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| CHANGE REQUEST |
| Meeting ID:\* | SDS 65.3 |
| Source:\* | Anupama, C-DOT, anupama@cdot.in Poornima, C-DOT, poornima@cdot.inAndreas Kraft, andreas.kraft@exactagss.comBob Flynn, , bob.flynn@exactagss.com |
| Date:\* | 2024-07-29 |
| Reason for Change/s:\* | See the Introduction |
| CR against: Release\* | Rel 5 |
| CR against: WI\* | [ ]  Active <Work Item number> [ ]  MNT maintenance / < Work Item number(optional)>Is this a mirror CR? Yes [ ]  No [ ] mirror CR number: (Note to Rapporteur - use latest agreed revision)[x]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0001 |
| Clauses \* | 9.6.1.3.2, 9.6.5, 9.6.6, 9.6.18, 9.6.35,9.6.36,9.6.15 |
| 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 |
| Other TS/TR(s) impacted | TS-0004 |
| 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 2020 (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.

If this is a correction, and the change applies to previous releases, a separate “mirror CR” should be posted at the same time as 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. Include any changes to references, definitions, and abbreviations in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar.

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 proposed new clause is 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 the 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

The CR proposes a new common attribute called “subscriptionIDs” and to add this attribute in <AE>, <container>, <node>, <flexContainer>, <timeSeries>, <mgmtObj> resources.

For more details on this attribute requirement, please refer SDS-2022-0177R01-Referencing\_Subscriptions.

|  |  |
| --- | --- |
| [SDS-2022-0177R01](https://member.onem2m.org:443/Application/documentApp/documentinfo/?documentId=35412&fromList=Y) | [Referencing Subscriptions](https://member.onem2m.org:443/Application/documentApp/documentinfo/?documentId=35412&fromList=Y) |

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

##### 9.6.1.3.2 Common attributes

The following attributes are commonly used in multiple, but not all, resource types which are normal, not virtual or announced. Common attributes for announced resource types are independently defined in clause 9.6.26.3.

NOTE: The list of attributes in table 9.6.1.3.2-1 is not exhaustive.

