|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resource Type | Short Description | Child Resource Types | Parent Resource Types | Clause |
| *delivery* | Forwards requests from CSE to CSE | *subscription* | *CSEBase* | 9.6.11 |

### 9.6.11 Resource Type *delivery*

When a CSE is requested to initiate an operation (CRUDN) targeting resources on another CSE, then it needs to do scheduling and execution of delivery of data from the source CSE to the target CSE in line with the provisioned policies. It shall be in one of the following ways:

* Using delivery aggregation (***Delivery Aggregation*** information set to ON); or
* Forwarding the original request as a separate request on the Mcc reference point without changes.

In order to be able to initiate and manage the execution of data delivery in a resource-based manner, resource type <*delivery>* is defined. This resource type shall be used for forwarding requests from one CSE to another CSE when the ***Delivery Aggregation*** parameter in the request is set to ON. If the ***Delivery Aggregation*** parameter is set to OFF, the original request shall be forwarded without change to the next CSE, i.e. without the use of *<delivery>* resource. If the ***Delivery Aggregation*** parameter is not present, the latter method shall be used.

Operations to Retrieve, Update or Delete a *<delivery>* resource shall allow authorized entities to inquire the status of a delivery, change delivery attributes or cancel a delivery.

As defined in clause 10.2.4, *<delivery>* resource can only be created by a CSE. A request for the creation of a *<delivery>* resource can only be issued to a registrar or registree CSE from a registree or registrar CSE with a direct registration relationship among each other (i.e. no transit CSE). *<delivery>* resource is deleted on successful delivery of the data in the *aggregatedRequest* attribute to the next hop CSE.

The parent of a *<delivery>* resource is the *<CSEBase>* resource of the CSE that accepted the request for the creation of the *<delivery>* resource.



Figure 9.6.11-1: Structure of *<delivery>* resource

The *<delivery>* resource shall contain the child resource specified in table 9.6.11-1.

Table 9.6.11-1: Child resources of *<delivery>* resource

| Child Resources of *<delivery>* | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 |

The *<delivery>* resource shall contain the attributes specified in table 9.6.11-2.

Table 9.6.11-2: Attributes of *<delivery>* resource

| Attributes of  *<delivery>* | Multiplicity | RW/  RO/  WO | Description |
| --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. |
| *resourceID* | 1 | RO | See clause 9.6.1.3. |
| *resourceName* | 1 | WO | See clause 9.6.1.3. |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. |
| *parentID* | 1 | RO | See clause 9.6.1.3. |
| *creationTime* | 1 | RO | See clause 9.6.1.3. |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *stateTag* | 1 | RO | See clause 9.6.1.3. |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *source* | 1 | WO | The CSE-ID of the CSE that initiated the delivery process represented by this <delivery> resource. |
| *target* | 1 | WO | CSE-ID that defines the Hosting CSE for delivering the data contained in the *aggregatedRequest* attribute |
| *lifespan* | 1 | RW | Defines the time limit when the delivery of the information in the *aggregatedRequest* attribute needs to complete. If the *lifespan* expires before successful delivery, no further attempts to deliver the information in the *aggregatedRequest* attribute need to be executed. If the delivery fails, a feedback may be expected by the source CSE depending on options reflected in the *deliveryMetaData* attribute. The *lifespan* attribute of a *<delivery>* resource shall be set consistent with the ***Request Expiration Timestamp*** parameters of the set of original requests contained in the *aggregatedRequest* attribute, i.e. *lifespan* shall not extend beyond the earliest expiring ***Request Expiration Timestamp*** parameter in the set of the original requests contained in the *aggregatedRequest* attribute. |
| *eventCat* | 1 | RW | Defines the category of the event that triggered the delivery request represented by this *<delivery>* resource. |
| *deliveryMetaData* | 1 | RW | Contains meta information on the delivery process represented by this *<delivery>* resource, such as delivery status, delivery options, tracing information, etc. |
| *aggregatedRequest* | 1 | WO | Attribute containing the request(s) to be delivered to the Hosting CSE. This represents one or more original requests that were targeting the same Hosting CSE. |

### Resource Type <delivery>

#### Introduction

In order to be able to initiate and manage the execution of data delivery in a resource-based manner, resource type delivery is defined. This resource type shall be used for forwarding requests from one CSE to another CSE when the ***Delivery Aggregation*** parameter in the request is set to ON. The detailed description can be found in clause 9.6.11 in TS-0001 [6].

Table 7.4.11.1‑1: Data type definition of <delivery> resource

|  |  |  |
| --- | --- | --- |
| Data Type ID | File Name | Note |
| delivery | CDT-delivery-v2\_4\_0.xsd |  |

Table 7.4.11.1‑2: Universal/Common Attributes of <delivery> resource

|  |  |  |
| --- | --- | --- |
| Attribute Name | Request Optionality | |
| Create | Update |
| *@resourceName* | O | NP |
| *resourceType* | NP | NP |
| *resourceID* | NP | NP |
| *expirationTime* | O | O |
| *parentID* | NP | NP |
| *creationTime* | NP | NP |
| *lastModifiedTime* | NP | NP |
| *accessControlPolicyIDs* | O | O |
| *labels* | O | O |
| *stateTag* | NP | NP |

Table 7.4.11.1‑3: Resource Specific Attributes of <delivery> resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | Request Optionality | | Data Type | Default Value and Constraints |
| Create | Update |
| *source* | M | NP | m2m:ID | No default |
| *target* | M | NP | m2m:ID | No default |
| *lifespan* | M | O | m2m:timestamp | No default |
| *eventCat* | M | O | m2m:eventCat | No default |
| *deliveryMetaData* | M | O | m2m: deliveryMetaData | No default |
| *aggregatedRequest* | O | O | m2m:aggregatedRequest | No default |

Table 7.4.11.1‑4: Child resources of <delivery> resource

|  |  |  |  |
| --- | --- | --- | --- |
| Child Resource Type | Child Resource Name | Multiplicity | Ref. to Resource Type Definition |
| <subscription> | variable | 0..n | Clause 7.4.8 |