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| CHANGE REQUEST |
| Meeting ID:\* | PRO 32 |
| Source:\* | Bob Flynn, Convida Wireless; Flynn.bob@convidawireless.com |
| Date:\* | 2017-11-05 |
| Reason for Change/s:\* | Release Version Procedures |
| 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 [x] mirror CR number: (Note to Rapporteur - use latest agreed revision)[x]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0004 Version 2.14.0 |
| Clauses \* | 7.3.1.1, 7.3.2.1, 7.3.3.12, 7.3.2.6 |
| 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) | <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 [x]  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

R01 –

Since Release 1 entities do not recognize the rvi parameter, R2+ CSEs must add the rvi parameter if it is not received (change 2) and must remove the rvi parameter whenever sending the request to an R1 entity (change 4 – change 4 also brings clarifying text from R3).

Not captured in specifications is the following behaviors based on R1.

If R2 CSE sends request or response to R1 entity, the R1 entity MAY NOT know how to handle the message.

* It may send a bad request as a RESPONSE to a REQUEST
* It may not know how to handle a RESPONSE that is Higher version.

This “could” be avoidable since the Hosting CSE “knows” that the request is R1. If the Hosting CSE is not able to send an R1 compliant response then it should respond with “UNSUPPORTED\_VERSION” error. – This is covered by Change 2.

R00 – Original contribution

The CR proposes changes to TS-0004 to align with Release Version Handling described in ARC-2017-0406R02 (Agreed). The fundamental components of the Release Version Handling are:

* The Release Version Indicator describes what version of oneM2M that the message conforms to.
* Release Version Indicator MUST be present in Requests and Responses for R2 and higher versions of oneM2M. Default is Release 1 if not specified.
* SupportedReleaseVersions attribute is added to <CSEBase>,<AE>,<remoteCSE>
	+ These are Mandatory in the CREATE request (<AE> and <remoteCSE>) for R2 and higher versions of oneM2M. Default is Release 1 if not specified.

The additional parameters and attributes is submitted in contribution ????

### The procedural changes in this contribution are:

* Originator MUST specify the release version of the request. Change 1
* Reciever has no changes at this time. This may change in R3.
* Receiver CSE shall check for the existance of the rvi parameter. And set to R1 if not present. Change 2
* Hosting CSE shall set the rvi in the response message. Change 3
* Hosting CSE shall check the value of the rvi to see if it can process this message. If not the Hosting CSE shall send an error response UNSUPPORTED\_VERSION. Optionally, the Hosting CSE may also send information indicating the supported release versions in the response.
	+ Resource representation --- capture by change 2 as well.
	+ Recv-1.0 for request primitive validity Change 2

Additionally one of the Receiver actions is modifies to remove a check of the received resource representation since the receiver may not be able to check the validity of the resource if the resource is a higher version. This check is done in Recv-6.0. Change 2

Going forward, protocol bindings should contain ONLY what is needed by the Receiver so that the serialization check is not needed. If An AE target CSE2 that supports JSON, should the registrar CSE that supports only XML reject the request? I think this should be avoided. I keep the check in place because in the case of MQTT the entire primitive is in the payload, so the check is still potentially needed by the Receiver.

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

#### Compose request primitive

The originator shall compose a Request message that shall be mapped to a specific protocol.

The Request shall include mandatory parameters which is ***Operation***, ***To***, From, Request Identifier and ***Release Version Indicator***.

The Request may include the time related parameters which is ***Originating*** ***Timestamp***, ***Request*** ***Expiration*** ***Timestamp***, ***Result*** ***Expiration*** ***Timestamp*** and ***Operation*** ***Execution*** ***Time***.

The Request may include the other parameters as specified in Table 7.2.1.1‑1: Request Primitive Parameters.

When including a resource representation in the request primitive for create and update, the originator shall take into account the validation rules as specified in "Check validity for resource representation for create" and "Check validity for resource representation for update" respectively.

EXAMPLE: Any attributes marked with NP shall not be present in the resource representation for the corresponding request primitive.

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

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

* + 1.

#### Check the validity of received request primitive

The validity checking of the message carrying the received request primitive is specified by the protocol mapping Technical Specifications (CoAP binding [22], HTTP binding [23], and MQTT binding [24]).

If the ***Request Expiration Timestamp*** is given in the request and expired, the Receiver CSE shall reject the request with an "REQUEST\_TIMEOUT" ***Response Status Code*** parameter value.

If the ***From*** parameter is not present in the request except AE Create request, the Receiver CSE shall reject the request with "BAD\_REQUEST" ***Response Status Code*** parameter value.

If the received request is communicated within an established Security Association (TS-0003 [7]), and

* the Receiver knows that the Registree using the established Security Association is an AE, and
* the Receiver knows the AE-ID(s) of the Registree using the established Security Association, and
* the ***From*** parameter does not match the allowed AE-ID(s) of the Registree using the established Security Association,

then the request shall be rejected with an "ORIGINATOR\_HAS\_NOT\_REGISTERED " ***Response Status Code*** parameter value.

If the received request is communicated within an established Security Association, and

* the Receiver knows that the Registree using the established Security Association is a CSE, and
* the Receiver knows the CSE -ID of the Registree using the established Security Association, and
* if one of the following applies:
* the ***From*** parameter is an CSE-ID that matches one of the Receiver's Registree CSE's CSE-ID other than the CSE-ID of the Registree using the established Security Association, or
* the ***From*** parameter is an CSE-Relative C-Type AE-ID-Stem, or
* the ***From*** parameter is an SP-Relative AE-ID or Absolute AE-ID with a C-Type AE-ID-Stem, and the CSE-ID portion of the ***From*** parameter matches one of the Receiver's Registree CSE's CSE-ID other than the CSE-ID of the Registree for the established Security Association,

then the request shall be rejected with an "ORIGINATOR\_HAS\_NOT\_REGISTERED" ***Response Status Code*** parameter value.

