

TS-M2M-0013v2.3.2

oneM2M 技術仕様書 相互接続テスト

oneM2M Technical Specification Interoperability Testing

2018年5月11日制定

-般社団法人 情報通信技術委員会

THE TELECOMMUNICATION TECHNOLOGY COMMITTEE



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oneM2M 技術仕様書ー相互接続テスト [oneM2M Technical Specification - Interoperability Testing]

<参考> [Remarks]

1. 英文記述の適用レベル [Application level of English description]

適用レベル [Application level]: E2

本標準の本文、付属資料および付録の文章および図に英文記述を含んでいる。

[English description is included in the text and figures of main body, annexes and appendices.]

2. 国際勧告等の関連 [Relationship with international recommendations and standards]

本標準は、oneM2M で承認された Technical Specification 0013V2.3.2 に準拠している。

[This standard is standardized based on the Technical Specification 0013 (V2.3.2) approved by oneM2M.]

3. 上記国際勧告等に対する追加項目等 [Departures from international recommendations]

原標準に対する変更項目 [Changes to original standard]

原標準が参照する標準のうち、TTC 標準に置き換える項目。

[Standards referred to in the original standard, which are replaced by TTC standards.]

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5. 作成専門委員会 [Working Group]

oneM2M 専門委員会 [oneM2M Working Group]



ONEM2M TECHNICAL SPECIFICATION			
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Document Name:	Interoperability Testing		
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Abstract:	The specification address the testing of the primitives on the oneM2M interfaces as specified in TS-0001 [1] and TS-0004 [2]. The purpose of the interoperability testing is to prove end-to-end functionality between Application Entities and Common Service Entities over the Mca and Mcc reference points		

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About oneM2M

The purpose and goal of oneM2M is to develop technical specifications which address the need for a common M2M Service Layer that can be readily embedded within various hardware and software, and relied upon to connect the myriad of devices in the field with M2M application servers worldwide.

More information about one M2M may be found at: http://www.oneM2M.org

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1 Scope

The present document specifies Interoperability Test Descriptions (TDs) for the oneM2M Primitives as specified in oneM2M TS-0001 [1], oneM2M TS-0004 [2], the bindings oneM2M TS-0008 [3], oneM2M TS-0009 [4] and oneM2M TS-0010 [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.

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

[1]	oneM2M TS-0001: "Functional Architecture- Release 2".
[2]	oneM2M TS-0004 "Service Layer Core protocol Specification - Release 2".
[3]	oneM2M TS-0008: "CoAP Protocol Binding Release 2".
[4]	oneM2M TS-0009: "HTTP Protocol Binding - Release 2".
[5]	oneM2M TS-001: "MQTT Protocol Binding - Release 2".
[6]	oneM2M TS-0015: "Testing Framework".
[7]	oneM2M TS-0011: "Common Terminology".
[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]	oneM2M TS-0005: "Management Enablement (OMA) - Release 2".
[11]	oneM2M TS-0006: "Management Enablement (BBF) - Release 2".
[12]	oneM2M TS-0003: "Security Solutions - Release 2".
[13]	oneM2M TS-0034: "Semantics Support - Release 2".

2.2 Informative 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.

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 http://www.onem2m.org/images/files/oneM2M-Drafting-Rules.pdf.

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

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in oneM2M TS-0011 [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

oneM2M TS-0011 [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

registree: AE or CSE that registers with another CSE

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

resource: uniquely addressable entity in oneM2M architecture

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

3.2 Abbreviations

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

ACP Access Control Policy AE Application Entity

AE-ID Application Entity Identifier
APP-ID Application Identifier
BBF BroadBand Forum
CFG Configuration

CoAP Constrained Application Protocol

CSE Common Services Entity

CSE-ID Common Service Entity Identifier

DM Device Management

DTLS Datagram Transport Layer Security

DUT Device Under Test

FQDN Fully Qualified Domain Name HTTP HyperText Transfer Protocol

IN Infrastructure Node

IN-CSE CSE which resides in the Infrastructure Node

IOP Interoperability IP Internet Protocol

JSON JavaScript Object Notation

LWM2M Lightweight M2M M2M Machine to Machine MA Mandatory Announced

Mca Reference Point for M2M Communication with AE Mcc Reference Point for M2M Communication with CSE

MH Multi Hop

MO Management Object

MQTT Message Queuing Telemetry Transport

NB Non-Blocking

NH No Hop

OMA Open Mobile Alliance

PRO Protocol

PSK Pre-Shared Key

RFC Request for Comments

RP Reference Point

RPC Remote Procedure Calls

RQI Request-ID
SE Security
SH Single Hop
SP Service Provider
SUT System Under Test

TCP Transmission Control Protocol

TD Test Description

TLS Transport Layer Security
UDP User Datagram Protocol
URI Uniform Resource Identifier
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 oneM2M TS-0015: Testing framework [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 1.

Table 1: Interoperability test description

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	
	TP(s) 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		
	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
	SH	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 prequisites, 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 (oneM2M TS-0008 [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:

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

extended by a port identifier.

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.
- <ID> represents an AE-ID or CSE-ID in MQTT Topic names.

The value will be given at an interoperability test event.

