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oneM2M; Interoperability Testing (oneM2M TS-0013 version 3.3.1 Release 3)



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| History. | | |

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Foreword

This Technical Specification (TS) has been produced by ETSI Partnership Project oneM2M (oneM2M).

1 Scope

The present document specifies Interoperability Test Descriptions (TDs) for the oneM2M Primitives as specified in ETSI TS 118 101 [1], oneM2M TS-0004 [2], the bindings ETSI TS 118 108 [3], ETSI TS 118 109 [4] and ETSI TS 118 110 [5].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

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The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 118 101: "oneM2M; Functional ArchitectureFunctional Architecture (oneM2M TS-0001 Release 3)".
- [2] oneM2M TS-0004: "Service Layer Core protocol Specification Release 3".
- [3] ETSI TS 118 108: "oneM2M; CoAP Protocol Binding (oneM2M TS-0008 Release 3)".
- [4] ETSI TS 118 109: "oneM2M; HTTP Protocol Binding (oneM2M TS-0009 Release 3)".
- [5] ETSI TS 118 110: "oneM2M; MQTT Protocol Binding (oneM2M TS-0010 Release 3)".
- [6] ETSI TS 118 115: "oneM2M; Testing Framework (oneM2M TS-0015)".
- [7] ETSI TS 118 111: "oneM2M; Common Terminology (oneM2M TS-0011)".
- [8] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".
- [9] IETF RFC 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".
- [10] ETSI TS 118 105: "oneM2M; Management Enablement (OMA) (oneM2M Release 3)".
- [11] ETSI TS 118 106: "oneM2M; Management Enablement (BBF) (oneM2M TS-0006 Release 3)".
- [12] ETSI TS 118 103: "oneM2M; Security solutions (oneM2M TS-0003 Release 3)".
- [13] oneM2M TS-0034: "Semantics Support Release 3".
- [14] ETSI TS 118 123: "oneM2M; Home Appliances Information Model and Mapping (oneM2M TS-0023 Release 3)".
- [15] oneM2M TS-0026: "3GPP interworking Release 4".
- [16] oneM2M TS-0040: "Modbus Interworking Release 4".

2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] oneM2M Drafting Rules.

NOTE: Available at <u>http://www.onem2m.org/images/files/oneM2M-Drafting-Rules.pdf</u>.

[i.2] BBF TR-069: "CPE WAN Management Protocol".

3 Definitions of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI TS 118 111 [7] and the following apply:

NOTE: A term defined in the present document takes precedence over the definition of the same term, if any, in ETSI TS 118 111 [7].

hosting CSE: CSE where the addressed resource is hosted

M2M service provider domain: part of the M2M System that is associated with a specific M2M Service Provider

mc: interface between the management server and the management client

NOTE: This interface can be realized by the existing device management technologies such as BBF TR-069 [i.2], OMA DM [10], etc.

receiver CSE: any CSE that receives a request

registrar CSE: CSE where an Application or another CSE has registered

registree: AE or CSE that registers with another CSE

resource: uniquely addressable entity in oneM2M architecture

transit CSE: any receiver CSE that is not a Hosting CSE

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

| Access Control Policy |
|--|
| Access Control Policy-Semantic Descriptor |
| AE which resides in the Application Dedicated Node |
| Application Entity |
| Application Entity Identifier |
| Application Identifier |
| BroadBand Forum |
| Configuration |
| Constrained Application Protocol |
| |

| CP | Communication Patterns |
|--------|---|
| CSE | Common Services Entity |
| CSE-ID | Common Service Entity Identifier |
| DAS | Dynamic Authorization System |
| DDN | Downlink Data Notification |
| DM | Device Management |
| DTLS | Datagram Transport Layer Security |
| DUT | Device Under Test |
| ECDHE | Elliptic-curve Diffie–Hellman |
| FQDN | Fully Qualified Domain Name |
| HAIM | Home Appliances Information Model |
| HSS | Home Subscriber Serve |
| HTTP | HyperText Transfer Protocol |
| IN | Infrastructure Node |
| IN-AE | Application Entity that is registered with the CSE in the Infrastructure Node |
| IN-CSE | CSE which resides in the Infrastructure Node |
| IOP | Interoperability |
| IP | Internet Protocol |
| IPE | Interworking Proxy Entity |
| JSON | JavaScript Object Notation |
| LWM2M | Lightweight M2M |
| M2M | Machine to Machine |
| MA | Mandatory Announced |
| MBMS | Multimedia Broadcast Multicast Service |
| Mca | Reference Point for M2M Communication with AE |
| Mcc | Reference Point for M2M Communication with CSE |
| MEF | M2M Enrolment Function |
| MH | Multi Hop |
| MNO | Mobile Network Operator |
| MO | Management Object |
| MOTT | Message Queuing Telemetry Transport |
| MT | Mobile Terminated |
| NB | Non-Blocking |
| NH | No Hop |
| NIDD | non-IP Data Delivery |
| NODN | Non oneM2M Device Node |
| OMA | Onen Mohile Alliance |
| PDN | Packet Data Network |
| PRO | Protocol |
| PSK | Pre-Shared Key |
| PSM | Power Savings Mode |
| RDS | Reliable Data Service |
| REC | Request for Comments |
| RP | Reference Point |
| RPC | Remote Procedure Calls |
| ROI | Request-ID |
| SCEF | Service Canability Exposure Function |
| SD | Semantic Descriptor |
| SE | Security |
| SGS | Semantic Granh Store |
| SH | Single Hon |
| SP | Service Provider |
| SPAROI | SPAROL Protocol and RDF Query Language |
| SUID | Security Usage Identifier |
| SUT | System Under Test |
| ТСР | Transmission Control Protocol |
| TD | Test Description |
| TLS | Transport Laver Security |
| TMGI | Temporary Mobile Group Identity |
| TP | Traffic Pattern |
| | Harrie Lauerin User Datagram Protocol |
| | Uniform Descurse Identifier |
| UNI | |

XML eXtensible Markup Language

4 Conventions

The key words "Shall", "Shall not", "May", "Need not", "Should", "Should not" in the present document are to be interpreted as described in the oneM2M Drafting Rules [i.1].

5 Testing conventions

5.1 The Test Description proforma

The testing methodology used in the present document is specified in the ETSI TS 118 115 [6].

A Test Description (TD) is a well detailed description of a process that aims to test one or more functionalities of an implementation. Applying to interoperability testing, these testing objectives address the interoperable functionalities between two or more vendor implementations.

In order to ensure the correct execution of an interoperability test, the following information should be provided by the test description:

- The proper configuration of the vendor implementations.
- The availability of additional equipment (protocol monitors, functional equipment, ...) required to achieve the correct behaviour of the vendor implementations.
- The correct initial conditions.
- The correct sequence of the test events and test results.

In order to facilitate the specification of test cases an interoperability test description should include, at a minimum, the following fields as indicated table 5.1-1.

| Table 5.1-1: Interoperability test desc | ription |
|---|---------|
|---|---------|

| Identifier | A unique test description ID. | |
|---------------------|---|--|
| Objective | A concise summary of the test which should reflect the purpose of the test and enable | |
| | readers to easily distinguish this test from any other test in the document. | |
| References | A list of references to the base specification section(s), use case(s), requirement(s) and | |
| | Test Purposes which are either used in the test or define the functionality being tested. | |
| Applicability | A list of features and capabilities which are required to be supported by the SUT in order to | |
| | execute this test (e.g. if this list contains an optional feature to be supported, then the test is | |
| | optional). | |
| Configuration or | A list of all required equipment for testing and possibly also including a reference to an | |
| Architecture | illustration of a test architecture or test configuration. | |
| Pre-Test Conditions | A list of test specific pre-conditions that need to be met by the SUT including information | |
| | about equipment configuration, i.e. precise description of the initial state of the SUT | |
| | required to start executing the test sequence. | |
| Test Sequence | An ordered list of equipment operation and observations. The test sequence may also | |
| | contain the conformance checks as part of the observations. | |

The test descriptions are provided in proforma tables. In order to ensure the correct execution of an interoperability test, the following information is provided in the test description:

- The configuration applied for the test.
- The need of additional equipment (protocol monitors, functional equipment, etc.) required to achieve the correct behaviour of the implementations.
- The initial conditions.
- The sequence of the test events and test results.

The following different types of test operator actions are considered during the test execution:

- A stimulus corresponds to an event that enforces a DUT to proceed with a specific protocol action, such as sending a message.
- A configure corresponds to an action to modify the DUT configuration.
- An **IOP check** consists of observing that one DUT behaves as described in the standard: i.e. resource creation, update, deletion, etc. For each IOP check in the Test Sequence, a result can be recorded. The overall **IOP Verdict** will be considered OK if all the IOP checks in the sequence are OK.
- In the context of Interoperability Testing with Conformance Checks, an additional step type, **PRO checks** can be used to verify the appropriate sequence and contents of protocol messages, this is helpful for debugging purposes. **PRO Verdict** will be PASS if all the PRO checks are PASS.

5.2 Test Description naming convention

| TD/ <root>/<gr>/<nn></nn></gr></root> | | |
|---------------------------------------|-----|--|
| <root> = root</root> | M2M | oneM2M |
| | | |
| <gr> = group</gr> | NH | No Hop: Testing on Mca reference point |
| | NB | Non-Blocking scenario |
| | сц | Single Hop: management of remote resources |
| | 511 | on Mca + Mcc |
| | MH | Multi Hop |
| | SE | Security |
| | | |
| | | |
| <nn> = sequential number</nn> | | 01 to 99 |

5.3 Test Settings

This clause contains some test requirements applied to the testing, some constraints, restrictions for executions or some recommendations.

In order to ease test setup and execution, the CSE and AE are requested to support the following settings:

- Security shall be disable as it is out of scope of this interoperability testing.
- Resource names are pre-provisioned, except for content instance resources that are automatically assigned by the hosting CSE.
- After each "Delete" primitive on a resource, the user shall check the resource is effectively deleted.
- Unless it is indicated in the test cases prerequisites, by default, all the applications shall have the required access rights to manage resources on the CSE.

In order to address the TBDs in the oneM2M CoAP binding specification (ETSI TS 118 108 [3]), basic XML and JSON media-type numbers shall be used in the contentFormat option.

In the test descriptions specified below, the following definitions of terms used for short-hand notation apply:

extended by a port identifier.

| Serialized Representation: | refers to either an XML or a JSON representation of data in text-string format as defined in clauses 8.3 and 8.4 of oneM2M TS-0004 [2]. |
|----------------------------|---|
| Host Address: | refers to the authority part of a target URI as defined in IETF RFC 3986 [8] and IETF RFC 7230 [9] which can be represented as an IP literal encapsulated within square |
| | brackets, an IPv4 address in dotted decimal form, or a registered name, and optionally |

5.4 Pre-conditions

5.4.1 Registration

The AE or CSE that originates the request has been successfully registered to its corresponding CSE. The registration of the AE includes the creation of <AE> resource under the <CSEBase> of its registrar CSE. The registration of the CSE includes the creation of <remoteCSE> resource representing itself under the <CSEBase> of its registrar CSE as well as the creation of <remoteCSE> resource representing the registrar CSE under its own <CSEBase> resource. The creation of <remoteCSE> resource representing the registrar CSE can be achieved by remotely retrieving the <CSEBase> resource of the registrar CSE.

5.4.2 Security

The Originator and the receiver have successfully established security association between each other. This may involve the exchange of key and the establishment of a security connection.

The security pre-condition also assumes that the originator has the appropriate access control privilege towards the requested resource.

5.4.3 Service Subscription

Service subscription means that the originator is allowed to be connected with the oneM2M system by contract between the owner of the application and the service provider of the oneM2M system. This may require a corresponding information record in the <m2mServiceSubscriptionProfile> resource.

5.4.4 ID allocation

ID allocation means that the Originator has already acquired usable identity, either from its registrar CSE or the IN-CSE of the oneM2M system. The ID may be CSE relative or SP relative. The ID is then further used as the identity of the Originator to perform access control, charging, etc.

5.4.5 Existence of resource

Existence of resource means the resource been addressed and has already been created.

5.4.6 Management Session between Management Server and Management Client

Before the device management using external technologies is executed, it is required that a management session has already been established between the Management Server and Management Client. If there is no existing management session, the IN-CSE shall request the establishment of a management session between the Management Server and Management Client.

5.5 Binding message convention

In HTTP/CoAP/MQTT binding messages, the present document defines the convention for <variable>:

- <resourceType> represents a resource name (i.e. resourceName attribute) of a resource instance in that resourceType. For example, <CSEBase>/<AE> can represent "CSE1base/AE1" in structured resource ID format.
- can</pr
- <ID> represents an AE-ID or CSE-ID in MQTT Topic names.

The value will be given at an interoperability test event.

In ETSI TS 118 110 [5], all oneM2M request/response parameters are carried in the MQTT message payload since it has no message header concept. Therefore, the MQTT message payload needs to be described more than HTTP and CoAP messages to describe those parameters in clause 8. In HTTP and CoAP binding messages, payloads are described as "empty" or "<container> resource to be created" in a very abstract way.

Since the representation can be XML or JSON, payload should be abstract to support XML and JSON. The following example is an XML representation and its abstraction for creating a <container> resource.

| XML payload | xml version="1.0" encoding="UTF-8"? | | | | | | | |
|-----------------|--|--|--|--|--|--|--|--|
| example for | <m2m:req <="" th="" xmlns:m2m="http://www.onem2m.org/xml/protocols"></m2m:req> | | | | | | | |
| | xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" | | | | | | | |
| INGT F DITUTING | xsi:schemaLocation="http://www.onem2m.org/xml/protocols CDT-requestPrimitive- | | | | | | | |
| | v1_0_0.xsd"> | | | | | | | |
| | <op>1</op> | | | | | | | |
| | <to>CSE1Base</to> | | | | | | | |
| | <fr>/CSE1/C_AE1</fr> | | | | | | | |
| | <rqi>2001</rqi> | | | | | | | |
| | <ty>3</ty> | | | | | | | |
| | <nm>cont1</nm> | | | | | | | |
| | <rti><rt>3</rt></rti> | | | | | | | |
| | <pc></pc> | | | | | | | |
| | <cnt></cnt> | | | | | | | |
| | <lbl>SmartMeter</lbl> | | | | | | | |
| | <pre><et>20141003T112033</et></pre> | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Abstracted | op = 1 | | | | | | | |
| payload | to = CSElBase | | | | | | | |
| example for | fr = /CSEI/C_AE01 | | | | | | | |
| MOTT binding | rqi = 3001 | | | | | | | |
| in a r binaing | ty = 3 | | | | | | | |
| | name = contl | | | | | | | |
| | rti.rt = 3 | | | | | | | |
| | pc.cnt.lbl = SmartMeter | | | | | | | |
| | pc.cnt.et = 20141003T112033 | | | | | | | |
| Abstracted | | | | | | | | |
| payload | to = <csebase></csebase> | | | | | | | |
| example for | IT = <from></from> | | | | | | | |
| MQTT binding | rdi = <kequest id=""></kequest> | | | | | | | |
| adopting the | | | | | | | | |
| pavload | | | | | | | | |
| convention | | | | | | | | |
| CONVENIUON | | | | | | | | |
| 1 | | | | | | | | |

6 Test Description Summary

6.1 Tests list

| Nb | Category | Procedure/Resource | TD ID | TD Description |
|----|------------|--------------------|--------------|--|
| | Resource | CSEBase | TD_M2M_NH_01 | AE retrieves the CSEBase resource |
| 1 | management | Management | | |
| 2 | | RemoteCSE | TD_M2M_NH_02 | Registree CSE registers to Registrar CSE |
| 3 | Single Hop | | TD_M2M_NH_03 | Registree CSE retrieves RemoteCSE from Registrar CSE |
| 4 | | | TD_M2M_NH_04 | Registree CSE updates RemoteCSE from Registrar CSE |
| 5 | | | TD_M2M_NH_05 | Registree CSE deletes RemoteCSE from Registrar CSE |
| 6 | | Application Entity | TD_M2M_NH_06 | AE registers to its registrar CSE via an AE Create Request |
| 7 | | | TD_M2M_NH_07 | AE retrieves <ae> resource via an AE Retrieve Request</ae> |
| 8 | | | TD_M2M_NH_08 | AE updates attribute in <ae> resource via an AE Update Request</ae> |
| 9 | | | TD_M2M_NH_09 | AE de-registers by deleting <ae> resource via an AE Delete Request</ae> |
| 10 | | Container | TD_M2M_NH_10 | AE creates a container resource in registrar CSE via a container |
| 11 | | | TD_M2M_NH_11 | AE retrieves information of a container resource via a container Retrieve Request |

| Nh | Category | Procedure/Resource | | TD Description |
|----|----------|---------------------|------------------|--|
| 12 | Outegory | | TD_M2M_NH_12 | AE updates attribute in application resource via a container Update Request |
| 13 | | | TD_M2M_NH_13 | AE deletes a specific container resource via a container Delete Request |
| | | ContentInstance | TD_M2M_NH_14 | AE adds a contentInstance resource <contentinstance> to a specific container in Registrar CSE via a contentInstance Create Request and the registrar CSE updates the parent <container> resource with stateTag, and currentNrOfInstances.</container></contentinstance> |
| 14 | | | TD M2M NH 15 | CurrentByteSize attributes correspondingly |
| 15 | | | | contentInstance Retrieve Request |
| 16 | | | TD_M2M_NH_17 | AE deletes contentInstance resource via a Delete Request and the registrar CSE updates the parent <container> resource with currentNrOfInstances, and CurrentByteSize attribute correspondingly</container> |
| 17 | | | TD_M2M_NH_49 | AE deletes a <latest> resource in a <container> and the Registrar CSE points a latest <contentinstance> among the existing contentInstances to the <latest> resource of the <container></container></latest></contentinstance></container></latest> |
| 18 | | | TD_M2M_NH_50 | AE deletes a <oldest> resource in a <container> resource and the Registrar CSE points an oldest <contentinstance> among the existing contentInstances to the <oldest> resource of the <container></container></oldest></contentinstance></container></oldest> |
| 19 | | | TD_M2M_NH_51 | AE sends a <contentinstance> CREATE request to a <container> which contains attribute <i>currentNrOfInstances</i> whose value equals to that of <i>maxNrOfInstances</i> and Registrar CSE deletes the oldest <contentinstance> from the parent <container> and then creates the requested <contentinstance> resource</contentinstance></container></contentinstance></container></contentinstance> |
| 20 | | | TD_M2M_NH_102 | AE retrieves a <latest> resource of a <container> for which attribute <i>locationID</i> is configured, value of <i>locationUpdatePeriod</i> is marked '0' or not defined and <i>locationSource</i> attribute is 'Network Based'</container></latest> |
| 21 | | | TD_M2M_NH_71 | AE retrieves a <latest> resource of a <container> and the Registrar CSE points a latest <contentinstance> among the existing</contentinstance></container></latest> |
| 21 | | | TD_M2M_NH_72 | AE retrieves a <oldest> resource of a <container> and the Registrar CSE points a oldest <contentinstance> among the existing contentInstances to the <oldest> resource of the</oldest></contentinstance></container></oldest> |
| 22 | | | | <pre><container></container></pre> |
| 23 | | Discovery | TD_M2M_NH_18 | AE discovers resources residing in Registrar CSE |
| 24 | | | TD_M2M_NH_19 | AE discovers accessible resources residing in Registrar CSE using the label filter criteria |
| 25 | | | TD_M2M_NH_20 | AE discovers accessible resources residing in Registrar CSE limiting the number of matching resources to the specified value |
| 26 | | | TD_M2M_NH_21 | AE discovers accessible resources residing in Registrar CSE using multiple Filter Criteria |
| 27 | | | TD_M2M_NH_58 | AE discovers accessible resources residing in Registrar CSE using the level filter criteria value set to 1 |
| 28 | | | TD_M2M_NH_59 | AE discovers accessible resources residing in Registrar CSE using the level filter criteria value set to 2 |
| 29 | | | TD_M2M_NH_60 | AE1 discovers accessible resources residing in Registrar CSE using the level filter criteria value set to 3 |
| 30 | | | TD_M2M_NH_61 | AE discovers accessible resources residing in Registrar CSE using the offset filter criteria value set to 3 |
| 31 | | | TD_M2M_NH_62 | AE discovers all the accessible resources residing in Registrar CSE using the offset filter criteria |
| 32 | | Subscription | TD_M2M_NH_22 | AE creates a subscription to Application Entity resource via subscription Create Request |
| 33 | | | TD_M2M_NH_23 | AE retrieves information about a subscription via subscription Retrieve Request such as expiration Time labels, etc. |
| 34 | | | TD_M2M_NH_24 | AE updates information about a subscription via subscription |
| 35 | | | TD_M2M NH 25 | AE cancels subscription via an subscription Delete Request |
| 36 | | AccessControlPolicy | TD_M2M_NH_26 | AE creates an accessControlPolicy resource |
| 37 | | | TD_M2M_NH_27 | AE retrieves accessControlPolicy resource |
| 38 | | | TD_M2M_NH_28 | AE updates attribute in accessControlPolicy resource |

| Nb | Category | Procedure/Resource | TD ID | TD Description |
|------------|----------|--------------------|--------------|--|
| 39 | | | TD_M2M_NH_29 | AE deletes accessControlPolicy resource |
| 40 | | | TD_M2M_NH_30 | AE delete request is rejected due to accessControlPolicy |
| <u>4</u> 1 | | | TD_M2M_NH_73 | AE delete request is rejected due to accessControlPolicy |
| 42 | | | TD M2M NH 74 | AE delete request is allowed due to accessControlPolicy |
| 42 | | Group | TD M2M NH 31 | AE creates a group resource |
| 43 | | | TD M2M NH 32 | AE retrieves group resource |
| 44 | | | TD M2M NH 33 | AE updates attribute in group resource |
| 45 | | | TD M2M NH 34 | AE deletes aroup resource |
| 40 | | Node | TD M2M NH 35 | AE creates a node resource |
| 47 | | | TD M2M NH 36 | AE retrieves node resource |
| 40 | | | TD M2M NH 37 | AE updates attribute in node resource |
| 50 | | | TD M2M NH 38 | AE deletes node resource |
| 50 | | PollingChannel | TD M2M NH 39 | AE creates a <pollingchannel> resource in registrar CSE via a</pollingchannel> |
| 51 | | | | Create Request |
| 52 | | | TD_M2M_NH_40 | AE retrieves information of a pollingChannel resource via a Retrieve Request |
| 53 | | | TD_M2M_NH_41 | AE updates attribute in pollingChannel resource via a Update Request |
| 54 | | | TD_M2M_NH_42 | AE deletes a pollingChannel resource via a Delete Request |
| 55 | | | TD_M2M_NH_43 | AE retrieves information of a pollingChannel resource via a Retrieve Request |
| 56 | | FanoutPoint | TD_M2M_NH_44 | AE creates a <contentinstance> resource in each group member</contentinstance> |
| 57 | | | TD_M2M_NH_45 | AE retrieves the <container> resource from in each group member</container> |
| 58 | | | TD_M2M_NH_46 | AE updates an <container> resource of each member resource</container> |
| 59 | | | TD_M2M_NH_47 | AE deletes a <container> of each member</container> |
| 60 | | Notification | TD_M2M_NH_48 | AE receives a notification request from the HOST CSE |
| | | | TD_M2M_NH_80 | AE2 sends maxNrOfInstances UPDATE request to <container></container> |
| | | | | which has been set to subscribed-to resource. Since |
| 61 | | | | eventNotificationCriteria, Hosting CSE send notification to AE1 |
| | | | TD_M2M_NH_81 | AE2 sends DELETE request to <container> which has been set to subscribed-to resource. Since <subscription> resource has</subscription></container> |
| 62 | | | | notificationEventType with 'Delete of Resource', Hosting CSE send |
| 02 | | | TD_M2M_NH_82 | AE2 sends <contentinstance> CREATE request to <container></container></contentinstance> |
| | | | | which has been set to subscribed-to resource. Since |
| 63 | | | | Subscription> resource has notificationEvent lype with "Create of Direct Child 'Resource' Hosting CSE send notification to AE1 |
| | | | TD_M2M_NH_83 | AE2 sends DELETE request to the <contentinstance> which</contentinstance> |
| | | | | located under the subscribed-to resource. Since <subscription></subscription> |
| 64 | | | | resource has notificationEventType with 'Delete of Direct Child Resource' Hosting CSE send notification to AE1 |
| | | | TD_M2M_NH_89 | AE creates <subscription> resources by sending Create Request to</subscription> |
| | | | | Since AE has set notifyAggregation to 2. Hosting CSF aggregate |
| 65 | | | | notification and send aggregated notification to AE |
| 66 | | FlexContainer | TD_M2M_NH_52 | AE creates a flexcontainer resource in Registrar CSE via a |
| 00 | | | TD M2M NH 53 | AF retrieves information of a flexContainer resource via a |
| 67 | | | | flexContainer Retrieve Request |
| 68 | | | TD_M2M_NH_54 | AE updates attribute in application resource via a flexContainer Update Request |
| 69 | | | TD_M2M_NH_55 | AE deletes a specific container resource via a container Delete |
| | | | TD_M2M_NH_56 | AE receives a notification request on flexContainer update from the |
| 70 | | | | HOST CSE |
| | | | 1D_M2M_NH_57 | AE discovers accessible resources residing in Registrar CSE using |
| 71 | | | | assigned to it |

| Nb | Category | Procedure/Resource | TD ID | TD Description |
|-----|----------|----------------------------------|----------------|---|
| 72 | | External Management | TD_M2M_NH_63 | AE creates a mgmtCmd resource |
| 73 | | Operations | TD_M2M_NH_64 | AE retrieves mgmtCmd resource |
| 74 | | | TD_M2M_NH_65 | AE updates attribute (not with 'true' in execEnable attribute) in mgmtCmd resource |
| 75 | | | TD_M2M_NH_66 | AE updates attribute (with 'true' in execEnable attribute) in mgmtCmd resource |
| 76 | | | TD_M2M_NH_67 | AE deletes mgmtCmd resource |
| 77 | | | TD_M2M_NH_68 | AE retrieves execInstance resource |
| 78 | | | TD_M2M_NH_69 | AE updates attribute 'execDisable' to true in execInstance resource to cancel pending management command |
| 79 | | | TD_M2M_NH_70 | AE deletes execInstance resource |
| 80 | | SemanticDescriptor Management | TD_M2M_NH_75 | AE creates a SemanticDescriptor resource in Registrar CSE via a SemanticDescriptor Create Request |
| 81 | | | TD_M2M_NH_76 | AE retrieves information of a semanticDescriptor resource via a semanticDescriptor Retrieve Request |
| 82 | | | TD_M2M_NH_77 | AE updates attribute in <semanticdescriptor> resource via a semanticDescriptor Update Request</semanticdescriptor> |
| 83 | | | TD_M2M_NH_78 | AE deletes SemanticDescriptor resource via a SemanticDescriptor Delete Request |
| 84 | | Semantic Resource Discovery | TD_M2M_NH_79 | AE discovers accessible resources residing in Registrar CSE using the semanticFilter filter criteria |
| 85 | | ResultContent | TD_M2M_NH_84 | Check creation of <container> resource with result content set to 0(nothing)</container> |
| 86 | | | TD_M2M_NH_85 | Check creation of <container> resource with result content set to 1(attributes)</container> |
| 87 | | | TD_M2M_NH_86 | Check creation of <container> resource with result content set to 2(hierarchical address)</container> |
| 88 | | | TD_M2M_NH_87 | Check creation of <container> resource with result content set to 3(hierarchical address and attributes)</container> |
| 89 | | | TD_M2M_NH_88 | Check retrievability of <container> resource with result content set to 4(attributes and child resources)</container> |
| 90 | | timeSeries | TD_M2M_NH_90 | AE creates a <timeseries> resource in registrar CSE via a Create Request</timeseries> |
| 91 | | | TD_M2M_NH_91 | AE retrieves information of a <timeseries> resource via a Retrieve Request</timeseries> |
| 92 | | | TD_M2M_NH_92 | AE updates attribute in <timeseries> resource via a Update Request</timeseries> |
| 93 | | | TD_M2M_NH_93 | AE deletes a <timeseries> resource via a Delete Request</timeseries> |
| 94 | | timeSeriesInstance | TD_M2M_NH_94 | AE sends Create Request of a <timeseriesinstance> resource to a <timeseries> resource in Registrar CSE. Registrar CSE creates the <timeseriesinstance> resource and updates the parent <timeseries> resource with <i>currentNrOfInstances</i> and <i>currentPuteSize</i> attributes correspondingly.</timeseries></timeseriesinstance></timeseries></timeseriesinstance> |
| 05 | | | TD_M2M_NH_95 | AE retrieves information of a <timeseriesinstance> resource via a</timeseriesinstance> |
| | | | TD_M2M_NH_96 | AE sends Delete Request of a <timeseriesinstance> resource in Registrar CSE. Registrar CSE delete the <timeseriesinstance> resource and updates the parent <timeseries> resource with currentNrOfInstances and currentByteSize attributes</timeseries></timeseriesinstance></timeseriesinstance> |
| 96 | | | | correspondingly |
| 07 | | | TD_M2M_NH_97 | AE sends a <timeseriesinstance> resource Create Request to a <timeseries> resource which contains <i>currentNrOfInstances</i> value equals to that of <i>maxNrOfInstances</i> and Registrar CSE delets the oldest <timeseriesinstance> resource from the <timeseries> resource and then creates the requested <timeseriesinstance></timeseriesinstance></timeseries></timeseriesinstance></timeseries></timeseriesinstance> |
| 97 | | LocationPolicv | TD_M2M_NH_98 | AE creates a <locationpolicy> resource in registrar CSE via a</locationpolicy> |
| 98 | | ·····, | TD M2M NH 99 | IocationPolicy Create Request AE retrieves information of a <locationpolicy> resource via a</locationpolicy> |
| 99 | | | | locationPolicy Retrieve Request |
| 100 | | | U_M2M_NH_100 | AE updates attribute in <locationpolicy> resource via a locationPolicy Update Request</locationpolicy> |
| 101 | | | עון_MZM_NH_101 | Delete Request |

| Nb | Category | Procedure/Resource | TD ID | TD Description |
|------|--------------|---------------------------|---------------|---|
| | Catogory | Schedule | TD M2M NH 155 | AE creates a <schedule> resource in Registrar CSE via a</schedule> |
| 102 | | | | Schedule Create Request |
| 103 | | | TD_M2M_NH_156 | AE retrieves information of a <schedule> resource via a schedule Retrieve Request</schedule> |
| 104 | | | TD_M2M_NH_157 | AE updates attribute in <schedule> resource via a schedule Update Request</schedule> |
| 105 | | | TD_M2M_NH_158 | AE deletes Schedule resource via a Schedule Delete Request |
| 106 | | | TD_M2M_NH_159 | CSE sends a notification request to the AE when Schedule |
| 107 | Non-Blocking | Synchronous request | TD_M2M_NB_01 | AE creates a container resource using non-blocking synchronous request in registrar CSE |
| 108 | | | TD_M2M_NB_02 | AE retrieves a Container resource using non-blocking synchronous request in registrar CSE |
| 109 | | | TD_M2M_NB_03 | AE updates a Container resource using non-blocking synchronous |
| 110 | | | TD_M2M_NB_04 | AE deletes a Container resource using non-blocking synchronous request |
| 111 | | Asynchronous request | TD_M2M_NB_05 | AE creates a container resource using non-blocking asynchronous |
| 112 | | | TD_M2M_NB_06 | AE retrieves a Container resource using non-blocking |
| 112 | | | TD M2M NB 07 | AF updates a Container resource using non-blocking |
| 113 | | | | asynchronous request |
| 114 | | | | request |
| 115 | Single Hop | Retargeting | TD_M2M_SH_01 | AE creates a remote <resource> resource</resource> |
| 116 | | | TD_M2M_SH_02 | AE retrieves a remote <resource> resource</resource> |
| 117 | | | TD_M2M_SH_03 | AE updates a remote <resource> resource</resource> |
| 118 | | | TD M2M SH 04 | AE delete a remote <resource> resource</resource> |
| 110 | | Discovery | TD M2M SH 09 | AF discovers accessible resources residing in the remote Hosting |
| 119 | | | | CSE using multiple Filter Criteria |
| 120 | | Unauthorized operation | TD_M2M_SH_10 | AE delete request is rejected after access rights verification using retargeting |
| 121 | | Notification | TD_M2M_SH_11 | AE receives a notification request from the remote hosting CSE |
| 122 | | mgmtObj | TD_M2M_SH_05 | AE creates a <mgmtobj> resource</mgmtobj> |
| 123 | | | TD_M2M_SH_06 | AE updates a <mgmtobj> resource</mgmtobj> |
| 124 | | | TD M2M SH 07 | AE retrieves a <montobi> resource</montobi> |
| 124 | | | TD M2M SH 08 | AF deletes a <mgmtobi> resource</mgmtobi> |
| 125 | | Announcement | TD_M2M_SH_12 | AF1 appoinces itself to CSF2 |
| 120 | | , and an och one | TD_M2M_OH_12 | AE1 announces a child container to CSE2 |
| 127 | | | | |
| 128 | | | | |
| 129 | | | TD_M2M_SH_15 | AE2 retrieves an Announced Resource |
| 130 | | | TD_M2M_SH_16 | AE2 retrieves the original resource representation of an announced resource |
| 131 | | | TD_M2M_SH_21 | ContainerAnnc Delete by updating announceTo attribute. AE1 deletes its announced child container from CSE2 |
| 132 | | | TD_M2M_SH_22 | ContainerAnnc Delete by deleting original resource. AE1 deletes its |
| 152 | | | TD M2M SH 23 | Announced attribute Create by addition to announced Attribute |
| 133 | | | | attribute AE1 announces an announcable attribute of its child container to CSE2 |
| 12/ | | | TD_M2M_SH_24 | Announced attribute Create by creation of a MA attribute at the original resource. AE1 announces an MA attribute of its child container to CSE2 |
| 1.54 | | | TD_M2M_SH_25 | Announced attribute Delete by deletion from announcedAttribute attribute. AE1 de-announces an announcable attribute of its child |
| 135 | | | | container to CSE2 |
| | | | TD_M2M_SH_26 | Announced attribute Delete by deletion of a MA attribute at the original resource. AE1 de-announces an MA attribute (conditionally |
| 136 | 1 | | | mandatory) of its child container to CSE2 |
| 137 | | ranOut | ID_M2M_SH_17 | AL creates a <contentinstance> resource in each group member, where some memberIDs are on a remoteCSE</contentinstance> |
| | | | | |

| Category | Procedure/Resource | TD ID | TD Description |
|----------|-----------------------------------|--|---|
| | | TD_M2M_SH_18 | AE retrieves a <contentinstance> resource from each group member, where some memberIDs are on a remoteCSE</contentinstance> |
| | | TD_M2M_SH_19 | AE updates a <container> resource in each group member, where some memberIDs are on a remoteCSE</container> |
| | | TD_M2M_SH_20 | AE deletes a <contentinstance> resource from each group member, where some memberIDs are on a remoteCSE</contentinstance> |
| Security | Secure AE Registration | TD_M2M_SE_01 | AE uses Provisioned Symmetric Key Security Association Establishment Framework to enable mutual authentication with the Registrar CSE. Registrar CSE performs AE authorization check on incoming AE registration request |
| | Authentication | TD M2M SE 02 | AF establishes mutual authentication with the Registrar CSF using |
| | / allonioallon | | Provisioned Symmetric Key Security Association Establishment Framework |
| | | TD_M2M_SE_03 | AE establishes mutual authentication with the Registrar CSE using Certificate-Based Security Association Establishment Framework |
| | Authorization | TD_M2M_SE_04 | AE accesses <accesscontrolpolicy> resource using its selfPrivileges credentials</accesscontrolpolicy> |
| | | TD_M2M_SE_05 | AE accesses <ae> resource using its accessControlPolicyIDs attribute</ae> |
| | | TD M2M SE 06 | AE accesses <ae> resource using default access privileges</ae> |
| | | TD M2M SE 07 | AE accesses <ae> resource using default access privileges</ae> |
| | | TD M2M SF 08 | AE accesses <ae> resource using Direct Dynamic Authorization</ae> |
| | | TD_M2M_SE_00 | AE accesses <ae> resource using Indirect Dynamic Authorization</ae> |
| | Kana ana dalaminan | TD_M2M_SE_09 | AL accesses (AL) resource using indirect Dynamic Authorization |
| | management | TD_M2M_SE_10 | TLS session for protecting the communication between an MEF |
| | | TD_M2M_SE_11 | A MEF Handshake procedure establishes a mutually authenticated TLS or DTLS session for protecting the communication between an |
| | | TD_M2M_SE_12 | The MEF Client registers with the MEF to confirm that it is willing to |
| | | | administrating stakeholder |
| | | TD_M2M_SE_13 | The MEF Client retrieves MEF Client Configurations provided by the administrating stakeholder to the MEF |
| | | TD_M2M_SE_14 | MEF Client updates the MEF Client registration by any combination of extending the <i>expirationTime</i> of the MEF Client Registration record or updating the <i>labels</i> |
| | | TD_M2M_SE_15 | The MEF Client registers with the MEF to confirm that it is willing to use the services of the MEF, under the authorization of the |
| | | | administrating stakeholder |
| | | | which can be retrieved for use by one or more Target MEF Clients |
| | | TD_M2M_SE_17 | The Target MEF Client to retrieve the Key Value from a MEF corresponding to a RelativeKeyID received by the Target MEF |
| | | TD_M2M_SE_18 | Client MEF Client updates the MEF Client registration by any combination |
| | | | of extending the <i>expirationTime</i> of the MEF Client Registration record or updating the <i>labels</i> |
| | | TD_M2M_SE_19 | Source MEF Client requests the MEF to stop distributing the registered key |
| | End-to-End security management | TD_M2M_SE_20 | AE sends an arbitrary request primitive inside of ESPrim Object to CSE |
| | | TD_M2M_SE_21 | AE establishes a connection with the Registrar CSE using pairwiseE2EKey |
| HAIM | HAIM Device Model | TD_M2M_NH_102 | AE1 creates a HAIM Light Device Model |
| | | TD_M2M_NH_103 | AE2 reads the status of a HAIM Light Device Model |
| | | TD_M2M_NH_104 | AE2 turns the binarySwitch of a HAIM Light Device Model "ON" or "OFF" |
| | | TD_M2M_NH_105 | AE2 toggles the state of a HAIM Light Device Model |
| | | TD_M2M_NH_160 | AE1 creates a Power Outlet SubDevice Model |
| | | TD_M2M_NH_161 | AE1 creates a Toggle Action Model |
| | | TD_M2M_NH_162 | AE1 creates Device Properties Model |
| | Security | Security Secure AE Registration Authentication Authorization Key provisioning management End-to-End security management HAIM HAIM Device Model | Data Structure TD_M2M_SH_18 TD_M2M_SH_19 TD_M2M_SH_20 Security Secure AE Registration TD_M2M_SE_01 Authentication TD_M2M_SE_02 TD_M2M_SE_03 TD_M2M_SE_04 Authorization TD_M2M_SE_06 TD_M2M_SE_06 TD_M2M_SE_06 TD_M2M_SE_06 TD_M2M_SE_06 TD_M2M_SE_07 TD_M2M_SE_08 TD_M2M_SE_08 TD_M2M_SE_08 TD_M2M_SE_08 TD_M2M_SE_10 management TD_M2M_SE_11 TD_M2M_SE_12 TD_M2M_SE_13 TD_M2M_SE_14 TD_M2M_SE_14 TD_M2M_SE_15 TD_M2M_SE_16 TD_M2M_SE_16 TD_M2M_SE_17 TD_M2M_SE_18 TD_M2M_SE_12 Management TD_M2M_SE_12 HAIM HAIM Device Model TD_M2M_SE_20 TD_M2M_SE_21 TD_M2M_SE_21 HAIM HAIM Device Model TD_M2M_NH_102 TD_M2M_NL_100 TD_M2M_NL_104 TD_M2M_NL_101 TD_M2M_NL_104 TD_M2M_NL_106 TD_M2M_NL_104 |

| Nb | Category | Procedure/Resource | TD ID | TD Description |
|-----|-----------|------------------------|---------------------|--|
| | Semantics | Semantic Access | TD M2M NH 106 | ACP triples are created when a new <accesscontrolpolicy></accesscontrolpolicy> |
| 170 | Comanico | Control Policy | | resource is created |
| | | | TD M2M NH 107 | ACP triples are updated when an existing <accesscontrolpolicy></accesscontrolpolicy> |
| 171 | | | | resource is updated |
| | | | TD M2M NH 108 | ACP triples are deleted when an existing <accesscontrolpolicy></accesscontrolpolicy> |
| 172 | | | | resource is deleted |
| | | | TD_M2M_NH_109 | ACP-SD Binding Triples and SD relationship in SGS are created |
| | | | | when AE creates a <semanticdescriptor> resource in Registrar</semanticdescriptor> |
| 173 | | | | CSE |
| | | | TD_M2M_NH_110 | ACP-SD Binding Triples are updated when the |
| | | | | accessControlPolicyIDs attribute of a <semanticdescriptor></semanticdescriptor> |
| 174 | | | | resource is updated |
| 475 | | | TD_M2M_NH_111 | SD Relationship Triples are updated when the descriptor attribute |
| 175 | | | | of a <semanticdescriptor> resource is changed</semanticdescriptor> |
| 170 | | | TD_M2M_NH_112 | SD Relationship Triples are deleted when the descriptor attribute of |
| 176 | | | | a <semanticdescriptor> resource is deleted</semanticdescriptor> |
| 177 | | Semantic Filtering and | ID_M2M_NH_113 | AE discovers accessible resources residing in Registrar CSE using |
| 1// | | discovery | | the <semanticfanoutpoint></semanticfanoutpoint> |
| 178 | | | 1D_M2M_NH_114 | AE discovers accessible resources residing in Registrar USE using |
| 170 | | | | AE performe a Sementia Query request in Registrar CSE using the |
| 179 | | | | AE perioritis a Semantic Query request in Registral CSE using the |
| 175 | | Semantic Mashun | TD M2M NH 116 | ΔE creates a SemanticMashun JohProfile resource in Registrar |
| 180 | | Semantic Mashup | | CSE via a SemanticMashup JobProfile Create Request |
| | | | TD M2M NH 117 | AF retrieves information of a semantic Mashun JobProfile resource |
| 181 | | | | via a semanticMashup.lobProfile Retrieve Request |
| | | | TD M2M NH 118 | AE updates attribute in <semanticmashup.lobprofile> resource via</semanticmashup.lobprofile> |
| 182 | | | | a semanticMashup.JobProfile Update Request |
| | | | TD M2M NH 119 | AE deletes semanticMashupJobProfile resource via a |
| 183 | | | | semanticMashupJobProfile Delete Request |
| | | | TD M2M NH 120 | AE creates a semanticMashupInstance resource in Registrar CSE |
| 184 | | | | via a semanticMashupInstance Create Request |
| | | | TD_M2M_NH_121 | AE retrieves information of a semanticMashupInstance resource |
| 185 | | | | via a semanticMashupInstance Retrieve Request |
| | | | TD_M2M_NH_122 | AE updates attribute in <semanticmashupinstance> resource via a</semanticmashupinstance> |
| 186 | | | | semanticMashupInstance Update Request |
| 107 | | | TD_M2M_NH_123 | AE deletes semanticMashupInstance resource via a |
| 187 | | | | semanticMashupInstance Delete Request |
| 100 | | | TD_M2M_NH_124 | AE retrieves information of a semanticMashupResult resource via a |
| 188 | | | TD MOM NUL 405 | semanticMashupResult Retrieve Request |
| 190 | | | TD_M2M_NH_125 | AE deletes semanticianshup Result resource via a |
| 105 | | | | Semanticial shup Result Delete Request |
| | | | | AE inggers a calculation and generation of the mashup result by |
| 190 | | | | Request |
| | | Ontology Repository | TD M2M NH 127 | AF creates a OntologyRepository resource in Registrar CSE via a |
| 191 | | | | OntologyRepository Create Request |
| | 1 | | TD_M2M_NH 128 | AE retrieves information of a ontologyRepository resource via a |
| 192 | | | | ontologyRepository Retrieve Request |
| | 1 | | TD_M2M_NH_129 | AE updates attribute in <ontologyrepository> resource via a</ontologyrepository> |
| 193 | | | | ontologyRepository Update Request |
| | | | TD_M2M_NH_130 | AE deletes OntologyRepository resource via a OntologyRepository |
| 194 | | | | Delete Request |
| | | Semantic validation | TD_M2M_NH_131 | AE checks the validity of the <semanticdescriptor> resource via a</semanticdescriptor> |
| 195 | | | | <semanticvalidation> Update Request</semanticvalidation> |
| | | | TD_M2M_NH_132 | AE creates a <semanticdescriptor> resource visa</semanticdescriptor> |
| 106 | | | | SemanticDescriptor Create Request and Registrar CSE checks the |
| 190 | | Ontology Marrie | | validity of the created <semanticdescriptor> resource</semanticdescriptor> |
| 107 | | Untology Mapping | וט_M2M_NH_133 | AE creates an OntologyMapping resource in Registrar CSE via an |
| 121 | | | | A E retrieves information of an antelent manning result via a |
| 192 | | | וע_ווו_וNH_134 | AE remeves mormation of an onlology mapping result via a |
| 190 | | | | AF updates attribute in contologyMappings resource via a |
| 199 | | | רכו_חאו_ואובואו_ט ו | ontologyMapping Update Request |
| | | | TD M2M NH 136 | AF deletes OntologyMapping resource via a OntologyMapping |
| 200 | | | | Delete Request |
| - | | | | |

| Nb | Category | Procedure/Pesource | | TD Description |
|-----|-----------------|----------------------------|-------------------------------------|--|
| 201 | 3GPP | Cellular IoT non-IP | TD M2M SH 27 | IN-CSE establishes SCEE Configuration for NIDD |
| 201 | Interworking | data delivery (NIDD) | TD M2M SH 28 | IN-AE sends a downlink non-IP data to a LIE hosting ADN-AE |
| 202 | | | TD_M2M_SH_29 | IN-AE sends a downlink non-IP data to a UE hosting ADN-AE |
| 205 | | Monitoring events | TD_M2M_SH_30 | IN-AE monitors LIE Reachability status |
| 204 | | wonitoring events | TD_M2M_SH_30 | |
| 205 | | | | |
| 206 | | | | |
| 207 | | | TD_M2M_SH_33 | Roaming status scenario |
| 208 | | | TD_M2M_SH_34 | Location Reporting scenario |
| 209 | | 3GPP Based Device | TD_M2M_SH_35 | IN-AE triggers ADN-AE hosted on UE |
| 210 | | Inggenng | TD_M2M_SH_36 | IN-AE recalls/replaces a trigger request targeting ADN-AE hosted on UE that has been already created in IN-CSE |
| 211 | | Configuration of traffic | TD_M2M_SH_37 | IN-CSE translates the oneM2M Node Traffic Pattern (TP) into a |
| 211 | | Group message | | 3GPP Device Communication Pattern |
| 212 | | delivery using MBMS | | IN AE conde a request for accessing member resources to the |
| 213 | | Netification Tornet | | Group Hosting CSE |
| 214 | Subscriptions | removal | | notificationTargetMgmtPolicyRef Delete Request |
| | & Notifications | NotificationTargetMgm | TD_M2M_NH_138 | AE creates a notificationTargetMgmtPolicyRef resource in registrar |
| 215 | | tPolicyRef | | CSE via a notificationTargetMgmtPolicyRef Create Request |
| 216 | | | TD_M2M_NH_139 | AE retrieves notificationTargetMgmtPolicyRef resource from |
| 210 | | | TD M2M NH 140 | AF updates information about a notificationTargetMgmtPolicyRef |
| 217 | | | | via notificationTargetMgmtPolicyRef>Update Request |
| 218 | | | | notificationTargetMgmtPolicyRef Delete Request |
| | | NotificationTargetPolic | TD_M2M_NH_142 | AE creates a notificationTargetPolicy resource in registrar CSE via |
| 219 | | У | | a notificationTargetPolicy Create Request |
| 220 | | | TD_M2M_NH_143 | AE retrieves notification largetPolicy resource from Registrar CSE |
| 221 | | | TD_M2M_NH_144 | AE updates information about a notificationTargetPolicy via |
| 221 | | | TD M2M NH 145 | AF removes notification Target Policy via a |
| 222 | | | · • _ · · • _ · · • _ · · • _ · · • | <notificationtargetpolicy> Delete Request</notificationtargetpolicy> |
| 222 | | PolicyDeletionRules | TD_M2M_NH_146 | AE creates a policyDeletionRules resource in registrar CSE via a |
| 223 | | | | policyDeletionRules Create Request |
| 224 | | | | AE retrieves policy Deletion Rules resource from Registrar CSE |
| 225 | | | TD_IM2INI_INH_148 | AE updates information about a policyDeletionRules via |
| | | | TD_M2M_NH_149 | AE removes policyDeletionRules via a <policydeletionrules></policydeletionrules> |
| 226 | | | | Delete Request |
| 227 | | CrossResourceSubscr iption | TD_M2M_NH_150 | AE creates a crossResourceSubscription resource in registrar CSE via a crossResourceSubscription Create Request |
| 228 | | | TD_M2M_NH_151 | AE retrieves crossResourceSubscription resource from Registrar CSE |
| 220 | | | TD_M2M_NH_152 | AE updates information about a crossResourceSubscription via |
| 229 | | | TD M2M NH 153 | <crossresourcesubscription> Update Request AE removes crossResourceSubscription via a</crossresourcesubscription> |
| 230 | | | | <pre><crossresourcesubscription> Delete Request</crossresourcesubscription></pre> |
| 231 | | | TD_M2M_NH_154 | AE receives a notification request from the HOST CSE |
| 232 | Modbus | Modbus Thermometer | TD_M2M_NH_163 | AE1 creates Device Model for Modbus device |
| 233 | Interworking | device | TD_M2M_NH_164 | Modbus IPE reads data from Modbus device and updates Registrar |
| 200 | | | TD_M2M_NH_165 | AE writes data into a Modbus device by updating <flexcontainer></flexcontainer> |
| 234 | | Generic IPE | | resource in Registrar CSE NoDN IPE reads data from a NoDN device and undates Pegistrar |
| 235 | Interworking | | | CSE with the read data |
| 236 | | | וע וע_ועובועו_ואH_16/ | resource in Registrar CSE |

7 Configuration

- 7.1 Test Configuration
- 7.1.1 No hop
- 7.1.1.1 M2M_CFG_01

The AE manages resources on the registrar CSE (Hosting CSE).

oneM2M entities model



Figure 7.1.1.1-1

7.1.1.2 M2M_CFG_02

oneM2M entities model



Figure 7.1.1.2-1

7.1.1.3 M2M_CFG_10

oneM2M entities model





NOTE: For HAIM Model tests, clause 8.5, AE1 represents a native oneM2M device that implements the HAIM models or a combined IPE(AE) plus a non-oneM2M device node (nodn).

