|  |
| --- |
| CHANGE REQUEST |
| Meeting ID:\* | PRO 33 |
| Source:\* | Bob Flynn, Convida Wireless; Flynn.bob@convidawireless.com |
| Date:\* | 2018-01-13 |
| Reason for Change/s:\* | Vendor Specific Field |
| CR against: Release\* | Release 3 |
| 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 3.5.0 |
| Clauses \* |  |
| Type of change: \* | [ ]  Editorial change[ ]  Bug Fix or Correction[x]  Change to existing feature or functionality[ ]  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

Protocol contribution to reflect changes in ARC-2017-0472R01-TS-0001\_Vendor\_Information\_R3

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

### Primitive format

#### Request primitive format

Table 7.2.1.1‑1 summarizes the primitive parameters of the Request primitive, indicating their presence depending on the C, R, U, D or N operations. "M" indicates mandatory, "O" indicates optional, "NP" indicates not present.

Refer to clause 8.1.2 of the oneM2M TS-0001 [6] for additional information on the request primitive parameters.

Table 7.2.1.1‑1: Request Primitive Parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Primitive Parameter** | **CREATE** | **RETRIEVE** | **UPDATE** | **DELETE** | **NOTIFY** |
| Operation | M | M | M | M | M |
| To | M | M | M | M | M |
| From | OSee note | M | M | M | M |
| Request Identifier | M | M | M | M | M |
| Resource Type | M | NP | NP | NP | NP |
| Content | M | O | M | NP | M |
| Role IDs | O | O | O | O | O |
| Originating Timestamp | O | O | O | O | O |
| Request Expiration Timestamp | O | O | O | O | O |
| Result Expiration Time | O | O | O | O | O |
| Operation Execution Time | O | O | O | O | O |
| Response Type | O | O | O | O | O |
| Result Persistence | O | O | O | O | NP |
| Result Content | O | O | O | O | NP |
| Event Category | O | O | O | O | O |
| Delivery Aggregation | O | O | O | O | O |
| Group Request Identifier | O | O | O | O | O |
| Filter Criteria | NP | O | O | O | NP |
| Discovery Result Type | NP | O | NP | NP | NP |
| Tokens | O | O | O | O | O |
| Token IDs | O | O | O | O | O |
| Local Token IDs | O | O | O | O | O |
| Token Request Indicator | O | O | O | O | O |
| Group Request Target Members | O | O | O | O | NP |
| Authorization Signature Indicator | O | O | O | O | NP |
| Authorization Signatures | O | O | O | O | NP |
| Authorization Relationship Indicator | O | O | O | O | NP |
| Semantic Query Indicator | NP | O | NP | NP | NP |
| Release Version Indicator | M | M | M | M | M |
| Vendor Information | O | O | O | O | O |
| NOTE: The *From* parameter is Mandatory for all requests except for AE CREATE. For AE CREATE, it is Optional. |

The Content parameter in a Request shall contain one of the following:

1. A partial Resource. This applies to Create and Update request primitives. In the case of Create request the ***Content*** parameter shall contain a single root element whose name is the name of the Resource and whose content consists of one or more attributes, child Resources or childResource references. In the case of an Update request primitive, the ***Content*** parameter shall contain the attribute and new values. Attributes to be deleted from the resource shall be indicated without a value. In both cases the resource type is as defined in clause 7.4, however since a partial resource is being transferred it is not required to be valid according to the XSD for that resource in terms of the presence of resource attributes. Any attribute that is present, however, shall comply to the data type defined in the XSD of that resource.
2. A Notification Data Object. This applies to Notification request primitives. The data type of the data object is named <m2m:notification> and is described in Clause 7.5.1
3. An Aggregated Notification. This applies to Notification request primitives. The data type of the data object is named <m2m:aggregatedNotification> and contains multiple <m2m:notification> objects. This is described in clause 7.5.1.
4. An AttributeList element, as described in clause 7.5.2. This is used in partial retrieve request primitives to indicate a list of attribute names whose values shall be retrieved in the response.
5. A ResponsePrimitive object as described in clause 7.5.1. This applies to Notification request primitives which are sent when accessing resources in asynchronous non-blocking mode.

