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| CHANGE REQUEST | |
| Meeting ID:\* | SDS #52 |
| Source:\* | Andreas Kraft, DT, [A.Kraft@telekom.de](mailto:A.Kraft@telekom.de)  Andreas Neubacher, DT, [Andreas.Neubacher@magenta.at](mailto:Andreas.Neubacher@magenta.at)  Poornima Shandilya, [poornima@cdot.in](mailto:poornima@cdot.in) |
| Date:\* | 2021-11-17 |
| Reason for Change/s:\* | Add missing mgmtObj specializations for <node> in TS-0001 (R4) |
| 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-0001, V4.12.0 |
| Clauses \* | 9.6.18 |
| 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

In TS-0001 version 4.12.0, table 9.6.18-1: Child resources of *<node>* resource, the specialization types from TS-0022 are currently not listed.

This CR proposes to add these specializations to the table. It relates to issue #18 from the oneM2M issue tracker.

R01: changed multiplicity of [registration],,[dataCollection], [authenticationProfile],[*myCertFileCred*],[*trustAnchorCred*] from 0..1 to 0..n.

A node can have multiple entities e.g. ADN may have multiple AEs and MN/ASN will have one CSE and may have multiple AEs.

Each [registration] resource corresponds to exactly one entity (AE/CSE). Hence there can be multiple [registration] child resource for a <node> resource. Same applies for other resources mentioned above.

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

### 9.6.18 Resource Type *node*

The *<node>* resource represents specific information that provides properties of an M2M Node that can be utilized by other oneM2M operations. The *<node>* resource has specialization of the *<mgmtObj>* as its child resources. These resources represent the Node's context information (e.g. memory and battery), network topology, device information, device capability etc. The specialized *<mgmtObj>* resources are used to perform management of the Node.

This node specific information stored in these resources such as *[memory]* and *[battery]* can be obtained either by the existing device management technologies (OMA DM [i.3], BBF TR-069 [i.2]) or any other way (e.g. JNI [i.18]).

For the case when the *<node>* resource belongs to an ADN, please see figure 9.6.18-1 in conjunction with the description of *nodeLink* attribute in the *<AE>* resource (clause 9.6.5).

For the case when the *<node>* resource belongs to an NoDN and the applications that correspond to interworked devices are represented by <*flexContainer>s* please see figure 9.6.18-2.



Figure 9.6.18-1: Relationship between IN/MN and ADN



Figure 9.6.18-2: Relationship between IPE, interworked Services and NoDN

The *<node>* resource shall contain the child resources specified in table 9.6.18-1.

Table 9.6.18-1: Child resources of *<node>* resource

| Child Resources of *<node>* | Child Resource Type | Multiplicity | Description | *<nodeAnnc>* Child Resource Type |
| --- | --- | --- | --- | --- |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 | *<semanticDescriptor>, <semanticDescriptorAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*memory]* | 0..1 | This resource provides the memory (typically RAM) information of the node. (E.g. the amount of total volatile memory), See clause D.4. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*battery]* | 0..n | The resource provides the power information of the node. (E.g. remaining battery charge). See clause D.7. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*areaNwkInfo]* | 0..n | This resource describes the list of Nodes attached behind the MN/ASN node and its physical or underlying relation among the nodes in the M2M Area Network. This attribute is defined in case the Node is MN/ASN. See clause D.5. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*areaNwkDeviceInfo]* | 0..n | This resource describes the information about the Node in the M2M Area Network. See clause D.6. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*firmware]* | *0..n* | This resource describes the information about the firmware of the Node include name, version etc. See clause D.2. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*software]* | 0..n | This resource describes the information about the software of the Node. See clause D.3. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*deviceInfo]* | 0..n | The resource contains information about the identity, manufacturer and model number of the device. See clause D.8. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*deviceCapability]* | 0..n | The resource contains information about the capability supported by the Node. See clause D.9. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*reboot]* | 0..1 | The resource is the place to reboot or reset the Node. See clause D.10. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization [*eventLog]* | 0..1 | The resource contains the information about the log of events of the Node. See clause D.11. | *<mgmtObjAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[cmdhPolicy]* | 0..n | The resource(s) contain(s) information about CMDH policies that are applicable to the CMDH processing on the CSE hosted on the node represented by this *<node>* resource and identified by the *hostedCSELink* attribute of this *<node>* resource. See clause D.12. | NA |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[activeCmdhPolicy]* | 0..1 | This resource defines which of the present *[cmdhPolicy]* resource(s) shall be active for the CMDH processing on the CSE hosted on the node represented by this *<node>* resource and identified by the *hostedCSELink* attribute of this *<node>* resource. See clause D.12. | NA |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[registration]* | 0..n | This specialization of <mgmtObj> is used to convey the service layer configuration information needed to register an AE or CSE with a Registrar CSE. | *<registrationAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[dataCollection]* | 0..n | This specialization of <mgmtObj> is used to convey the application configuration information needed by an AE to collect data and then transmit the data to a Hosting CSE. | *<dataCollectionAnnc>* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[authenticationProfile]* | 0..n | The [*authenticationProfile*] specialization of the <*mgmtObj*> is used to convey the configuration information regarding establishing mutually-authenticated secure communications. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[myCertFileCred]* | 0..n | This <mgmtObj> specialization is used to configure a certificate or certificate chain which the Managed Entity knows the private key. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[trustAnchorCred]* | 0..n | The [*trustAnchorCred*] <mgmtObj> specialization is read by AEs or CSEs on ADN or ASN/MN nodes in the Field Domain. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[MAFClientRegCfg]* | 0..1 | This <mgmtObj> specialization is used to convey instructions regarding the MAF Client Registration procedure. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[MEFClientRegCfg]* | 0..1 | This <*mgmtObj*> specialization is used to convey instructions regarding the MEF Client Registration procedure. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[OAuth2Authentication]* | 0..1 | This specialization of <mgmtObj> is used to store access token and refresh token used in OAuth2 security protocol. | *NA* |
| *[variable]* | *<mgmtObj>* as defined in the specialization *[wifiClient]* | 0..1 | This specialization of <mgmtObj> is used to store configuration of WiFi connection on the client device. | *NA* |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8. | *<subscription>* |
| *[variable]* | *<schedule>* | 0..n | See clause 9.6.9. | *<scheduleAnnc>* |
| *[variable]* | *<transaction>* | 0..n | See clause 9.6.48 | *<transaction>* |
| *[variable]* | *<action>* | 0..n | See clause 9.6.61 | *None* |