7.1.2 Single hop

7.1.2.1 M2M_CFG_03

The AE manages resources on the remote CSE.

oneM2M entities model



Figure 7.1.2.1-1

7.1.2.2 M2M_CFG_04

oneM2M entities model





Figure 7.1.2.3-1

7.1.2.4 M2M_CFG_08

This configuration concerns group management when the AE is using a group to fan out requests to multiple members. The connection between the AE and the Group Hosting CSE, the Group Hosting CSE and the Member Hosting CSE may be a multi hop connection following the definition in clause 7.1.3.

This configuration is mapped to cases including:

- AE sends a request addressing <group>/fanOutPoint in the Group Hosting CSE, the Group Hosting CSE then further fans out the request to each Member Hosting CSE.
- The Member Hosting CSE sends a notification to the Group Hosting CSE pertaining to the subscription made through the Group Hosting CSE. The Group Hosting CSE then further aggregates the notification and sends it back to the AE.



Figure 7.1.2.4-1

7.1.2.5 M2M_CFG_09

This configuration concerns device management using external technologies.

This configuration is mapped to cases including:

• The AE sends a request addressing <mgmtObj> to IN-CSE. IN-CSE then further acts as a Management Server to send management commands to Managed Entity over the mc interface. The management command is defined in OMA DM, BBF TR069 or LWM2M.





7.1.2.6 M2M_CFG_11

This configuration concerns device management using 3GPP network.



7.1.2.7 M2M_CFG_12

This configuration concerns group management when the IN-AE is using a group to fan out requests to multiple members in 3GPP interworking scenraios. The connection between the IN-AE and the Group Hosting CSE, the Group Hosting CSE and the Member Hosting CSE may be a multi hop connection following the definition in clause 7.1.3.

This configuration is mapped to cases including:

• IN-AE sends a request addressing <group>/fanOutPoint in the Group Hosting CSE, the Group Hosting CSE then further fans out the request to each Member Hosting CSE through 3GPP network.



- 7.1.3 Multi hops
- 7.1.3.1 M2M_CFG_06

oneM2M entities model





7.1.3.2 M2M_CFG_07

oneM2M entities model



Figure 7.1.3.2-1

8 Test Descriptions

8.1 No Hop configuration testing

8.1.1 CSEBase Management

8.1.1.1 CSEBase Retrieve on Mca

| | | | Interoperability Test Description | | | |
|--------|----------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_01 | | | |
| Objec | tive: | | AE retrieves the CSEBase resource | | | |
| Config | guratior | ו: | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.2.11 | | | |
| | | | oneM2M TS-0004 [2], clause 7.3.2 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been automatically created in CSE | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a retrieve Request to CSE with name {CSEBaseName} | | | |
| 2 | Мса | PRO Check Primitive | Operation (op) = 2 (Retrieve) To (to) = Resource-ID of requested <csebase> resource, assumed CSE-relative here</csebase> From (from) = AE-ID of request originator Request Identifier (rqi) = (token-string) | | | |
| 3 | Мса | PRO Check Primitive | Response Status Code (rsc) = 2000 (OK) Request Identifier (rqi) = same string as received in request message Content (pc) = Serialized Representation of <csebase> resource</csebase> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| IOP V | /erdict | | | | | |
| PRO | /erdict | | | | | |

8.1.2 RemoteCSE Management

8.1.2.1 RemoteCSE Create

| | | | Interoperability Test Description | | | |
|--------|----------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_02 | | | |
| Objec | tive: | | Registree CSE registers to Registrar CSE | | | |
| Config | guratior | า: | M2M_CFG_02 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2.1 | | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.2.1 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | Registree CSE is requested to send a RemoteCSE Create request to Registrar CSE | | | |
| 2 | Мсс | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = Registree CSE-ID rqi = (token-string) ty = 16 (RemoteCSE) pc = Serialized representation of <remotecse> resource</remotecse> | | | |
| 3 | Мсс | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <remotecse> resource</remotecse> | | | |
| 4 | | IOP Check | Check if possible that the <remotecse> resource has been created in registrar CSE</remotecse> | | | |
| 5 | | IOP Check | Check if possible that the corresponding <remotecse> resource has been also created in registree CSE</remotecse> | | | |

| | Interoperability Test Description | | | | | | |
|-------|-----------------------------------|-----------|--|--|--|--|--|
| 6 | | IOP Check | Registree CSE indicates successful operation | | | | |
| IOP V | /erdict | | | | | | |
| PRO \ | /erdict | | | | | | |

8.1.2.2 remoteCSE Retrieve

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_03 | | |
| Objective: | | | Registree CSE retrieves RemoteCSE from Registrar CSE | | |
| Config | guratior | 1: | M2M_CFG_02 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 8.1.2.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.2.2 | | |
| | | | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} | | |
| | | | Registree CSE has created a remoteCSE resource on registrar CSE with name {RemoteCSEName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | Registree CSE is requested to send a RemoteCSE retrieve request to Registrar CSE | | |
| 2 | Мсс | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{remoteCSEName} fr = Registree CSE-ID rqi = (token-string) pc = empty | | |
| 3 | Мсс | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <remotecse> resource</remotecse> | | |
| 4 IOP Che | | IOP Check | Registree CSE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.2.3 remoteCSE Update

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|----------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_04 | | |
| Objective: | | | Registree CSE updates RemoteCSE from Registrar CSE | | |
| Config | guratior | า: | M2M_CFG_02 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | Registree CSE has created a remoteCSE resource on registrar CSE with name | | |
| | | | {RemoteCSEName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | Registree CSE is requested to send a RemoteCSE update request to Registrar CSE | | |
| | Мсс | PRO Check Mcc Primitive | • op = 3 (Update) | | |
| | | | to = {CSEBaseName}/{remoteCSEName} | | |
| 2 | | | • fr = Registree CSE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <remotecse> resource</remotecse> | | |
| 3 | | IOP Check | Check if possible that the <remotecse> resource has been updated in registrar CSE</remotecse> | | |
| | | | Registrar CSE sends response containing: | | |
| 4 | | PRO Check | • rsc = 2004 (UPDATED) | | |
| 4 | Mcc | Primitive | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of <remotecse> resource</remotecse> | | |
| 5 | | IOP Check | Registree CSE indicates successful operation | | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.2.4 remoteCSE Delete

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_05 | | |
| Objective: | | | Registree CSE deletes RemoteCSE from Registrar CSE | | |
| Config | guratior | າ: | M2M_CFG_02 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 8.1.2.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.2.4 | | |
| | | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | Registree CSE has created a remoteCSE resource on registrar CSE with name | | |
| | | | {RemoteCSEName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | Registree CSE is requested to send a RemoteCSE delete request to Registrar CSE | | |
| | | PRO Check Primitive | • op = 4 (Delete) | | |
| | | | to = {CSEBaseName}/{remoteCSEName} | | |
| 2 | Mcc | | • fr = Registree CSE-ID | | |
| | IVICC | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| | | | Registrar CSE sends response containing: | | |
| ~ | | PRO Check | rsc = 2002 (DELETED) | | |
| 3 | Mcc | Primitive | rqi = (token-string) same as received in request message | | |
| | | | • pc = empty | | |
| 4 | | IOP Check | Check if possible that the <remotecse> resource has been removed from registrar CSE</remotecse> | | |
| 5 | | IOP Check | Check if possible that the <remotecse> resource is also removed from registree CSE</remotecse> | | |
| 6 | | IOP Check | Registree CSE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.3 Application Entity Registration

8.1.3.1 AE Create

| | Interoperability Test Description | | | | |
|------------|-----------------------------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_06 | | |
| Objective: | | | AE registers to its registrar CSE via an AE Create Request | | |
| Config | guratior | 1: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.2.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.5.2.1 | | |
| | | | | | |
| Pre-te | st cond | itions: | CSEBase resource has been created in CSE with name {CSEBaseName} | | |
| | | | AE does not have an AE-ID, i.e. it registers from scratch | | |
| | Test Sequence | | | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a AE Create request to register to the Registrar CSE | | |
| | | | • op = 1 (Create) | | |
| | Мса | PRO Check Primitive | to = {CSEBaseName} | | |
| 2 | | | • fr = AE-ID | | |
| 2 | | | rqi = (token-string) | | |
| | | | • ty = 2 (AE) | | |
| | | | pc = Serialized representation of <ae> resource</ae> | | |
| 3 | | IOP Check | Check if possible that the <ae> resource is created in registrar CSE</ae> | | |
| | | DDO Chack | rsc = 2001 (CREATED) | | |
| 4 | Мса | PRO Check | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of <ae> resource</ae> | | |
| 5 | | IOP Check | AE indicates successful operation | | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.3.2 AE Retrieve

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|--|--|--|
| Identifier: | | | TD_M2M_NH_07 | | |
| Objective: | | | AE retrieves <ae> resource via an AE Retrieve Request</ae> | | |
| Config | guration | 1: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.2.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.5.2.2 | | |
| | | | | | |
| Pre-te | st cond | itions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE has created a <ae> resource on registrar CSE with name {AE}bgf</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a AE retrieve request to Registrar CSE | | |
| | | PRO Check | • op = 2 (Retrieve) | | |
| | Мса | | to = {CSEBaseName}/{AE} | | |
| 2 | | Primitive | fr = AE-ID of request originator | | |
| | | | • rqi = (token-string) | | |
| | | | Registrar CSE sends response containing: | | |
| 2 | | PRO Check | • rsc = 2000 (OK) | | |
| 3 | Мса | Primitive | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of <ae> resource</ae> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.3.3 AE Update

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_08 | | |
| Objective: | | | AE updates attribute in <ae> resource</ae> | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.2.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.5.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE has created a <ae> resource on registrar CSE with name {AE}</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send an AE Update Request | | |
| | | PRO Check Primitive | • op = 3 (Update) | | |
| | | | to = {CSEBaseName}/{AE} | | |
| 2 | Мса | | • fr = AE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <ae> resource</ae> | | |
| 3 | | IOP Check | Check if possible that the <ae> resource has been updated in registrar CSE</ae> | | |
| | | | Registrar CSE sends response containing: | | |
| 1 | | PRO Check | • rsc = 2004 (UPDATED) | | |
| 4 | Мса | Primitive | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of <ae> resource</ae> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.3.4 AE Delete

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_09 | | |
| Objective: | | | AE de-registers by deleting <ae> resource via an AE Delete Request</ae> | | |
| Config | guratio | n: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.2.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.5.2.4 | | |
| | | | | | |
| Pre-te | est cond | ditions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE has created a <ae> resource on registrar CSE with name {AE}</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send an AE Delete Request | | |
| | | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE} | | |
| 2 | Maa | | • fr = AE-ID | | |
| | Мса | | • rgi = (token-string) | | |
| | | | • pc = empty | | |
| | | | Registrar CSE sends response containing: | | |
| 2 | | PRO Check | • rsc = 2002 (DELETED) | | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | | | • pc = empty | | |
| 4 | | IOP Check | Check if possible that the <ae> resource has been removed from registrar CSE</ae> | | |
| 5 IOP Check | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.4 Container Management

8.1.4.1 Container Create

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|--|
| Identifier: | | | TD_M2M_NH_10 | | | |
| Objective: | | | AE creates a container resource in registrar CSE via a container Create Request | | | |
| Confi | guratior | ו: | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.3 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | |
| | | | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE sends a request to create a <container></container> | | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae> resource</ae> fr = AE-ID rqi = (token-string) ty = 3 (Container) pc = Serialized representation of <container> resource</container> | | | |
| 3 | | IOP Check | Check if possible that the <container> resource is created in registrar CSE</container> | | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | | | |
| 5 | | IOP Check | AE indicates successful operation | | | |
| IOP Verdict | | | | | | |
| PRO Verdict | | | | | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD M2M NH 11 | | |
| Objective: | | | AE retrieves information of a container resource via a container Retrieve Request | | |
| Config | guratior | n: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <container></container> | | |
| | | PRO Check Primitive | • op = 2 (Retrieve) | | |
| | Мса | | to = {CSEBaseName}/URI of <container> resource</container> | | |
| 2 | | | • fr = AE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| | | DDO Chask | rsc = 2000 (OK) | | |
| 3 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | IVICa | FIIIIIIVe | pc = Serialized representation of <container> resource</container> | | |
| 4 IOP Check | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO | /erdict | | | | |

8.1.4.2 Container Retrieve

8.1.4.3 Container Update

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_12 | | |
| Objective: | | | AE updates attribute in application resource via a container Update Request | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a container Update Request to update the lifetime of the | | |
| | | | resource | | |
| | | PRO Check Primitive | • op = 3 (Update) | | |
| | | | to = {CSEBaseName}/URI of <container> resource</container> | | |
| 2 | Мса | | • fr = AE-ID | | |
| | | | rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <container> resource</container> | | |
| 3 | | IOP Check | Check if possible that the < container > resource is updated in Registrar CSE | | |
| | | DBO Chook | rsc = 2004 (Updated) | | |
| 4 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | ivica | riiiiiuve | pc = Serialized representation of <container> resource</container> | | |
| 5 IOP Check | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|---|
| Identifier: | | | TD_M2M_NH_13 |
| Objective: | | | AE deletes a specific container resource via a container Delete Request |
| Configuration: | | | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.6 |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.4 |
| | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a container resource <container> on Registrar CSE</container> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a container Delete Request |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID rqi = (token-string) pc = empty |
| 3 | | IOP Check | Check if possible that the <container> resource is deleted in registrar CSE</container> |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty |
| 5 | | IOP Check | Check if possible that the <container> resource has been removed in registrar CSE</container> |
| 6 | | IOP Check | AE indicates successful operation |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.1.4.4 Container Delete

8.1.5 ContentInstance Management

8.1.5.1 ContentInstance Create

| Interoperability Test Description | | | |
|-----------------------------------|----------|------------------------|---|
| Identifier: | | | TD_M2M_NH_14 |
| Objec | tive: | | AE adds a contentInstance resource <contentinstance> to a specific container in Registrar CSE via a contentInstance Create Request and the Registrar CSE updates the parent <container> resource with <i>stateTag, currentNrOfInstances,</i> and <i>CurrentByteSize</i> attributes correspondingly</container></contentinstance> |
| Config | guratior | 1: | M2M_CFG_01 |
| References: | | | ETSI TS 118 101 [1], clause 10.2.4.7 oneM2M TS-0004 [2], clause 7.4.7.1.1 |
| Pre-test conditions: | | | AE has created an application resource <ae> on registrar CSE</ae> AE has created a container resource <container> on registrar CSE</container> Test Sequence |
| Step | RP | Type | Description |
| 1 | | Stimulus | AE sends a RETRIEVE request with resultContent set to 1 (default value) to retrieve the <container> resource and AE sends a request to create a < contentInstance > resource</container> |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of < container > resource fr = AE-ID rqi = (token-string) ty = 4 (contentInstance) pc = Serialized representation of <contentinstance> resource</contentinstance> |
| 3 | | IOP Check | Check if possible that the <contentinstance> resource is created in Registrar CSE and AE sends a RETRIEVE request to the <container> resource to check that if the Registrar CSE has updated stateTag, currentNrOfInstances, and CurrentByteSize attribute correspondingly which is resulted from the successful creation of child <contentinstance> resource</contentinstance></container></contentinstance> |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <contentinstance> resource</contentinstance> |

| Interoperability Test Description | | | | |
|-----------------------------------|---------|---|---|--|
| 5 | | IOP Check | AE indicates successful CREATE operation of <contentinstance> and indicates Registrar CSE has updated stateTag, currentNrOfInstances, and CurrentByteSize attribute correspondingly by checking the response of a <container> request to the <container> resource</container></container></contentinstance> | |
| IOP Verdict | | Set verdict to <i>pass</i> if IOP check goal is achieved exactly, otherwise verdict <i>fail</i> is set with corresponding error message | | |
| PRO | Verdict | errer meeeuge | | |

8.1.5.2 ContentInstance Retrieve

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_NH_15 | |
| Objective: | | | AE retrieves information of a contentInstance resource via a contentInstance Retrieve | |
| | | | Request | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.8 | |
| | | | oneM2M TS-0004 [2], clause 7.4.7.2.2 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | |
| | | | AE has created a contentInstance resource <contentinstance> as child resource</contentinstance> | |
| | | | of <container> resource</container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <contentinstance></contentinstance> | |
| | Мса | PRO Check Primitive | • op = 2 (Retrieve) | |
| | | | to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> | |
| 2 | | | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | | • pc = empty | |
| | Мса | PRO Check Primitive | • rsc = 2000 (OK) | |
| 3 | | | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.1.5.3 ContentInstance Delete

| Interoperability Test Description | | | | | |
|-----------------------------------|----------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_17 | | |
| Objective: | | | AE deletes contentInstance resource via a contentInstance Delete Request and the | | |
| | | | Registrar CSE updates the parent <container> resource with currentNrOfInstances, and</container> | | |
| | | | CurrentByteSize attributes correspondingly | | |
| Config | guratior | າ: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.10 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.7.2.4 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | AE has created a contentInstance resource <contentinstance> as child resource</contentinstance> | | |
| | | | of <container> resource</container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a RETRIEVE request with resultContent set to 1 (default value) to retrieve the | | |
| | | | <container> resource and AE is requested to send a contentInstance Delete Request</container> | | |
| | Мса | PRO Check Primitive | • op = 4 (Delete) | | |
| | | | to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> | | |
| 2 | | | • fr = AE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | • pc = empty | | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|---|---|
| 3 | | IOP Check | Check if possible that the <contentinstance> resource is deleted in Registrar CSE and AE sends a RETRIEVE request to the parent <container> resource to check that if the Registrar CSE has updated <i>currentNrOfInstances, and CurrentByteSize</i> attribute correspondingly which is resulted from the successful deletion of child <contentinstance> resource</contentinstance></container></contentinstance> |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty |
| 5 | | IOP Check | Check if possible that the <contentinstance> resource has been removed in registrar CSE.</contentinstance> |
| 6 | | IOP Check | AE indicates successful DELETE operation of <contentinstance> and indicates Registrar CSE has updated <i>currentNrOfInstances</i>, and <i>CurrentByteSize</i> attribute correspondingly</contentinstance> |
| IOP Verdict | | Set the verdict to <i>pass</i> if both the <contentinstance> is deleted and the Registrar CSE updated <i>currentNrOfInstances</i>, and <i>CurrentByteSize</i> attribute. Otherwise, set the verdict to <i>fail</i> with corresponding error message</contentinstance> | |
| PRO | Verdict | | |

8.1.5.4 <latest> ContentInstance Delete

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------------------|---|--|
| Identifier: | | | TD_M2M_NH_49 | |
| Objec | tive: | | AE deletes a <latest> resource of a <container> and the Registrar CSE points a latest <contentinstance> among the existing contentInstances to the <latest> resource of the <container></container></latest></contentinstance></container></latest> | |
| Config | guratior | າ: | M2M_CFG_01 | |
| References: | | | ETSI TS 118 101 [1], clause 10.2.4.12 oneM2M TS-0004 [2], clause 7.4.27.2.4 | |
| Pre-test conditions: | | | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a container resource <container> on Registrar CSE</container> AE has created more than one contentInstances <contentinstance> as child of <container> on Registrar CSE</container></contentinstance> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE retrieves a <latest> resource in a <container> and then sends a DELETE request to the <latest> resource of the <container></container></latest></container></latest> | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <latest> resource of a <container></container></latest> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = representation of deleted <latest> resource of a <container></container></latest> | |
| 4 | | IOP Check | AE indicates successful DELETE operation of a <latest> resource and AE sends a RETRIEVE request to <latest> resource of a <container> to check if the retrieved <latest> resource in the <container> is different with that one that was retrieved before DELETE request of the <latest> resource in terms of <i>resourceID</i> and <i>resourceName</i> attribute value</latest></container></latest></container></latest></latest> | |
| IOP Verdict Set | | Set the verdict t error message | o pass if IOP check goal is achieved, otherwise set the verdict to fail with corresponding | |
| PRO | Verdict | | | |
| | Interoperability Test Description | | | | | |
|------------|-----------------------------------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_50 | | | |
| Objective: | | | AE deletes a <oldest> resource of a <container> and the Registrar CSE points an oldest</container></oldest> | | | |
| - | | | <contentinstance> among the existing contentInstances to the <oldest> resource of the</oldest></contentinstance> | | | |
| | | | <container></container> | | | |
| Config | guratior | า: | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.14 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.28.2.4 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | | |
| | | | AE has created more than one contentInstances <contentinstance> as child of</contentinstance> | | | |
| | | | <container> on Registrar CSE</container> | | | |
| _ | | _ | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE retrieves a <oldest> resource of a <container> and AE sends a DELETE Request to</container></oldest> | | | |
| | | | the <oldest> resource of the <container></container></oldest> | | | |
| | | PRO Check Primitive | • op = 4 (Delete) | | | |
| | Mca | | to = {CSEBaseName}/URI of <oldest> resource of a <container></container></oldest> | | | |
| 2 | | | • fr = AE-ID | | | |
| | | | • rqi = (token-string) | | | |
| | | | • pc = empty | | | |
| | | PRO Check | rsc = 2002 (DELETED) | | | |
| | | | rqi = (token-string) same as received in request message | | | |
| З | | 1 111111110 | pc = representation of deleted <oldest> resource of a <container></container></oldest> | | | |
| Ŭ | Мса | | | | | |
| | | | | | | |
| | | | | | | |
| | | | AE indicates successful DELETE operation of a <oldest> resource and AE sends a</oldest> | | | |
| | | | RETRIEVE request to <oldest> resource of a <container> to check if the retrieved</container></oldest> | | | |
| 4 | | IOP Check | <pre></pre> | | | |
| | | | DELETE request of the <oldest> resource in terms of resourceID and resourceName</oldest> | | | |
| | | | attribute values | | | |
| IOP \ | /erdict | Set the verdict t | o pass if IOP check goal is achieved, otherwise set the verdict to <i>fail</i> with corresponding | | | |
| | /erdict | endimessaye | | | | |
| | a or aiot | 1 | | | | |

8.1.5.5 <oldest> ContentInstance Delete

8.1.5.6 ContentInstance Create when currentNrOfInstance equals to maxNrOfInstances in parent <container> resource

| | Interoperability Test Description | | | | | |
|--------|-----------------------------------|----------|--|--|--|--|
| Identi | fier: | | TD_M2M_NH_51 | | | |
| Objec | tive: | | AE sends a <contentinstance> CREATE request to a <container> which contains attribute <i>currentNrOfInstances</i> whose value equals to that of <i>maxNrOfInstances</i> and Registrar CSE deletes the oldest <contentinstance> from the parent <container> and then creates the requested <contentinstance> resource for the originator AE</contentinstance></container></contentinstance></container></contentinstance> | | | |
| Config | guratio | n: | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.7 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | | | |
| | | | AE has created a container resource <container> (where the number of</container> | | | |
| | | | contentInstances equals to the value set in maxNrOfInstance) on registrar CSE | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| | | Stimulus | AE sends a RETRIEVE request with resultContent set to 1 (default value) to retrieve the | | | |
| 1 | | | <oldest> contentInstance resource and</oldest> | | | |
| | | | AE sends a request to create a <contentinstance> resource</contentinstance> | | | |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|------------------------|--|--|
| | | | • op = 1 (Create) | |
| | | | to = {CSEBaseName}/URI of <container> resource</container> | |
| 2 | | PRO Check | • fr = AE-ID | |
| 2 | Mca | Primitive | rqi = (token-string) | |
| | | | • ty = 4 (contentInstance) | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| 3 | | IOP Check | Check if possible that the <oldest> resource of a <container> is deleted</container></oldest> | |
| | Мса | PRO Check Primitive | rsc = 2001 (CREATED) | |
| 4 | | | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| | | | AE indicates successful CREATE operation of <contentinstance> and indicates the</contentinstance> | |
| 5 | | IOD Chook | representation of the recent <oldest> resource in the <container> is different with that of</container></oldest> | |
| 5 | | IOF Check | <oldest> resource retrieved at the beginning of test in terms of resourceID and</oldest> | |
| | | | resourceName attribute value | |
| | ordict | Set the verdict to | p pass if IOP check goal is achieved, otherwise set the verdict to fail with corresponding | |
| | eruici | error message | | |
| PRO \ | /erdict | | | |

8.1.5.7 <latest> ContentInstance Retrieve

8.1.5.7.1 Attribute *locationID* of the <container> resource configured

| | Interoperability Test Description | | | | | |
|----------------------|-----------------------------------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_102 | | | |
| Objective: | | | AE retrieves a <latest> resource of a <container> for which attribute <i>locationID</i> is configured, value of <i>locationUpdatePeriod</i> is marked '0' or not defined and <i>locationSource</i> attribute is 'Network Based'</container></latest> | | | |
| Config | guration | n: | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.11 oneM2M TS-0004 [2], clause 7.4.27.2.2 | | | |
| Pre-test conditions: | | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a container resource <container> on Registrar CSE</container> AE has created a <locationpolicy> resource on Registrar CSE having its resource/D and locationContainer/D attribute set to location/D and resource/D attribute of the <container> resource respectively</container></locationpolicy> In resource <locationpolicy>, value of locationUpdatePeriod is marked '0' or not defined and locationSource attribute is 'Network Based'</locationpolicy> | | | |
| Stop BB Type | | | Description | | | |
| 1 | IXI | Stimulus | AF is requested to send a Retrieve Request for a https://www.atestscondition.org | | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource/la</container> fr = AE-ID rqi = (token-string) pc = empty | | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of latest <contentinstance> resource, created after acquiring location info from Location Server, in response to Location Request made by the CSE, using the attributes stored in the <<i>locationPolicy></i> resource</contentinstance> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| IOP V | /erdict | | | | | |
| PRO | Verdict | | | | | |

| 8.1.5.7.2 | Attribute | locationID of th | e <container></container> | resource not | configured |
|-----------|-----------|------------------|---------------------------|----------------------------------|------------|
|-----------|-----------|------------------|---------------------------|----------------------------------|------------|

| | Interoperability Test Description | | | | | |
|----------------------|-----------------------------------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_71 | | | |
| Objective: | | | AE retrieves a <latest> resource of a <container> and the Registrar CSE points a latest <contentinstance> among the existing contentInstances to the <latest> resource of the <container></container></latest></contentinstance></container></latest> | | | |
| Confi | guratior | 1: | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.11 oneM2M TS-0004 [2], clause 7.4.27.2.2 | | | |
| Pre-test conditions: | | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a container resource <container> on Registrar CSE</container> AE has created multiple contentInstance resources <contentinstance> as child resource of <container> resource</container></contentinstance> | | | |
| Ston | Ston DD Type | | | | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <latest></latest> | | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource/la</container> fr = AE-ID rqi = (token-string) pc = empty | | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of latest <contentinstance> resource</contentinstance> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| IOP \ | /erdict | | | | | |
| PRO Verdict | | | | | | |

8.1.5.8 <oldest> ContentInstance Retrieve

| | | | Interoperability Test Description | | | |
|----------------------|----------|------------------------|---|--|--|--|
| Identifier: | | | TD_M2M_NH_72 | | | |
| Objective: | | | AE retrieves a <oldest> resource of a <container> and the Registrar CSE points a oldest <contentinstance> among the existing contentInstances to the <oldest> resource of the <container></container></oldest></contentinstance></container></oldest> | | | |
| Config | guratior | n: | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.13 oneM2M TS-0004 [2], clause 7.4.28.2.2 | | | |
| | | | | | | |
| Pre-test conditions: | | | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a container resource <container> on Registrar CSE</container> AE has created multiple contentInstance resources <contentinstance> as child resource of <container> resource</container></contentinstance> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <oldest></oldest> | | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource/ol</container> fr = AE-ID rqi = (token-string) pc = empty | | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of oldest <contentinstance> resource</contentinstance> | | | |
| - | | | | | | |

8.1.6 Discovery

8.1.6.1 Discovery of all resources

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_18 | | |
| Objec | tive: | | AE discovers all accessible resources from registrar CSE | | |
| Config | guratior |): | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | | |
| | | | | | |
| Pre-te | st cond | itions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a discovery request to registrar CSE | | |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu=1 • pc = empty | | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of data object containing addresses of all discovered resources | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO | Verdict | | | | |

8.1.6.2 Discovery with label filter criteria

| | | | Interoperability Test Description |
|----------------------|----------|------------------------|--|
| Identifier: | | | TD_M2M_NH_19 |
| Objec | tive: | | AE discovers accessible resources residing in Registrar CSE using the label filter criteria |
| Confi | guratior | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.3.3.14 |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} A <container> resource with label "key1" is created on Registrar CSE</container> |
| 01 | | Toma | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | resource using the label filter criteria |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu=1 • Ibl=key1 • pc = empty |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of data object containing the address of the <container> address</container> |

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|-----------|-----------------------------------|--|--|--|
| 4 | | IOP Check | AE indicates successful operation | | | |
| IOP Verdict | | | | | | |
| PRO Verdict | | | | | | |

8.1.6.3 Discovery with limit filter criteria

| | | | Interoperability Test Description |
|-------------|----------|------------------------|--|
| Identifier: | | | TD_M2M_NH_20 |
| Objective: | | | AE discovers accessible resources residing in Registrar CSE limiting the number of matching resources to the specified value |
| Confi | guration | า: | M2M_CFG_01 |
| References: | | | ETSI TS 118 101 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.3.3.14 |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Discovery request in order to discover at most 2 resources in registrar CSE |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu = 1 • lim = 2 • pc = empty |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message cnst = 1 cno t= 2 pc = Serialized representation of data object containing the address of the <container> address</container> |
| 4 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO Verdict | | | |

8.1.6.4 Discovery with multiple filter criteria

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|----------|---|--|--|
| Identi | fier: | | TD_M2M_NH_21 | | |
| Objec | tive: | | AE discovers accessible resources residing in Registrar CSE using multiple Filter Criteria | | |
| Confi | guratio | n: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | | |
| | | | | | |
| Pre-te | est conc | litions: | Two <container> resources with labels "key1" and "key2" are created in</container> | | |
| | | | Registrar CSE | | |
| | | | A <group> resources with labels "key1" and "key2" is created in Registrar CSE</group> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Discovery request in order to discover specific resources | | |
| 1 | | | located in Registrar CSE using multiple filter criteria (label, resource type and limit) | | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|---|
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu=1 • Ibl=key1 • Ibl=key2 • ty=3 • lim=1 • pc = empty |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of data object containing the address of one of the <container> resources</container> |
| 4 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO ' | Verdict | | |

8.1.6.5 Discovery with level filter criteria

| Interoperability Test Description | | | |
|-----------------------------------|----------|---------------------------|---|
| Identi | fier: | | TD_M2M_NH_58 |
| Objective: | | | AE discovers accessible resources residing in Registrar CSE using the level filter criteria |
| | | | value set to 1 |
| Config | guratior | ו: | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.6 |
| - | | | oneM2M TS-0004 [2], clause 7.3.3.14 |
| | | | |
| Pre-te | est cond | litions: | <ae1> and <ae2> resources are created in Registrar CSE</ae2></ae1> |
| | | | A <container> resource is created under both <ae> resources in Registrar CSE</ae></container> |
| | | | A <contentinstance> resource is created under both <container> resources in</container></contentinstance> |
| - | | | Registrar CSE |
| | | _ | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Discovery request in order to discover specific resources |
| · · | | | located in Registrar CSE using level filter criteria value set to 1 |
| | | ca PRO Check Primitive | Sent request contains: |
| | Мса | | • op = 2 (Retrieve) |
| | | | to = {CSEBaseName} |
| 2 | | | • fr = AE1-ID |
| 2 | | | rqi = (token-string) |
| | | | • fu=1 |
| | | | • lvl=1 |
| | | | • pc = empty |
| | | | Registrar CSE sends response containing: |
| | | DDO Chask | rsc = 2000 (OK) |
| 3 | Maa | PRO Check | rqi = (token-string) same as received in request message |
| | ivica | Primitive | pc = Serialized representation of data object containing the address of both |
| | | | <ae> resources</ae> |
| 4 | | IOP Check | AE1 indicates successful operation |
| IOP \ | /erdict | | · · · |
| PRO Verdict | | | |

| | Interoperability Test Description | | | |
|------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_59 | |
| Objective: | | | AE discovers accessible resources residing in Registrar CSE using the level filter criteria | |
| | | | value set to 2 | |
| Confi | guration | า: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | |
| | | | | |
| Pre-te | est cond | litions: | <ae1> and <ae2> resources are created in Registrar CSE. A <container></container></ae2></ae1> | |
| | | | resource is created under both <ae> resources in Registrar CSE</ae> | |
| | | | A <contentinstance> resource is created under both <container> resources in</container></contentinstance> | |
| | | | Registrar CSE | |
| | | _ | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Discovery request in order to discover specific resources | |
| | | | located in Registrar CSE using level filter criteria value set to 2 | |
| | Мса | PRO Check Primitive | Sent request contains: | |
| | | | • $op = 2$ (Retrieve) | |
| | | | • to = {CSEBaseName} | |
| 2 | | | • $fr = AE1-ID$ | |
| _ | | | • rqi = (token-string) | |
| | | | • fu = 1 | |
| | | | • IvI = 2 | |
| | | | • pc = empty | |
| | | | Registrar CSE sends response containing: | |
| | | PRO Check | • rsc = 2000 (OK) | |
| 3 | Мса | Primitive | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of data object containing the address of all <ae></ae> | |
| | | | and <container> resources</container> | |
| 4 | | IOP Check | AE1 indicates successful operation | |
| IOP \ | /erdict | | | |
| IPRO ' | Verdict | | | |

| | | | Interoperability Test Description | |
|------------|----------|-------------|---|--|
| Identi | ifier: | | TD_M2M_NH_60 | |
| Objective: | | | AE1 discovers accessible resources residing in Registrar CSE using the level filter criteria | |
| | | | value set to 3 | |
| Confi | guratio | n: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | |
| | | | | |
| Pre-te | est cond | aitions: | <ae1> and <ae2> resources are created in Registrar CSE</ae2></ae1> | |
| | | | A <container> resource is created under both <ae> resources in Registrar CSE</ae></container> | |
| | | | A <contentinstance> resource is created under both <container> resources in</container></contentinstance> | |
| | | | Registrar CSE | |
| Ctore | | Turne | Test Sequence | |
| Step | RP | Type | | |
| 1 | | Stimulus | AE1 is requested to send a Discovery request in order to discover specific resources | |
| | | | Contraguest containe: | |
| | | | Sent request contains. | |
| | | | • $op = 2$ (Relieve) | |
| | | | • $to = \{CSEBaseName\}$ | |
| 2 | Maa | PRO Check | • If = AE I-ID | |
| | Ivica | Primitive | • rqi = (token-string) | |
| | | | • TU=1 | |
| | | | • IVI=3 | |
| | | | • pc = empty | |
| | | | Registrar CSE sends response containing: | |
| 3 | | PRO Check | • $rsc = 2000 (OK)$ | |
| | Мса | a Primitive | • rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of data object containing the address of all <ae>,</ae> | |
| | | | Container> and <contentinstance>resources</contentinstance> | |
| 4 | 1 | IOP Check | IAE indicates successful operation | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.6.6 Discovery with offset filter criteria

| | | | Interoperability Test Description | |
|------------|----------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_61 | |
| Objective: | | | AE discovers accessible resources residing in Registrar CSE using the offset filter criteria | |
| | | | value set to 3 | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | |
| | | | | |
| Pre-te | est cond | litions: | <ae1> and <ae2> resources are created in Registrar CSE. A <container></container></ae2></ae1> | |
| | | | resource is created under both <ae> resources in Registrar CSE</ae> | |
| | | | A <contentinstance> resource is created under both <container> resources in</container></contentinstance> | |
| | | | Registrar CSE | |
| | | - | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE1 is requested to send a Discovery request in order to discover specific resources | |
| | | | located in Registrar CSE using offset filter criteria value set to 3 | |
| | | | Sent request contains: | |
| | Мса | PRO Check Primitive | • $op = 2$ (Retrieve) | |
| | | | • to = {CSEBaseName} | |
| 2 | | | • $fr = AE1-ID$ | |
| _ | | | • rqi = (token-string) | |
| | | | • fu=1 | |
| | | | ofst=3 | |
| | | | pc = empty | |
| | | | Registrar CSE sends response containing: | |
| | | PRO Check | • rsc = 2000 (OK) | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | |
| | iviou | 1 111111110 | pc = Serialized representation of data object containing only 3 of the 6 <ae>,</ae> | |
| | | | <container> and <contentinstance> resources hosted by the Registrar CSE</contentinstance></container> | |
| 4 | | IOP Check | AE1 indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO V | Verdict | | | |

| | Interoperability Test Description | | | |
|------------|-----------------------------------|-----------|---|--|
| Identi | fier: | | TD_M2M_NH_62 | |
| Objective: | | | AE discovers all the accessible resources residing in Registrar CSE using the offset filter | |
| | | | criteria | |
| Config | guration | n: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.14 | |
| | | | | |
| Pre-te | est cond | litions: | <ae1> and <ae2> resources are created in Registrar CSE</ae2></ae1> | |
| | | | A <container> resource is created under both <ae> resources in Registrar CSE</ae></container> | |
| | | | A <contentinstance> resource is created under both <container> resources in</container></contentinstance> | |
| | | | Registrar CSE | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| | | Stimulus | AE1 is requested to send a Discovery request in order to discover specific resources | |
| 1 | | | located in Registrar CSE using offset filter criteria attribute value set to 0 (Default value) | |
| | | | and limit filter Criteria attribute value set to 2 | |
| | | | Sent request contains: | |
| | | | • op = 2 (Retrieve) | |
| | | | • to = {CSEBaseName} | |
| 2 | | PRO Check | • $fr = AE1-ID$ | |
| - | Мса | Primitive | • rqi = (token-string) | |
| | | | • fu = 1 | |
| | | | • lim = 2 | |
| | | | • pc = empty | |

| | Interoperability Test Description | | | |
|--------|-----------------------------------|---------------------------|---|--|
| 3 | | IOP Check | Registrar CSE sends success response to AE1 | |
| | | | Registrar CSE sends response containing: | |
| | PRO Check | | • rsc = 2000 (OK) | |
| | | PRO Check | rqi = (token-string) same as received in request message | |
| 4 | Мса | Primitive | • cnst = 1 | |
| | | | • cnot = 2 | |
| | | | pc = Serialized representation of data object containing the address of first 2 | |
| | | | resources hosted by Registrar CSE | |
| 5 | | IOP Check | AE1 sends discovery request to Registrar CSE with offset filtercriteria value set to 2 and | |
| | | | Sent request contains: | |
| | | | Sent request contains. | |
| | | | • $op = 2$ (Relieve) • $t_0 = (CSEPageName)$ | |
| | | | • $IO = \{OSEDASENAILE\}$ • $fr = AE1 ID$ | |
| 6 | | PRO Check | • II = AE I-ID | |
| 0 | Mca | Primitive | • $IqI = (IOKEII-SUIIIG)$ | |
| | | | • Iu=1 | |
| | | | $ \lim_{n \to \infty} \frac{1}{2} $ | |
| | | | • $\lim_{n \to \infty} a = 2$ | |
| 7 | | IOP Check | Registrar CSE sends success response to AE1 | |
| · · | | | Registrar CSE sends response containing: | |
| | | | • $rsc = 2000 (OK)$ | |
| | | | rai – (token-string) same as received in request message | |
| 8 | Mca | PRO Check Primitive | rigi = (loken stillig) same as received in request message rigi = 1 | |
| Ŭ | | | • cnot-4 | |
| | | | nc – Serialized representation of data object containing the address of next 2 | |
| | | | resources hosted by Registrar CSE | |
| - | | | AE1 sends discovery request to Registrar CSE with offset filtercriteria value set to 4 and | |
| 9 | | IOP Check | limit filtercriteria attribute value set to 2 | |
| | | PRO Check ca Primitive | Sent request contains: | |
| | | | • op = 2 (Retrieve) | |
| | | | to = {CSEBaseName} | |
| | | | • fr = AE1-ID | |
| 10 | Maa | | rqi = (token-string) | |
| | IVICa | | • fu = 1 | |
| | | | • ofst = 4 | |
| | | | • lim = 2 | |
| | | | • pc = empty | |
| 11 | | IOP Check | Registrar CSE sends success response to AE1 | |
| | | | Registrar CSE sends response containing: | |
| | | | • rsc = 2000 (OK) | |
| 12 | | PRO Check | rqi = (token-string) same as received in request message | |
| | Мса | Primitive | • cnst = 2 | |
| | | | pc = Serialized representation of data object containing the address of last 2 | |
| 10 | | | resources hosted by Registrar CSE | |
| 13 | | IOP Check | AE1 indicates successful operation | |
| IOP \ | /erdict | | | |
| INKO / | verdict | 1 | | |

8.1.7 Subscription Management

8.1.7.1 Subscription Create

| | | | Interoperability Test Description | |
|-------------|----------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_22 | |
| Objective: | | | AE creates a subscription to Application Entity resource via subscription Create Request | |
| Confi | guration | າ: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.8.2.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE has created a container resource <container> on registrar CSE</container> | |
| - | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a subscription Create request to the Registrar CSE | |
| | Мса | PRO Check Primitive | • op = 1 (Create) | |
| | | | to = {CSEBaseName}/URI of <container> resource</container> | |
| 2 | | | • fr = AE-ID | |
| 2 | | | rqi = (token-string) | |
| | | | • ty = 23 (Subscription) | |
| | | | pc = Serialized representation of <subscription> resource</subscription> | |
| 3 | | IOP Check | Check if possible that the <subscription> resource is created in registrar CSE</subscription> | |
| | | | • rsc = 2001 (CREATED) | |
| 4 | Maa | PRO Check | rgi = (token-string) same as received in request message | |
| | Ivica | Primitive | pc = Serialized representation of <subscription> resource</subscription> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.1.7.2 Subscription Retrieve

| | Interoperability Test Description | | | | | |
|----------------|-----------------------------------|------------------------|---|--|--|--|
| Identi | fier: | | TD_M2M_NH_23 | | | |
| Objec | tive: | | AE retrieves subscription resource from Registrar CSE | | | |
| Configuration: | | | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.3 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.8.2.2 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | | |
| | | | AE has created a subscription resource <subscription> on Registrar CSE</subscription> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <subscription></subscription> | | | |
| | | | • op = 2 (Retrieve) | | | |
| | | PRO Check Primitive | to = {CSEBaseName}/URI of <subscription> resource</subscription> | | | |
| 2 | Mca | | • fr = AE-ID | | | |
| | INCa | | • rqi = (token-string) | | | |
| | | | • pc = empty | | | |
| | | BBO Chock | • rsc = 2000 (OK) | | | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | | | |
| | IVICa | riiiiiuve | pc = Serialized representation of <subscription> resource</subscription> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| IOP V | /erdict | | | | | |
| PRO Verdict | | | | | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD M2M NH 24 | | |
| Objective: | | | AE updates information about a subscription via subscription Update Request | | |
| Confi | uration | 1: | M2M CFG 01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.8.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | AE has created a subscription resource <subscription> on Registrar CSE</subscription> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a subscription Update Request to update the lifetime of the resource. | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <subscription> resource</subscription> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <subscription> resource</subscription> | | |
| 3 | | IOP Check | Check if possible that the <subscription> resource is updated in Registrar CSE</subscription> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <subscription> resource</subscription> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.7.3 Subscription Update

8.1.7.4 Subscription Delete

| Interoperability Test Description | | | | | |
|-----------------------------------|----------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_25 | | |
| Objective: | | | AE cancels subscription via an subscription Delete Request | | |
| Config | guratior | 1: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.8.2.4 | | |
| | | | | | |
| Pre-te | est cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | AE has created a subscription resource <subscription> on Registrar CSE</subscription> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a subscription Delete Request | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <subscription> resource</subscription> fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | | IOP Check | Check if possible that the <subscription> resource is deleted in registrar CSE</subscription> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | | |
| 5 | | IOP Check | Check if possible that the <subscription> resource has been removed in registrar CSE</subscription> | | |
| 6 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.8 accessControlPolicy Management

8.1.8.1 accessControlPolicy Create

| [| Interenerghility Test Description | | | | |
|-------------|-----------------------------------|-------------|--|--|--|
| ldontifior. | | | TD MOM NIL 20 | | |
| | | | | | |
| Objective: | | | AE creates an accessControlPolicy resource | | |
| Config | guration | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.3.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.2.2.1 | | |
| | | | · · · · | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE has created a <ae> resource on registrar CSE with name {AE}</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Type | Description | | |
| 1 | | Stimulus | AE is requested to send an accessControlPolicy Create Request | | |
| | | | • op = 1 (Create) | | |
| | | PRO Check | to = {CSEBaseName}/{AE} | | |
| | | | • $fr = AF - ID$ | | |
| 2 | Mca | Primitive | • rai – (taken-string) | | |
| | iviou | 1 11111110 | • ty = (accessControlPolicy) | | |
| | | | • iy - i (accessed into in oncy) | | |
| _ | | | • pc = Senalized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | | |
| 3 | | IOP Check | Check if possible that the <container> resource is created in registrar CSE</container> | | |
| | | PPO Check | • rsc = 2001 (CREATED) | | |
| 4 | Mca | Drimitivo | rqi = (token-string) same as received in request message | | |
| | IVICa | T IIIIIIIVE | pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | | |
| 5 IOP Check | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO | Verdict | | | | |

8.1.8.2 accessControlPolicy Retrieve

| | Interoperability Test Description | | | | |
|----------------|-----------------------------------|---------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_27 | | |
| Objec | tive: | | AE retrieves accessControlPolicy resource | | |
| Configuration: | | | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.3.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.2.2.2 | | |
| | | | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE has created a <ae> resource on registrar CSE with name {AE}</ae> | | |
| | | | accessControlPolicy resource has been created in registrar CSE under <ae></ae> | | |
| | | | resource with name {accessControlPolicyName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a accessControlPolicy retrieve request to Registrar CSE | | |
| | | PRO Check ca Primitive | • op = 2 (Retrieve) | | |
| | | | to = {CSEBaseName}/{AE}/{accessControlPolicyName} | | |
| 2 | Maa | | • fr = AE-ID | | |
| | IVICa | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| | | | Registrar CSE sends response containing: | | |
| 2 | | PRO Check | • rsc = 2000 (OK) | | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO ' | Verdict | | | | |

8.1.8.3 accessControlPolicy Update

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identif | ier: | | TD_M2M_NH_28 | |
| Objective: | | | AE updates attribute in accessControlPolicy resource | |
| Config | guratio | n: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.3.5 | |
| | | | oneM2M TS-0004 [2], clause 7.4.2.2.3 | |
| | | | | |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send an accessControlPolicy update request to Registrar CSE | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 3 | | IOP Check | Check if possible that the <accesscontrolpolicy> resource has been updated in registrar CSE</accesscontrolpolicy> | |
| 4 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 5 | 1 | IOP Check | AE indicates successful operation | |
| IOP V | erdict | | | |
| PRO V | /erdict | | | |

8.1.8.4 accessControlPolicy Delete

| r | | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| | Interoperability Test Description | | | | |
| Identi | fier: | | TD_M2M_NH_29 | | |
| Objective: | | | AE deletes accessControlPolicy resource | | |
| Config | guratio | n: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.3.6 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.2.2.4 | | |
| | | | | | |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send an accessControlPolicy delete request to Registrar CSE | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message • pc = empty | | |
| 4 | | IOP Check | Check if possible that the <accesscontrolpolicy> resource has been removed from registrar CSE.</accesscontrolpolicy> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO \ | /erdict | | | | |

| 8.1.8.5 | Unauthorized opera | tion (Insufficient | Access Rights, | operations) |
|---------|--------------------|--------------------|----------------|-------------|
| | | | | |

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_30 | | |
| Objective: | | | AE delete request is rejected due to accessControlPolicy (accessControlOperations) | | |
| Configuration: | | | M2M_CFG_01 | | |
| Refere | ences: | | oneM2M TS-0004 [2], clause 7.3.3.15 | | |
| | | | | | |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}, and accessControlOperations with no delete privilege</ae> AE has created a <container> resource on registrar CSE under <ae>, with name {containerName} and accessControlPolicyIDs including proper identifier of accessControlPolicy resource</ae></container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Type Description | | |
| 1 | | Stimulus | AE is requested to send a container Delete Request for resource <container></container> | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 4103 (ACCESS_DENIED) rqi = (token-string) same as received in request message pc = empty | | |
| 4 | | IOP Check | Check if possible that the <container> resource has not been removed in registrar CSE</container> | | |
| 5 | | IOP Check | AE indicates unsuccessful operation (Delete error - no privilege) | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.8.6 Unauthorized operation (Insufficient Access Rights, originators)

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_73 | | |
| Objective: | | | AE delete request is rejected due to accessControlPolicy (accessControlOriginators) | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | oneM2M TS-0004 [2], clause 7.3.3.15 | | |
| | | | | | |
| Pre-test conditions: | | | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}, and accessControlOriginators with no privilege for AE</ae> AE has created a <container> resource on registrar CSE under <ae>, with name {containerName} and accessControlPolicyIDs including proper identifier of</ae></container> | | |
| | | | accessControlPolicy resource | | |
| Ston | Ston PP Tuno Description | | | | |
| Jiep | КГ | Stimuluo | AE is requested to condicionar Delete Deguest for recourse, container | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message • pc = empty | | |
| 4 | | IOP Check | [Check if possible that the <container> resource has not been removed in registrar CSE</container> | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| 5 | | IOP Check | AE indicates unsuccessful operation (Delete error - no privilege) | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.8.7 Authorized operation

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_74 | |
| Objec | tive: | | AE delete request is allowed due to accessControlPolicy | |
| Configuration: | | | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0004 [2], clause 7.3.3.15 | |
| | | | | |
| Pre-test conditions: | | itions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}, and accessControlOperations with delete privilege and accessControlOriginators with privilege for AE</ae> AE has created a <container> resource on registrar CSE under <ae>, with name {containerName} and accessControlPolicyIDs including proper identifier of accessControlPolicy resource</ae></container> | |
| | | | Test Sequence | |
| Step | RP | Type Description | | |
| 1 | | Stimulus | AE is requested to send a container Delete Request for resource <container></container> | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 4 | | IOP Check | Check if possible that the <container> resource has been removed in registrar CSE</container> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.9 Group Management