#### Response primitive format

Table7.2.1.2‑1 summarizes the primitive parameters for Response primitive, indicating their presence depending on the C, R, U, D or N operations of the associated Request primitive and whether this operation was successful or caused an error. "M" indicates mandatory, "O" indicates optional, "NP" indicates not present.

Refer to clause 8.1.3 of TS-0001 [6] for additional information on the request primitive parameters.

NOTE: ***Response Code*** and ***Status Code*** parameters are merged into the ***Response Status Code*** parameter.

Table7.2.1.2‑1 : Response Primitive Parameters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Primitive parameter** | **Ack** | **CREATE****Success** | **RETRIEVE****Success** | **UPDATE****Success** | DELETESuccess | NOTIFYSuccess | Error |
| Response Status Code | M | M | M | M | M | M | M |
| Request Identifier | M | M | M | M | M | M | M |
| Content | O | O | M | O | O | O | O |
| To | O | O | O | O | O | O | O |
| From | O | O | O | O | O | O | O |
| Originating Timestamp | O | O | O | O | O | O | O |
| Result Expiration Timestamp | O | O | O | O | O | O | O |
| Event Category | O | O | O | O | O | O | O |
| Content Status | NP | NP | O | NP | NP | NP | NP |
| Content Offset | NP | NP | O | NP | NP | NP | NP |
| Assigned Token Identifiers | NP | O | O | O | O | O | O |
| Token Request Information | NP | NP | NP | NP | NP | NP | O |
| Authorization Signature Request Information | NP | NP | NP | NP | NP | NP | O |
| Release Version Indicator | M | M | M | M | M | M | M |
| Vendor Information | O | O | O | O | O | O | O |

The Content parameter in a Response shall contain one of the following:

1. A complete or partial Resource. This applies to a response primitive sent in reply to create and retrieve request message. A partial resource also applies to a response primitive sent in reply to update request message. The ***Content*** parameter shall contain a single root element whose name is the name of the Resource and whose content consists of one or more attributes, child resources or childResource references. In this case the resource type is as defined in clause 7.4. However if a partial resource is being transferred, it is not required to be valid according to the XSD for that resource, in terms of the presence of resource attributes. Any attribute that is present, however, shall comply to the data type defined in the XSD of that resource.
2. The URI of a resource. This is included directly as the content of the ***Content*** parameter (like in case 6)
3. A partial resource and its hierarchical URI. These are included in a root element called m2m:resource defined in clause 7.5.2. The URI is included as an attribute of m2m:resource.
4. A list of URIs. This can be used for transferring the childResource URIs in a Discovery response. These are included in an element called m2m:URIList defined in clause 7.5.2.
5. A list of childResourceRef. This can be used for transferring the child resource references in a Discovery response. These are included in an element called m2m:resourceRefList defined in clause 7.5.2.
6. An Aggregated Response. This is sent as a result of a Group operation. This uses the element m2m:aggregatedResponse defined in clause 7.5.2.
7. A request primitive. A pending request is sent in a polling response. This uses the element m2m:requestPrimitive defined in clause 6.4.1.
8. Human-readable error message. This is included in an element called m2m:debugInfo defined in clause 7.5.2.

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

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

* + 1.

## Message parameter data types

### Request primitive parameter data types

The data types of request primitive parameters are specified in this clause.

Detailed request primitive parameter descriptions and usage can be found in clause 8.1.2 of the oneM2M TS-0001 [6]. Further details on the representation of primitives are specified in clauses 7.2.1.1 and 8. Table 6.4.1‑1 shows the structure of the request primitive. This is defined as the m2m:requestPrimitive data type in the XSD file CDT-requestPrimitive-v3\_5\_0.xsd.