In oneM2M TS-0010 [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 version="1.0" encoding="UTF-8"?>
XML payload
                   <m2m:req xmlns:m2m="http://www.onem2m.org/xml/protocols"
example for
               xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
MQTT binding
               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>
                           <cnt>
                               <lbl>SmartMeter</lbl>
                               <et>20141003T112033</et>
                           </cnt>
                       </pc>
               </m2m:req>
Abstracted
               op = 1
               to = CSE1Base
payload
               fr = /CSE1/C AE01
example for
               rqi = 3001
MQTT binding
               ty = 3
               name = cont1
               rti.rt = 3
               pc.cnt.lbl = SmartMeter
               pc.cnt.et = 20141003T112033
Abstracted
               op = 1
               to = <CSEBase>
payload
               fr = \langle From \rangle
example for
               rqi = <Request ID>
MQTT binding
               ty = 3
adopting the
               name = <Name>
payload
               rti.rt = 3
convention
               pc = <Content>
```

6 Test Description Summary

6.1 Tests list

Nb	Procedure/Resource	TD ID	TD Description
1	CSEBase Management	TD_M2M_NH_01	AE retrieves the CSEBase resource
2	RemoteCSE		Registree CSE registers to Registrar CSE
3	1	TD_M2M_NH_03	Registree CSE retrieves RemoteCSE from Registrar CSE
4	1	TD_M2M_NH_04	Registree CSE updates RemoteCSE from Registrar CSE
5	1	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	1	TD_M2M_NH_07	AE retrieves <ae> resource via an AE Retrieve Request</ae>
8	1	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 Create Request
11		TD_M2M_NH_11	AE retrieves information of a container resource via a container Retrieve Request
12		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
14	ContentInstance	TD_M2M_NH_14	AE adds a contentInstance resource <contentinstance> to a</contentinstance>
			specific container in Registrar CSE via a contentInstance Create
			Request and the registrar CSE updates the parent <container> resource with stateTag, and currentNrOfInstances, CurrentByteSize</container>
			attributes correspondingly
15	†	TD_M2M_NH_15	AE retrieves information of a contentInstance resource via a
'			contentInstance Retrieve Request
16	1	TD_M2M_NH_17	AE deletes contentInstance resource via a Delete Request and the
			registrar CSE updates the parent <container> resource with</container>
			currentNrOfInstances, and CurrentByteSize attribute
]		correspondingly
17		TD_M2M_NH_49	AE deletes a <latest> resource in a <container> and the Registrar</container></latest>
			CSE points a latest <contentinstance> among the existing</contentinstance>
	4		contentInstances to the <latest> resource of the <container></container></latest>
18		TD_M2M_NH_50	AE deletes a <oldest> resource in a <container> resource and the</container></oldest>
			Registrar CSE points an oldest <contentinstance> among the</contentinstance>
			existing contentInstances to the <oldest> resource of the <container></container></oldest>
19	1	TD_M2M_NH_51	AE sends a <contentinstance> CREATE request to a <container></container></contentinstance>
13		I D_WZW_WI _ST	which contains attribute <i>currentNrOfInstances</i> whose value equals
			to that of maxNrOfInstances and Registrar CSE deletes the oldest
			<contentinstance> from the parent <container> and then creates</container></contentinstance>
			the requested <contentinstance> resource</contentinstance>
20		TD_M2M_NH_71	AE retrieves a <latest> resource of a <container> and the Registrar</container></latest>
			CSE points a latest <contentinstance> among the existing</contentinstance>
	1		contentInstances to the <latest> resource of the <container></container></latest>
21		TD_M2M_NH_72	AE retrieves a <oldest> resource of a <container> and the Registrar</container></oldest>
			CSE points a oldest <contentinstance> among the existing</contentinstance>
22	Diagovery	TD MOM NUL 40	contentInstances to the <oldest> resource of the <container></container></oldest>
22	Discovery	TD_M2M_NH_18	AE discovers resources residing in Registrar CSE
23		TD_M2M_NH_19	AE discovers accessible resources residing in Registrar CSE using the label filter criteria
24	†	TD_M2M_NH_20	AE discovers accessible resources residing in Registrar CSE
		. D_IVIZIVI_IVI I_ZU	limiting the number of matching resources to the specified value.
25	1	TD_M2M_NH_21	AE discovers accessible resources residing in Registrar CSE using
_			multiple Filter Criteria
26	1	TD_M2M_NH_58	AE discovers accessible resources residing in Registrar CSE using
			the level filter criteria value set to 1
27		TD_M2M_NH_59	AE discovers accessible resources residing in Registrar CSE using
]		the level filter criteria value set to 2
28		TD_M2M_NH_60	AE1 discovers accessible resources residing in Registrar CSE

Nb	Procedure/Resource	TD ID	TD Description
			using the level filter criteria value set to 3
29		TD_M2M_NH_61	AE discovers accessible resources residing in Registrar CSE using
			the offset filter criteria value set to 3
30		TD_M2M_NH_62	AE discovers all the accessible resources residing in Registrar CSE
31	Subscription	TD_M2M_NH_22	using the offset filter criteria AE creates a subscription to Application Entity resource via
31	Subscription	I D_IVIZIVI_IVI I_ZZ	subscription Create Request
32	•	TD_M2M_NH_23	AE retrieves information about a subscription via subscription
			Retrieve Request such as expirationTime, labels, etc.
33		TD_M2M_NH_24	AE updates information about a subscription via subscription
			Retrieve Request
34	A a a a a C a m tra l Dalia v		AE cancels subscription via an subscription Delete Request
35 36	AccessControlPolicy		AE creates an accessControlPolicy resource AE retrieves accessControlPolicy resource
37	-		AE updates attribute in accessControlPolicy resource
38	-		AE deletes accessControlPolicy resource
39	-		AE delete request is rejected due to accessControlPolicy
40			AE delete request is rejected due to accessControlPolicy
			(accessControlOriginators)
41			AE delete request is allowed due to accessControlPolicy
42	Group		AE creates a group resource
43	_		AE retrieves group resource
44	4		AE updates attribute in group resource
45	Node		AE deletes group resource
46 47	Node		AE creates a node resource AE retrieves node resource
48	-		AE updates attribute in node resource
49	1		AE deletes node resource
50	PollingChannel		AE creates a <pollingchannel> resource in registrar CSE via a</pollingchannel>
			Create Request
51		TD_M2M_NH_40	AE retrieves information of a pollingChannel resource via a Retrieve Request
52	1	TD_M2M_NH_41	AE updates attribute in pollingChannel resource via a Update
			Request
53	1	TD_M2M_NH_42	AE deletes a pollingChannel resource via a Delete Request
54		TD_M2M_NH_43	AE retrieves information of a pollingChannel resource via a Retrieve Request
55	FanoutPoint	TD M2M NH 44	AE creates a <contentinstance> resource in each group member</contentinstance>
56			AE retrieves the <container> resource from in each group member</container>
57	1		AE updates an <container> resource of each member resource</container>
58		TD_M2M_NH_47	AE deletes a <container> of each member</container>
59	Notification		AE receives a notification request from the HOST CSE
60	FlexContainer	TD_M2M_NH_52	AE creates a flexcontainer resource in Registrar CSE via a
	-	TD MOM NUL 50	flexcontainer Create Request
61			AE retrieves information of a flexContainer resource via a flexContainer Retrieve Request
62		TD_M2M_NH_54	AE updates attribute in application resource via a flexContainer Update Request
63		TD_M2M_NH_55	AE deletes a specific container resource via a container Delete Request
64		TD_M2M_NH_56	AE receives a notification request on flexContainer update from the
65	1	TD_M2M_NH_57	HOST CSE AE discovers accessible resources residing in Registrar CSE using
0.5		TD_IMZIM_INT_57	attribute filter criteria which has a customAttribute name and value
66	External Management	TD_M2M_NH_63	assigned to it. AE creates a mgmtCmd resource
67	Operations		AE retrieves mgmtCmd resource
68			AE updates attribute (not with 'true' in execEnable attribute) in
69		TD_M2M_NH_66	mgmtCmd resource AE updates attribute (with 'true' in execEnable attribute) in
	-	TD MCM 1": 5=	mgmtCmd resource
70	-	TD_M2M_NH_67	AE deletes mgmtCmd resource
71 72	-		AE retrieves execInstance resource AE updates attribute 'execDisable' to true in execInstance resource
1'2		D_INIZINI_INU_09	to cancel pending management command.
	1	<u> </u>	The state of the s

Nb	Procedure/Resource	TD ID	TD Description
73			AE deletes execlnstance resource
74	SemanticDescriptor Management		AE creates a SemanticDescriptor resource in Registrar CSE via a SemanticDescriptor Create Request
75		TD_M2M_NH_76	AE retrieves information of a semanticDescriptor resource via a semanticDescriptor Retrieve Request
76		TD_M2M_NH_77	AE updates attribute in <semanticdescriptor> resource via a semanticDescriptor Update Request</semanticdescriptor>
77		TD_M2M_NH_78	AE deletes SemanticDescriptor resource via a SemanticDescriptor Delete Request
78	Semantic Resource Discovery	TD_M2M_NH_79	AE discovers accessible resources residing in Registrar CSE using the semanticFilter filter criteria
79	Synchronous request	TD_M2M_NB_01	AE creates a container resource using non-blocking synchronous request in registrar CSE
80		TD_M2M_NB_02	AE retrieves a Container resource using non-blocking synchronous request in registrar CSE
81		TD_M2M_NB_03	AE updates a Container resource using non-blocking synchronous request in registrar CSE
82		TD_M2M_NB_04	AE deletes a Container resource using non-blocking synchronous request
83	Asynchronous request	TD_M2M_NB_05	AE creates a container resource using non-blocking asynchronous request
84		TD_M2M_NB_06	AE retrieves a Container resource using non-blocking asynchronous request
85		TD_M2M_NB_07	AE updates a Container resource using non-blocking asynchronous request
86		TD_M2M_NB_08	AE deletes a Container resource using non-blocking asynchronous request
87	Retargeting	TD_M2M_SH_01	AE creates a remote <resource> resource</resource>
88		TD_M2M_SH_02	AE retrieves a remote <resource> resource</resource>
89			AE updates a remote <resource> resource</resource>
90		TD_M2M_SH_04	AE delete a remote <resource> resource</resource>
91	Discovery	TD_M2M_SH_09	AE discovers accessible resources residing in the remote Hosting CSE using multiple Filter Criteria
92	Unauthorized operation	TD_M2M_SH_10	AE delete request is rejected after access rights verification using retargeting.
93	Notification	TD_M2M_SH_11	AE receives a notification request from the remote hosting CSE
94	mgmtObj	TD_M2M_SH_05	AE creates a <mgmtobj> resource</mgmtobj>
95			AE updates a <mgmtobj> resource</mgmtobj>
96		TD_M2M_SH_07	AE retrieves a <mgmtobj> resource</mgmtobj>
97			AE deletes a <mgmtobj> resource</mgmtobj>
	Announcement		AE1 announces itself to CSE2
99		TD_M2M_SH_13	AE1 announces a child container to CSE2
100			AE1 announces an Optional Announce attribute to CSE2
101 102			AE2 retrieves an Announced Resource AE2 retrieves the original resource representation of an announced
103	fanOut	TD_M2M_SH_17	AE creates a <contentinstance> resource in each group member, where some memberIDs are on a remoteCSE</contentinstance>
104		TD_M2M_SH_18	AE retrieves a <contentinstance> resource from each group member, where some memberIDs are on a remoteCSE</contentinstance>
105		TD_M2M_SH_19	AE updates a <container> resource in each group member, where some memberIDs are on a remoteCSE</container>
106		TD_M2M_SH_20	AE deletes a <contentinstance> resource from each group member, where some memberIDs are on a remoteCSE</contentinstance>
107	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.

7 Configuration

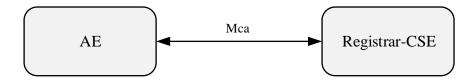
7.1 Test Configuration

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



7.1.1.2 M2M_CFG_02

oneM2M entities model



7.1.2 Single hop

7.1.2.1 M2M_CFG_03

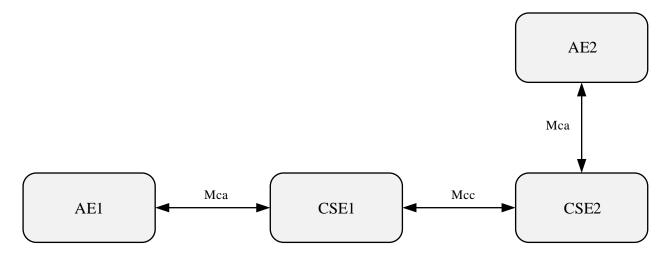
The AE manages resources on the remote CSE

oneM2M entities model



7.1.2.2 M2M_CFG_04

oneM2M entities model



7.1.2.3 M2M CFG 05

oneM2M entities model



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.



7.1.2.5 M2M_CFG_09

This configuration concerns device management using external technologies.

This configuration is mapped to cases including:

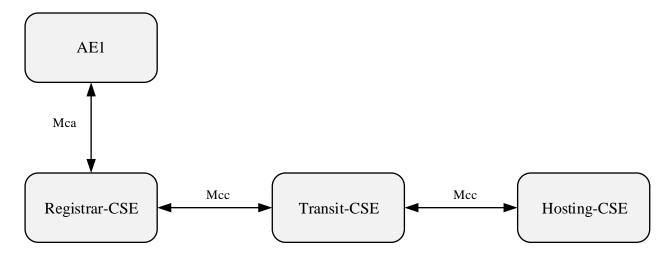
• The AE sends a request addressing <mgmtObj> to IN-CSE. IN-CSE then further acts as a Management Server to send management commands to Managed Entity over the mc interface. The management command is defined in OMA DM, BBF TR069 or LWM2M.



7.1.3 Multi hops

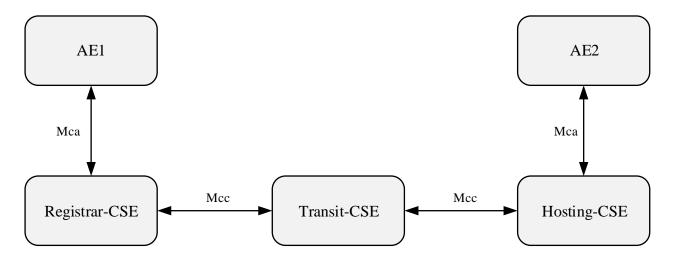
7.1.3.1 M2M_CFG_06

oneM2M entities model



7.1.3.2 M2M_CFG_07

oneM2M entities model



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					
Configuration: M2M_CFG_01			M2M_CFG_01		
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.3.2		
			oneM2M TS-0004 [2], clause 7.3.2		
Pre-te	est cond	litions:	CSEBase resource has been automatically created in CSE		
			Test Sequence		
Step	RP	Type	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 (rgi) = (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 \	/erdict				
PRO'	Verdict				

8.1.2 RemoteCSE Management

8.1.2.1 RemoteCSE Create

			Interoperability Test Description		
Identifier:			TD_M2M_NH_02		
Objective: Registree CSE registers to Registrar CSE			Registree CSE registers to Registrar CSE		
Confi	guration	າ:	M2M_CFG_02		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.2.1		
			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 remote CSE resource has been also created in		
6		IOP Check Registree CSE indicates successful operation.			
IOP \	/erdict				
PRO '	Verdict				

8.1.2.2 remoteCSE Retrieve

	Interoperability Test Description				
Identifier:			TD_M2M_NH_03		
Objec	tive:		Registree CSE retrieves RemoteCSE from Registrar CSE		
Config	guration	1:	M2M_CFG_02		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.2.2		
			oneM2M TS-0004 [2], clause 7.3.3.2.2		
Pre-te	st cond	itions:	 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	Type	Description		
1		Stimulus	Registree CSE is requested to send a RemoteCSE retrieve request to Registrar CSE		
		PRO Check	• op = 2 (Retrieve)		
			to = {CSEBaseName}/{remoteCSEName}		
2	14		fr = Registree CSE-ID		
	Мсс	Primitive	• rqi = (token-string)		
			• pc = empty		
			Registrar CSE sends response containing:		
		PRO Check	• rsc = 2000 (OK)		
3	Мсс	Primitive	 rqi = (token-string) same as received in request message 		
			 pc = Serialized representation of <remotecse> resource</remotecse> 		
4		IOP Check	Registree CSE indicates successful operation		
IOP V	/erdict				
PRO \	PRO Verdict				

remoteCSE Update 8.1.2.3

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_04
Objective:			Registree CSE updates RemoteCSE from Registrar CSE
	guratior	າ:	M2M_CFG_02
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.2.3
			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	Type	Description
1		Stimulus	Registree CSE is requested to send a RemoteCSE update request to Registrar CSE
2	Мсс	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{remoteCSEName} 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>
4	Мсс	PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2004 (UPDATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <remotecse> resource</remotecse>
5		IOP Check	Registree CSE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.1.2.4 remoteCSE Delete

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_05	
Objective:			Registree CSE deletes RemoteCSE from Registrar CSE	
Config	guration	1:	M2M_CFG_02	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.2.4 oneM2M TS-0004 [2], clause 7.3.3.2.4	
Pre-test conditions:		itions:	 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	Type	Description	
1		Stimulus	Registree CSE is requested to send a RemoteCSE delete request to Registrar CSE	
2	Мсс	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{remoteCSEName} fr = Registree CSE-ID rqi = (token-string) pc = empty 	
