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| --- | --- |
| CHANGE REQUEST | |
| Meeting ID:\* | [PRO 31](http://member.onem2m.org/Application/Meeting/updateMeeting/?meetingId=1145&view=true).4 |
| Source:\* | Poornima, C-DOT, [poornima@cdot.in](mailto:poornima@cdot.in)  Giribabu Naik Moode, C-DOT, [moode@cdot.in](mailto:moode@cdot.in) |
| Date:\* | 2017-11-02 |
| Reason for Change/s:\* | See the introduction |
| CR against: Release\* | Release 3 |
| 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)  STE Small Technical Enhancements / < Work Item number (optional)>  Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0004 v3.4.0 |
| Clauses \* | D.8,6.3.3,8.2.3 |
| 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) | <TS/TR number>, <Version Number>, and <Description on which aspect should be reflected in this TS/TR> |
| 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

In the CR PRO-2017-0298-PRO31\_changes\_of\_XML\_schemas\_to\_align\_with\_TS-0004 it was proposed to add shortnames for the deviceInfo resource and to add the missing attribute “protocol”.

Changes in request optionality for the resource <deviceInfo> was added corresponding to the CR [ARC-2017-0413R03](http://member.onem2m.org/Application/documentApp/documentinfo/?documentId=24377&fromList=Y) [modification\_of\_deviceInfo\_access\_mode\_for\_interworking](http://member.onem2m.org/Application/documentApp/documentinfo/?documentId=24377&fromList=Y).

The CR proposes changes in [deviceInfo] <mgmtObj> resource.

First change is for missing attributes in TS-0004 w.r.t TS-0001 as highlighted below:

Also there are some attributes for which access mode RW/WO/RO is not consistent w.r.t TS-0001 as highlighted below

Model and deviceType attributes can be updated in TS-0004 as they are of type “O” in update request optionalitiy. But as per TS-0001,these are RO attributes. So, these attributes should have “NP” in update request optionalitiy.

Table D.8-2: Attributes of *[deviceInfo]* resource

| Attributes of *[deviceInfo]* | 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. |
| *parentID* | 1 | RO | See clause 9.6.1.3. |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *creationTime* | 1 | RO | See clause 9.6.1.3. |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. |
| *labels* | 0..1(L) | RW | See clause 9.6.1.3. |
| *mgmtDefinition* | 1 | WO | See clause 9.6.15. This attribute shall have the fixed value *"deviceInfo"*. |
| *objectIDs* | 0..1 (L) | WO | See clause 9.6.15. |
| *objectPaths* | 0..1 (L) | WO | See clause 9.6.15. |
| *description* | 0..1 | RW | See clause 9.6.15. |
| *deviceLabel* | 1 | RW | Unique device label assigned by the manufacturer.  This attribute is a specialization of *[objectAttribute]* attribute.  The value of the attribute typically exposes the device’s serial number that is specific to a manufacturer and possibly further restricted within the manufacturer by a *deviceType* or model.  This attribute shall be formatted as either single value-only string or a string format that contains a list of key-value pairs.  When this attribute contains a list of key-value pairs, the list of key-value pairs is identified by a “|”(vertical line) character as the first character in the string. Within the list of key-value pairs, each key and value shall be separated by “:”(colon) and each pairs shall be separated by “ (SPACE(U+0020))”.  An example for the key-value string about OMA DWAPI is “|systemID:0123 serviceID:xyz”.  When using reserved characters (e.g., SPACE, “:”, “%”, or “|”) within a key or value element, the reserved characters are escaped by identifying the ascii value of the character with a percent escape character preceeding the ascii value.  For example if the previous examples systemID key’s value included a SPACE character the string is represented as “|systemID:01%2023 serviceID:xyz”.  It is also possible to use a list of URNs.. |
| *manufacturer* | 1 | WO | The name/identifier of the device manufacturer. This attribute is a specialization of *[objectAttribute]* attribute. |
| *manufacturerDetailsLink* | 0..1 | RW | URL to manufacturer's website. This attribute is a specialization of *[objectAttribute]* attribute. |
| *manufacturingDate* | 0..1 | WO | Manufacturing date of device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *model* | 1 | WO | The name/identifier of the device mode assigned by the manufacturer. This attribute is a specialization of *[objectAttribute]* attribute. |
| *subModel* | 0..1 | WO | Device sub-model name. This attribute is a specialization of *[objectAttribute]* attribute. |
| *deviceType* | 1 | RW | The type (e.g. cell phone, photo frame, smart meter) or product class (e.g. X-series) of the device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *deviceName* | 0..1 | RW | Device name. This attribute is a specialization of *[objectAttribute]* attribute. |
| *fwVersion* | 0..1 | RW | The firmware version of the device (see note). |
| *swVersion* | 0..1 | RW | The software version of the device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *hwVersion* | 0..1 | WO | The hardware version of the device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *osVersion* | 0..1 | RW | Version of the operating system (defined by manufacturer). This attribute is a specialization of *[objectAttribute]* attribute. |
| *country* | 0..1 | WO | Country code of the device. It could be manufacturing country, deployment country or procurement country where the device was manufactured, first deployed or first procured. This attribute is a specialization of [objectAttribute] attribute. |
| *location* | 0..1 | RW | Location where the device is installed. It may be configured via the user interface provided by the ‘presentationURL' property or any other means. This attribute is a specialization of [objectAttribute] attribute. |
| *systemTime* | 0..1 | RW | Reference time for the device. This attribute is a specialization of [objectAttribute] attribute. |
| *supportURL* | 0..1 | RW | URL that points to product support information of the device. This attribute is a specialization of [objectAttribute] attribute. |
| *presentationURL* | 0..1 | RW | To quote UPnP: "the control point can retrieve a page from this URL, load the page into a web browser, and depending on the capabilities of the page, allow a user to control the device and/or view device status. The degree to which each of these can be accomplished depends on the specific capabilities of the presentation page and device". This attribute is a specialization of [objectAttribute] attribute. |
| *protocol* | 0..1(L) | RW | A list of MIME types for all supported communication protocol(s) of the device. Example: application/x-alljoin;version=1.0 application/x-echonet-lite;version=1.0 indicates the device supports both AllJoyn v1.0 and Echonet Lite v1.0. This attribute is a specialization of [objectAttribute] attribute. |
| NOTE: If the device only supports one kind of Software this is identical to *swVersion*. This attribute is a specialization of *[objectAttribute]* attribute. | | | |