Table 6.4.1‑1: Data Types for Request primitive parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Primitive Parameter | Data Type | Multiplicity | Default Handling NOTE 2 | Note |
| Operation | m2m:operation | 1 | Not applicable | See clause 6.3.4.2.5 |
| To | xs:anyURI | 1 | Not applicable |  |
| From | m2m:ID | 0..1 | Not applicable | See clause 6.3.3Also see NOTE 2 below. |
| Request Identifier | m2m:requestID | 1 | Not applicable | See clause 6.3.3 |
| Resource Type | m2m:resourceType | 0..1 | No default | See clause 6.3.4.2.1 |
| Content | m2m:primitiveContent | 0..1 | No default |  See clause 6.3.5.5 |
| Role IDs | List of m2m:roleID  | 0..1 | Not applicable |  |
| Originating Timestamp | m2m:timestamp | 0..1 | No default |  |
| Request Expiration Timestamp | m2m:absRelTimestamp | 0..1 | Can be given by CMDH policy (Annex D.12) | "Result Expiration Timestamp" shall be later than "Request Message Expiration Timestamp" |
| Result Expiration Timestamp | m2m:absRelTimestamp | 0..1 | Can be given by CMDH policy (Annex D.12) |  |
| Operation Execution Time | m2m:absRelTimestamp | 0..1 | Can be given by CMDH policy (Annex D.12) |  |
| Response Type | m2m:responseTypeInfo | 0..1 | Use 'blockingRequest' | See clause 6.3.5.30 |
| Result Persistence | m2m:absRelTimestamp | 0..1 | Can be given by CMDH policy (Annex D.12) |  |
| Result Content | m2m:resultContent | 0..1 | The default value depends on a given operation. See Table 8.1.2-1 of TS-0001 [6]. | See clause 6.3.4.2.7 |
| Event Category | m2m:eventCat | 0..1 | No default | See clause 6.3.3 |
| Delivery Aggregation | xs:boolean | 0..1 | Can be given by CMDH policy (Annex D.12), otherwise FALSE |  |
| Group Request Identifier | xs:string | 0..1 | No default |  |
| Filter Criteria | m2m:filterCriteria | 0..1 | No default | See clause 6.3.5.8 |
| Discovery Result Type | m2m:discResType | 0..1 | Use 'structured' | See clause 6.3.4.2.8 |
| Tokens | List of m2m:dynAuthJWT | 0..1 | Not applicable | See clause 6.3.3 |
| Token IDs | List of m2m:tokenID | 0..1 | Not applicable |  |
| LocalTokenIDs | List of xs:NCName | 0..1 | No default |  |
| Token Request Indicator | xs:boolean | 0..1 | No default |  |
| Group Request Target Members | list of xs:anyURI | 0..1 | No default |  |
| Authorization Signature Indicator | xs:boolean | 0..1 | No default |  |
| Authorization Signatures | m2m:signatureList | 0..1 | No default | See clause 6.3.3 |
| Authorization Relationship Indicator | xs:boolean | 0..1 | No default |  |
| Semantic Query Indicator | xs:boolean | 0..1 | No default | Semantic Query Indicator |
| Release Version Indicator | m2m:releaseVersion | 1 | No default | This parameter is set to the release version that the primitive complies with  |
| Vendor Information | xs:string | 0..1 | No default | This parameter is used to convey vendor specific information. No procedures are defined. |
| NOTE 1: Default handling is the request handling procedure on a Transit/Hosting CSE when the request parameter is not included in a request primitive. This is not applicable for mandatory parameters which are marked as 'M' in Table 7.2.1.1‑1.NOTE 2: *From* parameter shall be present for all requests except for <AE> CREATE where it is optional. |

### Response primitive parameter data types

The data types of response primitive parameters are specified in this clause.

Detailed response message parameter descriptions and usage can be found in clause 8.1.3 of TS-0001 [6]. Further details on the representation of primitives are specified in clauses 7.1.1.1 and 8. Table 6.4.2‑1 shows the structure of the response primitive. This is defined as the m2m:responsePrimitive data type in the XSD file CDT-responsePrimitive-v3\_5\_0.xsd.