3	Mcc	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 <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>	
4		IOP Check	Registree CSE indicates successful operation.	
IOP V	erdict/			
PRO \	/erdict			

8.1.3 Application Entity Registration

8.1.3.1 **AE Create**

Interoperability Test Description			
Identifier:			TD_M2M_NH_06
Objective:			AE registers to its registrar CSE via an AE Create Request
Confi	guratior	ո։	M2M_CFG_01
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.1.1
			oneM2M TS-0004 [2], clause 7.3.5.2.1
Pre-te	st cond	litions:	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	Type	Description
1		Stimulus	AE is requested to send a AE Create request to register to the Registrar CSE
2	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>
3		IOP Check	Check if possible that the <ae> resource is created in registrar CSE.</ae>
4	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae>
5		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO'	Verdict		

AE Retrieve 8.1.3.2

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_07		
Objec	tive:		AE retrieves <ae> resource via an AE Retrieve Request</ae>		
Confi	guration	1:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.1.2		
			oneM2M TS-0004 [2], clause 7.3.5.2.2		
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	Type	Description		
1		Stimulus	AE is requested to send a AE retrieve request to Registrar CSE		
			• op = 2 (Retrieve)		
_		PRO Check	to = {CSEBaseName}/{AE}		
2	Mca	Primitive	 fr = AE-ID of request originator 		
			• rqi = (token-string)		
			Registrar CSE sends response containing:		
3		PRO Check	• rsc = 2000 (OK)		
3	Mca	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 \	/erdict				
PRO '	√erdict				

8.1.3.3 AE Update

	Interoperability Test Description				
Identif	fier:		TD M2M NH 08		
Objective:			AE updates attribute in <ae> resource</ae>		
	guration	1:	M2M_CFG_01		
	ences:		oneM2M TS-0001 [1], clause 10.2.1.3		
			oneM2M TS-0004 [2], clause 7.3.5.2.3		
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}</ae> 		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send an AE Update Request		
2	Mca	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{AE} 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>		
4	Mca	PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2004 (UPDATED) • 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	IOP Verdict				
PRO \	/erdict				

AE Delete 8.1.3.4

			Interoperability Test Description
Identifier:			TD_M2M_NH_09
Objec	tive:		AE de-registers by deleting <ae> resource via an AE Delete Request</ae>
Config	guratio	n:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.1.4
			oneM2M TS-0004 [2], clause 7.3.5.2.4
Pre-te	st 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	Type	Description
1		Stimulus	AE is requested to send an AE Delete Request
			• op = 4 (Delete)
		PRO Check	to = {CSEBaseName}/{AE}
2	Maa		• fr = AE-ID
	Mca	Primitive	rqi = (token-string)
			• pc = empty
			Registrar CSE sends response containing:
		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	AE indicates successful operation
IOP V	erdict		
PRO \	/erdict		

Container Management 8.1.4

8.1.4.1 **Container Create**

	Interoperability Test Description			
Identifier:			TD_M2M_NH_10	
Objec	tive:		AE creates a container resource in registrar CSE via a container Create Request	
Config	guration	n:	M2M_CFG_01	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.4.1	
			oneM2M TS-0004 [2], clause 7.3.5.2.1	
Pre-te	st cond	itions:	AE has created an application resource <ae> on registrar CSE</ae>	
	1	Ī	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	Mca	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 \	/erdict			
PRO \	PRO Verdict			

Container Retrieve 8.1.4.2

	Interoperability Test Description				
Identif	fier:		TD_M2M_NH_11		
Objec	tive:		AE retrieves information of a container resource via a container Retrieve Request		
Config	guration):	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.4.2		
			oneM2M TS-0004 [2], clause 7.3.5.2.2		
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	Type	Description		
1		Stimulus	AE is requested to send a Retrieve Request for a <container></container>		
		PRO Check Primitive	op = 2 (Retrieve)		
			 to = {CSEBaseName}/URI of <container> resource</container> 		
2	Mca		• fr = AE-ID		
	ivica		rqi = (token-string)		
			• pc = empty		
		PRO Check	• rsc =2000 (OK)		
3	Mca	Primitive	 rqi = (token-string) same as received in request message 		
	IVICa	Fillillive	 pc = Serialized representation of <container> resource</container> 		
4		IOP Check	AE indicates successful operation		
IOP V	erdict/				
PRO \	/erdict				

Container Update 8.1.4.3

			Interoperability Test Description
Identifier:			TD M2M NH 12
Objective:			AE updates attribute in application resource via a container Update Request
	guration	າ:	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.4.3
			oneM2M TS-0004 [2], clause 7.3.5.2.3
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	Type	Description
1		Stimulus	AE is requested to send a container Update Request to update the lifetime of the
'			resource.
2	Мса	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	Check if possible that the < container > resource is updated in Registrar CSE.
4	Mca	PRO Check Primitive	 rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container>
5		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.1.4.4 **Container Delete**

	Interoperability Test Description			
Identifier:			TD_M2M_NH_13	
Objective:			AE deletes a specific container resource via a container Delete Request	
Config	guration	1:	M2M_CFG_01	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.4.4	
			oneM2M TS-0004 [2], clause 7.3.5.2.4	
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	Type	Description	
1		Stimulus	AE is requested to send a container Delete Request	
2	Mca	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	Mca	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 V	erdict/			
PRO \	/erdict			

8.1.5 ContentInstance Management

ContentInstance Create 8.1.5.1

	Interoperability Test Description				
Identifier:		TD_M2M_NH_14			
Objective	:	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, currentNrOfInstances, and CurrentByteSize attributes correspondingly</container></contentinstance>			
Configura	ation:	M2M_CFG_01			
Reference	es:	oneM2M TS-0001 [1], clause 10.2.19.2 oneM2M TS-0004 [2], clause 7.3.6.2.1			
Pre-test c	onditions:	AE has created an application resource <ae> on registrar CSE AE has created a container resource <container> on registrar CSE Test Sequence</container></ae>			
Step R	P 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 _{Mo}	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 Mo	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	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 Verd	ict Set verdict to perfor message.	ass if IOP check goal is achieved exactly, otherwise verdict fail is set with corresponding			
PRO Verd					

ContentInstance Retrieve 8.1.5.2

			Interoperability Test Description
Identifier:			TD_M2M_NH_15
Objective:			AE retrieves information of a contentInstance resource via a contentInstance Retrieve Request
Confi	guratior	1:	M2M_CFG_01
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.19.3 oneM2M TS-0004 [2], clause 7.3.6.2.2
Pre-test conditions:			AE has created an Application Entity resource <ae> on Registrar CSE AE has created a container resource <container> on Registrar CSE AE has created a contentInstance resource <contentinstance> as child resource of <container> resource</container></contentinstance></container></ae>
Step	RP	Type	Test Sequence Description
1	IXF	Stimulus	AE is requested to send a Retrieve Request for a <contentinstance></contentinstance>
2	PRO Check Mca Primitive		 op = 2 (Retrieve) to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> fr = AE-ID rqi = (token-string)

	Interoperability Test Description		
			• pc = empty
3	Mca	PRO Check Primitive	 rsc =2000 (OK) 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
Identi	fier:		TD_M2M_NH_17
Objective:			AE deletes contentInstance resource via a contentInstance Delete Request and the Registrar CSE updates the parent <container> resource with <i>currentNrOfInstances</i>, and <i>CurrentByteSize</i> attributes correspondingly</container>
Confi	guratio	n:	M2M_CFG_01
Configuration: References:			oneM2M TS-0001 [1], clause 10.2.19.5 oneM2M TS-0004 [2], clause 7.3.6.2.4
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 a contentInstance resource <contentinstance> as child resource of <container> resource</container></contentinstance>
			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 is requested to send a contentInstance Delete Request</container>
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> fr = AE-ID rqi = (token-string) pc = empty
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</i>, <i>and CurrentByteSize</i> attribute correspondingly which is resulted from the successful deletion of child <contentinstance> resource.</contentinstance></container></contentinstance>
4	Mca	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			to pass if both the <contentinstance> is deleted and the Registrar CSE updated tances, and CurrentByteSize attribute. Otherwise, set the verdict to fail with corresponding</contentinstance>
PRO \	Verdict		

8.1.5.4 <latest> ContentInstance Delete

			Interoperability Test Description
Identi	fier:		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>
Confi	guration	ո։	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.22.2 oneM2M TS-0004 [2], clause 7.4.28.2.5
Pre-te	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	Mca	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	Mca	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 resourceID and resourceName attribute value.</latest></container></latest></container></latest></latest>
IOP V	erdict/	Set the verdict t error message.	o pass if IOP check goal is achieved, otherwise set the verdict to fail with corresponding
PRO \	/erdict		

8.1.5.5 <oldest> ContentInstance Delete

			Interespondibility Took Decementary		
Identi	fior:		Interoperability Test Description		
			TD_M2M_NH_50		
Objec	tive:		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>		
	guratior	า:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.22.2		
			oneM2M TS-0004 [2], clause 7.4.28.2.5		
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	Type	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>		
			• op = 4 (Delete)		
		DD0 01 1	 to = {CSEBaseName}/URI of <oldest> resource of a <container></container></oldest> 		
2		PRO Check	• fr = AE-ID		
	Mca	Primitive	• rqi = (token-string)		
			• pc = empty		
			• rsc = 2002 (DELETED)		
		PRO Check	rqi = (token-string) same as received in request message		
3	Mca	Primitive	pc = representation of deleted <oldest> resource of a <container></container></oldest>		
	ivica		pc – representation of deferen coldesty resource of a confidingly		
		1			

	Interoperability Test Description		
4		IOP Check	AE indicates successful DELETE operation of a <oldest> resource and AE sends a RETRIEVE request to <oldest> resource of a <container> to check if the retrieved <oldest> resource in the <container> is different with that one that was retrieved before DELETE request of the <oldest> resource in terms of resourceID and resourceName attribute value and</oldest></container></oldest></container></oldest></oldest>
IOP \	/eraict	Set the verdict t error message.	o pass if IOP check goal is achieved, otherwise set the verdict to fail with corresponding
PRO '	Verdict		

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

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_51
Objective:			AE sends a <contentinstance> CREATE request to a <container> which contains attribute currentNrOfInstances whose value equals to that of maxNrOfInstances 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	guration	า:	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.19.2 oneM2M TS-0004 [2], clause 7.3.6.2.1
Pre-te	st cond	litions:	AE has created an application resource <ae> on registrar CSE AE has created a container resource <container> (where the number of contentInstances equals to the value set in maxNrOfInstance) on registrar CSE Test Sequence</container></ae>
Step	RP	Туре	Description
1		Stimulus	AE sends a RETRIEVE request with resultContent set to 1 (default value) to retrieve the <oldest> contentInstance resource and AE sends a request to create a <contentinstance> resource</contentinstance></oldest>
2	Mca	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID 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>
4	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	AE indicates successful CREATE operation of <contentinstance> and indicates the representation of the recent <oldest> resource in the <container> is different with that of <oldest> resource retrieved at the beginning of test in terms of resourceID and resourceName attribute value</oldest></container></oldest></contentinstance>
	erdict/	Set the verdict t error message.	to pass if IOP check goal is achieved, otherwise set the verdict to fail with corresponding
PRO \	/erdict		

8.1.5.7 < latest > ContentInstance Retrieve

			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	guration	1:	M2M_CFG_01		
	ences:		oneM2M TS-0001 [1], clause 10.2.22.1 oneM2M TS-0004 [2], clause 7.4.27.2.2		
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 multiple contentInstance resources <contentinstance> as child resource of <container> resource</container></contentinstance> 		
			Test Sequence		
Step	RP	Type	Description		
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	Mca	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				

<oldest> ContentInstance Retrieve 8.1.5.8

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_72		
Objec	tive:		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		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.23.1 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	Type	Description		
1		Stimulus	AE is requested to send a Retrieve Request for a <oldest></oldest>		
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource/ol</container> fr = AE-ID rqi = (token-string) pc = empty 		
3	Mca	PRO Check Primitive	 rsc =2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of oldest <contentinstance> resource</contentinstance> 		
4		IOP Check	AE indicates successful operation		

8.1.6 Discovery

Discovery of all resources 8.1.6.1

			Interoperability Test Description
Identif	fier:		TD_M2M_NH_18
Objective:			AE discovers all accessible resources from registrar CSE
Config	guration	n:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.2.3.13
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	Mca	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE-ID rqi = (token-string) fu=1 pc = empty
3	Mca	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 V	erdict/		
PRO \	/erdict		

8.1.6.2 Discovery with label filter criteria

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_19
Objective:			AE discovers accessible resources residing in Registrar CSE using the label filter criteria
Config	guration	ւ :	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.2.3.13
Pre-te	st cond	litions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName} A <container> resource with label "key1" is created on Registrar CSE.</container>
		_	Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a Discovery request in order to discover the <container> resource using the label filter criteria</container>
2	Мса	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE-ID rqi = (token-string) fu=1 lbl=key1 pc = empty
3	Mca	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>
4		IOP Check	AE indicates successful operation

	Interoperability Test Description		
IOP Verdict			
PRO Verdict			

Discovery with limit filter criteria 8.1.6.3

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.			
Configuration:			M2M_CFG_01			
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.6			
			oneM2M TS-0004 [2], clause 7.2.3.13			
Pre-test conditions:			CSEBase resource has been created in registrar CSE with name			
			{CSEBaseName}			
	Test Sequence					