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

1. 1. Resource [deviceInfo]
      1. Introduction

The resource [deviceInfo] is used to provide information regarding the device.

The detailed description of the [deviceInfo] resource can be found in clause D.8 of oneM2M TS-0001 [6].

Table D.8.1‑1: Data Type Definition of [deviceInfo]

|  |  |  |
| --- | --- | --- |
| Data Type ID | File Name | Note |
| deviceInfo,  deviceInfoAnnc | CDT-deviceInfo-v3\_4\_0.xsd |  |

Table D.8.1‑2: Resource specific attributes of [deviceInfo]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | Request Optionality | | Data Type | Default Value and Constraints |
| Create | Update |
| mgmtDefinition | M | NP | See clause 7.4.15 | 1007 (deviceInfo) |
| objectIDs | O | NP | See clause 7.4.15 |  |
| objectPaths | O | NP | See clause 7.4.15 |  |
| description | O | O | See clause 7.4.15 |  |
| deviceLabel | M | O | xs:string |  |
| manufacturer | M | NP | xs:string |  |
| manufacturerDetailsLink | O | O | xs:string |  |
| manufacturingDate | O | NP | m2m:timestamp |  |
| model | M | NP | xs:string |  |
| subModel | O | NP | xs:string |  |
| deviceType | M | O | xs:string |  |
| deviceName | O | O | xs:string |  |
| fwVersion | O | O | xs:string |  |
| swVersion | O | O | xs:string |  |
| hwVersion | O | NP | xs:string |  |
| osVersion | O | O | xs:string |  |
| country | O | NP | xs:string |  |
| location | O | O | xs:string |  |
| systemTime | O | O | m2m:timestamp |  |
| supportURL | O | O | xs:anyURI |  |
| presentationURL | O | O | xs:anyURI |  |
| protocol | O | O | m2m:protocolList |  |

* + 1. Resource specific procedure on CRUD operations

D.8.2.0. Introduction

When management is performed using technology specific protocols, the procedures defined in clause 7.4.15.2 <mgmtObj> specific procedures shall be used. The following clauses define additional procedures besides the generic procedure defined in clause 7.2.2.

* + - 1. Create

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

No change from the generic procedures in clause 7.2.2.2.

* + - 1. Update

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

No change from the generic procedures in clause 7.2.2.2.

* + - 1. Retrieve

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

No change from the generic procedures in clause 7.2.2.2.

* + - 1. Delete

***Originator:***

No change from the generic procedures in clause 7.2.2.1.

***Receiver:***

No change from the generic procedures in clause 7.2.2.2.

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

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



### oneM2M simple data types

Table 6.3.3‑1 describes oneM2M-specific simple data type definitions. XML Schema data type definitions for these data types can be found in the XSD file called CDT-commonTypes-v3\_4\_0.xsd.

The types in table 6.3.3‑1 are either:

* Atomic data types derived from XML Schema data types by restrictions (other than enumeration) or union.
* List data types constructed from other XML Schema or oneM2M-defined atomic data types.

The oneM2M-defined enumeration data types are defined in clause 6.3.4.

