource Hosting CSE shall be allowed to update and delete the announced attribute which is created by the original resource Hosting CSE.

Table 9.6.26.1-1: Announced Resource Types

| **Announced Resource Type** | **Short Description** | **Child Resource Types** | **Clause** |
| --- | --- | --- | --- |
| *accessControlPolicyAnnc* | Announced variant of *accessControlPolicy* | *subscription* | 9.6.2 |
| *AEAnnc* | Announced variant of *AE* | *subscription,**container,**containerAnnc, flexContainer,**flexContainerAnnc,**group,**groupAnnc,**accessControlPolicy,**accessControlPolicyAnnc**semanticDescriptor,**semanticDescriptorAnnc,**timeSeries,**timeSeriesAnnc* | 9.6.5 |
| *containerAnnc* | Announced variant of *container* | *container,**containerAnnc, flexContainer,**flexContainerAnnc,**contentInstance,**contentInstanceAnnc,**subscription,**semanticDescriptor,**semanticDescriptorAnnc,**timeSeries,**timeSeriesAnnc* | 9.6.6 |
| *contentInstanceAnnc* | Announced variant of *contentInstance* |  *semanticDescriptor,**semanticDescriptorAnnc* | 9.6.7 |
| *CSEBaseAnnc* | *Announced variant of CSEBase* | *container,**containerAnnc, dynamicAuthorizationConsultationAnnc,**flexContainer,**flexContainerAnnc,**group,**groupAnnc,**accessControlPolicy,**accessControlPolicyAnnc,**subscription,**scheduleAnnc,**semanticDescriptorAnnc, semanticMashupJobProfileAnnc,**timeSeries,**timeSeriesAnnc,**remoteCSEAnnc,**nodeAnnc,* *mgmtObjAnnc,**AEAnnc,**locationPolicyAnnc* | 9.6.3 |
| *dynamicAuthorizationConsultationAnnc* | Announced variant of *dynamicAuthorizationConsultation* | None specified | 9.6.40 |
| *flexContainerAnnc* | Announced variant of flexC*ontainer* | *container,**containerAnnc,**flexContainer,**flexContainerAnnc,**subscription,**semanticDescriptor,**semanticDescriptorAnnc,**timeSeries,**timeSeriesAnnc* | 9.6.35 |
| *groupAnnc* | Announced variant of *group* | *subscription,**semanticDescriptor,**semanticDescriptorAnnc* | 9.6.13 |
| *locationPolicyAnnc* | Announced variant of *locationPolicy* | None specified | 9.6.10 |
| *mgmtObjAnnc* | Announced variant of *mgmtObj* | *subscription* | 9.6.15 |
| *nodeAnnc* | Announced variant of *node* | *mgmtObjAnnc,**subscription, semanticDescriptor,**semanticDescriptorAnnc,**scheduleAnnc* | 9.6.18 |
| *remoteCSEAnnc* | Announced variant of *remoteCSE* | *container,**containerAnnc, dynamicAuthorizationConsultationAnnc,**flexContainer,**flexContainerAnnc,**group,**groupAnnc,**accessControlPolicy,**accessControlPolicyAnnc,**subscription,**scheduleAnnc,**semanticDescriptorAnnc,**semanticMashupJobProfileAnnc,* *timeSeries,**timeSeriesAnnc,**remoteCSEAnnc,**nodeAnnc,* *mgmtObjAnnc,**AEAnnc,**locationPolicyAnnc* | 9.6.4 |
| *scheduleAnnc* | Announced variant of *schedule* | None specified | 9.6.9 |
| *semanticDescriptorAnnc* | Announced variant of *semanticDescriptor* | Subscription | 9.6.30 |
| *semanticMashupInstanceAnnc* | Announced variant of *semanticMashupInstance* | None specified | 9.6.54 |
| *semanticMashupJobProfileAnnc* | Announced variant of *semanticMashupJobProfile* | None specified | 9.6.53 |
| *timeSeriesAnnc* | Announced variant of timeSeries | timeSeriesInstance,timeSeriesInstanceAnnc,subscription, semanticDescriptor,semanticDescriptorAnnc | 9.6.36 |
| *timeSeriesInstanceAnnc* | Announced variant of timeSeriesInstance | None specified | 9.6.37 |

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

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

#### 10.2.13.5 Procedure for original resource Hosting CSE to Create an Announced Resource

This clause explains the resource announcement procedure that shall be used by the original resource Hosting CSE to announce the original resource to the remote CSE(s).

