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| CHANGE REQUEST |
| Meeting ID:\* | TDE # |
| Source:\* | TF-oneM2M |
| Date:\* | 2021-04-22 |
| Reason for Change/s:\* | New TPs for Software Management release 4 |
| CR against: Release\* | Release 4 |
| 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-0018 V4.3.0 |
| Clauses \* |  |
| 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 |
| Other TS/TR(s) impacted | <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 [x]  NO [ ] This CR may break backwards compatibility with the last approved version of the TS? YES [ ]  NO [x]  |
| Template Version: January 2020 (do not modify) |

**oneM2M Notice**

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.

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

New TPs for Software Management Release 4.

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

TP/oneM2M/CSE/SM/001

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| **TP Id** | TP/oneM2M/CSE/SM/001 |
| **Test objective** | Check that the IUT rejects the creation request of <softwareCampaign> resource if target node on which software management operation has to be performed does not exist. |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.3.3.5 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **having registered** an AE **and** the IUT **being** a hosting CSE  **and** the IUT **not having** the resource referenced in attribute softwareTargets **and** the AE **having** the privileges to perform CREATE operation on  TARGET\_RESOURCE\_ADDRESS**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid CREATE Request from AE **containing** Resource Type **set to** 61? (softwareCampaign)To **set to** TARGET\_RESOURCE\_ADDRESS **and**From **set to** AE\_ID **}** | IUT 🡨 AE­­ |
| **then {**  the IUT **sends** a Response **containing**  Response Status Code set to 4000 (BAD\_REQUEST)**}** | AE 🡨 IUT |

TP/oneM2M/CSE/SM/002

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| **TP Id** | TP/oneM2M/CSE/SM/002 |
| **Test objective** | Check that the IUT rejects creation of <softwareCampaign> resource if the resource referenced in softwareTriggerCriteria attribute does not exist.  |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.3.3.5 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **having registered** an AE **and** the IUT **being** a hosting CSE  **and** the IUT **not having** the resource referenced in attribute softwareTriggerCriteria **and** the AE **having** the privileges to perform CREATE operation on  TARGET\_RESOURCE\_ADDRESS **}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid CREATE Request from AE **containing**  Resource Type **set to** 61? (softwareCampaign) To **set to** TARGET \_RESOURCE\_ADDRESS **and**From **set to** AE\_ID**}** | IUT 🡨 AE­­ |
| **then {**  the IUT **sends** a valid Response **containing**  Response Status Code **set to** 4000 (BAD\_REQUEST)**}** | AE 🡨 IUT |

TP/oneM2M/CSE/SM/003

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| **TP Id** | TP/oneM2M/CSE/SM/003 |
| **Test objective** | Check that the IUT rejects creation of <softwareCampaign> resource if the resource referenced in softwareTriggerCriteria attribute is not accessible by the AE.  |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.3.3.5 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **having registered** an AE **and** the IUT **being** a hosting CSE  **and** the AE **not having** the privileges to perform operations on the resource referenced in softwareTriggerCriteria attribute **and** the AE **having** the privileges to perform CREATE operation on  TARGET\_RESOURCE\_ADDRESS**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid CREATE Request from AE **containing**  Resource Type **set to** 61? (softwareCampaign)To **set to** TARGET \_RESOURCE\_ADDRESS **and**From **set to** AE\_ID**}** | IUT 🡨 AE­­ |
| **then {**  the IUT **sends** a valid Response **containing**  Response Status Code **set to** 4103 (ORIGINATOR\_HAS\_NO\_PRIVILEGE)**}** | AE 🡨 IUT |

TP/oneM2M/CSE/SM/004

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| **TP Id** | TP/oneM2M/CSE/SM/004 |
| **Test objective** | Check that the IUT rejects creation of <softwareCampaign> resource if it conflicts with any existing <softwareCampaign> resource in the hosting CSE. |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.3.3.5 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **having registered** an AE **and** the IUT **being** a hosting CSE  **and** the IUT **having** valid <softwareCampaign>resource **containing**softwareTargetsattribute **set to**SOFTWARE\_TARGETS**and**campaignEnabled **set to** true **and** the AE **having** the privileges to perform CREATE operation on  TARGET\_RESOURCE\_ADDRESS**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid CREATE Request from AE **containing**  Resource Type **set to** 61? (softwareCampaign)To **set to** TARGET \_RESOURCE\_ADDRESS **and**From **set to** AE-ID **and** Content **containing**softwareTargetsattribute **set to**SOFTWARE\_TARGETS**}** | IUT 🡨 AE­­ |
| **then {**  the IUT **sends** a valid Response **containing**  Response Status Code **set to** 4105 (SOFTWARE\_CAMPAIGN\_CONFLICT)**}** | AE 🡨 IUT |

TP/oneM2M/CSE/SM/005

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| **TP Id** | TP/oneM2M/CSE/SM/005 |
| **Test objective** | Check that the IUT rejects UPDATE of <softwareCampaign> resource when the aggregatedSoftwareStatus attribute is set to *SOFTWARE\_STATUS.* |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.3.3.7 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **having registered** an AE  **and** the IUT **being** a hosting CSE  **and** the IUT **having** a <softwareCampaign>resource at SOFTWARE\_RESOURCE\_ADDRESS **containing** aggregatedSoftwareStatus attribute **set to** *SOFTWARE\_STATUS* **and** the AE **having** the privileges to perform UPDATE operation on  SOFTWARE\_RESOURCE\_ADDRESS**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid UPDATE Request from AE **containing** To **set to** SOFTWARE\_RESOURCE\_ADDRESS **and**From **set to** AE\_ID**}** | IUT 🡨 AE­­ |
| **then {**  the IUT **sends** a valid Response **containing**  Response Status Code **set to** 4000 (BAD\_REQUEST)**}** | AE 🡨 IUT |

