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| CHANGE REQUEST | |
| Meeting ID:\* | SDS #51 |
| 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)  Bob Flynn, Exacta GSS, [Bob.Flynn@exactagss.com](mailto:Bob.Flynn@exactagss.com) |
| Date:\* | 2021-08-05 |
| Reason for Change/s:\* | Clarification for m2m:absRelTimestamp in TS-0004 |
| CR against: Release\* | Release 5 |
| 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-0004 v4.6.0 |
| Clauses \* | 6.3.3 |
| 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) |  |
| 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

This CR proposes a clarification for the simple data type *m2m:absRelTimestamp*.

This data type defines a union of *m2m:timestamp* and xs:long. The example given is:

20141003T112032 (absolute time),or 3600000 (relative time)

What is missing from the description as well as from the example is the unit for the relative time.

**Discussion on precission**

The ISO 8601 timestamp format for the absolute time allows for nanosecond precision, but in other parts of TS-0004 this precision is not used, so this CR proposes to define the precision, in alignment with other definitions, for the relative time as milliseconds.

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

Table 6.3.3‑1: oneM2M Simple Data Types

| XSD type name | | Type Name | | Examples | | Description |
| --- | --- | --- | --- | --- | --- | --- |
| m2m:resourceName | | Resource name | | myLightBulb  123Sensor | | Used for resource name attribute. This shall be formed by (ALPHA / DIGIT) \*(ALPHA / DIGIT / "-" / "." / "\_") as described in clause 6.2.3 |
| m2m:ID | | Generic ID | | //globalm2m.org | Used to represent generic IDs generated and used within oneM2M (M2M-SP-ID) | |
| //globalm2m.org/C190XX7T | (CSE-ID) | |
| //globalm2m.org/CSE1/123A38ZZY | (AE-ID) | |
| m2m:nodeID | | Node ID | | urn:gsma:imei:90420156-025763-0;svn=42 | | Used for Node IDs. The constraints on this type are different from those on Generic IDs  (IMEI as node ID) |
| m2m:deviceID | | Device ID | | urn:dev:ops:012345-Set%2DTop%2DBox-0123456789 | | A Device ID uniquely identifies a device using a URN. The format of the URN is one of IETF RFC 4122 [35] UUID, OPS URN, OS URN, IMEI URN, ESN URN, or MEID URN.A |
| m2m:externalID | | M2M-EXT-ID | | 123456789@domain.com | The External Identifier allows the Underlying Network to identify the M2M Device (e.g. ASN, MN) associated with the CSE-ID or AE-ID. In the 3GPP case, the External Identifier is specified in 3GPP TS 23.003 [17] | |
| 3GPP external Group ID | | 123456789@domain.com | In the 3GPP multicast case, the External Group Identifier is used in the group message delivery procedure and specified in 3GPP TS 23.682 [15] | |
| m2m:requestID | | Request ID | | ab3f124a, CSE1/98821 | | Used for Request IDs. This type may include the ID of the target CSE as well as a part that varies for each ID |
| m2m:nhURI | | Non Hierarchical Identifier | | /CSE090112/ C190XX7T | | Used where a resourceID is required to be non-hierarchical |
| m2m:acpType | | List of ACP Resource IDs | | //IN-CSEID.m2m.myoperator.org/93405 | | Used to represent a list of AccessControlPolicy identifiers. The list shall contain at least one member |
| m2m:labels | | list of xs:token | | printers networkwifi1 home\_energy (key-only)  domain:home color:red (key-value pair) | | A list of tokens used for describing and discovering resources (searching wifi connected printer from vendor 1)  Each token can have two formats, key-only and key-value pair. In the case of key-value pair, key and value are separated by ":". The key portion does not contain ":". The list shall contain at least one member |
| m2m:triggerRecipientID | | Trigger Recipient Identifier | | 3010 | | Used when device triggering services are requested from the Underlying Network, to identify an instance of an ASN/MN-CSE on an execution environment, to which the trigger is routed. Defined as port number in the range 0 to 65535 |
| m2m:listOfM2MID | | List of M2M identifiers | |  | | xs:list of elements of data type m2m:ID. The list shall contain at least one member |
| m2m:listOfURIs | | List of any URI | |  | | xs:list of elements of data type xs:anyURI. The list shall contain at least one member |
| m2m:listOfDuration | | List of durations | |  | | xs:list of elements of data type xs:duration. The list shall contain at least one member |
| m2m:resourceTypeList | | List of resource types | |  | | xs:list of elements of data type m2m:resourceType. The list shall contain at least one member |
| m2m:listOfMinMax | | List of Time Limits | | 10 2560 | | xs:list of two xs:long values defining min and max limits of time intervals in units of milliseconds (value -1 representing infinite time) |
| m2m:ipv4 | | IPv4 address string with optional CIDR suffix | | 10.125.0.0/16,122.77.12.1 | | Used in m2m:accessControlRules specified in clause 6.3.5.27 |