8.1.9.1 Group Retrieve

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|----------------------------|--|--|
| Identifier: | | | TD_M2M_NH_32 | |
| Objec | tive: | | AE retrieves group resource | |
| Config | guratior | n: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.7.3 | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.2.2 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created a <group> resource on Registrar CSE</group> | |
| | | | Test Sequence | |
| Step | Step RP Type Description | | Description | |
| 1 | | Stimulus | AE is requested to send a group Retrieve Request | |
| | | PRO Check Aca Primitive | • op = 2 (RETRIEVE) | |
| | | | to = {CSEBaseName}/{group} | |
| 2 | Мса | | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | DDO Chask | • rsc = 2000 (OK) | |
| 3 | Maa | PRO Check | rgi = (token-string) same as received in request message | |
| | ivica | Finnuve | pc = Serialized representation of <group> resource</group> | |
| 4 | | IOP Check | AE indicates successful operation | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.9.2 Group Create

| Interconcrability Test Description | | | | |
|------------------------------------|---|--|--|--|
| | | | | |
| er: | | [TD_M2M_NH_31 | | |
| /e: | | AE creates a group resource | | |
| ration: | | M2M_CFG_01 | | |
| ces: | | ETSI TS 118 101 [1], clause 10.2.7.2 | | |
| | | oneM2M TS-0004 [2], clause 7.4.14.2.2 | | |
| | | | | |
| conditio | ons: | void | | |
| | | Test Sequence | | |
| RP | Туре | Description | | |
| | Stimulus | AE is requested to send a group Create Request | | |
| | | • op = 1 (Create) | | |
| Мса | | • to = {CSEBaseName} | | |
| | PRO Check | • fr = AE-ID | | |
| | Primitive | rqi = (token-string) | | |
| | | • ty = 9 (group) | | |
| | | pc = Serialized representation of <group> resource</group> | | |
| | IOP Check | Check if possible that the <group> resource is created in Registrar CSE</group> | | |
| | DDO Chask | rsc = 2001 (CREATED) | | |
| N 4 | PRO Check | rgi = (token-string) same as received in request message | | |
| IVICa | Primitive | pc = Serialized representation of <group> resource</group> | | |
| | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | |
| /erdict | | | | |
| | er: /e: ration: ces: condition RP Mca Mca Mca erdict | er: /e: ration: ces: conditions: RP Type Stimulus PRO Check Primitive IOP Check PRO Check Primitive IOP Check Primitive | | |

8.1.9.3 Group Update

| | | | Interoperability Test Description |
|-------------|----------|------------------------|---|
| Identifier: | | | TD_M2M_NH_33 |
| Objec | tive: | | AE updates attribute in group resource |
| Config | guratior | ו: | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.7.4 |
| | | | oneM2M TS-0004 [2], clause 7.4.14.2.4 |
| | | | · · · · · · |
| Pre-te | st cond | litions: | AE has created a <group> resource on Registrar CSE</group> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a group Update Request |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string) pc = Serialized representation of <group> resource</group> |
| 3 | | IOP Check | Check if possible that the <group> resource is updated in Registrar CSE</group> |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <group> resource</group> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP V | /erdict | | |
| PRO | Verdict | | |

8.1.9.4 Group Delete

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|---|--|
| Identi | fier: | | TD_M2M_NH_34 | |
| Objec | tive: | | AE deletes group resource | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.5 | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.2.5 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created a <group> resource on Registrar CSE</group> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a group Delete Request | |
| | | | op = 4 (DELETE) | |
| | | PRO Check | to = {CSEBaseName}/{group} | |
| 2 | Мса | Primitive | • fr = AE-ID | |
| | mou | | • rqi = (token-string) | |
| • | | PRO Check | • rsc = 2002 (DELETED) | |
| 3 | Мса | Primitive | rqi = (token-string) same as received in request message | |
| 4 | | IOP Check | Check if possible that the <group> resource is deleted in Registrar CSE</group> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.10 Node Management

8.1.10.1 Node Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_35 | | |
| Objectiv | ve: | | AE creates a node resource | | |
| Configu | ration: | | M2M_CFG_01 | | |
| Referen | ces: | | ETSI TS 118 101 [1], clause 10.2.8.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.18.2.1 | | |
| | | | | | |
| Pre-test | condition | ons: | void | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a node Create Request | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 14 (node) pc = Serialized representation of <node> resource</node> | | |
| 3 | | IOP Check | Check if possible that the <node> resource is created in Registrar CSE</node> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO V | /erdict | | | | |

8.1.10.2 Node Retrieve

| | Interoperability Test Description | | | |
|--------|-----------------------------------|-----------|--|--|
| Identi | fier: | | TD_M2M_NH_36 | |
| Objec | tive: | | AE retrieves node resource | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.4 | |
| | | | oneM2M TS-0004 [2], clause 7.4.18.2.2 | |
| | | | · • • • | |
| Pre-te | st cond | litions: | AE has created a <node> resource on Registrar CSE</node> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a node Retrieve Request | |
| | | | • op = 2 (RETRIEVE) | |
| 2 | | PRO Check | to = {CSEBaseName}/{node} | |
| 2 | Mca | Primitive | • $fr = AE-ID$ | |
| | | | • rqi = (token-string) | |
| | | | • rsc = 2000 (OK) | |
| 3 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | Mca | Primitive | pc = Serialized representation of <node> resource</node> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.10.3 Node Update

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_37 | | |
| Objec | tive: | | AE updates attribute in node resource | | |
| Config | guration | : | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.8.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.18.2.3 | | |
| | | | | | |
| Pre-te | st cond | itions: | AE has created a <node> resource on Registrar CSE</node> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a node Update Request | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) pc = Serialized representation of <node> resource</node> | | |
| 3 | | IOP Check | Check if possible that the <node> resource is updated in Registrar CSE</node> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO | /erdict | | | | |

8.1.10.4 Node Delete

| | Interoperability Test Description | | |
|----------------------|--|--|--|
| Identifier: | TD_M2M_NH_38 | | |
| Objective: | AE deletes node resource | | |
| Configuration: | M2M_CFG_01 | | |
| References: | ETSI TS 118 101 [1], clause 10.2.8.5 | | |
| | oneM2M TS-0004 [2], clause 7.4.18.2.4 | | |
| | | | |
| Pre-test conditions: | AE has created a <node> resource on Registrar CSE</node> | | |
| Test Sequence | | | |
| Step RP Type | Description | | |

| Interoperability Test Description | | | |
|-----------------------------------|-----|------------------------|--|
| 1 | | Stimulus | AE is requested to send a node Delete Request |
| 2 | Мса | PRO Check Primitive | op = 4 (DELETE) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) |
| 3 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message |
| 4 | | IOP Check | Check if possible that the <node> resource is deleted in Registrar CSE</node> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.1.11 PollingChannel Management

8.1.11.1 PollingChannel Create

| [| | | Interenerability Test Description | |
|-------------|----------|------------------------|--|--|
| | | | | |
| Identifier: | | | TD_M2M_NH_39 | |
| Objective: | | | AE creates a <pollingchannel> resource in registrar CSE via a Create Request</pollingchannel> | |
| Config | guratior | n: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.5.13 | |
| | | | oneM2M TS-0004 [2], clause 7.4.21.2.1 | |
| | | | | |
| Pre-te | st cond | itions: | AE has created an application resource <ae> on registrar CSE</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE sends a request to create a < pollingChannel > | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae> resource</ae> fr = AE-ID rqi = (token-string) ty = 15 (pollingChannel) pc = Serialized representation of < pollingChannel > resource | |
| 3 | | IOP Check | Check if possible that the < pollingChannel > resource is created in registrar CSE | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of < pollingChannel > resource | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO | Verdict | | | |

8.1.11.2 PollingChannel Retrieve

| | | | Interoperability Test Description | | |
|----------------------|--------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_40 | | |
| Objec | tive: | | AE retrieves information of a pollingChannel resource via a Retrieve Request | | |
| Configuration: | | | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.5.14 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.21.2.2 | | |
| | | | | | |
| Pre-test conditions: | | | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource < pollingChannel > on Registrar CSE | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a < pollingChannel > | | |
| | | | • op = 2 (Retrieve) | | |
| | | DDO Chask | to = {CSEBaseName}/URI of < pollingChannel > resource | | |
| 2 | Мса | PRO Check Primitive | • fr = AE-ID | | |
| | | | rqi = (token-string) | | |
| | | | • pc = empty | | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of < pollingChannel > resource | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.11.3 pollingChannel Update

| Interoperability Test Description | | | | |
|-----------------------------------|----------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_41 | |
| Objective: | | | AE updates attribute in pollingChannel resource via a Update Request | |
| Config | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.5.15 | |
| | | | oneM2M TS-0004 [2], clause 7.4.21.2.3 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | |
| | - | - | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a pollingChannel Update Request to update the lifetime of the | |
| | | | resource | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated < pollingChannel > resource | |
| 3 | | IOP Check | Check if possible that the < pollingChannel > resource is updated in Registrar CSE | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of < pollingChannel > resource | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.11.4 pollingChannel Delete

| Interoperability Test Description | | | |
|-----------------------------------|----------|------------------------|--|
| Identi | fier: | | TD_M2M_NH_42 |
| Objective: | | | AE deletes a pollingChannel resource via a Delete Request |
| Config | guration |): | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.5.16 |
| | | | oneM2M TS-0004 [2], clause 7.4.21.2.4 |
| | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a container resource <container> on Registrar CSE</container> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a subscription Delete Request |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = empty |
| 3 | | IOP Check | Check if possible that the < pollingChannel > resource is deleted in registrar CSE |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty |
| 5 | | IOP Check | Check if possible that the < pollingChannel > resource has been removed in registrar CSE |
| 6 | | IOP Check | AE indicates successful operation |

| Interoperability Test Description | | |
|-----------------------------------|--|--|
| IOP Verdict | | |
| PRO Verdict | | |

8.1.11.5 Long Polling on a PollingChannel Retrieve

| | | | Interoperability Test Description |
|-------------|----------|------------------------|---|
| Identifier: | | | TD_M2M_NH_43 |
| Objective: | | | AE retrieves information of a pollingChannel resource via a Retrieve Request |
| Config | guratior | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.5.18 |
| | | | oneM2M TS-0004 [2], clause 7.4.22.2.2 |
| | | | |
| Pre-te | est cond | litions: | A pollingChannel resource < pollingChannel > has been created in application |
| | | | <ae> on the Registrar CSE</ae> |
| | | | A subscription to a <container> resource has been created using the</container> |
| | | | <pre><pre>cpollingChannel> as a notificationURI in the subscription</pre></pre> |
| | | | A single <contentinstance> resource is created in the subscribed to resource</contentinstance> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a pollingChannelURI Retrieve Request for <pollingchanneluri></pollingchanneluri> |
| | Мса | PRO Check Primitive | Sent RETRIEVE request contains: |
| 2 | | | To: <csebase>/<ae>/<pollingchannel>/pollingChannelURI</pollingchannel></ae></csebase> |
| | | | • Fr. AE-ID |
| | | PRO Check Primitive | Sent RETRIEVE response contains: |
| | | | • To: AE-ID |
| 3 | Maa | | • Fr: CSE-ID |
| | Ivica | | Response Status Code: OK |
| | | | Cn: pending Notification request |
| 4 | | IOP Check | AE indicates successful operation |
| F | | | Repeat steps 1-2. There is no pending request. When the Request Expiration Timestamp |
| Э | | | expires Registrar sends response indicating "REQUEST_TIMEOUT" |
| | | | Sent RETRIEVE response contains: |
| 6 | | PRO Check | • To: AE-ID |
| | Mca | Primitive | • Fr. CSE-ID |
| | | | Response Status Code: REQUEST_TIMEOUT |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.1.12 FanoutPoint Management

8.1.12.1 FanoutPoint Create

| | Interoperability Test Description | | | |
|--------|-----------------------------------|-----------|---|--|
| Identi | fier: | | TD_M2M_NH_44 | |
| Objec | tive: | | AE creates a <contentinstance> resource in each group member</contentinstance> | |
| Confi | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.6 | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.3.1 | |
| | | | | |
| Pre-te | est cond | itions: | A group is created containing 2 members of type <container></container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Create Request to create <contentinstance> in each group</contentinstance> | |
| | | | member | |
| | | | • op = 1 (Create) | |
| | | | to = {CSEBaseName}/{group}/fopt | |
| 2 | Check | PRO Check | • fr = AE-ID | |
| 2 | Мса | Primitive | • rqi = (token-string) | |
| 1 | | | • ty = 4 (contentInstance) | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| 3 | | IOP Check | Check if possible that the <contentinstance> resource is created in each member hosting CSE</contentinstance> | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| 4 | Check | PRO Check Primitive | • rsc = 2001 (CREATED) | |
| | | | rqi = (token-string) same as received in request message | |
| | INCa | | pc = aggregated response | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | Verify that the a | ggregate response includes responses from each member of the group | |
| PRO | PRO Verdict | | | |

8.1.12.2 FanoutPoint Retrieve

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_45 | |
| Objec | tive: | | AE retrieves the <container> resource from in each group member</container> | |
| Config | guration | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.7 | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.3.2 | |
| | | | | |
| Pre-te | est cond | itions: | A group is created containing 2 members of type <container></container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request to the fanoutPoint of <group> resource</group> | |
| 2 | Check Mca | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{group}/fopt fr = AE-ID rqi = (token-string) | |
| 3 | | IOP Check | | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = aggregated response | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | Verify that the ag | ggregate response includes responses from each member of the group | |
| PRO Verdict | | | | |

8.1.12.3 FanoutPoint Update

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_NH_46 | |
| Objective: | | | AE updates an <container> resource of each member resource</container> | |
| Confi | guratio | n: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.8 | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.3.3 | |
| | | | | |
| Pre-te | est conc | litions: | A group is created containing 2 members of type <container></container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Update Request to the fanoutPoint of <group> resource to lifetime of the resource</group> | |
| 2 | Check Mca | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{group}/fopt fr = AE-ID rqi = (token-string) pc = Serialized representation of <container> resource</container> | |
| 3 | | IOP Check | Check if possible that both of the <container> resources have been updated in registrar CSE</container> | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = aggregated response | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | Verdict | Verify that the a | ggregate response includes responses from each member of the group | |
| PRO | Verdict | | | |

| | Interoperability Test Description | | | | |
|---------------|-----------------------------------|-------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_47 | | |
| Objecti | ve: | | AE deletes a <container> of each member</container> | | |
| Configu | iration: | | M2M_CFG_01 | | |
| Referer | ices: | | ETSI TS 118 101 [1], clause 10.2.7.9 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.3.4 | | |
| | | | | | |
| Pre-test | t conditi | ons: | A group is created containing 2 members of type <container></container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group></group> | | |
| I | | | resource | | |
| | | | • op = 4 (Delete) | | |
| 2 | Check | PRO Check | to = {CSEBaseName}/{group}/fopt | | |
| 2 | Мса | Primitive | • fr = AE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | DDO Chask | rsc = 2002 (DELETED) | |
| 3 | Спеск | PRO Check | rqi = (token-string) same as received in request message | | |
| | INICa | Primitive | pc = aggregated response | | |
| 4 | | Varify | Check if possible that the oldest <contentinstance> resource has been removed in</contentinstance> | | |
| 4 | | veniy | registrar CSE | | |
| 5 | | Verify | AE indicates successful operation | | |
| IOP Verdict V | | Verify that the a | ggregate response includes responses from each member of the group | | |
| PRO Ve | erdict | | | | |

8.1.12.4 FanoutPoint Delete

8.1.13 Notification Management

8.1.13.1 Notification

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------|--|--|
| Identifier: | | | TD_M2M_NH_48 | |
| Objective: | | | AE receives a notification request from the HOST CSE | |
| Confi | guratior | : | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10 | |
| | | | oneM2M TS-0004 [2], clause 7.4.1 | |
| | | | | |
| Pre-te | est cond | itions: | AE1 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE1 has created a container resource <container> on registrar CSE</container> | |
| | | | AE1 has created a <subscription> as a child resource of a <container></container></subscription> | |
| | | | AE2 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE2 has permissions to UPDATE the container created by AE1 | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE2 is requested to send a Update request to the <container> created by AE1. This</container> | |
| | | | triggers or causes the HOST CSE to send a notification to AE1 | |
| | | | • op = 5 (Notify) | |
| | Check | PRO Check | to = notificationURI of subscription resource | |
| 2 | Mca | Primitive | from = Registrar CSE-ID | |
| | Moa | 1 minuvo | • rqi = (token-string) | |
| | | | pc = Serialized representation of Notification data object | |
| 3 | | IOP Check | Check if the notification representation | |
| | Check | PRO Chack | Sent response contains: | |
| 4 | Mca | Primitive | • rsc = 2000 (OK) | |
| | Wica | T THINKIVE | rqi = (token-string) same as received in request message | |
| 5 | | IOP Check | AE1 indicates notification received | |
| IOP Verdict | | | | |
| PRO | Verdict | | | |

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_80 | | |
| Objec | tive: | | AE2 sends maxNrOfInstances UPDATE request to <container> which has been set to</container> | | |
| | | | subscribed-to resource. Since <subscription> resource has specific setting in</subscription> | | |
| | | | eventNotificationCriteria, Hosting CSE send notification to AE1 | | |
| Config | guratior | 1: | M2M_CFG_10 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10 | | |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.19 | | |
| | | | | | |
| Pre-te | est cond | itions: | CSEBase resource has been created in registrar CSE with name | | |
| | | | {CSEBaseName} | | |
| | | | AE1 has created a <container> resource on registrar CSE</container> | | |
| | | | AE1 has created <subscription> resources under the <container> resource. AE1 has set attribute of eventNetificationCriterio to a specific condition (or greater)</container></subscription> | | |
| | | | maxNrOfInstances in this scenario) and notificationEventType set to 1/1 Indate of | | |
| | | | | | |
| | | | AF2 has permissions to LIPDATE the <container></container> | | |
| | | | | | |
| Step | RP | Туре | Description | | |
| 4 | | Stimulus | AE2 is requested to send a Update Request to the <container>. This triggers or causes</container> | | |
| 1 | | | the Hosting CSE to send a notification to AE1 | | |
| | | | • op = 3 (Update) | | |
| | Chack | DBO Chack | to = ID of <container> resource</container> | | |
| 2 | Mca | Primitive | • from = AE2-ID | | |
| | INICA | 1 minuve | • rqi = (token-string) | | |
| | | | pc = Serialized representation of maxNrOfInstances update | | |
| 3 | | IOP Check | Hosting CSE successfully updated mxNrOfInsatnce of the <container> resource</container> | | |
| | Check | PRO Check | rsc = 2004 (Updated) | | |
| 4 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| _ | | | pc = Serialized representation of <container> resource</container> | | |
| 5 | | IOP Check | AE2 successfully received response of Update request | | |
| | | | • $op = 5$ (Notify) | | |
| | | PRO Check Primitive | to = ID or <subscription> resource</subscription> | | |
| 6 | Спеск | | • trom = Registrar CSE-ID | | |
| | IVICa | | rql = (token-string) Serialized representation of Netify request which contain | | |
| | | | pc = Senalized representation of Notity request which contain patificationEventType equal to 1/Lipdate of Resource) | | |
| 7 | | IOP Check | AF1 successfully received Notify request | | |
| , | Check | PRO Check | rsc = 2000 (OK) | | |
| 8 | Mca | Primitive | rgi = (token-string) same as received in request message | | |
| 9 | | IOP Check | Hosting CSE successfully received response of Notify request | | |
| - | | | • op = 3 (Update) | | |
| | <u>.</u> | | to = ID of <container> resource</container> | | |
| 10 | Check | PRO Check | • from = AE2-ID | | |
| | ivica | Primitive | rqi = (token-string) | | |
| | | | pc = Serialized representation of labels update(can be any other attribute) | | |
| 11 | | IOP Check | Hosting CSE successfully updated labels of the <container> resource</container> | | |
| | Check | DPO Chook | • rsc = 2004 (Updated) | | |
| 12 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | ivica | | pc = Serialized representation of <container> resource</container> | | |
| 13 | | IOP Check | AE2 successfully received response of Update request, notify request will not be sent | | |
| IOP \ | /erdict | Check that the r | notification is only sent when there is update of maxNrOfInstances due to setting of the | | |
| | | eventNotification | nCriteria | | |
| PRO۱ | Verdict | | | | |

8.1.13.2 Update Notification

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_81 | |
| Objective: | | | AE2 sends DELETE request to <container> which has been set to subscribed-to resource. Since <subscription> resource has notificationEventType with 'Delete of Resource', Hosting CSE send notification to AE1</subscription></container> | |
| Config | guration |): | M2M_CFG_10 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10 oneM2M TS-0004 [2], clause 6.3.4.2.19 | |
| Pre-test conditions: | | itions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE1 has created a <container> resource on registrar CSE</container> AE1 has created a <subscription> under the <container> resource, with notificationEventType set to 2(Delete of Resource)</container></subscription> AE2 has permissions to DELETE the <container></container> | |
| Cton | | Turne | Test Sequence | |
| Step | RP | I ype | Description | |
| 1 | | Stimulus | the Hosting CSE to send a notification to AE1 | |
| 2 | Check Mca | PRO Check Primitive | op = 4 (Delete) to = ID of <container> resource</container> fr = AE2-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Hosting CSE successfully deleted the <container> resource</container> | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | AE2 successfully received response of Delete request | |
| 6 | Check Mca | PRO Check Primitive | op = 5 (Notify) to = ID of <subscription> resource</subscription> from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notify request which contain notificationEventType equal to 2(Delete of Resource) | |
| 7 | | IOP Check | AE1 successfully received Notify request | |
| 8 | Check Mca | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message | |
| 9 | | IOP Check | Hosting CSE successfully received response of Notify request | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.13.3 Delete Notification

8.1.13.4 Creation of Direct Child Resource Notification

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_82 | |
| Objective: | | | AE2 sends <contentinstance> CREATE request to <container> which has been set to subscribed-to resource. Since <subscription> resource has notificationEventType with 'Create of Direct Child Resource' Hosting CSE send notification to AE1</subscription></container></contentinstance> | |
| Confi | ouration | | M2M_CEG_10 | |
| Refer | oncos: | • | ETSLTS 118 101 [1] clause 10.2.10 | |
| Refer | 011003. | | oneM2M TS-0004 [2] clause 6.3.4.2.19 | |
| | | | | |
| Pre-te | est cond | itions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE1 has created a coentrinery resource on registrar CSE | |
| | | | AET has created a <container> resource on registral CSE</container> AE1 has created a <subscription> under the <container> resource, with notificationEventType set to 3(Create of Direct Child Resource)</container></subscription> AE2 has permissions to CREATE child resource under the <container></container> | |
| | | | ALZ has permissions to CREATE child resource under the <container> Toot Seguence</container> | |
| Ston | RD | Туре | Test Sequence Description | |
| Step | INF | Stimulus | AF2 is requested to send a Create Request of <contentinstance> resource to the</contentinstance> | |
| 1 | | Olimaids | AL2 is requested to send a create request of contentinistance/ resource to the <container> resource. This triggers or causes the Hosting CSE to send a notification to AE1</container> | |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = ID of <container> resource</container> fr = AE2-ID rqi = (token-string) ty = 4 (contentInstance) pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| 3 | | IOP Check | Hosting CSE successfully created the <contentinstance> resource under the <container> resource</container></contentinstance> | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <contentinstance> resource</contentinstance> | |
| 5 | | IOP Check | AE2 successfully received response of Create request | |
| 6 | Check Mca | PRO Check Primitive | op = 5 (Notify) to = ID of <subscription> resource</subscription> from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notify request which contain notificationEventType equal to 3(Create of Direct Child Resource) | |
| 7 | | IOP Check | AE1 successfully received Notify request | |
| 8 | Check Mca | PRO Check Primitive | Sent response contains: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message | |
| 9 | | IOP Check | Hosting CSE successfully received response of Notify request | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.13.5 Deletion of Direct Child Resource Notification

| | | | Interoperability Test Description |
|------------|--------------|------------------------|--|
| Identi | fier: | | TD_M2M_NH_83 |
| Objective: | | | AE2 sends DELETE request to the <contentinstance> which is located under the</contentinstance> |
| | | | subscribed-to resource. Since <subscription> resource has notificationEventType with</subscription> |
| | | | 'Delete of Direct Child Resource', Hosting CSE send notification to AE1 |
| Confi | guration | 1: | M2M_CFG_10 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10 |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.19 |
| | | | |
| Pre-te | est cond | itions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} |
| | | | AE1 has created a <container> resource on registrar CSE</container> |
| | | | • AE1 has created a <contentinstance> as a child resource of <container> created</container></contentinstance> |
| | | | by AE1 |
| | | | AE1 has created a <subscription> under the <container> resource, with</container></subscription> |
| | | | notificationEventType set to 4(Delete of Direct Child Resource) |
| | | | AE2 has permissions to DELETE the <contentinstance></contentinstance> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE2 is requested to send a Delete Request to the <contentinstance>. This triggers or</contentinstance> |
| | | | causes the Hosting CSE to send a notification to AE1 |
| | Check Mca | PRO Check Primitive | • op = 4 (Delete) |
| | | | to = ID of <contentinstance> resource</contentinstance> |
| 2 | | | • fr = AE-ID |
| | | | • rqi = (token-string) |
| | | | • pc = empty |
| 3 | | IOP Check | Hosting CSE successfully deleted the <contentinstance> resource</contentinstance> |
| | 0 | DBO Chack | • rsc = 2002 (DELETED) |
| 4 | Спеск | PRO Check | rgi = (token-string) same as received in request message |
| | Ivica | Primitive | • pc = empty |
| 5 | | IOP Check | AE2 successfully received response of Delete request |
| | | | • op = 5 (Notify) |
| | | | to = ID of <subscription> resource</subscription> |
| • | Check | PRO Check | from = Registrar CSE-ID |
| 6 | Мса | Primitive | • rai = (token-string) |
| | | | pc = Serialized representation of Notify request which contain |
| | | | notificationEventType equal to 4(Delete of Direct Child Resource) |
| 7 | | IOP Check | AE1 successfully received Notify request |
| | Check | PRO Check | • rsc = 2000 (OK) |
| 8 | Мса | Primitive | rgi = (token-string) same as received in request message |
| 9 | | IOP Check | Hosting CSE successfully received response of Notify request |
| IOP \ | /erdict | | |
| PRO | Verdict | | |
| | | | |

| Interoperability Test Description | | | | | |
|-----------------------------------|--------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_89 | | |
| Objective: | | | AE creates <subscription> resources by sending Create Request to the fanOutPoint. Since AE has set notifyAggregation to 2, Hosting CSE aggregate notification and send</subscription> | | |
| Config | uration: | | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.7.11 oneM2M TS-0004 [2], clause 7.4.14.2.4 | | |
| Pre-test conditions: | | | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created two <container> resources on registrar CSE</container> AE has created a <group> resource with memberIDs set to two <container> resources. AE has set number in notifyAggregation to 2</container></group> AE has created <subscription> resources under the members of <group> resources by sending Create Request to the fanOutPoint. AE has set notificationForwardingURI and notificationEventType set to 3(Create of Direct Child Baseurce)</group></subscription> | | |
| | | | Child Resource) | | |
| Stop | DD | Туро | Description | | |
| Step | КГ | Stimuluo | AE is requested to condia Create Request of coontentingtaneos, resource to the | | |
| 1 | | Sumulus | fanOutPoint | | |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/{group}/fopt fr = AE-ID rqi = (token-string) ty = 4 (contentInstance) pc = Serialized representation of <subscription> resource</subscription> | | |
| 3 | | IOP Check | Hosting CSE successfully created the <contentinstance> resources in each member</contentinstance> | | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = aggregated response | | |
| 5 | | IOP Check | AE successfully received converged response | | |
| 6 | Check Mca | PRO Check Primitive | op = 5 (Notify) to = ID of <subscription> resource</subscription> from = Registrar CSE-ID rqi = (token-string) pc = aggregated Notify request which contain the occurrence of child resource creation | | |
| 7 | | IOP Check | AE successfully received aggregated Notify request | | |
| 8 | Check Mca | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message | | |
| 9 | | IOP Check | Group Hosting CSE successfully received response of Notify request | | |
| IOP | Verdict | Check that the r | esponse is aggregated by the group Hosting CSE and successfully parse to AE | | |
| PRO | Verdict | | | | |

8.1.13.6 Notifcation Aggregation

8.1.14 FlexContainer Management

8.1.14.1 FlexContainer Create

| | Interoperability Test Description | | | |
|-------------------|-----------------------------------|---|--|--|
| Identifier: | | TD_M2M_NH_52 | | |
| Objective: | | AE creates a flexContainer resource in Registrar CSE via a flexContainer Create Request | | |
| Configuration: | | M2M_CFG_01 | | |
| References: | | ETSI TS 118 101 [1], clause 10.2.4.16, 9.6.35 | | |
| | | oneM2M TS-0004 [2], clause 7.4.37.2.1 | | |
| | | | | |
| Pre-test conditio | ns: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | | |
| | | Test Sequence | | |
| Step RP | Туре | Description | | |
| 1 | Stimulus | AE sends a request to create a <flexcontainer></flexcontainer> | | |

| | Interoperability Test Description | | | |
|---|-----------------------------------|--|---|--|
| 2 | Mca | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is created in Registrar CSE</flexcontainer> | |
| 4 | Мса | PRO Check • rsc = 2001 (CREATED) Ica Primitive • rgi = (token-string) same as received in request message • pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 5 IOP Check AE indicates successful operation | | AE indicates successful operation | | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.14.2 FlexContainer Retrieve

| | | | Interoperability Test Description | | |
|-------------|---------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_53 | | |
| Objec | tive: | | AE retrieves information of a flexContainer resource via a flexContainer Retrieve Request | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clauses 10.2.4.17, 9.6.35 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.37.2.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a flexContainer resource <flexcontainer> on Registrar CSE</flexcontainer> | | |
| | Test Sequence | | | | |
| Step | RP | Туре | ype Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <flexcontainer></flexcontainer> | | |
| | Maa | PRO Check Primitive | • op = 2 (Retrieve) | | |
| | | | to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> | | |
| 2 | | | • fr = AE-ID | | |
| | IVICa | | rqi = (token-string) | | |
| | | | • pc = empty | | |
| | | DDO Chask | rsc = 2000 (OK) | | |
| 3 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | ivica | Finnuve | pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 4 IOP | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.14.3 FlexContainer Update

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|-----------|--|--|--|
| Identi | fier: | | TD_M2M_NH_54 | | |
| Objec | tive: | | AE updates attribute in application resource via a flexContainer Update Request | | |
| Confi | guration | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clauses 10.2.4.18, 9.6.35 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.37.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a flexContainer resource <flexcontainer> on Registrar CSE</flexcontainer> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a flexContainer Update Request to update the any | | |
| | | | customAttribute of the resource | | |
| | | | • op = 3 (Update) | | |
| | | PRO Check | to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> | | |
| 2 | Mca | Primitive | • fr = AE-ID | | |
| | Mea | Thinkive | • rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <flexcontainer> resource</flexcontainer> | | |
| 3 | | IOP Check | Check if possible that the < flexContainer > resource is updated in Registrar CSE | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|--|-----------------------------------|--|--|
| 4 | Мса | PRO Check Primitive rgi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO Verdict | | | | | |

8.1.14.4 FlexContainer Delete

| | | | Interoperability Test Description | |
|-------------|----------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_55 | |
| Objec | tive: | | AE deletes a specific container resource via a container Delete Request | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clauses 10.2.4.19, 9.6.35 | |
| | | | oneM2M TS-0004 [2], clause 7.4.37.2.4 | |
| | | | | |
| Pre-te | est cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a flexContainer resource <flexcontainer> on Registrar CSE</flexcontainer> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a flexContainer Delete Request | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is deleted in Registrar CSE</flexcontainer> | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | Check if possible that the <flexcontainer> resource has been removed in Registrar CSE</flexcontainer> | |
| 6 IOP Check | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.14.5 Notification Create

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|----------------|--|--|--|--|
| Identifier: | | | TD_M2M_NH_56 | | | |
| Objective: | | | AE receives a notification request on flexContainer update from the HOST CSE | | | |
| Confi | guration | : | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clauses 10.2.10 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.1 | | | |
| | | | | | | |
| Pre-te | est cond | itions: | AE1 has created an application resource <ae> on Registrar CSE</ae> | | | |
| | | | AE1 has created a flexContainer resource <flexcontainer> on Registrar CSE</flexcontainer> | | | |
| | | | AE1 has created a <subscription> as a child resource of a <flexcontainer></flexcontainer></subscription> | | | |
| | | | AE2 has created an application resource <ae> on Registrar CSE</ae> | | | |
| | | | AE2 has permissions to UPDATE customAttributes of flexContainer | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE2 is requested to send a update request to <flexcontainer> for updating</flexcontainer> | | | |
| | | | custom Autobale. This inggets of causes the HOOT COL to seria a notification to ALT $= -5$ (Notify) | | | |
| | | neck PRO Check | • op = 5 (Notify) | | | |
| 2 | Check | | • to = notification of subscription resource | | | |
| 2 | Мса | Primitive | • $1011 = \text{Registrat CSE-ID}$ | | | |
| | | | IqI = (loken-sumg) no. Serialized representation of Natification data chiest | | | |
| 2 | | | pc = Senanzeu representation of Notification data object | | | |
| 3 | | IOP Check | Check if the notification representation | | | |
| | Check | PRO Check | Sent response contains: | | | |
| 4 | Mca | Primitive | • rsc = 2000 (OK) | | | |
| | | 1 111111110 | rqi = (token-string) same as received in request message | | | |

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|---|--|--|--|--|
| 5 | | IOP Check AE1 indicates notification received | | | | |
| IOP Verdict | | | | | | |
| PRO Verdict | | | | | | |

8.1.14.6 Discovery with attribute filter criteria over customAttributes

| | | | Interoperability Test Description | | |
|-------------|----------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_57 | | |
| Objective: | | | AE discovers accessible resources residing in Registrar CSE using attribute filter criteria which has a customAttribute name and value assigned to it. | | |
| Config | guration | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clauses 10.2.10 oneM2M TS-0004 [2], clause 7.3.3.14 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a flexContainer resource <flexcontainer> on Registrar CSE with customAttribute set to a specific value "x", created on Registrar CSE</flexcontainer> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Discovery request in order to discover the <container> resource using attribute filter criteria</container> | | |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu=1 • atr= <nm>,<val> • pc = empty</val></nm> | | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of data object containing the address of the <flexcontainer> address</flexcontainer> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.15 External Management Operations Management

8.1.15.1 mgmtCmd Create

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|-----------|--------------|--|--|--|
| Identifier: | | | TD_M2M_NH_63 | | | |
| Objectiv | ve: | | AE creat | tes a mgmtCmd resource | | |
| Configu | uration: | | M2M_CI | FG_01 | | |
| Referen | nces: | | ETSI TS | 5 118 101 [1], clause 10.2.8.8 | | |
| | | | oneM2N | 1 TS-0004 [2], clause 7.4.16.2.1 | | |
| | | | | | | |
| Pre-test | t conditie | ons: | • | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | • | AE has created a node resource <node> on Registrar CSE</node> | | |
| | Test Sequence | | | | | |
| Step | RP | Туре | | Description | | |
| 1 | | Stimulus | AE is red | quested to send a mgmtCmd Create Request | | |
| | | | • | op = 1 (Create) | | |
| | | | • | to = {CSEBaseName} | | |
| 2 | | PRO Check | • | fr = AE-ID | | |
| 2 | Mca | Primitive | • | rqi = (token-string) | | |
| | | | • | ty = 12 (mgmtCmd) | | |
| | | | • | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | | |
| 3 | | IOP Check | Check if | possible that the <mgmtcmd> resource is created in Registrar CSE</mgmtcmd> | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-------------------------------------|--|--|--|
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | | |
| 5 | | IOP Check | IOP Check AE indicates successful operation | | |
| IOP Verdict | | Set verdict to pa error message. | ass if IOP check goal is achieved exactly, otherwise verdict fail is set with corresponding | | |
| PRO Verdict | | | | | |

8.1.15.2 mgmtCmd Retrieve

| | | | Interoperability Test Description | |
|----------------|---------|------------------------|--|--|
| Identifier: | | | TD_M2M_NH_64 | |
| Objective: | | | AE retrieves mgmtCmd resource | |
| Configuration: | | | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.8.9 | |
| | | | oneM2M TS-0004 [2], clause 7.4.16.2.2 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a node resource <node> on Registrar CSE</node> | |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a mgmtCmd Retrieve Request | |
| | | | • op = 2 (RETRIEVE) | |
| - | Мса | PRO Check Primitive | to = {CSEBaseName}/{mgmtCmd} | |
| 2 | | | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | PPO Chock | • rsc = 2000 (OK) | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | |
| | INICA | Timuve | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | Verdict | | | |

8.1.15.3 mgmtCmd Update (Normal)

| | | | Interoperability Test Description | |
|-------------|----------|--------------------------|--|--|
| Identifier: | | | TD_M2M_NH_65 | |
| Objective: | | | AE updates attribute (not with 'true' in execEnable attribute) in mgmtCmd resource | |
| Config | guratior | າ: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.10 | |
| | | | oneM2M TS-0004 [2], clause 7.4.16.2.3.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a node resource <node> on Registrar CSE</node> | |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a mgmtCmd Update Request | |
| | | PRO Check a Primitive | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/{mgmtCmd} | |
| 2 | Maa | | • fr = AE-ID | |
| | IVICa | | rqi = (token-string) | |
| | | | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | |
| 3 | | IOP Check | Check if possible that the <mgmtcmd> resource is updated in Registrar CSE</mgmtcmd> | |
| | | | rsc = 2004 (UPDATED) | |
| 4 | Мса | a PRO Check | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | |
| 5 | | IOP Check | AE indicates successful operation | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.15.4 mgmtCmd Update (Execute)

| | | | Interoperability Test Description | |
|----------------|---------|------------------------|--|--|
| Identifier: | | | TD_M2M_NH_66 | |
| Objective: | | | AE updates attribute (with 'true' in execEnable attribute) in mgmtCmd resource | |
| Configuration: | | | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.12 | |
| | | | oneM2M TS-0004 [2], clause 7.4.16.2.3.2 | |
| | | | · · · · · · · · · · · · · · · · · · · | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a node resource <node> on Registrar CSE</node> | |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a mgmtCmd Update Request | |
| | | PRO Check Primitive | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/{mgmtCmd} | |
| 2 | Mca | | • fr = AE-ID | |
| | MCa | | • rqi = (token-string) | |
| | | | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | |
| 3 | | IOP Check | Check if possible that the <mgmtcmd> resource is updated in Registrar CSE</mgmtcmd> | |
| | | DDO Chaak | rsc = 2004 (UPDATED) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | Ivica | Fiimuve | pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> | |
| 5 IOP Chec | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.1.15.5 mgmtCmd Delete

| | | | Interoperability Test Description |
|----------------|---------|-----------|--|
| Identifier: | | | TD_M2M_NH_67 |
| Objective: | | | AE deletes mgmtCmd resource |
| Configuration: | | | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.8.11 |
| | | | oneM2M TS-0004 [2], clause 7.4.16.2.4 |
| | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> |
| | | | AE has created a node resource <node> on Registrar CSE</node> |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a mgmtCmd Delete Request |
| | | | • op = 4 (DELETE) |
| | | PRO Chack | to = {CSEBaseName}/{mgmtCmd} |
| 2 | Mca | Primitive | • fr = AE-ID |
| | Wica | Thinkive | • rai = (token-string) |
| | | | |
| 3 | | PRO Check | • $rsc = 2002 (DELETED)$ |
| | Mca | Primitive | rqi = (token-string) same as received in request message |
| 4 | | IOP Check | Check if possible that the <mgmtcmd> resource is deleted in Registrar CSE</mgmtcmd> |
| 5 IOP Che | | IOP Check | AE indicates successful operation |
| IOP V | /erdict | | |
| PRO V | Verdict | | |

| | | | Interoperability Test Description |
|-------------|----------|---------------|---|
| Identifier: | | | TD_M2M_NH_68 |
| Objective: | | | AE retrieves execlnstance resource |
| Config | guratior | ו: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.20 |
| | | | oneM2M TS-0004 [2], clause 7.4.17.2.2 |
| | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> |
| | | | AE has created a node resource <node> on Registrar CSE</node> |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> |
| | | | AE has executed the mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> |
| | | | (update execEnable attribute with 'true') |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a execInstance Retrieve Request |
| | | | • op = 2 (RETRIEVE) |
| 2 | | PRO Check | to = {CSEBaseName}/{mgmtCmd}/{execInstance} |
| 2 | Mca | lca Primitive | • fr = AE-ID |
| | | | rqi = (token-string) |
| | | | • rsc = 2000 (OK) |
| 3 | Maa | PRO Check | rgi = (token-string) same as received in request message |
| | ivica | Primitive | pc = Serialized representation of <execinstance> resource</execinstance> |
| 4 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.1.15.6 execInstance Retrieve

8.1.15.7 execInstance Update (Cancel)

| | | | Interoperability Test Description | | |
|--|------------------|--|---|--|--|
| Identifier: | | | TD_M2M_NH_69 | | |
| Objective: | | | AE updates attribute 'execDisable' to true in execInstance resource to cancel pending | | |
| _ | | | management command. | | |
| Confi | guratior | ו: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.19 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.17.2.1 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a node resource <node> on Registrar CSE</node> | | |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | | |
| | | | AE has executed the mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | | |
| | | | (update execEnable attribute with 'true') | | |
| | | | Test Sequence | | |
| - | | | | | |
| Step | RP | Туре | Description | | |
| Step 1 | RP | Type Stimulus | Description AE is requested to send a execInstance Update Request | | |
| Step 1 | RP | Type Stimulus | Description AE is requested to send a execInstance Update Request • op = 3 (Update) | | |
| Step 1 | RP | Type Stimulus | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} | | |
| 2 Step | RP | Type Stimulus PRO Check | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID | | |
| 2 | RP Mca | Type Stimulus PRO Check Primitive | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) | | |
| 2 | RP Mca | Type Stimulus PRO Check Primitive | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource</execinstance> | | |
| 2 3 | Mca | Type Stimulus PRO Check Primitive IOP Check | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE</execinstance></execinstance> | | |
| 2 3 | Mca | Type Stimulus PRO Check Primitive | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE • rsc = 2004 (UPDATED)</execinstance></execinstance> | | |
| Step 1 2 3 4 | Mca | Type Stimulus PRO Check Primitive IOP Check PRO Check | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE • rsc = 2004 (UPDATED) • raj = (token-string) same as received in request message</execinstance></execinstance> | | |
| 2 3 4 | RP Mca Mca | Type Stimulus PRO Check Primitive IOP Check PRO Check Primitive | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE • rsc = 2004 (UPDATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <execinstance> resource</execinstance></execinstance></execinstance> | | |
| 2 3 4 5 | Mca Mca | Type Stimulus PRO Check Primitive IOP Check PRO Check Primitive IOP Check | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE • rsc = 2004 (UPDATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <execinstance> resource</execinstance></execinstance></execinstance> | | |
| 2 3 4 5 IOP \ | RP Mca Mca | Type Stimulus PRO Check Primitive IOP Check PRO Check Primitive IOP Check | Description AE is requested to send a execInstance Update Request • op = 3 (Update) • to = {CSEBaseName}/{mgmtCmd}/{execInstance} • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <execinstance> resource Check if possible that the <execinstance> resource is updated in Registrar CSE • rsc = 2004 (UPDATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <execinstance> resource</execinstance></execinstance></execinstance> | | |

| | | | Interoperability Test Description | |
|-------------|----------|-----------|---|--|
| Identifier: | | | TD_M2M_NH_70 | |
| Objective: | | | AE deletes execInstance resource | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.21 | |
| | | | oneM2M TS-0004 [2], clause 7.4.17.2.3 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a node resource <node> on Registrar CSE</node> | |
| | | | AE has created a mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | |
| | | | AE has executed the mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> | |
| | | | (update execEnable attribute with 'true') | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a execInstance Delete Request | |
| | | | • op = 4 (DELETE) | |
| 2 | | PRO Check | to = {CSEBaseName}/{mgmtCmd}/{execInstance} | |
| 2 | Мса | Primitive | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| ~ | | PRO Check | • rsc = 2002 (DELETED) | |
| 3 | Мса | Primitive | rgi = (token-string) same as received in request message | |
| 4 | | IOP Check | Check if possible that the <execinstance> resource is deleted in Registrar CSE</execinstance> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.1.15.8 execlistance Delete

8.1.16 SemanticDescriptor Management

8.1.16.1 SemanticDescriptor Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| Identifier: | | | TD_M2M_NH_75 | | |
| Objective: | | | AE creates a SemanticDescriptor resource in Registrar CSE via a SemanticDescriptor | | |
| _ | | | Create Request | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| References: | | | oneM2M TS-0034 [13], clause 6.1.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.34.2.1 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a container resource <container> on Registrar CSE</container> | | |
| | | | | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a <semanticdescriptor></semanticdescriptor> | | |
| | | | • op = 1 (Create) | | |
| | | | to = {CSEBaseName}/URI of < container > resource | | |
| 2 | | PRO Check | • fr = AE-ID | | |
| 2 | Mca | Primitive | • rqi = (token-string) | | |
| | | | ty = 24 (semanticDescriptor) | | |
| | | | pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is created in Registrar CSE</semanticdescriptor> | | |
| | | DDO Chask | • rsc = 2001 (CREATED) | | |
| 4 | Maa | PRO Check | rgi = (token-string) same as received in request message | | |
| | Ivica | Primitive | pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

| | | | Interoperability Test Description | | |
|----------------|----------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_76 | | |
| Objective: | | | AE retrieves information of a semanticDescriptor resource via a semanticDescriptor | | |
| | | | Retrieve Request | | |
| Configuration: | | | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.1.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.34.2.2 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a semanticDescriptor resource <semanticdescriptor> as child</semanticdescriptor> | | |
| | | | resource of <ae> resource</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <semanticdescriptor></semanticdescriptor> | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.1.16.2 SemanticDescriptor Retrieve

8.1.16.3 SemanticDescriptor Update

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|---------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_77 | | |
| Objective: | | | AE updates attribute in <semanticdescriptor> resource via a semanticDescriptor Update</semanticdescriptor> | | |
| - | | | Request | | |
| Confi | guratior | າ: | M2M_CFG_01 | | |
| References: | | | oneM2M TS-0034 [13]. clause 6.1.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.34.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a semanticDescriptor resource <semanticdescriptor> as child</semanticdescriptor> | | |
| | | | resource of <ae> resource</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a semanticDescriptor Update Request to update the descriptor | | |
| 1 | | | attribute of the resource | | |
| | Мса | PRO Check ca Primitive | • op = 3 (Update) | | |
| | | | to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> | | |
| 2 | | | • fr = AE-ID | | |
| | | | rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <semanticdescriptor> resource</semanticdescriptor> | | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is updated in Registrar CSE</semanticdescriptor> | | |
| | | | • rsc = 2004 (Updated) | | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | ivica | Primitive | pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO | Verdict | | | | |
| | Internet little Test Description | | | |
|------------|----------------------------------|------------------------|---|--|
| | | | The Month and The State | |
| Identi | tier: | | 1D_M2M_NH_78 | |
| Objective: | | | AE deletes SemanticDescriptor resource via a SemanticDescriptor Delete Request | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 6.1.5 | |
| | | | oneM2M TS-0004 [2], clause 7.4.34.2.4 | |
| | | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticDescriptor resource <semanticdescriptor> as child of</semanticdescriptor> | |
| | | | <ae> resource</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a semanticDescriptor Delete Request | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is deleted in Registrar CSE</semanticdescriptor> | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | Check if possible that the <semanticdescriptor> resource has been removed in Registrar CSE</semanticdescriptor> | |
| 6 | | IOP Check | AE indicates successful operation. | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.1.16.4 SemanticDescriptor Delete

8.1.17 Semantic Resource Discovery

8.1.17.1 Discovery with semanticFilter filter criteria

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|-----------|--|--|--|
| Identi | fier: | | TD_M2M_NH_79 | | |
| Objec | Objective: | | AE discovers accessible resources residing in Registrar CSE using the semanticFilter | | |
| | | | filter criteria | | |
| Confi | guration | 1: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.18 | | |
| | | | | | |
| Pre-te | est cond | itions: | AE1 has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | AE1 has created a container resource <container> on Registrar CSE</container> | | |
| | | | AE1 has created a <semanticdescriptor> as a child resource of a <container></container></semanticdescriptor> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 is requested to send a Discovery request to discover the <container> resource using</container> | | |
| | | | the semanticFilter filterCriteria | | |
| | | | Sent request contains: | | |
| | | | • op = 2 (Retrieve) | | |
| | | | to = {CSEBaseName} | | |
| 2 | Check | PRO Check | • from = AE-ID | | |
| ~ | Mca | Primitive | • rqi = (token-string) | | |
| | | | • fu=1 | | |
| | | | smf=sparqlQuery1 | | |
| | | | • pc = empty | | |
| | | | Sent response contains: | | |
| 3 | Check | PRO Check | • rsc = 2000 (OK) | | |
| 5 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of data object containing the <container> address</container> | | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|-------------------------------------|--|
| 4 | | IOP Check | AE1 indicates notification received | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.18 ResultContent

8.1.18.1 ResultContent=0

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_84 | | |
| Objec | tive: | | Check creation of <container> resource with result content set to 0(nothing)</container> | | |
| Confi | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2 | | |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.7 | | |
| | | | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in CSE with name {CSEBaseName} | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a <container> resource Create Request to the Registrar CSE</container> | | |
| | | | with rcn=0 | | |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 3 (container) rcn = 0 pc = Serialized representation of <container> resource which contain {containerName} as a rn</container> | | |
| 3 | | IOP Check | Hosting CSE successfully created the <container> resource</container> | | |
| 4 | Check | PRO Check | • rsc = 2001 (CREATED) | | |
| 4 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| 5 | | IOP Check | AE successfully received response of Create request | | |
| IOP \ | /erdict | Check that the r | esponse body does not include any message | | |
| PRO | Verdict | | | | |

8.1.18.2 ResultContent=1

| | | | Interoperability Test Description |
|------------|--------------|------------------------|--|
| Identi | ifier: | | TD_M2M_NH_85 |
| Objective: | | | Check creation of <container> resource with result content set to 1(attributes)</container> |
| Confi | guratior | ו: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2 |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.7 |
| | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in CSE with name {CSEBaseName} |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a <container> resource Create Request to the Registrar CSE</container> |
| - | | | with rcn=1 |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 3 (container) rcn = 1 pc = Serialized representation of <container> resource</container> |
| 3 | | IOP Check | Hosting CSE successfully created the <container> resource</container> |
| 4 | Check Mca | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource which contain attributes</container> |
| 5 | | IOP Check | AE successfully received response of Create request |

| Interoperability Test Description | | | | |
|-----------------------------------|---|--|--|--|
| IOP Verdict | Check that the response body include attributes | | | |
| PRO Verdict | | | | |

8.1.18.3 ResultContent=2

| | Interoperability Test Description | | | |
|--------|-----------------------------------|------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_86 | |
| Objec | tive: | | Check creation of <container> resource with result content set to 2(hierarchical address)</container> | |
| Confi | guration | າ: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2 | |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.7 | |
| | | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in CSE with name {CSEBaseName} | |
| | | - | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a <container> resource Create Request to the Registrar CSE</container> | |
| | | | with rcn = 2 | |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 3 (container) rcn = 2 pc = Serialized representation of <container> resource</container> | |
| 3 | | IOP Check | Hosting CSE successfully created the <container> resource</container> | |
| 4 | Check Mca | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Hierarchical address of <container> resource</container> | |
| 5 | | IOP Check | AE successfully received response of Create request | |
| IOP \ | /erdict | Check that the r | esponse body include hierarchical address | |
| PRO | Verdict | | | |