Table 6.3.3‑1: oneM2M Simple Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| XSD type name | Type Name | Examples | Description |
| m2m:resourceName | Resource name | myLightBulb  123Sensor | Used for resource name attribute. This shall be formed by (ALPHA / DIGIT) \*(ALPHA / DIGIT / "-" / "." / "\_") as described in 6.2.3. |
| m2m:ID | Generic ID | //globalm2m.org | Used to represent generic IDs generated and used within oneM2M (M2M-SP-ID) |
| //globalm2m.org/C190XX7T | (CSE-ID) |
| //globalm2m.org/CSE1/123A38ZZY | (AE-ID) |
| m2m:nodeID | Node ID | urn:gsma:imei:90420156-025763-0;svn=42 | Used for Node IDs. The constraints on this type are different from those on Generic IDs  (IMEI as node ID) |
| m2m:deviceID | Device ID | urn:dev:ops:012345-Set%2DTop%2DBox-0123456789 | A Device ID uniquely identifies a device using a URN. The format of the URN is one of IETF RFC 4122([35]) UUID, OPS URN, OS URN, IMEI URN, ESN URN, or MEID URN.A |
| m2m:externalID | M2M-EXT-ID | urn:gsma:imei:90420156-025763-0;vers=0 | The External Identifier allows the Underlying Network to identify the M2M Device (e.g. ASN, MN) associated with the CSE-ID or AE-ID.In 3GPP case, the accessID is mapped to External Identifier as specified in TS 23.003 [17]. |
| m2m:requestID | Request ID | ab3f124a, CSE1/98821 | Used for Request IDs. This type may include the ID of the target CSE as well as a part that varies for each ID |
| m2m:nhURI | Non Hierarchical Identifier | /CSE090112/ C190XX7T | Used where a resourceID is required to be non-hierarchical |
| m2m:acpType | List of ACP Resource IDs | //IN-CSEID.m2m.myoperator.org/93405 | Used to represent a list of AccessControlPolicy identifiers. |
| m2m:labels | list of xs:token | printers networkwifi1 home\_energy (key-only)  domain:home color:red (key-value pair) | A list of tokens used for describing and discovering resources (searching wifi connected printer from vendor 1)  Each token can have two formats, key-only and key-value pair. In the case of key-value pair, key and value are separated by “:”. The key portion doesn’t contain “:”. |
| m2m:triggerRecipientID | Trigger Recipient Identifier | 3010 | Used when device triggering services are requested from the Underlying Network, to identify an instance of an ASN/MN-CSE on an execution environment, to which the trigger is routed. Defined as port number in the range 0 to 65535. |
| m2m:listOfM2MID | List of M2M identifiers |  | xs:list of elements of data type m2m:ID |
| m2m:listOfMinMax | List of Time Limits | 10 2560 | xs:list of two xs:long values defining min and max limits of time intervals in units of milliseconds (value -1 representing infinite time) |
|  |  |  |  |
| m2m:ipv4 | IPv4 address string with optional CIDR suffix | 10.125.0.0/16,122.77.12.1 | Used in m2m:accessControlRules specified in the section 6.3.5.26 |
| m2m:ipv6 | IPv6 address string with optional CIDR suffix | ::/0, Fadf:ddd0::/32, abcd:ffff:abb0:aaaa::/64 | Used in m2m:accessControlRules specified in the section 6.3.5.26 |
| m2m:countryCode | Country Code | KR | 2-character country code as defined by ISO 3166-1 [40] |
| m2m:poaList | List of PointOfAccess strings | http://172.25.0.10:8080,  coap://m2m.sp.com:5683,  mqtt://172.25.0.10:1883 | list of xs:string. Each pointOfAccess entry in list is represented as a string containing the underlying transport protocol as well as the IP address and port (or an FQDN in all lowercase). |
| m2m:timestamp | Time stamp string | 20141003T112032 | DateTime string using 'Basic Format' specified in ISO8601 [27]. Time zone shall be interpreted as UTC timezone. See below for more details. |
| m2m:absRelTimestamp | absolute or relative time stamp string | 20141003T112032 (absolute time),or 3600000 (relative time) | defined as xs:union of m2m:timestamp and xs:duration data types |
| m2m:typeOfContent | Type of Content | application/xml | The media type shall be an IANA registered Media Types name, or an experimental Media Type (See [26]) ':' |
| m2m:serializations | Serialization types | application/xml application/json application/cbor | A list of IANA registered media types that can be used for serialization of primitives. The permitted values are   * application/xml * application/json * application/cbor |
| m2m:contentInfo | Content Information | application/xml:1  application/xml:1:0  application/xml:1:5 | A string consisting of a media type followed by a m2m:encodingType and optional m2m:contentSecurity, each separated by ':' character. If the m2m:contentSecurity value is not present, then the preceding ':' shall also be not present. If the m2m:contentSecurity value is not present then this has the same interpretation as a value of 0 for m2m:contentSecurity.  See note. |
| m2m:protocolList | List of protocols | application/x-alljoyn;version=1.0 application/x-echonet-lite;version=1.0 | A list of MIME types for all communication protocols supported by the device. |