| m2m:ipv6 | | IPv6 address string with optional CIDR suffix | | ::/0, Fadf:ddd0::/32, abcd:ffff:abb0:aaaa::/64 | | Used in m2m:accessControlRules specified in clause 6.3.5.27 |
| m2m:countryCode | | Country Code | | KR | | 2-character country code as defined by ISO 3166‑1 [41] |
| m2m:pointOfAccess | | single point of access of an AE or CSE | | <http://172.25.0.10:8080/xyz>  or  coap://m2m.sp.com:5683  or  mqtt://172.25.0.10:1883  or  ws://10.222.254.26:80 | | A point of access is represented as a URI that shall contain the underlying transport protocol (in either lowercase or uppercase spelling), the IP address (or an FQDN in all lowercase) and optionally a port number and/or path. No whitespace characters are allowed. The protocol binding specifications may give additional instructions on how the URI is. interpreted |
| m2m:poaList | | List of pointOfAccess strings | | http://172.25.0.10:8080/xyz  coap://m2m.sp.com:5683  mqtt://172.25.0.10:1883 | | xs:list of elements of data type m2m:pointOfAccess. The list shall contain at least one member |
| m2m:timestamp | | Time stamp string | | 20141003T112032 | | DateTime string using 'Basic Format' specified in ISO 8601 [27]. Time zone shall be interpreted as UTC timezone. See below for more details |
| m2m:absRelTimestamp | | absolute or relative time stamp string | | 20141003T112032 (absolute time),or 3600000 (relative time) | | defined as xs:union of m2m:timestamp and xs:long data types. The unit for relative time is milliseconds. |
| m2m:typeOfContent | | Type of Content | | application/xml | | The media type shall be an IANA registered Media Types name, or an experimental Media Type (see [26]) ':' |
| m2m:serializations | | Serialization types | | xml json cbor | | A list of serialization types that can be used for serialization of primitives. The permitted values are:   * xml * json * cbor   The list shall contain at least one member |
| m2m:contentInfo | | Content Information | | application/xml:1  application/xml:1:0  application/xml:1:5 | | A string consisting of a media type followed by a m2m:encodingType and optional m2m:contentSecurity, each separated by ':' character. If the m2m:contentSecurity value is not present, then the preceding ':' shall also be not present. If the m2m:contentSecurity value is not present then this has the same interpretation as a value of 0 for m2m:contentSecurity.  See note |
| m2m:protocolList | | List of protocols | | application/x-alljoyn;version=1.0 application/x-echonet-lite;version=1.0 | | A list of MIME types for all communication protocols supported by the device |
| m2m:eventCat | | Event Category | | 2 | | Either:  1) one of the values from m2m:stdEventCats, or  2) a user-defined category in the range 100-999 |
| m2m:eventCatWithDef | | Event Category with default | | 0 | | Either:  1) a value from m2m:eventCat, or  2) the value 0 which has the special meaning "default" |
| m2m:listOfEventCat | | List of (applicable) Event Categories | | 1 101 | | xs:list of elements of data type m2m:eventCat. The list shall contain at least one member |
| m2m:listOfEventCatWithDef | | List of m2m:eventCatWithDef | | 0 1 101 | | xs:list of elements of data type m2m:eventCatWithDef. The list shall contain at least one member |
| m2m:scheduleEntry | | Schedule Entry | | \* 0-5 2,6,10 \* \* \* \* | | The string is used to describe a duration of enablement. The string format is described in clause 7.4.9.1 |
| m2m:attributeList | | List of xs:NCName | | poa rr | | Used for the ***Content*** parameter of Retrieve request primitives and in m2m:eventNotificationCriteria. Attributes represented with their short names. The list shall contain at least one member |
| m2m:roleID | | Role-ID | | 1234abcd@role-issuer.com | | A string pattern consisting of a name (the issuerRelativeID) and an FQDN in all lowercase (the issuerID) separated by the ‘@' character, not including any whitespace characters. The issuerRelativeID shall be comprised of any combination of the Roman alphabet, numerals, '.', '\_' and '-' characters |
| m2m:sparql | | SPARQL content | | SELECT ?functionality  WHERE {  ?functionality rdf:type base:Measuring.  ?functionality base:refersTo ?aspect.  ?aspect rdf:type instance:Temperature } | | The string is used for SPARQL content, e.g. in ***semanticsFilter*** |
| m2m:missingDataList | | List of  absolute timestamp or  list of relative timestamp | | absolute time:  20141103T111832  20141103T112435  20141103T113633  or  relative time:  10000  10005  10020 | | Used for storing the time information of missing data points in Time Series  defined as xs:union of list of m2m:timestamp and list of xs:duration data types. The list shall contain at least one member |
| m2m:tokenID | | Token-ID | | 1234abcd@token-issuer.com | | A string pattern consisting of a name (the issuerRelativeID) and an FQDN in all lowercase (the issuerID) separated by the ‘@' character, not including any whitespace characters. See constraints above for the issuerRelativeID |