NOTE: An SP-Relative-AE-ID or Absolute AE-ID with a C-Type AE-ID-Stem always includes a CSE-ID portion (see TS-0001 [6]).

If the received request is communicated outside of an established Security Association, and

* If the ***From*** parameter includes an AE-ID, and
* The request is not a CREATE <AE> Request, and
* The ***From*** parameter does not match the AE-ID of an AE currently registered to the Receiver

then the request shall be rejected with a "ORIGINATOR\_HAS\_NOT\_REGISTERED" ***Response Status Code*** parameter value.

If the received request is communicated outside of an established Security Association, and the ***From*** parameter includes a CSE-ID, then the request shall be rejected with an "SECURITY\_ASSOCIATION\_REQUIRED" ***Response Status Code*** parameter value.

If a received request needs to be forwarded to another CSE and if CMDH processing is supported, then in addition, the "CMDH message validation procedure" defined in Annex H.2.3. shall be carried out.

If the message is not valid, the request shall be rejected with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

If ***Resource Type*** is not present or is invalid in a CREATE request ,the request shall be rejected with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

If the ***Filter Criteria*** parameter is included in a CREATE request, the request shall be rejected with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

If the ***Result Content*** is invalid for a given operation (Refer TS-0001 Table8.1.2-1: Summary of Result Content Values) then the Hosting CSE shall reject the request with a ***Response Status Code*** indicating "BAD\_REQUEST" error.

If the receiver does not support the content format (i.e. type of serialization) requested by the originator, the request shall be rejected with a ***Response Status Code*** indicating "NOT\_ACCEPTABLE" error.

If the ***Release Version Indicator*** is not present in the request the Reciever CSE shall set the value to Release\_1.

If the Hosting CSE does not support the release value present in the ***Release Version Indicator*** then the request shall be rejected with a ***Response Status Code*** indicating " UNSUPPORTED\_VERSION " error.

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

### -----------------------Start of change 3-------------------------------------------

#### Create a success response

The Hosting CSE shall create a success response primitive with a ***Response Status Code*** indicating:

* "CREATED" in case of Create operation;
* "OK" in case of Retrieve operation;
* "UPDATED" in case of Update operation;
* "DELETED" in case of Delete operation; and
* "OK" in case of Notify operation.

The Hosting CSE shall include ***Request Identifier*** and the ***Release Version Indicator*** parameter in the response primitive.

The Hosting CSE shall include the ***Content*** parameter in a Retrieve Response. The Hosting CSE shall include the ***Content*** parameter in a Create/Update/Delete Response unless the ***Result Content*** is set to 0 (nothing). If the ***Result Content*** is not given in the Request, the default value for Delete is 0 (nothing), for Create/Retieve/Update it is 1 (all attributes).

The information of the ***Content*** parameter shall comply to the value of the ***Result Content*** request parameter of the corresponding Request.

More details can be found in clause 7.2.1.2 (Response primitive format).

The Hosting CSE may include ***To***, ***From***, ***Originating******Timestamp***, ***Result******Expiration*** ***Timestamp***, ***Event******Category*** parameters.

### -----------------------End of change 3-------------------------------------------

### -----------------------Start of change 4-------------------------------------------

#### Forwarding

When a receiver CSE is not the Hosting CSE, i.e. the CSE-ID of the receiver CSE is different from the CSE-ID in the ***To*** parameter, the receiver CSE shall attempt to forward the message. The Receiver CSE checks each of its <remoteCSE> resources to find whether the CSE-ID in the ***To*** parameter of the message matches the CSE-ID attribute of the <remoteCSE>. If a match is found, the CSE shall retarget the request to the *pointOfAccess* of the matching <remoteCSE> resource.

If a match is not found, and the CSE received the request from an AE and the CSE is not the IN-CSE, then it shall retarget the request to its Registrar CSE.

If a match is not found and the CSE is the IN-CSE, then the CSE shall not forward the request and it shall respond with an error using ***Response Status Code*** 4004 NOT\_FOUND.

If a match is not found and the CSE is not the IN-CSE and the CSE receives the request from its registrar CSE, then the CSE shall not forward the request and it shall respond with an error using ***Response Status Code***  4004 NOT\_FOUND.

If the ***Request Expiration Timestamp, Result Expiration Timestamp*** or ***Operation Execution Time*** is set in the request, the receiver CSE should forward the request before the earliest of the times. If the any of the timestamps are in the past, it shall reject the request with a "REQUEST\_TIMEOUT" ***Response Status Code*** parameter value and not forward the request.

A receiver CSE shall remove the ***Release Version Indicator*** from the request or response before retargeting a primitive to a Release 1 entity. A release 1 entity is indicated in the *supportReleaseVersions* attribute of the <AE> and <remoteCSE> resources.

Acting as an originator the CSE shall perform the following procedures:

1. "Send a Request to the receiver CSE". Please refer to clause 7.3.1.2 for details.
2. "Wait for Response primitive". Please refer to clause 7.3.1.3 for details.

When the Response is received the receiver CSE shall:

1. Primitive specific procedure: Forward the Response to the original CSE.

### -----------------------End of change 4-------------------------------------------

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?
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* 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.?