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| CHANGE REQUEST |
| Meeting ID:\* |  SDS #52 |
| Source:\* | Andreas Kraft, DT, A.Kraft@telekom.de Andreas Neubacher, DT, Andreas.Neubacher@magenta.at  |
| Date:\* | 2022-01-20 |
| Reason for Change/s:\* | Adding [credentials] specialization to TS-0022 (TS-0004) |
| CR against: Release\* | Release 5 |
| CR against: WI\* | [ ]  Active WI-xxxx[x]  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, V4.6.0 |
| Clauses \* | TS-0004: 6.3.4.2.22 |
| 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 |
| Impacted other TS/TR(s) |  |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES [x]  NO [ ] This CR may break backwards compatibility with the last approved version of the TS? YES [ ]  NO [x]  |
| 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 proposes a new <mgmtObj> specialization to store general credentials for a device.

In addition to, for example, network identification and authentication, a device might also need credentials to authenticate with third party components such as message broker or an additional non-oneM2M backend components which are out-of-scope of the common oneM2M Mca communication specification. Beside the already available specializations, for example for OAuth2, storing simple username/password combinations or tokens are currently not supported. Though it is recommended to utilize more modern authentication schemes, basic or token-based authentication is still widely used in legacy installations, and in installations that cannot afford or utilize an operated trust infrastructure.

The following diagram shows the general flow. An AE on an ADN requires credentials to access services on a non-oneM2M service. A CSE stores the credentials for that ADN together with other management information and makes them available via Mca. The usual oneM2M security and access methods do apply here, though an implementation may choose to store credentials in a more secure way.



A similar <flexContainer> specialization is specified in TS-0023, 5.3.1.27 “credentials”. That specialization may be added or referenced to <flexContainer> - based device management in TS-0023 to provide the same functionality as well. This would be for another CR.

This is a mirror CR for SDS-2021-0185R01-Adding\_[credentials]\_specialization\_to\_TS-0022 for TS-0004

Changes 1 provides a new mgmtDefinition value for the specialization for TS-0004, Table 6.3.4.2.22 1: Interpretation of mgmtDefinition.

Change2: In addition to the addition in Change 1 this change provides missing mgmtDefinition values for the [wifiClient] and [OAuth2Authentication] specializations as editorial corrections.

Change 2 provides an XSD for the new specialization.

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

##### 6.3.4.2.22 m2m:mgmtDefinition

This is used in the <mgmtObj> resource.

Table 6.3.4.2.22‑1: Interpretation of mgmtDefinition

|  |  |  |
| --- | --- | --- |
| Value | Interpretation | Note |
| 1001 | [firmware] |  |
| 1002 | software |  |
| 1003 | memory |  |
| 1004 | areaNwkInfo |  |
| 1005 | areaNwkDeviceInfo |  |
| 1006 | battery |  |
| 1007 | deviceInfo |  |
| 1008 | deviceCapability |  |
| 1009 | reboot |  |
| 1010 | eventLog |  |
| 1011 | cmdhPolicy |  |
| 1012 | activeCmdhPolicy |  |
| 1013 | cmdhDefaults |  |
| 1014 | cmdhDefEcValue |  |
| 1015 | cmdhEcDefParamValues |  |
| 1016 | cmdhLimits |  |
| 1017 | cmdhNetworkAccessRules |  |
| 1018 | cmdhNwAccessRule |  |
| 1019 | cmdhBuffer |  |
| 1020  | registration | Note 2 |
| 1021 | dataCollection | Note 2 |
| 1022 | authenticationProfile | Note 2 |
| 1023 | myCertFileCred | Note 2 |
| 1024 | trustAnchorCred | Note 2 |
| 1025 | MAFClientRegCfg | Note 2 |
| 1026 | MEFClientRegCfg | Note 2 |
| 1029 | credentials | Note 2 |
| 0 | Self-defined | Permits vendor-specific XML schema definition |
| NOTE 1: See clause 7.4.15 mgmtObj.NOTE 2: These mgmtObj specializations are defined in oneM2M TS-0022 [38]. |

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

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

##### 6.3.4.2.22 m2m:mgmtDefinition

This is used in the <mgmtObj> resource.