| m2m:dynAuthJWT | | JSON Web Token (JWT), which uses either JSON Web Encryption (JWE) Compact Serialization JSON Web Signature (JWS) Compact Serialization | | See m2m:e2eCompactJWE and m2m:e2eCompactJWS | | Defined as xs:union of m2m:e2eCompactJWE and m2m:e2eCompactJWS |
| m2m:e2eCompactJWS | | JSON Web Signature (JWS) Compact Serialization, used in End-to-End Security Features oneM2M TS‑0003 [7] | | eyJ0eXAiOiJK.  eyJpc3MiOiJqb2UiLA0KIC.  dBjftJeZ4CVP  (line breaks for display purposes only) | | Of the form [a].[b].[c], where components [a] and [c] are non-empty, while component [b] can be either empty or not empty. When not empty, each component is base64url encoded (IETF RFC 4648 [9]). See IETF RFC 7515 [i.7] |
| m2m:e2eCompactJWE | | JSON Web Encryption (JWE) Compact Serialization, used in End-to-End Security Features oneM2M TS‑0003 [7] | | eyJ0eXAiOiJK.  eyJpc3MiOiJqb2UiLA0KIC.  dBjftJeZ4CVP.  5eym8TW\_c8SuK.  SdiwkIr3a.  XFBoMYUZo  (line breaks for display purposes only) | | Of the form [a].[b].[c].[d].[e], where components [a] and [d] are non-empty, while components [b], [c] and [e] can be empty or not empty. When not empty, each component is base64url encoded (IETF RFC 4648 [9]). See IETF RFC 7516 [i.8] |
| m2m:signatureList | | List of signatures generated using a certificate or MIC generated using a symmetric key.  It is used in Authorization Relationship Mapping | | i6watmQQQ1y3GB-VsWq5fJKzQcBB4jRfH1bfJFj0JtFVtLotttzYyA==  IWijxQjUrcXBYoCei4QxjWo9Kg8D3p9tlWoT4t0\_gyTE96639In0FZFY2\_rvP-\_bMJ01EArmKZsR5VW3rwoPxw==  (line breaks for display purposes only) | | Each signature or MIC in the list is represented as a string which is base64url encoded(IETF RFC 4648 [9]). The list shall contain at least one member |
| m2m:locationTargetID | | The identifier to be used for retrieving the location information of a remote Node or device of underlying network | | urn:gsma:imei:90420156-025763-0;vers=0 or 123456789@domain.com;svn=42 or 8617791450839 | | defined as xs:union of m2m:nodeID and m2m:externalID and MSISDN |
| m2m:releaseVersion | | Service Layer Release Version | | 3  or  2a | | This parameter is set to the release version that the primitive complies with |
| m2m:supportedReleaseVersions | | List of supported Release Versions | | applicable list elements: 1, 2, 2a, 3 | | This list includes the release versions supported by AE or CSE. The list shall contain at least one member |
| m2m:TMGI | | Temporary Mobile Group Identity allocated to the MBMS bearer. | | F2003090156 | | A string assigned by the 3GPP network used to identify the MBMS Bearer Service. The format is defined in 3GPP TS 23.003 [17] |
| m2m:sessionDescription | | Session Description | | o=user 2890844526 2890844526 IN IP4 10.1.1.1  s=stream  c=IN IP4 10.1.1.1  t=0 0  m=video 5600 RTP/AVP 96  a=rtpmap:96 H264/90000 | | The description format is a multi-lined text string as defined in Session Description Protocol (IETF RFC 4566 [52]) |
| m2m:sessionCapabilities | | Session Capability | | audio:AVP video:RTS/AVP | | Pair(s) of media type and corresponding protocol as defined in Session Description Protocol (IETF RFC 4566 [52]). The delimiter between the media type and the protocol is colon |
| m2m:listOfCoordinates | | Geo-coordinates | | Point: [100.0, 0.0]  LineString: [[100.0, 0.0], [101.0, 1.0]]  Polygon: [[0.0, 0.0], [0.0, 100.0], [100.0, 100.0], [100.0, 0.0], [0.0, 0.0]] | | Longitude and latitude (optionally altitude as well), coordinates in an array.  The last coordinates of the Polygon type shall have the last item as the same as the first item in the array.  The array syntax is defined in GeoJSON [53]. |
| m2m:qosLevel | | QoS Level | | 55 | | Defines a QoS level. It is an integer in the range from 0 (lowest) to 100 (highest). |
| m2m:congestionLevel | | Congestion Level | | 0 or  1 or  31 or | | Indicates the level of congestion as specified in 3GPP TS 23.003 [17]. It is an integer between 0 and 31 inclusive. |
| m2m:congestionLevels | | List of Congestion Levels | | 0 7 22 | | The list shall contain at least one member |
| m2m:listOfOperations | | List of operations | | 1 3 4 | | xs:list of elements of data type m2m:operation. The list shall contain at least one member |
| NOTE: The media type and m2m:encodingType in m2m:contentInfo describe the content data to which the End-to-End Security of Data (ESData) processing, if any, was applied as indicated by m2m:contentSecurity. The m2m:contentInfo indicates a sequence of processes to be applied to the *content* after being obtained from the CSE. First, the ESData processing (if any) as indicated by m2m:contentSecurity is applied. The result of this processing then has transfer decoding (if any) applied as indicated by m2m:encodingType. The result of this processing is then processed according to the media type. | | | | | | |

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