Step	RP	Type	Description			
1		Stimulus	AE is requested to send a Discovery request in order to discover at most 2 resources in			
'			registrar CSE.			
			Sent request contains			
			• op = 2 (Retrieve)			
			to = {CSEBaseName}			
_		PRO Check	• fr = AE-ID			
2	Mca	Primitive	• rqi = (token-string)			
			• fu=1			
			• lim=2			
			• pc = empty			
			Registrar CSE sends response containing:			
	Mca	PRO Check Primitive	• rsc = 2000 (OK)			
			, ,			
_			rqi = (token-string) same as received in request message			
3			• cnst=1			
			• cnot=2			
			 pc = Serialized representation of data object containing the address of the 			
			<container> address</container>			
4		IOP Check	AE indicates successful operation			
IOP Verdict						
PRO Verdict						

8.1.6.4 Discovery with multiple filter criteria

Interoperability Test Description						
Identifier:			TD_M2M_NH_21			
Objective:			AE discovers accessible resources residing in Registrar CSE using multiple Filter Criteria			
Configuration:			M2M_CFG_01			
References:			oneM2M TS-0001 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.2.3.13			
Pre-test conditions:			 Two <container> resources with labels "key1" and "key2" are created in Registrar CSE.</container> 			
			 A <group> resources with labels "key1" and "key2" is created in Registrar CSE.</group> 			
			Test Sequence			
Step	RP	Type	Description			
1		Stimulus	AE is requested to send a Discovery request in order to discover specific resources located in Registrar CSE using multiple filter criteria (label, resource type and limit)			
2	Mca	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE-ID rqi = (token-string) fu=1 Ibl=kev1			

Interoperability Test Description				
			 lbl=key2 ty=3 lim=1 pc = empty 	
3	Mca	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 Verdict				
PRO '	Verdict			

Discovery with level filter criteria 8.1.6.5

Interoperability Test Description					
Identifier:			TD_M2M_NH_58		
Objective:			AE discovers accessible resources residing in Registrar CSE using the level filter criteria value set to 1		
Configurations			M2M_CFG_01		
Configuration: References:			oneM2M TS-0001 [1], clause 10.2.6		
IVEIGI	ciices.		oneM2M TS-0004 [2], clause 7.3.3.14		
OHEWZWITO-0004 [2], Clause 1.3.3.14					
Pre-test conditions:			 <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 Registrar CSE.</container></contentinstance> 		
			Test Sequence		
Step	RP	Type	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		
2	Мса	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE1-ID rqi = (token-string) fu=1 lvl=1 pc = empty		
3	Mca	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 both <ae> resources</ae>		
4		IOP Check	AE1 indicates successful operation		
IOP Verdict					
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	ո։	M2M_CFG_01
References:			oneM2M TS-0001 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.3.3.14
Pre-test conditions:			 <ae1> and <ae2> resources are created in Registrar CSE. A <container> resource is created under both <ae> resources in Registrar CSE.</ae></container></ae2></ae1> A <contentinstance> resource is created under both <container> resources in Registrar CSE.</container></contentinstance>
			Test Sequence
Step	RP	Type	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
2	Mca	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE1-ID rqi = (token-string) fu=1 lvl=2 pc = empty
3	Mca	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 all <ae> and <container> resources</container></ae>
4		IOP Check	AE1 indicates successful operation
	/erdict		
PRO '	Verdict		

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_60
Objective:			AE1 discovers accessible resources residing in Registrar CSE using the level filter criteria value set to 3
Confi	guration	١•	M2M CFG 01
	ences:	<u> </u>	oneM2M TS-0001 [1], clause 10.2.6
IXCICI	ciices.		oneM2M TS-0004 [2], clause 7.3.3.14
			01011211 10 000 1 [2], 010000 1.0.0.11
Pre-test conditions:			 <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	Type	Description
1		Stimulus	AE1 is requested to send a Discovery request in order to discover specific resources located in Registrar CSE using level filter criteria value set to 3
2	Mca	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE1-ID rqi = (token-string) fu=1 lvl=3 pc = empty
3	Mca	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 all <ae>, <container> and <contentinstance>resources</contentinstance></container></ae>
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

Discovery with offset filter criteria 8.1.6.6

			Interoperability Test Description		
Identi	fior:		TD_M2M_NH_61		
Objective:			AE discovers accessible resources residing in Registrar CSE using the offset filter criteria value set to 3		
Confi	guration	n:	M2M_CFG_01		
Configuration: References:			oneM2M TS-0001 [1], clause 10.2.6 oneM2M TS-0004 [2], clause 7.3.3.14		
Pre-test conditions:			 <ae1> and <ae2> resources are created in Registrar CSE. A <container> resource is created under both <ae> resources in Registrar CSE.</ae></container></ae2></ae1> A <contentinstance> resource is created under both <container> resources in Registrar CSE.</container></contentinstance> 		
_		_	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		
2	Мса	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE1-ID rqi = (token-string) fu=1 ofst=3 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 only 3 of the 6 <ae>, <container> and <contentinstance> resources hosted by the Registrar CSE</contentinstance></container></ae>		

	Interoperability Test Description				
4		IOP Check	AE1 indicates successful operation		
IOP Verdict					
PRO Verdict					

			Interoperability Test Description
Identifier:			TD_M2M_NH_62
Objec			AE discovers all the accessible resources residing in Registrar CSE using the offset filter criteria
Configuration:			M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.6
			oneM2M TS-0004 [2], clause 7.3.3.14
Pre-te	st 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	Type	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 attribute value set to 0 (Default value) and limit filter Criteria attribute value set to 2.
			Sent request contains
			• op = 2 (Retrieve)
			• to = {CSEBaseName}
		PRO Check	• fr = AE1-ID
2	Mca	PRO Check Primitive	• rqi = (token-string)
			• fu=1
			• lim=2
			• pc = empty
3		IOP Check	Registrar CSE sends success response to AE1
			Registrar CSE sends response containing:
			• rsc = 2000 (OK)
			 rqi = (token-string) same as received in request message
4	N4	PRO Check	• cnst=1
	Mca	Primitive	• 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
3		101 Officer	limit filter criteria attribute value set to 2
			Sent request contains
			• op = 2 (Retrieve)
			to = {CSEBaseName}
		DDO Charle	• fr = AE1-ID
6	Mca	PRO Check	• rqi = (token-string)
		Primitive	• fu=1
			• ofst=2
			• lim=2
7		IOD Ob a all	• pc = empty
7		IOP Check	Registrar CSE sends success response to AE1
			Registrar CSE sends response containing:
	Мса		 rsc = 2000 (OK) rqi = (token-string) same as received in request message
8		PRO Check Primitive	 rqi = (token-string) same as received in request message cnst=1
			• cnst=1 • cnot=4
			 pc = 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

	Interoperability Test Description				
10	Мса	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE1-ID rqi = (token-string) fu=1 ofst=4 lim=2 pc = empty		
11		IOP Check	Registrar CSE sends success response to AE1		
12	Mca	PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • cnst =2 • pc = Serialized representation of data object containing the address of last 2 resources hosted by Registrar CSE		
13		IOP Check	AE1 indicates successful operation		
IOP \	/erdict				
PRO Verdict					

Subscription Management 8.1.7

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	guratior	າ:	M2M_CFG_01			
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.11.2			
			oneM2M TS-0004 [2], clause 7.3.7.2			
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	Type	Description			
1		Stimulus	AE is requested to send a subscription Create request to the Registrar CSE			
2	Мса	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID 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>			
4	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <subscription> resource</subscription> 			
5		IOP Check	AE indicates successful operation			
IOP \	IOP Verdict					
PRO Verdict						

Subscription Retrieve 8.1.7.2

	Interoperability Test Description				
Identifier:			TD M2M NH 23		
Objective:			AE retrieves subscription resource from Registrar CSE		
	guration	1:	M2M_CFG_01		
	ences:		oneM2M TS-0001 [1], clause 10.2.11.3		
			oneM2M TS-0004 [2], clause 7.3.7.2		
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>		
			AE has created a subscription resource <subscription> on Registrar CSE</subscription>		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a Retrieve Request for a <subscription></subscription>		
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <subscription> resource</subscription> fr = AE-ID rqi = (token-string) pc = empty 		
3	Mca	PRO Check Primitive	 rsc =2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <subscription> resource</subscription> 		
4		IOP Check	AE indicates successful operation		
IOP Verdict					
PRO Verdict					

8.1.7.3 Subscription Update

			Interespondibility Toot Description		
Labora (*)	c :		Interoperability Test Description		
Identifier:			TD_M2M_NH_24		
Objec			AE updates information about a subscription via subscription Update Request		
Config	guratior	n:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.11.4		
			oneM2M TS-0004 [2], clause 7.3.7.2		
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>		
			AE has created a subscription resource <subscription> on Registrar CSE</subscription>		
			Test Sequence		
Step	RP	Туре	Description		
-		Stimulus	AE is requested to send a subscription Update Request to update the lifetime of the		
1			resource.		
		PRO Check Primitive	• op = 3 (Update)		
			 to = {CSEBaseName}/URI of <subscription> resource</subscription> 		
2			• fr = AE-ID		
_	Mca		• rqi = (token-string)		
			. ,		
3		IOP Check	pc = Serialized representation of updated <subscription> resource Charlet if possible that the representation resource is updated in Positive CSE.</subscription>		
3		TOP Check	Check if possible that the <subscription> resource is updated in Registrar CSE.</subscription>		
		PRO Check	• rsc = 2004 (Updated)		
4	Mca	Primitive	 rqi = (token-string) same as received in request message 		
	IVIOU		 pc = Serialized representation of <subscription> resource</subscription> 		
5		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO '	Verdict				

Subscription Delete 8.1.7.4

	Interoperability Test Description				
Identi	fier:		TD M2M NH 25		
Objective:			AE cancels subscription via an subscription Delete Request		
	guration) :	M2M_CFG_01		
	ences:		oneM2M TS-0001 [1], clause 10.2.11.5		
			oneM2M TS-0004 [2], clause 7.3.7.2		
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>		
			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	Mca	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	Mca	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					

accessControlPolicy Management 8.1.8

accessControlPolicy Create 8.1.8.1

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_26		
Objective:			AE creates an accessControlPolicy resource		
Confi	guratior) :	M2M_CFG_01		
References:			1] 10.2.21.1 oneM2M TS-0004 [2], clause 7.3.1.2		
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> 		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send an accessControlPolicy Create Request		
2	Mca	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) ty = 1 (accessControlPolicy) pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> 		
3		IOP Check	Check if possible that the <container> resource is created in registrar CSE.</container>		
4	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) 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				

accessControlPolicy Retrieve 8.1.8.2

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_27		
Objective:			AE retrieves accessControlPolicy resource		
Confi	guration	1:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.21.2		
			oneM2M TS-0004 [2], clause 7.3.1.2		
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}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae> 		
	Test Sequence				
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a accessControlPolicy retrieve request to Registrar CSE		
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty 		
3	Mca	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				

8.1.8.3 accessControlPolicy Update

	Interoperability Test Description			
Identif	fier:		TD_M2M_NH_28	
Objective:			AE updates attribute in accessControlPolicy resource	
Config	guratio	n:	M2M_CFG_01	
Refere			oneM2M TS-0001 [1], clause 10.2.21.3	
			oneM2M TS-0004 [2], clause 7.3.1.2	
Pre-te	st 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> 	
			 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 an accessControlPolicy update request to Registrar CSE	
		PRO Check	• op = 3 (Update)	
			 to = {CSEBaseName}/{AE}/{accessControlPolicyName} 	
2	Mca	Primitive	• fr = AE-ID	
	ivica	Timilave	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</accesscontrolpolicy>	
		101 OHOOK	registrar CSE.	
			Registrar CSE sends response containing:	
4		PRO Check	• rsc = 2004 (UPDATED)	
· ·	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 V				
PR				
Ver	dict			

accessControlPolicy Delete 8.1.8.4

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_29
Objective:			AE deletes accessControlPolicy resource
Confi	guratio	n:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.21.4
			oneM2M TS-0004 [2], clause 7.3.1.2
Pre-te	st 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>
			 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	Mca	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		

Unauthorized operation (Insufficient Access Rights, operations) 8.1.8.5

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_30	
Objective:			AE delete request is rejected due to accessControlPolicy (accessControlOperations)	
Confi	guratior) :	M2M_CFG_01	
Refer	ences:		[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 accessContorlOperations 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 Type		Type	Description	
1		Stimulus	AE is requested to send a container Delete Request for resource <container></container>	
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty 	
3	Mca	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)	

Interoperability Test Description				
IOP Verdict				
PRO Verdict				

Unauthorized operation (Insufficient Access Rights, originators) 8.1.8.6

	Interoperability Test Description			
Identi	fior:		TD M2M NH_73	
Objec			AE delete request is rejected due to accessControlPolicy (accessControlOriginators)	
	guration) •	M2M_CFG_01	
	ences:	l •	[2], clause 7.3.3.15	
Keleit			[[2], clause 1.5.5.15	
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 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 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	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty 	
3	Mca	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			
	√erdict			

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
Config	guratior	ո։	M2M_CFG_01
Refere	ences:		[2], clause 7.3.3.15
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> 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	Туре	Description
1		Stimulus	AE is requested to send a container Delete Request for resource <container></container>
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string)

	Interoperability Test Description			
			• pc = empty	
			Registrar CSE sends response containing:	
3		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 <container> resource has been removed in registrar CSE.</container>	
5		IOP Check	AE indicates successful operation.	
IOP \	/erdict			
PRO '	Verdict			

Group Management 8.1.9

Group Retrieve 8.1.9.1

	International With Test Description			
			Interoperability Test Description	
Identifier:			TD_M2M_NH_32	
Objec	tive:		AE retrieves group resource	
