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| CHANGE REQUEST | |
| Meeting ID:\* | SDS #50 |
| Source:\* | Andreas Kraft, DT, [A.Kraft@telekom.de](mailto:A.Kraft@telekom.de)  Andreas Neubacher, DT, [Andreas.Neubacher@magenta.at](mailto:Andreas.Neubacher@magenta.at)  Cyrille Bareau, Orange, [cyrille.bareau@orange.com](mailto:cyrille.bareau@orange.com)  Marianne Mohali, Orange, [marianne.mohali@orange.com](mailto:marianne.mohali@orange.com) |
| Date:\* | 2021-04-16 |
| Reason for Change/s:\* | Add copying of label attribute when creating flexContainerInstance resources |
| CR against: Release\* | Release 4 |
| CR against: WI\* | Active WI-xxxx  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-0004, V4.4.0 |
| Clauses \* | 7.4.37.2.1, 7.4.37.2.3 |
| Type of change: \* | Editorial change  Bug Fix or Correction  Change to existing feature or functionality  New feature or functionality  Only ONE of the above shall be ticked |
| Impacted other TS/TR(s) |  |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES  NO  This CR may break backwards compatibility with the last approved version of the TS? YES  NO |
| 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

This CR proposes to add copying of the *label* attribute during the creation of a <flexContainerInstance> resource. <flexContainerInstance> resources are created during the creation or update of a parent <flexContainer> resource when any of the <flexContainer>’s *maxNrOfInstances*, *maxByteSize*, or *maxInstanceAge* attributes is set.

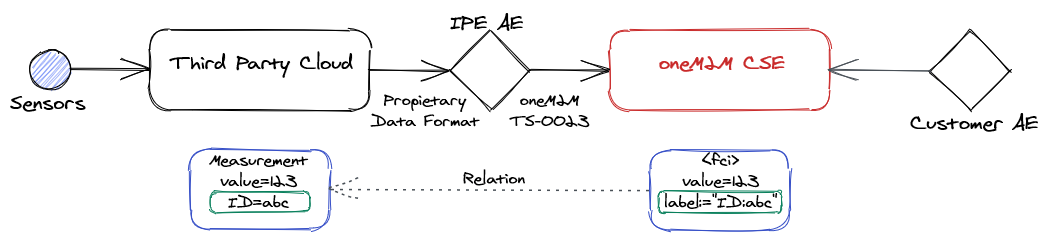
So far, it is only specified to copy the <flexContainer>’s custom attributes for these procedures. But the following use case illustrates why it is necessary to copy the *label* attribute as well. As a reminder, the *label* attribute use is to add meta-data in the form of tags, or labels to a resource. This attribute can be set, updated, or deleted like any other attribute during a create or update request.

**Use Case**

An IPE AE connects a non-oneM2M IoT cloud to a oneM2M CSE. It listens for new measurements that are created in the non-oneM2M IoT cloud, retrieves them, and adds them to the oneM2M CSE. For this the data that is provided in a proprietary format and structure is converted to oneM2M data structures defined in TS-0023.

Each original measure has an individual ID that is demanded by another customer’s AE to be stored together with the TS-0023-based <flexContainer> and <flexContainerInstance>. Unfortunately, there is no custom attribute in the TS-0023 ModuleClass definitions to store this (and similar values), so the converter stores this measurement ID in a label.

The following figure outlines this scenario.



The problem is now that the label is not copied during the creation of <flexContainerInstance> resource. It is also not possible to add another custom attribute to the original <flexContainer> that stores this (or other) meta-data information because this will break the TS-0023 ModuleClass containerDefinions. Also, the original measurement’s changes for every measurement and therefore also needs to be stored with each of the <flexContainerInstance> resources.

The following proposed changes are for clauses in “7.4.37.2 <flexContainer> resource specific procedures for CRUD operations”.

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

##### 7.4.37.2.1 Create

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

Primitive specific operation on Recv-1.0 with the following additional operations.

1. The hosting CSE shall validate the received resource representation against the schema value present in the received resource *containerDefinition* attribute. If the schema is not available then the Hosting CSE shall return a response primitive with a ***Response Status Code*** indicating "SPECIALIZATION\_SCHEMA\_NOT\_FOUND" error. If the received resource is not valid then the Hosting CSE shall return a response primitive with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

Primitive specific operation on Recv-6.5 "Create/Update/Retrieve/Delete/Notify operation is performed" with the following additional operations:

1. The Hosting CSE shall set the *contentSize* attribute to the sum of the size in bytes of all of the custom attributes.
2. If the *maxNrOfInstances* attribute is present in the request with a non-zero value and the *maxByteSize* attribute is present in the request and the *contentSize* attribute is greater than the *maxByteSize* attribute, the Hosting CSE shall not create the resource. It shall return the response primitive with a ***Response Status Code*** indicating "NOT\_ACCEPTABLE" error and skip step 3 below.
3. If the created resource *maxNrOfInstances, maxByteSize* or *maxInstanceAge* attributes are present with non-zero value, then the Hosting CSE shall create a <flexContainerInstance> resource child of the targeted <flexContainer> resource. The *contentSize* attribute of the created <flexContainerInstance> resource will have the same values as in the created <flexContainer> resource. The *originator* attribute of the created <flexContainerInstance> resource shall be set to the identifier of the originator of this CREATE request. The *custom* attributes and, if present in the <flexContainer> resource, the *label* attribute of the created <flexContainer> resource shall be copied into the created <flexContainerInstance> resource. The Hosting CSE shall adjust accordingly the attributes of parent <flexContainer> resource related to the instance creation (*currentNrOfInstances* and *currentByteSize*).

No other changes from the generic procedures in clause 7.2.2.2.

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

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 7.4.37.2.3 Update

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

Primitive specific operation on Recv-1.0 with the following additional operations.

1. The hosting CSE shall validate the received resource representation against the schema value present in the resource *containerDefinition* attribute. If the received resource is not valid then the Hosting CSE shall return a response primitive with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

Primitive specific operation on Recv-6.5 "Create/Update/Retrieve/Delete/Notify operation is performed" with the following additional operations:

1. If at least one of the *maxNrOfInstances, maxByteSize* or *maxInstanceAge is* set to zero value, all children <flexContainerInstances> resources shall be deleted and the *currentNrOfInstances, currentByteSize* and policy attributes shall be deleted.
2. If a *custom* attribute of the targeted <flexContainer> resource is modified in the request, and *maxByteSize* attribute is present with non-zero value, the Hosting CSE shall check whether the size in bytes of the *custom* attributes of the targeted <flexContainer> resource is greater than the *maxByteSize* of attribute.
3. If true, the Hosting CSE shall return the response primitive with a ***Response Status Code*** indicating "NOT\_ACCEPTABLE" error and skip step 3 below.
4. If false, the Hosting CSE shall update the *contentSize* attribute to the sum of the size in bytes of all of the custom attributes.

3) If a *custom* attribute of the targeted <flexContainer> resource is modified in the request, and *maxNrOfInstances, maxByteSize* or *maxInstanceAge* attributes are present with non-zero value, then *after* updating the attributes of the targeted <flexContainer> resource:

a) The Hosting CSE shall create a <flexContainerInstance> resource child of the targeted <flexContainer> resource. The attribute *contentSize* of the created <flexContainerInstance> resource will have the same value as in the targeted <flexContainer> resource. The custom attributes and, if present in the <flexContainer> resource after the update, the *label* attribute of the targeted <flexContainer> resource shall be copied into the created <flexContainerInstance> resource. The *originator* attribute of the created <flexContainerInstance> resource shall be set to the identifier of the originator of this UPDATE request.

b) The Hosting CSE shall update the *currentNrOfInstances* of the targeted <flexContainer > resource with the number of <flexContainerInstance> resources in the targeted <flexContainer > resource. The Hosting CSE shall update the *currentByteSize* of the targeted <flexContainer > resource with the sum of the *contentSize* attributes of the <flexContainerInstance> resources in the targeted <flexContainer > resource.

c) If *maxNrOfInstances* of the targeted <flexContainer > resource is specified then if the *currentNrOfInstances* when modified to reflect the addition of the new *<*flexContainerInstance*>* exceeds *maxNrOfInstances*, the Hosting CSE shall remove the oldest *<*flexContainerInstance*>* resource from the targeted <flexContainer*>* resource.

d) If *maxByteSize* of the targeted <flexContainer > resource is specified then if the *currentByteSize* when modified to reflect the addition of the new *<*flexContainerInstance*>* exceeds *maxByteSize* the Hosting CSE shall remove the oldest *<*flexContainerInstance*>* resource(s) from the targeted <flexContainer*>* resource until *maxByteSize* conditions are met.

e) When removing the oldest *<*flexContainerInstance*>* resources, the Hosting CSE shall not generate notifications even if there exists a <subscription> to the targeted <flexContainer> resource and this <subscription> is configured to generate a notification on "Delete\_of\_Direct\_Child\_Resource".

f) If the *maxInstanceAge* attribute is present in the targeted <flexContainer> resource, then the Hosting CSE shall set the *expirationTime* attribute in created <flexContainerInstance> child resource such that the time difference between *expirationTime* and the *creationTime* of the <flexContainerInstance>. The <flexContainerInstance> child resource shall not exceed the *maxInstanceAge* of the targeted <flexContainer> resource.

No other changes from the generic procedures in clause 7.2.2.2.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*