8.1.18.4 ResultContent=3

| Interoperability Test Description | | | |
|-----------------------------------|--------------|------------------------|--|
| Identi | fier: | | TD_M2M_NH_87 |
| Objective: | | | Check creation of <container> resource with result content set to 3(hierarchical address</container> |
| | | | and attributes) |
| Confi | guratior | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2 |
| | | | oneM2M TS-0004 [2], clause 6.3.4.2.7 |
| | | | |
| Pre-te | est cond | litions: | CSEBase resource has been created in CSE with name {CSEBaseName} |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a <container> Create Request to the Registrar CSE with rcn=3</container> |
| 2 | Check Mca | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 3 (container) rcn = 3 pc = Serialized representation of <container> resource</container> |
| 3 | | IOP Check | Hosting CSE successfully created the <container> resource</container> |
| 4 | Check Mca | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource with hierarchical address</container> |
| 5 | | IOP Check | AE successfully received response of Create request |
| IOP \ | /erdict | Check that the r | esponse body include hierarchical address and attributes |
| PRO | Verdict | | |

| Interoperability Test Description | | | |
|-----------------------------------|--------------|------------------------|--|
| Identi | fier: | | TD_M2M_NH_88 |
| Objective: | | | Check retrievability of <container> resource with result content set to 4 (attributes and child resources)</container> |
| Confi | guratior | າ: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 8.1.2 oneM2M TS-0004 [2], clause 6.3.4.2.7 |
| Pre-test conditions: | | litions: | CSEBase resource has been created in CSE with name {CSEBaseName} AE has created a <container> resource on registrar CSE</container> AE has created two <contentinstance> resources under the <container> resources</container></contentinstance> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a <container> Retrieve Request to the Registrar CSE with rcn=4</container> |
| 2 | Check Mca | PRO Check Primitive | op = 2 (Retrieve) to = ID of <container> resource</container> fr = AE-ID rqi = (token-string) rcn = 4 |
| 3 | | IOP Check | Hosting CSE successfully received Retrieve request of the <container> resource</container> |
| 4 | Check Mca | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <container> and child resources</container> |
| 5 | | IOP Check | AE successfully received response of Retrieve request |
| IOP \ | /erdict | Check that the r | esponse body include attributes and child resources |
| PRO | Verdict | | |

8.1.18.5 ResultContent=4

8.1.19 timeSeries Management

8.1.19.1 timeSeries Create

| | | | Interoperability Test Description | |
|------------|----------|---------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_90 | |
| Objective: | | | AE creates a <timeseries> resource in registrar CSE via a Create Request</timeseries> | |
| Confie | guration | ו: | M2M CFG 01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.21 | |
| | | | oneM2M TS-0004 [2], clause 7.4.38.2.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Create Request of the <timeseries> resource</timeseries> | |
| | | PRO Check ca Primitive | • op = 1 (Create) | |
| | Мса | | to = {CSEBaseName}/URI of <ae> resource</ae> | |
| 0 | | | • fr = AE-ID | |
| 2 | | | • rai = (token-string) | |
| | | | • $tv = 29$ (timeSeries) | |
| | | | | pc = Serialized representation of <timeseries> resource</timeseries> |
| 3 | | IOP Check | Registrar CSE successfully created the <timeseries> resource</timeseries> | |
| | | | • rsc = 2001 (CREATED) | |
| 4 | | PRO Check | rai = (token-string) same as received in request message | |
| | Мса | Primitive | • nc = Serialized representation of <timeseries> resource</timeseries> | |
| 5 | | IOP Check | AF successfully received response of Create Request | |
| | /ordict | | The successfully received response of oreate request | |
| | eruici | | | |
| INKO V | verdict | 1 | | |

| r | | | | | |
|------------|-----------------------------------|--------------------------|---|--|--|
| | Interoperability Test Description | | | | |
| Identi | fier: | | TD_M2M_NH_91 | | |
| Objective: | | | AE retrieves information of a <timeseries> resource via a Retrieve Request</timeseries> | | |
| Config | guratior | 1: | M2M CFG 01 | | |
| Refere | ences: | | ETSI TS 118 101 [1]. clause 10.2.4.22 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.38.2.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | | |
| | | | AE has created a <timesereis> resource on Registrar CSE</timesereis> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request of the <timeseries> resource</timeseries> | | |
| | | PRO Check a Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <timeseries> resource</timeseries> | | |
| 2 | Maa | | • fr = AE-ID | | |
| | wica | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| 3 | | IOP Check | Registrar CSE successfully received Retrieve Request of the <timeseries> resource</timeseries> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <timeseries> resource</timeseries> | | |
| 5 | | IOP Check | AE successfully received response of Retrieve Request | | |
| IOP V | /erdict | | · | | |
| PRO | /erdict | | | | |

8.1.19.2 timeSeries Retrieve

8.1.19.3 timeSeries Update

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|--------------------------|---|--|
| Identifier: | | | TD_M2M_NH_92 | |
| Objective: | | | AE updates attribute in <timeseries> resource via a Update Request</timeseries> | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.23 | |
| | | | oneM2M TS-0004 [2], clause 7.4.38.2.3 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | |
| | | | AE has created a <timesereis> resource on Registrar CSE</timesereis> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Update Request to the <timeseries> resource to update the</timeseries> | |
| | | | maxNrOfInstances | |
| | | | • op = 3 (Update) | |
| | | PRO Check a Primitive | to = {CSEBaseName}/URI of <timeseries> resource</timeseries> | |
| 2 | | | • fr = AE-ID | |
| 2 | Mca | | • rqi = (token-string) | |
| | | | pc = Serialized representation of maxNrOfInstances update(can be any other | |
| | | | attribute) | |
| 3 | | IOP Check | Registrar CSE successfully updated the maxNrOfInstances of the <timeseries> resource</timeseries> | |
| | | PPO Chock | rsc = 2004 (Updated) | |
| 4 | Mca | Primitivo | rqi = (token-string) same as received in request message | |
| | wica | riiniuve | pc = Serialized representation of <timeseries> resource</timeseries> | |
| 5 | | IOP Check | AE successfully received response of Update Request | |
| IOP V | /erdict | | | |
| PRO V | /erdict | | | |

| Interoperability Test Description | | | | | |
|-----------------------------------|-------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_93 | | |
| Objective: | | | AE deletes a <timeseries> resource via a Delete Request</timeseries> | | |
| Configuration: | | | M2M_CFG_01 | | |
| References: | | | ETSI TS 118 101 [1], clause 10.2.4.24 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.38.2.4 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | | |
| | | | AE has created a <timeseries> resource on Registrar CSE</timeseries> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Delete Request of the <timeseries> resource</timeseries> | | |
| | | | • op = 4 (Delete) | | |
| | | PRO Check Primitive | to = {CSEBaseName}/URI of <timeseries> resource</timeseries> | | |
| 2 | Maa | | • fr = AE-ID | | |
| | IVICa | | rqi = (token-string) | | |
| | | | • pc = empty | | |
| 3 | | IOP Check | Registrar CSE successfully deleted the <timeseries> resource</timeseries> | | |
| | | DDO Chask | rsc = 2002 (DELETED) | | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | Mca | Primitive | • pc = empty | | |
| 5 IOP Check | | IOP Check | AE successfully received response of Delete Request | | |
| IOP V | /erdict | | · · · · · · | | |
| PRO \ | PRO Verdict | | | | |

8.1.19.4 timeSeries Delete

8.1.20 timeSeriesInstance Management

8.1.20.1 timeSeriesInstance Create

| Interoperability Test Description | | | | |
|-----------------------------------|----------|----------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_94 | |
| Objective: | | | AE sends Create Request of a <timeseriesinstance> resource to a <timeseries></timeseries></timeseriesinstance> | |
| - | | | resource in Registrar CSE. Registrar CSE creates the <timeseriesinstance> resource</timeseriesinstance> | |
| | | | and updates the parent <timeseries> resource with currentNrOfInstances and</timeseries> | |
| | | | currentByteSize attributes correspondingly | |
| Config | guratior | า: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.25 | |
| | | | oneM2M TS-0004 [2], clause 7.4.39.2.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | |
| | | | AE has created a <timeseries> resource on registrar CSE</timeseries> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Create Request of the <timeseriesinstance> resource</timeseriesinstance> | |
| | | | • op = 1 (Create) | |
| | Мса | PRO Check Mca Primitive | to = {CSEBaseName}/URI of <timeseries> resource</timeseries> | |
| 2 | | | • fr = AE-ID | |
| 2 | | | rqi = (token-string) | |
| | | | ty = 30 (timeSeriesInstance) | |
| | | | pc = Serialized representation of <timeseriesinstance> resource</timeseriesinstance> | |
| 2 | | | Registrar CSE successfully created <timeseriesinstance> resource and updated</timeseriesinstance> | |
| 3 | | IOP Check | currentNrOfInstances and currentByteSize of the <timeseries> resource</timeseries> | |
| | | DDO Chael | rsc = 2001 (CREATED) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | IVICa | Fiimuve | pc = Serialized representation of <timeseriesinstance> resource</timeseriesinstance> | |
| 5 | | IOP Check | AE successfully received response of Create Request | |
| IOP \ | /erdict | | · · · | |
| PRO Verdict | | | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|----------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_95 | | |
| Objective: | | | AE retrieves information of a <timeseriesinstance> resource via a Retrieve Request</timeseriesinstance> | | |
| Config | guratior | 1: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.26 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.39.2.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> | | |
| | | | AE has created a <timeseries> resource on registrar CSE</timeseries> | | |
| | | | AE has created a <timeseriesinstance> resource as child resource of the</timeseriesinstance> | | |
| | | | <timeseries> resource</timeseries> | | |
| | | | Test Seguence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <timeseriesinstance> resource</timeseriesinstance> | | |
| | | | • op = 2 (Retrieve) | | |
| | | | to = {CSEBaseName}/URI of <timeseriesinstance> resource</timeseriesinstance> | | |
| 2 | | Ica PRO Check Primitive | • fr = AF-ID | | |
| | Mca | | • rai = (token-string) | | |
| | | | • $pc = empty$ | | |
| | | | Registrar CSE successfully received Retrieve Reguest of the <timeseriesinstance></timeseriesinstance> | | |
| 3 | | IOP Check | resource | | |
| | | | • $rsc = 2000 (OK)$ | | |
| 4 | | PRO Check | rai – (token-string) same as received in request message | | |
| | Mca | Primitive | ng = (loken stillig) same as received in request message ng = Serialized representation of <timeseriesinstance> resource</timeseriesinstance> | | |
| 5 | | IOP Check | ΔF successfully received response of Retrieve Request | | |
| | /ordict | | | | |
| | | | | | |
| PRO verdict | | | | | |

8.1.20.2 timeSeriesInstance Retrieve

8.1.20.3 timeSeriesInstance Delete

| | Interoperability Test Description | | |
|--------------------------------|-----------------------------------|--|---|
| Identi | fier: | | TD M2M NH 96 |
| Objective: | | | AE sends Delete Request of a <timeseriesinstance> resource in Registrar CSE. Registrar CSE delete the <timeseriesinstance> resource and updates the parent <timeseries> resource with <i>currentNrOfInstances</i> and <i>currentByteSize</i> attributes correspondingly</timeseries></timeseriesinstance></timeseriesinstance> |
| Confi | guratior | າ: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.28 oneM2M TS-0004 [2], clause 7.4.39.2.4 |
| | | | |
| Pre-test conditions: | | litions: | AE has created a <ae> resource on Registrar CSE</ae> AE has created a <timeseries> resource on registrar CSE</timeseries> AE has created a <timeseriesinstance> resource as child resource of the <timeseries> resource</timeseries></timeseriesinstance> |
| | | | Test Sequence |
| Stop | 0 | Turna | |
| Step | RP | Туре | Description |
| 1 | RP | Stimulus | AE is requested to send a Delete Requeest a <timeseriesinstance> resource</timeseriesinstance> |
| 1 2 | Мса | Stimulus PRO Check Primitive | Description AE is requested to send a Delete Requeest a <timeseriesinstance> resource • op = 4 (Delete) • to = {CSEBaseName}/URI of <timeseriesinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty • pc = empty</timeseriesinstance></timeseriesinstance> |
| 1 2 3 | Мса | Stimulus PRO Check Primitive | Description AE is requested to send a Delete Requeest a <timeseriesinstance> resource • op = 4 (Delete) • to = {CSEBaseName}/URI of <timeseriesinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Registrar CSE successfully deleted <timeseriesinstance> resource and updated currentNrOfInstances and currentByteSize of the <timeseries> resource</timeseries></timeseriesinstance></timeseriesinstance></timeseriesinstance> |
| 2 3 4 | Mca Mca | Stimulus PRO Check Primitive IOP Check PRO Check Primitive | Description AE is requested to send a Delete Requeest a <timeseriesinstance> resource • op = 4 (Delete) • to = {CSEBaseName}/URI of <timeseriesinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Registrar CSE successfully deleted <timeseriesinstance> resource and updated • rsc = 2002 (DELETED) • rgi = (token-string) same as received in request message • pc = empty • request message</timeseriesinstance></timeseriesinstance></timeseriesinstance> |
| 1 2 3 4 5 | Mca Mca | Stimulus PRO Check Primitive IOP Check PRO Check Primitive IOP Check | Description AE is requested to send a Delete Requeest a <timeseriesinstance> resource • op = 4 (Delete) • to = {CSEBaseName}/URI of <timeseriesinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Registrar CSE successfully deleted <timeseriesinstance> resource and updated • rsc = 2002 (DELETED) • rgi = (token-string) same as received in request message • pc = empty</timeseriesinstance></timeseriesinstance></timeseriesinstance> |
| 1 2 3 4 5 IOP \ | Mca Mca | Stimulus PRO Check Primitive IOP Check PRO Check Primitive IOP Check | Description AE is requested to send a Delete Requeest a <timeseriesinstance> resource • op = 4 (Delete) • to = {CSEBaseName}/URI of <timeseriesinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Registrar CSE successfully deleted <timeseriesinstance> resource and updated • rsc = 2002 (DELETED) • rgi = (token-string) same as received in request message • pc = empty AE successfully received response of Delete Request</timeseriesinstance></timeseriesinstance></timeseriesinstance> |

8.1.20.4 timeSeriesInstance Create when currentNrOfInstance equals to maxNrOfInstances in parent <timeSeries> resource

| Interoperability Test Description | | | |
|-----------------------------------|-------------|-----------|--|
| Identi | fier: | | TD_M2M_NH_97 |
| Objective: | | | AE sends a <timeseriesinstance> resource Create Request to a <timeseries> resource</timeseries></timeseriesinstance> |
| | | | which contains currentNrOfInstances value equals to that of maxNrOfInstances and |
| | | | Registrar CSE deletes the oldest <timeseriesinstance> resource from the <timeseries></timeseries></timeseriesinstance> |
| | | | resource and then creates the requested <timeseriesinstance> resource</timeseriesinstance> |
| Config | guration | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.25 |
| | | | oneM2M TS-0004 [2], clause 7.4.38.2.1 |
| | | | |
| Pre-te | est cond | litions: | AE has created a <ae> resource on Registrar CSE</ae> |
| | | | AE has created a <timeseries> resource on registrar CSE</timeseries> |
| | | | AE has created several <timeseriesinstance> resources and</timeseriesinstance> |
| | | | currentNrOfInstances of the <timeseries> resource reach the maxNrOfInstances</timeseries> |
| | 1 | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Create Request of the <timeseriesinstance> resource</timeseriesinstance> |
| | | | • op = 1 (Create) |
| | | | to = {CSEBaseName}/URI of <timeseries> resource</timeseries> |
| 2 | | PRO Check | • fr = AE-ID |
| 2 | Mca | Primitive | • rqi = (token-string) |
| | | | ty = 30 (timeSeriesInstance) |
| | | | pc = Serialized representation of <timeseriesinstance> resource</timeseriesinstance> |
| 2 | | | Registrar CSE successfully deleted <timeseriesinstance> resource with the oldest</timeseriesinstance> |
| 5 | | IOI CHECK | dataGenerationTime and created <timeseriesinstance> resource</timeseriesinstance> |
| | | PPO Chock | • rsc = 2001 (CREATED) |
| 4 | Mea | Primitivo | rqi = (token-string) same as received in request message |
| | Ivica | Fiilline | pc = Serialized representation of <timeseriesinstance> resource</timeseriesinstance> |
| 5 | | IOP Check | AE successfully received response of Create Request |
| IOP \ | /erdict | | |
| PRO | PRO Verdict | | |

8.1.21 Location Management

8.1.21.1 LocationPolicy Create

| Interoperability Test Description | | | | |
|-----------------------------------|----------|---------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_98 | |
| Objective: | | | AE creates a <locationpolicy> resource in registrar CSE via a locationPolicy Create</locationpolicy> | |
| | | | Request | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.9.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.10.2.1 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE sends a request to create a <locationpolicy></locationpolicy> | |
| | Мса | PRO Check ca Primitive | op = 1 (Create) to = {CSEBaseName} | |
| 2 | | | • fr = AE-ID | |
| - | | | • rqi = (token-string) | |
| | | | • ty = 10 (LocationPolicy) | |
| | | | pc = Serialized representation of <locationpolicy> resource</locationpolicy> | |
| 3 | | IOP Check | Check if possible that the <locationpolicy> resource is created in registrar CSE Check if possible that the <container> resource is created on registrar CSE having its <i>resourceID</i> and <i>locationID attribute</i> set to <i>locationContainerID</i> and <i>resourceID</i> attribute of the <locationpolicy> resource respectively</locationpolicy></container></locationpolicy> | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <locationpolicy> resource</locationpolicy> | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|-----------------------------------|--|
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO | PRO Verdict | | | |

8.1.21.2 LocationPolicy Retrieve

| Interoperability Test Description | | | |
|-----------------------------------|----------|-----------|---|
| Identifier: | | | TD_M2M_NH_99 |
| Objective: | | | AE retrieves information of a <locationpolicy> resource via a locationPolicy Retrieve</locationpolicy> |
| _ | | | Request |
| Confi | guratior | ו: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.9.3 |
| | | | oneM2M TS-0004 [2], clause 7.4.10.2.2 |
| | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a locationPolicy resource <locationpolicy> on Registrar CSE</locationpolicy> |
| | | | AE has created a container resource <container> on Registrar CSE having its</container> |
| | | | resourceID and locationID attribute set to locationContainerID and resourceID |
| | | | attribute of the <locationpolicy> resource respectively</locationpolicy> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <locationpolicy></locationpolicy> |
| | | | • op = 2 (Retrieve) |
| | | | to = {CSEBaseName}/URI of <locationpolicy> resource</locationpolicy> |
| 2 | Mag | PRO Check | • fr = AE-ID |
| | Ivica | Primitive | • rqi = (token-string) |
| | | | • pc = empty |
| | | | • rsc = 2000 (OK) |
| 3 | Мса | PRO Check | rgi = (token-string) same as received in request message |
| | | Primitive | pc = Serialized representation of <locationpolicy> resource</locationpolicy> |
| 4 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.1.21.3 LocationPolicy Update

| Interoperability Test Description | | | | |
|-----------------------------------|----------|---|--|--|
| Identifier: | | | TD_M2M_NH_100 | |
| Objective: | | | AE updates attribute in <locationpolicy> resource via a locationPolicy Update Request</locationpolicy> | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.9.4 | |
| | | | oneM2M TS-0004 [2], clause 7.4.10.2.3 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a locationPolicy resource <locationpolicy> on Registrar CSE</locationpolicy> | |
| | | | AE has created a container resource <container> on Registrar CSE having its</container> | |
| | | | resourceID and locationID attribute set to locationContainerID and resourceID | |
| | | | attribute of the <locationpolicy> resource respectively</locationpolicy> | |
| | | | Test Sequence | |
| Sten | | True e | Description | |
| 0.0p | RP | туре | Description | |
| 1 | КР | Stimulus | AE is requested to send a locationPolicy Update Request to update the lifetime of the | |
| 1 | ĸr | Stimulus | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource | |
| 1 | | Stimulus | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource • op = 3 (Update) | |
| 1 | ĸr | Stimulus | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource | |
| 1 | Мса | Stimulus PRO Check | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource | |
| 1 | Мса | Stimulus PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string)</locationpolicy> | |
| 1 2 | Мса | PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <locationpolicy> resource</locationpolicy></locationpolicy> | |
| 1 2 3 | Мса | Stimulus PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <locationpolicy> resource Check if possible that the < locationPolicy > resource is updated in Registrar CSE</locationpolicy></locationpolicy> | |
| 1 2 3 | Мса | Stimulus PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <locationpolicy> resource Check if possible that the < locationPolicy > resource is updated in Registrar CSE rsc = 2004 (Updated)</locationpolicy></locationpolicy> | |
| 1 2 3 4 | Мса | Stimulus PRO Check Primitive IOP Check PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <locationpolicy> resource Check if possible that the < locationPolicy > resource is updated in Registrar CSE rqi = (token-string) same as received in request message</locationpolicy></locationpolicy> | |
| 1 2 3 4 | Мса | Stimulus PRO Check Primitive IOP Check PRO Check Primitive | AE is requested to send a locationPolicy Update Request to update the lifetime of the resource op = 3 (Update) to = {CSEBaseName}/URI of <locationpolicy> resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <locationpolicy> resource Check if possible that the < locationPolicy > resource is updated in Registrar CSE rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <locationpolicy> resource</locationpolicy></locationpolicy></locationpolicy> | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.21.4 LocationPolicy Delete

| | Interoperability Test Description | | | | |
|------------|-----------------------------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_101 | | |
| Objective: | | | AE deletes a specific <locationpolicy> resource via a locationPolicy Delete Request</locationpolicy> | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.9.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.10.2.4 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a locationPolicy resource <locationpolicy> on Registrar CSE</locationpolicy> | | |
| | | | AE has created a container resource <container> on Registrar CSE having its</container> | | |
| | | | resourceID and locationID attribute set to locationContainerID and resourceID | | |
| | | | attribute of the <locationpolicy> resource respectively</locationpolicy> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a locationPolicy Delete Request | | |
| | | PRO Check Primitive | • op = 4 (Delete) | | |
| | Мса | | to = {CSEBaseName}/URI of <locationpolicy> resource</locationpolicy> | | |
| 2 | | | • fr = AE-ID | | |
| | | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| 3 | | IOP Check | Check if possible that the <locationpolicy> resource is deleted in registrar CSE</locationpolicy> | | |
| | | DBO Chook | • rsc = 2002 (DELETED) | | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | Ivica | Fiiiliuve | • pc = empty | | |
| 5 | | IOP Check | Check if possible that the <locationpolicy> resource has been removed in registrar CSE</locationpolicy> | | |
| 6 | | | Check if possible that the associated resources (e.g. <container>, <contentinstance></contentinstance></container> | | |
| 0 | | IOF Check | resources) are removed from the registrar CSE | | |
| | | | Check if possible that if the locationSource attribute and the locationUpdatePeriod attribute | | |
| 7 | | IOP Check | of the <locationpolicy> resource were set with appropriate value, the session with</locationpolicy> | | |
| | | | underlying network are torn down | | |
| 8 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO | Verdict | | | | |

8.1.22 Schedule management

8.1.22.1 Schedule Create

| | Interoperability Test Description | | | | |
|----------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_155 | | |
| Objective: | | | AE creates a <schedule> resource in Registrar CSE via a Schedule Create Request</schedule> | | |
| Configuration: | | | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.17.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.9.2.1 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a <schedule></schedule> | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 18 (schedule) pc = Serialized representation of <schedule> resource</schedule> | | |
| 3 | | IOP Check | Check if possible that the <schedule> resource is created in Registrar CSE</schedule> | | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <schedule> resource</schedule> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.22.2 Schedule Retrieve

| | Interoperability Test Description | | | |
|------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_156 | |
| Objective: | | | AE retrieves information of a <schedule> resource via a schedule Retrieve Request</schedule> | |
| Config | guratior |): | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.17.3 | |
| | | | oneM2M TS-0004 [2], clause 7.4.9.2.2 | |
| | | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a schedule resource <schedule> as child resource of</schedule> | |
| | | | <csebase> resource</csebase> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <schedule></schedule> | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <schedule> resource</schedule> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <schedule> resource</schedule> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.1.22.3 Schedule Update

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_157 | |
| Objective: | | | AE updates attribute in <schedule> resource via a schedule Update Request</schedule> | |
| Confi | guratio | า: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.17.4 oneM2M TS-0004 [2], clause 7.4.9.2.3 | |
| Pre-test conditions: | | | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a schedule resource <schedule> as child resource of <ae></ae></schedule> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a schedule Update Request to update an attribute of the resource | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <schedule> resource</schedule> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <schedule> resource</schedule> | |
| 3 | | IOP Check | Check if possible that the <schedule> resource is updated in Registrar CSE</schedule> | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <schedule> resource</schedule> | |
| 5 | | IOP Check | AE indicates successful operation | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.1.22.4 Schedule Delete

| | | | Interoperability Test Description |
|-------------|----------|------------------------|---|
| Identifier: | | | TD_M2M_NH_158 |
| Objective: | | | AE deletes <schedule> resource via a Schedule Delete Request</schedule> |
| Config | guration |): | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.17.5 |
| | | | oneM2M TS-0004 [2], clause 7.4.9.2.4 |
| | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a <schedule> resource as child of <ae> resource</ae></schedule> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a schedule Delete Request |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <schedule> resource</schedule> fr = AE-ID rqi = (token-string) pc = empty |
| 3 | | IOP Check | Check if possible that the <schedule> resource is deleted in Registrar CSE</schedule> |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty |
| 5 | | IOP Check | Check if possible that the <schedule> resource has been removed in Registrar CSE</schedule> |
| 6 | | IOP Check | AE indicates successful operation |
| IOP V | /erdict | | |
| PRO \ | Verdict | | |

8.1.22.5 Notification to AE with configured Schedule resource

| | | | Interoperability Test Description |
|----------------------|--------------|------------------------|---|
| Identi | ifier: | | TD_M2M_NH_159 |
| Objective: | | | CSE sends a notification request to the AE when <schedule> resource is configured</schedule> |
| Confi | guratior | 1: | M2M_CFG_10 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 9.6.9, 10.2.12 oneM2M TS-0004 [2], clause 7.4.1 |
| | | | |
| Pre-test conditions: | | | AE1 has created an application resource <ae> on registrar CSE</ae> AE1 has created a container resource <container> on registrar CSE</container> AE1 has created a <subscription> as a child resource of a <container></container></subscription> AE1 has created a <schedule> as a child resource of a <subscription></subscription></schedule> AE2 has created an application resource <ae> on registrar CSE</ae> AE2 has created an application resource <ae> on registrar CSE</ae> AE2 has permissions to UPDATE the container created by AE1 |
| | | | |
| Step | RP | Type | Description |
| 1 | | Stimulus | AE2 is requested to send a Update request to the <container> created by AE1</container> |
| 2 | Check Mca | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <container> resource</container> |
| 3 | | IOP Check | The HOST CSE prepares a notification to AE1 and sends it within the time window indicated in scheduleElement attribute of <schedule> resource</schedule> |
| 4 | Check Mca | PRO Check Primitive | op = 5 (Notify) to = notificationURI of subscription resource from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notification data object |

| Interoperability Test Description | | | |
|-----------------------------------|--------------|------------------------|--|
| 5 | Check Mca | PRO Check Primitive | Sent response contains: rsc = 2000 (OK) rqi = (token-string) same as received in request message |
| 6 | | IOP Check | Check that AE1 has received the notification within the time window indicated in scheduleElement attribute of <schedule> resource</schedule> |
| IOP Verdict | | | |
| PRO | Verdict | | |

8.2 Non-blocking configuration testing

8.2.1 Synchronous request

8.2.1.1 Container management

8.2.1.1.1 Container Create

| | | | Interoperability Test Description |
|------------|----------|------------------------|--|
| Identi | fier: | | TD_M2M_NB_01 |
| Objective: | | | AE creates a <container> resource using non-blocking synchronous request in registrar CSE</container> |
| Confi | guratior | n: | M2M CFG 01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 |
| | | | · · · · |
| Pre-te | st cond | itions: | |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a non-blocking synchronous request to create a <container></container> |
| 1 | | | resource in registrar CSE |
| | | | Sent request contains: |
| | | | • op = 1 (Create) |
| | | | to = {CSEBaseName} |
| ~ | | PRO Check | • fr= AE-ID |
| 2 | ivica | Primitive | rgi = (token-string) |
| | | | rt = 1 (non-blocking synchronous) |
| | | | • ty = 3 (container) |
| | | | pc = Serialized Representation of the <container> resource</container> |
| | | | Registrar CSE creates an internal <reguest> resource and sends acknowledgement</reguest> |
| | | | response containing: |
| 3 | Mca | PRO Check Primitive | • rsc = 1000 (Accepted) |
| _ | | | rgi = token-string) same as received in request message |
| | | | pc = Reference to the created <reguest> resource</reguest> |
| 4 | | IOP Check | AE indicates successful operation |
| 5 | | Stimulus | AE is requested to wait then send a retrieve request to <request> reference</request> |
| - | | | Sent Retrieve request contains: |
| | | | • $op = 2$ (Retrieve) |
| | | PRO Check | • to = <request> reference</request> |
| 6 | Мса | Primitive | • $fr = AF-ID$ |
| | | | • $rai = (token-string)$ |
| | | | • $pc = empty$ |
| | | | • $rsc = 2000 (OK)$ |
| | | | rai – (token-string) same as received in request message |
| 7 | Mca | PRO Check | ng = closen stilling) same as received in request message ng = cRequests resource with the parameter "requestStatus" set to 1 |
| ' | MCa | Primitive | (COMPLETED) and the "operation Result" parameter containing the <containers< td=""></containers<> |
| | | | resource |
| 8 | | IOP Check | AF indicates successful operation |
| IOP \ | /erdict | .or oncon | |
| PRO | Verdict | | |
| | | | |

| | Interoperability Test Description | | | |
|--------|-----------------------------------|------------------------|--|--|
| Identi | fier: | | TD M2M NB 02 | |
| Obiec | tive: | | AE retrieves a <container> resource using non-blocking synchronous request from</container> | |
| | | | registrar CSE | |
| Config | guration | n: | M2M CFG 01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | |
| | | | · • • • | |
| Pre-te | st cond | litions: | AE has created a <container> resource in registrar CSE</container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a non-blocking synchronous request to retrieve the <container> resource from registrar CSE</container> | |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName}/URI of <container> resource • fr= AE-ID • rqi = (token-string) • rt = 1 (non-blocking synchronous) • pc = empty</container> | |
| 3 | Мса | PRO Check Primitive | Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource</request></request> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE is requested to send a retrieve request to <request> reference</request> | |
| 6 | Mca | PRO Check Primitive | Sent Retrieve request contains: • op = 2 (Retrieve) • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty</request> | |
| 7 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource</container></request> | |
| 8 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.2.1.1.2 Container Retrieve

8.2.1.1.3 Container Update

| | | | Interoperability Test Description |
|----------------|---------|------------------|---|
| Identifier: | | | TD_M2M_NB_03 |
| Objective: | | | AE updates a <container> resource using non-blocking synchronous request in registrar CSE</container> |
| Configuration: | | | M2M_CFG_01 |
| References: | | | ETSI TS 118 101 [1], clause 10.2.4.1 |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 |
| | | | |
| Pre-te | st cond | litions: | AE has created a <container> resource in registrar CSE</container> |
| | | | Test Sequence |
| Step | RP | Type Description | |
| 4 | | Stimulus | AE is requested to send a non-blocking synchronous request to update the <container></container> |
| | | | resource |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|--------------------------|--|--|
| | | | Sent request contains: | |
| | | | • op = 3 (Update) | |
| | | DBO Chook | to = {CSEBaseName}/URI of <container> resource</container> | |
| 2 | Мса | PRO Check | • fr= AE-ID | |
| 1 | | r minuve | rqi = (token-string) | |
| | | | rt = 1 (non-blocking synchronous) | |
| | | | pc = Serialized Representation of the updated <container> resource</container> | |
| | | | Registrar CSE creates an internal <request> resource and sends acknowledgement</request> | |
| | | PPO Check | response containing: | |
| 3 | Мса | Primitive | rsc = 1000 (Accepted) | |
| | | 1 minuve | rqi = token-string) same as received in request message | |
| | | | pc = Reference to the created <request> resource</request> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE is requested to wait then send a retrieve request to <request> reference</request> | |
| | Мса | a PRO Check Primitive | Sent Retrieve request contains: | |
| | | | • op = 2 (Retrieve) | |
| 6 | | | to = <request> reference</request> | |
| Ŭ | | | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | | • pc = empty | |
| | | | • rsc = 2000 (OK) | |
| | | PRO Check | rqi = (token-string) same as received in request message | |
| 7 | Мса | Primitive | pc = <request> resource with the parameter "requestStatus" set to 1</request> | |
| | | 1 minuvo | (COMPLETED) and the "operationResult" parameter containing the <container></container> | |
| | | | resource | |
| 8 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO \ | Verdict | | | |

8.2.1.1.4 Container Delete

| | Interoperability Test Description | | | |
|--------|-----------------------------------|------------------------|--|--|
| Identi | fier: | | TD_M2M_NB_04 | |
| Objec | tive: | | AE deletes a Container resource using non-blocking synchronous request | |
| Config | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created <container> resource on registrar CSE</container> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a non-blocking synchronous request to delete the <container></container> | |
| | | | resource | |
| | | | Sent request contains: | |
| | | | • op = 4 (Delete) | |
| | | PRO Check Primitive | to = {CSEBaseName}/URI of <container> resource</container> | |
| 2 | Мса | | • fr= AE-ID | |
| | | | rqi = (token-string) | |
| | | | rt = 1 (non-blocking synchronous) | |
| | | | • pc = empty | |
| | | BBO Chock | Registrar CSE creates an internal <request> resource and sends acknowledgement</request> | |
| | | | response containing: | |
| 3 | Mca | Primitive | rsc = 1000 (Accepted) | |
| | | 1 111111110 | rqi = token-string) same as received in request message | |
| | | | pc = Reference to the created <request> resource</request> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE is requested to send a retrieve request to <request> reference</request> | |
| | | | Sent Retrieve request contains: | |
| | | | op = 2 (Retrieve) | |
| 6 | Mca | PRO Check | to = <request> reference</request> | |
| 0 | ivica | Primitive | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | | • pc = empty | |

| | Interoperability Test Description | | | | |
|---|-----------------------------------|-----------|-----------------------------------|--|--|
| 7 Mca PRO Check Primitive • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request> | | | | | |
| 8 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO | PRO Verdict | | | | |

8.2.2 Asynchronous request

8.2.2.1 Container management

8.2.2.1.1 Container Create

| | Interoperability Test Description | | | | | |
|---------|-----------------------------------|-----------|---|--|--|--|
| Identif | fier: | | TD_M2M_NB_05 | | | |
| Objec | tive: | | AE creates a <container> resource using non-blocking asynchronous request</container> | | | |
| Config | guration |): | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | |
| | | | | | | |
| Pre-te | st cond | itions: | AE is reachable on the URI: "AE-Notification-URI" | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a non-blocking asynchronous request to create the <container> resource in registrar CSE</container> | | | |
| | | | Sent request contains: | | | |
| | | | • op = 1 (Create) | | | |
| | | | to = {CSEBaseName} | | | |
| | | | • fr= AF-ID | | | |
| | | PRO Check | • rai = (token-string) | | | |
| 2 | Mca | Primitive | • $rt = 2$ (non-blocking asynchronous) | | | |
| | mod | | • $tv = 3$ (container) | | | |
| | | | nu= AF-Notification-URI | | | |
| | | | • oneM2M-ROI: Request-ID | | | |
| | | | pc = Serialized Representation of the <container> resource</container> | | | |
| | | | Registrar CSE creates an internal <reguest> resource and sends acknowledgement</reguest> | | | |
| | | | response containing: | | | |
| 3 | | PRO Check | • rsc = 1000 (Accepted) | | | |
| Ū | Мса | Primitive | roi = token-string) same as received in request message | | | |
| | | | pc = Reference to the created <reguest> resource</reguest> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| 5 | | IOP Check | Registrar CSE sends notify request to AE | | | |
| | | | Sent request contains: | | | |
| | | | • $op = 5$ (Notify) | | | |
| 0 | | PRO Check | to = AE-Notification-URI | | | |
| 6 | Мса | Primitive | • fr = registrar CSE-ID | | | |
| | | | • rqi = (token-string) | | | |
| | | | pc = Serialized representation of notification data object | | | |
| | | | AE sends notify response to Registrar CSE containing: | | | |
| 7 | Maa | PRO Check | • rsc = 2000 (OK) | | | |
| | Mca | Primitive | rqi = (token-string) same as received in request message | | | |
| 8 | | IOP Check | Registrar CSE indicates successful operation | | | |
| IOP V | /erdict | | | | | |
| PRO \ | /erdict | | | | | |

| | | | Interoperability Test Description | | | |
|------------------------------|--------------------|------------------------|--|--|--|--|
| Identifier: | | | TD_M2M_NB_06 | | | |
| Objec | tive: | | AE retrieves a <container> resource using non-blocking asynchronous request</container> | | | |
| Config | guration |): | M2M_CFG_01 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | |
| | | | | | | |
| Pre-te | st cond | itions: | AE has created a <container> resource on registrar CSE</container> | | | |
| | | | AE is reachable on the URI: "AE-Notification-URI" | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a non-blocking asynchronous request to retrieve the <container> resource from registrar CSE</container> | | | |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName}/URI of <container> resource • fr = AE-ID • rqi = (token-string) • rt = 2 (non-blocking asynchronous) • nu = AE-Notification-URI • pc = empty</container> | | | |
| | Мса | PRO Check Primitive | Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource</request></request> | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| 5 | | IOP Check | Registrar CSE sends notify request to AE | | | |
| 6 Mca PRO Check Primitive | | PRO Check Primitive | Sent request contains: • op = 5 (Notify) • to = AE-Notification-URI • fr = registrar CSE-ID • rqi = (token-string) • pc = Serialized representation of notification data object | | | |
| 7 | Мса | PRO Check Primitive | AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message | | | |
| 8 | / I [.] . | IOP Check | Registrar CSE indicates successful operation | | | |
| IOP V | rdict | | | | | |
| PRO V | /erdict | | | | | |

8.2.2.1.2 Container Retrieve

8.2.2.1.3 Container Update

| | Interoperability Test Description | | | | | | |
|--------|-----------------------------------|----------|---|--|--|--|--|
| Identi | fier: | | TD_M2M_NB_07 | | | | |
| Objec | tive: | | AE updates a <container> resource using non-blocking asynchronous request</container> | | | | |
| Config | guratior | ו: | M2M_CFG_01 | | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | | |
| | | | | | | | |
| Pre-te | st cond | litions: | AE has created a Container resource <container> on registrar CSE</container> | | | | |
| | | | AE is reachable on the URI: "AE-Notification-URI" | | | | |
| | | | Test Sequence | | | | |
| Step | RP | Туре | Description | | | | |
| 1 | | Stimulus | AE is requested to send a non-blocking asynchronous request to update the <container> resource in registrar CSE</container> | | | | |

| Interoperability Test Description | | | | | | |
|-----------------------------------|---------|---------------------------|---|--|--|--|
| | | | Sent request contains: • op = 3 (Update) • to = {CSEBaseName}/URI of <container> resource</container> | | | |
| 2 | Mca | PRO Check | II = AE-ID rai = (token-string) | | | |
| | Wied | 1 minuve | • $rt = 2$ (non-blocking asynchronous) | | | |
| | | | nu = AE-Notification-URI | | | |
| | | | pc = Serialized Representation of the updated <container> resource</container> | | | |
| | | | Registrar CSE creates an internal <request> resource and sends acknowledgement</request> | | | |
| | | PPO Check | response containing: | | | |
| 3 | Мса | Primitive | • rsc = 1000 (Accepted) | | | |
| | | | rqi = token-string) same as received in request message | | | |
| | | | pc = Reference to the created <request> resource</request> | | | |
| 4 | | IOP Check | E indicates successful operation | | | |
| 5 | | IOP Check | Registrar CSE sends notify request to AE | | | |
| | | PRO Check ca Primitive | Sent request contains: op = 5 (Notify) | | | |
| 6 | | | to = AE-Notification-URI | | | |
| Ŭ | Мса | | • fr = registrar CSE-ID | | | |
| | | | • rqi = (token-string) | | | |
| | | | pc = Serialized representation of notification data object | | | |
| | | PRO Check | AE sends notify response to Registrar CSE containing: | | | |
| 7 | Mca | Primitive | • rsc = 2000 (OK) | | | |
| | moa | | rqi = (token-string) same as received in request message | | | |
| 8 | | IOP Check | Registrar CSE indicates successful operation | | | |
| IOP \ | /erdict | | | | | |
| | | | | | | |

8.2.2.1.4 Container Delete

| | | | Interoperability Test Description | | | |
|-------------|---|--|--|--|--|--|
| Identifier: | | | TD_M2M_NB_08 | | | |
| Objective: | | | AE deletes a Container resource using non-blocking asynchronous request | | | |
| Config | guratio | n: | M2M_CFG_01 | | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.4.1 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.6.2.1 | | | |
| | | | | | | |
| Pre-te | est conc | litions: | AE has created a <container> resource on registrar CSE</container> | | | |
| | | | AE is reachable on the URI: "AE-Notification-URI" | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a non-blocking asynchronous request to delete the <container> resource in registrar CSE</container> | | | |
| 2 | Мса | PRO Check Primitive | Sent request contains: • op = 4 (Delete) • to = {CSEBaseName}/URI of <container> resource • fr = AE-ID • rqi = (token-string) • rt = 2 (non-blocking asynchronous) • nu = AE-Notification-URI • pc = empty</container> | | | |
| 3 | 3 Mca PRO Check Primitive Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: rsc = 1000 (Accepted) rqi = token-string) same as received in request message pc = Reference to the created <request> resource</request> </request> | | | | | |
| 4 | | IOP Check | AE indicates successful operation | | | |
| 5 | | IOP Check Registrar CSE sends notify request to AE | | | | |

| | Interoperability Test Description | | | | |
|---|-----------------------------------|--|--|--|--|
| 6 Mca PRO Check Primitive Primitive Sent request contains: • op = 5 (Notify) • to = AE-Notification-URI • fr = registrar CSE-ID • rqi = (token-string) • pc = Serialized representation of notification data object | | | | | |
| 7 Mca PRO Check Primitive AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rgi = (token-string) same as received in request message | | AE sends notify response to Registrar CSE containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message | | | |
| 8 | | IOP Check | Registrar CSE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO | Verdict | | | | |

8.3 Single hop configuration testing

8.3.1 Retargeting

8.3.1.1 RetargetingResource Create (Generic Test Description)

| | Interoperability Test Description | | | | | |
|--------|-----------------------------------|---|---|--|--|--|
| Identi | fier: | | TD_M2M_SH_01 | | | |
| Objec | tive: | | AE creates a remote <resource> resource</resource> | | | |
| Config | guration |): | M2M_CFG_03 | | | |
| Refere | ences: | | | | | |
| | | | | | | |
| Pre-te | st cond | itions | Parents resources need to be created on the hosting CSE | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a Create Request to create <resource> on the Hosting CSE</resource> | | | |
| | | | • op = 1 (Create) | | | |
| | | | to = URI of the parent resource | | | |
| 2 | | PRO Check | • fr = AE-ID | | | |
| 2 | Mca | Primitive | rqi = (token-string) | | | |
| | | | ty = <resource> type number</resource> | | | |
| | | | pc = Serialized representation of <resource> resource</resource> | | | |
| 3 | | IOP Check Check if possible that the request is forwarded by the registrar CSE to the Hosting C | | | | |
| | Мсс | PRO Check Primitive | • op = 1 (Create) | | | |
| | | | to = URI of the parent resource | | | |
| 4 | | | • fr = AE-ID | | | |
| 4 | | | rgi = (token-string) | | | |
| | | | • ty = m2m:resourceType | | | |
| | | | pc = Serialized representation of <resource> resource</resource> | | | |
| 5 | | IOP Check | Check if possible that the <resource> resource is created in the Hosting CSE</resource> | | | |
| | | DDO Chask | • rsc = 2001 (CREATED) | | | |
| 6 | 1400 | PRO Check | rgi = (token-string) same as received in request message | | | |
| | IVICC | Primuve | pc = Serialized representation of <resource> resource</resource> | | | |
| 7 | | IOP Check | Check if possible that the response is forwarded by the registrar CSE to the AE | | | |
| | | DDO Chask | • rsc = 2001 (CREATED) | | | |
| 8 | Maa | PRO Check | rqi = (token-string) same as received in request message | | | |
| | Ivica | Primuve | pc = Serialized representation of <resource> resource</resource> | | | |
| 9 | | IOP Check | AE indicates successful operation | | | |
| IOP V | /erdict | | | | | |
| PRO \ | /erdict | | | | | |

8.3.1.2 <Resource> Create

| <resource></resource> | Identifier | Refs | IOP Verdict | PRO Verdict |
|--|-----------------|----------------------|-------------|-------------|
| <container></container> | TD_M2M_SH_01#01 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.4.1 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.5.2.1 | | |
| <contentinstance></contentinstance> | TD_M2M_SH_01#02 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.19.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.7.2 | | |
| <subscription></subscription> | TD_M2M_SH_01#03 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.11.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.7.2 | | |
| <accesscontrolpolic< td=""><td>TD_M2M_SH_01#04</td><td>ETSI TS 118 101 [1],</td><td></td><td></td></accesscontrolpolic<> | TD_M2M_SH_01#04 | ETSI TS 118 101 [1], | | |
| y> | | clause 10.2.21.1 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.1.2 | | |
| <group></group> | TD_M2M_SH_01#05 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.7.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.12.2.1 | | |
| <pollingchannel></pollingchannel> | TD_M2M_SH_01#06 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.13.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.21.2.1 | | |
| <fanoutpoint></fanoutpoint> | TD_M2M_SH_01#07 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.7.6 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.14.3.1 | | |
| <node></node> | TD_M2M_SH_01#08 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.14.1 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.18.2.1 | | |

8.3.1.3 Resource Retrieve (Generic Test Description)

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_SH_02 | | |
| Objec | tive: | | AE retrieves a remote <resource> resource</resource> | | |
| Config | guratior | ו: | M2M_CFG_03 | | |
| Refer | ences: | | | | |
| | | | | | |
| Pre-te | st cond | litions: | Parents resources need to be created on the hosting CSE | | |
| | | | Resource <resource> has been created in Hosting CSE</resource> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request to retrieve <resource> on the remote Hosting CSE</resource> | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = URI of the <resource> resource U</resource> fr = AE-ID roi = (token-string) | | |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE | | |
| 4 | Мсс | PRO Check Primitive | op = 2 (Retrieve) to URI of the <resource> resource</resource> fr = AE-ID rqi = (token-string) | | |
| 5 | Мсс | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource> | | |
| 6 | | IOP Check | Check if possible that the response is forwarded by the registrar CSE to the AE | | |

| | Interoperability Test Description | | | | | |
|-------------|-----------------------------------|---|---|--|--|--|
| 7 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource> | | | |
| 8 | | IOP Check AE indicates successful operation | | | | |
| IOP Verdict | | | | | | |
| PRO | PRO Verdict | | | | | |

8.3.1.4 <Resource> retrieve

| <resource></resource> | Identifier | Refs | IOP Verdict | PRO Verdict |
|---|-----------------|----------------------|-------------|-------------|
| <container></container> | TD_M2M_SH_02#01 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.4.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.5.2.2 | | |
| <contentinstance></contentinstance> | TD_M2M_SH_02#02 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.19.3 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.6.2.2 | | |
| <subscription></subscription> | TD_M2M_SH_02#03 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.11.3 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.7.2 | | |
| <accesscontrolpolicy></accesscontrolpolicy> | TD_M2M_SH_02#04 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.21.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.1.2 | | |
| <group></group> | TD_M2M_SH_02#05 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.7.3 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.12.2.2 | | |
| <pollingchannel></pollingchannel> | TD_M2M_SH_02#06 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.13.3 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.21.2.2 | | |
| <fanoutpoint></fanoutpoint> | TD_M2M_SH_02#07 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.7.8 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.14.3.2 | | |
| <node></node> | TD_M2M_SH_02#08 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.14.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.18.2.2 | | |
| <remotecse></remotecse> | TD_M2M_SH_02#09 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.2.3 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.3.2.3 | | |
| <ae></ae> | TD_M2M_SH_02#10 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.1.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.5.2.2 | | |
| <csebase></csebase> | TD_M2M_SH_02#11 | ETSI TS 118 101 [1], | | |
| | | clause 10.2.3.2 | | |
| | | oneM2M TS-0004 [2], | | |
| | | clause 7.3.2 | | |

| | | | Interoperability Test Description | | | |
|-------------|----------|------------------------|---|--|--|--|
| Identifier: | | | TD_M2M_SH_03 | | | |
| Objective: | | | AE updates a remote <resource> resource</resource> | | | |
| Config | guration | 1 | M2M_CFG_03 | | | |
| Refere | ences: | | | | | |
| | | | | | | |
| Pre-te | st cond | itions: | Parents resources need to be created on the hosting CSE | | | |
| | | | Resource <resource> has been created in Hosting CSE</resource> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send an Update Request to update the <resource> on the Hosting CSE</resource> | | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = URI of the resource <resource></resource> fr = AE-ID rqi = (token-string) pc = Serialized representation of <resource> resource</resource> | | | |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE | | | |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = URI of the resource <resource></resource> fr = AE-ID rqi = (token-string) pc = Serialized representation of <resource> resource</resource> | | | |
| 5 | | IOP Check | Check if possible that the <resource> resource is updated in the Hosting CSE</resource> | | | |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource> | | | |
| 7 | | IOP Check | Check if possible that the response is forwarded by the registrar CSE to the AE | | | |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource> | | | |
| 9 | | IOP Check | AE indicates successful operation | | | |
| IOP V | 'erdict | | | | | |
| PRO \ | /erdict | | | | | |