Confi	guration	n:	M2M_CFG_01	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.7.3	
			oneM2M TS-0004 [2], clause 7.4.14.2.2	
Pre-te	st cond	itions:	AE has created a <group> resource on Registrar CSE</group>	
			Test Sequence	
Step	RP	Type	Description	
1		Stimulus	AE is requested to send a group Retrieve Request	
			• op = 2 (RETRIEVE)	
		PRO Check	to = {CSEBaseName}/{group}	
2	Mca	Primitive	• fr = AE-ID	
	ivica	ica Primitive	• rgi = (token-string)	
			1 141 – (token string)	
		PRO Check	• rsc = 2000 (OK)	
3	Mca	Primitive	 rqi = (token-string) same as received in request message 	
	ivica	Fillilline	 pc = Serialized representation of <group> resource</group> 	
4		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO '	Verdict			

Group Create 8.1.9.2

	Interoperability Test Description				
Identifier:			TD_M2M_NH_31		
Objectiv	ve:		AE creates a group resource		
Configu	uration:		M2M_CFG_01		
Referen			oneM2M TS-0001 [1], clause 10.2.7.2		
			oneM2M TS-0004 [2], clause 7.4.14.2.2		
Pre-test	t conditi	ons:	• void		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a group Create Request		
2	Mca	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName} fr = AE-ID rqi = (token-string) ty = 9 (group) pc = Serialized representation of <group> resource</group> 		
3		IOP Check	Check if possible that the <group> resource is created in Registrar CSE.</group>		

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

8.1.9.3 **Group Update**

	International Description				
			Interoperability Test Description		
Identifier:			TD_M2M_NH_33		
Objec			AE updates attribute in group resource		
Config	guration	1:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.7.4		
			oneM2M TS-0004 [2], clause 7.4.14.2.4		
Pre-te	st cond	itions:	AE has created a <group> resource on Registrar CSE</group>		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a group Update Request		
2	Mca	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	Mca	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 \	/erdict				
PRO '	Verdict				

Group Delete 8.1.9.4

	Interoperability Test Description			
Identifier:			TD_M2M_NH_34	
Objec	tive:		AE deletes group resource	
Confi	guratior	1:	M2M_CFG_01	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.7.5	
			oneM2M TS-0004 [2], clause 7.4.14.2.5	
Pre-te	st cond	itions:	AE has created a <group> resource on Registrar CSE</group>	
			Test Sequence	
Step	RP	Type	Description	
1		Stimulus	AE is requested to send a group Delete Request	
			• op = 4 (DELETE)	
_		PRO Check	to = {CSEBaseName}/{group}	
2	Mca	Primitive	• fr = AE-ID	
			• rqi = (token-string)	
_		PRO Check	• rsc = 2002 (DELETED)	
3	Mca	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 \	/erdict			
PRO '	Verdict			

Node Management 8.1.10

8.1.10.1 **Node Create**

Interoperability Test Description				
1.1				
Identifier:			TD_M2M_NH_35	
Objectiv	/e:		AE creates a node resource	
Configu	ration:		M2M_CFG_01	
Referen	ces:		oneM2M TS-0001 [1], clause 10.2.14.1	
			oneM2M TS-0004 [2], clause 7.3.18.2.1	
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	Mca	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 Ve	erdict		·	
PRO V	erdict			

8.1.10.2 Node Retrieve

	Interporability Test Description			
			Interoperability Test Description	
Identi			TD_M2M_NH_36	
Objec	tive:		AE retrieves node resource	
Config	guration):	M2M_CFG_01	
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.14.2	
			oneM2M TS-0004 [2], clause 7.3.18.2.2	
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 Retrieve Request	
			• op = 2 (RETRIEVE)	
		PRO Check	to = {CSEBaseName}/{node}	
2	Mca	Primitive	• fr = AE-ID	
	ivica	r minuve	• rqi = (token-string)	
			iqi = (tokeri-string)	
		DDO Chaale	• rsc = 2000 (OK)	
3		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			

Node Update 8.1.10.3

	Interoperability Test Description				
Identi	fier:		TD M2M NH 37		
Objec			AE updates attribute in node resource		
	guration	·	M2M CFG 01		
Refere		!•	oneM2M TS-0001 [1], clause 10.2.14.3		
INCICIO			oneM2M TS-0004 [2], clause 7.3.18.2.3		
			One 10 000 + [2], Old use 1.3.10.2.0		
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	Mca	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	Mca	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	IOP Verdict				
PRO \	PRO Verdict				

8.1.10.4 Node Delete

			Interoperability Test Description
Identifier:			TD_M2M_NH_38
Objec	tive:		AE deletes node resource
	guration	า:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.14.4
			oneM2M TS-0004 [2], clause 7.3.18.2.4
Pre-te	st cond	litions:	AE has created a <node> resource on Registrar CSE</node>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a node Delete Request
			• op = 4 (DELETE)
		PRO Check	to = {CSEBaseName}/{node}
2	Mca	Primitive	• fr = AE-ID
			rqi = (token-string)
_		PRO Check	• rsc = 2002 (DELETED)
3	Mca	Primitive	 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 \	IOP Verdict		
PRO '	PRO Verdict		

PollingChannel Management 8.1.11

PollingChannel Create 8.1.11.1

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_39		
Objec	tive:		AE creates a <pollingchannel> resource in registrar CSE via a Create Request</pollingchannel>		
Config	guration	1 :	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.13.2		
			oneM2M TS-0004 [2], clause 7.3.21.2.1		
_					
Pre-te	st cond	itions:	AE has created an application resource <ae> on registrar CSE</ae>		
	1	Ī	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	Mca	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 \	IOP Verdict				
PRO \	PRO Verdict				

PollingChannel Retrieve 8.1.11.2

			Interoperability Test Description
Identi	fier:		TD M2M NH 40
Objec	tive:		AE retrieves information of a pollingChannel resource via a Retrieve Request
	guration):	M2M CFG 01
	ences:		oneM2M TS-0001 [1], clause 10.2.13.3
			oneM2M TS-0004 [2], clause 7.3.21.2.2
Pre-te	st cond	itions:	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	Type	Description
1		Stimulus	AE is requested to send a Retrieve Request for a < pollingChannel >
			• op = 2 (Retrieve)
		PRO Check Primitive	 to = {CSEBaseName}/URI of < pollingChannel > resource
2	Mca		• fr = AE-ID
	ivica		• rqi = (token-string)
			• pc = empty
		PRO Check	• rsc =2000 (OK)
3	Mca	Primitive	 rqi = (token-string) same as received in request message
	ivica	Fillillitive	 pc = Serialized representation of < pollingChannel > resource
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict	-	

pollingChannel Update 8.1.11.3

			Interoperability Test Description
Identifier:			TD M2M NH 41
Objective:			AE updates attribute in pollingChannel resource via a Update Request
Confi	guration	า:	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.13.4
			oneM2M TS-0004 [2], clause 7.3.21.2.3
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	Type	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	Mca	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		

pollingChannel Delete 8.1.11.4

			Interconnectifity Test December
1-1			Interoperability Test Description
Identifier:			TD_M2M_NH_42
Object			AE deletes a pollingChannel resource via a Delete Request
Config	guration	1:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.13.5
			oneM2M TS-0004 [2], clause 7.3.21.2.4
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	Mca	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	Mca	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
IOP Verdict			
PRO \	/erdict		

Long Polling on a PollingChannel Retrieve 8.1.11.5

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_43
Objec			AE retrieves information of a pollingChannel resource via a Retrieve Request
	guration):	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.13.7
			oneM2M TS-0004 [2], clause 7.3.22.2.2
Pre-te	st cond	itions:	 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 <pollingchannel> as a notificationURI in the subscription.</pollingchannel></container>
			 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>
2	Mca	PRO Check Primitive	Sent RETRIEVE request contains • To: <csebase>/<ae>/<pollingchannel>/pollingChannelURI • Fr: AE-ID</pollingchannel></ae></csebase>
3	Mca	PRO Check Primitive	Sent RETRIEVE response contains • To: AE-ID • Fr. CSE-ID • Response Statuse Code: OK • Cn: pending Notification request
4		IOP Check	AE indicates successful operation
5			Repeat steps 1-2. There is no pending request. When the Request Expiration Timestamp expires Registrar sends response indicating "REQUEST_TIMEOUT"
6	Mca	PRO Check Primitive	Sent RETRIEVE response contains • To: AE-ID • Fr: CSE-ID • Response Statuse Code: REQUEST_TIMEOUT
	/erdict		
PRO \	√erdict		

FanoutPoint Management 8.1.12

8.1.12.1 FanoutPoint Create

			Interoperability Test Description
Identifier:			TD_M2M_NH_44
Objec	ctive:		AE creates a <contentinstance> resource in each group member</contentinstance>
Confi	guratior	1:	M2M_CFG_01
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.7.6
			oneM2M TS-0004 [2], clause 7.3.14.3.1
Pre-te	est cond	itions:	 A group is created containing 2 members of type <container></container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Create Request to create <contentinstance> in each group member</contentinstance>
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 <contentinstance> resource</contentinstance>
3		IOP Check	Check if possible that the <contentinstance> resource is created in each member hosting CSE</contentinstance>
4	Check Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = aggregated response

	Interoperability Test Description						
5		IOP Check	IOP Check AE indicates successful operation				
IOP \	/erdict	Verify that the a	ggregate response includes responses from each member of the group				
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>			
Confi	guratior	1:	M2M_CFG_01			
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.7.8			
			oneM2M TS-0004 [2], clause 7.3.14.3.2			
Pre-te	st cond	itions:	A group is created containing 2 members of type <container></container>			
			Test Sequence			
Step	RP	Type	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 			
3		IOP Check	rqi = (token-string)			
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 a	ggregate response includes responses from each member of the group			
PRO	Verdict					

FanoutPoint Update 8.1.12.3

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_46	
Objective:			AE updates an <container> resource of each member resource</container>	
	guration	1:	M2M_CFG_01	
	ences:		oneM2M TS-0001 [1], clause 10.2.7.9	
			oneM2M TS-0004 [2], clause 7.3.14.3.3	
Pre-te	st cond	itions:	A group is created containing 2 members of type <container></container>	
			Test Sequence	
Step	RP	Type	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 \	/erdict	Verify that the a	ggregrate response includes responses from each member of the group	
PRO	Verdict			

8.1.12.4 FanoutPoint Delete

	Interoperability Test Description			
Identific	er:		TD_M2M_NH_47	
Objective:			AE deletes a <container> of each member</container>	
Configu	ıration:		M2M_CFG_01	
Referer			oneM2M TS-0001 [1], clause 10.2.7.10	
			oneM2M TS-0004 [2], clause 7.3.14.3.4	
Pre-tes	t conditi	ons:	A group is created containing 2 members of type <container></container>	
			Test Sequence	
Step	RP	Type	Description	
1		Stimulus	AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group></group>	
ı			resource	
			• op = 4 (Delete)	
2	Check	PRO Check Primitive	 to = {CSEBaseName}/{group}/fopt 	
_	Mca		• fr = AE-ID	
			rqi = (token-string)	
	Chook	DDO Charle	• rsc = 2002 (DELETED)	
3	Check Mca	PRO Check Primitive	 rqi = (token-string) same as received in request message 	
	IVICa	Fillillite	pc = aggregated response	
4		Verify	Check if possible that the <i>oldest</i> <contentinstance> resource has been removed in</contentinstance>	
4		Verily	registrar CSE.	
5		Verify	AE indicates successful operation	
IOP Ver	dict	Verify that the a	ggregrate response includes responses from each member of the group	
PRO Ve	erdict			

Notification Management 8.1.13

Notification 8.1.13.1

	Interoperability Test Description				
Identi	ifier:		TD_M2M_NH_48		
Objective:			AE receives a notification request from the HOST CSE		
Confi	guration):	M2M_CFG_01		
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.12		
			oneM2M TS-0004 [2], clause 7.4.1		
Pre-te	Pre-test conditions:		AE1 has created an application resource <ae> on registrar CSE AE1 has created a container resource <container> on registrar CSE AE1 has created a <subscription> as a child resource of a <container> AE2 has created an application resource <ae> on registrar CSE AE2 has permissions to UPDATE the container created by AE1</ae></container></subscription></container></ae>		
Step	RP	Туре	Test Sequence Description		
1	IXI	Stimulus	AE2 is requested to send a Update request to the <container> created by AE1. This triggers or causes the HOST CSE to send a notification to AE1.</container>		
2	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 		
3		IOP Check	Check if the notification representation		
4	Check Mca	PRO Check Primitive	Sent response contains • rsc = 2000 (OK) • rqi = (token-string) same as received in request message		
5		IOP Check	AE1 indicates notification received		
IOP \	√erdict				
PRO	Verdict				

FlexContainer Management 8.1.14

FlexContainer Create 8.1.14.1

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_52
Objective:			AE creates a flexContainer resource in Registrar CSE via a flexContainer Create Request
Confi	guratior	າ:	M2M_CFG_01
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.29.1, 9.6.1.2.2 oneM2M TS-0004 [2], clause 7.4.37.2.1
Pre-te	st cond	litions:	AE has created an application resource <ae> on Registrar CSE</ae>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE sends a request to create a <flexcontainer></flexcontainer>
2	Мса	PRO Check Primitive	 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	Mca	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 \	/erdict		
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
Confi	guration):	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clauses 10.2.29.2, 9.6.1.2.2
			oneM2M TS-0004 [2], clause 7.4.37.2.2
Pre-te	st 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	Type	Description
1		Stimulus	AE is requested to send a Retrieve Request for a <flexcontainer></flexcontainer>
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> fr = AE-ID rqi = (token-string) pc = empty
3	Mca	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	AE indicates successful operation
IOP \	/erdict		
PRO '	√erdict (

FlexContainer Update 8.1.14.3

			Interoperability Test Description	
Identi	fier:		TD M2M NH 54	
Objective:			AE updates attribute in application resource via a flexContainer Update Request	
Confi	guratior	า:	M2M_CFG_01	
	ences:		oneM2M TS-0001 [1], clauses 10.2.29.3, 9.6.1.2.2	
			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	Type	Description	
1		Stimulus	AE is requested to send a flexContainer Update Request to update the any	
			customAttribute of the resource.	
		PRO Check Primitive	• op = 3 (Update)	
			 to = {CSEBaseName}/URI of <flexcontainer> resource</flexcontainer> 	
2	Mca		• fr = AE-ID	
			• 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.	
		PRO Check	 rsc = 2004 (Updated) 	
4	Mca	Primitive	 rqi = (token-string) same as received in request message 	
	IVIOU		 pc = Serialized representation of <flexcontainer> resource</flexcontainer> 	
5		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO '	Verdict			

8.1.14.4 FlexContainer Delete

			Interoperability Test Description		
Identifier:			TD_M2M_NH_55		
Objective:			AE deletes a specific container resource via a container Delete Request		
Confi	guratior	1:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clauses 10.2.29.4, 9.6.1.2.2		
			oneM2M TS-0004 [2], clause 7.4.37.2.4		
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 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	Mca	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	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	າ:	M2M_CFG_01	
	ences:		oneM2M TS-0001 [1], clauses 10.2.1.5, 9.6.1.2.2	
			oneM2M TS-0004 [2], clause 7.4.1	
Pre-te	st cond	litions:	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	Type	Description	