| m2m:eventCat | Event Category | 2 | Either   1. One of the values from m2m:stdEventCats or 2. A user-defined category in the range 100-999 |
| m2m:eventCatWithDef | Event Category with default | 0 | Either   1. A value from m2m:eventCat , or 2. The value 0 which has the special meaning "default" |
| m2m:listOfEventCat | List of (applicable) Event Categories | 1 101 | xs:list of elements of data type m2m:eventCat |
| m2m:listOfEventCatWithDef | List of m2m:eventCatWithDef | 0 1 101 |  |
| m2m:scheduleEntry | Schedule Entry | \* 0-5 2,6,10 \* \* \* \* | The string is used to describe a duration of enablement. The string format is described in clause 7.4.9.1 |
| m2m:attributeList | List of xs:NCName | poa rr | Used for the ***Content*** parameter of Retrieve request primitives and in m2m:eventNotificationCriteria. Attributes represented with their short names. |
| m2m:roleID | Role-ID | 1234abcd@role-issuer.com | A string pattern consisting of a name (the issuerRelativeID) and an FQDN in all lowercase (the issuerID) separated by the ‘@' character, not including any whitespace characters. The issuerRelativeID shall be comprised of any combination of the Roman alphabet, numerals, '.', '\_' and '-' characters. |
| m2m:descriptorRepresentation | Semantic content representation | application/rdf+xml:1 | A string consisting of a media type followed by a m2m:encoding separated by ':' character. The only permitted value is application/rdf+xml:1 |
| m2m:sparql | SPARQL content | SELECT ?functionality  WHERE {  ?functionality rdf:type base:Measuring.  ?functionality base:refersTo ?aspect.  ?aspect rdf:type instance:Temperature } | The string is used for SPARQL content, e.g. in *semanticsFilter* |
| m2m:missingDataList | List of  absolute timestamp or  list of relative timestamp | absolute time:  20141103T111832 ,  20141103T112435 ,  20141103T113633  or  relative time:  10000 ,  10005 ,  10020 | Used for storing the time information of missing data points in Time Series.  defined as xs:union of list of m2m:timestamp and list of xs:duration data types |
| m2m:tokenID | Token-ID | 1234abcd@token-issuer.com | A string pattern consisting of a name (the issuerRelativeID) and an FQDN in all lowercase (the issuerID) separated by the ‘@' character, not including any whitespace characters. See constraints above for the issuerRelativeID. |
| m2m:dynAuthJWT | JSON Web Token (JWT), which uses either JSON Web Encryption (JWE) Compact Serialization JSON Web Signature (JWS) Compact Serialization | See m2m:e2eCompactJWE and m2m:e2eCompactJWS | Defined as xs:union of m2m:e2eCompactJWE and m2m:e2eCompactJWS |
| m2m:e2eCompactJWS | JSON Web Signature (JWS) Compact Serialization, used in End-to-End Security Features TS-0003 [7] | eyJ0eXAiOiJK.  eyJpc3MiOiJqb2UiLA0KIC.  dBjftJeZ4CVP  (line breaks for display purposes only) | Of the form [a].[b].[c], where components [a] and [c] are non-empty, while component [b] can be either empty or not empty. When not empty, each component is base64url encoded (IETF RFC 4648 [9]). See [i.7] |
| m2m:e2eCompactJWE | JSON Web Encryption (JWE) Compact Serialization, used in End-to-End Security Features TS-0003 [7] | eyJ0eXAiOiJK.  eyJpc3MiOiJqb2UiLA0KIC.  dBjftJeZ4CVP.  5eym8TW\_c8SuK.  SdiwkIr3a.  XFBoMYUZo  (line breaks for display purposes only) | Of the form [a].[b].[c].[d].[e], where components [a] and [d] are non-empty, while components [b],[c] and [e] can be empty or not empty. When not empty, each component is base64url encoded (IETF RFC 4648 [9]). See [i.8] |
| m2m:signatureList | List of signatures generated using a certificate or MIC generated using a symmetric key.  It is used in Authorization Relationship Mapping | i6watmQQQ1y3GB+VsWq5fJKzQcBB4jRfH1bfJFj0JtFVtLotttzYyA==  IWijxQjUrcXBYoCei4QxjWo9Kg8D3p9tlWoT4t0/gyTE96639In0FZFY2/rvP+/bMJ01EArmKZsR5VW3rwoPxw=  (line breaks for display purposes only) | Each signature or MIC in the list is represented as a string which is base64url encoded(IETF RFC 4648 [9]). |
| m2m:locationTargetID | The identifier to be used for retrieving the location information of a remote Node or device of underlying network | urn:gsma:imei:90420156-025763-0;vers=0 or urn:gsma:imei:90420156-025763-0;svn=42 or 8617791450839 | defined as xs:union of m2m:nodeID and m2m:externalID and MSISDN |
| NOTE: The media type and m2m:encodingType in m2m:contentInfo describe the content data to which the End-to-End Security of Data (ESData) processing, if any, was applied as indicated by m2m:contentSecurity. The m2m:contentInfo indicates a sequence of processes to be applied to the *content* after being obtained from the CSE. First, the ESData processing (if any) as indicated by m2m:contentSecurity is applied. The result of this processing then has transfer decoding (if any) applied as indicated by m2m:encodingType. The result of this processing is then processed according to the media type. | | | |