8.3.1.5 Resource Update (Generic Test Description)

8.3.1.6 <Resource> update

| <resource></resource> | Identifier | Refs | IOP Verdict | PRO Verdict |
|---|-----------------|---------------------------------------|-------------|-------------|
| <container></container> | TD_M2M_SH_03#01 | ETSI TS 118 101 [1], clause 10.2.4.3 | | |
| | | oneM2M TS-0004 [2], clause 7.3.5.2.3 | | |
| <subscription></subscription> | TD_M2M_SH_03#02 | ETSI TS 118 101 [1], clause 10.2.11.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.7.2 | | |
| <accesscontrolpolicy></accesscontrolpolicy> | TD_M2M_SH_03#03 | ETSI TS 118 101 [1], clause 10.2.21.3 | | |
| | | oneM2M TS-0004 [2], clause 7.3.1.2 | | |
| <group></group> | TD_M2M_SH_03#04 | ETSI TS 118 101 [1], clause 10.2.7.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.12.2.3 | | |
| <pollingchannel></pollingchannel> | TD_M2M_SH_03#05 | ETSI TS 118 101 [1], clause 10.2.13.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.21.2.3 | | |
| <fanoutpoint></fanoutpoint> | TD_M2M_SH_03#06 | ETSI TS 118 101 [1], clause 10.2.7.9 | | |
| | | oneM2M TS-0004 [2], clause 7.3.14.3.3 | | |
| <node></node> | TD_M2M_SH_03#07 | ETSI TS 118 101 [1], clause 10.2.14.3 | | |
| | | oneM2M TS-0004 [2], clause 7.3.18.2.3 | | |
| <remotecse></remotecse> | TD_M2M_SH_03#08 | ETSI TS 118 101 [1], clause 10.2.2.3 | | |
| | | oneM2M TS-0004 [2], clause 7.3.3.2.3 | | |
| <ae></ae> | TD_M2M_SH_03#09 | ETSI TS 118 101 [1], clause 10.2.1.3 | | |
| | | oneM2M TS-0004 [2], clause 7.3.5.2.3 | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| Identi | fier: | | TD_M2M_SH_04 | | |
| Objec | tive: | | AE delete a remote <resource> resource</resource> | | |
| Config | guratior | ו: | M2M_CFG_03 | | |
| Refere | ences: | | | | |
| | | | | | |
| Pre-te | st cond | litions: | Parents resources need to be created on the hosting CSE | | |
| | | | Resource <resource> has been created in Hosting CSE</resource> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Delete Request to delete <resource> on the Hosting CSE</resource> | | |
| | | | • op = 4 (Delete) | | |
| 2 | | PRO Check | to = URI of the resource <resource></resource> | | |
| 2 | Mca | Primitive | • fr = AE-ID | | |
| | | | rqi = (token-string) | | |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE | | |
| | Мсс | | • op = 4 (Delete) | | |
| л | | PRO Check | to = URI of the resource <resource></resource> | | |
| - | | Primitive | • fr = AE-ID | | |
| | | | rqi = (token-string) | | |
| 5 | | IOP Check | Check if possible that the <resource> resource is deleted in the Hosting CSE</resource> | | |
| 6 | | PRO Check | rsc = 2002 (DELETED) | | |
| 0 | Mcc | Primitive | rqi = (token-string) same as received in request message | | |
| 7 | | IOP Check | Check if possible that the response is forwarded by the registrar CSE to the AE | | |
| 0 | | PRO Check | rsc = 2002 (DELETED) | | |
| 0 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| 9 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.3.1.7 Resource Delete (Generic Test Description)

8.3.1.8 <Resource> delete

| <resource></resource> | Identifier | Refs | IOP Verdict | PRO Verdict |
|---|-----------------|---------------------------------------|-------------|-------------|
| <container></container> | TD_M2M_SH_04#01 | ETSI TS 118 101 [1], clause 10.2.4.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.5.2.4 | | |
| <contentinstance></contentinstance> | TD_M2M_SH_04#02 | ETSI TS 118 101 [1], clause 10.2.19.5 | | |
| | | oneM2M TS-0004 [2], clause 7.3.6.2.4 | | |
| <subscription></subscription> | TD_M2M_SH_04#03 | ETSI TS 118 101 [1], clause 10.2.11.5 | | |
| | | oneM2M TS-0004 [2], clause 7.3.7.2 | | |
| <accesscontrolpolicy></accesscontrolpolicy> | TD_M2M_SH_04#04 | ETSI TS 118 101 [1], clause 10.2.21.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.1.2 | | |
| <group></group> | TD_M2M_SH_04#05 | ETSI TS 118 101 [1], clause 10.2.7.5 | | |
| | | oneM2M TS-0004 [2], clause 7.3.12.2.4 | | |
| <pollingchannel></pollingchannel> | TD_M2M_SH_04#06 | ETSI TS 118 101 [1], clause 10.2.13.5 | | |
| | | oneM2M TS-0004 [2], clause 7.3.21.2.4 | | |
| <fanoutpoint></fanoutpoint> | TD_M2M_SH_04#07 | ETSI TS 118 101 [1], clause 10.2.7.10 | | |
| | | oneM2M TS-0004 [2], clause 7.3.14.3.4 | | |
| <node></node> | TD_M2M_SH_04#08 | ETSI TS 118 101 [1], clause 10.2.14.4 | | |
| | | oneM2M TS-0004 [2], clause 7.3.18.2.4 | | |

| | | | Interoperability Test Description | | | |
|----------------|----------|-----------|---|--|--|--|
| Identi | fier: | | TD_M2M_SH_09 | | | |
| Objec | tive: | | AE discovers accessible resources residing in the remote Hosting CSE using multiple Filter Criteria | | | |
| Configuration: | | | M2M_CFG_03 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.6 | | | |
| | | | oneM2M TS-0004 [2], clause 7.2.3.13 | | | |
| | | | | | | |
| Pre-te | est cond | litions: | Two <container> resources with labels "key1" and "key2" are created in Hosting CSE</container> A <group> resources with labels "key1" and "key2" is created in Hosting CSE</group> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| | | Stimulus | AE is requested to send a discovery request to discover specific resources located in hosting | | | |
| 1 | | | CSE using multiple filter criteria (label, resource type and limit) | | | |
| | | | Sent request contains: | | | |
| | | | • op = 2 (Retrieve) | | | |
| | | | to = URI of hosting CSEBase | | | |
| | | | • fr = AE-ID | | | |
| | | | rgi = (token-string) | | | |
| 2 | Мса | PRO Check | • fu=1 | | | |
| | | Primitive | Ibl=key1 | | | |
| | | | Ibl=key2 | | | |
| | | | • rty=3 | | | |
| | | | • lim=1 | | | |
| | | | • pc = empty | | | |
| 0 | | | Check if possible that the request is forwarded by the registrar CSE to the Hosting | | | |
| 3 | | IOP Check | CSE | | | |
| | | | Forwarded request contains: | | | |
| | | | • op = 2 (Retrieve) | | | |
| | | | to = hosting CSEBase | | | |
| | | | • fr = AE-ID | | | |
| | | | rqi = (token-string) | | | |
| 4 | Mcc | PRO Check | • fu=1 | | | |
| | | Primuve | Ibl=key1 | | | |
| | | | Ibl=key2 | | | |
| | | | • rty=3 | | | |
| | | | • lim=1 | | | |
| | | | • pc = empty | | | |
| 5 | | IOP Check | Check if possible that the response is sent by the hosting CSE to the registrar CSE | | | |
| | | | Hosting CSE sends response containing: | | | |
| | | PRO Chack | • rsc = 2000 (OK) | | | |
| 6 | Mcc | Primitive | rqi = (token-string) same as received in request message | | | |
| | | 1 mmuve | pc = Serialized representation of data object containing the address of one of the | | | |
| | | | <container> resources</container> | | | |
| 7 | | IOP Check | Check if possible that the response is forwarded from the registrar CSE to AE | | | |
| | | | Registrar CSE sends response containing: | | | |
| _ | | PRO Check | • rsc = 2000 (OK) | | | |
| 6 | Мса | Primitive | rqi = (token-string) same as received in request message | | | |
| | | | • pc = Serialized representation of data object containing the address of one of the | | | |
| L | | | <container> resources</container> | | | |
| 7 | | IOP Check | AE indicates successful operation | | | |

8.3.1.9 Discovery with multiple filter criteria

8.3.1.10 Unauthorized operation (Insufficient Access Rights)

| | Interoperability Test Description | | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|--|
| Identifier: | | | TD_M2M_SH_10 | | | |
| Objec | tive: | | AE delete request is rejected after access rights verification using retargeting | | | |
| Configuration: | | | M2M_CFG_03 | | | |
| Refer | ences: | | oneM2M TS-0004 [2], clause 7.3.1.2 | | | |
| | | | | | | |
| Pre-test conditions: | | | An <accesscontrolpolicy> resource with name {ACPName} has been created in remote hosting CSE, not allowing delete operation</accesscontrolpolicy> AE has created an <ae> resource on registrar CSE with name {AEName}</ae> AE has created a <container> sub-resource in the <ae> resource with name {containerName} and having as accessControlPolicy-ID the ID of the remote <accesscontrolpolicy></accesscontrolpolicy></ae></container> | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | AE is requested to send a Request to delete the <container> resource from the registrar CSE</container> | | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = URI of addressed resource fr = AE-ID rqi = (token-string) pc = empty | | | |
| 3 | | IOP Check | Check if possible that a request is sent by the registrar CSE to the Hosting CSE to retrieve the corresponding remote <accesscontrolpolicy> resource</accesscontrolpolicy> | | | |
| 4 | Мсс | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = URI of addressed resource • fr = Registrar CSE-ID • rqi = (token-string) • pc = empty | | | |
| 5 | | IOP Check | Check if possible that the response is sent by the hosting CSE to the registrar CSE | | | |
| 6 | Мсс | PRO Check Primitive | Hosting CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | | | |
| 7 | | IOP Check | Check if possible that an access denied error response is sent by registrar CSE to AE | | | |
| 8 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 4103 (ACCESS_DENIED) rqi = (token-string) same as received in request message pc = empty | | | |
| 9 | | IOP Check | Check if possible that the <container> resource has not been deleted</container> | | | |
| 10 | | IOP Check | AE indicates unsuccessful operation (Delete error - no privilege) | | | |

8.3.1.11 Notification

| | Interoperability Test Description | | | | | |
|--------|-----------------------------------|----------|---|--|--|--|
| Identi | fier: | | TD_M2M_SH_11 | | | |
| Objec | tive: | | AE receives a notification request from the remote hosting CSE | | | |
| Config | guratior | ו: | M2M_CFG_03 | | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.12 | | | |
| | | | oneM2M TS-0004 [2], clause 7.4.1 | | | |
| | | | | | | |
| Pre-te | st cond | litions: | A <container> resource has been created on hosting CSE</container> | | | |
| | | | AE has created an <ae> resource on registrar CSE</ae> | | | |
| | | | AE has created a <subscription> resource for the <container> resource on the</container></subscription> | | | |
| | | | remote hosting CSE | | | |
| | | | Test Sequence | | | |
| Step | RP | Туре | Description | | | |
| 1 | | Stimulus | A <contentinstance> sub-resource is created on the <container> resource. This triggers or</container></contentinstance> | | | |
| | | | causes the hosting CSE to send a notification to AE | | | |

| | Interoperability Test Description | | | |
|----|-----------------------------------|------------------------|---|--|
| 2 | Мса | PRO Check Primitive | op = 5 (Notify) to = URI of AE resource from = Hosting CSE-ID rqi = (token-string) | |
| 3 | | IOP Check | Check if possible that the Notify request is forwarded by the registrar CSE to the AE-ID | |
| 4 | Мсс | PRO Check Primitive | op = 5 (Notify) to = AE from = Hosting CSE-ID rqi = (token-string) pc = Serialized representation of Notification data object | |
| 5 | | IOP Check | Check if possible that the response is sent by the AE to the registrar CSE | |
| 6 | Мсс | PRO Check Primitive | AE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = empty | |
| 7 | | IOP Check | Check if possible that the response is forwarded by registrar CSE to Hosting CSE | |
| 8 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = empty | |
| 9 | | IOP Check | Check if possible that the <container> resource has not been deleted</container> | |
| 10 | | IOP Check | AE indicates unsuccessful operation (Delete error - no privilege) | |

8.3.2 <mgmtObj> Test Description

8.3.2.1 <mgmtObj> Create

| | | | Interoperability Test Description |
|--------|----------|------------------------|---|
| Identi | fier: | | TD_M2M_SH_05 |
| Objec | tive: | | AE creates a <mgmtobj> resource</mgmtobj> |
| Confi | guratior | ו: | M2M_CFG_03 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.8.8 |
| | | | |
| Pre-te | st cond | litions: | Management Session between Management Server and Management Client |
| | | _ | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send an <mgmtobj> Create Request to create an <mgmtobj> on IN-CSE</mgmtobj></mgmtobj> |
| 2 | Мса | PRO Check Primitive | op: 1 (CREATE) fr: AE-ID to: {CSEBaseName}/{node} rqi = (token-string) ty = 13 (mgmtObj) pc: Serialized representation of the <mgmtobi> resource</mgmtobi> |
| 3 | | IOP Check | Check if possible that the <mgmtobj> resource is created in IN-CSE</mgmtobj> |
| | | PRO Check Primitive | N/A |
| | | PRO Check OMA DM | Requests to create the corresponding MO using Add DM command. The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of ETSI TS 118 105 [10]</mgmtobj> |
| 4 | mc | PRO Check BBF TR069 | Requests to create the corresponding information model using AddObject RPC. The mapping of <mgmtobj> and information model or RPC can be referenced from clause 7 of ETSI TS 118 106 [11]</mgmtobj> |
| | | PRO Check OMA LWM2M | Requests to create the corresponding Objects using Create LWM2M Create operations. The mapping of <mgmtobj> and Object can be referenced from clause 6.3 of ETSI TS 118 105 [10]</mgmtobj> |
| 5 | | IOP Check | Check if possible that the corresponding MO for OMA DM, information model for BBF TR069 or Object for OMA LWM2M is created on the Managed Entity. |
| | | PRO Check Primitive | N/A |
| 6 | mc | PRO Check OMA DM | Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105 [10] |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|---------------------|--|--|
| | | PRO Check BBF | Successful response of the RPC. Details can be found in clause 8.1 ETSI | |
| | | TR069 | TS 118 106 [11] | |
| | | PRO Check OMA | Response with status code 2.01 Created. Details can be found in clause 6.4 | |
| | | LWM2M | ETSI TS 118 105 [10] | |
| | | | rsc = 2001 (CREATED) | |
| 7 | Mca | PRO Check Primitive | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <mgmtobj> resource</mgmtobj> | |
| 8 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.3.2.2 <mgmtObj> Update

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|--|---|--|--|
| Identi | fier: | | TD_M2M_SH_06 | | |
| Objec | tive: | | AE updates a <mgmtobj> resource</mgmtobj> | | |
| Config | guratio | n: | M2M_CFG_03 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.8.10 | | |
| | | | | | |
| Pre-te | st cond | litions: | Management Session between Management Server and Management Client | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send an <mgmtobj> Update Request to update an <mgmtobj> on IN-CSE</mgmtobj></mgmtobj> | | |
| 2 | Мса | PRO Check Primitive | op: 3 (UPDATE) fr: AE-ID to: {CSEBaseName}/{node}/{mgmtObj} rqi = (token-string) pc: Serialized representation of the <mgmtobj> resource</mgmtobj> | | |
| 3 | | IOP Check | Check if possible that the <mgmtobj> resource is updated in IN-CSE</mgmtobj> | | |
| | | PRO Check Primitive | N/A | | |
| | | PRO Check OMA DM PRO Check BBF TR069 | Requests to update the corresponding MO using Replace DM command. The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of ETSI TS 118 105 [10]</mgmtobj> | | |
| 4 | mc | | Requests to Update the corresponding information model using SetParameterValues RPC. The mapping of <mgmtobj> and information model or RPC can be referenced from clause 7 of ETSI TS 118 106 [11]</mgmtobj> | | |
| | | PRO Check OMA LWM2M | Requests to Update the corresponding Objects using LWM2M Write operations. The mapping of <mgmtobj> and Object can be referenced from clause 6.3 of ETSI TS 118 105 [10]</mgmtobj> | | |
| 5 | | IOP Check | Check if possible that the corresponding MO for OMA DM, information model for BBF TR069 or Object for OMA LWM2M is Updated on the Managed Entity | | |
| | | PRO Check Primitive | N/A | | |
| | | PRO Check OMA DM | Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105 [10] | | |
| 6 | mc | PRO Check BBF TR069 | Successful response of the RPC. Details can be found in clause 8.1 ETSI TS 118 106 [11] | | |
| | | PRO Check OMA | Response with status code 2.04 Changed. Details can be found in clause 6.4 | | |
| | | LWM2M | ETSI TS 118 105 [10] | | |
| 7 | Мса | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj> | | |
| 8 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO \ | /erdict | | | | |

| | | | Interoperability Test Description |
|--------|---------|---|---|
| Identi | fier: | | TD M2M SH 07 |
| Object | tive: | | AE retrieves a <montobi> resource</montobi> |
| Config | uration | ו: | M2M CFG 03 |
| Refere | ences: | | ETSI TS 118 101 [1]. clause 10.2.8.9 |
| | | | |
| Pre-te | st cond | litions: | Management Session between Management Server and Management Client |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send an <mgmtobj> Retrieve Request to retrieve an <mgmtobj> on IN-CSE</mgmtobj></mgmtobj> |
| 2 | Мса | PRO Check Primitive | op = 2 (RETRIEVE) to = {CSEBaseName}/{node}/{mgmtObj} fr = AE-ID rqi = (token-string) |
| 3 | | IOP Check | Check if possible that the <mgmtobj> resource is retrieved in IN-CSE</mgmtobj> |
| 4 | mc | PRO Check Primitive PRO Check OMA DM PRO Check BBF TR069 | N/A Requests to retrieve the corresponding MO using Get DM command Requests to retrieve the corresponding information model using GetParametersValue RPC Requests to retrieve the corresponding Objects using Patrices LWM2M Read operation |
| | | OMA LWM2M | |
| 5 | | IOP Check | |
| | | PRO Check Primitive | N/A |
| 6 | mc | PRO Check OMA DM PRO Check | Response with status code (200) OK with the information of the MO. Details can be found in clause 5.4 ETSI TS 118 105 [10] |
| | | BBF TR069 | information. Details can be found in clause 8.1 ETSI TS 118 106 [11] |
| | | PRO Check OMA LWM2M | Response with status code 2.05 Content with the information of the Object. Details can be found in clause 6.4 ETSI TS 118 105 [10] |
| 7 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj> |
| 8 | | IOP Check | AE indicates successful operation |
| IOP V | 'erdict | | |
| PRO \ | /erdict | | |

8.3.2.3 <mgmtObj> Retrieve

8.3.2.4 <mgmtObj> Delete

| | | | Interoperability Test Description |
|----------------------|----------|---------------------|--|
| Identi | fier: | | TD_M2M_SH_08 |
| Objec | tive: | | AE deletes a <mgmtobj> resource</mgmtobj> |
| Config | guratior | ו: | M2M_CFG_03 |
| References: | | | ETSI TS 118 101 [1], clause 10.2.8.11 |
| | | | |
| Pre-test conditions: | | | Management Session between Management Server and Management Client |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send an <mgmtobj> Delete Request to delete an <mgmtobj> on IN-CSE</mgmtobj></mgmtobj> |
| 2 | Мса | PRO Check Primitive | op = 4 (DELETE) to = {CSEBaseName}/{node}/{mgmtObj} fr = AE-ID rqi = (token string) |
| 3 | | IOP Check | Check if possible that the <mgmtobj> resource is deleted in IN-CSE</mgmtobj> |
| 4 | ma | PRO Check Primitive | N/A |
| 4 | me | PRO Check OMA DM | Requests to delete the corresponding MO using Delete DM command |

| | | | Interoperability Test Description |
|-------|---------|------------------------|--|
| | | PRO Check BBF TR069 | Requests to delete the corresponding information model using DeleteObject RPC |
| | | PRO Check OMA LWM2M | Requests to delete the corresponding Objects using LWM2M Delete operation |
| 5 | | IOP Check | Check if possible that the corresponding MO for OMA DM, information model for BBF TR069 or Object for OMA LWM2M is deleted on the Managed Entity |
| | | PRO Check Primitive | N/A |
| | | PRO Check OMA DM | Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105 [10] |
| 6 | mc | PRO Check BBF TR069 | Successful response of the RPC. Details can be found in clause 8.1 ETSI TS 118 106 [11] |
| | | PRO Check OMA LWM2M | Response with status code 2.02 Deleted. Details can be found in clause 6.4 ETSI TS 118 105 [10] |
| 7 | Мса | PRO Check Primitive | • rsc = 2002 (DELETED) |
| | | | rqi = (token-string) same as received in request message |
| 8 | | IOP Check | AE indicates successful operation |
| IOP V | /erdict | | |
| PRO \ | /erdict | | |

8.3.3 Announcement Management

8.3.3.1 AEAnnc Create

| | Interoperability Test Description | | | | |
|------------|-----------------------------------|---------------------------|--|--|--|
| Identi | Identifier: | | TD_M2M_SH_12 | | |
| Objective: | | | AE1 announces itself to CSE2 | | |
| Config | guratior | ו: | M2M_CFG_04 | | |
| Refere | ences: | | | | |
| | | | | | |
| Pre-te | st cond | itions | • <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> | | |
| | | | AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> | | |
| | | | <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> | | |
| | | | CSE1 is registered to CSE2 | | |
| - | | _ | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 is requested to send an AE Update Request with announceTo attribute set to CSE2 CSE-ID | | |
| | | | • op = 3 (Update) | | |
| | | BBO Chack | to = {CSEBaseName}/{AE} | | |
| 2 | Mca | Primitive | • fr = AE-ID | | |
| | Ivica | r mmuve | • rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <ae> resource</ae> | | |
| 3 | | IOP Check | Check if possible that the CREATE <aeannc> is sent from CSE1 to CSE2</aeannc> | | |
| | | PRO Check cc Primitive | • op = 1 (Create) | | |
| | | | to = {CSEBaseName2}/{CSEBaseName1} | | |
| 4 | | | • fr = CSE1-ID | | |
| 4 | Mcc | | • rqi = (token-string) | | |
| | | | • ty = 10002 (AEAnnc) | | |
| | | | pc = Serialized representation of <aeannc> resource</aeannc> | | |
| 5 | | IOP Check | Check if possible that the <aeannc> resource is created in CSE2 with only MA</aeannc> | | |
| Ŭ | | | attributes | | |
| | | PRO Check | • rsc = 2001 (CREATED) | | |
| 6 | Mcc | Primitive | rqi = (token-string) same as received in request message | | |
| | moo | 1 111111110 | pc = Serialized representation of <aeannc> resource</aeannc> | | |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 | | |
| | | PRO Check | • rsc = 2004 (UPDATED) | | |
| 8 | Mca | Primitive | rqi = (token-string) same as received in request message | | |
| | wica | 1 mmave | pc = Serialized representation of <ae> resource</ae> | | |
| 9 | | IOP Check | AE indicates successful operation | | |
| IOP V | erdict | | | | |
| PRO \ | /erdict | | | | |

| 8.3.3.2 ContainerAnnc Create | ; |
|------------------------------|---|
|------------------------------|---|

| | Interoperability Test Description | | | |
|------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_SH_13 | |
| Objective: | | | AE1 announces a child container to CSE2 | |
| Confi | guratior | 1: | M2M_CFG_04 | |
| Refer | ences: | | | |
| | | | | |
| Pre-te | st cond | itions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> | |
| | | | AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> | |
| | | | <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> | |
| | | | AE2 has created a <ae> resource on registrar CSE with name {AE2}</ae> | |
| | | | CSE1 is registered to CSE2 | |
| | | | <container> resource is created as a child of AE1</container> | |
| | | | AE1 is announced on CSE2 | |
| | | 1 | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE1 is requested to send a an <container> Update Request with announceTo attribute set</container> | |
| | | | | |
| | | | • $op = 3$ (Update) | |
| | | PRO Check Primitive | • to = {CSEBaseName}/{container} | |
| 2 | Мса | | • tr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | 105.01 | pc = Serialized representation of updated <container> resource</container> | |
| 3 | | IOP Check | Check if possible that the CREATE <containerannc> is sent from CSE1 to CSE2</containerannc> | |
| | | | • op = 1 (Create) | |
| | | PRO Check Primitive | to = {CSEBaseName2}/{AE1Annc} | |
| 4 | | | • $fr = CSE1-ID$ | |
| | IVICC | | • rqi = (token-string) | |
| | | | • $ty = 10003$ (containerAnnc) | |
| | | | pc = Serialized representation of < containerAnnc > resource | |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is created in CSE2 with only MA | |
| | | | | |
| 6 | | PRO Check | • ISC = 2001 (CREATED) | |
| 0 | Mcc | Primitive | rql = (token-string) same as received in request message pa Serialized representation of a container Appendix resource | |
| 7 | | | pc = Senalized representation of < containerAnnc > resource | |
| | | IOF Check | | |
| • | | PRO Check | ISU = 2004 (UPDATED) rai = (takan atring) some as received in request message | |
| 0 | Mca | Primitive | Iqi = (lokeri-stillig) same as received in request message pa Carialized representation of reactions resources | |
| 0 | | IOP Chock | • pc = Senalized representation of <container> resource</container> | |
| JOB 1 | /ordict | IOF Check | | |
| | | | | |
| FRU | veruici | | | |

8.3.3.3 ContainerAnnc Update

| | | | Interoperability Test Description |
|--------|-------------|----------|---|
| Identi | Identifier: | | TD_M2M_SH_14 |
| Objec | Objective: | | AE1 announces an Optional Announce attribute to CSE2 |
| Config | guration | า: | M2M_CFG_04 |
| Refer | ences: | | |
| | | | |
| Pre-te | st cond | litions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> AE2 has created a <ae> resource on registrar CSE with name {AE2}</ae> CSE1 is registered to CSE2 <container> resource is created as a child of AE1</container> AE1 is announced on CSE2 <container> is announced on CSE2</container> |
| | | - | Test Sequence |
| Step | RP | Гуре | Description |
| 1 | | Stimulus | AE1 is requested to send a an <container> Update Request with announcedAttribute = maxNrOfInstances</container> |

| | | | Interoperability Test Description | |
|-------|---|------------------------|--|--|
| | op = 3 (Update) to = {CSEBaseName}/{container} | | | |
| 2 | Mca | PRO Check | • fr = AE-ID | |
| | Ivica | 1 Innuve | • rqi = (token-string) | |
| | | | pc = Serialized representation of updated <container> resource</container> | |
| 3 | | IOP Check | Check if possible that the UPDATE <containerannc> is sent from CSE1 to CSE2</containerannc> | |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName2}/{ ContainerAnnc } fr = CSE1-ID rqi = (token-string) pc = Serialized representation of < containerAnnc > resource | |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is update in CSE2 with maxNrOfInstances attributes | |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of < containerAnnc > resource | |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 | |
| 8 | Мса | | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | |
| 9 | | IOP Check | AE1 indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.3.3.4 ContainerAnnc Retrieve

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_SH_15 | | |
| Objective: | | | AE2 retrieves an Announced Resource | | |
| Config | guratio | า: | M2M_CFG_04 | | |
| Refer | ences: | | | | |
| | | | | | |
| Pre-test conditions: | | litions: | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> AE2 has created a <ae> resource on registrar CSE with name {AE2}</ae> CSE1 is registered to CSE2 <container> resource is created as a child of AE1</container> AE1 is announced on CSE2 <container> is announced on CSE2</container> | | |
| - | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE2 is requested to send a Retrieve Request for a < containerAnnc > | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName2}/URI of < containerAnnc > resource fr = AE2-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <containerannc> resource</containerannc> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | Verify that this is | s a containAnnc resource | | |
| PRO | Verdict | | | | |

8.3.3.5 ContainerAnnc Retrieve Original

| | Interoperability Test Description | | | |
|---------------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_SH_16 | |
| Objec | Objective: | | AE2 retrieves the original resource representation of an announced resource | |
| Config | guration | ו: | M2M_CFG_04 | |
| Refere | ences: | | | |
| | | | | |
| Pre-test conditions | | | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> AE2 has created a <ae> resource on registrar CSE with name {AE2}</ae> CSE1 is registered to CSE2 <container> resource is created as a child of AE1</container> | |
| | | | AET is announced on USE2 | |
| | | | <container> is announced on USE2 Tract Commanded</container> | |
| Stop | DD | Type | Test Sequence | |
| Step | RP | Stimuluo | Description ΔE^2 is requested to send a Petrieva Pequeet to a container Appa S with rep = 7 | |
| - 1 | | Sumulus | AEZ is requested to send a Retrieve Request to a < containerAnne > with ten = 7 | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName2}/URI of < containerAnnc > resource fr = AE2-ID rqi = (token-string) rcn = 7 (original) pc = empty | |
| 3 | | IOP Check | Check if possible that the GET <container> is sent from CSE2 to CSE1</container> | |
| 4 | Мсс | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName1}/{ Container} fr = AE2-ID rqi = (token-string) pc = empty | |
| 5 | | IOP Check | | |
| 6 | Мсс | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | |
| 7 | | IOP Check | Check if possible that the response is forwarded by the registrar CSE to the AE | |
| 8 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | |
| 9 IOD' | (a reliat | IOP Check | AE indicates successful operation | |
| | raict | | | |
| PRO V | verdict | | | |

8.3.3.6 ContainerAnnc Delete by updating announceTo attribute

| | Interoperability Test Description | | | | |
|---------------------|-----------------------------------|----------|---|--|--|
| Identifier: | | | TD_M2M_SH_21 | | |
| Objec | Objective: | | AE1 deletes its announced child container from CSE2 | | |
| Configuration: | | ו: | M2M_CFG_04 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.13.4 | | |
| | | | | | |
| Pre-test conditions | | | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> CSE1 is registered to CSE2 AE1 is announced on CSE2 <container> resource is created as a child of AE1 and announced on CSE2</container> Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 is requested to send a an container Update Request with announceTo attribute set to NULL | | |

| | | | Interoperability Test Description |
|-------|---------|------------------------|--|
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName1}/{AE1}/{container} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <container> resource</container> |
| 3 | | IOP Check | Check if possible that the DELETE <containerannc> is sent from CSE1 to CSE2</containerannc> |
| 4 | Мсс | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName2}/{AE1Annc}/{containerAnnc} fr = CSE1-ID rqi = (token-string) |
| 5 | | IOP Check | Check if possible that the <containerannc> resource is deleted in CSE2</containerannc> |
| 6 | Мсс | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> |
| 9 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.3.3.7 ContainerAnnc Delete by deleting original resource

| | Interoperability Test Description | | |
|------------|-----------------------------------|------------|---|
| Identif | ier: | | TD_M2M_SH_22 |
| Object | tive: | | AE1 deletes its announced child container from CSE2 |
| Confiç | guratior | ו: | M2M_CFG_04 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.13.4 |
| | | | |
| Pre-te: | st cond | litions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> |
| | | | AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> |
| | | | <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> |
| | | | CSE1 is registered to CSE2 |
| | | | AE1 is announced on CSE2 |
| | | | <container> resource is created as a child of AE1 and announced on CSE2</container> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE1 is requested to send a an container Delete Request |
| | | | • op = 4 (Delete) |
| _ | Мса | PRO Check | to = {CSEBaseName1}/{AE1}/{container} |
| 2 | Мса | Primitive | • fr = AE-ID |
| | | | • rqi = (token-string) |
| 3 | | IOP Check | Check if possible that the DELETE $<$ containerAppc> is sent from CSE1 to CSE2 |
| - U | | | on = 4 (Delete) |
| | | PRO Check | • $t_0 = 4$ (Delete) • $t_0 = \sqrt{CSEBaseName2}/(AE1Anne)/(containerAnne)}$ |
| 4 | Mcc | Primitivo | • $t_0 = \{0, 0\}$ base Name $2 p_1 A = TAI m c p_1 (0) mainer A m c p_2$ |
| | INICC | THIIIUVE | rai = (token_string) |
| 5 | | IOP Check | Check if possible that the <containerappic> resource is deleted in CSE2</containerappic> |
| 5 | | BBO Chock | oneck in possible that the container Anno resource is deleted in OOL2 |
| 6 | Mcc | Primitive | roi – (token-string) some as received in request message |
| 7 | WIGO | IOP Check | CSE1 sends a DELETE response to the AE1 |
| · · | | PRO Check | |
| 8 | Mca | Primitive | roi – (token-string) some as received in request message |
| | mou | 1 11111010 | |
| a i | | IOP Check | IAE indicates successful operation |
| 9 IOP V | erdict | IOP Check | AE indicates successful operation |

| 8.3.3.8 | Announced attribute Cr | eate by addition t | to announcedAttribute attribute |
|---------|------------------------|--------------------|---------------------------------|
|---------|------------------------|--------------------|---------------------------------|

| Interoperability Test Description | | | | | |
|-----------------------------------|---------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_SH_23 | | |
| Objective: | | | AE1 announces an announcable attribute of its child container to CSE2 | | |
| Configuration: | | ו: | M2M_CFG_04 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.13.7 | | |
| | | | | | |
| Pre-te | st cond | litions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> | | |
| | | | AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> | | |
| | | | <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> | | |
| | | | CSE1 is registered to CSE2 | | |
| | | | AE1 is announced on CSE2 | | |
| | | | <container> resource is created as a child of AE1 and announced on CSE2</container> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 is requested to send a an <container> Update Request with announcedAttribute</container> | | |
| | | | attribute containing currentNrOfInstances | | |
| | | | • op = 3 (Update) | | |
| | | DBO Chack | to = {CSEBaseName1}/{AE1}/{container} | | |
| 2 | Mca | Primitive | • fr = AE-ID | | |
| | Ivica | T TITTILIVE | • rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <container> resource</container> | | |
| 3 | | IOP Check | Check if possible that the UPDATE <containerannc> is sent from CSE1 to CSE2</containerannc> | | |
| | | PRO Check Primitive | • op = 3 (Update) | | |
| | | | to = {CSEBaseName2}/{AE1Annc}/{containerAnnc} | | |
| 4 | Мсс | | • fr = CSE1-ID | | |
| | | | • rqi = (token-string) | | |
| | | | pc = Serialized representation of < containerAnnc > resource | | |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is updated in CSE2 with | | |
| | | | currentNrOfInstances attribute | | |
| | Мсс | PRO Check Primitive | • rsc = 2004 (UPDATED) | | |
| 6 | | | rqi = (token-string) same as received in request message | | |
| | | | pc = Serialized representation of < containerAnnc > resource | | |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 | | |
| _ | Мса | PRO Check Primitive | • rsc = 2004 (UPDATED) | | |
| 8 | | | rqi = (token-string) same as received in request message | | |
| L | | | pc = Serialized representation of <container> resource</container> | | |
| 9 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO | Verdict | | | | |

8.3.3.9 Announced attribute Create by creation of a MA attribute at the original resource

| Interoperability Test Description | | | | |
|-----------------------------------|----------|----------|--|--|
| Identifier: | | | TD_M2M_SH_24 | |
| Objec | tive: | | AE1 announces an MA attribute of its child container to CSE2 | |
| Config | guratior | ו: | M2M_CFG_04 | |
| Refere | ences: | | | |
| | | | | |
| Pre-test conditions | | | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> CSE1 is registered to CSE2 AE1 is announced on CSE2 <container> resource is created as a child of AE1 and announced on CSE2</container> | |
| Test Sequence | | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE1 is requested to send a an <container> Update Request with labels attribute</container> | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|--|
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName1}/{AE1}/{container} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <container> resource</container> |
| 3 | | IOP Check | Check if possible that the UPDATE <containerannc> is sent from CSE1 to CSE2</containerannc> |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName2}/{AE1Annc}/{containerAnnc} fr = CSE1-ID rqi = (token-string) pc = Serialized representation of < containerAnnc > resource |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is updated in CSE2 with labels attribute |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of < containerAnnc > resource |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> |
| 9 | | IOP Check | AE indicates successful operation |
| | | | |
| IOP \ | /erdict | | |

8.3.3.10 Announced attribute Delete by deletion from announcedAttribute attribute

| Interoperability Test Description | | | | | |
|-----------------------------------|----------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_SH_25 | | |
| Objective: | | | AE1 de-announces an announcable attribute of its child container to CSE2 | | |
| Config | guration | า: | M2M_CFG_04 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.13.8 | | |
| | | | | | |
| Pre-test conditions | | litions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> CSE1 is registered to CSE2 AE1 is announced on CSE2 <container> resource is created as a child of AE1 and announced on CSE2 with currentNrOfInstances attribute announced</container> | | |
| | | - | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 is requested to send a <container> Update Request with announcedAttribute attribute set to NULL</container> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName1}/{AE1}/{container} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <container> resource</container> | | |
| 3 | | IOP Check | Check if possible that the UPDATE <containerannc> is sent from CSE1 to CSE2</containerannc> | | |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName2}/{AE1Annc}/{containerAnnc} fr = CSE1-ID rqi = (token-string) pc = Serialized representation of < containerAnnc > resource | | |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is updated in CSE2 with no currentNrOfInstances attribute | | |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of < containerAnnc > resource | | |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 | | |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | | |

| Interoperability Test Description | | | |
|-----------------------------------|--|-----------|-----------------------------------|
| 9 | | IOP Check | AE indicates successful operation |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.3.3.11 Announced attribute Delete by deletion of a MA attribute at the original resource

| Interoperability Test Description | | | | | |
|-----------------------------------|----------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_SH_26 | | |
| Objective: | | | AE1 de-announces an MA attribute (conditionally mandatory) of its child container to | | |
| Confi | guratior | n: | M2M_CFG_04 | | |
| Refer | ences: | | | | |
| | | | | | |
| Pre-test conditions | | litions | <csebase> resource has been created in CSE1 with name {CSEBaseName1}</csebase> AE1 has created a <ae> resource on registrar CSE with name {AE1}</ae> <csebase> resource has been created in CSE2 with name {CSEBaseName2}</csebase> CSE1 is registered to CSE2 AE1 is announced on CSE2 <container> resource is created as a child of AE1 and announced on CSE2 with labels attribute announced</container> | | |
| | | | Test Sequence | | |
| Step | RP | Type | Description | | |
| 1 | | Stimulus | AE1 is requested to send a <container> Update Request with labels attribute set to NULL</container> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName1}/{AE1}/{container} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <container> resource</container> | | |
| 3 | | IOP Check | Check if possible that the UPDATE <containerannc> is sent from CSE1 to CSE2</containerannc> | | |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName2}/{AE1Annc}/{containerAnnc} fr = CSE1-ID rqi = (token-string) pc = Serialized representation of < containerAnnc > resource | | |
| 5 | | IOP Check | Check if possible that the < containerAnnc > resource is updated in CSE2 with no labels attribute | | |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of < containerAnnc > resource | | |
| 7 | | IOP Check | CSE1 sends a UPDATED response to the AE1 | | |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> | | |
| 9 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO V | Verdict | | | | |
8.3.4 Single Hop <fanOutPoint> operations

8.3.4.1 Create <fanOutPoint>

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| Identifier: | | | TD_M2M_SH_17 | | |
| Objec | tive: | | AE creates a <contentinstance> resource in each group member, where some</contentinstance> | | |
| | | | memberIDs are on a remoteCSE | | |
| Confi | guratior | 1: | M2M_CFG_08 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.6 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.14.2, 7.4.14.3 | | |
| | | | | | |
| Pre-te | est cond | itions | Two or more resources of type <container> exist on the member hosting CSE</container> | | |
| | | | A group exists containing these two members of type <container></container> | | |
| Cton | | Tuno | lest Sequence | | |
| Step | RP | Stimuluo | Description | | |
| 1 | | Sumulus | member | | |
| | | | • op = 1 (Create) | | |
| | | | to = {CSEBaseName}/{group}/fopt | | |
| 2 | | PRO Check | • fr = AE-ID | | |
| - | Mca | Primitive | • rqi = (token-string) | | |
| | | | • ty = 4 (contentInstance) | | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | | |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar/Group Hosting CSE to the | | |
| | | | | | |
| | | | op = 1 (Oreale) to = {MemberCSEBaseName}//subgroupId}/font | | |
| | | | or /MemberCSEBaseName//subgroupid/ropt or /MemberCSEBaseName//memberId} | | |
| | | PRO Check | • $fr = \Delta F - ID$ | | |
| 4 | Mcc | Primitive | • $rai = (token-string)$ | | |
| | | | aid = (arpld-token-string) | | |
| | | | tv = 4 (contentInstance) | | |
| | | | pc = Serialized representation of <contentinstance> resource</contentinstance> | | |
| - | | | Check if possible that the <contentinstance> resource is created in the Member Hosting</contentinstance> | | |
| 5 | | IOP Check | CSE | | |
| | | | • rsc = 2001 (CREATED) | | |
| | | PRO Chack | rqi = (token-string) same as received in request message | | |
| 6 | Mcc | Primitive | gid = (grpld-token-string) same as received in request message | | |
| | Mioo | 1 minuvo | pc = Serialized representation of <contentinstance> resource or <aggregated< li=""> </aggregated<></contentinstance> | | |
| | | 105.01 | response> | | |
| 7 | | IOP Check | Check that the response is aggregated by the group hosting CSE and sent to the AE | | |
| | | PRO Check | • $rsc = 2001 (CREATED)$ | | |
| 8 | Мса | Primitive | rqi = (token-string) same as received in request message | | |
| 0 | | | pc = Serialized representation of <aggregated response=""></aggregated> | | |
| 9 | /ordict | | | | |
| | Verdict | | | | |
| IFNU | veruici | | | | |

8.3.4.2 Retrieve <fanOutPoint>

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|----------|--|--|
| Identifier: | | | TD_M2M_SH_18 | |
| Objective: | | | AE retrieves a <container> resource from each group member, where some memberIDs are on a remoteCSE</container> | |
| Config | guratior | า: | M2M_CFG_08 | |
| References: | | | ETSI TS 118 101 [1], clause 10.2.7.7 | |
| | | | | |
| Pre-test conditions: | | | Two or more resources of type <container> exist on the member hosting CSE</container> A group exists containing these two members of type <container></container> | |
| | Test Sequence | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request to the fanoutPoint of <group> resource</group> | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|---|
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{group}/fopt fr = AE-ID rgi = (token-string) |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar/group hosting CSE to the Member Hosting CSE |
| 4 | Мсс | PRO Check Primitive | op = 2 (Retrieve) to = {MemberCSEBaseName}/{subgroupId}/fopt or {MemberCSEBaseName}/{memberId} fr = AE-ID rqi = (token-string) gid = (grpId-token-string) |
| 5 | Мсс | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message gid = (grpld-token-string) same as received in request message pc = Serialized representation of <container> resource</container> |
| 6 | | IOP Check | Check that the response is aggregated by the group hosting CSE and sent to the AE |
| 7 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <aggregated_response></aggregated_response> |
| 8 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | /erdict | | |

8.3.4.3 Update <fanOutPoint>

| | Interoperability Test Description | | | | |
|------------|-----------------------------------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_SH_19 | | |
| Objective: | | | AE updates a <container> resource in each group member, where some memberIDs are</container> | | |
| - | | | on a remoteCSE | | |
| Config | guratior | ו: | M2M_CFG_08 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.7.8 | | |
| | | | | | |
| Pre-te | st cond | litions: | Two or more resources of type <container> exist on the member hosting CSE</container> | | |
| | | | A <group> exists containing these two members of type <container></container></group> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Update Request to the fanoutPoint of <group> resource to lifetime of the resource</group> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{group}/fopt fr = AE-ID rqi = (token-string) | | |
| | | | pc = Serialized representation of <container> resource</container> | | |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar/group hosting CSE to the Member Hosting CSE | | |
| 4 | Мсс | PRO Check Primitive | op = 3 (Update) to = {MemberCSEBaseName}/{subgroupId}/fopt or {MemberCSEBaseName}/{memberId} fr = AE-ID rqi = (token-string) pc = Serialized representation of <container> resource</container> | | |
| 5 | | IOP Check | Check if possible that the <resource> resource is updated in the Hosting CSE</resource> | | |
| 6 | Мсс | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message gid = (grpld-token-string) same as received in request message pc = Serialized representation of <container> resource or <aggregated response=""></aggregated></container> | | |
| 7 | | IOP Check | Check that the response is aggregated by the group hosting CSE and sent to the AE | | |
| 8 | Мса | PRO Check Primitive | rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <aggregated response=""></aggregated> | | |
| 9 | | IOP Check | AE indicates successful operation | | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.3.4.4 Delete <fanOutPoint>

| | | | Interoperability Test Description |
|------------|----------|-------------|---|
| Identi | fier: | | TD_M2M_SH_20 |
| Objective: | | | AE deletes a <contentinstance> resource from each group member, where some</contentinstance> |
| | | | memberIDs are on a remoteCSE |
| Config | guratior | ו: | M2M_CFG_08 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.7.9 |
| | | | |
| Pre-te | st cond | litions: | Two or more resources of type <container> exist on the member hosting CSE</container> |
| | | | Each <container> has at least 1 <contentinstance></contentinstance></container> |
| | | | A group exists containing these two members of type <container></container> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group> resource</group> |
| | | | • op = 4 (Delete) |
| 2 | | PRO Check | to = {CSEBaseName}/{group}/fopt/ol |
| 2 | Mca | a Primitive | • fr = AE-ID |
| | | | rqi = (token-string) |
| 3 | | IOP Check | Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE |
| | | | • op = 4 (Delete) |
| | | | to = {MemberCSEBaseName}/{subgroupId}/fopt/ol |
| 4 | | PRO Check | or {MemberCSEBaseName}/{memberId}/ol |
| 4 | Мсс | c Primitive | • fr = AE-ID |
| | | | rqi = (token-string) |
| | | | gid = (grpld-token-string) |
| 5 | | IOP Check | Check if possible that the <resource> resource is deleted in the Hosting CSE</resource> |
| | | DDO Chaak | rsc = 2002 (DELETED) |
| 6 | Maa | PRO Check | rqi = (token-string) same as received in request message |
| | IVICC | Finnuve | gid = (grpId-token-string) same as received in request message |
| 7 | | IOP Check | Check that the response is aggregated by the group hosting CSE and sent to the AE |
| | | DPO Chack | • rsc = 2002 (DELETED) |
| 8 | Maa | PRO Check | rqi = (token-string) same as received in request message |
| | IVICa | FIIIIIUVE | pc = Serialized representation of <aggregated_response></aggregated_response> |
| 9 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | /erdict | | |

8.4 Security management

8.4.1 Secure AE Registration

8.4.1.1 PSK Security Association Establishment Framework

| Interoperability Test Description | | | |
|-----------------------------------|----------|------------------------|---|
| Identi | fier: | | TD_M2M_SE_01 |
| Objec | tive: | | AE uses Provisioned Symmetric Key Security Association Establishment Framework to enable mutual authentication with the Registrar CSE. Registrar CSE performs AE authorization check on incoming AE registration request |
| Confi | guration | າ: | M2M CFG 01 |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.2.2.1 |
| | | | ETSI TS 118 101 [1], clauses 9.6.29, 9.6.19, 9.16.20 |
| | | | |
| Pre-test conditions: | | litions: | AE and Registrar CSE are pre-Provisioned with Kpsa = 123456,Kpsald = test@onem2m.com and Cipher Suites = TLS_PSK_WITH_AES_128_CBC_SHA256, TLS_PSK_WITH_AES_128_CCM_8 Registrar CSE is provisioned with Service Subscribed Profile and Service Subscribed Node Resources Service Subscribed Node contains csi <registrar cse-id=""> and rlk < URI of serviceSubscribedAppRule > attributes</registrar> Registrar CSE is configured with <servicesubscribedapprule> resource having a CredentialD, APP-ID and AE-ID with the following values:</servicesubscribedapprule> <m2m:asar rn="asar"></m2m:asar> <aci>00-test@onem2m.com</aci> <aae>AE-ID</aae> |
| | | | |
| Step | RP | Type | Description |
| 1 | | Stimulus | AE is requested to send a primitive to the Registrar CSE |
| | | PRO Check Primitive | Security Association Establishment |
| 2 | Мса | PRO Check TCP | TLS Handshake Cipher Suite:TLS_PSK_WITH_AES_128_CBC_SHA256 Version: TLS v1.2 Kpsald = test@onem2m.com |
| | | PRO Check UDP | DTLS Handshake Cipher Suite:TLS_PSK_WITH_AES_128_CCM_8 Version: DTLS v1.2 Kpsald = test@onem2m.com |
| 3 | | IOP Check | Check if possible that Handshake was successful |
| 4 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> |
| 5 | | IOP Check | Check that APP-ID, AE-ID, Credential ID are in <servicesubscribedapprule> Check if possible that the <ae> resource is created in registrar CSE</ae></servicesubscribedapprule> |
| 6 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae> |
| 7 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.4.2 Authentication

8.4.2.1 Authentication using the Provisioned Symmetric Key Security Association Establishment Framework with TLS

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------|---|--|
| Identifier: | | | TD_M2M_SE_02 | |
| Objec | tive: | | AE establishes mutual authentication with the Registrar CSE using Provisioned | |
| | | | Symmetric Key Security Association Establishment Framework | |
| Config | guratior |): | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 103 [12], clause 8.2.2.1 | |
| - | | | | |
| Pre-te | st cond | itions: | • AE and Registrar CSE are pre-Provisioned with Kpsa = 123456,Kpsald = | |
| | | | test@onem2m.com and Cipher Suites = | |
| | | | | |
| Sten | RP | Туре | Description | |
| 1 | NF | Stimulus | The TLS client on AE sends a Client Hello Handshake message | |
| | | Otimulus | Client Hello handshake message | |
| | | PRO Check | Handshake Type – 0x01 (Client Hello) | |
| 2 | Mca | TCP | Cipher Suite TLS PSK WITH AES 128 CBC SHA256 | |
| | mou | 101 | Version: TLS v1 2 | |
| | | | Server Hello handshake message | |
| | | | Handshake Type = 0x02 (Server Hello) | |
| | | | Cipher Suite: TLS PSK WITH AES 128 CBC SHA256 | |
| 3 | Мса | PRO Check | Version: TLS v1.2 | |
| | | TCP | | |
| | | | Server Hello Done handshake message | |
| | | | Handshake Type = 0x0e (Server Hello Done) | |
| 4 | | Stimuluo | The TLS client on AE sends Client Key Exchange, Change Cipher Spec, Finished | |
| 4 | | Sumulus | messages | |
| | | | The TLS client Key Exchange handshake message | |
| | | | Handshake Type = 0x10 (Client Key Exchange) | |
| | | | psk_identity = test@onem2m.com | |
| | | | Version: TLS v1.2 | |
| _ | | PRO Check | | |
| 5 | Мса | TCP | Client Change Cipher Spec message | |
| | | | • Content type = 0x14 (Change Cipner Spec) | |
| | | | Client Finished handshake message | |
| | | | Handshake Type – 0v14 (Client Einisbed) | |
| | | | Version: TLS v1 2 | |
| | | | Check that The TLS server authenticated the Client by validating Verify Data | |
| 6 | | IOP Check | Check that AE associated the established TLS session with the CSE-ID | |
| | | | Server New Session Ticket handshake message | |
| | | | Handshake Type = 0x04 (New Session Ticket) | |
| | | | psk_identity = test@onem2m.com | |
| | | | Version: TLS v1.2 | |
| | | BBO Chock | | |
| 7 | Mca | TCP | Server Change Cipher Spec message | |
| | Ivica | 101 | Content type = 0x14 (Change Cipher Spec) | |
| | | | | |
| | | | Server Finished handshake message | |
| | | | Handshake Lype = 0x14 (Client Finished) | |
| | | | Version: ILS v1.2 | |
| 8 | (ordist | IOP Check | Uneck that The TLS client authenticated the Server by validating Verify Data | |
| | /ordict | | | |
| | veruitt | | | |