1		Stimulus	AE2 is requested to send a update request to <flexcontainer> for updating</flexcontainer>	
'			customAttribute. This triggers or causes the HOST CSE to send a notification to AE1.	
		PRO Check	• op = 5 (Notify)	
	Check		 to = notificationURI of subscription resource 	
2	Mca		from = Registrar CSE-ID	
	IVICA	1 1111111111	• 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	Primitive	• rsc = 2000 (OK)	
	·vioa		rqi = (token-string) same as received in request message	
5		IOP Check	AE1 indicates notification received	
	/erdict			
PRO	Verdict			

Discovery with attribute filter criteria over customAttributes 8.1.14.6

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_57	
Objec	tive:		AE discovers accessible resources residing in Registrar CSE using attribute filter criteria which has a customAttribute name and value assigned to it.	
Confi	guration	1:	M2M_CFG_01	
	ences:		oneM2M TS-0001 [1], clauses 10.2.6, 9.6.1.2.2 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	Mca	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 '	√erdict			

External Management Operations Management 8.1.15

mgmtCmd Create 8.1.15.1

	Interoperability Test Description				
Identifie	r:		TD_M2M_NH_63		
Objectiv			AE creates a mgmtCmd resource		
Configu			M2M CFG 01		
Referen					
Referen	ces:		oneM2M TS-0001 [1], clause 10.2.9.2		
			oneM2M TS-0004 [2], clause 7.4.16.2.1		
Pre-test	condition	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	Type	Description		
1		Stimulus	AE is requested to send a mgmtCmd Create Request		
			• op = 1 (Create)		
			to = {CSEBaseName}		
		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>		
		556.61	• rsc = 2001 (CREATED)		
4	Mca	PRO Check	rgi = (token-string) same as received in request message		
		Primitive	pc = Serialized representation of <mgmtcmd> resource</mgmtcmd>		
5		IOP Check	AE indicates successful operation		

Interoperability Test Description			
IOP Verdict	Set verdict to pass if IOP check goal is achieved exactly, otherwise verdict fail is set with corresponding		
IOF Verdict	error message.		
PRO Verdict			

8.1.15.2 mgmtCmd Retrieve

	Interoperability Test Description			
Identi	fier:		TD M2M NH 64	
Objec			AE retrieves mgmtCmd resource	
	guration	າ:	M2M CFG 01	
	ences:		oneM2M TS-0001 [1], clause 10.2.9.3	
			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	Type	Description	
1		Stimulus	AE is requested to send a mgmtCmd Retrieve Request	
			• op = 2 (RETRIEVE)	
2		PRO Check	to = {CSEBaseName}/{mgmtCmd}	
-	Mca	Primitive	• fr = AE-ID	
			• rqi = (token-string)	
		PRO Check	• rsc = 2000 (OK)	
3	Mca	Primitive	 rqi = (token-string) same as received in request message 	
	IVICA	Tillillive	 pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> 	
4		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO'	Verdict			

mgmtCmd Update (Normal) 8.1.15.3

			Interoperability Test Description		
Identi	fier:		TD_M2M_NH_65		
Objec	tive:		AE updates attribute (not with 'true' in execEnable attribute) in mgmtCmd resource		
Config	guration	າ:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.9.4		
			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		
			• op = 3 (Update)		
		DDO Charle	to = {CSEBaseName}/{mgmtCmd}		
2	14	PRO Check	• fr = AE-ID		
	Mca	Primitive	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>		
		DD0 01 1	• rsc = 2004 (UPDATED)		
4	N4	PRO Check	 rqi = (token-string) same as received in request message 		
	Mca	Primitive	pc = Serialized representation of <mgmtcmd> resource</mgmtcmd>		
5		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO \	/erdict				

mgmtCmd Update (Execute) 8.1.15.4

	Interoperability Test Description				
Identi	fier:		TD M2M NH 66		
Objec	Objective:		AE updates attribute (with 'true' in execEnable attribute) in mgmtCmd resource		
Confi	guration):	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.9.6		
			oneM2M TS-0004 [2], clause 7.4.16.2.3.2		
Pre-te	st cond	itions:	 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	Type	Description		
1		Stimulus	AE is requested to send a mgmtCmd Update Request		
			• op = 3 (Update)		
		PRO Check	to = {CSEBaseName}/{mgmtCmd}		
2	Mca	Primitive	• fr = AE-ID		
	ivica	riiiiiiive	• 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>		
		PRO Check	• rsc = 2004 (UPDATED)		
4	Mca	Primitive	 rqi = (token-string) same as received in request message 		
	ivica	Fillillite	 pc = Serialized representation of <mgmtcmd> resource</mgmtcmd> 		
5		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO '	Verdict				

8.1.15.5 mgmtCmd Delete

			Interoperability Test Description
Identi	Identifier:		TD M2M NH 67
Objec	tive:		AE deletes mgmtCmd resource
	guration):	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.9.5
			oneM2M TS-0004 [2], clause 7.4.16.2.4
Pre-te	st cond	itions:	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	Type	Description
1		Stimulus	AE is requested to send a mgmtCmd Delete Request
			• op = 4 (DELETE)
_		PRO Check	to = {CSEBaseName}/{mgmtCmd}
2	Mca	Primitive	• fr = AE-ID
			• rqi = (token-string)
3		PRO Check	• rsc = 2002 (DELETED)
3	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 Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		·

8.1.15.6 execInstance Retrieve

			Interoperability Test Description		
Identi	Identifier:		TD_M2M_NH_68		
Objec	Objective:		AE retrieves execInstance resource		
Confi	guratior	ո։	M2M_CFG_01		
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.9.8		
			oneM2M TS-0004 [2], clause 7.4.17.2.2		
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> 		
			 AE has executed the mgmtCmd resource <mgmtcmd> on Registrar CSE</mgmtcmd> 		
			(update execEnable attribute with 'true')		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a execInstance Retrieve Request		
			• op = 2 (RETRIEVE)		
_		PRO Check	to = {CSEBaseName}/{mgmtCmd}/{execInstance}		
2	Mca	Primitive	• fr = AE-ID		
			rqi = (token-string)		
			• rsc = 2000 (OK)		
3		PRO Check	 rqi = (token-string) same as received in request message 		
"	Mca	Primitive	 pc = Serialized representation of <execlnstance> resource</execlnstance> 		
4		IOP Check	AE indicates successful operation		
	/erdict	IOF CHECK	Inclinates successful operation		
ILKO	Verdict				

execInstance Update (Cancel) 8.1.15.7

			100 7 100 100		
			Interoperability Test Description		
Identi			TD_M2M_NH_69		
Objec	tive:		AE updates attribute 'execDisable' to true in execInstance resource to cancel pending		
			management command.		
Config	guration):	M2M_CFG_01		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.9.7		
			oneM2M TS-0004 [2], clause 7.4.17.2.1		
Pre-te	st cond	itions:	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	Type	Description		
1		Stimulus	AE is requested to send a execlnstance Update Request		
			• op = 3 (Update)		
		DDO Ob I	to = {CSEBaseName}/{mgmtCmd}/{execInstacne}		
2	14	PRO Check	• fr = AE-ID		
	Mca	Primitive	rqi = (token-string)		
			pc = Serialized representation of <execlnstance> resource</execlnstance>		
3		IOP Check	Check if possible that the <execlnstance> resource is updated in Registrar CSE.</execlnstance>		
		550 01 1	• rsc = 2004 (UPDATED)		
4		PRO Check	rqi = (token-string) same as received in request message		
	Mca	Primitive	 pc = Serialized representation of <execlnstance> resource</execlnstance> 		
5		IOP Check	AE indicates successful operation		
IOP V	/erdict				
	/erdict				

8.1.15.8 execInstance Delete

			Interoperability Test Description		
Identi	Identifier:		TD_M2M_NH_70		
Objec	tive:		AE deletes execInstance resource		
Confi	guratior	n:	M2M_CFG_01		
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.9.9		
			oneM2M TS-0004 [2], clause 7.4.17.2.3		
Pre-te	st cond	itions:	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	Type	Description		
1		Stimulus	AE is requested to send a execlnstance Delete Request		
			• op = 4 (DELETE)		
		PRO Check	to = {CSEBaseName}/{mgmtCmd}/{execInstacne}		
2	Mca	Primitive	• fr = AE-ID		
			• rqi = (token-string)		
3		PRO Check	• rsc = 2002 (DELETED)		
3	Mca	Primitive	 rqi = (token-string) same as received in request message 		
4		IOP Check	Check if possible that the <execlnstance> resource is deleted in Registrar CSE.</execlnstance>		
5		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO '	Verdict				

SemanticDescriptor Management 8.1.16

8.1.16.1 SemanticDescriptor Create

			Interoperability Test Description		
Identi	fier:		TD_M2M_NH_75		
Objec	tive:		AE creates a SemanticDescriptor resource in Registrar CSE via a SemanticDescriptor Create Request		
Configuration:		n:	M2M_CFG_01		
Refere	ences:		oneM2M TS-0034 [13], clause 6.1.2 oneM2M TS-0004 [2], clause 7.4.34.2.1		
Pre-te	st cond	itions:	AE has created an application resource <ae> on Registrar CSE AE has created a container resource <container> on Registrar CSE</container></ae>		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE sends a request to create a <semanticdescriptor></semanticdescriptor>		
2	Mca	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/URI of < container > resource 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.</semanticdescriptor>		
4	Mca	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		
	erdict/				
PRO \	/erdict				

SemanticDescriptor Retrieve 8.1.16.2

			Interoperability Test Description		
Identi	fier:		TD_M2M_NH_76		
Objec	tive:		AE retrieves information of a semanticDescriptor resource via a semanticDescriptor		
			Retrieve Request		
Confi	guration	า:	M2M_CFG_01		
	ences:		oneM2M TS-0034 [13], clause 6.1.3		
			oneM2M TS-0004 [2], clause 7.4.34.2.2		
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	Type	Description		
1		Stimulus	AE is requested to send a Retrieve Request for a <semanticdescriptor></semanticdescriptor>		
			op = 2 (Retrieve)		
		DD 0 01 1	 to = {CSEBaseName}/URI of <semanticdescriptor> resource</semanticdescriptor> 		
2	l	PRO Check	• fr = AF-ID		
	Mca	Primitive	• rqi = (token-string)		
			• pc = empty		
			• rsc =2000 (OK)		
3		PRO Check	· · ·		
3	Mca	Primitive	rqi = (token-string) same as received in request message Coriolized recognitation of received in request message		
		100.01	pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor>		
4		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO '	Verdict				

SemanticDescriptor Update 8.1.16.3

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_77
Objective:			AE updates attribute in <semanticdescriptor> resource via a semanticDescriptor Update Request</semanticdescriptor>
Config	guration	1:	M2M_CFG_01
	ences:		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 has created a semanticDescriptor resource <semanticdescriptor> as child resource of <ae> resource</ae></semanticdescriptor></ae>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a semanticDescriptor Update Request to update the <i>descriptor</i> attribute of the resource.
2	Mca	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.</semanticdescriptor>
4	Mca	PRO Check Primitive	 rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <semanticdescriptor> resource</semanticdescriptor>
5		IOP Check	AE indicates successful operation
IOP V	/erdict		
PRO \	√erdict		

8.1.16.4 SemanticDescriptor Delete

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_78
Objective:			AE deletes SemanticDescriptor resource via a SemanticDescriptor Delete Request
Confi	guration	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
			<ae> resource</ae>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a semanticDescriptor Delete Request
2	Mca	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 \	/erdict		
PRO '	Verdict		

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	tive:		AE discovers accessible resources residing in Registrar CSE using the semanticFilter	
			filter criteria	
	Configuration:		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	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	Type	Description	
1		Stimulus	AE1 is requested to send a Discovery request to discover the <container> resource using the semanticFilter filterCriteria</container>	
			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)	
3	Mca	Primitive	 rqi = (token-string) same as received in request message 	
			 pc = Serialized representation of data object containing the <container> address</container> 	
4		IOP Check	AE1 indicates notification received	

	Interoperability Test Description		
IOP Verdict			
PRO Verdict			

Non-blocking configuration testing 8.2

Synchronous request 8.2.1

8.2.1.1 Container management

8.2.1.1.1 **Container Create**

Identifier: TD_M2M_NB_01				
AE creates a <container> resource using non-blocking synchronous request in registrar CSE. </container>				Interoperability Test Description
CSE. Configuration: M2M_CFG_01 References: oneM2M_TS-0001 [1], clause 10.2.4.1 oneM2M_TS-0004 [2], clause 7.3.6.2.1 Pre-test conditions: Test Sequence Step RP Type Description AE is requested to send a non-blocking synchronous request to create a <container> resource in registrar CSE Sent request contains</container>				
References: M2M_CFG_01 OneM2M TS-0001 [1], clause 10.2.4.1 OneM2M TS-0004 [2], clause 7.3.6.2.1	Objective:			
References:	0			
Pre-test conditions: Test Sequence			1:	
Test Sequence	Retere	ences:		
Test Sequence Description				OTIENIZIVI 15-0004 [2], Clause 7.3.6.2.1
Test Sequence Description	Dro-to	et cond	itions:	
Step RP Type AE is requested to send a non-blocking synchronous request to create a <container> resource in registrar CSE </container>	rie-le	St Cond	illons.	Tast Seguence
AE is requested to send a non-blocking synchronous request to create a <container> resource in registrar CSE Sent request contains • op = 1 (Create) • to = {CSEBaseName} • tre = 1 (non-blocking synchronous) • ty = 3 (container) • pc = Serialized Representation of the <container> resource Registrar CSE Regusts resource and sends acknowledgement respource PRO Check Primitive Registrar CSE Regusts resource and sends acknowledgement respource PRO Check Primitive Registrar CSE Registrar</container></container>	Step RP Type			
resource in registrar CSE Sent request contains op = 1 (Create) to = {CSEBaseName} fr = AE-ID PRO Check Primitive PRO Check Primi	Step	IXF		
Sent request contains	1		Stilliulus	
 Mca PRO Check Primitive i to = {CSEBaseName} i to = {CSEBaseName} i to = {CSEBaseName} i to = {CSEBaseName} i tr = AE-ID i rqi = (token-string) i tr = 1 (non-blocking synchronous) i ty = 3 (container) pc = Serialized Representation of the <container> resource</container> Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: i rsc = 1000 (Accepted) rqi = token-string) same as received in request message pc = Reference to the created <request> resource</request> </request> JOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference</request> Sent Retrieve request contains op = 2 (Retrieve) to = <request> reference</request> fr = AE-ID rqi = (token-string) pc = empty rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = empty 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> 				
Mca PRO Check Primitive PRO Check Primitive				· ·
PRO Check Primitive PRO Check Primitive				
Primitive Primitive Primitive Primitive Primitive PRO Check Primiti			DPO Chack	· · · · · · · · · · · · · · · · · · ·
 if t = 1 (non-blocking synchronous) if t = 3 (container) if t = 4 (co	2	Mca		
 ty = 3 (container) pc = Serialized Representation of the <container> resource</container> 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> IOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference</request> Sent Retrieve request contains op = 2 (Retrieve) to = <request> reference</request> fr = AE-ID rqi = (token-string) pc = empty Registrar CSE creates an internal <request> resource</request> request message pc = empty 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> 			Fillillite	
 pc = Serialized Representation of the <container> resource</container> 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> IOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference</request> Brack Retrieve request contains op = 2 (Retrieve) to = <request> reference</request> PRO Check Primitive rqi = (token-string) pc = empty 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> 				