The m2m:timestamp datatype uses ISO8601 [27] Complete Representation using the Basic Format as described here:

* The timestamp shall be a string containing Year, Month, Day, Hours, Minutes and Seconds components using the format YYYYMMDDThhmmss as defined in [27]. In this representation the character "T" is to indicate the start of the time of day portion.
* All these components shall appear in the string; reduced representations are not permitted.
* The Seconds component may optionally contain a decimal fraction. In this case the string shall contain two integer digits, followed by a comma and then one or more fractional digits, up to a maximum of six. For example YYYYMMDDThhmmss,ssssss
* The timestamp string shall not contain Timezone information. All timestamps shall be interpreted as being in UTC.

A receiving or Hosting CSE shall accept a timestamp that contains fractional seconds, but it need not act on a timestamp with the level of precision that is implied by its fractional part. For example it is acceptable for a Hosting CSE to round up an expiration time when interpreting it.

NOTE 1: Care should be taken when developing an application that compares timestamps. This is because AE's and CSE's are not required to have their clocks synchronized.

NOTE 2: As the m2m:timestamp is expressed in UTC, an AE has to be aware of the Timezone in which it is operating if it is to be able to relate the timestamp to its local time.

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

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



### Resource attributes

In protocol bindings, resource attributes names shall be translated into short names shown in the following tables.

Table 8.2.3‑1: Resource attribute short names (1/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *accessControlPolicyIDs* | All except accessControlPolicy, contentInstance | ***acpi*** |
| *announcedAttribute* | accessControlPolicy, AE, container, contentInstance, group, locationPolicy, mgmtObj, node, remoteCSE, schedule, semanticDescriptor, trafficPattern | ***aa*** |
| *announceTo* | accessControlPolicy, AE, container, contentInstance, group, locationPolicy, mgmtObj, node, remoteCSE, schedule, semanticDescriptor, trafficPattern | ***at*** |
| *creationTime* | All | ***ct*** |
| *expirationTime* | All except contentInstance, CSEBase | ***et*** |
| labels | All (optional) | ***lb***l |
| *lastModifiedTime* | All | ***lt*** |
| *Link* | All | ***lnk*** |
| *parentID* | All | ***pi*** |
| *resourceID* | All | ***ri*** |
| resourceType | All | ***ty\**** |
| *stateTag* | container, contentInstance, delivery, request | ***st*** |
| *resourceName* | All | ***rn*** |
| *privileges* | accessControlPolicy | ***pv*** |
| *selfPrivileges* | accessControlPolicy | ***pvs*** |
| *App-ID* | AE | ***api*** |
| *AE-ID* | AE | ***aei*** |
| *appName* | AE | ***apn*** |
| *pointOfAccess* | AE, CSEBase, remoteCSE | ***poa*** |
| *ontologyRef* | AE, container, contentInstance, semanticDescriptor. flexContainer, timeSeries | ***or*** |
| *nodeLink* | AE, CSEBase, remoteCSE | ***nl*** |
| contentSerialization | AE | ***csz*** |
| *creator* | container, contentInstance,eventConfig, group, pollingChannel, statsCollect, statsConfig, subscription, semanticDescriptor, notificationTargetPolicy, flexContainer, timeSeries | ***cr*** |
| *maxNrOfInstances* | container, timeSeries | ***mni*** |
| *maxByteSize* | container, timeSeries | ***mbs*** |
| *maxInstanceAge* | container, timeSeries | ***mia*** |
| *currentNrOfInstances* | container, timeSeries | ***cni*** |

Table 8.2.3‑2: Resource attribute short names (2/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *currentByteSize* | container | ***cbs*** |
| *locationID* | container | ***li*** |
| *disableRetrieval* | container | ***disr*** |
| *contentInfo* | contentInstance | ***cnf*** |
| *contentSize* | contentInstance, timeSeriesInstance | ***cs*** |
| *contentRef* | contentInstance | ***conr*** |
| *containerDefinition* | flexContainer | ***cnd*** |
| primitiveContent | request | ***pc\**** |
| *content* | contentInstance, timeSeriesInstance | ***con*** |
| *cseType* | CSEBase, remoteCSE | ***cst*** |
| *CSE-ID* | CSEBase, remoteCSE, service SubscribedNode | ***csi*** |
| *supportedResourceType* | CSEBase | ***srt*** |
| *notificationCongestionPolicy* | CSEBase | ***ncp*** |
| *source* | delivery | ***sr*** |
| *target* | delivery, request | ***tg*** |
| *lifespan* | delivery | ***ls*** |
| *eventCat* | delivery | ***ec*** |
| *deliveryMetaData* | delivery | ***dmd*** |
| *aggregatedRequest* | delivery | ***arq*** |
| *eventID* | eventConfig, statsCollect | ***evi*** |
| *eventType* | eventConfig | ***evt*** |
| *evenStart* | eventConfig | ***evs*** |
| *eventEnd* | eventConfig | ***eve*** |
| *operationType* | eventConfig | ***opt*** |
| *dataSize* | eventConfig | ***ds*** |
| *execStatus* | execInstance | ***exs*** |
| *execResult* | execInstance | ***exr*** |
| *execDisable* | execInstance | ***exd*** |
| *execTarget* | execInstance, mgmtCmd | ***ext*** |
| *execMode* | execInstance, mgmtCmd | ***exm*** |
| *execFrequency* | execInstance, mgmtCmd | ***exf*** |
| *execDelay* | execInstance, mgmtCmd | ***exy*** |
| *execNumber* | execInstance, mgmtCmd | ***exn*** |
| *execReqArgs* | execInstance, mgmtCmd | ***exra*** |
| *execEnable* | mgmtCmd | ***exe*** |
| *memberType* | group | ***mt*** |
| *currentNrOfMembers* | group | ***cnm*** |
| *maxNrOfMembers* | group | ***mnm*** |
| *memberIDs* | group | ***mid*** |
| *membersAccessControlPolicyIDs* | group | ***macp*** |
| *memberTypeValidated* | group | ***mtv*** |
| *consistencyStrategy* | group | ***csy*** |
| *semanticSupportIndicator* | group | ***ssi*** |
| *groupName* | group, subscription | ***gn*** |
| *locationSource* | locationPolicy | ***los*** |
| *locationUpdatePeriod* | locationPolicy | ***lou*** |
| *locationTargetID* | locationPolicy | ***lot*** |
| *locationServer* | locationPolicy | ***lor*** |
| *locationContainerID* | locationPolicy | ***loi*** |
| *locationContainerName* | locationPolicy | ***lon*** |
| *locationStatus* | locationPolicy | ***lost*** |
| *authID* | locationPolicy | ***aid*** |
| *description* | mgmtCmd, mgmtObj, all management resources from firmware, ontology | ***dc*** |
| *cmdType* | mgmtCmd | ***cmt*** |
| *mgmtDefinition* | mgmtObj, all management resources from firmware | ***mgd*** |
| *objectIDs* | mgmtObj | ***obis*** |