Table 6.4.2‑1: Data Types for Response primitive parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Primitive Parameter | Data Type | Multiplicity | Note |
| Response Status Code | m2m:responseStatusCode | 1 | See clause 6.3.4.2.9 |
| Request Identifier | m2m:requestID | 1 | See clause 6.3.3 |
| Content | m2m:primitiveContent | 0..1 | See clause 6.3.5.5 |
| To | m2m:ID  | 0..1 | See clause 6.3.3 |
| From | m2m:ID | 0..1 |  |
| Originating Timestamp | m2m:timestamp | 0..1 | See Table 6.3.3‑1 |
| Result Expiration Timestamp | m2m:absRelTimestamp | 0..1 | See Table 6.3.3‑1 |
| Event Category | m2m:eventCat | 0..1 | See clause 6.3.3 |
| Content Status | m2m:contentStatus | 0..1 | See clause 6.3.4.2.44 |
| Content Offset | xs:positiveInteger | 0..1 |  |
| Assigned Token Identifiers | m2m:dynAuthLocalTokenIdAssignments | 0..1 | See clause 6.3.5.43 |
| Token Request Information | m2m:dynAuthTokenReqInfo | 0..1 | See clause 6.3.5.45 |
| Authorization Signature Request Information | xs:boolean | 0..1 |  |
| Release Version Indicator | m2m:releaseVersion | 1 | This parameter is not present when a response is targeting a Release-1 entity and shall be included in all other cases. |
| Vendor Information | xs:string | 0..1 | This parameter is used to convey vendor specific information. No procedures are defined. |

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

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

#### 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 either the CSE-ID attribute or one of the CSE-IDs in the descendantCSEs 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 or a descendant CSE, 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*** "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*** "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.

When a receiver CSE forwards a request or response it should include all of the parameters of the original message unless otherwise described in this section.

A receiver CSE shall remove the ***Release Version Indicator*** from the request or response before retargeting a primitive to a Release 1 entity.

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 3-------------------------------------------

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

#### m2m:metaInformation

Used for ***metaInformation*** attribute in <request> resource, and m2m:aggregatedRequest data type.

Table 6.3.5.4‑1: Type Definition of m2m:metaInformation

|  |  |  |  |
| --- | --- | --- | --- |
| Element Path | **Element Data Type**  | Multiplicity | Note |
| resourceType | m2m:resourceType | 0..1 | See clause 6.3.4.2.1 |
| originatingTimestamp | m2m:timestamp | 0..1 |  |
| requestExpirationTimestamp | m2m:absRelTimestamp | 0..1 |  |
| resultExpirationTimestamp | m2m:absRelTimestamp | 0..1 |  |
| operationExecutionTime | m2m:absRelTimestamp | 0..1 |  |
| responseType | m2m:responseTypeInfo | 0..1 | See clause 6.3.4.2.6 |
| resultPersistence | m2m:absRelTimestamp | 0..1 |  |
| resultContent | m2m:resultContent | 0..1 | See clause 6.3.4.2.7 |
| eventCategory | m2m:eventCat | 0..1 | See clause 6.3.3 |
| deiveryAggregation | xs:boolean | 0..1 |  |
| groupRequestIdentifier | xs:string | 0..1 |  |
| filterCriteria | m2m:filterCriteria | 0..1 | See clause 6.3.5.8 |
| discoveryResultType | m2m:discResType | 0..1 | See clause 6.3.4.2.8 |
| roleIDs | List of m2m:roleID | 0..1 |  |
| tokenRequestIndicator | xs:boolean | 0..1 |  |
| tokens | List of m2m:dynAuthJWT | 0..1 |  |
| tokenIDs | List of m2m:tokenID | 0..1 |  |
| localTokenIDs | List of xs:NCName | 0..1 |  |
| groupRequestTargetMembers | List of xs:anyURI | 0..1 |  |
| authorSignIndicator | xs:boolean | 0..1 |  |
| authorSigns | m2m:signatureList | 0..1 |  |
| authorRelIndicator | xs:boolean | 0..1 |  |
| semanticQueryIndicator | xs:boolean | 0..1 |  |
| ReleaseVersionIndicator | m2m:releaseVersion | 1 |  |
| vendorInformation | xs:string | 0..1 |  |

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

### -----------------------Start of change 5-------------------------------------------

### Primitive parameters

In protocol bindings primitive parameter names shall be translated into short names of Table 8.2.2‑1.