See figure 10.2.13.2-1 for the graphical explanation.

The Originator of this Request shall be the original resource Hosting CSE. The Originator shall request to create the announced resource by using CREATE Request.

Table 10.2.13.5-1: Resource Hosting CSE to Announce Resource: CREATE

| *Resource Announcement:* CREATE |
| --- |
| Information in Request message | All parameters defined in table 8.1.2-3 are applicable as indicated in that table.***Content*:** contains MA attributes and OA attributes that are included in *announcedAttribute* attribute. |
| Processing at the Originator before sending Request  | Other details for the information in the Request message shall be as follows:* Attributes marked with MA and attributes marked with OA that are included in the *announcedAttribute* attribute at the original resource shall be provided in the CREATE Request. Such attributes shall have the same value as for the original resource.
* *resourceType* which shall be set to the appropriate tag that identifies the *<Annc>* resource.
* *expirationTime* provided by the Originator equal to the one for the original resource.
* The *link* attribute of the announced resource shall have the address of the original resource in SP-relative Resource-ID format or Absolute Resource-ID format.
* The *labels* attribute of the announced resource shall have the same value as for the original resource.
* The *accessControlPolicyIDs* attribute shall always be provided in the CREATE Request even if it is not present in the original resource. In this case the original resource shall include *accessControlPolicyIDs* from its parent resource or from the local policy at the original resource, as needed.
* *accessControlPolicyIDs* and *labels* attributes, if present at the original resource, shall be provided by the original resource Hosting CSE in the CREATE Request. Such attributes shall have the same value at the original resource and at the announced resource(s).
* If an attribute that is to be announced has an identifier type (i.e. CSE-ID, AE-ID, resource identifier), the Originator shall convert the value of the original resource attribute to an identifier format (see table 7.2-1) required by the Receiver.
 |
| Processing at the Receiver | Once the Originator has been successfully authorized, the Receiver shall grant the Request after successful validation of the Request. The Receiver shall perform as follows:* The basic procedure (clause 10.1.2) for the Receiver of the CREATE Request apply.
* The created announced resource shall include the common attributes specified in clause 9.6.26.1. The created announced resource shall contain the additional attributes that are provided by the Originator; i.e. attributes marked with MA and the attributes marked with OA that are included in the *announcedAttribute* attribute.
* The created announced resource shall set the *accessControlPolicyIDs* attribute to the value received in the Request message, and shall set the *labels* attribute (if present) and the *link* attribute to the value received in the Request message.
* Respond to the Originator with the CREATE Response. In this Response, the address of the successfully announced resource shall be provided.
 |
| Information in Response message | All parameters defined in table 8.1.3-1 are applicable as indicated in that table with the specific details for:***Content:*** address where the announced resource is created according to clause 10.1.2. |
| Processing at Originator after receiving Response | The Originator after receiving the Response from the Receiver shall perform the following steps:* If the announced resource has been successfully created, the *announceTo* attribute of the original resource shall be updated to include the address for the successfully announced resource at the Receiver. The *announcedAttribute* attribute shall be updated as well to represent the successfully announced attributes as received in the Response.
* For the attributes marked as MA and for the attributes marked as OA that are included in the *announcedAttribute* attribute, the Originator shall further take the responsibility to keep their values synchronized at the announced resource by using UPDATE operation (clause 10.1.4).
 |
| Exceptions | All exceptions described in the basic procedures (clause 10.1.2) are applicable. |

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

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

#### 10.2.13.9 Procedure for original resource Hosting CSE for Announcing Attributes

This clause describes procedure that shall be used by the original resource Hosting CSE to create announced attributes at the remote announced resources (i.e. the attribute announcement).