Table 9.6.1.3.2-1: Common Attributes

| Attribute Name | Description |
| --- | --- |
| *accessControlPolicyIDs* | The attribute contains a list of identifiers for *<accessControlPolicy>* resources. The privileges defined in the *<accessControlPolicy>* resources that are referenced determine who is allowed to access the resource containing this attribute for a specific purpose (e.g. Retrieve, Update, Delete, etc.).For an Update operation to a resource, it is forbidden to change the *accessControlPolicyIDs* attribute in the same request to Update other attributes of the targeted resource, i.e a request to Update the *accessControlPolicyIDs* attribute shall be the only attribute in the UPDATE request.To update the *accessControlPolicyIDs* attribute, a Hosting CSE shall check whether the Originator has Update privilege in any current *selfPrivileges* of the *<accessControlPolicy>* resources which this attribute references.To update any attribute other than the *accessControlPolicyIDs* attribute, a Hosting CSE shall check whether the Originator has Update privilege in any *privileges,* of the *<accessControlPolicy>* resources which the *accessControlPolicyIDs* attribute references.If a resource type does not have an *accessControlPolicyIDs* attribute definition, then the *accessControlPolicyIDs* for that resource is governed in a different way, for example, the *accessControlPolicy* associated with the parent may apply to a child resource that does not have an *accessControlPolicyIDs* attribute definition, or the privileges for access are fixed by the system. Refer to the corresponding resource type definitions and procedures to see how access control is handled in such cases.If a resource type does have an *accessControlPolicyIDs* attribute definition, but the (optional) *accessControlPolicyIDs* attribute value is not set in a resource instance, then the Hosting CSE shall apply the concept of the default access policy. The Hosting CSE shall first check whether the resource has a *custodian* attribute configured and if so, the default policy shall provide unrestricted access only to the custodian. If the *custodian* attribute is not configured, then the default policy shall provide unrestricted access only to the Originator of the successful resource creation request. All other entities shall be denied to access the resource. For that purpose, the Hosting CSE shall keep that Originator information of the resource. Note that how to keep that information is implementation specific. The default access policy is not applied to a resource which has a value assigned to the a*ccessControlPolicyIDs* attribute.All resources are accessible if and only if the privileges (i.e. configured as *privileges* or *selfPrivileges* attribute of <accessControlPolicy> resource) allow it, therefore all resources shall have an associated *accessControlPolicyIDs* attribute, either explicitly (setting the attribute in the resource itself) or implicitly (either by using the parent privileges or the system default policies). Which means that the system shall provide default access privileges in case that the Originator does not provide a specific *accessControlPolicyIDs* during the creation of the resource. |
| *expirationTime* | Time/date after which the resource will be deleted by the Hosting CSE. This attribute can be provided by the Originator, and in such a case it will be regarded as a hint to the Hosting CSE on the lifetime of the resource. The Hosting CSE shall configure the *expirationTime* value. If the Hosting CSE configures the new *expirationTime* attribute value rather than the Originator suggested value, the new value can be sent back to the Originator depending on the ***Result Content*** value.The lifetime of the resource can be extended by providing a new value for this attribute in an UPDATE operation. Or by deleting the attribute value, e.g. by updating the attribute with NULL when doing a full UPDATE, in which case the Hosting CSE can decide on a new value.If the Originator does not provide a value in the CREATE operation the system shall assign an appropriate value depending on its local policies and/or M2M service subscription agreements.A resource is known as 'obsolete' when the resource contains the attribute "expirationTime" and the lifetime of this resource has reached the value of this attribute. If the 'obsolete' resource had a reference to an Application Entity Resource ID, the Hosting CSE shall send a NOTIFY request to the IN-CSE, requesting to delete the entry from the <AEContactList> resource. |
| *stateTag* | An incremental counter of modification on the resource. When a resource is created, this counter is set to 0, and it will be incremented on every modification of the resource (see notes 1 and 2).  |
| *announceTo* | This attribute may be included in a CREATE or UPDATE Request in which case it contains a list of addresses/CSE-IDs where the resource is to be announced. For the case that CSE-IDs are provided, the announced-to CSE shall decide the location of the announced resources based on the rules described in clause 9.6.26.For the original resource, this attribute shall only be present if it has been successfully announced to other CSEs. This attribute maintains the list of the resource addresses to the successfully announced resources. Updates on this attribute will trigger new resource announcement or de-announcement.If the *announceTo* attribute includes resource address(s), the present document does not provide any means for validating these address(s) for announcement purposes. It is the responsibility of the Hosting-CSE referenced by the resource address(s) to validate the access privileges of the originator of the Request that triggers the announcement. |
| *announcedAttribute* | This attribute shall only be present at the original resource if some Optional Announced **(OA)** type attributes have been announced to other CSEs. This attribute maintains the list of the announced Optional Attributes (**OA** type attributes) in the original resource. Updates to this attribute will trigger new attribute announcement if a new attribute is added or de-announcement if the existing attribute is removed. |
| *announceSyncType* | This attribute indicates the types of synchronization for resource announcement. Possible values are as follows:* Uni-directional synchronization: Announced resource(s) is updated if the original resource is updated
* Bi-directional synchronization: Announced resource(s) is updated if the original resource is updated and vice versa

This attribute is presented in both the original resource and the announced resource(s).The absence of this attribute implies that uni-directional synchronization is the type of supported synchronization for resource announcement. |
| *labels* | Tokens used to add meta-information to resources.This attribute is optional.The value of the *labels* attribute is a list of individual labels, each of them being:* Either a standalone label-key, used as a simple "tag", that can be used for example for discovery purposes when looking for particular resources that one can "tag" using that label-key.
* Or a composite element made of a label-key and a label-value, separated by a special character defined in oneM2M TS-0004 [3].