8.4.2.2 Authentication using the Certificate-Based Security Association Establishment Framework with TLS

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------|--|--|
| Identi | fier: | | TD_M2M_SE_03 | |
| Objec | tive: | | AE establishes mutual authentication with the Registrar CSE using Certificate-Based | |
| | | | Security Association Establishment Framework | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.2.2.2 | |
| Pre-test conditions: | | litions: | The Registrar CSE uses the CSE-ID certificate signed by a root CA certificate AE uses the AE-ID certificate signed by a root CA certificate Cipher Suite = TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 | |
| 01 | | - | lest Sequence | |
| Step | RP | I ype | Description | |
| 1 | | Stimulus | The TLS client on AE sends a client Helio Handshake message | |
| 2 | Мса | PRO Check TCP | Handshake Type = 0x01 (Client Hello) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 Version: TLS v1.2 | |
| 3 | Мса | PRO Check TCP | messages to the TLS client Server Hello handshake message Handshake Type = 0x02 (Server Hello) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 Version: TLS v1.2 Server Certificate handshake message Handshake Type = 0x0b (Server Certificate) Certificate: the Registrar CSE certificate Server Key Exchange handshake message Handshake Type = 0x0c (Server Key Exchange) Public key: ECDHE generated key Server Certificate Request handshake message Handshake Type = 0x0d (Certificate Request) Server Hello Done handshake message Handshake Type = 0x0d (Certificate Request) | |
| 4 | | IOP Check | The TLS client on AE checks if the certificate of the Server is valid | |
| 5 | | Stimulus | The TLS client on AE sends Certificate, Client Key exchange, Certificate Verify, Change Cipher Spec, Finished messages | |
| 6 | Мса | PRO Check TCP | Client Certificate handshake message Handshake Type = 0x0b (Client Certificate) Certificate: AE certificate Client Key Exchange message Handshake Type = 0x10 (Client Key Exchange) Public key: ECDHE generated key Client Certificate Verify message Handshake Type = 0x0f (Certificate Verify) Client Change Cipher Spec message Client Change Cipher Spec message Client Thished handshake message Client Finished handshake message | |
| 7 | | IOP Check | The TLS server on CSE checks if the certificate of the Client is valid | |

| | Interoperability Test Description | | |
|-------------|-----------------------------------|------------------|--|
| 8 | Мса | PRO Check TCP | The TLS server sends New Session Ticket, Change Cipher Spec, and Finished messages to the TLS client Server New Session Ticket message • Handshake Type = 0x04 (New Session Ticket) Server Change Cipher Spec message • Content type = 0x14 (Change Cipher Spec) Server Finished message • Handshake Type = 0x14 (Client Finished) • Version: TLS v1.2 |
| 9 | | IOP Check | Check that The TLS client authenticated the Server by validating Verify Data |
| IOP Verdict | | | |
| PRO | Verdict | | |

8.4.3 Authorization

8.4.3.1 Authorization using selfPrivileges

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identi | fier: | | TD_M2M_SE_04 | |
| Objective: | | | AE accesses <accesscontrolpolicy> resource using its selfPrivileges credentials</accesscontrolpolicy> | |
| Config | guratior |): | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 9.6.2.0 | |
| | | | | |
| Pre-test conditions: | | itions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created an <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> selfPrivileges attribute of {accessControlPolicyName} contains the following access control tuple: acor = AE-ID acop = 63 | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send an accessControlPolicy Retrieve Request | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.4.3.2 Authorization using accessControlPolicy privileges

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_SE_05 | |
| Objective: | | | AE accesses <ae> resource using its accessControlPolicyIDs attribute</ae> | |
| Configuration: | | | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 9.6.2.0 | |
| | | | | |
| Pre-test conditions: | | | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created an <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> accessControlPolicyIDs attribute of {AE} is set to resource id of | |
| | | | {accessControlPolicyName} privileges attribute of {accessControlPolicyName} contains the following access control tuple: acor = AE-ID acop = 34 | |
| Sten | RP | Type | Description | |
| 1 | 111 | Stimulus | AF is requested to send an AF Retrieve Request | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE is requested to send an AE Delete Request | |
| 6 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) pc = empty | |
| 7 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 4103 (ACCESS_DENIED) rqi = (token-string) same as received in request message pc = empty | |
| 8 | | IOP Check | Check if possible that the <ae> resource has not been removed in registrar CSE.</ae> | |
| 9 | | IOP Check | AE indicates unsuccessful operation (Delete error - no privilege) | |
| IOP V | 'erdict | | | |
| PRO \ | /erdict | | | |

8.4.3.3 Authorization using default access privileges (owner is configured)

| | Interoperability Test Description |
|----------------------|---|
| Identifier: | TD_M2M_SE_06 |
| Objective: | AE accesses <ae> resource using default access privileges</ae> |
| Configuration: | M2M_CFG_01 |
| References: | ETSI TS 118 101 [1], clause 9.6.2.0 |
| | |
| Pre-test conditions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created an <ae> resource on registrar CSE with name {AE}</ae> <container> resource has been created in registrar CSE under <ae> resource with name {containerName}</ae></container> accessControlPolicyIDs attribute of {containerName} is <i>NULL</i> owner attribute of {containerName} = AE-ID |

| Interoperability Test Description | | | | |
|-----------------------------------|---------------|------------------------|---|--|
| | Test Sequence | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a container Retrieve Request | |
| 2 | Mca | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE2 is requested to send a container Retrieve Request | |
| 6 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE2-ID rqi = (token-string) pc = empty | |
| 7 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message • pc = empty | |
| 8 | | IOP Check | AE indicates unsuccessful operation (Retrieve error - no privilege) | |
| IOP \ | /erdict | | · · · · · · · · · · · · · · · · · · · | |
| PRO V | Verdict | | | |

8.4.3.4 Authorization using default access privileges (owner is not configured)

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_SE_07 | |
| Objective: | | | AE accesses <ae> resource using default access privileges</ae> | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 9.6.2.0 | |
| | | | | |
| Pre-te | st cond | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has grapted an cAEs resource an registrar CSE with name (AE) | |
| | | | • AE has clealed all <ae> lesource on registrar CSE with hame {AE}</ae> | |
| | | | <containers <aes="" been="" created="" cse="" has="" in="" registrar="" resource="" resource<br="" under="">with name {containerName}</containers> | |
| | | | accessControlPolicyIDs attribute of {containerName} is NULL | |
| | | | owner attribute of {containerName} is not set | |
| | | | creator attribute of {containerName} = AE-ID | |
| | | 1 | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a ContainerRetrieve Request | |
| 2 | | PRO Check | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AF-ID | |
| | Мса | Primitive | rqi = (token-string) pc = empty | |
| | | | Registrar CSE sends response containing: | |
| 2 | | PRO Check | • rsc = 2000 (OK) | |
| 3 | Мса | Primitive | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 4 | | IOP Check | AE indicates successful operation | |
| 5 | | Stimulus | AE2 is requested to send a Container Retrieve Request | |
| 6 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE2-ID rqi = (token-string) pc = empty | |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|------------------------|--|--|
| 7 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 4103 (ACCESS_DENIED) rqi = (token-string) same as received in request message pc = empty | |
| 8 | | IOP Check | AE indicates unsuccessful operation (Retrieve error - no privilege) | |
| IOP V | /erdict | | | |
| PRO \ | Verdict | | | |

8.4.3.5 Direct Dynamic Authorization

| Interoperability Test Description | | | |
|-----------------------------------|--------|------------------------|---|
| Identifier: | | | TD_M2M_SE_08 |
| Objective: | | | AE accesses <ae> resource using Direct Dynamic Authorization</ae> |
| Configuration: | | 1: | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 103 [12] , clause 7.3.2.2 |
| | | | |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created an <ae> resource on registrar CSE with name {AE}</ae> <container> resource has been created in registrar CSE under <ae> resource with name {containerName}</ae></container> Arbitrary set of <accesscontrolpolicy> resources are linked to the {containerName}</accesscontrolpolicy> |
| | | - | lest Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Container Retrieve Request |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty |
| 3 | | IOP Check | Check if possible that Tokens or Token-Ids have not been included in the request |
| 4 | | IOP Check | Check if possible that CSE selected a DAS Server based on accessControlRules linked to the requested resource |
| 5 | Mca | PRO Check Primitive | Registrar CSE sends a Notify request to the DAS server: op = 6 (Notify) pc: securityInfo: Direct Dynamic Authorization Originator = AE-ID Originator Resource Type = 3 (Container) Operation = 2 (Retrieve) |
| 6 | | IOP Check | Check that if the DAS Server issued token(s), they conform to the Token structure (ETSI TS 118 103 [12], clause 7.3.2.4) |
| 7 | Мса | PRO Check Primitive | The DAS server responds to the Registrar CSE: op = 6 (Notify response) pc: securityInfo: Direct Dynamic Authorization (optional) token(s): authorization token(s) (optional) dynamicACPInfo: information for creating accessControlPolicy dynamicaly |
| 8 | | IOP Check | Check that if token(s) present in response content, the token is validated in the Registrar CSE successfully (ETSI TS 118 103 [12], clause 7.3.2.5) |
| 9 | | IOP Check | Check that if dynamicACPInfo present in response content, the Registrar CSE created <accesscontrolpolicy> resource matching the dynamicACPInfo.</accesscontrolpolicy> |
| 10 | Мса | PRO Check Primitive | If access is granted, the Registrar CSE responds to the AE: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <container> resource If access is not granted, the Registrar CSE responds to the AE: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message • pc = empty</container> |

| Interoperability Test Description | | | |
|-----------------------------------|---------|-----------|---|
| 11 | | IOP Check | If access is granted, AE indicates successful operation, otherwise AE indicates unsuccessful operation (Retrieve error - no privilege) |
| IOP V | /erdict | | |
| PRO \ | /erdict | | |

8.4.3.6 Indirect Dynamic Authorization

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_SE_09 | |
| Objective: | | | AE accesses <ae> resource using Indirect Dynamic Authorization</ae> | |
| Configuration: | | ו: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 103 [12] , clause 7.3.2.3 | |
| | | | | |
| Pre-test conditions: | | litions: | CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created an <ae> resource on registrar CSE with name {AE}</ae> <container> resource has been created in registrar CSE under <ae> resource with name {containerName}</ae></container> Arbitrary set of containerName} | |
| | | | Arbitrary set of <accesscontrolpolicy> resources are linked to the (control of the set)</accesscontrolpolicy> | |
| | | | {containerName} | |
| Ctore | DD | Turne | lest Sequence | |
| Step | RP | Type | Description | |
| 1 | | Stimulus | AE is requested to send a Container Retrieve Request | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty | |
| | | | rsc = 4103 (ACCESS DENIED) | |
| 3 | Мса | PRO Check Primitive | rqi = (token-string) same as received in request message tqf: DAS Server PoA pc = empty | |
| 4 | | IOP Check | AE indicates unsuccessful operation (Retrieve error - no privilege) | |
| - | | Stimulus | AE is requested to send a token request to the DAS using original request data. | |
| 5 | | | AuthorSignIndicator parameter is optional. | |
| 6 | | | Check that if the DAS Server issued token(s), they conform to the Token structure (ETSI | |
| 0 | | IOP Check | TS 118 103 [12], clause 7.3.2.4) | |
| 7 | | Stimulus | AE is requested to send a Container Retrieve Request with additional token(s) information | |
| 8 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) (optional) tkns: token(s) if ESData-protected Token(s) are provided (optional) tids: token Id(s) if ESData-protected Token(s) are not provided pc = empty | |
| 9 | Мса | PRO Check Primitive | If the request in step 7 includes token Id(s), the Registrar CSE sends a Notify request to the DAS Server: • op = 6 (Notify) • securityInfo Type: Indirect Dynamic Authorization • pc: tids: token Id(s) | |
| 10 | Мса | PRO Check Primitive | Ine DAS server responds to the Registrar CSE: op = 6 (Notify response) pc: securityInfo: Indirect Dynamic Authorization token(s): authorization token(s) corresponding token Id(s) | |
| 12 | | IOP Check | Check that the token(s) are validated in the Registrar CSE successfully (ETSI TS 118 103 [12], clause 7.3.2.5) | |
| 13 | | IOP Check | If access is granted, AE indicates successful operation, otherwise AE indicates unsuccessful operation (Retrieve error - no privilege) | |

| | Interoperability Test Description | | |
|-------|-----------------------------------|------------------------|---|
| 14 | Мса | PRO Check Primitive | If access is granted, the Registrar CSE responds to the AE: • rsc = 2000 (OK) • Itids: Local-Token-ID(s) • tkns: Token(s) • rqi = (token-string) same as received in request message • pc = Serialized representation of <container> resource If access is not granted, the Registrar CSE responds to the AE: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message pc = empty</container> |
| 15 | | IOP Check | If access is granted, AE indicates successful operation, otherwise AE indicates unsuccessful operation (Retrieve error - no privilege) |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.4.4 Key provisioning management

8.4.4.1 MEF Handshake Procedure using certificates

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|---|--|
| Identifier: | | | TD_M2M_SE_10 | |
| Objec | tive: | | A MEF Handshake procedure establishes a mutually authenticated TLS session for | |
| | | | protecting the communication between an MEF Client and MEF using pre-provisioned | |
| | | | certificates. | |
| Config | guratior | n: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.2 | |
| | | | | |
| Pre-te | st cond | itions: | The MEF Client and MEF have been provisioned with certificates and Cipher | |
| | | | Suite = TLS_PSK_WITH_AES_128_CBC_SHA256 | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 4 | | Stimulus | MEF Client and MEF establish the TLS or DTLS session using the certificate-based TLS | |
| 1 | | | handshake | |
| | | | Check that MEF Handshake is successful | |
| 2 | | IOP Check | Check that the MEF's certificate is verified against the set of provisioned MEF certificate | |
| | | | trust anchors (as described in ETSI TS 118 103 [12]) | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.4.4.2 MEF Handshake Procedure using Master Credentials

| | Interoperability Test Description | | | |
|------------|-----------------------------------|-----------|---|--|
| Identi | fier: | | TD_M2M_SE_ 11 | |
| Objective: | | | A MEF Handshake procedure establishes a mutually authenticated TLS or DTLS session | |
| | | | for protecting the communication between an MEF Client and MEF using pre-provisioned | |
| | | | Master Credentials. | |
| Confi | guratior | າ: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.2 | |
| | | | | |
| Pre-te | est cond | litions: | The MEF Client and MEF have been provisioned with Kpm = 123456, KpmID = | |
| | | | psk_identity, and Cipher Suites = TLS_PSK_WITH_AES_128_CBC_SHA256, | |
| | | | TLS_PSK_WITH_AES_128_CCM_8 | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | MEF Client and MEF establish the TLS or DTLS session using the certificate-based TLS | |
| 1 | | | handshake | |
| 2 | | PRO Check | psk_identity = test@onem2m.com | |
| 2 | Мса | TCP/UDP | • psk = 123456 | |
| 3 | | IOP Check | Check that MEF Handshake is successful | |
| | | | | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.4.4.3 MEF Client Registration Procedure

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|----------------------|---|--|
| Identifier: | | | TD_M2M_SE_ 12 | |
| Objective: | | | The MEF Client registers with the MEF to confirm that it is willing to use the services of the MEF, under the authorization of the administrating stakeholder. | |
| Confi | guration |): | M2M CFG 01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.3 | |
| | | | | |
| Pre-te | st cond | itions: | The MEF Client, and MEF have been provisioned with the parameters described in ETSI TS 118 103 [12], clause 8.3.7 | |
| - | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the MEF Handshake procedure | |
| 2 | | Stimulus | The MEF Client sends a MEF Client Registration request | |
| 3 | Мса | PRO Check TCP/UDP | MEF-FQDN = FQDN of the MEF adminFQDN = FQDN of the administrating stakeholder expirationTime = time when the registration shall expire | |
| 4 | | IOP Check | Check if possible that MEF has created a MEF Client Registration record | |
| 5 | Mca | PRO Check TCP/UDP | The MEF sends a MEF Client Registration response MEFClientRegID = Identifier for the new MEF Client Registration expirationTime = time when the MEF Client Registration record shall expire MEF Client ID = Identifier of the MEF Client adminFQDN = FQDN of the administrating stakeholder | |
| 6 | | IOP Check | Check if possible that MEF Client has stored parameters provided by the MEF | |
| IOP \ | /erdict | | | |
| PRO | /erdict | | | |

8.4.4.4 MEF Client Configuration Retrieval Procedure

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|----------------------|---|--|
| Identi | fier: | | TD_M2M_SE_13 | |
| Objective: | | | The MEF Client retrieves MEF Client Configurations provided by the administrating | |
| Confi | guration | ו: וי | M2M CFG 01 | |
| Refere | ences: | • | ETSI TS 118 103 [12], clause 8.3.5.2.4 | |
| - | | | | |
| Pre-test conditions: | | | The MEF Client has previously performed the MEF Client Registration procedure to create the MEF Client Registration record The MEF Client Registration record is not expired | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the MEF Handshake procedure | |
| 2 | | Stimulus | The MEF Client sends a MEF Client Configuration Retrieval request | |
| 3 | Мса | PRO Check TCP/UDP | MEF-FQDN = FQDN of the MEF, from MEF Instruction Configuration MEFClientRegID = Identifier for the MEF Client registration record being updated | |
| 4 | Мса | PRO Check TCP/UDP | The MEF sends a MEF Client Configuration Retrieval response MEFClientCfg = MEF Client Configuration currently associated with the identified MEF Client registration record | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

| Interoperability Test Description | | | |
|-----------------------------------|----------|------------------|---|
| Identifier: | | | TD_M2M_SE_14 |
| Objective: | | | MEF Client updates the MEF Client registration by any combination of extending the |
| | | | expirationTime of the MEF Client Registration record or updating the labels. |
| Config | guratior | 1: | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.5 |
| | | | |
| Pre-te | st cond | itions: | The MEF Client has previously performed the MEF Client Registration procedure |
| | | | to create the MEF Client Registration record |
| | | | The MEF Client Registration record is not expired |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the |
| | | | MEF Handshake procedure |
| 2 | | Stimulus | The MEF Client shall send a MEF Client Registration Update request |
| | | | MEF-FQDN = FQDN of the MEF |
| | | | MEFClientRegID = Identifier for the MEF Client registration record being updated |
| | | BBO Chock | (optional) expirationTime = time when the MEF Client registration record shall |
| 3 | Мса | TCP/UDP | expire |
| | | | (optional) labels = labels to aid discovery of the MEF Client registration record |
| | | | |
| | | | NOTE: At least one of expirationTime and labels shall be included. |
| 1 | | IOP Check | Check if possible that MEF has updated the MEF Client Registration record with the |
| - | | | proposed values |
| | | | The MEF sends a MEF Client Registration Update response |
| | | | (optional) expirationTime = time when the MEF Client registration record shall |
| | | PRO Check | expire |
| 5 | Мса | TCP/UDP | (optional) labels = labels to aid discovery of the MEF Client registration record |
| | | | |
| | | | NOTE: The response only includes <i>expirationTime</i> and/or <i>labels</i> if those parameters |
| <u> </u> | | | were present in the corresponding request. |
| 6 | | IOP Check | Check if possible that MEF Client has stored parameters provided by the MEF |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.4.4.5 MEF Client Configuration Update Procedure

8.4.4.6 MEF Client De-Registration Procedure

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|--|--|
| Identi | fier: | | TD_M2M_SE_15 | |
| Objec | tive: | | The MEF Client registers with the MEF to confirm that it is willing to use the services of | |
| - | | | the MEF, under the authorization of the administrating stakeholder | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.6 | |
| | | | | |
| Pre-te | st cond | litions: | The MEF Client has previously performed the MEF Client Registration procedure | |
| | | | to create the MEF Client Registration record | |
| | | | The MEF Client Registration record is not expired | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the | |
| 1 | | | MEF Handshake procedure | |
| 2 | | Stimulus | The MEF Client sends a MEF Client De-Registration request | |
| 2 | | PRO Check | MEF-FQDN = FQDN of the MEF | |
| 3 | Mca | TCP/UDP | MEFClientRegID = Identifier for the MEF Client Registration record being ended | |
| 4 | | IOP Check | Check if possible that MEF has deleted the information associated with the identified MEF | |
| 4 | | | Client Registration record | |
| 5 | | IOP Check | The MEF sends a MEF Client Registration Update response. The MEF Client indicates | |
| э | | | the success of the operation | |
| IOP V | /erdict | | | |
| PRO Verdict | | | | |

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|----------------------|--|--|--|
| Identifier: | | | TD_M2M_SE_16 | | |
| Objective: | | | Source MEF Client establishes a symmetric key with the MEF which can be | | |
| - | | | retrieved for use by one or more Target MEF Clients | | |
| Config | guration | 1: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.7 | | |
| | | | | | |
| Pre-test conditions: | | | The Source MEF Client is provided with (or has otherwise determined) the information in the MEF Key Registration Configuration (ETSI TS 118 103 [12], clause 8.3.7.3) The Source MEF Client has performed the MEF Client Registration procedure (ETSI TS 118 103 [12], clause 8.3.5.2.3) with the MEF for the administrating stakeholder identified in the MEF Key Registration Configuration | | |
| | | | Test Sequence | | |
| Step | RP | Type | Description | | |
| 1 | | Stimulus | The Source MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the MEF Handshake procedure | | |
| 2 | | Stimulus | The MEF Client sends a MEF Key Registration request | | |
| 3 | Мса | PRO Check TCP/UDP | MEF-FQDN = FQDN of the MEF expirationTime = time when the MEF Client Registration shall expire adminFQDN = Identifier for the administrating stakeholder SUID = The Security Usage Identifier limiting the security feature in which the symmetric key may be used (optional) targetIDs = list of identifiers for the initial set of Target MEF Clients authorized to retrieve the symmetric key (optional) Key Value = output symmetric key value which is self-generated by the Source MEF Client | | |
| 4 | | IOP Check | If the MEF Key Registration request included Key Value, check that MEF has stored the value. Otherwise, MEF generates Key Value from the (D)TLS session using TLS Key Export | | |
| 5 | Мса | PRO Check TCP/UDP | The MEF sends a MEF Key Registration response: RelativeKeyID = the relative part of the Key Identifier associated with the Key Registration expirationTime = time when the MEF Client Registration record shall expire Source MEF Client ID = Identifier of the Source MEF Client adminFQDN = FQDN of the administrating stakeholder SUID = the Security Usage Identifier limiting the security feature in which the symmetric key may be used targetIDs =list of identifiers for the initial set of Target MEF Clients authorized to retrieve the symmetric key | | |
| 6 | | | symmetric key value and corresponding Key Identifier | | |
| IOP \ | /erdict | | | | |
| PRO | /erdict | | | | |
| | | | | | |

8.4.4.7 MEF Key Registration Procedure

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_SE_17 | | |
| Objective: | | | The Target MEF Client to retrieve the Key Value from a MEF corresponding to a | | |
| | | | RelativeKeyID received by the Target MEF Client | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.8 | | |
| | | | | | |
| Pre-test conditions: | | | The Target MEF Client has performed the MEF Client Credential Configuration with the MEF, including configuration of the MEF Key Retrieval URI The Source MEF Client has performed the MEF Key Registration procedure with the MEF, resulting in a registered Key Value and assigned RelativeKeyID for a specific administrating stakeholder and Security Usage Identifier The Target MEF Client received a Key Identifier from the Initiating-MEF Client in a security feature with the SUID which the Source MEF Client provided to the MEF during the MEF Key Registration procedure The Target MEF Client may expect that it is authorized to obtain the corresponding output symmetric key value | | |
| | | | Test Seguence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the MEF Handshake procedure | | |
| 2 | | Stimulus | The MEF Client sends a MEF Key Retrieval request | | |
| 3 | Мса | PRO Check Primitive | RelativeKeyID = The relative part of the Key Identifier received from the Source MEF Client in a security feature | | |
| 4 | Мса | PRO Check TCP/UDP | The MEF sends a MEF Key Retrieval response: expirationTime = time when the Key Registration shall expire Source MEF Client ID = Identifier of the Source MEF Client adminFQDN = Identifier for the administrating stakeholder SUID = the Security Usage Identifier limiting the security feature in which the symmetric key may be used Key Value = The registered value of the output symmetric key | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.4.4.8 MEF Key Retrieval Procedure

8.4.4.9 MEF Key Registration Update Procedure

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| Identifier: | | | TD_M2M_SE_18 | | |
| Objective: | | | MEF Client updates the MEF Client registration by any combination of extending the | | |
| | | | expirationTime of the MEF Client Registration record or updating the labels | | |
| Config | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.9 | | |
| | | | | | |
| Pre-te | est cond | litions: | The MEF Client has previously performed the MEF Key Registration procedure | | |
| | | | to create the key registration | | |
| | | | The key registration is not expired | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the | | |
| | | | MEF Handshake procedure | | |
| 2 | | Stimulus | The MEF Client shall send a MEF Key Registration Update request | | |
| | | | MEF-FQDN = FQDN of the MEF | | |
| | | | RelativeKeyID = the relative part of the Key Identifier associated with the Key | | |
| | | PRO Check | Registration | | |
| | | | (optional) expirationTime = time when the Key Registration shall expire | | |
| 3 | Mca | | (optional) labels = labels to aid discovery of the registered key | | |
| | wica | 101/001 | (optional) targetIDs = proposed list of identifiers for the set of Target MEF Clients | | |
| | | | authorized to retrieve the symmetric key | | |
| | | | | | |
| | | | NOTE: At least one of expirationTime, labels or targetIDs shall be included. | | |
| 4 | | IOP Check | Check if possible that MEF has updated the metadata with the proposed values | | |

| Interoperability Test Description | | | |
|-----------------------------------|---------|----------------------|--|
| 5 | Мса | PRO Check TCP/UDP | The MEF sends a MEF Key Registration Update response (optional) expirationTime = current time when the key registration shall expire (optional) labels = Updated list of labels to aid discovery of the Key Registration, if any (optional) targetIDs = current list of identifiers for the initial set of Target MEF Clients authorized to retrieve the symmetric key NOTE: The response includes only those parameters that were present in the corresponding request. |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.4.4.10 MEF Key De-Registration Procedure

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------|---|--|
| Identifier: | | | TD_M2M_SE_19 | |
| Objec | tive: | | Source MEF Client requests the MEF to stop distributing the registered key | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.3.5.2.10 | |
| | | | | |
| Pre-te | st cond | litions: | The MEF Client has previously performed the MEF Key Registration procedure | |
| | | | to create the key registration | |
| | | | The key registration is not expired | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | The MEF Client establishes a TLS (or DTLS) connection with the MEF by performing the | |
| | | | MEF Handshake procedure | |
| 2 | | Stimulus | The MEF Client sends a MEF Key De-Registration request | |
| | | BBO Chock | MEF-FQDN = FQDN of the MEF | |
| 3 | Mca | | RelativeKeyID = the relative part of the Key Identifier associated with the Key | |
| | INICA | | Registration | |
| 4 | | IOP Check | Check if possible that MEF has deleted the information associated with the identified key | |
| 4 | | | registration | |
| Б | | IOP Check | The MEF sends a MEF Client De-Registration response. The MEF client indicates | |
| 5 | | | success of the operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.4.5 End-to-End security management

8.4.5.1 End-to-End Security of Primitives (ESPrim) Architecture

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|--|--|
| Identifier: | | | TD_M2M_SE_20 | |
| Objec | tive: | | AE sends an arbitrary request primitive inside of ESPrim Object to CSE | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.4.2 | |
| | | | | |
| Pre-test conditions: | | | AE and CSE has established a secure ESPrim connection, so that both are able to extract ESPrim Objects sent from each other | |
| | | | AE has produced an ESPrim Object from the serialization of the arbitrary request primitive | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE sends a NOTIFY Request Message with ESPrim Object | |
| 2 | Мса | PRO Check Primitive | op = 5 (Notify) to = {CSEBaseName} from = AE-ID rqi = (token-string) pc: {seci: {sit = "esprimObject ", epo: serialized ESPrim Object }} | |
| 3 | | IOP Check | Check if possible that the CSE successfully extracted the inner request primitive Check if possible that the CSE successfully processed the inner request primitive | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|---|--|
| | | | The CSE sends a NOTIFY response to the AE: | |
| | | | • op = 5 (Notify) | |
| 4 | | PRO Check | • to = AE-ID | |
| 4 | Mca | Primitive | • from = CSE-ID | |
| | | | rqi = (token-string) | |
| | | | pc: {seci: {sit = "esprimObject ", epo: serialized ESPrim Object }} | |
| F | | | Check that the AE successfully extracted the inner response primitive | |
| 5 | | IOF CHECK | Check that the AE successfully processed the inner response primitive | |
| IOP Verdict | | | | |
| PRO | Verdict | | | |

8.4.5.2 End-to-End Certificate-based Key Establishment (ESCertKE)

| | | | Interoperability Test Description |
|----------------------|--------|------------------------|---|
| Identifier: | | | TD_M2M_SE_21 |
| Objective: | | | AE establishes a connection with the Registrar CSE using pairwiseE2EKey |
| Configuration: | |): | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 103 [12], clause 8.7.2 |
| | | | |
| Pre-test conditions: | | itions: | Both the Registrar CSE and AE support ESCertKE and are provisioned with private key and certificates. Both entities are configured with the information needed for the authentication and identification Cipher Suite = TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE sends an ESCertKE Message 1 in Notify request |
| 2 | Мса | PRO Check Primitive | op = 5 (Notify) to = {CSEBaseName} from = AE-ID rqi = (token-string) pc: {seci: {sit = "escertkeMessage",eckm: ESCertKE Message 1 }} ESCertKE Message 1 includes TLS a Client Hello handshake message: Handshake Type = 0x01 (Client Hello) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 Version: TLS v1.2 |
| 3 | Мса | PRO Check Primitive | op = 5 (Notify) to = AE-ID from = CSE-ID rqi = (token-string) pc: {seci: {sit = "escertkeMessage",eckm: ESCertKE Message 2 }} ESCertKE Message 2 includes Server Hello, Certificate, Server Key Exchange, Certificate Request, Server Hello Done messages Server Hello handshake message: Handshake Type = 0x02 (Server Hello) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 Version: TLS v1.2 Certificate handshake message: Handshake Type = 0x0b (Server Certificate) Certificate: the Registrar CSE certificate Server Key Exchange handshake message: Handshake Type = 0x0c (Server Key Exchange) Public key: ECDHE generated key Certificate Request handshake message Handshake Type = 0x0d (Certificate Request) |

| | | | Interoperability Test Description |
|-------|---------|------------------------|--|
| 4 | | IOP Check | The TLS client on AE checks if the certificate of the Server is valid |
| 5 | | Stimulus | AE sends an ESCertKE Message 3 in Notify request |
| 6 | Мса | PRO Check Primitive | op = 5 (Notify) to = {CSEBaseName} from = AE-ID rqi = (token-string) pc: {seci: {sit = "escertkeMessage",eckm: ESCertKE Message 3 }} ESCertKE Message 3 includes Certificate, Client Key exchange, Certificate Verify, Change Cipher Spec, Finished messages Certificate handshake message: Handshake Type = 0x0b (Client Certificate) Certificate: AE certificate Client Key Exchange message: Handshake Type = 0x10 (Client Key Exchange) Public key: ECDHE generated key |
| | | | Certificate Verify message: • Handshake Type = 0x0f (Certificate Verify) Change Cipher Spec message: • Content type = 0x14 (Change Cipher Spec) Finished handshake message: • Handshake Type = 0x14 (Client Finished) |
| 7 | | IOP Check | The TLS server on CSE checks if the certificate of the Client is valid |
| 8 | Мса | PRO Check Primitive | The Registrar CSE sends an ESCertKE Message 2 in Notify response: op = 5 (Notify) to = AE-ID from = CSE-ID rqi = (token-string) pc: {seci: {sit = "escertkeMessage",eckm: ESCertKE Message 4 }} ESCertKE Message 4 includes Change Cipher Spec, and Finished messages Server Change Cipher Spec message: Content type = 0x14 (Change Cipher Spec) Server Finished message: Handshake Type = 0x14 (Client Finished) |
| 9 | | IOP Check | Check that The TLS client authenticated the Server by validating Verify Data |
| 10 | | IOP Check | Check that AE and the Registrar CSE has generated and cached a pairwiseE2EKey |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

8.5 HAIM Device Model

8.5.1 HAIM Light Device Creation

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|----------|--|--|--|
| Identifier: | | | TD_M2M_NH_102 | | |
| Objective: | | | AE1 creates a HAIM Light Device Model | | |
| Configuration: | | ו: | M2M_CFG_10 | | |
| References: | | | ETSI TS 118 123 [14], clause 5.5.27 | | |
| | | | | | |
| Pre-test conditions: | | | AE1 has created an application resource <ae> on registrar CSE</ae> | | |
| | Test Sequence | | | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 sends a request to create a <flexcontainer> for deviceLight</flexcontainer> | | |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|------------------------|---|--|
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource</ae1> fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper container/Definition</flexcontainer> | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | |
| 5 | | IOP Check | AE indicates successful operation | |
| 6 | | Stimulus | AE1 sends a request to create a <flexcontainer> for binarySwitch</flexcontainer> | |
| 7 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource/resource name of deviceLight</ae1> fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition</flexcontainer> | |
| 8 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> | |
| 9 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | |
| 10 | | IOP Check | AE indicates successful operation | |
| No | ote | Optional: Repea | t steps 5-10 for additional deviceLight Modules | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.5.2 HAIM Light Device Status Read

| | Interoperability Test Description | | | | |
|------------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_103 | | |
| Objec | tive: | | AE2 reads the status of a HAIM Light Device Model | | |
| Config | guratior | ו: | M2M_CFG_10 | | |
| Refere | ences: | | ETSI TS 118 123 [14], clauses 5.5.27, 5.3.12 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE2 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created a HAIM Light Device model | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE2 sends a request to retrieve a <flexcontainer> for binarySwitch</flexcontainer> | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <devicelight> resource/binarySwitch</devicelight> fr = AE-ID rqi = (token-string) | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 4 | | IOP Check | AE2 indicates successful operation | | |
| Note Optional: F | | Optional: Repea | t steps 1-4 for additional deviceLight Modules | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

8.5.3 HAIM Light Device Update

| | Interoperability Test Description | | | | |
|---------------------|-----------------------------------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_104 | | |
| Objec | tive: | | AE2 turns the binarySwitch of a HAIM Light Device Model "ON" or "OFF" | | |
| Config | guratior | ו: | M2M_CFG_10 | | |
| Refer | ences: | | ETSI TS 118 123 [14], clause 5.5.27 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE2 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created a HAIM Light Device model | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE2 sends a request to create a <flexcontainer> for deviceLight</flexcontainer> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/ URI of <devicelight> resource/binarySwitch</devicelight> fr = AE-ID rqi = (token-string) pc = Serialized representation of <flexcontainer> resource with new value for powerState</flexcontainer> | | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is updates in registrar CSE</flexcontainer> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| Note Optional: Repe | | Optional: Repea | at steps 1-5 for additional device states and settings | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.5.4 HAIM Light Device Toggle Action

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_105 | | |
| Objec | tive: | | AE2 toggles the state of a HAIM Light Device Model | | |
| Config | guration | า: | M2M_CFG_10 | | |
| Refere | ences: | | ETSI TS 118 123 [14], clause 5.5.27 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE2 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created a HAIM Light Device model | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE2 sends a request to create a <flexcontainer> for deviceLight</flexcontainer> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/ URI of <devicelight> resource/binarySwitch/toggle</devicelight> fr = AE-ID rqi = (token-string) pc = Serialized representation of <flexcontainer> resource for <i>toggle</i> action</flexcontainer> | | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is updates in registrar CSE</flexcontainer> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 5 | | IOP Check | AE2 indicates successful operation. Check that the powerState of the binarySwitch is updated | | |
| Note Optional: Repea | | Optional: Repea | at steps 1-5 for additional device states and settings | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

8.5.5 HAIM Power Outlet SubDevice Create

| | Interoperability Test Description | | | | |
|----------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_160 | | |
| Objec | tive: | | AE1 creates a Power Outlet SubDevice Model | | |
| Configuration: | | | M2M_CFG_10 | | |
| Refere | ences: | | ETSI TS 118 123 [14], clause 5.4.1.2 | | |
| | | | | | |
| Pre-te | st conc | litions: | AE1 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created a <flexcontainer> for deviceSmartPlug</flexcontainer> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 sends a request to create a <flexcontainer> for subDevicePowerOutlet</flexcontainer> | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource/resource name of deviceSmartPlug</ae1> fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition</flexcontainer> | | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| 6 | | Stimulus | AE1 sends a request to create a <flexcontainer> for binarySwitch</flexcontainer> | | |
| 7 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource/resource name of subDevicePowerOutlet</ae1> fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition</flexcontainer> | | |
| 8 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> | | |
| 9 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | | |
| 10 | | IOP Check | AE indicates successful operation | | |
| No | ote | Optional: Repea | at steps 6-10 for additional subDevicePowerOutlet Modules | | |
| IOP V | /erdict | | | | |
| PRO \ | /erdict | | | | |

8.5.6 HAIM Toggle Action Create

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|----------|---|--|--|
| Identifier: | | | TD_M2M_NH_161 | | |
| Objec | tive: | | AE1 creates a Toggle Action Model | | |
| Config | guratio | n: | M2M_CFG_10 | | |
| Refere | ences: | | ETSI TS 118 123 [14], clause 5.3.1.12 | | |
| | | | | | |
| Pre-test conditions: | | litions: | AE1 has created an application resource <ae> on registrar CSE</ae> AE1 has created a <flexcontainer> for deviceSmartPlug</flexcontainer> AE1 has created a <flexcontainer> for binarySwtich as a child of deviceSmartPlug</flexcontainer> | | |
| Test Sequence | | | | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 sends a request to create a <flexcontainer> for Toggle</flexcontainer> | | |

| | Interoperability Test Description | | | |
|-------|-----------------------------------|------------------------|--|--|
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource/resource name of binarySwtich</ae1> fr = AE-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition</flexcontainer> | |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO V | Verdict | | | |

8.5.7 HAIM Device Properties Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_162 | | |
| Objective: | | | AE1 creates Device Properties Model | | |
| Config | guratior |): | M2M_CFG_10 | | |
| Refere | ences: | | ETSI TS 118 123 [14], clause 6.2.5 | | |
| | | | | | |
| Pre-te | st cond | itions: | AE1 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created a <flexcontainer> for deviceLight</flexcontainer> | | |
| | | | AE1 has created a <node> resource</node> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE1 sends a request to create a [deviceInfo] resource | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <node> resource/</node> fr = AE-ID rqi = (token-string) ty = 13 (mgmtObj) pc = Serialized representation of [deviceInfo] resource with with properties set as attributes of the resource | | |
| 3 | | IOP Check | Check if possible that the [deviceInfo] resource is created in registrar CSE | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of [deviceInfo] resource | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO Verdict | | | | | |

8.6 Semantics management

8.6.1 Semantic Access Control Policy management

8.6.1.1 Procedure for creating ACP triples when a new <accessControlPolicy> resource is created

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_106 | | |
| Objective: | | | ACP triples are created when a new <accesscontrolpolicy> resource is created</accesscontrolpolicy> | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | The Registrar CSE has SGS available | | |
| | | | | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create an <accesscontrolpolicy> resource</accesscontrolpolicy> | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/<ae></ae> fr = AE-ID rqi = (token-string) ty = 1 (accessControlPolicy) pc = Serialized representation of < accessControlPolicy > resource | | |
| 3 | | IOP Check | Check if possible that the <accesscontrolpolicy> resource is created in Registrar CSE Check if possible that Registrar CSE has created ACP Triples in SGS for the new <accesscontrolpolicy> resource</accesscontrolpolicy></accesscontrolpolicy> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of < accessControlPolicy > resource | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.1.2 Procedure for updating ACP triples when a new <accessControlPolicy> resource is updated

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identi | fier: | | TD_M2M_NH_107 | | |
| Objec | tive: | | ACP triples are updated when an existing <accesscontrolpolicy> resource is updated</accesscontrolpolicy> | | |
| Config | guration |): | M2M_CFG_01 | | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.3 | | |
| | | | | | |
| Pre-test conditions: | | itions: | AE has created an application resource <ae> on Registrar CSE</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> The Registrar CSE has SGS available | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to update a privileges attribute of {accessControlPolicyName} | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) ty = 1 (accessControlPolicy) pc = Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy> | | |
| 3 | | IOP Check | Check if possible that the <accesscontrolpolicy> resource has been updated in Registrar CSE Check if possible that Registrar CSE has updated corresponding ACP Triples in SGS</accesscontrolpolicy> | | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|--|--|
| 4 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.6.1.3 Procedure for deleting ACP triples when an existing <accessControlPolicy> resource is deleted

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_108 | |
| Objective: | | | ACP triples are deleted when an existing <accesscontrolpolicy> resource is deleted</accesscontrolpolicy> | |
| Confi | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.4 | |
| | | | | |
| Pre-test conditions: | | litions: | AE has created an application resource <ae> on Registrar CSE</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> The Registrar CSE has SGS available | |
| | | | | |
| | 1 | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send an accessControlPolicy delete request to Registrar CSE | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <accesscontrolpolicy> resource has been removed from registrar CSE Check if possible that Registrar CSE has deleted corresponding ACP Triples in SGS</accesscontrolpolicy> | |
| 4 | Мса | PRO Check Primitive | Registrar CSE sends response containing: rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.6.1.4 Procedure for creating ACP-SD binding triples and SD relationship in SGS

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|----------|---|--|--|
| Identi | fier: | | TD_M2M_NH_109 | | |
| Objec | tive: | | ACP-SD Binding Triples and SD relationship in SGS are created when AE creates a | | |
| | | | <semanticdescriptor> resource in Registrar CSE</semanticdescriptor> | | |
| Config | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.5 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> | | |
| | | | The Registrar CSE has SGS available | | |
| | | | | | |
| | Test Sequence | | | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create an <semanticdescriptor> resource</semanticdescriptor> | | |

| | Interoperability Test Description | | |
|-------------|-----------------------------------|------------------------|--|
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/<ae></ae> fr = AE-ID rqi = (token-string) ty = 24 (semanticDescriptor) pc = Serialized representation of <semanticdescriptor> resource acpi = URI of {accessControlPolicyName} </semanticdescriptor> |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is created in Registrar CSE. Check if possible that Registrar CSE has created SD Relationship Triples and ACP-SD Binding Triples for the new <semanticdescriptor> in SGS</semanticdescriptor></semanticdescriptor> |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP Verdict | | | |
| PRO \ | /erdict | | |

8.6.1.5 Procedure for updating ACP-SD binding triples in SGS

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_110 | |
| Objective: | | | ACP-SD Binding Triples are updated when the accessControlPolicyIDs attribute of a | |
| | | | <semanticdescriptor> resource is updated</semanticdescriptor> | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.6 | |
| | | | | |
| Pre-test conditions: | | litions: | AE has created an application resource <ae> on Registrar CSE</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> AE has created a semanticDescriptor resource <semanticdescriptor> as child resource of <ae> resource</ae></semanticdescriptor> The Registrar CSE has SGS available | |
| | | | Test Seguence | |
| Sten | RP | Type | Description | |
| 1 | | Stimulus | AE sends a request to update an accessControlPolicyIDs attribute of the resource | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <semanticdescriptor> resource</semanticdescriptor> | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is updated in Registrar CSE. Check if possible that Registrar CSE has updated corresponding ACP-SD Binding Triples in SGS</semanticdescriptor> | |
| 4 | Мса | PRO Check Primitive | Registrar CSE sends response containing: • rsc = 2004 (UPDATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

| 8.6.1.6 | Procedure for updating SD relationship triples in SGS |
|---------|---|
|---------|---|

| | Interoperability Test Description | | | |
|------------|--|-------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_111 | |
| Objective: | | | SD Relationship Triples are updated when the descriptor attribute of a | |
| - | | | <semanticdescriptor> resource is changed</semanticdescriptor> | |
| Config | guration | า: | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.7 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> accessControlPolicy resource has been created in registrar CSE under <ae></ae> | |
| | | | resource with name {accessControlPolicyName} | |
| | | | AE has created a semanticDescriptor resource <semanticdescriptor> as child resource of <aes li="" resource<=""> </aes></semanticdescriptor> | |
| | | | The Degistrar CSE has SCS evolution | |
| | | | | |
| | | | Test Sequence | |
| Sten | RP | Type | Description | |
| otop | | Stimulus | AF is requested to send a semanticDescriptor Update Request to update the descriptor | |
| 1 | | | attribute of the resource | |
| | | | • op = 3 (Update) | |
| | PRO Check to = {CSEBaseName}/URI of <semanticdescriptor< li=""> fr = AE-ID </semanticdescriptor<> | | to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> | |
| 2 | | • fr = AE-ID | | |
| | ivica | ca Primitive • rgi = (t | rgi = (token-string) | |
| | | | pc = Serialized representation of updated <semanticdescriptor> resource</semanticdescriptor> | |
| | | | Check if possible that the <semanticdescriptor> resource is updated in Registrar CSE.</semanticdescriptor> | |
| 3 | | IOP Check | Check if possible that Registrar CSE has updated old SD Relationship Triples and/or add | |
| | | | new SD Relationship Triple in the SGS | |
| | | | Registrar CSE sends response containing: | |
| 4 | | PRO Check | rsc = 2004 (UPDATED) | |
| 4 | Mca | Primitive | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.6.1.7 Procedure for deleting SD relationship triples and ACP-SD binding triples in SGS

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_112 | |
| Objective: | | | SD Relationship Triples are deleted when the descriptor attribute of a | |
| | | | <semanticdescriptor> resource is deleted</semanticdescriptor> | |
| Confi | guration | 1: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.2.1.5.8 | |
| | | | | |
| Pre-test conditions: | | | AE has created an application resource <ae> on Registrar CSE</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> AE has created a semanticDescriptor resource <semanticdescriptor> as child resource of <ae> resource</ae></semanticdescriptor> The Registrar CSE has SGS available | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a semanticDescriptor Delete Request to update the <i>descriptor</i> attribute of the resource | |
| 2 | Check Mca | PRO Check Primitive | op = 4 (Detete) to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is deleted in Registrar CSE. Check if possible that Registrar CSE has removed SD Original Triples, SD Relationship Triples, and ACP-SD Binding Triples related to the <semanticdescriptor> from SGS</semanticdescriptor></semanticdescriptor> | |

| Interoperability Test Description | | | |
|-----------------------------------|--------------|------------------------|--|
| 4 | Check Mca | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty |
| 5 | | IOP Check | AE indicates successful operation |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.6.2 Semantic Filtering and discovery

8.6.2.1 Semantic Filtering and Discovery using <semanticFanOutPoint> resource

| Interoperability Test Description | | | |
|-----------------------------------|----------|-----------|--|
| Identi | fier: | | TD_M2M_NH_113 |
| Objec | tive: | | AE discovers accessible resources residing in Registrar CSE using the |
| | | | <semanticfanoutpoint></semanticfanoutpoint> |
| Config | guratior | ו: | M2M_CFG_01 |
| Refere | ences: | | oneM2M TS-0034 [13], clause 7.4.1 |
| | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> |
| | | | AE has created <container> resources {container1} and {container2} in registrar</container> |
| | | | CSE under <ae> resource</ae> |
| | | | AE has created a group resource with semanticSupportIndicator attribute set to |
| | | | TRUE and memberIds set to {container1} and {container2} ids |
| | | | AE has created <semanticdescriptor> as a child resources of a resources</semanticdescriptor> |
| | | | {container1} and {container2} |
| | | | |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a Discovery request to discover the < semanticFanOutPoint > |
| | | | virtual resource of <group></group> |
| | | | • op = 2 (Retrieve) |
| | | | to = {CSEBaseName}/<ae>/<group>/sfopt</group></ae> |
| | | PRO Chack | • from = AE-ID |
| 2 | Mca | Primitivo | • rqi = (token-string) |
| | INCa | Thinkive | • fu=1 |
| | | | smf=sparqlQuery1 |
| | | | • pc = empty |
| | | | Sent response contains: |
| | | DBO Chook | • rsc = 2000 (OK) |
| 4 | Mee | PRO Check | rqi = (token-string) same as received in request message |
| | мса | r mmuve | pc = Serialized representation of data object containing the <container></container> |
| | | | resources addresses |
| 5 | | IOP Check | AE indicates successful operation |
| IOP V | /erdict | | |
| PRO | Verdict | | |

Interoperability Test Description TD M2M_NH_114 Identifier: Objective: AE discovers accessible resources residing in Registrar CSE using the resource linkbased Semantic Discovery Configuration: M2M_CFG_01 References: oneM2M TS-0034 [13], clause 7.4.3 Pre-test conditions: AE has created an application resource <AE> on Registrar CSE AE has created <container> resources {container1} and {container2} in registrar CSE under <AE> resource AE has created a group resource with semanticSupportIndicator attribute set to TRUE and memberIds set to {container1} and {container2} ids AE has created <semanticDescriptor> resources as a child resources of a resources {container1} and {container2} named {descriptor1} and {descriptor2} {descriptor1} has relatedSemantics attribute set to ID of {descriptor2} {descriptor2} has relatedSemantics attribute set to ID of {descriptor1} **Test Sequence** RP Description Step Туре Stimulus AE1 is requested to send a Discovery request to discover the <container> resource using 1 the semanticFilter filterCriteria op = 2 (Retrieve) to = {CSEBaseName}/<AE> • from = AE-ID• **PRO Check** 2 • rgi = (token-string) Primitive Mca • fu=1 • smf=sparqlQuery1 pc = empty• Sent response contains: rsc = 2000 (OK) **PRO Check** 4 rqi = (token-string) same as received in request message Primitive Mca pc = Serialized representation of data object containing the <Container> • resources addresses 5 **IOP Check** AE indicates successful operation **IOP** Verdict PRO Verdict

