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| CHANGE REQUEST | |
| Meeting ID:\* | ARC 30.2 |
| Source:\* | Poornima, C-DOT, [poornima@cdot.in](mailto:poornima@cdot.in)  Giribabu Naik, C-DOT, [moode@cdot.in](mailto:moode@cdot.in) |
| Date:\* | 2017-08-16 |
| Reason for Change/s:\* | See the introduction |
| CR against: Release\* | Release 2 |
| 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-0001 Version 2.12.2 |
| Clauses \* | D.2, D.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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The document to which this cover statement is attached is submitted to oneM2M. Participation in, or attendance at, any activity of oneM2M, constitutes acceptance of and agreement to be bound by terms of the Working Procedures and the Partnership Agreement, including the Intellectual Property Rights (IPR) Principles Governing oneM2M Work found in Annex 1 of the Partnership Agreement.

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

As discussed earlier, for resources <software>, <firmware> KEEP status as mandatory, but change to RW for IPE case, and update TS-0004 providing initial status value.  
R01 expected in ARC.

When [firmware] resource is created with *update* attribute as false then there shall be no value in status fields as action hasn’t started.

Same applies to [software] resource for *installStatus* attribute

The CR proposes to change the multiplicity to 0..1 in [firmware] and [software] resource’ *updateStatus* and *installStatus* attributes respectively.

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

# D.2 Resource *firmware*

The *[firmware]* resource is used to share information regarding the firmware on the device. The *[firmware]* resource is a specialization of the *<mgmtObj>*resource.



Figure D.2-1: Structure of *[firmware]* resource

The *[firmware]* resource shall contain the child resources specified in table D.2-1.

Table D.2-1: Child resources of *[firmware]* resource

| Child Resources of *[firmware]* | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 where the type of this resource is described. |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 |

The *[firmware]* resource shall contain the attributes specified in table D.2-2.

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

| Attributes of  *[firmware]* | 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. Has fixed value *"firmware"* to indicate the resource is for firmware management. |
| *objectIDs* | 0..1 (L) | RW | See clause 9.6.15. |
| *objectPaths* | 0..1 (L) | RW | See clause 9.6.15. |
| *description* | 0..1 | RW | See clause 9.6.15. |
| *version* | 1 | RW | The version of the firmware. This attribute is a specialization of *[objectAttribute]* attribute. |
| *name* | 1 | RW | The name of the firmware to be used on the device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *URL* | 1 | RW | The URL from which the firmware image can be downloaded. This attribute is a specialization of *[objectAttribute]* attribute. |
| *update* | 1 | RW | The action that downloads and installs a new firmware in a single operation. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. |
| *updateStatus* | 1 | RW | Indicates the status of the update. This attribute is a specialization of *[objectAttribute]* attribute. |

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

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

# D.3 Resource *software*

The *[software]* resource is used to share information regarding the software on the device. The *[software]* resource is a specialization of the *<mgmtObj>*resource.



Figure D.3-1: Structure of *[software]* resource

The *[software]* resource shall contain the child resource specified in table D.3-1.

Table D.3-1: Child resources of *[software]* resource

| Child Resources of *[software]* | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8 where the type of this resource is described. |
| *[variable]* | *<semanticDescriptor>* | 0..n | See clause 9.6.30 |

The *[software]* resource shall contain the attributes specified in table D.3-2.

Table D.3-2: Attributes of *[software]* resource

| Attributes of  *[software]* | 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. Has fixed value *"software"* to indicate the resource is for software management. |
| *objectIDs* | 0..1 (L) | RW | See clause 9.6.15. |
| *objectPaths* | 0..1 (L) | RW | See clause 9.6.15. |
| *description* | 0..1 | RW | See clause 9.6.15. |
| *version* | 1 | RW | The version of the software. This attribute is a specialization of *[objectAttribute]* attribute. |
| *name* | 1 | RW | The name of the software to be used on the device. This attribute is a specialization of *[objectAttribute]* attribute. |
| *URL* | 1 | RW | The URL from which the software package can be downloaded. This attribute is a specialization of *[objectAttribute]* attribute. |
| *install* | 1 | RW | The action that downloads and installs new software in a single operation. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. |
| *uninstall* | 1 | RW | The action that un-installs the software. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. |
| *installStatus* | 1 | RW | Indicates the status of the install. This attribute is a specialization of *[objectAttribute]* attribute. |
| *activate* | 0..1 | RW | The action that activates software previously installed. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. |
| *deactivate* | 0..1 | RW | The action that deactivates software. The action is triggered by assigning value "TRUE" to this attribute. This attribute is a specialization of *[objectAttribute]* attribute. |
| *activeStatus* | 0..1 | RW | The status of active or deactivate action. This attribute is a specialization of *[objectAttribute]* attribute. |

The state machine for managing the software in oneM2M is shown in figure D.3-2.

Uninstalled

Execute: ./[software]/Install

Execute: ./[software]/Uninstall

Removed

Installed

Delete: ./[software]

Figure D.3-2: State machine for *[software]* management

Figure D.3-3 is the state machine after install starts from the deactivated state.



### Figure D.3-3: State machine for *[software]* management after install

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

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.?