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| CHANGE REQUEST |
| Meeting ID:\* | SDS 49.4 |
| Source:\* | Andreas Kraft, Deutsche Telekom, Andreas.Kraft@t-systems.com Miguel Angel Reina Ortega, ETSI, MiguelAngel.ReinaOrtega@etsi.org  |
| Date:\* | 2021-03-31 |
| Reason for Change/s:\* | resourceRefList data type |
| 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-2021-0089-TS-0004\_resourceRefList\_data\_type\_R3[ ]  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 \* | 6.3.5.49, 7.3.3.14 |
| Type of change: \* | [ ]  Editorial change[ ]  Bug Fix or Correction[x]  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

When returning resourceRefList element as a content of a discovery operation response where no matching resource was found, resourceRefList type does not allowed an empty list. This CR fixes that by correcting the multiplicity of elements of ListOfChildResourceRef type.

R01 – Small correction to use rcn description and not the number

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

6.3.5.49 m2m:listOfChildResourceRef

**Table 6.3.5.49‑1: Type Definition of m2m:listOfChildResourceRef**

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| --- | --- | --- | --- |
| **Element Path** | **Element Data Type**  | **Multiplicity** | **Note** |
| resourceRef | m2m:childResourceRef | 0..n | References of resources with name and type |

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

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

7.3.3.14 Discovery related procedures

If the ***Request Expiration Timestamp*** is given in the request and has expired, the Hosting CSE shall reject the request with a "REQUEST\_TIMEOUT" ***Response Status Code*** parameter value. Otherwise, the Hosting CSE should handle the request before the time specified in ***Request Expiration Timestamp.***

If the ***Operation Execution Time*** is given in the request, the Hosting CSE should perform the following procedures at that time and shall not perform the procedures before that time.

If the Hosting CSE does not support the content format (i.e. type of serialization) requested by the originator, the request shall be rejected with a ***Response Status Code*** indicating "NOT\_ACCEPTABLE" error.

If the Hosting CSE does not support the content format sent by the originator, the request shall be rejected with a ***Response Status Code*** indicating "UNSUPPORTED\_MEDIA\_TYPE" error.

If the parameter ***filterUsage*** is configured as "Discovery", "Discovery-based Operation " or "IPE On-demand Discovery" the request is a Discovery-related request and the Hosting CSE shall perform the steps described below. The parameter ***filterUsage*** indicates the type of procedure to be performed, as follows:

* Discovery: initiated by a Retrieve request with ***filterUsage*** configured as "Discovery".
* Discovery-based Operation: initiated by Create, Update or Delete requests with ***filterUsage*** configured as "Discovery-based Operation".
* IPE On-demand Discovery: initiated by a Retrieve request with ***filterUsage*** configured as "IPE On-demand Discovery".

These requests may include other ***Filter Criteria*** parameters as well.

The Hosting CSE shall perform the following procedures in order to identify the resource set based on conditions specified in ***Filter Criteria***.

The Discovery procedure begins with the children of the resource addressed by the ***To*** parameter (the ‘targeted resource’). The Hosting CSE shall not include the targeted resource in the resulting resource set.

1. The Hosting CSE shall check if the resource addressed by the ***To*** parameter exists. If the resource does not exist, the Hosting CSE shall reject the request with a Response Status Code indicating "NOT\_FOUND" error.
2. The Hosting CSE shall examine the child/descendent resources of the targeted resource to find the resources that match the ***Filter Criteria*** Matching Conditions. In this search, the Receiver will not consider any child/descendent <AE> resources with *registrationStatus* attribute set to INACTIVE, and any child/descendent resources of this INACTIVE <AE> resource. The Hosting CSE shall proceed with the search even if the targeted resource does not match the Matching Conditions.The scope of the search is subject to filter handling conditions if specified by the Originator in the Filter Criteria as follows (see also clause 8.1.2 of oneM2M TS-0001 [6]):

Based on the filter handling condition ***level***: The Hosting CSE shall skip over and not include any descendants in the resource tree that are deeper than the maximum level indicated by the ***level*** condition. This level is measured from the targeted resource (i.e. *To* parameter).