The list of allowed characters in a label (and in label-keys and label-values) and separator characters is defined in oneM2M TS-0004 [3], clause 6.3.3. |
| *e2eSecInfo* | Present in a resource representing an AE or CSE. Indicates the end-to-end security capabilities supported by the AE or CSE. May indicate supported end-to-end security frameworks. May also contains a certificate or credential identifier used by the AE or CSE. May include random values for use in end-to-end security protocols. The details of this attributes are described in oneM2M TS-0003 [2].This attribute is optional and if not present it means that the represented entity does not support oneM2M end-to-end security procedures. |
| *dynamicAuthorizationConsultationIDs* | This attribute contains a list of identifiers of *<dynamicAuthorizationConsultation>* resources. The information defined in a *<dynamicAuthorizationConsultation>* resource is used by a CSE for initiating consultation-based dynamic authorization requests.Consultation-based dynamic authorization is only performed for a targeted resource if and only if it is linked to an enabled *<dynamicAuthorizationConsultation>* resource.If the attribute is not set or has a value that does not correspond to a valid *<dynamicAuthorizationConsultation>* resource(s), or it refers to an *<dynamicAuthorizationConsultation>* resource(s) that is not reachable, then the *dynamicAuthorizationConsultationIDs* associated with the parent may apply to the child resource if present, or a system default *<dynamicAuthorizationConsultation>* may apply if present. |
| *creator* | The AE-ID or CSE-ID of the entity which created the resource containing this attribute. |
| *location* | This attribute contains the geo-coordinates of entities or things represented by its resource types (e.g. AE, container). Longitude and Latitude are shall be included as a coordinate and optionally altitude may also be included. The representation format shall follow the definition in the GeoJSON format [16]. This attribute can be used for geo-query (Clause 10.2.6) with relevant filter conditions (clause 8.1.2). |
| *custodian* | The AE-ID, M2M-User-ID or CSE-ID of the entity which owns the resource containing this attribute. |
| *subscriptionIDs* | The attribute contains a list of identifiers for *<subscription>* resources. The policies defined in the *<subscription>* resources that are referenced determine the notification conditions such as eventNotificationCriteria, notificationURI etc.  |
| NOTE 1: In order to enable detection of overflow, the counter needs to be capable of expressing sufficiently long numbers.NOTE 2: This attribute has the scope to allow identifying changes in resources within a time interval that is lower than the one supported by the attribute *lastModifiedTime* (e.g. less than a second or millisecond). This attribute can also be used to avoid race conditions in case of competing modifications. |

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

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

### 9.6.5 Resource Type *AE*

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Table 9.6.5-2: Attributes of *<AE>* resource

| Attributes of *<AE>* | Multiplicity | RW/RO/WO | Description | *<AEAnnc>* Attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. Contains the AE‑ID‑Stem of the AE (see clause 7.2 on identifier formats and clause 10.2.2.2 for AE registration procedure). | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *location* | 0..1 | RW | See clause 9.6.1.3. | OA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *appName* | 0..1 | RW | The name of the application, as declared by the application developer (e.g. "HeatingMonitoring").Several sibling resources may share the *appName*. | OA |
| *App-ID* | 1 | WO | The identifier of the Application (see clause 7.1.3). | OA |
| *AE-ID* | 1 | RO | The identifier of the Application Entity (see clause 7.1.2). | OA |
| *M2M-Ext-ID* | 0..1 | RW | See clause 7.1.8 where this attribute is described. This attribute is used only for the case of dynamic association of M2M‑Ext-ID and AE-ID. | NA |
| *trigger-Recipient-ID* | 0..1 | RW | See clause 7.1.10 where this attribute is described. This attribute is used only for the case of dynamic association of M2M‑Ext-ID and AE-ID. | NA |
| *triggerReferenceNumber* | 0..1 | RW | This is to identify device trigger procedure request. This attribute is used only for device trigger and assigned by the CSE. | NA |
| *pointOfAccess* | 0..1 (L) | RW | The list of addresses for communicating with the registered Application Entity over Mca reference point via the transport services provided by Underlying Network (e.g. IP address, FQDN, URI). This attribute shall be accessible only by the AE and the Hosting CSE.If this information is not provided and the <pollingChannel> resource does exist, the AE should use *<pollingChannel>* resource. Then the Hosting CSE can forward a request to the AE without using the PoA. | OA |
| *registrationStatus* | 0..1 | RW | Denotes status of the AE registration. If ACTIVE, the <AE> resource and all its child resources may be discoverable. If INACTIVE, the <AE> resource and all its child resources shall not be discoverable.Set to ACTIVE during an AE registration or re-registration. When an AE changes its registration point, the registration at the old registration point is set to INACTIVE. | OA |
| *trackRegistrationPoints* | 0..1 | RW | Denotes if the Application Entity requests that its Registration Points be tracked. If TRUE, AE requests to be tracked as it changes its Registration Points. If FALSE, the AE requests not to be tracked as it changes its Registration Points. | OA |
| *ontologyRef* | 0..1 | RW | A URI of the ontology used to represent the information that is managed and understood by the AE. | OA |
| *requestReachability* | 1 | RW | This attribute is an indication of static capability of the AE that created this *<AE>* resource. If the AE can receive requests originated at or forwarded by its registrar CSE, this attribute is set to "TRUE" otherwise "FALSE". | OA |
| *nodeLink* | 0..1 | RW | The *resource identifier* of a *<node>* resource that stores the node specific information of the node on which the AE represented by this *<AE>* resource resides. | OA |
| *contentSerialization* | 0..1 (L) | RW | The list of supported serializations of the ***Content*** primitive parameter for receiving a request and a response from its registrar CSE. (e.g. XML, JSON, CBOR). The list shall be ordered so that the most preferred format comes first. | OA |
| *e2eSecInfo* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *activityPatternElements* | 0..1(L) | RW | This attribute describes the anticipated availability of the AE for communications. See further description below and table 9.6.4-3. | OA |
| *triggerEnable* | 0..1 | RW | When set to "TRUE", trigger requests may be sent to the AE represented by this <*AE*> resource. When set to "FALSE" trigger requests shall not be sent to this AE. | OA |
| *sessionCapabilities* | 0..1 (L) | RW | The list of supported session media types (e.g. audio, video, image) and supported session protocols (e.g. RTP, RTP/AVP) as defined by session parameters as defined by the IETF IANA Session Descriptor Protocol (SDP) Parameter Registry. | OA |
| *supportedReleaseVersions* | 0..1(L) | RW | The oneM2M release versions supported by the Registree AE represented by this <*AE*> resource.Starting with Release 2, this attribute is mandatory for an AE. For AEs compliant to older releases, this attribute is optional. For AEs that do not include this attribute, the default release version shall be Release 1. | MA |
| *externalGroupID* | 0..1 | RW | It is used by an M2M Service Provider (M2M SP) when services targeted to a group of M2M Devices are requested from the Underlying Network. It is assumed to be a globally unique ID exposed by the underlying network to identify a group of M2M Devices (e.g. ADN, ASN, MN) for group related services. | OA |
| *enableTimeCompensation* | 0..1 | RW | Enables time offset compensation functionality. When set to "TRUE", the Registrar CSE peforms time offset compensation for the Registree AE. If "FALSE", the Registrar CSE does not perform time offset compensation. See clause 10.2.24.Default value is "FALSE". | NA |
| NOTE:For the case of a response, this attribute is applicable if the corresponding request does not contain the serialization format of the *Content* request parameter to allow a CSE to determine the proper serialization format to use in the response. |