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| **TP Id** | ***SOFTWARE\_STATUS*** |
| TP/oneM2M/CSE/SM/005\_PEN | PENDING |
| TP/oneM2M/CSE/SM/005\_INPROG | IN PROGRESS |

TP/oneM2M/CSE/SM/006

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| **TP Id** | TP/oneM2M/CSE/SM/006 |
| **Test objective** | Check that the IUT sends a notification message to the AE after the specified software management operation on target node has been performed successfully  |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 7.5.1.2.2 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **being** a hosting CSE  **and** the IUT **having registered** an AE  **and** the IUT **having registered** a Target Node (TN) as TARGET\_NODE\_ADDRESS **and** the IUT **having created** a <softwareCampaign> resource at SOFTWARE\_RESOURCE\_ADDRESS **containing** a child resource <subscription> **and** the IUT **having created** a [software] specializationat TARGET\_NODE\_ADDRESS **containing**a child resource <subscription> **and** the [software] specialization **having** performed the software management operation**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {**the IUT **receives** a valid NOTIFY response from the [software]specialization **containing**To **set to** SOFTWARE\_RESOURCE\_ADDRESS **and**From **set to** TARGET\_NODE\_ADDRESS Content **containing** installStatus **set to** INSTALLED**}** | TN 🡪 IUT |
| **then {** the IUT **updates** the <softwareCampaign> resource **and** the IUT **sends** a valid NOTIFY Response to the AE **}** | AE 🡨 IUT |

TP/oneM2M/CSE/SM/007

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| **TP Id** | TP/oneM2M/CSE/SM/007 |
| **Test objective** | Check that the IUT sets the aggregatedSoftwareStatus attribute of <softwareCampaign> resource to ERROR and sends a notification to AE when it does not receive a notify response from the [software] specialization which is created on target node to perform the software management operation |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 6.6.3.5, 7.5.1.2.2 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **being** a hosting CSE  **and** the IUT **having registered** an AE  **and** the IUT **having registered** a Target Node (TN) as TARGET\_NODE\_ADDRESS **and** the IUT **having created** a <softwareCampaign> resource at SOFTWARE\_RESOURCE\_ADDRESS **containing** a child resource <subscription> **and** the IUT **having created** a [software] specializationat TARGET\_NODE\_ADDRESS **containing**a child resource <subscription> **and** the [software] specialization **having** performed the software management operation**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** The IUT does not **receive** a valid NOTIFY Response from [software] specialization**}** | IUT |
| **then {** the IUT **updates** <softwareCampaign> resource  **and** the IUT **sends** a valid NOTIFY Response **containing** Content **containing**  notification message **containing**  aggregatedSoftwareStatusattribute **set to** ERROR**}** | IUT 🡪 AE |

TP/oneM2M/CSE/SM/008

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| **TP Id** | TP/oneM2M/CSE/SM/008 |
| **Test objective** | Check that the IUT sets the aggregatedSoftwareStatus attribute of <softwareCampaign> resource to ERROR and sends a notification to AE when the IUT receives the ERROR notification for software management operation on one of the target nodes. |
| **Reference** | TS-0001 [1], clause 9.6.76 and clause 10.2.28, TS-0004 [2], clause 7.5.1.2.2 |
| **Config Id** | CF01 |
| **Parent Release** | Release 4 |
| **PICS Selection** | PICS\_CSE |
| **Initial conditions** | **with {** the IUT **being** in the "initial state" **and** the IUT **being** a hosting CSE  **and** the IUT **having registered** an AE  **and** the IUT **having registered** REMOTE\_CSE\_1 and REMOTE\_CSE\_2  **and** the IUT **having created** a <softwareCampaign> resource at SOFTWARE\_RESOURCE\_ADDRESS **containing**a child resource <subscription> **and** AE **having** subscribed to the <softwareCampaign> resource **and** the IUT **having created** a [software] specializationat REMOTE\_CSE\_ADDRESS\_1 **containing**a child resource <subscription> **and** the IUT **having created** a [software] specializationat REMOTE\_CSE\_ADDRESS\_2 **containing**a child resource <subscription> **and** the [software] specialization **having** performed the software management operation **and** the IUT **having received** a valid NOTIFY Response **containing** To **set to** SOFTWARE\_RESOURCE\_ADDRESS **and** From **set to** REMOTE\_CSE\_ADDRESS\_1 **and**  Content **containing** notification message **containing**  installStatus attribute **set to** INSTALLLED**}** |
| **Expected behaviour** | **Test events** | **Direction** |
| **when {** the IUT **receives** a valid NOTIFY Response **containing** To **set to** SOFTWARE\_RESOURCE\_ADDRESS **and** From **set to** REMOTE\_CSE\_ADDRESS\_2 **and**  Content **containing**  notification message **containing**  installStatus attribute **set to** ERROR**}** | R-CSE-2 🡪 IUT |
| **then {** the IUT **updates** <softwareCampaign> resource  **and** the IUT **sends** a valid NOTIFY Response **containing** Content **containing**  notification message **containing**  aggregatedSoftwareStatusattribute **set to** ERROR**}** | IUT 🡪 AE |

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

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.?