Based on the filter handling condition ***offset***: At the start of its search the Hosting CSE shall skip over and not include in the number of child and descendant resources indicated by the ***offset*** condition. The ***offset*** condition is permitted only for Retrieve operations.

1. For ***filterUsage*** "Discovery" or "Discovery-based Operation" if the filter handling condition ***applyRelativePath*** is provided, the Hosting CSE appends the specified relative path to each resource in the matching result. The matching resource is excluded and is replaced by the resource corresponding to this compounded path, if there is one. The replacement resource is not required to match the filter Matching Conditions. See 7.3.3.17.17 for details about ***applyRelativePath***.
2. The Hosting CSE shall exclude any resources from the resource set to which the Originator does not have "Discover" privilege.
3. If the request is a retrieve request with ***filterUsage*** set to "IPE On-demand Discovery" that addresses an <AE> resource representing the IPE by its *labels* attribute, the Hosting CSE shall first find resources using the ***Filter Criteria*** as detailed above. If the Hosting CSE finds no matches, the Hosting CSE shall check the ***filterUsage*** element. If the ***filterUsage*** element is set to "IPE On-demand Discovery", then the Hosting CSE shall send a Notify request to the IPE to trigger the external discovery procedure (see clause 7.5.1.2.8 for more details). If the Hosting CSE receives a successful Notify response, the Hosting CSE shall check the Originator's "Discover" privilege for the resources listed in the Notify response. If the Hosting CSE receives an unsuccessful Notify response from the IPE, then the Hosting CSE shall use the same ***Response Status Code*** in the response to the Originator.
4. The final resource set shall be truncated if it contains more than the maximum permitted number of resources. This maximum shall be the smaller of:

The Originator-supplied filter handling condition limit, if there is one

A value set by the Hosting CSE based on local policies.

If ***filterUsage*** is configured as "Discovery" or "IPE On-demand Discovery" the Hosting CSE shall then proceed to step Recv-6.6.1 "Communication method?" . The Hosting CSE shall include in the response the addresses of all the resources in the resource set produced by steps 1-6 above. It shall use the resource identifier format specified by the ***Desired Identifier Result Type*** parameter setting (see clause 6.3.4.2.8).

* If there are no resources in the resource target set, the Hosting CSE shall respond with a successful response with a Content parameter as follows:
	+ If rcn is not present or rcn = ”discovery result resource references”, the ***primitive Content*** is an m2m:URIList containing no entries
	+ If rcn=”child resource references”, the ***primitive Content*** is an m2m:resourceRefList containing no entries
* If the resource set was truncated in step 6 the response shall contain a ***Content Status*** parameter with the value PARTIAL\_CONTENT, and a ***Content Offset*** parameter indicating the point at which the Originator can continue discovery.

If ***filterUsage*** is configured as "Discovery-based Operation" and the resource set was truncated in step 6 by Hosting CSE policy, the Hosting CSE shall reject the request with a ***Response Status Code*** indicating a "DISCOVERY\_LIMIT\_EXCEEDED" error.

If the result set was not truncated, or was truncated to the value of the ***limit*** condition supplied by the Originator, the Hosting CSE shall repeat steps Recv-6.2.1- Recv-6.6 for each of the resources in the resource set from steps 1-6 as “addressed” or “targeted” resources. After the processing has been repeated for all the resources in the resource set, the Hosting CSE shall proceed to step Recv-6.6.1 "Communication method?". The Hosting CSE shall respond with successful response as follows:

* If rcn is not present or other than “discovery result resource references”all the individual primitives created either as successful or as error responses are aggregated to be sent as a single response primitive. If the target resource set is empty the primitive content is an m2m:aggregatedResponse containing no entries in the successful response.
* If rcn=”discovery result resource references” a single response primitive is composed, with content that includes the resource references of all the target resources. If the target resource set is empty the ***primitive content*** is an m2m:URIList containing no entries in the successful response.

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