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| CHANGE REQUEST | |
| Meeting ID:\* | RDM#49 |
| Source:\* | Cyrille Bareau, Orange, [cyrille.bareau@orange.com](mailto:cyrille.bareau@orange.com)  Andreas Kraft, Deutsche Telekom, [Andreas.Kraft@t-systems.com](mailto:Andreas.Kraft@t-systems.com)  Marianne Mohali, Orange, [marianne.mohali@orange.com](mailto:marianne.mohali@orange.com) |
| Date:\* | 2020-12-25 |
| Reason for Change/s:\* | See the introduction. |
| CR against: Release\* | Release 4 |
| CR against: WI\* | Active WI-0084  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-0023 4.7.0 |
| Clauses \* | Clauses 5.6.45, 5.8.2, 5.8.4, 5.8.10, 5.8.12, 6.4.2 |
| 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 |
| Other TS/TR(s) impacted | N/A |
| 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 [flexNode] resource has specific [customAttributes], which cannot be expressed in “pure SDT” formalization. It is therefore considered no longer as a SDT Device, but as a specific specialization of a <flexContainer> resource.

This CR also contains minor updates:

* Values in enumPowerState are rewritten in lower case.
* In [dmDeviceInfo], the manufacturerDetailsLink datapoint’s type is modified from string to URL.
* In [dmCapability], the actionStatus datapoint is removed and instead a return value is introduced for the enable/disable actions.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 5.6.45 hd:enumPowerState

Used for the “powerStatus” DataPoint of the “dmAgent” ModuleClass.

Table 5.6.45-1 Interpretation of hd:enumPowerState

|  |  |  |
| --- | --- | --- |
| Value | Interpretation | Note |
| 1 | normal |  |
| 2 | charging |  |
| 3 | chargingComplete |  |
| 4 | degraded |  |
| 5 | low |  |
| 6 | critical |  |
| 7 | notInstalled |  |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 2

### 5.8.2 flexNode

This flexContainer specialization is the root for SDT-based Device Management modules.

The containerDefinition attribute of this specialization shall be “org.onem2m.management.device.flexNode”.

It is targeted by the *flexNodeLink* attribute of *<flexContainer>* SDT devices (see in 6.2.2 the rules 1-6, 1-7 and 1-8).

Table 5.8.2‑1: Child resources of [*flexNode*] resource

| Child Resources of [*flexNode*] | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *dmAreaNwkInfo\_<i>* | *[dmAreaNwkInfo]* | 0..n | See clause 5.8.10 |
| *dmAgent* | *[dmAgent]* | 0..1 | See clause 5.8.3 |
| *dmDeviceInfo* | *[dmDeviceInfo]* | 1 | See clause 5.8.4 |
| *dmDataModelIO\_<i>* | *[dmDataModelIO]* | 0..N | See clause 5.8.5 |
| *dmFirmware\_<i>* | *[dmFirmware]* | 1..N | See clause 5.8.6 |
| *dmSoftware\_<i>* | *[dmSoftware]* | 0..N | See clause 5.8.7 |
| *dmEventLog\_<i>* | *[dmEventLog]* | 0..N | See clause 5.8.8 |
| *dmPackage\_<i>* | *[dmPackage]* | 0..N | See clause 5.8.9 |
| *battery\_<i>* | *[battery]* | 0..N | See clause 5.3.10 |
| *dmCapability\_<i>* | *[dmCapability]* | 0..N | See clause 5.8.12 |
| *dmStorage\_<i>* | *[dmStorage]* | 0..N | See clause 5.8.13 |

NOTES:

* the notation ‘\_<i>’ for child resources indicates that the resource name is the name of the child ModuleClass or SubDevice flexContainer, appended with an underscore ‘\_’ and an incrementing index so that it is unique in the [flexNode] children (e.g. “dmFirmware\_0”, “dmFirmware\_1”, etc.). The index shall not have leading 0’s.
* the current list of modules for Device Management is not fixed and can evolve with new optional features.