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

### -----------------------Start of change 3---------------------------------------------

### 9.6.6 Resource Type *container*

The *<container>* resource represents a container for data instances. It is used to share information with other entities and potentially to track the data. A *<container>* resource has no associated content. It has only attributes and child resources.

The *<container>* resource shall contain the child resources specified in table 9.6.6-1.

Table 9.6.6-1: Child resources of *<container>* resource

| Child Resources of *<container>* | Child Resource Type | Multiplicity | Description | *<containerAnnc>* Child Resource Types |
| --- | --- | --- | --- | --- |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 | *<semanticDescriptor>, <semanticDescriptorAnnc>* |
| *[variable]* | *<contentInstance>* | 0..n | See clause 9.6.7 | *<contentInstance>, <contentInstanceAnnc>* |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 | *<subscription>* |
| *[variable]* | *<container>* | 0..n | See clause 9.6.6 | *<container>**<containerAnnc>* |
| *[variable]* | *<flexContainer>* | 0..n | See clause 9.6.35 | *<flexContainer>**<flexContainerAnnc>* |
| *[variable]* | *<timeSeries>* | 0..n | See clause 9.6.36 | *<timeSeries>,**<timeSeriesAnnc>* |
| *la* | *<latest>* | 1 | See clause 9.6.27 | *None* |
| *ol* | *<oldest>* | 1 | See clause 9.6.28 | *None* |
| *[variable]* | *<transaction>* | 0..n | See clause 9.6.48 | *<transaction>* |
| *[variable]* | *<action>* | 0..n | See clause 9.6.61 | *<actionAnnc>* |

The *<container>* resource shall contain the attributes specified in table 9.6.6-2.

