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| CHANGE REQUEST | |
| Meeting ID:\* | SDS #56 |
| Source:\* | Andreas Kraft, DT, [Andreas.Kraft@t-systems.com](mailto:Andreas.Kraft@t-systems.com)  Andreas Neubacher, DT, [Andreas.Neubacher@magenta.at](mailto:Andreas.Neubacher@magenta.at) |
| Date:\* | 2022-08-31 |
| Reason for Change/s:\* | Adding missing mgmtObj short names and mgmtDefinitions to TS-0022 and TS-0004 |
| CR against: Release\* | Release 4 |
| CR against: WI\* | Active WI-xxxx  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-0022 v.4.3.0 |
| Clauses \* | Modified clauses: TS-0022: 7.3.4.1, 9.4, 7.1.10, 7.2.10.1 |
| 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) |  |
| 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

This CR adds missing short names (Change 1 for TS-0022) for the mgmtObj specializations *OAuth2Authenication* and *wificlient*, both defined in TS-0022.

It also fixes a few issues with the complex type *dcfg:wifiCredentials* defined in Table 7.3.4.1-1 : The spelling of attributes should not include any characters that makes using these attributes in implementations way more difficult. Here: Remove the period in the names. Variables or member attributes in programming languages usually must not contain a period.

In Change 3 the Table 7.3.4.1-1 is corrected. Undefined resp. not used member attributes are removed, and the missing member attributes for *dcfg:wifiCredentials* are added.

Changes 4 and 5 are correcting issues in the *wifiClient* specialization definition: Adding clarifications, changing request optionality and cardinalities.

**R01:**

Moved TS-0004 related changes to a separate CR: SDS-2022-0123

Added new Change 2: Correcting attribute names for *dcfg:wifiCredentials*

Added new Change 3: The short name table for complex type definitions is updated.

Added new Change 4 & 5: Improving the *wifiCredential* specialization specification.

**R02:**

Changed “shall” to “should” in attribute descriptions in Change 4

Provided defaults for some attributes in Change 5

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 9.2 Common and Field Device Configuration specific oneM2M Resource attributes

In protocol bindings, resource attribute names shall be translated into short names of table 9.2-1 and in table 8.2.3-1 of oneM2M TS-0004 [4].

Table 9.2-1: Common and Field Device Configuration specific oneM2M Attribute Short Names