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: respource response containing: response contains respource response contains respource and sends acknowledgement respource and sends acknowledgement response contains response contains respource response cheekerspource response cheeker</request>				
PRO Check Primitive				pc = Serialized Representation of the <container> resource</container>
Mca			PRO Check	, ,
Primitive Primit	_			
 pc = Reference to the created <request> resource</request> IOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference</request> Sent Retrieve request contains op = 2 (Retrieve) to = <request> reference</request> PRO Check Primitive Frimitive PRO Check Primitive Total PRO Check Primitive PRO Check Primitive pro = empty resc = 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> 	3	Mca		
4 IOP Check AE indicates successful operation 5 Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains • op = 2 (Retrieve) • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty • 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></request></request>				
5 Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains • op = 2 (Retrieve) • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty • 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></request></request>				
Sent Retrieve request contains op = 2 (Retrieve) to = <request> reference fr = AE-ID rqi = (token-string) pc = empty PRO Check Primitive OKA PRO Check Primitive PRO Check Primitive OKA PRO Che</request>				
PRO Check Primitive Op = 2 (Retrieve) to = <request> reference fr = AE-ID rqi = (token-string) pc = empty PRO Check Primitive Or sc = 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></request>	5		Stimulus	
6 Mca PRO Check Primitive • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty • 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></request>				
6 Mica Primitive • fr = AE-ID • rqi = (token-string) • pc = empty • 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>				
 fr = AE-ID rqi = (token-string) pc = empty 7 Mca	6	Mca		
 pc = empty 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> 	0	IVICa	Primitive	
 PRO Check Primitive PRO Check Primitive rgi = (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> 				rqi = (token-string)
PRO Check Primitive • 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>				• pc = empty
7 Mca Primitive • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request>				
7 Mca Primitive • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request>		Mca	2	 rqi = (token-string) same as received in request message
(COMPLETED) and the "operationResult" parameter containing the <container> resource.</container>	7			 pc = <request> resource with the parameter "requestStatus" set to 1</request>
			Fillillive	(COMPLETED) and the "operationResult" parameter containing the <container></container>
				· · · · · · · · · · · · · · · · · · ·
o IOP Check AE indicates successiui operation	8		IOP Check	AE indicates successful operation
IOP Verdict				
PRO Verdict				

8.2.1.1.2 Container Retrieve

			Interoperability Test Description		
Identi	fier:		TD M2M NB 02		
Objective:			AE retrieves a <container> resource using non-blocking synchronous request from</container>		
,			registrar CSE.		
Confid	guration	n:	M2M_CFG_01		
Refere			oneM2M TS-0001 [1], clause 10.2.4.1		
			oneM2M TS-0004 [2], clause 7.3.6.2.1		
Pre-te	st cond	itions:	AE has created a <container> resource in registrar CSE.</container>		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a non-blocking synchronous request to retrieve the <container></container>		
'			resource from registrar CSE.		
			Sent request contains		
			• op = 2 (Retrieve)		
		PRO Check	 to = {CSEBaseName}/URI of <container> resource</container> 		
2	Mca	Primitive	• fr= AE-ID		
		1 minuve	rqi = (token-string)		
			rt = 1 (non-blocking synchronous)		
			pc = empty		
		PRO Check	Registrar CSE creates an internal <request> resource and sends acknowledgement</request>		
			response containing:		
3	Mca	Primitive	• rsc = 1000 (Accepted)		
			 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> 		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		
			• rsc = 2000 (OK)		
_		PRO Check	rqi = (token-string) same as received in request message		
7	Mca	Primitive	pc = <request> resource with the parameter "requestStatus" set to 1</request>		
			(COMPLETED) and the "operationResult" parameter containing the <container></container>		
		IOD Chasti	resource.		
8	/ordist	IOP Check	AE indicates successful operation		
	/erdict				
PKO V	/erdict				

Container Update 8.2.1.1.3

			Interoperability Test Description
Identi	fier:		TD M2M NB 03
Objective:			AE updates a <container> resource using non-blocking synchronous request in registrar CSE.</container>
Configuration:			M2M_CFG_01
References:			oneM2M TS-0001 [1], clause 10.2.4.1 oneM2M TS-0004 [2], clause 7.3.6.2.1
Pre-test conditions:			AE has created a <container> resource in registrar CSE.</container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a non-blocking synchronous request to update the <container> resource.</container>
2	Mca	PRO Check Primitive	Sent request contains

			Interoperability Test Description
			rt = 1 (non-blocking synchronous)
			 pc = Serialized Representation of the updated <container> resource</container>
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		Stimulus	AE is requested to wait then 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	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) and the "operationResult" parameter containing the <container> resource.</container></request>
8		IOP Check	AE indicates successful operation
IOP V	erdict/		
PRO \	/erdict		

8.2.1.1.4 Container Delete

			Interoperability Test Description
Identifier:			TD_M2M_NB_04
Objective:			AE deletes a Container resource using non-blocking synchronous request.
Confi	guratior	າ:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.4.1
			oneM2M TS-0004 [2], clause 7.3.6.2.1
Pre-te	st 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> resource.</container>
2	Mca	PRO Check Primitive	Sent request contains
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		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	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>
O	l	TOF CHECK	AE indicates successful operation

	Interoperability Test Description
IOP Verdict	
PRO Verdict	

8.2.2 Asynchronous request

8.2.2.1 Container management

Container Create 8.2.2.1.1

			Interoperability Test Description
Identi	fier:		TD_M2M_NB_05
Objective:			AE creates a <container> resource using non-blocking asynchronous request</container>
	guration	1:	M2M_CFG_01
	ences:		oneM2M TS-0001 [1], clause 10.2.4.1
			oneM2M TS-0004 [2], clause 7.3.6.2.1
Pre-te	st cond	itions:	AE is reachable on the URI: "AE-Notification-URI"
			Test Sequence
Step	RP	Type	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= AE-ID
		PRO Check	• rqi = (token-string)
2	Mca	Primitive	rt = 2 (non-blocking asynchronous)
			• ty = 3 (container)
			nu= AE-Notification-URI
			oneM2M-RQI: Request-ID
			pc = Serialized Representation of the <container> resource</container>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
	Mca	PRO Check Primitive	response containing:
3			• rsc = 1000 (Accepted)
			 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		IOP Check	Registrar CSE sends notify request to AE
			Sent request contains
6			• op = 5 (Notify)
		PRO Check	to = AE-Notification-URI
	Mca	Mca Primitive	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)
		IOD Charle	• rqi = (token-string) same as received in request message
8	/ordist	IOP Check	Registrar CSE indicates successful operation
	/erdict		
PKU	Verdict		

8.2.2.1.2 Container Retrieve

			Interoperability Test Description
Identi	fier:		TD M2M NB 06
Objective:			AE retrieves a <container> resource using non-blocking asynchronous request</container>
Confi	guratior	1:	M2M_CFG_01
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.4.1
			oneM2M TS-0004 [2], clause 7.3.6.2.1
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	Type	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
	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
6	Mca	PRO Check Primitive	Sent request contains
7	Mca	PRO Check Primitive	AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message
8	<u> </u>	IOP Check	Registrar CSE indicates successful operation
	/erdict		
PRO '	√erdict (

Container Update 8.2.2.1.3

			Interoperability Test Description
Identi	fier:		TD_M2M_NB_07
Objective:			AE updates a <container> resource using non-blocking asynchronous request</container>
Confi	guratior	າ:	M2M_CFG_01
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.4.1
			oneM2M TS-0004 [2], clause 7.3.6.2.1
Pre-test conditions:			AE has created a Container resource <container> on registrar CSE AE is reachable on the URI: "AE-Notification-URI" Test Sequence</container>
Step	RP	Type	Description
1		Stimulus	AE is requested to send a non-blocking asynchronous request to update the <container> resource in registrar CSE.</container>
2	Мса	PRO Check Primitive	Sent request contains op = 3 (Update) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous)</container>

	Interoperability Test Description		
			nu = AE-Notification-URI
			 pc = Serialized Representation of the updated <container> resource</container>
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
6	Мса	PRO Check Primitive	Sent request contains
7	Mca	PRO Check Primitive	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 V	/erdict		
PRO \	√erdict		

8.2.2.1.4 Container Delete

Identifier: TD_M2M_NB_08 Objective: AE deletes a Container resource using non-blocking asynchronous request				
AE deletes a Container resource using non-blocking asynchronous request				Interoperability Test Description
Configuration: M2M_CFG_01				
References: oneM2M TS-0001 [1], clause 10.2.4.1 oneM2M TS-0004 [2], clause 7.3.6.2.1 Pre-test conditions: • AE has created a <container> resource on registrar CSE • AE is reachable on the URI: "AE-Notification-URI" Test Sequence Step RP Type Description AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI" •=""> resource • fr = AE-ID • rqi = (token-string) • rt = 2 (non-blocking asynchronous) • nu = AE-Notification-URI • pc = empty 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></container></container>				AE deletes a Container resource using non-blocking asynchronous request
Pre-test conditions: AE has created a <container> resource on registrar CSE AE is reachable on the URI: "AE-Notification-URI" Test Sequence Step RP Type Description AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI"> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pre = empty 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></container></container>	Confi	guratio	า:	
Pre-test conditions: AE has created a <container> resource on registrar CSE AE is reachable on the URI: "AE-Notification-URI" Test Sequence Step RP Type Description AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI"> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty Registrar CSE reates an internal <request> resource and sends acknowledgement response containing: rgi = token-string) same as received in request message pc = Reference to the created <request> resource</request></request></container></container>	Refer	ences:		oneM2M TS-0001 [1], clause 10.2.4.1
AE is reachable on the URI: "AE-Notification-URI" Test Sequence Step RP Type Description AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI"> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty 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></container>				oneM2M TS-0004 [2], clause 7.3.6.2.1
AE is reachable on the URI: "AE-Notification-URI" Test Sequence Step RP Type Description AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI"> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty 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></container>				
Test Sequence Step RP	Pre-te	st cond	litions:	 AE has created a <container> resource on registrar CSE</container>
Step RP Type Description				AE is reachable on the URI: "AE-Notification-URI"
AE is requested to send a non-blocking asynchronous request to delete the <container (delete)="" <container="" contains="" cse.="" in="" of="" op="4" registrar="" request="" resource="" sent="" to="{CSEBaseName}/URI"> resource fr = AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty 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></container>				Test Sequence
resource in registrar CSE. Sent request contains op = 4 (Delete) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rej = (token-string) resource in registrar CSE. Sent request contains op = 4 (Delete) to = {CSEBaseName}/URI of <container> resource fr = AE-ID or rqi = (token-string) nu = AE-Notification-URI pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request></container></container>	Step	RP		
PRO Check Primitive PRO Check	1		Stimulus	
PRO Check Primitive o to = {CSEBaseName}/URI of <container> resource of r = AE-ID orgi = (token-string) orgi = (token-string) orgi = 2 (non-blocking asynchronous) orgi = 2 (non-blocking asynchronous) orgi = 4E-Notification-URI orgi = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: orgi = token-string) same as received in request message orgi = token-string) same as received in request message orgi = token-string) same as received</request></container>				Sent request contains
PRO Check Primitive of the fire AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request>				• op = 4 (Delete)
PRO Check Primitive of the fire AE-ID rqi = (token-string) rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request>				 to = {CSEBaseName}/URI of <container> resource</container>
Primitive			PRO Check	
rt = 2 (non-blocking asynchronous) nu = AE-Notification-URI pc = empty 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>	2	Mca		• rqi = (token-string)
nu = AE-Notification-URI pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request>	1			
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check Primitive Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request></request>				,
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check Primitive Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: response containing:</request></request>				• pc = empty
BRO Check Primitive PRO Check Primitive response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource</request>				
 Mca Primitive rgi = token-string) same as received in request message pc = Reference to the created <request> resource</request> 	3	Mca		
 rqi = token-string) same as received in request message pc = Reference to the created <request> resource</request> 				• rsc = 1000 (Accepted)
pc = Reference to the created <request> resource</request>			Primitive	
4 IOP Check AE indicates successful operation	4		IOP Check	AE indicates successful operation
5 IOP Check Registrar CSE sends notify request to AE	5		IOP Check	Registrar CSE sends notify request to AE
Sent request contains				Sent request contains
• op = 5 (Notify)				• op = 5 (Notify)
PRO Check • to = AE-Notification-URI	6		PRO Check	to = AE-Notification-URI
Mca Primitive • fr = registrar CSE-ID	ь	Mca	Primitive	fr = registrar CSE-ID
• rqi = (token-string)				
pc = Serialized representation of notification data object				
AE sends notify response to Pagistrar CSE containing:		Mca	DDO Charle	
7 PRO Check • rsc = 2000 (OK)	7			
Mca Primitive • rqi = (token-string) same as received in request message			Primitive	,
8 IOP Check Registrar CSE indicates successful operation	8		IOP Check	

	Interoperability Test Description			
IOP Verdict				
PRO Verdict				

Single hop configuration testing 8.3

Retargeting 8.3.1

RetargetingResource Create (Generic Test Description) 8.3.1.1

			Interoperability Test Description					
Identifier:			TD_M2M_SH_01					
Objective:			AE creates a remote <resource> resource</resource>					
Configuration:			M2M_CFG_03					
References:								
Pre-test conditions			Parents resources need to be created on the hosting CSE					
			Test Sequence					
Step	RP	Type	Description					
1		Stimulus	AE is requested to send a Create Request to create <resource> on the Hosting CSE.</resource>					