Table 9.6.6-2: Attribute of *<container>* resource

| Attributes of *<container>* | Multiplicity | RW/RO/WO | Description | *<containerAnnc>* Attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *stateTag* | 1 | RO | See clause 9.6.1.3. | NA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *creator* | 0..1 | RO | See clause 9.6.1.3. | NA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *location* | 0..1 | RW | See clause 9.6.1.3. | OA |
| *maxNrOfInstances* | 0..1 | RW | Maximum number of direct child *<contentInstance>* resources in the <*container*> resource. | OA |
| *maxByteSize* | 0..1 | RW | Maximum size in bytes of data (i.e. *content* attribute of a <*contentInstance*> resource) that is allocated for the *<container>* resource for all direct child <*contentInstance*> resources in the *<container>* resource. | OA |
| *maxInstanceAge* | 0..1 | RW | Maximum age of a direct child *<contentInstance>* resource in the *<container> resource*. The value is expressed in seconds. | OA |
| *currentNrOfInstances* | 1 | RO | Current number of direct child <*contentInstance*> resource in the *<container>* resource. It is limited by the *maxNrOfInstances*. The *currentNrOfInstances* attribute of the <container> resource shall be updated on successful creation or deletion of direct child <contentInstance> resource of <container> resource. | NA |
| *currentByteSize* | 1 | RO | Current size in bytes of data (i.e. *content* attribute of a <*contentInstance*> resource) stored in all direct child *<contentInstance>* resources of a *<container>* resource. This is the summation of *contentSize* attribute values of the <*contentInstance*> resources. It is limited by the*maxByteSize*. The *currentByteSize* attribute of the <container> resource shall be updated on successful creation of deletion of direct child <contentInstance> resource of <container> resource. | NA |
| *locationID* | 0..1 | RO | An ID of the resource where the attributes/policies that define how location information are obtained and managed. This attribute is defined only when the *<container>* resource is used for containing location information. | OA |
| *ontologyRef* | 0..1 | RW | A reference (URI) of the ontology used to represent the information that is stored in the child *<contentInstance>* resources of the present *<container>* resource (see note). | OA |
| *disableRetrieval* | 0..1 | RW | Boolean value to control RETRIE/UPDATE/DELETE operation on the child *<contentInstance>* resource.When the value is set to "TRUE", RETRIEVE/DELETE/UPDATE operations for child <contentInstance> shall be rejected at all times.When the value is updated from "TRUE" to "FALSE", all existing <contentInstance> are deleted immediately.When the value is set to "FALSE", all operations are permitted on the <contentInstance> resource as per existing procedures. | OA |
| NOTE: The access to this URI is out of scope of oneM2M. |

### -----------------------End of change 3---------------------------------------------

### -----------------------Start of change 4---------------------------------------------

### 9.6.18 Resource Type *node*

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The *<node>* resource shall contain the attributes specified in table 9.6.18-2.

Table 9.6.18-2: Attributes of *<node>* resource

| Attributes of *<node>* | Multiplicity | RW/RO/WO | Description | *<nodeAnnc>* attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *nodeID* | 1 | RW | The M2M-Node-ID of the node which is represented by this *<node>* resource. | MA |
| *nodeType* | 0..1 | RW | Indicates the type of node.It shall have one of the following values:* IN
* MN
* ASN
* ADN
* NoDN­­
* UNSPECIFIED
 | OA |
| *hostedCSELink* | 0..1 | RW | This attribute allows to find the <CSEBase> or <remoteCSE> resource representing the CSE that is residing on the node that is represented by this <*node*> resource. The attribute contains the resource ID of a resource where all of the following applies:* The resource is a *<CSEBase>* resource or a *<remoteCSE>* resource.
* The resource represents the CSE which resides on the specific node that is represented by the current *<node>* resource.

In case the node that is represented by this <node> resource does not contain a CSE, this attribute shall not be present. | OA |
| *hostedAELinks* | 0..1(L) | RW | This attribute allows to find the AEs hosted by the node that is represented by this <*node*> resource. The attribute shall contain a list of resource identifiers of *<AE>* resources representing the ADN-AEs residing on the node that is represented by the current *<node>* resource.In case the node that is represented by this <node> resource does not contain an AE, this attribute shall not be present. | OA |
| *hostedServiceLinks* | 0..1(L) | RW | This attribute allows to find <*flexContainer> resources that have* been created by an IPE to represent services hosted on a NoDN, the NoDN being represented by this <*node*> resource. If the NoDN hosts a set of services represented by <*flexContainer>s,* then the attribute shall contain the list of resource identifiers of these <*flexContainer>* resources.In case the node that is represented by this <*node*> resource does not contain a service that is represented by a <*flexContainer>,* this attribute shall not be present. | OA |
| *mgmtClientAddress* | 0..1 | RW | Represents the physical address of management client of the node which is represented by this <node> resource.This attribute is absent if management server is able to acquire the physical address of the management client. | OA |
| *roamingStatus* | 0..1 | RO | Indicates if the M2M Node is currently roaming from the perspective of the underlying network.The allowed values are "Yes" or "No". | OA |
| *networkID* | 0..1 | RO | Configured with the identity of the underlying network which the M2M Node is currently attached to. | OA |

### -----------------------End of change 4---------------------------------------------

### -----------------------Start of change 5---------------------------------------------

### 9.6.35 Resource Type *flexContainer*

…………….

The *<flexContainer>* resource shall contain the attributes specified in table 9.6.35-2.