| **Attribute Name** | **Occurs in** | **Short Name** | **Notes** |
| --- | --- | --- | --- |
| *resourceType* | All | ***ty*** | Defined in oneM2M TS-0004 [4]. |
| *resourceID* | All | ***ri*** | Defined in oneM2M TS-0004 [4]. |
| *resourceName* | All | ***rn*** | Defined in oneM2M TS-0004 [4]. |
| *parentID* | All | ***pi*** | Defined in oneM2M TS-0004 [4]. |
| *expirationTime* | All | ***et*** | Defined in oneM2M TS-0004 [4]. |
| *creationTime* | All | ***ct*** | Defined in oneM2M TS-0004 [4]. |
| *labels* | All | ***lbl*** | Defined in oneM2M TS-0004 [4]. |
| *lastModifiedTime* | All | ***lt*** | Defined in oneM2M TS-0004 [4]. |
| *description* | All | ***dc*** | Defined in oneM2M TS-0004 [4]. |
| *mgmtDefinition* | All | ***mgd*** | Defined in oneM2M TS-0004 [4]. |
| *objectIDs* | All | ***obis*** | Defined in oneM2M TS-0004 [4]. |
| *objectPaths* | All | ***obps*** | Defined in oneM2M TS-0004 [4]. |
| *mgmtLink* | All | ***cmlk*** | Defined in oneM2M TS-0004 [4]. |
| *CSE-ID* | registration | ***csi*** | Defined in oneM2M TS-0004 [4]. |
| *CSEBase* | registration | ***cb*** | Defined in oneM2M TS-0004 [4]. |
| *originatorID* | registration | ***oid*** |  |
| *pointOfAccess* | registration | ***poa*** |  |
| *appID* | registration | ***apid*** |  |
| *externalID* | registration | ***eid*** |  |
| *triggerRecipientID* | registration | ***tri*** |  |
| *containerPath* | dataCollection | ***cntp*** |  |
| *reportingSchedule* | dataCollection | ***rpsc*** |  |
| *measurementSchedule* | dataCollection | ***mesc*** |  |
| *SUID* | authenticationProfile | ***suid*** |  |
| *TLSCiphersuites* | authenticationProfile | ***tlcs*** |  |
| *symmKeyID* | authenticationProfile | ***aski*** |  |
| *symmKeyValue* | authenticationProfile | ***skv*** |  |
| *MAFKeyRegLabels* | authenticationProfile | ***mkrl*** |  |
| *MAFKeyRegDuration* | authenticationProfile | ***mkrd*** |  |
| *mycertFingerprint* | authenticationProfile | ***mcfp*** |  |
| *rawPubKeyID* | authenticationProfile | ***rpki*** |  |
| *SUIDs* | myCertFileCred | ***suids*** |  |
| *myCertFileFormat* | myCertFileCred | ***mcff*** |  |
| *myCertFileContent* | myCertFileCred | ***mcfc*** |  |
| *certFingerprint* | trustAnchorCred | ***cfp*** |  |
| *URI* | trustAnchorCred | ***uri*** | Defined in oneM2M TS-0004 [4]. |
| *fqdn* | MEFClientRegCfg,  MAFClientRegCfg | ***fq*** | Defined in oneM2M TS-0032 [9]. |
| *adminFQDN* | MEFClientRegCfg, MAFClientRegCfg | ***adfq*** | Defined in oneM2M TS-0032 [9]. |
| *httpPort* | MEFClientRegCfg, MAFClientRegCfg | ***hpt*** | Defined in oneM2M TS-0032 [9]. |
| *coapPort* | MEFClientRegCfg, MAFClientRegCfg | ***cpt*** | Defined in oneM2M TS-0032 [9]. |
| *websocketPort* | MEFClientRegCfg, MAFClientRegCfg | ***wpt*** | Defined in oneM2M TS-0032 [9]. |
| accessToken | OAuth2Authentication | ***atk*** |  |
| refreshToken | OAuth2Authentication | ***rtk*** |  |
| ssid | wifiClient | ***ssid*** |  |
| credentials | wifiClient | ***cred*** |  |
| macAddress | wifiClient | ***maca*** |  |
| channel | wifiClient | ***chan*** |  |
| connectionStatus | wifiClient | ***cons*** |  |
| scan | wifiClient | ***scan*** |  |
| scanResult | wifiClient | ***scanr*** |  |
| update | wificlient, | ***ud*** | Defined in oneM2M TS-0004 [4]. |
| *updateStatus* | wifiClient | ***uds*** | Defined in oneM2M TS-0004 [4]. |
| *toggleRadioStatus* | wifiClient | ***trdst*** |  |
| *radioStatus* | wifiClient | ***rdst*** |  |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.3.4.1 dcfg:wifiCredentials

Used for credentials in [wifiClient] Management Object resource. Values contained in username, password, wep.key and wpa.psk attributes shall not be readable. Each Retrieve request shall be forwarded to device and from there the data shall be retrieved.

Table 7.3.4.1-1: Type Definition of dcfg:wifiCredentials

|  |  |  |  |
| --- | --- | --- | --- |
| Element Path | **Element Data Type** | Multiplicity | Note |
| encryptionType | dcfg:wifiEncryptionType | 1 | Indicates type of encryption used to provide network security |
| username | xs:string | 0..1 | Indicates username used to authenticate user in WPA-Enterprise, WPA2-Enterprise or WPA3-Enterpise protocols  Only valid if encryptionType=6,7 or 8 |
| password | xs:string | 0..1 | Indicates password used to authenticate user in WPA-Enterprise, WPA2-Enterprise or WPA3-Enterpise protocols  Only valid if encryptionType=6,7 or 8 |
| wepKey | xs:string | 0..1 | Indicates key in case of WEP encryption.  Only valid if field encryptionType =2 |
| wpaPsk | xs:string | 0..1 | Indicates WPA Pre Shared Key  Only valid if field encryptionType = 3,4 or 5 |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 2 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 9.4 oneM2M Complex data type members

In protocol bindings, complex data types member names shall be translated into the short names of table 9.4-1.

Table 9.4-1: oneM2M Complex data type member short names

| **Member Name** | **Occurs in** | **Short Name** | **Notes** |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| *encryptionType* | dcfg:wifiCredentials | ***enct*** |  |
| *username* | dcfg:wifiCredentials | ***unm*** | Defined in oneM2M TS-0004 [4]. |
| *password* | dcfg:wifiCredentials | ***pwd*** | Defined in oneM2M TS-0004 [4]. |
| *wepKey* | dcfg:wifiCredentials | ***wepk*** |  |
| *wpaPsk* | dcfg:wifiCredentials | ***wpap*** |  |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 3 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.1.10 Resource [*wifiClient]*

This specialization of <mgmtObj> is used to store configuration of WiFi connection on the client device.

The *[wifiClient]* resource shall contain the child resources specified in table 7.1.10-1.