Table 6.3.4.2.22‑1: Interpretation of mgmtDefinition

|  |  |  |
| --- | --- | --- |
| Value | Interpretation | Note |
| 1001 | [firmware] |  |
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| 1003 | memory |  |
| 1004 | areaNwkInfo |  |
| 1005 | areaNwkDeviceInfo |  |
| 1006 | battery |  |
| 1007 | deviceInfo |  |
| 1008 | deviceCapability |  |
| 1009 | reboot |  |
| 1010 | eventLog |  |
| 1011 | cmdhPolicy |  |
| 1012 | activeCmdhPolicy |  |
| 1013 | cmdhDefaults |  |
| 1014 | cmdhDefEcValue |  |
| 1015 | cmdhEcDefParamValues |  |
| 1016 | cmdhLimits |  |
| 1017 | cmdhNetworkAccessRules |  |
| 1018 | cmdhNwAccessRule |  |
| 1019 | cmdhBuffer |  |
| 1020  | registration | Note 2 |
| 1021 | dataCollection | Note 2 |
| 1022 | authenticationProfile | Note 2 |
| 1023 | myCertFileCred | Note 2 |
| 1024 | trustAnchorCred | Note 2 |
| 1025 | MAFClientRegCfg | Note 2 |
| 1026 | MEFClientRegCfg | Note 2 |
| 1027 | OAuth2Authentifcation | Note 2 |
| 1028 | wificlient | Note 2 |
| 0 | Self-defined | Permits vendor-specific XML schema definition |
| NOTE 1: See clause 7.4.15 mgmtObj.NOTE 2: These mgmtObj specializations are defined in oneM2M TS-0022 [38]. |

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

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of Change 3 (XSD) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

<?xml version="1.0" encoding="UTF-8"?>

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<xs:schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://www.onem2m.org/xml/deviceConfig"

 xmlns:m2m="http://www.onem2m.org/xml/protocols"

 xmlns:dcfg="http://www.onem2m.org/xml/deviceConfig"

 xmlns:xs="http://www.w3.org/2001/XMLSchema"

 elementFormDefault="unqualified" attributeFormDefault="unqualified">

 <xs:import namespace="http://www.onem2m.org/xml/protocols" schemaLocation="CDT-subscription-v3\_8\_0.xsd" />

 <xs:import namespace="http://www.onem2m.org/xml/protocols" schemaLocation="CDT-commonTypes-v3\_8\_0.xsd" />

 <xs:element name="credentials" substitutionGroup="m2m:sg\_mgmtResource">

 <xs:complexType>

 <xs:complexContent>

 <!-- Inherit Common Attributes from data type "mgmtResource" -->

 <xs:extension base="m2m:mgmtResource">

 <!-- Resource Specific Attributes -->

 <xs:sequence>

 <xs:element name="purpose" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialID" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialSecret" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialToken" type="xs:string" minOccurs="0"/>

 <!-- Child Resources -->

 <xs:choice minOccurs="0" maxOccurs="1">

 <xs:element name="childResource" type="m2m:childResourceRef" maxOccurs="unbounded" />

 <xs:element ref="m2m:subscription" maxOccurs="unbounded" />

 </xs:choice>

 </xs:sequence>

 </xs:extension>

 </xs:complexContent>

 </xs:complexType>

 </xs:element>

 <xs:element name="credentialsAnnc" substitutionGroup="m2m:sg\_announcedMgmtResource">

 <xs:complexType>

 <xs:complexContent>

 <!-- Inherit Common Attributes from data type "announcedMgmtResource" -->

 <xs:extension base="m2m:announcedMgmtResource">

 <!-- Resource Specific Attributes -->

 <xs:sequence>

 <xs:element name="purpose" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialID" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialSecret" type="xs:string" minOccurs="0"/>

 <xs:element name="credentialToken" type="xs:string" minOccurs="0"/>

 <!-- Child Resources -->

 <xs:choice minOccurs="0" maxOccurs="1">

 <xs:element name="childResource" type="m2m:childResourceRef" maxOccurs="unbounded" />

 <xs:element ref="m2m:subscription" maxOccurs="unbounded" />

 </xs:choice>

 </xs:sequence>

 </xs:extension>

 </xs:complexContent>

 </xs:complexType>

 </xs:element>

</xs:schema>

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