Table 9.6.35-2: Attributes of <*flexContainer*> resource

| **Attributes of *<flexContainer>*** | **Multiplicity** | **RW/****RO/****WO** | **Description** | ***<flexContainerAnnc>* Attributes** |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 0..1 (note) | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 0..1(note) | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 0..1(note) | RO | See clause 9.6.1.3. | NA |
| *stateTag* | 1 | RO | See clause 9.6.1.3.This *stateTag* attribute value shall be incremented when a custom attribute of the flexContainer is modified. | NA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *creator* | 0..1 | RO | See clause 9.6.1.3. | NA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *location* | 0..1 | RW | See clause 9.6.1.3. | OA |
| *fcinEnabled* | 0..1 | RW | Controls the creation of <flexContainerInstance> child resources. Valid values are “TRUE” and “FALSE”.  | OA |
| *maxNrOfInstances* | 0..1 | RW | Maximum number of direct child *<flexContainerInstance>* resources in the *<flexContainer>* resource. | OA |
| *maxByteSize*  | 0..1 | RW | Maximum size in bytes of custom attributes that is allocated for the *<flexContainer>* resource for all direct child *<flexContainerInstance>* resources. | OA |
| *maxInstanceAge* | 0..1 | RW | Maximum age of a direct child *<flexContainerInstance>* resources in the *<flexContainer>* resource. The value is expressed in seconds. | OA |
| *currentNrOfInstances* | 0..1 | RO |  Current number of direct child *<flexContainerInstance>* resources in the *<flexContainer>* resource. It is limited by the maxNrOfInstances. The currentNrOfInstances attribute of the *<flexContainer>* resource shall be updated on successful creation or deletion of direct child *<flexContainerInstance>* resource of *<flexContainer>* resource. | OA |
| *currentByteSize*  | 0..1 | RO | Current size in bytes of custom attributes stored in all direct child *<flexContainerInstance>* resources of the *<flexContainer>* resource. It is limited by the maxByteSize. The currentByteSize attribute of the *<flexContainer>* resource shall be updated on successful creation or deletion of a direct child *<flexContainerInstance>* resource of *<flexContainer>* resource. | OA |
| *containerDefinition* | 1 | WO | This contains an identifier reference (URI) to the <*flexContainer*> schema definition which shall be used by the CSE to validate the syntax of the <*flexContainer*> resource.This URI may refer to one of the oneM2M <*flexContainer*> definitions specified in the following documents:* Generic Interworking [6]
* AllJoyn Interworking [7]
* Home Domain Information Model [8]

A list of oneM2M <*flexContainer*> definitions is also provided in clause 9.6.1.2.2 of oneM2M TS‑0004 [3].Other URI for other *<flexContainer>* definitions may be specified. | MA |
| *ontologyRef* | 0..1 | RW | A reference (URI) of the ontology used to represent the information that is stored in the present *<flexContainer>* resource. | OA |
| *contentSize* | 1 | RO | Sum of the size in bytes of all of the custom attributes. | NA |
| *nodeLink* | 0..1 | RW | The resource identifier of a <node> resource that stores the node specific information of the NoDN on which the interworked service represented by this <flexContainer> resource resides. | OA |
| *[customAttribute]* | 0..n | RW | Specialization-specific attribute(s). Name and data type defined in each specialization of <*flexContainer>* resource. | OA |
| NOTE: When an instance of <*flexContainer*> is a child of a <*flexContainer*> resource, these attributes can be optional. Their presence is determined by the respective definition referred to by the *containerDefinition* attribute. |

When a new <*flexContainerInstance*> child resource is created, the attributes in Table 9.6.35-3 shall be copied from the parent <*flexContainer*> resource to the new <*flexContainerInstance*> resource.

Table 9.6.35-3: Copied attributes of the parent <*flexContainer*> resource

| Attributes of *<flexContainer>* | Description |
| --- | --- |
| *fcinEnabled* |  |
| *labels* |  |
| *stateTag* |  |
| *[customAttribute]* | All custom attributes are copied |

### -----------------------End of change 5---------------------------------------------

### -----------------------Start of change 6---------------------------------------------

### 9.6.36 Resource Type *timeSeries*

The *<timeSeries>* resource represents a container for Time Series Data instances. It is used to share information with other entities and potentially to track, detect and report the missing data in Time Series. A *<timeSeries>* resource has no associated content. It has only attributes and child resources.