Table 7.1.10-1: Child resources of *[wifiClient]* resource

| Child Resources of *[wifiClient]* | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 of oneM2M TS-0001 [2] |

The *[wifiClient]* resource shall contain the attributes specified in table 7.1.10.-2

Table 7.1.10-2: Attributes of *[wifiClient]* resource

| Attributes of  *[wifiClient]* | Multiplicity | RW/ RO/ WO | Description |
| --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *resourceID* | 1 | RO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *resourceName* | 1 | WO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *parentID* | 1 | RO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *expirationTime* | 1 | RW | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *creationTime* | 1 | RO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *labels* | 0..1(L) | RW | See clause 9.6.1.3 of oneM2M TS-0001 [2]. |
| *mgmtDefinition* | 1 | WO | See clause 9.6.15 of oneM2M TS-0001 [2].. This attribute shall have the fixed value 1027(wifiClient). |
| *objectIDs* | 0..1 (L) | WO | See clause 9.6.15 of oneM2M TS-0001 [2]. |
| *objectPaths* | 0..1 (L) | WO | See clause 9.6.15 of oneM2M TS-0001 [2]. |
| *description* | 0..1 | RW | See clause 9.6.15 of oneM2M TS-0001 [2]. |
| *ssid* | 1 | RW | Indicates ssid of wifi network. This attribute is a specialization of *[objectAttribute]* attribute. |
| *credentials* | 0..1 | RW | Indicates encryption type and credentials used to authenticate connection. This attribute is a specialization of [objectAttribute] attribute. |
| *macAddress* | 0..1 | RW | Indicates MAC address of network’s access point. This attribute is a specialization of [objectAttribute] attribute. |
| *channel* | 0..1 | RW | Indicates WiFi channel. This attribute is a specialization of [objectAttribute] attribute. This attribute should only be set by the wifi client device. |
| *connectionStatus* | 0..1 | RW | Indicates current status of the connection. This attribute is a specialization of *[objectAttribute]* attribute. This attribute should only be set by the wifi client device. |
| *scan* | 1 | RW | The action that allows to scan the environment to find available wifi networks. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. This action will provide all the available ssids in *scanResult*. |
| *scanResult* | 1 | RW | Indicates list of networks detected by the device. This attribute is a specialization of *[objectAttribute]* attribute. This attribute should only be set by the wifi client device. |
| *update* | 1 | RW | The action is to trigger the device to update its Wifi configuration based on the provided values (e.g. ssid, credentials, …). The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of [objectAttribute] attribute. |
| *updateStatus* | 1 | RW | Indicates status of update operation. This attribute is a specialization of *[objectAttribute]* attribute. This attribute should only be set by the wifi client device. |
| *toggleRadioStatus* | 0..1 | RW | The action that allows to turn on and turn off the wifi sub-system on wifi client device.The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. This action will switch *radioStatus* when the wifi client device successfully toggled its radio status.. |
| *radioStatus* | 1 | RW | Indicates whether the wifi sub-system on wifi client device is turned on or turned off. This attribute is a specialization of *[objectAttribute]* attribute. This attribute should only be set by the wifi client device. |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 4 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.2.10.1 Introduction

This specialization of <mgmtObj> is used to store configuration of WiFi connection on the client device.

Table 7.2.10.1‑1: Data Type Definition of [wifiClient]

|  |  |  |
| --- | --- | --- |
| Data Type ID | File Name | Note |
| wifiClient | DCFG-wifiClient.xsd |  |

Table 7.2.10.1‑2: Resource specific attributes of [wifiClient]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute Name | Request Optionality | | Data Type | Default Value and Constraints |
| Create | Update |
| mgmtDefinition | M | NP | See clause 7.4.15 of oneM2M TS-0004 [4]. | 1028 (wifiClient) |
| objectIDs | O | NP | See clause 7.4.15 of oneM2M TS-0004 [4]. |  |
| objectPaths | O | NP | See clause 7.4.15 of oneM2M TS-0004 [4]. |  |
| description | O | O | See clause 7.4.15 of oneM2M TS-0004 [4]. |  |
| ssid | M | O | dcfg:ssid |  |
| credentials | O | O | dcfg:wifiCredentials |  |
| macAddress | O | O | xs:string |  |
| channel | O | O | xs:integer |  |
| update | O | O | xs:boolean | False |
| scan | O | O | xs:boolean | False |
| toggleRadioStatus | O | O | xs:boolean |  |
| scanResult | O | O | dcfg:listOfSsids | An empty list. |
| updateStatus | O | O | m2m:actionStatus | The *actionStatus/action* is initially not present, and *actionStatus/status i*s set to “Uninitialized”. |
| connectionStatus | O | O | dcfg:wifiConnectionStatus |  |
| radioStatus | O | O | xs:boolean | False |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change 5 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*