8.6.2.2 Resource link-based Semantic Discovery

8.6.2.3 Semantic query

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|----------|--|--|
| Identifier: | | | TD_M2M_NH_115 | |
| Objec | tive: | | AE performs a Semantic Query request in Registrar CSE using the semanticFilter filter | |
| _ | | | criteria | |
| Config | guration | ו: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.4 | |
| | | | oneM2M TS-0004 [2], clause 7.3.3.18 | |
| | | | | |
| Pre-te | st cond | litions: | AE1 has created an application resource <ae> on Registrar CSE</ae> | |
| | | | AE1 has created a container resource <container> on Registrar CSE</container> | |
| | | | AE1 has created a <semanticdescriptor> as a child resource of a <container></container></semanticdescriptor> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE1 is requested to send a Semantic Query Operation request to query the <container></container> | |
| I | | | resource using a SPARQL query | |

| | | | Interoperability Test Description |
|-------------|--------------|------------------------|--|
| 2 | Check Mca | PRO Check Primitive | Sent request contains: • op = 2 (Retrieve) • to = {CSEBaseName} • from = AE-ID • rqi = (token-string) • sqi = TRUE • smf=sparqlQuery1 • rcn = 10 (semantic content) • pc = empty |
| 3 | Check Mca | PRO Check Primitive | Sent response contains: rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation semantic query result |
| 4 | | IOP Check | AE indicates notification received |
| IOP Verdict | | | |
| PRO | Verdict | | |

8.6.3 Semantic Mashup management

8.6.3.1 SemanticMashupJobProfile Create

| | Interoperability Test Description | | | |
|--------|-----------------------------------|--------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_116 | |
| Objec | tive: | | AE creates a SemanticMashupJobProfile resource in Registrar CSE via a | |
| | | | SemanticMashupJobProfile Create Request | |
| Config | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.3.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.49.2.1 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | | |
| | - | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE sends a request to create a <semanticmashupjobprofile></semanticmashupjobprofile> | |
| | | PRO Check a Primitive | • op = 1 (Create) | |
| | | | to = {CSEBaseName} | |
| 2 | | | • fr = AE-ID | |
| 2 | Mca | | rqi = (token-string) | |
| | | | ty = 40 (semanticMashupJobProfile) | |
| | | | pc = Serialized representation of <semanticmashupjobprofile> resource</semanticmashupjobprofile> | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is created in Registrar CSE</semanticdescriptor> | |
| | | | rsc = 2001 (CREATED) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | IVICa | Fiimuve | pc = Serialized representation of <semanticmashupjobprofile> resource</semanticmashupjobprofile> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_117 | | |
| Objective: | | | AE retrieves information of a semanticMashupJobProfile resource via a semanticMashupJobProfile Retrieve Request | | |
| Confi | guratior | າ: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.3.3 oneM2M TS-0004 [2], clause 7.4.49.2.2 | | |
| Due (e | | | | | |
| Pre-test conditions: | | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a semanticMashupJobProfile resource <semanticmashupjobprofile> as child resource of <ae> resource</ae></semanticmashupjobprofile> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <semanticmashupjobprofile></semanticmashupjobprofile> | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <semanticmashupjobprofile> resource</semanticmashupjobprofile> fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticmashupjobprofile> resource</semanticmashupjobprofile> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO ' | Verdict | | | | |

8.6.3.2 SemanticMashupJobProfile Retrieve

8.6.3.3 SemanticMashupJobProfile Update

| Interoperability Test Description | | | | |
|-----------------------------------|----------|-----------|--|--|
| Identi | fier: | | TD_M2M_NH_118 | |
| Objective: | | | AE updates attribute in <semanticmashupjobprofile> resource via a</semanticmashupjobprofile> | |
| | | | semanticMashupJobProfile Update Request | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 6.3.4 | |
| | | | oneM2M TS-0004 [2], clause 7.4.49.2.3 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticMashupJobProfile resource | |
| | | | <semanticmashupjobprofile> as child resource of <ae> resource</ae></semanticmashupjobprofile> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 4 | | Stimulus | AE is requested to send a semanticMashupJobProfile Update Request to update the | |
| I | | | memberFilter attribute of the resource | |
| | | | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/URI of <semanticmashupjobprofile> resource</semanticmashupjobprofile> | |
| 2 | | PRO Check | • fr = AE-ID | |
| 2 | Мса | Primitive | rgi = (token-string) | |
| | | | pc = Serialized representation of updated <semanticmashupjobprofile></semanticmashupjobprofile> | |
| | | | resource | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is updated in Registrar CSE</semanticdescriptor> | |
| | | DDO Chask | rsc = 2004 (Updated) | |
| 4 | Maa | PRO Check | rgi = (token-string) same as received in request message | |
| | ivica | Primitive | pc = Serialized representation of <semanticmashupjobprofile> resource</semanticmashupjobprofile> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_119 | | |
| Objective: | | | AE deletes semanticMashupJobProfile resource via a semanticMashupJobProfile Delete | | |
| | | | Request | | |
| Config | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.3.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.49.2.4 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a semanticMashupJobProfile resource | | |
| | | | <semanticmashupjobprofile> as child of <ae> resource</ae></semanticmashupjobprofile> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a semanticMashupJobProfile Delete Request | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <semanticmashupjobprofile> resource</semanticmashupjobprofile> fr = AE-ID | | |
| | | | rqi = (token-string) pc = empty | | |
| 3 | | IOP Check | Check if possible that the <semanticmashupjobprofile> resource is deleted in Registrar CSE</semanticmashupjobprofile> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | | |
| 5 | | IOP Check | Check if possible that the <semanticmashupjobprofile> resource has been removed in Registrar CSE</semanticmashupjobprofile> | | |
| 6 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.3.4 SemanticMashupJobProfile Delete

8.6.3.5 SemanticMashupInstance Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_120 | | |
| Objective: | | | AE creates a semanticMashupInstance resource in Registrar CSE via a semanticMashupInstance Create Request | | |
| Confi | guratio | า: | M2M_CFG_01 | | |
| References: | | | oneM2M TS-0034 [13], clause 6.4.2 oneM2M TS-0004 [2], clause 7.4.50.2.1 | | |
| | | | | | |
| Pre-te | est conc | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a <semanticdescriptor></semanticdescriptor> | | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 41 (semanticMashupInstance) pc = Serialized representation of <semanticmashupinstance> resource</semanticmashupinstance> | | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is created in Registrar CSE</semanticdescriptor> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticmashupinstance> resource</semanticmashupinstance> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

| | | | Interoperability Test Description | |
|----------------------|----------|------------------------|--|--|
| Identifier: | | | TD_M2M_NH_121 | |
| Objec | tive: | | AE retrieves information of a semanticMashupInstance resource via a semanticMashupInstance Retrieve Request | |
| Confi | guration | า: | M2M_CFG_01 | |
| References: | | | oneM2M TS-0034 [13], clause 6.4.3 oneM2M TS-0004 [2], clause 7.4.50.2.2 | |
| Pre-test conditions: | | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> AE has created a semanticMashupInstance resource <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> Test Sequence | |
| Step | RP | Type | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <semanticmashupinstance></semanticmashupinstance> | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <semanticmashupinstance> resource</semanticmashupinstance> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticmashupinstance> resource</semanticmashupinstance> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.6.3.6 SemanticMashupInstance Retrieve

8.6.3.7 SemanticMashupInstance Update

| Interoperability Test Description | | | | |
|-----------------------------------|----------|------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_122 | |
| Objective: | | | AE updates attribute in <semanticmashupinstance> resource via a</semanticmashupinstance> | |
| _ | | | semanticMashupInstance Update Request | |
| Config | guratior | າ: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.4.4 | |
| | | | oneM2M TS-0004 [2], clause 7.4.50.2.3 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticMashupInstance resource | |
| | | | <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 4 | | Stimulus | AE is requested to send a semanticMashupInstance Update Request to update the | |
| 1 | | | smjpInputParameter attribute of the resource. | |
| | Maa | PRO Check Primitive | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/URI of <semanticmashupinstance> resource</semanticmashupinstance> | |
| 2 | | | • fr = AE-ID | |
| | IVICa | | rqi = (token-string) | |
| | | | pc = Serialized representation of updated <semanticmashupinstance> resource</semanticmashupinstance> | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is updated in Registrar CSE.</semanticdescriptor> | |
| | | | • rsc = 2004 (Updated) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | ivica | Fiilliuve | pc = Serialized representation of <semanticmashupinstance> resource</semanticmashupinstance> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

| | | | Interoperability Test Description | | |
|-------------|----------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_123 | | |
| Objective: | | | AE deletes semanticMashupInstance resource via a semanticMashupInstance Delete | | |
| | | | Request | | |
| Confi | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.4.5 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.50.2.4 | | |
| | | | - | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a semanticMashupInstance resource | | |
| | | | <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a semanticMashupInstance Delete Request | | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/ URI of <semanticmashupinstance> resource</semanticmashupinstance> fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | | IOP Check | Check if possible that the <semanticmashupinstance> resource is deleted in Registrar CSE</semanticmashupinstance> | | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | | |
| 5 | | IOP Check | Check if possible that the <semanticmashupinstance> resource has been removed in Registrar CSE</semanticmashupinstance> | | |
| 6 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.3.8 SemanticMashupInstance Delete

8.6.3.9 SemanticMashupResult Retrieve

| Interoperability Test Description | | | | |
|-----------------------------------|----------|--------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_124 | |
| Objective: | | | AE retrieves information of a semanticMashupResult resource via a | |
| | | | semanticMashupResult Retrieve Request | |
| Confi | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.6.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.52.2.2 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticMashupInstance resource | |
| | | | <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> | |
| | | | <semanticmashupresult> resource is created as child resource of</semanticmashupresult> | |
| | | | <semanticmashupinstance> resource</semanticmashupinstance> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <semanticmashupresult></semanticmashupresult> | |
| | | PRO Check a Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <semanticmashupinstance> resource</semanticmashupinstance> | |
| 2 | Мса | | fr = AE-ID rai = (token-string) | |
| | | | • pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticmashupresult> resource</semanticmashupresult> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

| Interoperability Test Description | | | | |
|-----------------------------------|----------|-----------|---|--|
| Identi | fier: | | TD_M2M_NH_125 | |
| Objective: | | | AE deletes semanticMashupResult resource via a semanticMashupResult Delete | |
| | | | Request | |
| Confi | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.6.3 | |
| | | | oneM2M TS-0004 [2], clause 7.4.52.2.4 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticMashupInstance resource | |
| | | | <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> | |
| | | | <semanticmashupresult> resource is created as child resource of</semanticmashupresult> | |
| | | | <semanticmashupinstance> resource</semanticmashupinstance> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a semanticMashupResult Delete Request | |
| | | | • op = 4 (Delete) | |
| | | | to = {CSEBaseName}/ URI of <semanticmashupinstance> resource/ URI of</semanticmashupinstance> | |
| 2 | | PRO Check | <semanticmashupresult> resource</semanticmashupresult> | |
| 2 | Mca | Primitive | • fr = AE-ID | |
| | | | rqi = (token-string) | |
| | | | • pc = empty | |
| 3 | | IOP Check | Check if possible that the <semanticmashupresult> resource is deleted in Registrar CSE</semanticmashupresult> | |
| | | | rsc = 2002 (DELETED) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | Ivica | Primuve | • pc = empty | |
| F | | | Check if possible that the <semanticmashupresult> resource has been removed in</semanticmashupresult> | |
| 5 | | IOP CHECK | Registrar CSE | |
| 6 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.6.3.10 SemanticMashupResult Delete

8.6.3.11 Mashup Retrieve

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|----------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_126 | | |
| Objective: | | | AE triggers a calculation and generation of the mashup result by sending a | | |
| | | | <semanticmashupinstance>/<mashup> Retrieve Request</mashup></semanticmashupinstance> | | |
| Config | guratior | 1: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.5.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.51.2.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a semanticMashupInstance resource | | |
| | | | <semanticmashupinstance> as child resource of <csebase> resource</csebase></semanticmashupinstance> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE retrieves a <mashup> resource in a <semanticmashupinstance></semanticmashupinstance></mashup> | | |
| | | PRO Check Ica Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <semanticmashupinstance> resource/msp</semanticmashupinstance> | | |
| 2 | | | • fr = AE-ID | | |
| | Мса | | • rai = (token-string) | | |
| | | | • $pc = empty$ | | |
| 3 | | IOP Check | Check if possible that a <semanticmashupresult> resource is created under the <semanticmashupinstance> resource</semanticmashupinstance></semanticmashupresult> | | |
| | | DBO Chack | • rsc = 2000 (OK) | | |
| 4 | Mca | PRO Check | rqi = (token-string) same as received in request message | | |
| | IVICa | r mmuve | pc = Serialized representation of <semanticmashupresult> resource</semanticmashupresult> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.4 Ontology Repository management

8.6.5.1 OntologyRepository Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|---------------------------|---|--|--|
| Identi | fier: | | TD_M2M_NH_127 | | |
| Objec | tive: | | AE creates a OntologyRepository resource in Registrar CSE via a OntologyRepository | | |
| _ | | | Create Request | | |
| Confi | guratior | า: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.7.2 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.46.2.1 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | | |
| | | | | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a <ontologyrepository></ontologyrepository> | | |
| | | | • op = 1 (Create) | | |
| | Мса | PRO Check ca Primitive | to = {CSEBaseName} | | |
| 2 | | | • fr = AE-ID | | |
| 2 | | | rqi = (token-string) | | |
| | | | ty = 38 (ontologyRepository) | | |
| | | | pc = Serialized representation of <ontologyrepository> resource</ontologyrepository> | | |
| 3 | | IOP Check | Check if possible that the <ontologyrepository> resource is created in Registrar CSE</ontologyrepository> | | |
| | | DDO Chaak | rsc = 2001 (CREATED) | | |
| 4 | Mca | PRO Check | rqi = (token-string) same as received in request message | | |
| | wica | riiiiiuve | pc = Serialized representation of <ontologyrepository> resource</ontologyrepository> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.4.2 OntologyRepository Retrieve

| Interoperability Test Description | | | | |
|-----------------------------------|----------|--------------------------|---|--|
| Identifier: | | | TD_M2M_NH_128 | |
| Objec | tive: | | AE retrieves information of a ontologyRepository resource via a ontologyRepository | |
| | | | Retrieve Request | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.7.3 | |
| | | | oneM2M TS-0004 [2], clause 7.4.46.2.2 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a ontologyRepository resource <ontologyrepository> as child</ontologyrepository> | |
| | | | resource of <ae> resource</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <ontologyrepository></ontologyrepository> | |
| | | PRO Check a Primitive | • op = 2 (Retrieve) | |
| | | | to = {CSEBaseName}/URI of <ontologyrepository> resource</ontologyrepository> | |
| 2 | Mca | | • fr = AE-ID | |
| | Mida | | rqi = (token-string) | |
| | | | • pc = empty | |
| | | PPO Chock | • rsc = 2000 (OK) | |
| 3 | Мса | Primitive | rqi = (token-string) same as received in request message | |
| | | Finnuve | pc = Serialized representation of <ontologyrepository> resource</ontologyrepository> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |
| | Interoperability Test Description | | | |
|-------------|-----------------------------------|---------------------------|---|--|
| Identifier: | | | TD_M2M_NH_129 | |
| Objective: | | | AE updates attribute in <ontologyrepository> resource via a ontologyRepository Update</ontologyrepository> | |
| _ | | | Request | |
| Config | guratior | າ: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.7.4 | |
| | | | oneM2M TS-0004 [2], clause 7.4.46.2.3 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a ontologyRepository resource <ontologyrepository> as child</ontologyrepository> | |
| | | | resource of <ae> resource</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a ontologyRepository Update Request to update an attribute of | |
| | | | the resource | |
| | | PRO Check ca Primitive | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/URI of <ontologyrepository> resource</ontologyrepository> | |
| 2 | Mca | | • fr = AE-ID | |
| | IVICa | | • rqi = (token-string) | |
| | | | pc = Serialized representation of updated <ontologyrepository> resource</ontologyrepository> | |
| 3 | | IOP Check | Check if possible that the <ontologyrepository> resource is updated in Registrar CSE</ontologyrepository> | |
| | | | rsc = 2004 (Updated) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | ivica | Fiilliuve | pc = Serialized representation of <ontologyrepository> resource</ontologyrepository> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | /erdict | | | |

8.6.4.3 OntologyRepository Update

8.6.4.4 OntologyRepository Delete

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_130 | |
| Objective: | | | AE deletes OntologyRepository resource via a OntologyRepository Delete Request | |
| Confi | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.7.5 | |
| | | | oneM2M TS-0004 [2], clause 7.4.46.2.4 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a ontologyRepository resource <ontologyrepository> as child of</ontologyrepository> | |
| | | | <ae> resource</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a ontologyRepository Delete Request | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <ontologyrepository> resource</ontologyrepository> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <ontologyrepository> resource is deleted in Registrar CSE</ontologyrepository> | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | Check if possible that the <ontologyrepository> resource has been removed in Registrar CSE</ontologyrepository> | |
| 6 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.6.5 Semantic validation management

8.6.5.1 Semantic validation independent of <semanticDescriptor> resource operation

| | Interoperability Test Description | | | |
|------------|-----------------------------------|----------------------------|--|--|
| Identi | fier: | | TD_M2M_NH_131 | |
| Objective: | | | AE checks the validity of the <semanticdescriptor> resource via a <semanticvalidation></semanticvalidation></semanticdescriptor> | |
| | | | Update Request | |
| Config | guration | า: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.10.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.48.2.3 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a semanticDescriptor resource <semanticdescriptor> as child of</semanticdescriptor> | |
| | | | <ae> resource</ae> | |
| | | - | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a <semanticvalidation> Update Request to check the validity of</semanticvalidation> | |
| | | | the <semanticdescriptor>resource</semanticdescriptor> | |
| | | PRO Check Ica Primitive | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/URI of <semanticdescriptor> resource/smv</semanticdescriptor> | |
| 2 | Mca | | • fr = AE-ID | |
| | Inca | | • rqi = (token-string) | |
| | | | pc = Serialized representation of <semanticvalidation> parameters</semanticvalidation> | |
| з | | IOP Check | Check if possible that the received <semanticdescriptor> resource with the</semanticdescriptor> | |
| 5 | | IOI OHECK | semanticValidated attribute is set to 'true' in Registrar CSE | |
| 4 | | PRO Check | • rsc = 2004 (Updated) | |
| 4 | Mca | Primitive | rqi = (token-string) same as received in request message | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.6.5.2 Semantic validation triggered when Create a semanticDescriptor resource

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_132 | |
| Objective: | | | AE creates a <semanticdescriptor> resource visa SemanticDescriptor Create Request</semanticdescriptor> | |
| - | | | and Registrar CSE checks the validity of the created <semanticdescriptor> resource</semanticdescriptor> | |
| Confi | guratior | า: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 7.10.3 | |
| | | | oneM2M TS-0004 [2], clause 7.4.34.2.1 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a < semanticDescriptor > Create Request with validationEnable attribute set to 'true' | |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 24 (semanticDescriptor) pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | |
| 3 | | IOP Check | Check if possible that the <semanticdescriptor> resource is created in Registrar CSE Check if possible that the semanticValidated attribute of the <semanticdescriptor> is set to 'true'</semanticdescriptor></semanticdescriptor> | |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.6.6 Ontology Mapping management

8.6.6.1 OntologyMapping Create

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|---------------------------|---|--|
| Identifier: | | | TD_M2M_NH_133 | |
| Objec | tive: | | AE creates an OntologyMapping resource in Registrar CSE via an OntologyMapping | |
| | | | Create Request | |
| Config | guration | า: | M2M_CFG_01 | |
| Refere | ences: | | oneM2M TS-0034 [13], clause 6.10.2 | |
| | | | oneM2M TS-0004 [2], clause 7.4.62.2.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on Registrar CSE</ae> | |
| | | | | |
| | - | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE sends a request to create a <ontologymapping> resource</ontologymapping> | |
| | | PRO Check ca Primitive | • op = 1 (Create) | |
| | | | to = {CSEBaseName} | |
| 2 | | | • fr = AE-ID | |
| 2 | Mca | | • rqi = (token-string) | |
| | | | ty = 52 (ontologyMapping) | |
| | | | pc = Serialized representation of <ontologymapping>resource</ontologymapping> | |
| 3 | | IOP Check | Check if possible that the <ontologymapping> resource is created in Registrar CSE</ontologymapping> | |
| | | DDO Chaak | rsc = 2001 (CREATED) | |
| 4 | Mee | PRO Check | rqi = (token-string) same as received in request message | |
| | wica | riiiiiuve | pc = Serialized representation of <ontologymapping> resource</ontologymapping> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.6.6.2 OntologyMapping Retrieve

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_NH_134 | | |
| Objec | tive: | | AE retrieves information of an ontology mapping result via a ontologyMapping Retrieve | | |
| | | | Request | | |
| Confi | guratior | ו: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.10.3 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.62.2.2 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a ontologyMapping resource <ontologymapping> as child</ontologymapping> | | |
| | | | resource of <ae> resource</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <ontologymapping></ontologymapping> | | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <ontologymapping> resource</ontologymapping> fr = AE-ID rqi = (token-string) pc = empty | | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <ontologymapping> resource</ontologymapping> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP Verdict | | | | | |
| PRO | Verdict | | | | |

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-------------|--|--|--|
| Identifier: | | | TD_M2M_NH_135 | | |
| Objective: | | | AE updates attribute in <ontologymapping> resource via a ontologyMapping Update</ontologymapping> | | |
| | | | Request | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.10.4 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.62.2.3 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a ontologyMapping resource <ontologymapping> as child</ontologymapping> | | |
| | | | resource of <ae> resource</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a ontologyMapping Update Request to update the mappingPolicy | | |
| | | | attribute of the resource | | |
| | | | • op = 3 (Update) | | |
| | | DDO Chaak | to = {CSEBaseName}/URI of <ontologymapping> resource</ontologymapping> | | |
| 2 | Maa | a Primitive | • fr = AE-ID | | |
| | IVICa | | rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <ontologymapping> resource</ontologymapping> | | |
| 3 | | IOP Check | Check if possible that the <ontologymapping> resource is updated in Registrar CSE</ontologymapping> | | |
| | | | rsc = 2004 (Updated) | | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | | |
| | ivica | Fiimuve | pc = Serialized representation of <ontologymapping> resource</ontologymapping> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

8.6.6.3 OntologyMapping Update

8.6.6.4 OntologyMapping Delete

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_136 | |
| Objective: | | | AE deletes OntologyMapping resource via a OntologyMapping Delete Request | |
| Confi | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | oneM2M TS-0034 [13], clause 6.10.5 | |
| | | | oneM2M TS-0004 [2], clause 7.4.62.2.4 | |
| | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a ontologyMapping resource <ontologymapping> as child of</ontologymapping> | |
| | | | <ae> resource</ae> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a ontologyMapping Delete Request | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <ontologymapping> resource</ontologymapping> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | | IOP Check | Check if possible that the <ontologymapping> resource is deleted in Registrar CSE</ontologymapping> | |
| 4 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 5 | | IOP Check | Check if possible that the <ontologymapping> resource has been removed in Registrar CSE</ontologymapping> | |
| 6 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.7 3GPP Interworking

8.7.1 Cellular IoT non-IP data delivery (NIDD)

8.7.1.1 SCEF Configuration for NIDD

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|-------------------|--|--|
| Identi | fier: | | TD_M2M_SH_27 | |
| Objective: | | | IN-CSE establishes SCEF Configuration for NIDD | |
| Config | guration | 1: | M2M_CFG_09 | |
| Refer | ences: | | oneM2M TS-0026 [15], clause 7.1.1.1 | |
| | | | | |
| Pre-test conditions: | | itions: | UE hosts an ADN-AE node IN-CSE has a <m2mservicesubscriptionprofile> resource created as a child of <csebase> resource</csebase></m2mservicesubscriptionprofile> <servicesubscribednode> resource is created as a child of <m2mservicesubscriptionprofile></m2mservicesubscriptionprofile></servicesubscribednode> Node-ID attribute of <servicesubscribednode> resource is set to M2M-Ext-ID of UE and niddRequired attribute is set to TRUE</servicesubscribednode> | |
| | | | SCEF identifier is pre-provisioned to IN-CSE | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | IN-CSE issues a NIDD Configuration Request to SCEF for ADN-AE hosted on a UE | |
| 2 | (T8) Mcn | PRO Check HTTP | Method = POST URI = {apiRoot}/3gpp-nidd/v1/{scsAsId}/configurations/ The {apiRoot} and {scsAsId} segments are configured based on Service Provider and MNO policies. Payload shall include NiddConfiguration data structure with the following attributes included in the request: externalld, notificationDestination, duration, pdnEstablishmentOption, duration, pdnEstablishmentOption, reliableDataService, rdsPorts, supportedFeatures | |
| 3 | | IOP Check | Check if possible that the SCEF has successfully processes the NIDD Configuration Request | |
| 4 | (T8) Mcn | PRO Check HTTP | SCEF responds for the NIDD Configuration Response: Status code = 201 (CREATED) Location header = {apiRoot}/3gpp- nidd/v1/{scsAsId}/configurations/{configurationId} Payload shall include NiddConfiguration data structure with the following attributes included in the request: maximumPacketSize, status, self | |
| 5 | | IOP Check | IN-CSE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.7.1.2 SCEF-based Mobile Terminated NIDD

| | Interoperability Test Description | | | | |
|--------|-----------------------------------|----------|--|--|--|
| Identi | fier: | | TD_M2M_SH_28 | | |
| Objec | tive: | | IN-AE sends a downlink non-IP data to a UE hosting ADN-AE | | |
| Config | guratior | า: | M2M_CFG_11 | | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.1.1.2 | | |
| | | | | | |
| Pre-te | st cond | litions: | IN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | | |
| | | | ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | | |
| | | | IN-CSE has a <m2mservicesubscriptionprofile> resource created as a child of <csebase> resource</csebase></m2mservicesubscriptionprofile> | | |
| | | | <servicesubscribednode> resource is created as a child of <m2mservicesubscriptionprofile></m2mservicesubscriptionprofile></servicesubscribednode> | | |
| | | | Node-ID attribute of <servicesubscribednode> resource is set to M2M-Ext-ID of UE and niddRequired attribute is set to TRUE</servicesubscribednode> | | |
| | | | SCEF identifier is pre-provisioned to IN-CSE | | |
| | | | NIDD configuration procedure is competed successfully | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | (Optional) IN-AE issues an arbitrary oneM2M request targeting an ADN-AE. | | |

| Interoperability Test Description | | | |
|-----------------------------------|-------------|-------------------|---|
| 2 | | Stimulus | IN-CSE issues a SCEF-based Mobile Terminated (MT) NIDD Downlink Data Transfer |
| 2 | | | Request |
| 3 | (T8) Mcn | PRO Check HTTP | Method = POST URI = {apiRoot}/3gpp- nidd/v1/{scsAsId}/configurations/{configurationId}/downlink-data-deliveries Payload shall include NiddDownlinkDataTransfer data structure with the following attributes included in the request: externalld, maximumLatency, priority, pdnEstablishmentOption, pdnEstablishmentOption, reliableDataService, rdsPorts, data (containing onem2m primitive) |
| 4 | | IOP Check | Check if possible that the SCEF has successfully processes the NIDD Downlink Data Transfer Request |
| 5 | (T8) Mcn | PRO Check HTTP | SCEF responds for the NIDD Downlink Data Transfer Request: Status code = 201 (CREATED) Location header = {apiRoot}/3gpp- nidd/v1/{scsAsId}/configurations/{configurationId} Payload shall include NiddConfiguration data structure with the following attributes included in the request: maximumPacketSize, status, self |
| 6 | | IOP Check | In case the UE does not have an active NIDD PDN connection to the SCEF, check that SCEF buffered the request until the UE establishes the connection |
| 7 | (T8) Mcn | PRO Check HTTP | SCEF responds with NIDD Downlink Data Transfer Response: Status code = 200 (OK) / 201 (CREATED, Buffered request) Location header = {apiRoot}/3gpp- nidd/v1/{scsAsId}/configurations/{configurationId}/downlink-data- deliveries/{downlinkDataDeliveryId} Payload shall include NiddDownlinkDataTransfer data structure with the following attributes included in the request: deliviryStatus, self, requestedRetransmissionTime |
| 8 | (T8) Mcn | PRO Check HTTP | (Optional) SCEF returns a MT NIDD Downlink Data Delivery Status Notification to IN-CSE: Method = POST URI = {notification_uri} Payload shall include a NiddDownlinkDataDeliveryStatusNotification data structure with the following attributes included in the request: niddDownlinkDataTransfer, deliveryStatus, requestedRetransmissionTime |
| 9 | (T8) Mcn | PRO Check | IN-CSE responds to the MT NIDD Downlink Data Delivery Status Acknowledgement: |
| 10 | WCH | | Check that ADN-AE on LIE has executed the oneM2M request primitive accordingly |
| 11 | | Stimulus | (Optional) ADN-AE hosted on the UE issues a MO NIDD Uplink Data Notification to deliver a oneM2M response primitive back to the Originator |
| 12 | (T8) Mcn | PRO Check HTTP | (Optional) SCEF sends for the NIDD Uplink Data Notification: Method = POST URI = {notification_uri} Payload shall include NiddUplinkDataNotification data structure with the following attributes included in the request: niddConfiguration, externalld, reliableDataService, rdsPort, data |
| 13 | (T8) Mcn | PRO Check HTTP | (Optional) IN-CSE responds with MO NIDD Uplink Data Acknowledgement and sends oneM2M response primitive to IN-AE • Status code = 204 (NO CONTENT) |
| 14 | | IOP Check | (Optional) Check that IN-AE received a corresponding oneM2M response primitive |
| IOP V | /erdict | | |
| PRO \ | /erdict | | |

8.7.1.3 SCEF-based Mobile Originated NIDD

| | Interoperability Test Description | | | | |
|------------|-----------------------------------|-----------|--|--|--|
| Identi | fier: | | TD_M2M_SH_29 | | |
| Objective: | | | IN-AE sends a downlink non-IP data to a UE hosting ADN-AE | | |
| Config | guratior |): | M2M_CFG_11 | | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.1.1.3 | | |
| | | | | | |
| Pre-te | st cond | itions: | IN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | | |
| | | | ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | | |
| | | | IN-CSE has a <m2mservicesubscriptionprofile> resource created as a child of</m2mservicesubscriptionprofile> | | |
| | | | <csebase> resource</csebase> | | |
| | | | <servicesubscribednode> resource is created as a child of</servicesubscribednode> | | |
| | | | <m2mservicesubscriptionprofile></m2mservicesubscriptionprofile> | | |
| | | | Node-ID attribute of <servicesubscribednode> resource is set to M2M-Ext-ID of</servicesubscribednode> | | |
| | | | UE and niddRequired attribute is set to TRUE | | |
| | | | SCEF identifier is pre-provisioned to IN-CSE | | |
| | | | NIDD configuration procedure is competed successfully | | |
| | | | RDS source and destination port numbers are pre-provisioned in ADN-AE | | |
| 01 | | - | lest Sequence | | |
| Step | RP | Type | Description | | |
| 1 | | Stimulus | ADN-AE issues MO NIDD Uplink Data Notification to deliver an arbitrary primitive to the | | |
| | | | IN-OSE SCEE triagers a MO NIDD Uplink Data Natification corruing request primitive: | | |
| | | | Mothed – POST | | |
| | (T8) | PRO Check | INPL - notification unit | | |
| 2 | (10) Mcn | HTTP | DRI = nouncauon_un} Payload shall include Niddl InlinkDataNotification data structure with the | | |
| | WICH | | Fayload shall include NiddOpiliticDataNotification data structure with the following attributes included in the request; niddConfiguration, externalld | | |
| | | | reliableDataService, rdsPort, data (containing opem2m primitive) | | |
| - | (T8) | PRO Check | IN-CSE responds with MO NIDD I Inlink Data Acknowledgement: | | |
| 3 | (10) Mcn | HTTP | Status code - 204 (NO CONTENT) | | |
| | WIGHT | | Check if possible that SCEE has processed the MO NIDD Uplink Data Acknowledgement | | |
| 4 | | IOP Check | from the IN-CSE | | |
| - | | | SCEF sends an RDS acknowledgment to the UE: | | |
| 5 | | PRO Check | Status code = 204 (NO CONTENT) | | |
| 6 | | IOP Check | Check if possible that IN-CSE processes the oneM2M request primitive | | |
| | | | (Optional) If a response is required, IN-CSE generates a oneM2M response and sends a | | |
| | | | MT NIDD Downlink Data Transfer Request: | | |
| | | | Method = POST | | |
| | (T8) | PRO Check | URI = {apiRoot}/3gpp- | | |
| 7 | Mcn | HTTP | nidd/v1/{scsAsId}/configurations/{configurationId}/downlink-data-deliveries | | |
| | WICH | | Payload shall include NiddDownlinkDataTransfer data structure with the | | |
| | | | following attributes included in the request:externalld, maximumLatency, priority, | | |
| | | | pdnEstablishmentOption, (optional) reliableDataService, rdsPort, data | | |
| | | | (containing response to oneM2M primitive) | | |
| | | | (Optional) Scet returns MT NIDD Downlink Data Transfer Response to IN-CSE: | | |
| | | | Status code = 200 (OK) / 201 (Created) | | |
| | (T8) | PRO Check | • URI = {apiRoot}/3gpp- | | |
| 8 | Mcn | HTTP | nidd/v1/{scsAsid/configurations/{configurationid/downlink-data- | | |
| | | | deliveries/{downlinkDataDeliveryId} | | |
| | | | Payload may include <i>ModDowninkData ransier</i> data structure with the following | | |
| | | | (Optional) Check if possible that SCEE has processed the request and delivered it to the | | |
| 9 | | IOP Check | targeted UF | | |
| Ũ | | | (Optional) Check if possible that UE has responded with an RDS acknowledgment | | |
| | | | (Optional) SCEF returns MT NIDD Downlink Data Delivery Status Notification to IN-CSE: | | |
| | | | Method = POST | | |
| | (T8) | PRO Check | • URI = {notification uri} | | |
| 10 | Mcn | HTTP | Pavload shall include NiddDownlinkDataDelivervStatusNotification data structure | | |
| | | | with the following attributes included in the request: niddDownlinkDataTransfer. | | |
| | | | deliveryStatus, requestedRetransmissionTime | | |
| 4.4 | (T8) | PRO Check | (Optional) IN-CSE responds to SCEF: | | |
| 11 | Ňcń | HTTP | Status code = 204 (NO CONTENT) | | |
| 12 | | IOP Check | (Optional) Check if possible that ADN-AE has processed the oneM2M response primitive | | |

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| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.7.2 Monitoring events

8.7.2.1 UE Reachability monitoring

| | | | Interenerability Test Description |
|----------------------|-------------|------------------------|---|
| Identifier | | | |
| Objective: | | | ID_WIZW_SH_SU |
| Confid | uve. | | |
| Defer | Juration | | M2M2FG_10 |
| Releie | inces. | | OTEMZINI 13-0020 [15], Clause 7.4.1 |
| Pre-test conditions: | | | UE, SCEF and IN-CSE are attached to the underlying 3GPP network IN-AE has created an Application Entity resource <ae> on IN-CSE</ae> ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> ADN-AE has created a Node resource <node> on IN-CSE representing UE</node> ADN-AE has created a Schedule resource <schedule> on IN-CSE under <node> resource. The networkCoordinated attribute is set to TRUE.</node></schedule> |
| | | | IN-AE has subscribed to the <schedule> resource by creating a child <subscription> resource.</subscription></schedule> IN-CSE has subscribed to to the SCEF to receive notifications (monitoringType = UE_REACHABILITY). UE is in idle mode |
| 01.00 | | Toma | Test Sequence |
| Step | RP | I ype | |
| 2 | | IOP Check | Check if possible that the 3GPP network entities (e.g. HSS) has detected the condition and sent a Monitoring Event Report to SCEF |
| 3 | (T8) Mcn | PRO Check HTTP | SCEF receives the report and sends Monitoring Notification UE for_REACHABILITY to IN-CSE: Method = POST URI = {notification_uri} Payload shall include MonitoringNotification data structure with the following attributes included in the request: subscription, configResults, cancelInd, monitoringEventReports (externalIDs, monitoringType, idleStatusInfo, reachabilityType) |
| 4 | (T8) Mcn | PRO Check HTTP | IN-CSE responds to the UE Reachability Monitoring Notification: Status code = 204 (NO CONTENT) |
| 5 | | IOP Check | Check if possible that if idleStatusInfo information is provided in the report, IN-CSE has updated scheduleElement attribute of the <schedule> resource</schedule> |
| 6 | (T8) Mcn | PRO Check Primitive | IN-CSE sends a Notify message to IN-CSE: op = 6 (Notify) pc = serialized representation of the updated <schedule> resource</schedule> |
| 7 | | IOP Check | Check if possible that ADN-AE on UE has updated its local <schedule> resource (if applicable)</schedule> |
| IOP V | 'erdict | | |
| PRO \ | /erdict | | |

8.7.2.2 UE Availability after DDN Failure

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|-------------------|--|--|
| Identifier: | | | TD_M2M_SH_31 | |
| Objective: | | | UE Availability after DDN Failure scenario | |
| Configuration: | | | M2M_CFG_11 | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.4.2 | |
| | | | | |
| Pre-test conditions: | | | UE, SCEF and IN-CSE are attached to the underlying 3GPP network IN-AE has created an Application Entity resource <ae> on IN-CSE</ae> ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> ADN-AE has created a Node resource <node> on IN-CSE representing UE</node> ADN-AE has created a Schedule resource <schedule> on IN-CSE under <node></node></schedule> | |
| | | | resource. The networkCoordinated attribute is set to TRUE. IN-AE has subscribed to the <schedule> resource by creating a child <subscription> resource.</subscription></schedule> IN-CSE has subscribed to to the SCEF to receive notifications (monitoringType = AVAII ABILITY_AFTER_DDN_FAILURE) | |
| | | | UE is in unreachable for Downlink data and in state that DDN Failure condition can be reproduced | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | IN-AE issues an arbitrary oneM2M request targeting an ADN-AE | |
| 2 | | IOP Check | Check that no response for UE paging is received Check if possible that if UE is in PSM mode, the UE subscription has been updated to reflect that a notification of availability should be sent after this DDN failure | |
| 3 | | Stimulus | UE contacts the network | |
| 4 | | IOP Check | Check if possible that SCEF has received a Monitoring Indication that the UE is available | |
| 5 | (T8) Mcn | PRO Check HTTP | SCEF receives the report and sends Monitoring Notification for AVAILABILITY_AFTER_DDN_FAILURE to IN-CSE: Method = POST URI = {notification_uri} Payload shall include MonitoringNotification data structure with the following attributes included in the request: subscription, configResults, cancelInd, monitoringEventReports (externalIDs, monitoringType, idleStatusInfo) | |
| 6 | (T8) Mcn | PRO Check | IN-CSE responds to the DDN Failure Monitoring Notification: | |
| 7 | Wen | IOP Check | Check if possible that IN-CSE has updated the <schedule> resource to indicate that UE is available and created new scheduleElement Check if possible that notification has been sent to the <schedule> resource subscribed entities</schedule></schedule> | |
| 8 | | Stimulus | UE transitions to Idle | |
| 9 | (T8) Mcn | PRO Check HTTP | SCEF sends a UE Reachability Monitoring Event Notification Request to IN-CSE: Method = POST URI = {notification_uri} Payload shall include MonitoringNotification data structure with the following attributes included in the request: subscription, configResults, cancelInd, monitoringEventReports (externalIDs, monitoringType, idleStatusInfo) | |
| 10 | (T8) Mcn | PRO Check HTTP | IN-CSE responds to the UE Reachability Monitoring Notification: Status code = 204 (NO CONTENT) | |
| 11 | | IOP Check | Check if possible that IN-CSE has updated the <schedule> resource to indicate that UE is idle Check if possible that notification has been sent to the <schedule> resource subscribed entities</schedule></schedule> | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|--|--|
| Identifier: | | | TD_M2M_SH_32 | |
| Objective: | | | UE Communication Failure scenario | |
| Config | guratior | 1: | M2M_CFG_11 | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.4.3 | |
| | | | | |
| Pre-te | st cond | litions: | UE, SCEF and IN-CSE are attached to the underlying 3GPP network | |
| | | | IN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | |
| | | | ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | |
| | | | ADN-AE has created a Node resource <node> on IN-CSE representing UE</node> | |
| | | | ADN-AE has created a Schedule resource <schedule> on IN-CSE under <node></node></schedule> | |
| | | | resource. The networkCoordinated attribute is set to TRUE | |
| | | | IN-AE has subscribed to the <schedule> resource by creating a child sub-axis tion</schedule> | |
| | | | <subscription> resource.</subscription> | |
| | | | IN-CSE has subscribed to to the SCEP to receive notifications (monitoring type = COMMUNICATION_EATURE) | |
| - | | | | |
| Step | RP | Type | Description | |
| 1 | | Stimulus | UE communication failure occurs | |
| 2 | | IOP Check | Check if possible SCEF has received a Monitoring Event Report | |
| | | | SCEF receives the report and sends Monitoring Notification Report for | |
| | | | COMMUNICATION_FAILURE to IN-CSE: | |
| | (T8) | PRO Chack | Method = POST | |
| 3 | (10) Mcn | HTTP | URI = {notification_uri} | |
| | WIGHT | | Payload shall include MonitoringNotification data structure with the following | |
| | | | attributes included in the request: subscription, configResults, cancelInd, | |
| | (| | monitoringEventReports (externalIDs, monitoringType, failureCause). | |
| 4 | (18) | PRO Check | IN-CSE responds to the Monitoring Notification Report request: | |
| | IVICN | HIIP | Status code = 204 (NO CONTENT) | |
| 5 | | IOP Check | Check if possible that in-CSE has updated the <schedule> resource to indicate that OE is</schedule> | |
| | | | SCEE sends a LIE Communication Failure Monitoring Event Notification Request to IN- | |
| | | | CSE. | |
| | | | Method = POST | |
| 6 | (T8) | PRO Check | • URI = {notification uri} | |
| | Mcn | нир | Payload shall include MonitoringNotification data structure with the following | |
| | | | attributes included in the request: subscription, configResults, cancelInd, | |
| | | | monitoringEventReports (externalIDs, monitoringType, failureCause) | |
| 7 | (T8) | PRO Check | IN-CSE responds to the UE Communication Failure Monitoring Notification: | |
| ' | Mcn | HTTP | Status code = 204 (NO CONTENT) | |
| | | | Check if possible that IN-CSE has updated the scheduleElement of the <schedule></schedule> | |
| 8 | | IOP Check | resource to indicate that no communications are currently available | |
| | | | Check it possible that notification has been sent to the <schedule> resource subscribed</schedule> | |
| | (ordist | | entities | |
| | | | | |
| PRON | verdict | | | |

8.7.2.3 UE Communication Failure

8.7.2.4 Roaming Status

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|---|--|
| Identifier: | | | TD_M2M_SH_33 | |
| Objec | tive: | | Roaming status scenario | |
| Config | guration | 1: | M2M_CFG_09 | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.4.6 | |
| | | | | |
| Pre-te | st cond | itions: | UE, SCEF and IN-CSE are attached to the underlying 3GPP network | |
| | | | IN-CSE can make Roaming Status Reports requests | |
| | | | ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | |
| | | | ADN-AE has created a Node resource <node> on IN-CSE representing UE.</node> | |
| | | | roamingStatus and networkID attributes of <node> resource are configured.</node> | |
| | | | IN-CSE has subscribed to to the SCEF to receive notifications (monitoringType = | |
| | | | ROAMING_STATUS) | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | Roaming status of UE has changed | |
| 2 | | IOP Check | Check if possible SCEF has received a Monitoring Event Report | |
| | | PPO Check | SCEF receives the report and sends Monitoring Notification Report for | |
| | (T9) | | ROAMING_STATUS to IN-CSE: | |
| 3 | | | Method = POST | |
| | (10) Mcn | | URI = {notification_uri} | |
| | WICH | | Payload shall include MonitoringNotification data structure with the following | |
| | | | attributes included in the request: subscription, configResults, cancelInd, | |
| | | | monitoringEventReports (externalIDs, monitoringType, plmnld, roamingStatus) | |
| 1 | (T8) | PRO Check | IN-CSE responds to the DDN Failure Monitoring Notification: | |
| - | Mcn | HTTP | Status code = 204 (NO CONTENT) | |
| 5 | | IOP Check | Check if possible that IN-CSE has updated roamingStatus and networkID attributes the | |
| | | | <node> resource</node> | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.7.2.5 Location updating triggered by retrieval

| | Interoperability Test Description | | | | |
|----------------------|-----------------------------------|------------------------|--|--|--|
| Identifier: | | | TD_M2M_SH_34 | | |
| Objec | tive: | | Location Reporting scenario | | |
| Confi | guratior | า: | M2M_CFG_09 | | |
| Refer | ences: | | oneM2M TS-0026 [15], clause 7.4.7.2 | | |
| | | | | | |
| Pre-test conditions: | | | UE, SCEF and IN-CSE are attached to the underlying 3GPP network ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> IN-CSE has subscribed to to the SCEF to receive notifications (monitoringType = LOCATION_REPORTING) | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | IN-AE sends a < locationPolicy> CREATE request | | |
| 2 | (T8) Mcn | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName} fr = IN-AE-ID rqi = (token-string) ty = 10 (LocationPolicy) pc = Serialized representation of <locationpolicy> resource locationSource = Netwrork based locationUpdatePeriod = 0 locationTargetID = M2M-Ext-ID of the UE locationInformationType = position fix retrieveLastKnownLocation = TRUE/FALSE </locationpolicy> | | |
| 3 | | IOP Check | Check if possible that IN-CSE has created <locationpolicy> resource</locationpolicy> | | |
| 4 | | Stimulus | AE is requested to send a Retrieve Request for a <latest> content instance</latest> | | |

| | Interoperability Test Description | | | |
|------|-----------------------------------|-------------------|---|--|
| | | | • op = 2 (Retrieve) | |
| 5 | | PRO Check | to = {CSEBaseName}/URI of <container> resource/la</container> | |
| | (T8) | Primitive | • fr = IN-AE-ID | |
| | Mcn | 1 minuvo | • rqi = (token-string) | |
| | | | • pc = empty | |
| | | | IN-CSE makes Monitoring Event Subscription request to retrieve current location of UE | |
| | | | Method = POST UBL (op/Doct)/2gnn manitaring event/ut/(ope/Add)/ov/basintiang/ | |
| | (TQ) | PPO Chock | ORI = {apiRool//3gpp-monitoring-event/v//{scsAsid/subscriptions/ Devleed aball include ManitoringEventSubscription data structure with the | |
| 6 | Mcn | HTTP | Payload shall include inomicing events upschption data structure with the following attributes included in the request: externally notification Destination | |
| | | | monitoringType, supportedFeatures, maximumNumberOfReports. | |
| | | | monitorExpireTime, accuracy. | |
| | | | locationType = CURRENT_KNOWNLOCATION | |
| | | | SCEF sends a Monitoring Event Subscription Response message to the IN-CSE | |
| | (— -) | | Status code = 201 (CREATED) | |
| 7 | (T8) | PRO Check | Location header = {apiRoot}/3gpp-monitoring- | |
| | Mcn | нир | event/v1/{scsAsId}/subscriptions/{subscriptionId} | |
| | | | Payload shall include NiddConliguration data structure with the following attributes included in the request: monitoringEventPenert, self | |
| 8 | | IOP Check | Check if possible that SCEE detected and retrieved location of UE | |
| | | | SCEF sends a Monitoring Event Report message to the IN-CSE: | |
| | | | Method = POST | |
| 0 | (T8) | PRO Check | • URI = {notification_uri} | |
| 9 | Mcn | HTTP | Payload shall include MonitoringEventSubscription data structure with the | |
| | | | following attributes included in the request: subscription, configResults, | |
| | (To) | | cancelid,monitoring, EventReports (externalID, monitoringType, locatonInfo) | |
| 10 | (18) Mon | | IN-CSE responds to the DDN Failure Monitoring Notification: | |
| | WCh | ппр | Check if possible that INLCSE has created a new contentingtances child resource of the | |
| 11 | | IOP Check | <pre><container>. The <contentinstance> contains the UE's current location</contentinstance></container></pre> | |
| | | | IN-CSE sends a Monitoring Event Subscription message to the SCEF: | |
| | | PRO Check HTTP | Method = POST | |
| | (T8) Mcn | | URI = {apiRoot}/3gpp-monitoring-event/v1/{scsAsId}/subscriptions/ | |
| 12 | | | Payload shall include MonitoringEventSubscription with the following attributes | |
| | | | included in the request: subscription, configResults, | |
| | | | cancelid,monitoringEventReports (externaliD, monitoringType, locatoninto) | |
| | | | IDCalloTType = LAST_KNOWINLOCATION SCEE sends a Monitoring Event Report message to the IN-CSE: | |
| | | | Method - POST | |
| | (T8) | PRO Check | Response code = 201 (CREATED) | |
| 13 | Mcn | HTTP | URI = {apiRoot}/3gpp-monitoring-vent/v1/{scsAsId}/subscriptions/{subscriptionId} | |
| | | | Payload shall include MonitoringEventSubscription data structure with the | |
| | | | following attributes included in the request: self, monitoringEnentReport | |
| 14 | | IOP Check | Check if possible that SCEF receives a last known location information of UE | |
| | | | SCEF sends a Monitoring Notification Report message to the IN-CSE for | |
| | | | LOCATION_REPORTING: | |
| 15 | (T8) | PRO Check | • Method = $POSI$ • $UPI = (notification uri)$ | |
| 15 | Mcn | HTTP | DNI = {nonication_un} Payload shall include MonitoringEventSubscription data structure with the | |
| | | | following attributes included in the request: subscription and stratige with the | |
| | | | cancelid,monitoringEventReports | |
| 16 | (T8) | PRO Check | IN-CSE responds to the Monitoring Notification: | |
| 10 | Mcn | HTTP | Status code = 204 (NO CONTENT) | |
| 17 | | IOP Check | Check if possible that IN-CSE has created a new <i><contentinstance></contentinstance></i> child resource of the | |
| | | | | |
| | (T8) | PRO Check | roi = 2000 (OK) roi = (token-string) same as received in request message | |
| 18 | Mcn | HTTP | pc = Serialized representation of latest <contentinstance> resource. created after</contentinstance> | |
| | | | acquiring location info from SCEF | |
| 19 | | IOP Check | AE indicates successful operation | |
| NOTE | : Ste | ps: 12-17 are on | ly applicable, if retrieveLastKnownLocation is set to TRUE. | |
| IPRO | Verdict | | | |