Table 8.2.3‑3: Resource attribute short names (3/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *objectPaths* | mgmtObj | ***obps*** |
| *nodeID* | node | ***ni*** |
| *hostedCSELink* | node | ***hcl*** |
| *mgmtClientAddress* | node | ***mgca*** |
| *CSEBase* | remoteCSE | ***cb\**** |
| *M2M-Ext-ID* | remoteCSE | ***mei*** |
| *Trigger-Recipient-ID* | remoteCSE | ***tri*** |
| *requestReachability* | remoteCSE | ***rr*** |
| *triggerReferenceNumber* | remoteCSE | ***trn*** |
| descendantCSEs | remoteCSE | ***dcse*** |
| *originator* | request | ***org*** |
| *metaInformation* | request | ***mi*** |
| *requestStatus* | request | ***rs*** |
| *operationResult* | request | ***ors*** |
| *operation* | request | ***op\**** |
| *requestID* | request | ***rid*** |
| *scheduleElement* | schedule | ***se*** |
| *deviceIdentifier* | serviceSubscribedNode | ***di*** |
| *ruleLinks* | serviceSubscribedNode | ***rlk*** |
| *statsCollectID* | statsCollect | ***sci*** |
| *collectingEntityID* | statsCollect | ***cei*** |
| *collectedEntityID* | statsCollect | ***cdi*** |
| *devStatus* | areaNwkDeviceInfo | ***ss*** |
| *statsRuleStatus* | statsCollect | ***srs*** |
| *statModel* | statsCollect | ***sm*** |
| *collectPeriod* | statsCollect | ***cp*** |
| *eventNotificationCriteria* | subscription | ***enc*** |
| *expirationCounter* | subscription | ***exc*** |
| *notificationURI* | subscription | ***nu*** |
| groupID | subscription | ***gpi*** |
| *notificationForwardingURI* | subscription | ***nfu*** |
| *batchNotify* | subscription | ***bn*** |
| *rateLimit* | subscription | ***rl*** |
| *preSubscriptionNotify* | subscription | ***psn*** |
| *pendingNotification* | subscription | ***pn*** |
| *notificationStoragePriority* | subscription | ***nsp*** |
| *latestNotify* | subscription | ***ln*** |
| *notificationContentType* | subscription | ***nct*** |
| *notificationEventCat* | subscription | ***nec*** |
| *subscriberURI* | subscription | ***su*** |
| *version* | firmware, software, token | ***vr*** |
| *URL* | firmware, software | ***url*** |
| *update* | firmware | ***ud*** |
| *updateStatus* | firmware | ***uds*** |
| *install* | software | ***in*** |
| *uninstall* | software | ***un*** |
| *installStatus* | software | ***ins*** |
| *activate* | software | ***act*** |
| *deactivate* | software | ***dea*** |
| *activeStatus* | software, areaNwkInfo | ***acts*** |
| *memAvailable* | memory | ***mma*** |
| *memTotal* | memory | ***mmt*** |