Table 8.2.2‑1: Primitive parameter short names

| Parameter Name | XSD long name | Occurs in | Short Name |
| --- | --- | --- | --- |
| ***Operation*** | operation | Request | ***op*** |
| ***To*** | to | Request, Response | ***to*** |
| ***From*** | from | Request, Response | ***fr*** |
| ***Request Identifier*** | requestIdentifier | Request, Response | ***rqi*** |
| ***Resource Type*** | resourceType | Request | ***ty*** |
|  |  |  |  |
| ***Content*** | primitiveContent  | Request, Response | ***pc*** |
| ***Role IDs*** | roleIDs | Request | ***rids*** |
| ***Originating Timestamp*** | originatingTimestamp | Request, Response | ***ot*** |
| ***Request Expiration Timestamp*** | requestExpirationTimestamp | Request | ***rqet*** |
| ***Result Expiration Timestamp*** | resultExpirationTimestamp | Request, Response | ***rset*** |
| ***Operation Execution Time*** | operationExecutionTime | Request | ***oet*** |
| ***Response Type*** | responseType | Request | ***rt*** |
| ***Result Persistence*** | resultPersistence | Request | ***rp*** |
| ***Result Content*** | resultContent | Request | ***rcn*** |
| ***Event Category*** | eventCategory | Request, Response | ***ec*** |
| ***Delivery Aggregation*** | deliveryAggregation | Request | ***da*** |
| ***Group Request Identifier*** | groupRequestIdentifier | Request | ***gid*** |
| ***Filter Criteria*** | filterCriteria | Request | ***fc*** |
| ***Discovery Result Type*** | discoveryResultType | Request | ***drt*** |
| ***Response Status Code*** | responseStatusCode | Response | ***rsc*** |
| ***Tokens*** | tokens | Request | ***tkns*** |
| ***Token IDs*** | tokenIDs | Request | ***tids*** |
| ***Token Request Indicator*** | tokenRequestIndicator | Request | ***tqi*** |
| ***Local Token IDs*** | localTokenIDs | Request | ***ltids*** |
| ***Group Request Target Members*** | groupRequestTargetMembers | Request | ***grtm*** |
| ***Assigned Token Identifiers*** | assignedTokenIdentifiers | Response | ***ati*** |
| ***Token Request Information*** | tokenRequestInformation | Response | ***tqf*** |
| ***Content Status*** | contentStatus | Response | ***cnst*** |
| ***Content Offset*** | contentOffset | Response | ***cnot*** |
| ***Authorization Signature Indicator*** | authorSignIndicator | Request | ***asi*** |
| ***Authorization Signature Request Information*** | authorSignReqInfo | Response | ***asri*** |
| ***Authorization Signatures*** | authorSigns | Request | ***aus*** |
| ***Authorization Relationship Indicator*** | authorRelIndicator | Request | ***auri*** |
| ***Semantic Query Indicator*** | semanticQueryIndicator | Request | ***sqi*** |
| ***Release Version Indicator*** | releaseVersionIndicator | Request, Response | ***rvi*** |
| ***Vendor Information*** | vendorInformation | Request, Response | ***vsi*** |

XML serialized representations of primitives employ root element names to differentiate between request and response primitive types (see clause 8.3). These root element names shall be translated into short names as in Table 8.2.2‑2.

**Table 8.2.2‑2: Primitive root element short names**

| **Root Element Name** | **Occurs in** | **Short Name** |
| --- | --- | --- |
| *requestPrimitive* | Request | ***rqp*** |
| *responsePrimitive* | Response | ***rsp*** |

### -----------------------End of change 5-------------------------------------------

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.?