Table 5.8.2-3: Custom Attributes of [*flexNode*] resource

| Attributes of  *[flexNode]* | Multiplicity | RW/  RO/  WO | Description | *[flexNodeAnnc]* attributes |
| --- | --- | --- | --- | --- |
| *nodeID* | 1 | RW | The M2M-Node-ID of the node which is represented by this *<flexNode>* resource. |  |
| *hostedAELinks* | 0..1(L) | RO | This attribute allows to find the AEs that are represented by this [*flexNode*] resource, if any. The attribute shall contain a list of resource identifiers of *<AE>* resources representing the ADN-Aes that are represented by the current [*flexNode*] resource. | OA |
| *hostedServiceLinks* | 0..1(L) | RO | This attribute allows to find SDT device <*flexContainer>* resources that havebeen created to represent services hosted on a device (ADN or NoDN proxied by an IPE), the device being represented by this [*flexNode*] resource.  If the device hosts a set of services represented by SDT device <*flexContainer>s,* then the attribute shall contain the list of resource identifiers of these <*flexContainer>* resources. | OA |

If the <flexContainer>(s) that are listed in the *hostedServiceLinks* attribute have a *nodeLink* attribute that points to a <node>, then :

- if there are more than one such <flexContainer>, they shall all have the same *nodeLink* attribute value, and

- this [flexNode] resource shall have a *nodeLink* attribute with the same value, and shall have the same nodeID attribute as this <node> resource.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 5.8.4 dmDeviceInfo

This ModuleClass is used to share static information regarding the device.

Table 5.8.4-1 DataPoints of dmDeviceInfo ModuleClass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | R/W | Optional | Unit | Description |
| serialNumber | xs:string | R | true |  | Unique device label assigned by the manufacturer.  The value of the datapoint typically exposes the device’s serial number that is specific to a manufacturer. |
| manufacturer | xs:string | R | true |  | The name/identifier of the device manufacturer. |
| manufacturerDetailsLink | xs:anyURI | RW | true |  | URL to manufacturer’s website. |
| manufacturingDate | m2m:timestamp | R | true |  | Manufacturing date of device. |
| model | xs:string | R | true |  | The name/identifier of the device model assigned by the manufacturer. |
| subModel | xs:string | R | true |  | Device sub-model name. |
| hwVersion | xs:string | R | true |  | The hardware version / revision of the device. |
| osVersion | xs:string | R | true |  | Version of the operating system (defined by manufacturer). |
| country | m2m:countryCode | R | true |  | Country code of the device. It could be manufacturing country, deployment country or procurement country. |
| supportURL | xs:anyURI | RW | true |  | URL that points to product support information of the device. |
| presentationURL | xs:anyURI | RW | true |  | 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”. |
| friendlyName | xs:string | RW | true |  | The device friendly name. |
| description | xs:string | RW | true |  | A human readable description of the device (e.g. Alice’s cell phone, kitchen’s fridge…) |

NOTE: although all datapoints are optional, depending on the underlying DM technology, some datapoints should be filled, for instance serialNumber, manufacturer and model when this information is available.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 5.8.10 dmAreaNwkInfo

A dmAreaNwkInfo is a SDT SubDevice entity, mapped as a <flexContainer> resource, that expresses the information about the devices in a M2M Area Network managed by the parent flexNode.

Table 5.8.10-1: Properties of dmAreaNwkInfo model

|  |  |  |  |
| --- | --- | --- | --- |
| Property Name | Property Type | Multiplicity | Description |
| areaNwkType | xs :string | 1 | Indicates the type of M2M Area Network |

Table 5.8.10-2: Modules of dmAreaNwkInfo model

|  |  |  |  |
| --- | --- | --- | --- |
| Module Instance Name | Module Class Name | Multiplicity | Description |
| dmAreaNwkDeviceInfo | dmAreaNwkDeviceInfo | 0..N | See clause 5.8.11 |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 5.8.12 dmCapability

This ModuleClass is used to model the service capabilities of a managed device.

Table 5.8.12-1: Actions of dmCapability ModuleClass

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Return Type | Name | Argument | Optional | Documentation |
| m2m:status | enable | none | true | The action that allows enabling the device capability.  Returns the status of the action. |
| m2m:status | disable | none | true | The action that allows disabling the device capability.  Returns the status of the action. |

Table 5.8.12-2 DataPoints of dmCapability ModuleClass

| Name | Type | R/W | Optional | Unit | Description |
| --- | --- | --- | --- | --- | --- |
| name | xs:string | R | false |  | The name of the device capability. |
| attached | xs:boolean | R | false |  | Indicates whether the capability is currently attached to the device or not. |
|  |  |  |  |  |  |
| currentState | xs:boolean | R | false |  | Indicates the current state of the capability (enabled or disabled). |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change 6 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.4.2 Device models

Depending on the domain, the containerDefinition attribute of specializations for device models shall have the values that comply with the following rule.

* Rule: “org.onem2m.[domain].device.[device name]”, where [domain] is one of the following names: “agriculture”, “city”, “common”, “health”, “home”, “industry”, “railway”, “vehicular” and “management”. The name is chosen according to the domain in which the device is defined.

For example, the containerDefinition attribute of the specialization for the “deviceAirConditioner” device of the “home” domain shall be “org.onem2m.home.device.deviceAirConditioner”.

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change 6 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*