Table 9.6.36-1: Child resources of <*timeSeries*> resource

| Child Resources of *<timeSeries>* | Child Resource Type | Multiplicity | Description | *<timeSeriesAnnc>* Child Resource Types |
| --- | --- | --- | --- | --- |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 | *<semanticDescriptor>, <semanticDescriptorAnnc>* |
| *[variable]* | *<timeSeriesInstance>* | 0..n | See clause 9.6.37 | *<timeSeriesInstance>,**<timeSeriesInstanceAnnc>* |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 | *<subscription>* |
| *la* | *<latest>* | 1 | See clause 9.6.27 | *None* |
| *ol* | *<oldest>* | 1 | See clause 9.6.28 | *None* |
| *[variable]* | *<transaction>* | 0..n | See clause 9.6.48 | *<transaction>* |
| *[variable]* | *<action>* | 0..n | See clause 9.6.61 | *<actionAnnc>* |

The *<timeSeries>* resource shall contain the attributes specified in table 9.6.36-2.

Table 9.6.36-2: Attributes of <*timeSeries*> resource

| Attributes of *<timeSeries>* | Multiplicity | RW/RO/WO | Description | *<timeSeriesAnnc>* Attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3  | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *creator* | 0..1 | RO | See clause 9.6.1.3. | NA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *location* | 0..1 | RW | See clause 9.6.1.3. | OA |
| *maxNrOfInstances* | 0..1 | RW | Maximum number of direct child *<timeSeriesInstance>* resources in the <*timeSeries*> resource. | OA |
| *maxByteSize* | 0..1 | RW | Maximum size in bytes of data that is allocated for the *<timeSeries>* resource for all direct child*<timeSeriesInstance>* resources. | OA |
| *maxInstanceAge* | 0..1 | RW | Maximum age of a direct child *<timeSeriesInstance>* resource in the <*timeSeries*> *resource*. The value is expressed in seconds. | OA |
| *currentNrOfInstances* | 1 | RO | Current number of direct child *<timeSeriesInstance>* resource in the <*timeSeries*> resource. It is limited by the *maxNrOfInstances*. The *currentNrOfInstances* attribute of the <timeSeries> resource shall be updated on successful creation or deletion of direct child < *timeSeriesInstance* > resource of <timeSeries > resource. | NA |
| *currentByteSize* | 1 | RO | Current size in bytes of data stored in all direct child *<timeSeriesInstance>* resources of a <*timeSeries*> resource. It is limited by the *maxByteSize*. The *currentByteSize* attribute of the <timeSeries> resource shall be updated on successful creation or deletion of direct child < *timeSeriesInstance* > resource of <timeSeries > resource. | NA |
| *periodicInterval* | 0..1 | RW | If the Time Series Data is periodic, this attribute shall contain the expected amount of time between two instances of Time Series Data. | OA |
| *periodicIntervalDelta* | 0..1 | RW | If the Time Series Data is periodic, this attribute contains a +/- delta value relative to *periodicInterval* for the purpose of detecting missing data.The value of this attribute shall be less than or equal to (*periodicInterval/2*).If the attribute is omitted the hosting CSE can use a local policy to determine a default value. | OA |
| *missingDataDetect* | 1 | RW | Indicates whether the Receiver shall detect the missing Time Series Data if it is periodic. The default value is false. | NA |
| *ontologyRef* | 0..1 | RW | A reference (URI) of the ontology used to represent the information that is stored in the child *<timeSeriesInstance>* resources of the present *<timeSeriesData>* resource (see note). | OA |
| *missingDataMaxNr* | 0..1 | RW | Maximum number of entries in the *missingDataList* if the *periodicInterval* is set and the *missingDataDetect* is TRUE. | OA |
| *missingDataList* | 0..1(L) | RO | The list of the *dataGenerationTime* valuerepresenting the missing Time Series Data in descending order by time if the *periodicInterva*l is set and the *missingDataDetect* is TRUE. | NA |
| *missingDataCurrentNr* | 1 | RO | Current number of the missing Time Series Data in the *missingDataList*. | NA |
| *missingDataDetectTimer* | 0..1 | RW | The *missingDataDetectTimer* is a duration after which a <*timeSeriesInstance*> shall be considered missing by the hosting CSE.If *periodicIntervalDelta* is present, the value of this attribute shall be greater than *periodicIntervalDelta.* | OA |
| *contentInfo* | 0..1 | WO | This attribute contains information to understand the contents of the *content* attribute of <timeSeriesInstance>. It shall be composed of two mandatory components consisting of an Internet Media Type (as defined in the IETF RFC 6838 [i.36]) and an encoding type. In addition, an optional content security component may also be included. The format of this attribute is defined in oneM2M TS‑0004 [3].This attribute should be used to represent the content information of the *content* attribute of child <*timeSeriesInstance*> resources so that AEs can understand the content. | OA |
| NOTE: The access to this URI is out of scope of oneM2M. |

### -----------------------End of change 6---------------------------------------------

### -----------------------Start of change 7---------------------------------------------

### 9.6.15 Resource Type *mgmtObj*

The *<mgmtObj>* resource contains management data which represents individual M2M management functions. It represents a general structure to map to technology specific data model e.g. OMA DM [i.3], BBF TR-069 [i.2] and LWM2M [i.4]. Each instance of *<mgmtObj>* resource shall be mapped to single technology specific protocol.