8.7.3 3GPP Based Device triggering

8.7.3.1 General Procedure for 3GPP Based Device Triggering

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|--|--|
| Identifier: | | | TD_M2M_SH_35 | |
| Objective: | | | IN-AE triggers ADN-AE hosted on UE | |
| Confi | guratior | n: | M2M_CFG_09 | |
| Refer | ences: | | oneM2M TS-0026 [15], clause 7.5.1 | |
| | | | | |
| Pre-te | est cond | itions: | UE, SCEF and IN-CSE are attached to the underlying 3GPP network | |
| | | | ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> | |
| | | | ADN-AE is available to receive the Device Trigger Requests (triggerEnable = | |
| | | | "TRUE") | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | IN-AE sends a request to create a <triggerrequest></triggerrequest> | |
| | | | • op = 1 (Create) | |
| 2 | | | to = {CSEBaseName}/{AE-ID}/ | |
| 2 | | PRO Check | • fr = AE-ID | |
| | Mca | Primitive | rqi = (token-string) | |
| | | | • ty = 47 (triggerRequest) | |
| | | | pc = Serialized representation of < triggerRequest > resource | |
| 3 | | IOP Check | Check if possible that IN-CSE has created <triggerrequest> resource</triggerrequest> | |
| | | | IN-CSE sends a Device Triggering request to the SCEF | |
| | | | Method = POST | |
| 1 | (T8) | PRO Check | URI = {apiRoot}/3gpp-device-triggering/v1/{scsAsId}/transactions | |
| - | Mcn | HTTP | Payload shall include DeviceTriggering data structure with the following | |
| | | | attributes included in the request: supportedFeatures, validityPeriod, | |
| | | | triggerPayload, externalld, applicationPortID, notificationDestination, priority | |
| | | | Check that SCEF has responded to IN-CSE for Device Triggering request | |
| 5 | | IOP Check | Check that SCEF has delivered the device trigger message to the UE hosting ADN-AE | |
| Ŭ | | | Check that SCEF has delivered the Device Triggering Delivery Report Notification request | |
| | | | to IN-CSE | |
| | | | Check that IN-CSE has responded to SCEF the Device Triggering Delivery Report | |
| ~ | | | Notification request | |
| б | | IOP Check | Check if possible that IN-CSE has updated triggerStatus attribute of <triggerrequest></triggerrequest> | |
| | | | resource Check that IN CSE has reasoned to IN AE for stringerPequents. Create request | |
| 7 | | IOP Chack | Check that ADNLAE has performed the trigger actions | |
| 1 | | | | |
| | /ordict | | | |

8.7.3.2 3GPP Based Device Trigger Recall/Replace Procedure

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|----------|--|--|
| Identi | fier: | | TD_M2M_SH_36 | |
| Objec | tive: | | IN-AE recalls/replaces a trigger request targeting ADN-AE hosted on UE that has been already created in IN-CSE | |
| Config | guratio | n: | M2M_CFG_09 | |
| Refer | ences: | | oneM2M TS-0026 [15], clause 7.5.2 | |
| | | | | |
| Pre-test conditions: | | litions: | UE, SCEF and IN-CSE are attached to the underlying 3GPP network ADN-AE has created an Application Entity resource <ae> on IN-CSE</ae> ADN-AE is available to receive the Device Trigger Requests (triggerEnable = "TRUE") <triggerrequest> resource targeting ADN-AE has been created in IN-CSE</triggerrequest> IN-CSE has already sent a device trigger request to the underlying 3GPP network | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | IN-AE sends a request to UPDATE/DELETE a <triggerrequest></triggerrequest> | |

| Interoperability Test Description | | | |
|-----------------------------------|-------------|------------------------|--|
| 2 | Мса | PRO Check Primitive | op = 3 (Update) / 4 (Delete) to = {CSEBaseName}/{AE-ID}/{URI of <triggerrequest> resource}</triggerrequest> fr = AE-ID rqi = (token-string) pc = Serialized representation of < triggerRequest > resource (for UPDATE only) |
| 3 | | IOP Check | Check if possible that IN-CSE has created <triggerrequest> resource</triggerrequest> |
| 4 | (T8) Mcn | PRO Check HTTP | IN-CSE sends a Trigger UPDATE (Replace) / DELETE (Recall) Request to the SCEF Method = PUT/DELETE URI = {apiRoot}/3gpp-device-triggering/v1/{scsAsId}/transactions (For Trigger UPDATE only) Payload shall include DeviceTriggering data structure with the following attributes included in the request: supportedFeatures, validityPeriod, triggerPayload, externalId, applicationPortID, notificationDestination, priority |
| 5 | | IOP Check | Check that SCEF has recalled/replaced the trigger Check that SCEF responded to IN-CSE for Device Trigger Recall/Replace Check that SCEF has delivered the device trigger message to the UE hosting ADN-AE Check that SCEF has delivered the Device Triggering Delivery Report Notification request to IN-CSE |
| 6 | | IOP Check | Check if possible that IN-CSE has updated triggerStatus attribute of <triggerrequest> resource / deleted <triggerrequest> resource Check that IN-CSE has responded to IN-AE for <triggerrequest> UPDATE/DELETE request</triggerrequest></triggerrequest></triggerrequest> |
| IOP \ | /erdict | | |
| PRO | /erdict | | |

8.7.4 Configuration of traffic patterns

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|---|--|--|
| Identifier: | | | TD_M2M_SH_37 | | |
| Objective: | | | IN-CSE translates the oneM2M Node Traffic Pattern (TP) into a 3GPP Device | | |
| _ | | | Communication Pattern | | |
| Confi | guratior | ו: | M2M_CFG_09 | | |
| Refer | ences: | | oneM2M TS-0026 [15], clause 7.6 | | |
| | | | | | |
| Pre-te | est cond | litions: | UE, SCEF and IN-CSE are attached to the underlying 3GPP network | | |
| | | | ADN-AE hosted on UE has created an Application Entity resource <ae> on IN-</ae> | | |
| | | | CSE | | |
| | | | IN-CSE has established relationship with MNO and is allowed to request | | |
| | | | Configuration of Device Communication Patterns. | | |
| 01 | | - | Test Sequence | | |
| Step | RP | I ype | Description | | |
| 1 | | Stimulus | ADN-AE sends a request to create an activityPatternElements attribute in <ae> resource</ae> | | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/{AE-ID} fr = AE-ID rqi = (token-string) consistent representation of aAE, representation | | |
| 2 | | | pc = Senalized representation of <ae> resource</ae> | | |
| 3 | | IOP Check | Check in possible that in-CSE has updated <ae> resource</ae> | | |
| 4 | (T8) Mcn | PRO Check HTTP | Method = POST URI = {apiRoot}/3gpp-cp-parameter-provisioning/v1/{scsAsId}/subscriptions Payload shall include DeviceTriggering data structure with the following attributes included in the request: externalld, supportedFeatures, cpParameterSets | | |
| 5 | | IOP Check | Check if possible that underlying 3GPP network elements has stored the new/updated CP parameter Check that SCEF has responded to IN-CSE for Communication Patterns Configuration request | | |
| IOP \ | /erdict | | | | |
| PRO ' | Verdict | | | | |

8.7.5 Group message delivery using MBMS

8.7.5.1 Create MBMS Group

| | Interoperability Test Description | | | |
|----------------|-----------------------------------|-----------|---|--|
| Identifier: | | | TD_M2M_SH_38 | |
| Objec | tive: | | IN-AE creates a MBMS Group for handling group related requests | |
| Configuration: | | | M2M_CFG_12 | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.7.3.1 | |
| | | | | |
| Pre-te | st cond | itions: | Member Hosting CSE, SCEF and Group Hosting CSE are attached to the underlying 3GPP network | |
| | | | Member Hosting CSE on UE has created a <remotecse> resource on Group Hosting CSE</remotecse> | |
| | | | IN-AE has created an Application Entity resource <ae> on Group Hosting CSE</ae> | |
| | | | The MBMS service area information provided by the MNO is configured in the oneM2M System | |
| | | | External Group Identifiers for the devices have been pre-provisioned in the one MOM System | |
| | | | | |
| Stop | DD | Type | Description | |
| | INF | Stimulus | INLAE is requested to send a group Create Request | |
| 1 | | Sumuus | $n_{\text{AL}} = 10$ requested to serie a group create (request | |
| | | | • $op = 1$ (CSEBaseName) | |
| 2 | | DBO Chook | • $t_0 = \{0\}$ (OSE DASENAILE) | |
| | Mca | Primitive | • II = AE-ID • rai = (takan atring) | |
| | INCa | rinnuve | • $IqI = (IOKeII-SIIIIIg)$ | |
| | | | • ty = 9 (group) | |
| | | | pc = Senalized representation of <groups resource<="" td=""></groups> | |
| 2 | | IOP Chock | Check if possible that multicastType attribute of the Multicast Group Information is set to | |
| 5 | | IOI CHECK | SGPP MBMS group | |
| | | | Group Hosting CSE responds to IN-AE: | |
| 4 | | PRO Chack | • rec = 2001 (CREATED) | |
| | Mca | Primitive | rai – (token-string) same as received in request message | |
| | ivica | 1 minuve | Iqi = (loken stillig) same as received in request message nc = Serialized representation of <aroun> resource</aroun> | |
| | | | Group Hosting CSE sends a Allocate TMGI Request to the SCEE | |
| | | | Method – POST | |
| 5 | (T8) | PRO Check | IJPI – (aniPoot)/3ann-aroun-message-delivery-mb2 /u1/(scs/s/d)/tmgi-allocation | |
| 5 | Mcn | HTTP | Divide TMCIAllocation data structure with the following attributes | |
| | | | included in the request: external GroupId, mbmsl ocArea, supported Features | |
| 6 | | IOP Check | Check that SCEE has delivered Allocate TMCI Response to Group Hosting CSE | |
| | | | Check if possible that the Group Hosting CSE has stored the trai and traiEvoiration in | |
| | | | the local Multicast Group Information | |
| 7 | | IOP Check | Check that Group Hosting CSE has sent <localmulticastgroup> creation requests to the</localmulticastgroup> | |
| ' | | | Member Hosting CSE | |
| | | | Check that Member Hosting CSE has created <localmulticastgroup> resource</localmulticastgroup> | |
| IOP V | /erdict | | | |
| PRO | /erdict | | | |

| 8.7.5.2 | Group message delivery using MBMS |
|---------|-----------------------------------|
|---------|-----------------------------------|

| | Interoperability Test Description | | | |
|----------------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_SH_39 | |
| Objective: | | | IN-AE sends a request for accessing member resources to the Group Hosting CSE | |
| Configuration: | | 1: | M2M_CFG_12 | |
| Refere | ences: | | oneM2M TS-0026 [15], clause 7.7.3.1 | |
| | | | | |
| Pre-te | st cond | itions: | Member Hosting CSE, SCEF and Group Hosting CSE are attached to the underlying 3GPP network | |
| | | | Member Hosting CSE on UE has created a <remotecse> resource on Group Hosting CSE</remotecse> | |
| | | | <node> resource representing UE has been created on Group Hosting CSE</node> | |
| | | | <schedule> resource has been created as a child of the <node> resource on Group Hosting CSE</node></schedule> | |
| | | | IN-AE has created a <group> resource in Group Hosting CSE</group> | |
| | | | <node> resource is the member of the <group></group></node> | |
| | | | Group Hosting CSE has created a <localmulticastgroup> in the Member Hosting CSE</localmulticastgroup> | |
| | | | Group Hosting CSE stores tmgi and tmgiExpiration in the local Multicast Group Information | |
| | | | Test Seguence | |
| Step | RP | Type | Description | |
| 1 | | Stimulus | IN-AE is requested to send a Retrieve Request to the fanoutPoint of <group> resource</group> | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/{group}/fopt fr = AE-ID rgi = (token-string) | |
| 3 | (T8) Mcn | PRO Check HTTP | Group Hosting CSE sends a Group Message Delivery Request to the SCEF: Method = POST URI = to {apiRoot}/3gpp-group-message-delivery-mb2 /v1/{scsAs/d}/tmgi-allocation{<i>tmgi</i>}/delivery-via-mbms Payload shall include GMDViaMBMSByMb2data structure with the following attributes included in the request: externalGroupId, mbmsLocArea, messageDeliveryStartTime, notificationDestination | |
| 4 | | IOP Check | Check that SCEF has responded to the Group Message Check that SCEF has sent Group Message Delivery Notification to Group Hosting CSE | |
| 5 | | IOP Check | Check that Group Hosting CSE has responded to the Group Message Delivery Notification | |
| 6 | | IOP Check | Check that Member Hosting CSE has sent response message within the scope of responseTimeWindow | |
| 7 | | IOP Check | Check that Group Hosting CSE has received the response messages from Member Hosting CSEs until responseTimeWindow expires and returned the aggregated group member responses to the IN-AE/CSE | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.8 Advanced Subscriptions & Notifications management

8.8.1 Notification Target removal procedure

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|-----------|--|--|
| Identifier: | | | TD_M2M_NH_137 | |
| Objec | tive: | | AE removes notificationTargetMgmtPolicyRef via a notificationTargetMgmtPolicyRef | |
| | | | Delete Request | |
| Config | guratior | ו: | M2M_CFG_10 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.8 | |
| | | | oneM2M TS-0004 [2], clause 7.4.33.2.4 | |
| | | | | |
| Pre-te | est cond | litions: | AE1 has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE1 has created a <subscription> resource on Registrar CSE</subscription> | |
| | | | AE1 has created a <notificationtargetpolicy> resource on Registrar CSE, where</notificationtargetpolicy> | |
| | | | policyLabel = "default", action = "accept" | |
| | | | AE2 has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | 1 | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE2 is requested to send a notificationTargetSelfReference Delete Request | |
| | | | • op = 4 (Delete) | |
| | | PRO Check | to = {CSEBaseName}/URI of <subscription> resource/ntsr</subscription> | |
| 2 | Mca | Primitive | • fr = AE-ID | |
| | wica | | • rqi = (token-string) | |
| | | | • pc = empty | |
| | | PPO Chock | • rsc = 2002 (DELETED) | |
| 3 | Mca | Primitive | rqi = (token-string) same as received in request message | |
| | Wica | 1 mmuve | • pc = empty | |
| 4 | | IOP Check | Check if possible that the registrar CSE has removed the AE2 in the notificationURI | |
| - | | IOI OHECK | attribute in the <subscription> resource</subscription> | |
| 5 | | IOP Check | AE2 indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.8.2 NotificationTargetMgmtPolicyRef management

8.8.2.1 NotificationTargetMgmtPolicyRef Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|------------------------|--|---|--|
| Identifier: | | | TD_M2M_NH_138 | | |
| Objec | tive: | | AE creates a notificationTargetMgmtPolicyRef resource in registrar CSE via a | | |
| | | | notificationTargetMgmtPolicyRef Create Request | | |
| Config | guratior | ו: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.10 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.30.2.1 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE has created a <subscription> resource on registrar CSE</subscription> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a notificationTargetMgmtPolicyRef> | | |
| | Мса | PRO Check Primitive | • op = 1 (Create) | | |
| | | | to = {CSEBaseName}/URI of <subscription> resource</subscription> | | |
| 2 | | | • fr = AE-ID | | |
| - | | | • rqi = (token-string) | | |
| | | | | ty = 25 (notificationTargetMgmtPolicyRef) | |
| | | | pc = Serialized representation of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> | | |
| з | | IOP Check | Check if possible that the <notificationtargetmgmtpolicyref> resource is created in</notificationtargetmgmtpolicyref> | | |
| 5 | | | registrar CSE | | |
| 4 | | PRO Check | rsc = 2001 (CREATED) | | |
| | Mca | | rqi = (token-string) same as received in request message | | |
| | wica | 7 1111000 | pc = Serialized representation of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> | | |
| 5 | | IOP Check | AE indicates successful operation | | |

| Interoperability Test Description | | | | |
|-----------------------------------|--|--|--|--|
| IOP Verdict | | | | |
| PRO Verdict | | | | |

8.8.2.2 NotificationTargetMgmtPolicyRef Retrieve

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_139 | |
| Objec | tive: | | AE retrieves notificationTargetMgmtPolicyRef resource from Registrar CSE | |
| Config | guration | 1: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.11 | |
| | | | oneM2M TS-0004 [2], clause 7.4.30.2.2 | |
| | | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a subscription resource <subscription> on Registrar CSE</subscription> | |
| | | | AE has created a <notificationtargetmgmtpolicyref> on Registrar CSE</notificationtargetmgmtpolicyref> | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <notificationtargetmgmtpolicyref></notificationtargetmgmtpolicyref> | |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

8.8.2.3 NotificationTargetMgmtPolicyRef Update

| | Interoperability Test Description | | | |
|--------|-----------------------------------|------------------------|---|--|
| Identi | fier: | | TD_M2M_NH_140 | |
| Objec | tive: | | AE updates information about a notificationTargetMgmtPolicyRef via | |
| | | | notificationTargetMgmtPolicyRef>Update Request | |
| Config | guratior | ו: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.12 | |
| | | | oneM2M TS-0004 [2], clause 7.4.30.2.3 | |
| | | | 1 | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a subscription resource <subscription> on Registrar CSE</subscription> | |
| | | | AE has created a subscription resource <notificationtargetmgmtpolicyref> on</notificationtargetmgmtpolicyref> | |
| | | | Registrar CSE | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a notificationTargetMgmtPolicyRef Update Request to update the notificationIPolicyID attribute of the resource | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> | |
| 3 | | IOP Check | Check if possible that the <notificationtargetmgmtpolicyref> resource is updated in Registrar CSE</notificationtargetmgmtpolicyref> | |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> | |
| 5 | | IOP Check | AE indicates successful operation | |

| Interoperability Test Description | | | |
|-----------------------------------|--|--|--|
| IOP Verdict | | | |
| PRO Verdict | | | |

8.8.2.4 NotificationTargetMgmtPolicyRef Delete

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_141 | |
| Objec | tive: | | AE removes notificationTargetMgmtPolicyRef via a notificationTargetMgmtPolicyRef | |
| | | | Delete Request | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.12 oneM2M TS-0004 [2], clause 7.4.30.2.4 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE AE has created a patificationTargetMgmtPolicyPaf resource</ae> | |
| | | | AL has created a notification arget/gen/gen/gen/gen/gen/gen/gen/gen/gen/gen | |
| | | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a notificationTargetMgmtPolicyRef Delete Request | |
| 2 | Мса | PRO Check Primitive | op = 4 (Delete) to = {CSEBaseName}/URI of <notificationtargetmgmtpolicyref> resource</notificationtargetmgmtpolicyref> fr = AE-ID rqi = (token-string) pc = empty | |
| 3 | Мса | PRO Check Primitive | rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = empty | |
| 4 | | IOP Check | Check if possible that the <notificationtargetmgmtpolicyref> resource has been removed in registrar CSE</notificationtargetmgmtpolicyref> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO | /erdict | | | |

8.8.3 NotificationTargetPolicy management

8.8.3.1 NotificationTargetPolicy Create

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|-----------|---|--|--|
| Identifier: | | | TD_M2M_NH_142 | | |
| Objec | tive: | | AE creates a notificationTargetPolicy resource in registrar CSE via a | | |
| - | | | notificationTargetPolicy Create Request | | |
| Config | guratior | n: | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.14 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.31.2.1 | | |
| | | | | | |
| Pre-te | st cond | litions: | AE has created an application resource <ae> on registrar CSE</ae> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE sends a request to create a <notificationtargetpolicy></notificationtargetpolicy> | | |
| | | | • op = 1 (Create) | | |
| | | | to = {CSEBaseName} | | |
| 2 | | PRO Check | • fr = AE-ID | | |
| 2 | Мса | Primitive | rqi = (token-string) | | |
| | | | ty = 26 (notificationTargetPolicy) | | |
| | | | pc = Serialized representation of <notificationtargetpolicy> resource</notificationtargetpolicy> | | |
| 3 | | IOP Check | Check if possible that the <notificationtargetpolicy> resource is created in registrar CSE</notificationtargetpolicy> | | |
| 4 | | DDO Chaak | rsc = 2001 (CREATED) | | |
| | Мса | | rqi = (token-string) same as received in request message | | |
| | | Finnlive | pc = Serialized representation of <notificationtargetpolicy> resource</notificationtargetpolicy> | | |
| 5 | | IOP Check | AE indicates successful operation | | |

| Interoperability Test Description | | | |
|-----------------------------------|--|--|--|
| IOP Verdict | | | |
| PRO Verdict | | | |

8.8.3.2 NotificationTargetPolicy Retrieve

| | Interoperability Test Description | | | | |
|-------------|-----------------------------------|----------------------------|--|--|--|
| Identifier: | | | TD_M2M_NH_143 | | |
| Objec | tive: | | AE retrieves notificationTargetPolicy resource from Registrar CSE | | |
| Config | guration | : | M2M_CFG_01 | | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.15 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.31.2.2 | | |
| | | | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a <notificationtargetpolicy> on Registrar CSE</notificationtargetpolicy> | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <notificationtargetpolicy></notificationtargetpolicy> | | |
| | | PRO Check Ica Primitive | • op = 2 (Retrieve) | | |
| | | | to = {CSEBaseName}/URI of <notificationtargetpolicy> resource</notificationtargetpolicy> | | |
| 2 | Mee | | • fr = AE-ID | | |
| | IVICa | | • rqi = (token-string) | | |
| | | | • pc = empty | | |
| | | DDO Chask | • rsc = 2000 (OK) | | |
| 3 | Maa | | rqi = (token-string) same as received in request message | | |
| | ivica | FIIIIIIVe | pc = Serialized representation of <notificationtargetpolicy> resource</notificationtargetpolicy> | | |
| 4 | | IOP Check | AE indicates successful operation | | |
| IOP V | /erdict | | | | |
| PRO \ | /erdict | | | | |

8.8.3.3 NotificationTargetPolicy Update

| | | | Interoperability Test Description | |
|------------|---------------|-----------|---|--|
| Identi | fier: | | TD_M2M_NH_144 | |
| Objective: | | | AE updates information about a notificationTargetPolicy via <notificationtargetpolicy></notificationtargetpolicy> | |
| | | | Update Request | |
| Config | guratior | 1: | M2M_CFG_01 | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.16 | |
| | | | oneM2M TS-0004 [2], clause 7.4.31.2.3 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a notificationTargetPolicy resource <notificationtargetpolicy> on</notificationtargetpolicy> | |
| | | | Registrar CSE | |
| | Test Sequence | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a notificationTargetPolicy Update Request to update the | |
| | | | policyLabel attribute of the resource | |
| | | PRO Check | • op = 3 (Update) | |
| | | | to = {CSEBaseName}/URI of <notificationtargetpolicy> resource</notificationtargetpolicy> | |
| 2 | Mee | | • fr = AE-ID | |
| | IVICa | FIIIIIIVE | • rqi = (token-string) | |
| | | | pc = Serialized representation of updated <subscription> resource</subscription> | |
| 3 | | IOP Check | Check if possible that the <notificationtargetpolicy> resource is updated in Registrar CSE</notificationtargetpolicy> | |
| | | | • rsc = 2004 (Updated) | |
| 4 | Maa | PRO Check | rqi = (token-string) same as received in request message | |
| | ivica | Primitive | pc = Serialized representation of <notificationtargetpolicy> resource</notificationtargetpolicy> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

| | | | Interoperability Test Description | |
|-------------|----------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_145 | |
| Objective: | | | AE removes notificationTargetPolicy via a <notificationtargetpolicy> Delete Request</notificationtargetpolicy> | |
| Config | guratior | າ: | M2M_CFG_01 | |
| References: | | | ETSI TS 118 101 [1], clause 10.2.10.17 | |
| | | | oneM2M TS-0004 [2], clause 7.4.31.2.4 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a notificationTargetPolicy resource <notificationtargetpolicy> on</notificationtargetpolicy> | |
| | | | Registrar CSE | |
| | | | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a notificationTargetPolicy Delete Request | |
| | | PRO Check Primitive | • op = 4 (Delete) | |
| | | | to = {CSEBaseName}/URI of <notificationtargetpolicy> resource</notificationtargetpolicy> | |
| 2 | Mee | | • fr = AE-ID | |
| | IVICa | | • rqi = (token-string) | |
| | | | • pc = empty | |
| | | | • rsc = 2002 (DELETED) | |
| 3 | Мса | PRO Check | rqi = (token-string) same as received in request message | |
| | | Primitive | • pc = empty | |
| 4 | | IOP Check | Check if possible that the <notificationtargetpolicy> resource is deleted in registrar CSE</notificationtargetpolicy> | |
| 5 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO Verdict | | | | |

8.8.3.4 NotificationTargetPolicy Delete

8.8.4 PolicyDeletionRules management

8.8.4.1 PolicyDeletionRules Create

| | | | Interoperability Test Description |
|----------------------|---------|------------------------|--|
| Identi | fier: | | TD_M2M_NH_146 |
| Objective: | | | AE creates a policyDeletionRules resource in registrar CSE via a policyDeletionRules |
| Confi | guratio | า: | M2M_CFG_01 |
| References: | | | ETSI TS 118 101 [1], clause 10.2.10.18 oneM2M TS-0004 [2], clause 7.4.32.2.1 |
| Pre-test conditions: | | litions: | AE has created an application resource <ae> on registrar CSE</ae> AE has created a <notificationtargetpolicy> on Registrar CSE</notificationtargetpolicy> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE sends a request to create a <policydeletionrules></policydeletionrules> |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/ URI of <notificationtargetpolicy></notificationtargetpolicy> fr = AE-ID rqi = (token-string) ty = 27 (policyDeletionRules) pc = Serialized representation of <policydeletionrules> resource</policydeletionrules> |
| 3 | | IOP Check | Check if possible that the <policydeletionrules> resource is created in registrar CSE</policydeletionrules> |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <policydeletionrules> resource</policydeletionrules> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

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| | Interoperability Test Description | | | |
|--------|-----------------------------------|--------------|--|--|
| Identi | fier: | | TD_M2M_NH_147 | |
| Objec | tive: | | AE retrieves policyDeletionRules resource from Registrar CSE | |
| Config | guration |): | M2M_CFG_01 | |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.19 | |
| | | | oneM2M TS-0004 [2], clause 7.4.32.2.2 | |
| | | | | |
| Pre-te | st cond | itions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a <notificationtargetpolicy> on Registrar CSE</notificationtargetpolicy> | |
| | | | AE has created a <policydeletionrules> as a child of <notificationtargetpolicy></notificationtargetpolicy></policydeletionrules> | |
| | | | on Registrar CSE | |
| | Test Sequence | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <policydeletionrules></policydeletionrules> | |
| | | | • op = 2 (Retrieve) | |
| | | DBO Chack | to = {CSEBaseName}/URI of <policydeletionrules> resource</policydeletionrules> | |
| 2 | Mca | a Primitive | • fr = AE-ID | |
| | Ivica | | • rqi = (token-string) | |
| | | | • pc = empty | |
| | | DDO Chask | • rsc = 2000 (OK) | |
| 3 | Mee | PRO Check | rqi = (token-string) same as received in request message | |
| | wica | T TITILITY E | pc = Serialized representation of <policydeletionrules> resource</policydeletionrules> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP V | /erdict | | | |
| PRO | /erdict | | | |

8.8.4.2 PolicyDeletionRules Retrieve

8.8.4.3 PolicyDeletionRules Update

| | | | Interoperability Test Description | | |
|-------------|----------|-----------|--|--|--|
| Identi | fier: | | TD_M2M_NH_148 | | |
| Objective: | | | AE updates information about a policyDeletionRules via <policydeletionrules> Update</policydeletionrules> | | |
| | | | Request | | |
| Config | guration | า: | M2M_CFG_01 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.20 | | |
| | | | oneM2M TS-0004 [2], clause 7.4.32.2.3 | | |
| | | | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | | |
| | | | AE has created a <notificationtargetpolicy> on Registrar CSE</notificationtargetpolicy> | | |
| | | | AE has created a <policydeletionrules> as a child of <notificationtargetpolicy></notificationtargetpolicy></policydeletionrules> | | |
| | | | on Registrar CSE | | |
| | | | Test Sequence | | |
| Step | RP | Туре | Description | | |
| 1 | | Stimulus | AE is requested to send a policyDeletionRules Update Request to update the | | |
| | | | deletionRulesRelation attribute of the resource | | |
| | | PRO Check | • op = 3 (Update) | | |
| | | | to = {CSEBaseName}/URI of <policydeletionrules> resource</policydeletionrules> | | |
| 2 | Mca | | • fr = AE-ID | | |
| | Ivica | FIIIIIIVe | rqi = (token-string) | | |
| | | | pc = Serialized representation of updated <policydeletionrules> resource</policydeletionrules> | | |
| 3 | | IOP Check | Check if possible that the <policydeletionrules> resource is updated in Registrar CSE</policydeletionrules> | | |
| | | | rsc = 2004 (Updated) | | |
| 4 | Mag | PRO Check | rqi = (token-string) same as received in request message | | |
| | ivica | Finnuve | pc = Serialized representation of <policydeletionrules> resource</policydeletionrules> | | |
| 5 | | IOP Check | AE indicates successful operation | | |
| IOP \ | /erdict | | | | |
| PRO Verdict | | | | | |

| | | | Interoperability Test Description |
|-------------|----------|------------------------|--|
| Identifier: | | | TD_M2M_NH_149 |
| Objective: | | | AE removes policyDeletionRules via a <policydeletionrules> Delete Request</policydeletionrules> |
| Confi | guration | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.21 |
| | | | oneM2M TS-0004 [2], clause 7.4.32.2.4 |
| | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a <notificationtargetpolicy> on Registrar CSE</notificationtargetpolicy> |
| | | | AE has created a <policydeletionrules> as a child of <notificationtargetpolicy></notificationtargetpolicy></policydeletionrules> |
| | | | on Registrar CSE |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a policyDeletionRules Delete Request |
| | | PRO Check Primitive | • op = 4 (Delete) |
| | | | to = {CSEBaseName}/URI of <policydeletionrules> resource</policydeletionrules> |
| 2 | Maa | | • fr = AE-ID |
| | Ivica | | rqi = (token-string) |
| | | | • pc = empty |
| | | | • rsc = 2002 (DELETED) |
| 3 | Mag | PRO Check | rgi = (token-string) same as received in request message |
| | ivica | Primuve | • pc = empty |
| 4 | | | Check if possible that the <notificationtargetpolicy> resource has been removed in</notificationtargetpolicy> |
| | | IOP Check | registrar CSE |
| 5 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO ' | Verdict | | |

8.8.4.4 PolicyDeletionRules Delete

8.8.5 CrossResourceSubscription management

8.8.5.1 CrossResourceSubscription Create

| | | | Interoperability Test Description |
|------------|---------|------------------|---|
| Idanti | fior | | |
| | | | |
| Objective: | | | AE creates a crossResourceSubscription resource in registrar CSE via a |
| | | | crossResourceSubscription Create Request |
| Config | guratio | n: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.22 |
| | | | oneM2M TS-0004 [2], clause 7.4.58.2.1 |
| | | | |
| Pre-te | st conc | litions: | AE has created an application resource <ae> on registrar CSE</ae> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| | | Stimulus | AE sends a request to create a <crossresourcesubscription> where</crossresourcesubscription> |
| 1 | | | regularResourcesAsTarget = AE-ID |
| | | | • op = 1 (Create) |
| | | | • to = {CSEBaseName} |
| | | PPO Chock | |
| 2 | Mee | Primitivo | = 1 - A - 1D |
| | IVICa | Finnuve | • Idi = (token-sting) |
| | | | • ty = 48 (crossResourceSubscription) |
| | | | pc = Serialized representation of <crossresourcesubscription> resource</crossresourcesubscription> |
| | | | Check if possible that the <crossresourcesubscription> resource is created in registrar</crossresourcesubscription> |
| 2 | | IOP Chock | CSE |
| 3 | | IOF CHECK | Check if possible that the <subscribtion> resource is created as a child of <ae> resource</ae></subscribtion> |
| | | | in registrar CSE |
| | | | • rsc = 2001 (CREATED) |
| 4 | | PRO Check | rgi = (token-string) same as received in request message |
| | ivica | Primitive | • pc = Serialized representation of <crossresourcesubscription> resource</crossresourcesubscription> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | T= |
| PRO | Verdict | | |

| - | | | | |
|-------------|---------------|----------------------------|--|--|
| | | | Interoperability Test Description | |
| Identifier: | | | TD_M2M_NH_151 | |
| Objective: | | | AE retrieves crossResourceSubscription resource from Registrar CSE | |
| Confi | guratior | າ: | M2M_CFG_01 | |
| References: | | | ETSI TS 118 101 [1]. clause 10.2.10.23 | |
| | | | oneM2M TS-0004 [2], clause 7.4.58.2.2 | |
| | | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> | |
| | | | AE has created a <crossresourcesubscription> on Registrar CSE</crossresourcesubscription> | |
| | Test Sequence | | | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE is requested to send a Retrieve Request for a <crossresourcesubscription></crossresourcesubscription> | |
| | | | • op = 2 (Retrieve) | |
| | Мса | PRO Check Ica Primitive | to = {CSEBaseName}/URI of <crossresourcesubscription> resource</crossresourcesubscription> | |
| 2 | | | • fr = AE-ID | |
| | | | • rqi = (token-string) | |
| | | | • pc = empty | |
| - | | | • rsc = 2000 (OK) | |
| 3 | N 4 | PRO Check | rgi = (token-string) same as received in request message | |
| | ivica | Primitive | • pc = Serialized representation of <crossresourcesubscription> resource</crossresourcesubscription> | |
| 4 | | IOP Check | AE indicates successful operation | |
| IOP \ | /erdict | | | |
| PRO | Verdict | | | |

8.8.5.2 CrossResourceSubscription Retrieve

8.8.5.3 CrossResourceSubscription Update

| | | | Interoperability Test Description |
|------------|----------|------------------------|---|
| Identi | fier: | | TD_M2M_NH_152 |
| Objective: | | | AE updates information about a crossResourceSubscription via |
| | | | <crossresourcesubscription> Update Request</crossresourcesubscription> |
| Confi | guration | า: | M2M_CFG_01 |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.24 |
| | | | oneM2M TS-0004 [2], clause 7.4.58.2.3 |
| | | | |
| Pre-te | est cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a <crossresourcesubscription> on Registrar CSE</crossresourcesubscription> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE is requested to send a crossResourceSubscription Update Request to update the |
| | | | regularResourcesAsTarget attribute of the resource |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of <crossresourcesubscription> resource</crossresourcesubscription> fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <crossresourcesubscription> resource</crossresourcesubscription> |
| 3 | | IOP Check | Check if possible that the <crossresourcesubscription> resource is updated in Registrar CSE If regularResourcesAsTarget contains new target resources, check if possible that <subscription> resources are created to each new target resource</subscription></crossresourcesubscription> |
| 4 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <crossresourcesubscription> resource</crossresourcesubscription> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO | Verdict | | |

| | | | Interoperability Test Description |
|-------------|----------|-----------|---|
| Identifier: | | | TD_M2M_NH_153 |
| Objective: | | | AE removes crossResourceSubscription via a <crossresourcesubscription> Delete</crossresourcesubscription> |
| - | | | Request |
| Config | guratior | າ: | M2M_CFG_01 |
| Refere | ences: | | ETSI TS 118 101 [1], clause 10.2.10.21 |
| | | | oneM2M TS-0004 [2], clause 7.4.32.2.4 |
| | | | |
| Pre-te | st cond | litions: | AE has created an Application Entity resource <ae> on Registrar CSE</ae> |
| | | | AE has created a <crossresourcesubscription> on Registrar CSE</crossresourcesubscription> |
| | | | Registrar CSE has created <subscription> resources as targets of</subscription> |
| | | | <pre><crossresourcesubscription></crossresourcesubscription></pre> |
| | | | Test Sequence |
| Step | RP | Type | Description |
| 1 | | Stimulus | AE is requested to send a crossResourceSubscription Delete Request |
| | | | • $op = 4$ (Delete) |
| | | | to = {CSEBaseName}/URL of <crossresourcesubscription> resource</crossresourcesubscription> |
| 2 | | PRO Check | • $fr = AF-ID$ |
| 2 | Мса | Primitive | rai – (token-string) |
| | | | pc = empty |
| | | | |
| 2 | | PRO Check | • ISC = 2002 (DELETED) |
| 3 | Мса | Primitive | • rdi = (token-string) same as received in request message |
| | | | • pc = empty |
| | | | Check if possible that the <crossresourcesubscription> resource is deleted in registrar</crossresourcesubscription> |
| 4 | | IOP Check | CSE |
| _ | | | Check if possible that the target <subscription> resources are deleted in registrar CSE</subscription> |
| 5 | | IOP Check | AE indicates successful operation |
| IOP \ | /erdict | | |
| PRO Verdict | | | |

8.8.5.4 CrossResourceSubscription Delete

8.8.5.5 Cross-Resource Notification

| | | | Interoperability Test Description | | |
|-------------|---------------|-----------|--|--|--|
| Identifier: | | | TD_M2M_NH_154 | | |
| Objective: | | | AE receives a notification request from the HOST CSE | | |
| Confi | guration |): | M2M_CFG_10 | | |
| Refer | ences: | | ETSI TS 118 101 [1], clause 10.2.10.26 | | |
| | | | | | |
| Pre-te | est cond | itions: | AE1 has created an application resource <ae> on registrar CSE</ae> | | |
| | | | AE1 has created <crossresourcesubscription> on registrar CSE</crossresourcesubscription> | | |
| | | | AE1 has created a container1 resource <container> on registrar CSE</container> | | |
| | | | AE1 has created a container2 resource <container> on registrar CSE</container> | | |
| | | | AE2 has permissions to UPDATE the container1 and container2 created by AE1 | | |
| | | | Registrar CSE has created <subscription> resources as a child resource of a</subscription> | | |
| | | | container1 and container2 as a target of <crossresourcesubscription> resource</crossresourcesubscription> | | |
| | Test Sequence | | | | |
| Step | RP | Туре | Description | | |
| | | Stimulus | AE2 is requested to send an Update request to the container1 created by AE1. This | | |
| 1 | | | triggers the timer as indicated in timeWindowSize attribute of | | |
| | | | <crossresourcesubscription></crossresourcesubscription> | | |
| | | Stimulus | AE2 is requested to send an Update request to the container2 created by AE1 within the | | |
| 2 | | | time frame indicated in timeWindowSize after the 1 st request. This triggers or causes the | | |
| | | | Registrar CSE to send a notification to AE1 | | |
| | | | • op = 5 (Notify) | | |
| | Check | PRO Check | to = notificationURI of subscription resource | | |
| 3 | Mca | Primitive | from = Registrar CSE-ID | | |
| | wida | 1 minuvo | rqi = (token-string) | | |
| | | | pc = Serialized representation of Notification data object | | |
| 3 | | IOP Check | Check if the notification representation | | |
| | Check | PRO Check | Sent response contains: | | |
| 4 | Mca | | • rsc = 2000 (OK) | | |
| | ivica | | rqi = (token-string) same as received in request message | | |

| Interoperability Test Description | | | |
|-----------------------------------|--|-----------|-------------------------------------|
| 5 | | IOP Check | AE1 indicates notification received |
| IOP Verdict | | | |
| PRO Verdict | | | |

8.9 Modbus Interworking

8.9.1 Modbus Thermometer Device Create

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|--|
| Identifier: | | | TD_M2M_NH_163 |
| Objective: | | | AE1 creates Device Model for Modbus device |
| Configuration: | | | M2M_CFG_10 |
| References: | | | oneM2M TS-0040 [16], clause 6.3 |
| | | | · · · · · |
| Pre-te | st conc | litions: | AE1 is running in Modbus IPE |
| | | | AE1 has created an application resource <ae> on registrar CSE</ae> |
| | | | Test Sequence |
| Step | RP | Туре | Description |
| 1 | | Stimulus | AE1 sends a request to create a <flexcontainer> resource for Modbus deviceThermometer</flexcontainer> |
| 2 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource</ae1> fr = AE1-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition</flexcontainer> |
| 3 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> |
| 4 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> |
| 5 | | IOP Check | AE indicates successful operation |
| 6 | | Stimulus | AE1 sends a request to create a <flexcontainer> for temperature</flexcontainer> |
| 7 | Мса | PRO Check Primitive | op = 1 (Create) to = {CSEBaseName}/URI of <ae1> resource/resource name of Modbus deviceLight</ae1> fr = AE1-ID rqi = (token-string) ty = 28 (flexContainer) pc = Serialized representation of <flexcontainer> resource with proper containerDefinition and nodnProperties</flexcontainer> |
| 8 | | IOP Check | Check if possible that the <flexcontainer> resource is created in registrar CSE</flexcontainer> |
| 9 | Мса | PRO Check Primitive | rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> |
| 10 | | IOP Check | AE indicates successful operation |
| No | ote | Optional: Repea | at steps 5-10 for battery Module |
| IOP V | /erdict | | |
| PRO \ | /erdict | | |

8.9.2 Retrieve data from a Modbus Thermometer device

| | Interoperability Test Description | | | |
|----------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_164 | |
| Objective: | | | Modbus IPE reads data from Modbus device and updates Registrar CSE with the read data | |
| Configuration: | | | M2M CFG 10 | |
| Refer | ences: | | oneM2M TS-0040 [16], clause 6.5.1 | |
| | | | | |
| Pre-te | st cond | litions: | AE1 is running in Modbus IPE | |
| | | | AE1 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE1 has created a <flexcontainer> for deviceThermometer</flexcontainer> | |
| | | | AE1 has created a <flexcontainer> for temperature as a child of</flexcontainer> | |
| | | | deviceThermometer | |
| | | | AE2 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE2 has created a <subscription> resource as a child of temperature</subscription> | |
| | | | Test Sequence | |
| Step | RP | Type | Description | |
| 1 | | Stimulus | AE1 sends a request to retrieve a <flexcontainer> resource for temperature</flexcontainer> | |
| | | | • $op = 2$ (Retrieve) | |
| _ | | PRO Check | to = {CSEBaseName}/URL of <devicethermometer> resource/ temperature</devicethermometer> | |
| 2 | Мса | Primitive | • $fr = AF1-ID$ | |
| | | | • $rai = (token-string)$ | |
| | | PRO Check | nc – Serialized representation of <flexcontainers li="" resource<=""> </flexcontainers> | |
| 3 | Mca | Primitive | • $rsc = 2000 (OK)$ | |
| 4 | Mida | IOP Check | AF1 indicates successful operation | |
| 5 | | Stimulus | Modbus IPE sends a request(s) to retrieve data from Modbus Thermometer device | |
| 6 | | IOP Check | Check if possible that Modbus IPE has successfully retrieved data from Modbus device | |
| 7 | | Stimulus | AF1 sends a request to update a <flexcontainer> resource for deviceThermometer</flexcontainer> | |
| - | | Otimatas | • on = 3 (Undate) | |
| | | | to = {CSEBaseName}/LIBL of deviceThermometer/temperature | |
| 8 | Мса | PRO Check Primitive | • $fr = \Delta F1 - ID$ | |
| Ũ | | | • $rai = (token-string)$ | |
| | | | nc = Serialized representation of updated <flexcontainer> resource</flexcontainer> | |
| | | | rec = 2004 (Lipdated) | |
| ٩ | Mca | PRO Check | rai – (token-string) some as received in request message | |
| 5 | Inica | Primitive | ng - Serialized representation of <flexcontainers li="" resource<=""> </flexcontainers> | |
| | | | Check if possible that the < flexContainer > resource for temperature is undated in | |
| 10 | | IOP Check | Registrar CSE. Registrar CSE sends a notification to AF2 | |
| | | | $o_{n} = 5 \text{ (Notify)}$ | |
| | | | • $t_0 = \Delta F_2 - ID$ | |
| 11 | | PRO Check | • from - Registrar CSF-ID | |
| | Мса | Primitive | roi – (token-string) | |
| | | | nc – Serialized representation of Notification data object | |
| | | | ΦE2 responds to notification | |
| 10 | Mca | PRO Check | $r_{\rm EC} = 2000 (OK)$ | |
| 12 | ivica | Primitive | rai - (token-string) same as received in request message | |
| 13 | | IOP Check | • Iqi – (loken-stillig) same as received in request message | |
| | /ordict | IOF CHECK | | |
| | | | | |
| | v GI UIGL | 1 | | |

8.9.3 Write data to a Modbus Thermometer device

| | Interoperability Test Description | | | |
|-------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_165 | |
| Objective: | | | AE writes data into a Modbus device by updating <flexcontainer> resource in Registrar CSE</flexcontainer> | |
| Confi | guration | າ: | M2M CFG 10 | |
| Refer | ences: | | oneM2M TS-0040 [16], clause 6.5.2 | |
| | | | | |
| Pre-te | st cond | litions: | AE1 is running in Modbus IPE | |
| | | | AE1 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE1 has created a <flexcontainer> for deviceThermometer</flexcontainer> | |
| | | | AE1 has created a <flexcontainer> for temperature as a child of</flexcontainer> | |
| | | | deviceThermometer | |
| | | | AE2 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE2 has created a <subscription> resource as a child of temperature</subscription> | |
| | | | (notificationEventType = Blocking_Update) | |
| | | 1 | Test Sequence | |
| Step | RP | Туре | Description | |
| 1 | | Stimulus | AE2 is requested to send a flexContainer Update Request to update the any customAttribute of the resource | |
| | | | • op = 3 (Update) | |
| | | PRO Check Primitive | to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> | |
| 2 | Мса | | • fr = AE-ID | |
| | | | rqi = (token-string) | |
| | | | pc = Serialized representation of updated <flexcontainer> resource</flexcontainer> | |
| 3 | | IOP Check | Check that Registrar CSE sent a notification to AE1 | |
| | | PRO Check Primitive | • op = 5 (Notify) | |
| | | | • to = AE1-ID | |
| 4 | Мса | | from = Registrar CSE-ID | |
| | | | • rqi = (token-string) | |
| | | | pc = Serialized representation of Notification data object | |
| 5 | | Stimulus | Modbus IPE sends a request(s) to write data to Modbus Thermometer device | |
| 6 | | IOP Check | Check if possible that Modbus IPE has successfully written data to Modbus device | |
| 7 | | Stimulus | AE1 sends a response to notification to Registrar CSE | |
| | | PRO Check | Sent response contains: | |
| 8 | Mca | Primitive | • rsc = 2000 (OK) | |
| | | 1 1111111110 | rqi = (token-string) same as received in request message | |
| | | | Registrar CSE sends a response to AE2 | |
| 9 | Мса | PRO Check Primitive | • rsc = 2004 (Updated) | |
| | | | rqi = (token-string) same as received in request message | |
| | | | pc = Serialized representation of <flexcontainer> resource</flexcontainer> | |
| 10 | | IOP Check | AE2 indicates successful operation | |
| IOP \ | IOP Verdict | | | |
| PRO ' | Verdict | | | |

8.10 NoDN Interworking

8.10.1 Retrieve data from a NoDN device

| Interoperability Test Description | | | |
|-----------------------------------|---------|------------------------|--|
| Identifier: | | | TD_M2M_NH_166 |
| Objective: | | | NoDN IPE reads data from a NoDN device and updates Registrar CSE with the read data |
| Configuration: | | | M2M CFG 10 |
| Refere | ences: | | |
| | | | |
| Pre-test conditions: | | | AE1 is running in NoDN IPE AE1 has created an application resource <ae> on registrar CSE</ae> AE1 has created a <flexcontainer> representing NoDN DeviceClass</flexcontainer> |
| | | | AE1 has created a <flexcontainer> for the ModuleClass as a child of the DeviceClass representing the NoDN device</flexcontainer> AE2 has created an application resource <ae> on registrar CSE</ae> AE2 has created a <subscription> resource as a child of the ModuleClass</subscription> |
| | | | Test Sequence |
| Step | RP | Type | Description |
| 1 | | Stimulus | AE1 sends a request to retrieve a <flexcontainer> resource for the ModuleClass</flexcontainer> |
| 2 | Мса | PRO Check Primitive | op = 2 (Retrieve) to = {CSEBaseName}/URI of ModuleClass fr = AE1-ID rqi = (token-string) |
| 3 | Мса | PRO Check Primitive | pc = Serialized representation of <flexcontainer> resource</flexcontainer> rsc = 2000 (OK) |
| 4 | | IOP Check | AE1 indicates successful operation |
| 5 | | Stimulus | NoDN IPE retrieves data from NoDN device |
| 6 | | IOP Check | Check if possible that NoDN IPE has successfully retrieved data from NoDN device |
| 7 | | Stimulus | AE1 sends a request to update a <flexcontainer> resource for the ModuleClass</flexcontainer> |
| 8 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of the ModuleClass fr = AE1-ID rqi = (token-string) pc = Serialized representation of the updated ModuleClass |
| 9 | Мса | PRO Check Primitive | rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <flexcontainer> resource</flexcontainer> |
| 10 | | IOP Check | Check if possible that the <flexcontainer> resource for the ModuleClass is updated in Registrar CSE. Registrar CSE sends a notification to AE2</flexcontainer> |
| 11 | Мса | PRO Check Primitive | op = 5 (Notify) to = AE2-ID from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notification data object |
| 12 | Мса | PRO Check Primitive | AE2 responds to notification • rsc = 2000 (OK) • rqi = (token-string) same as received in request message |
| 13 | | IOP Check | AE2 indicates notification received |
| IOP V | /erdict | | |
| IPRO V | Verdict | | |

8.10.2 Write data to a NoDN device

| | Interoperability Test Description | | | |
|----------------------|-----------------------------------|------------------------|---|--|
| Identifier: | | | TD_M2M_NH_167 | |
| Objective: | | | AE writes data into a NoDN device by updating <flexcontainer> resource in Registrar CSE</flexcontainer> | |
| Confi | guration | າ: | M2M CFG 10 | |
| Refere | ences: | | | |
| | | | | |
| Pre-test conditions: | | | AE1 is running in NoDN IPE AE1 has created an application resource <ae> on registrar CSE</ae> AE1 has created a <flexcontainer> representing the NoDN DeviceClass</flexcontainer> | |
| | | | AE1 has created a <flexcontainer> for the ModuleClass as a child of the Device Class representing the NaDN device</flexcontainer> | |
| | | | Device Liass representing the NODN device | |
| | | | AE2 has created an application resource <ae> on registrar CSE</ae> | |
| | | | AE2 has created a <subscription> resource as a child of the ModuleClass (notificationEventType = Blocking, Undate)</subscription> | |
| | | | | |
| Sten | RP | Type | Description | |
| otep | | Stimulus | AF2 is requested to send a flexContainer Undate Request to undate any customAttribute | |
| 1 | | Stimulus | of the ModuleClass | |
| 2 | Мса | PRO Check Primitive | op = 3 (Update) to = {CSEBaseName}/URI of the ModuleClass fr = AE-ID rqi = (token-string) pc = Serialized representation of the updated ModuleClass | |
| 3 | | IOP Check | Check that Registrar CSE sent a notification to AE1 | |
| 4 | Мса | PRO Check Primitive | op = 5 (Notify) to = AE1-ID from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notification data object | |
| 5 | | Stimulus | NoDN IPE sends a request(s) to write data to NoDN device | |
| 6 | | IOP Check | Check if possible that NoDN IPE has successfully written data to NoDN device | |
| 7 | | Stimulus | AE1 sends a response to notification to Registrar CSE | |
| 8 | Мса | PRO Check Primitive | Sent response contains: rsc = 2000 (OK) rqi = (token-string) same as received in request message | |
| 9 | Мса | PRO Check Primitive | Registrar CSE sends a response to AE2 rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of the ModuleClass | |
| 10 | | IOP Check | AE2 indicates successful operation | |
| IOP V | /erdict | | | |
| PRO \ | /erdict | | | |

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History

| Document history | | | |
|------------------|----------------|-------------|--|
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