The *<node>* resource shall contain the attributes specified in table 9.6.18-2.

Table 9.6.18-2: Attributes of *<node>* resource

| Attributes of  *<node>* | Multiplicity | RW/  RO/  WO | Description | *<nodeAnnc>* attributes |
| --- | --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceID* | 1 | RO | See clause 9.6.1.3. | NA |
| *resourceName* | 1 | WO | See clause 9.6.1.3. | NA |
| *parentID* | 1 | RO | See clause 9.6.1.3. | NA |
| *expirationTime* | 1 | RW | See clause 9.6.1.3. | MA |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *creationTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3. | NA |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. | MA |
| *announceTo* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announcedAttribute* | 0..1 (L) | RW | See clause 9.6.1.3. | NA |
| *announceSyncType* | 0..1 | RW | See clause 9.6.1.3. | MA |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. | OA |
| *holder* | 0..1 | RW | See clause 9.6.1.3 | NA |
| *nodeID* | 1 | RW | The M2M-Node-ID of the node which is represented by this *<node>* resource. | MA |
| *nodeType* | 0..1 | RW | Indicates the type of node.  It shall have one of the following values:   * IN * MN * ASN * ADN * NoDN­­ * UNSPECIFIED | OA |
| *hostedCSELink* | 0..1 | RW | This attribute allows to find the <CSEBase> or <remoteCSE> resource representing the CSE that is residing on the node that is represented by this <*node*> resource. The attribute contains the resource ID of a resource where all of the following applies:   * The resource is a *<CSEBase>* resource or a *<remoteCSE>* resource. * The resource represents the CSE which resides on the specific node that is represented by the current *<node>* resource.   In case the node that is represented by this <node> resource does not contain a CSE, this attribute shall not be present. | OA |
| *hostedAELinks* | 0..1(L) | RW | This attribute allows to find the AEs hosted by the node that is represented by this <*node*> resource. The attribute shall contain a list of resource identifiers of *<AE>* resources representing the ADN-AEs residing on the node that is represented by the current *<node>* resource.  In case the node that is represented by this <node> resource does not contain an AE, this attribute shall not be present. | OA |
| *hostedServiceLinks* | 0..1(L) | RW | This attribute allows to find <*flexContainer> resources that have* been created by an IPE to represent services hosted on a NoDN, the NoDN being represented by this <*node*> resource.  If the NoDN hosts a set of services represented by <*flexContainer>s,* then the attribute shall contain the list of resource identifiers of these <*flexContainer>* resources.  In case the node that is represented by this <*node*> resource does not contain a  service that is represented by a <*flexContainer>,* this attribute shall not be present. | OA |
| *mgmtClientAddress* | 0..1 | RW | Represents the physical address of management client of the node which is represented by this <node> resource.  This attribute is absent if management server is able to acquire the physical address of the management client. | OA |
| *roamingStatus* | 0..1 | RO | Indicates if the M2M Node is currently roaming from the perspective of the underlying network.  The allowed values are "Yes" or "No". | OA |
| *networkID* | 0..1 | RO | Configured with the identity of the underlying network which the M2M Node is currently attached to. | OA |

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