Table 8.2.3‑4: Resource attribute short names (4/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *areaNwkType* | areaNwkInfo | ***ant*** |
| *listOfDevices* | areaNwkInfo | ***ldv*** |
| *devId* | areaNwkDeviceInfo | ***dvd*** |
| *devType* | areaNwkDeviceInfo | ***dvt*** |
| *areaNwkId* | areaNwkDeviceInfo | ***awi*** |
| *sleepInterval* | areaNwkDeviceInfo | ***sli*** |
| *sleepDuration* | areaNwkDeviceInfo | ***sld*** |
| *listOfNeighbors* | areaNwkDeviceInfo | ***lnh*** |
| *batteryLevel* | battery | ***btl*** |
| *batteryStatus* | battery | ***bts*** |
| *deviceLabel* | deviceInfo | ***dlb*** |
| *manufacturer* | deviceInfo | ***man*** |
| *model* | deviceInfo | ***mod*** |
| *deviceType* | deviceInfo | ***dty*** |
| *fwVersion* | deviceInfo | ***fwv*** |
| *swVersion* | deviceInfo | ***swv*** |
| *hwVersion* | deviceInfo | ***hwv*** |
| manufacturerDetailsLink | deviceInfo | ***mfdl*** |
| manufacturingDate | deviceInfo | ***mfd*** |
| subModel | deviceInfo | ***smod*** |
| deviceName | deviceInfo | ***dvnm*** |
| osVersion | deviceInfo | ***osv*** |
| country | deviceInfo | ***cnty*** |
| location | deviceInfo | ***loc*** |
| systemTime | deviceInfo | ***syst*** |
| supportURL | deviceInfo | ***spur*** |
| presentationURL | deviceInfo | ***purl*** |
| *protocol* | deviceInfo | ***ptl*** |
| *capabilityName* | deviceCapability | ***can*** |
| *attached* | deviceCapability | ***att*** |
| *capabilityActionStatus* | deviceCapability | ***cas*** |
| *enable* | deviceCapability, allJoynSvcObject | ***ena*** |
| *disable* | deviceCapability | ***dis*** |
| *currentState* | deviceCapability | ***cus*** |
| *reboot* | reboot | ***rbo*** |
| *factoryReset* | reboot | ***far*** |
| *logTypeId* | eventLog | ***lgt*** |
| *logData* | eventLog | ***lgd*** |
| *logStatus* | eventLog | ***lgst*** |
| *logStart* | eventLog | ***lga*** |
| *logStop* | eventLog | ***lgo*** |
| firmwareName | firmware | ***fwn*** |
| softwareName | software | ***swn*** |
| cmdhPolicyName | cmdhPolicy | ***cpn*** |
| *mgmtLink* | cmdhPolicy, activeCmdhPolicy, cmdhDefaults, cmdhNetworkAccessRules, cmdhNwAccessRule | ***cmlk*** |
| *activeCmdhPolicyLink* | activeCmdhPolicy | ***acmlk*** |
| *order* | cmdhDefEcValue, cmdhLimits | ***od*** |
| *defEcValue* | cmdhDefEcValue | ***dev*** |
| *requestOrigin* | cmdhDefEcValue, cmdhLimits | ***ror*** |
| *requestContext* | cmdhDefEcValue, cmdhLimits | ***rct*** |
| *requestContextNotification* | cmdhDefEcValue, cmdhLimits | ***rctn*** |
| *requestCharacteristics* | cmdhDefEcValue, cmdhLimits | ***rch*** |
| *applicableEventCategories* | cmdhNetworkAccessRules | ***aecs*** |
| *applicableEventCategory* | cmdhEcDefParamValues, cmdhBuffer | ***aec*** |
| *defaultRequestExpTime* | cmdhEcDefParamValues | ***dqet*** |
| *defaultResultExpTime* | cmdhEcDefParamValues | ***dset*** |
| *defaultOpExecTime* | cmdhEcDefParamValues | ***doet*** |
| *defaultRespPersistence* | cmdhEcDefParamValues | ***drp*** |
| *defaultDelAggregation* | cmdhEcDefParamValues | ***dda*** |
| *limitsEventCategory* | cmdhLimits | ***lec*** |
| *limitsRequestExpTime* | cmdhLimits | ***lqet*** |
| *limitsResultExpTime* | cmdhLimits | ***lset*** |
| *limitsOpExecTime* | cmdhLimits | ***loet*** |
| *limitsRespPersistence* | cmdhLimits | ***lrp*** |
| *limitsDelAggregation* | cmdhLimits | ***lda*** |
| *targetNetwork* | cmdhNwAccessRule, trafficPattern | ***ttn*** |

Table 8.2.3‑5: Resource attribute short names (5/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *minReqVolume* | cmdhNwAccessRule | ***mrv*** |
| *spreadingWaitTime* | cmdhNwAccessRule | ***swt*** |
| *backOffParameters* | cmdhNwAccessRule | ***bop*** |
| *otherConditions* | cmdhNwAccessRule | ***ohc*** |
| *maxBufferSize* | cmdhBuffer | ***mbfs*** |
| *storagePriority* | cmdhBuffer | ***sgp*** |
| *applicableCredIDs* | serviceSubscribedAppRule | ***apci*** |
| *allowedApp-IDs* | serviceSubscribedAppRule | ***aai*** |
| *allowedAEs* | serviceSubscribedAppRule | ***aae*** |
| *allowedRole-IDs* | serviceSubscribedAppRule | ***ari*** |
| *notificationTargetURI* | notificationTargetMgmtPolicyRef | ***ntu*** |
| *notificationlPolicyID* | notificationTargetMgmtPolicyRef | ***npi*** |
| *action* | notificationTargetPolicy | ***ac*** |
| *policyLabel* | notificationTargetPolicy | ***plbl*** |
| *rulesRelationship* | notificationTargetPolicy | ***rrs*** |
| *creator* | notificationTargetPolicy | ***cr*** |
| *deletionRules* | policyDeletionRules | ***dr*** |
| *deletionRulesRelation* | policyDeletionRules | ***drr*** |
| *dynamicAuthorizationConsultationIDs* | All resources having an accessControlPolicyID attribute | ***daci*** |
| *dynamicAuthorizationEnabled* | dynamicAuthorizationConsultation | ***dae*** |
| *dynamicAuthorizationPoA* | dynamicAuthorizationConsultation | ***dap*** |
| *dynamicAuthorizationLifetime* | dynamicAuthorizationConsultation | ***dal*** |
| *descriptorRepresentation* | semanticDescriptor | ***dcrp*** |
| *semanticOpExec* | semanticDescriptor | ***soe*** |
| *descriptor* | semanticDescriptor | ***dsp*** |
| *relatedSemantics* | semanticDescriptor | ***rels*** |
| *semanticValidated* | semanticDescriptor | ***svd*** |
| *validationEnable* | semanticDescriptor | ***vlde*** |
| *periodicInterval* | timeSeries | ***pei*** |
| *missingDataDetect* | timeSeries | ***mdd*** |
| *missingDataMaxNr* | timeSeries | ***mdn*** |
| *missingDataList* | timeSeries | ***mdlt*** |
| *missingDataCurrentNr* | timeSeries | ***mdc*** |
| *missingDataDetectTimer* | timeSeries | ***mdt*** |
| *dataGenerationTime* | timeSeriesInstance | ***dgt*** |
| *sequenceNr* | timeSeriesInstance | ***snr*** |
| *providedToNSE* | trafficPattern | ***ptn*** |
| *periodicIndicator* | trafficPattern | ***pri*** |
| *periodicDurationTime* | trafficPattern | ***pdt*** |
| *periodicIntervalTime* | trafficPattern | ***pit*** |
| *stationaryIndication* | trafficPattern | ***sti*** |
| *dataSizeIndicator* | trafficPattern | ***dsi*** |
| *validityTime* | trafficPattern | ***vdt*** |
| *roleID* | role | ***rlid*** |
| *roleName* | role | ***rlnm*** |
| *tokenLink* | role | ***rltl*** |
| *tokenID* | token | ***tkid*** |
| *tokenObject* | token | ***tkob*** |
| *issuer* | token, role | ***tkis*** |
| *holder* | token, role | ***tkhd*** |
| *notBefore* | token, role | ***tknb*** |
| *notAfter* | token, role | ***tkna*** |
| *tokenName* | token | ***tknm*** |
| *audience* | token | ***tkau*** |
| *permissions* | token | ***tkps*** |
| *extension* | token | ***tkex*** |
| *e2eSecInfo* | CSEBase, remoteCSE, AE | ***esi*** |