The *<mgmtObj>* resource shall contain the child resource specified in table 9.6.15-1.

Table 9.6.15-1: Child resources of *<mgmtObj>* resource

| Child Resources of *<mgmtObj>* | Child Resource Type | Multiplicity | Description | *<mgmtObjAnnc>* Child Resource Type |
| --- | --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 | *<subscription>* |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 | *<semanticDescriptor>, <semanticDescriptorAnnc>* |
| *[variable]* | *<transaction>* | 0..n | See clause 9.6.48 | *<transaction>* |

The *<mgmtObj>* resource shall contain the attributes specified in table 9.6.15-2.

Table 9.6.15-2: Attributes of *<mgmtObj>* resource

| Attributes of *<mgmtObj>* | Multiplicity | RW/RO/WO | Description | *<mgmtObjAnnc>* Attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *subscriptionIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *custodian* | 0..1 | RW | See clause 9.6.1.3. | NA |
| *mgmtDefinition* | 1 | WO | Specifies the type of *<mgmtObj>* resource e.g. software, firmware, memory. The list of the value of the attribute can be seen in annex D. | MA |
| *mgmtSchema* | 0..1 | WO | Contains a URI to the <*mgmtObj*> schema definition which shall be used by the Hosting CSE to validate the syntax of incoming primitives targeting this <*mgmtObj*> resource.This URI may refer to a oneM2M specified <*mgmtObj*> definition as well as other <mgmtObj> definitions. | MA |
| *objectIDs* | 0..1 (L) | WO | Contains the list URNs that uniquely identify the technology specific data model objects used for this *<mgmtObj>* resource as well as the managed function and version it represents. This attribute shall be provided during the creation of the *<mgmtObj>* resource and shall not be modifiable afterwards.If the *<mgmtObj>* resource is mapped to multiple technology specific data model objects, this attribute shall list all URNs for each mapped technology specific data model objects. This is mandatory for the *<mgmtObj>*, for which the data model is not specified by oneM2M but mapped from technology specific data model. | OA |
| *objectPaths* | 0..1 (L) | WO | Contains the list of local paths of the technology specific data model objects on the managed entity which is represented by the *<mgmtObj>* resource in the Hosting CSE.This attribute shall be provided during the creation of the *<mgmtObj>*, so that the Hosting CSE can correlate the created *<mgmtObj>* with the technology specific data model object on the managed entity for further management operations. It shall not be modifiable after creation.The format of this attribute shall be a local technology specific data model object path in the form as specified by technology specific protocol. (e.g. "./anyPath/Fw1" in OMA DM [i.3], "Device.USBHosts.Host.3." in BBF TR‑069 [i.2]).The combination of the *objectPaths* and the *objectIDs* attribute, allows to address the technology specific data model. | OA |
| *mgmtLink* | 0..1 (L) | RW | This attribute contains reference to a list of other *<mgmtObj>* resources in case a hierarchy of *<mgmtObj>* is needed. | OA |
| *[objectAttribute]* | 0..n | RW | Each *[objectAttribute]* is mapped from a leaf node of a hierarchical structured technology specific data model object (including oneM2M data model and the technology specific data model objects) based on the mapping rules below the table. | OA |
| *description* | 0..1 | RW | Text format description of <*mgmtObj>*. | OA |

When mapping objects from technology specific protocol to a corresponding *<mgmtObj>* resource, the following rules shall apply:

* The root objects of technology specific data model objects maps to the *<mgmtObj>* resource.
* For the child of the root of technology specific data model objects:
* **Rule 1:** If the child technology specific data model object cannot have another child technology specific data model object, the technology specific data model object maps to the *[objectAttribute]* attribute of the *<mgmtObj>* resource with the same resource name.
* **Rule 2:** If the child technology specific data model object can have another child technology specific data model object, the technology specific data model object maps to a new *<mgmtObj>* resource. The ID of the new *<mgmtObj>* resource is stored as an *mgmtLink* attribute of the *<mgmtObj>* resource which is mapped from the parent technology specific data model object.

### -----------------------End of change 7---------------------------------------------

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.?