The Originator of this Request shall be the original resource Hosting CSE.

Table 10.2.13.9-1: Original Resource Hosting CSE to Announce Attribute: UPDATE

| *Attribute Announcement:* UPDATE |
| --- |
| Information in Request message | Information described for the Originator of the UPDATE Request as in clause 10.1.4.***Content:*** Parameter includes the names of the attributes to be announced and their values. |
| Processing at the Originator before sending Request | The Originator shall request to create attributes at the announced resources by using the UPDATE Request as specified in clause 10.1.4. Only parameters marked with OA can be announced. If an attribute that is to be announced has an identifier type (i.e. CSE-ID, AE-ID, resource identifier), the Originator shall convert the value of the original resource attribute to an identifier format (see table 7.2-1) required by the Receiver. |
| Processing at the Receiver | Once the Originator has been successfully authorized, the Receiver (CSE hosting announced resource) shall grant the Request after successful validation of the Request. The Receiver shall perform as follows:* Create announced attributes at the announced resource as per procedures in clause 10.1.4. The initial value for the announced attributes shall use the same value as with the original resource.
* Respond to the Originator with UPDATE Response as in clause 10.1.4.
 |
| Information in Response message | Parameters defined in table 8.1.3-1 that are applicable. |
| Processing at Originator after receiving Response | Originator after receiving the Response from the Receiver shall perform the following steps:* If the announced attributes have been successfully created, the *announcedAttribute* attribute shall be updated to include the attribute names for the successfully announced attributes.
* For the newly announced attributes in the *announcedAttribute* attribute, the Originator shall take the responsibility to keep their values synchronized at the announced resources by using UPDATE operation as in clause 10.1.4.
 |
| Exceptions | All exceptions described in the basic procedures (clause 10.1.4) are applicable. |

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

## ----------------------- Start of Change 4--------------------------------------------

#### 10.2.13.11 Procedure for original resource Hosting CSE for Updating Attributes

This clause describes procedure that shall be used by the original resource Hosting CSE to update announced attributes at the remote announced resources. The Originator of this Request shall be the original resource Hosting CSE.

Table 10.2.13.11-1: Original Resource Hosting CSE to Update Attribute: UPDATE

| *Attribute Update:* UPDATE |
| --- |
| Information in Request message | Information described for the Originator of the UPDATE Request as in clause 10.1.4.***Content:*** Parameter includes the names of the attributes to be updated with their target values. |
| Processing at the Originator before sending Request | The Originator shall request to update the announced attributes by using the UPDATE Request as specified in clause 10.1.4. Attributes marked as MA or OA can be updated:***Content:*** Parameter in the UPDATE Request shall provide the names of the attributes to be updated by setting their target values. If an attribute has an identifier type (i.e. CSE-ID, AE-ID, resource identifier), the Originator shall convert the target value of this attribute to an identifier format (see table 7.2-1) required by the Receiver. |
| Processing at the Receiver | If the value of the *From* parameter in Request message is identical with the CSE-ID included in the *link* attribute in the announced resource, the Receiver (CSE hosting announced resource) shall grant the Request after successful validation of the Request. The Receiver shall perform as follows:* Update the target attributes identified by the ***Content*** parameter in the UPDATE Request as per procedures in clause 10.1.4.
* Respond to the Originator with the appropriate UPDATE Response as in clause 10.1.4.
 |
| Information in Response message | Parameters defined in table 8.1.3-1 that are applicable. |
| Exceptions | All exceptions described in the basic procedures (clause 10.1.4) are applicable. |

-------------------------------------------------- End of Change 4---------------------------------------