Table 8.2.3‑6: Resource attribute short names (6/6)

|  |  |  |
| --- | --- | --- |
| Attribute Name | Occurs in | Short Name |
| *serviceName* | genericInterworkingService | ***gisn*** |
| *operationName* | genericInterworkingOperationInstance | ***gion*** |
| *inputDataPointLinks* | genericInterworkingService, genericInterworkingOperationInstance | ***giip*** |
| *outputDataPointLinks* | genericInterworkingService, genericInterworkingOperationInstance | ***giop*** |
| *inputLinks* | genericInterworkingOperationInstance | ***giil*** |
| *outputLinks* | genericInterworkingOperationInstance | ***giol*** |
| *operationState* | genericInterworkingOperationInstance | ***gios*** |
| *direction* | allJoynApp | ***dir*** |
| *objectPath* | allJoynSvcObject | ***ajop*** |
| *interfaceIntrospectXmlRef* | allJoynInterface | ***ajir*** |
| *input* | allJoynMethodCall | ***inp*** |
| *callStatus* | allJoynMethodCall | ***clst*** |
| *output* | allJoynMethodCall | ***out*** |
| *currentValue* | allJoynProperty | ***crv*** |
| *requestedValue* | allJoynProperty | ***rqv*** |
| *decision* | authorizationDecision | ***dec*** |
| *status* | authorizationDecision, authorizationPolicy, authorizationInformation | ***sta*** |
| *to* | authorizationDecision, authorizationPolicy | ***to\**** |
| *from* | authorizationDecision, authorizationInformation | ***fr\**** |
| *requestedResourceType* | authorizationDecision | ***rrt*** |
| *operation* | authorizationDecision | ***op\**** |
| *filterUsage* | authorizationDecision | ***fu*** |
| *roleIDs* | authorizationDecision, authorizationInformation | ***rids\**** |
| *tokenIDs* | authorizationDecision, authorizationInformation | ***tids\**** |
| *tokens* | authorizationDecision | ***tkns\**** |
| *requestTime* | authorizationDecision | ***rtm*** |
| *originatorLocation* | authorizationDecision | ***olo*** |
| *originatorIP* | authorizationDecision | ***oip*** |
| *policies* | authorizationPolicy | ***ps*** |
| *combiningAlgorithm* | authorizationPolicy | ***ca*** |
| *ontologyFormat* | ontology | ***ontf*** |
| *ontologyContent* | ontology | ***ontc*** |
| *memberFilter* | semanticMashupJobProfile | ***mbft*** |
| *smiID* | semanticMashupJobProfile | ***miid*** |
| *inputDescriptor* | semanticMashupJobProfile | ***iptd*** |
| *outputDescriptor* | semanticMashupJobProfile | ***uptd*** |
| *functionDescriptor* | semanticMashupJobProfile | ***fucd*** |
| *smjpID* | semanticMashupInstance | ***mjid*** |
| *smjpInputParameter* | semanticMashupInstance, semanticMashupResult | ***jpin*** |
| *memberStoreType* | semanticMashupInstance | ***mst*** |
| *mashupMember* | semanticMashupInstance | ***msm*** |
| *resultGenType* | semanticMashupInstance | ***rgt*** |
| *periodForResultGen* | semanticMashupInstance | ***prg*** |
| *mashupResultFormat* | semanticMashupResult | ***mrf*** |
| *mashupResult* | semanticMashupResult | ***mrt*** |
| NOTE: \* marked short names have been already assigned in Table 8.2.2-1. | | |

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

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.?