2	Мса	PRO Check Primitive	 op = 1 (Create) to = URI of the parent resource fr = AE-ID 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 CSE.					
4	Мсс	PRO Check Primitive	 op = 1 (Create) to = URI of the parent resource fr = AE-ID rqi = (token-string) ty = m2m:resourceType pc = Serialized representation of <resource> resource</resource> 					
5		IOP Check						
6	Мсс	PRO Check Primitive	 rsc = 2001 (CREATED) 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	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource> 					
9		IOP Check	AE indicates successful operation					
IOP \	/erdict							
PRO '	Verdict							

8.3.1.2 < Resource > Create

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_01#01	oneM2M TS-		
		0001 [1], clause		
		10.2.4.1		
		oneM2M TS-		
		0004 [2], clause		
		7.3.5.2.1		
<contentinstance></contentinstance>	TD_M2M_SH_01#02	oneM2M TS-		
		0001 [1], clause		
		10.2.19.2		
		oneM2M TS-		
		0004 [2], clause		
		7.3.7.2		
<subscription></subscription>	TD_M2M_SH_01#03	oneM2M TS-		
23db36ffptfoff>	1B_W2W_011_01#00	0001 [1], clause		
		10.2.11.2		
		oneM2M TS-		
		0004 [2], clause		
		7.3.7.2		
zaccac Control Policy	TD_M2M_SH_01#04	oneM2M TS-		
<accesscontrolpolicy></accesscontrolpolicy>	I D_INIZINI_3H_01#04	0001 [1], clause		
		10.2.21.1		
		oneM2M TS-		
		0004 [2], clause		
	TD MOM OU 04//05	7.3.1.2		
<group></group>	TD_M2M_SH_01#05	oneM2M TS-		
		0001 [1], clause		
		10.2.7.2		
		oneM2M TS-		
		0004 [2], clause		
		7.3.12.2.1		
<pollingchannel></pollingchannel>	TD_M2M_SH_01#06	oneM2M TS-		
		0001 [1], clause		
		10.2.13.2		
		oneM2M TS-		
		0004 [2], clause		
		7.3.21.2.1		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_01#07	oneM2M TS-		
		0001 [1], clause		
		10.2.7.6		
		oneM2M TS-		
		0004 [2], clause		
		7.3.14.3.1		
<node></node>	TD_M2M_SH_01#08	oneM2M TS-		
		0001 [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				
Objective:			AE retrieves a remote <resource> resource</resource>				
Configuration:			M2M_CFG_03				
References:							
Pre-test conditions:			Parents resources need to be created on the hosting CSE				
			Resource < Resource > has been created in Hosting CSE				
Test Sequence							
Step	RP	Туре	Description				
1		Stimulus	AE is requested to send a Retrieve Request to retrieve <resource> on the remote</resource>				

	Interoperability Test Description					
			Hosting CSE.			
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = URI of the <resource> resource U</resource> 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.			
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.			
7	Mca	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 \	/erdict					
PRO \	√erdict					

8.3.1.4 <Resource> retrieve

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_02#01	oneM2M TS-		
		0001 [1], clause		
		10.2.4.2		
		oneM2M TS-		
		0004 [2], clause		
<pre><contentinstance></contentinstance></pre>	TD_M2M_SH_02#02	7.3.5.2.2 oneM2M TS-		
Contentinstance>	I D_IVIZIVI_SH_02#02	0001 [1], clause		
		10.2.19.3		
		oneM2M TS-		
		0004 [2], clause		
		7.3.6.2.2		
<subscription></subscription>	TD_M2M_SH_02#03	oneM2M TS-		
		0001 [1], clause		
		10.2.11.3		
		oneM2M TS-		
		0004 [2], clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_02#04	oneM2M TS-		
Cacobascontion only	1 D_IVIZIVI_OI I_U2#U4	0001 [1], clause		
		10.2.21.2		
		oneM2M TS-		
		0004 [2], clause		
		7.3.1.2		
<group></group>	TD_M2M_SH_02#05	oneM2M TS-		
		0001 [1], clause		
		10.2.7.3		
		oneM2M TS-		
		0004 [2], clause 7.3.12.2.2		
<pollingchannel></pollingchannel>	TD_M2M_SH_02#06	oneM2M TS-		
Cpoining Charmer>	1 D_IVIZIVI_SI 1_02#00	0001 [1], clause		
		10.2.13.3		
		oneM2M TS-		
		0004 [2], clause		
		7.3.21.2.2		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_02#07	oneM2M TS-		
		0001 [1], clause		
		10.2.7.8 oneM2M TS-		
		0004 [2], clause		
		7.3.14.3.2		
<node></node>	TD_M2M_SH_02#08	oneM2M TS-		
		0001 [1], clause		
		10.2.14.2		
		oneM2M TS-		
		0004 [2], clause		
	TD MOM OU 00//00	7.3.18.2.2		
<remotecse></remotecse>	TD_M2M_SH_02#09	oneM2M TS- 0001 [1], clause		
		10.2.2.3		
		oneM2M TS-		
		0004 [2], clause		
		7.3.3.2.3		
<ae></ae>	TD_M2M_SH_02#10	oneM2M TS-		
		0001 [1], clause		
		10.2.1.2		
		oneM2M TS-		
		0004 [2], clause		
CCEDage	TD MOM OU COULT	7.3.5.2.2		1
<csebase></csebase>	TD_M2M_SH_02#11	oneM2M TS-		
		0001 [1], clause 10.2.3.2		
		oneM2M TS-		
		0004 [2], clause		
		1000 i [=], oladoo	<u> </u>	I .

	7.3.2	_

Resource Update (Generic Test Description) 8.3.1.5

			Interoperability Test Description			
Identi	fier:		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	Mca	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 Mcc 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	Mca	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			
	erdict/					
PRO \	√erdict					

8.3.1.6 <Resource> update

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_03#01	oneM2M TS-0001 [1], clause		
		10.2.4.3		
		oneM2M TS-0004 [2], clause		
		7.3.5.2.3		
<subscription></subscription>	TD_M2M_SH_03#02	oneM2M TS-0001 [1], clause		
		10.2.11.4		
		oneM2M TS-0004 [2], clause		
		7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_03#03	oneM2M TS-0001 [1], clause		
		10.2.21.3		
		oneM2M TS-0004 [2], clause		
		7.3.1.2		
<group></group>	TD_M2M_SH_03#04	oneM2M TS-0001 [1], clause		
		10.2.7.4		
		oneM2M TS-0004 [2], clause		
		7.3.12.2.3		
<pollingchannel></pollingchannel>	TD_M2M_SH_03#05	oneM2M TS-0001 [1], clause		
		10.2.13.4		
		oneM2M TS-0004 [2], clause		
		7.3.21.2.3		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_03#06	oneM2M TS-0001 [1], clause		
		10.2.7.9		
		oneM2M TS-0004 [2], clause		
		7.3.14.3.3		
<node></node>	TD_M2M_SH_03#07	oneM2M TS-0001 [1], clause		
		10.2.14.3		
		oneM2M TS-0004 [2], clause		
		7.3.18.2.3		
<remotecse></remotecse>	TD_M2M_SH_03#08	oneM2M TS-0001 [1], clause		
		10.2.2.3		
		oneM2M TS-0004 [2], clause		
		7.3.3.2.3		
<ae></ae>	TD_M2M_SH_03#09	oneM2M TS-0001 [1], clause		
		10.2.1.3		
		oneM2M TS-0004 [2], clause		
		7.3.5.2.3		

8.3.1.7 Resource Delete (Generic Test Description)

	Interoperability Test Description					
Identifier:			TD_M2M_SH_04			
Objec	tive:		AE delete a remote <resource> resource</resource>			
Confi	guratior	n:	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			
			Test Sequence			
Step	RP	Type	Description			
1		Stimulus	AE is requested to send a Delete Request to delete <resource> on the Hosting CSE.</resource>			
			• op = 4 (Delete)			
		PRO Check	 to = URI of the 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.			
			• op = 4 (Delete)			
		PRO Check	 to = URI of the resource < Resource > 			
4	Mcc	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)			

	Interoperability Test Description					
	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)			
8	Mca	Primitive	 rqi = (token-string) same as received in request message 			
9		IOP Check	AE indicates successful operation			
IOP \	/erdict					
PRO '	Verdict					

8.3.1.8 <Resource> delete

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_04#01	oneM2M TS-0001 [1], clause		
		10.2.4.4		
		oneM2M TS-0004 [2], clause		
		7.3.5.2.4		
<contentinstance></contentinstance>	TD_M2M_SH_04#02	oneM2M TS-0001 [1], clause		
		10.2.19.5		
		oneM2M TS-0004 [2], clause		
		7.3.6.2.4		
<subscription></subscription>	TD_M2M_SH_04#03	oneM2M TS-0001 [1], clause		
		10.2.11.5		
		oneM2M TS-0004 [2], clause		
		7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_04#04	oneM2M TS-0001 [1], clause		
		10.2.21.4		
		oneM2M TS-0004 [2], clause		
		7.3.1.2		
<group></group>	TD_M2M_SH_04#05	oneM2M TS-0001 [1], clause		
		10.2.7.5		
		oneM2M TS-0004 [2], clause		
		7.3.12.2.4		
<pollingchannel></pollingchannel>	TD_M2M_SH_04#06	oneM2M TS-0001 [1], clause		
		10.2.13.5		
		oneM2M TS-0004 [2], clause		
		7.3.21.2.4		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_04#07	oneM2M TS-0001 [1], clause		
		10.2.7.10		
		oneM2M TS-0004 [2], clause		
		7.3.14.3.4		
<node></node>	TD_M2M_SH_04#08	oneM2M TS-0001 [1], clause		
		10.2.14.4		
		oneM2M TS-0004 [2], clause		
		7.3.18.2.4		

8.3.1.9 Discovery with multiple filter criteria

	Interoperability Test Description					
Identifier:			TD M2M SH 09			
Objective:			AE discovers accessible resources residing in the remote Hosting CSE using multiple Filter Criteria			
Confi	guration	1:	M2M_CFG_03			
Refer	ences:		oneM2M TS-0001 [1], clause 10.2.6			
			oneM2M TS-0004 [2], clause 7.2.3.13			
Pre-te	st cond	itions:	 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	Type	Description			
1	Stimulus		AE is requested to send a discovery request to discover specific resources located in			
'			hosting CSE using multiple filter criteria (label, resource type and limit)			
2	Mca	PRO Check	Sent request contains			

	Interoperability Test Description					
		Primitive	 op = 2 (Retrieve) to = URI of hosting CSEBase fr = AE-ID rqi = (token-string) fu=1 lbl=key1 lbl=key2 rty=3 lim=1 pc = empty 			
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.			
4	Мсс	PRO Check Primitive	Forwarded request contains op = 2 (Retrieve) to = hosting CSEBase fr = AE-ID rqi = (token-string) fu=1 lbl=key1 lbl=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.			
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 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			
6	Mca	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>			
7		IOP Check	AE indicates successful operation			

8.3.1.10 Unauthorized operation (Insufficient Access Rights)

			Interoperability Test Description			
Identi	fier:		TD_M2M_SH_10			
Objec	tive:		AE delete request is rejected after access rights verification using retargeting.			
Config	guration):	M2M_CFG_03			
Refere	ences:		oneM2M TS-0004 [2], clause 7.3.1.2			
Pre-test conditions:		itions:	 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	Type	Description			
1		Stimulus	AE is requested to send a Request to delete the <container> resource from the registrar CSE.</container>			
2	Mca	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>			

	Interoperability Test Description				
4	Mcc	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	Mca	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	fior:		TD_M2M_SH_11	
Objective:			AE receives a notification request from the remote hosting CSE	
	guratior	١•	M2M_CFG_03	
	ences:	1.	oneM2M TS-0001 [1], clause 10.2.12	
IXCICI			oneM2M TS-0004 [2], clause 7.4.1	
			One 10 000 + [2], Old 000 1.4.1	
Pre-te	st cond	itions:	A <container> resource has been created on hosting CSE</container>	
1.10.10	o. 0011a		A Container resource has been created of mosting ode AE has created an <ae> resource on registrar CSE</ae>	
			AE has created at <a>E resource on registral OSE AE has created a <subscription> resource for the <container> resource on the</container></subscription>	
			remote hosting CSE.	
			Test Sequence	
Step	RP	Туре	Description	
		Stimulus	A <contentinstance> sub-resource is created on the <container> resource. This triggers or</container></contentinstance>	
1			causes the hosting CSE to send a notification to AE.	
			• op = 5 (Notify)	
		PRO Check Primitive	to = URI of AE resource	
2	Mca		from = Hosting CSE-ID	
			• rqi = (token-string)	
			 pc = Serialized representation of Notification data object 	
3		IOP Check	Check if possible that the Notify request is forwarded by the registrar CSE to the AE-ID.	
			• op = 5 (Notify)	
		DDO Ob I	• to = AE	
4	Mcc	Acc PRO Check Primitive	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.	
			AE sends response containing:	
6	Mcc	PRO Check	• rsc = 2000 (OK)	
0	IVICC	Primitive	 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	
			Registrar CSE sends response containing:	
8	Mca	PRO Check	• rsc = 2000 (OK)	
0		Primitive	 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
Identif	ier:		TD_M2M_SH_05
Objec			AE creates a <mgmtobj> resource</mgmtobj>
Configuration:		n:	M2M_CFG_03
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.8.2
Pre-te	st cond	itions:	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 <mgmtobj> resource</mgmtobj>
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 oneM2M TS-0005 [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 oneM2M TS-0006 [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 oneM2M TS-0005 [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 oneM2M TS-0005 [10].
		PRO Check	Successful response of the RPC. Details can be found in clause 8.1 oneM2M TS-0006
		BBF TR069 [11].	[11]. Response with status code 2.01 Created. Details can be found in clause 6.4 oneM2M TS-
		PRO Check OMA LWM2M	Response with status code 2.01 Created. Details can be found in clause 6.4 onewizw 15- 0005 [10].
7	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj>
8		IOP Check	AE indicates successful operation
	'erdict		
PRO \	/erdict		

8.3.2.2 <mgmtObj> Update

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_06		
Objec	tive:		AE updates a <mgmtobj> resource</mgmtobj>		
Confi	guratior	n:	M2M_CFG_03		
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.8.4		
Pre-te	st cond	itions:	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>		

	Interoperability Test Description			
2	Mca	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	Requests to update the corresponding MO using Replace DM command. The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of oneM2M TS- 0005 [10].</mgmtobj>	
4	mc	PRO Check BBF TR069	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 oneM2M TS-0006 [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 oneM2M TS-0005 [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 oneM2M TS-0005 [10].	
6	mc	PRO Check BBF TR069	Successful response of the RPC. Details can be found in clause 8.1 oneM2M TS-0006 [11].	
		PRO Check OMA LWM2M	Response with status code 2.04 Changed. Details can be found in clause 6.4 oneM2M TS-0005 [10].	
7	Mca	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 V	'erdict		•	
PRO \	/erdict			

8.3.2.3 <mgmtObj> Retrieve

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_07
Objective:			AE retrieves a <mgmtobj> resource</mgmtobj>
Config	guratio	า:	M2M_CFG_03
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.8.3
Pre-te	st cond	litions:	Management Session between Management Server and Management Client
			Test Sequence
Step	RP	Type	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>
	mc	PRO Check Primitive	N/A
4		PRO Check OMA DM	Requests to retrieve the corresponding MO using Get DM command.
7		PRO Check BBF TR069	Requests to retrieve the corresponding information model using GetParametersValue RPC.
		PRO Check OMA LWM2M	Requests to retrieve the corresponding Objects using Retrieve LWM2M Read operation.
5		IOP Check	
6	mc	PRO Check	N/A

			Interoperability Test Description
		Primitive	
		PRO Check	Response with status code (200) OK with the information of the MO. Details can be found
		OMA DM	in clause 5.4 oneM2M TS-0005 [10].
		PRO Check	Successful response of the RPC with the information about the management related
		BBF TR069	information. Details can be found in clause 8.1 oneM2M TS-0006 [11].
		PRO Check	Response with status code 2.05 Content with the information of the Object. Details can be
		OMA LWM2M	found in clause 6.4 oneM2M TS-0005 [10].
		. PRO Check	• rsc = 2000 (OK)
7	Mca	Primitive	 rqi = (token-string) same as received in request message
		riiiiiiive	 pc = Serialized representation of <mgmtobj> resource</mgmtobj>
8		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.3.2.4 <mgmtObj> Delete

			Interoperability Test Description
Identif	fier:		TD_M2M_SH_08
Objec			AE deletes a <mgmtobj> resource</mgmtobj>
Config	guration	າ:	M2M_CFG_03
Refere	ences:		oneM2M TS-0001 [1], clause 10.2.8.5
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> Delete Request to delete an <mgmtobj> on IN-CSE.</mgmtobj></mgmtobj>
2	Mca	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>
		PRO Check Primitive	N/A
4	mc	PRO Check OMA DM	Requests to delete the corresponding MO using Delete DM command.
•	1110	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
6	mc	PRO Check OMA DM	Response with status code (200) OK. Details can be found in clause 5.4 oneM2M TS-0005 [10].
0	IIIC	PRO Check BBF TR069	Successful response of the RPC. Details can be found in clause 8.1 oneM2M TS-0006 [11].
		PRO Check OMA LWM2M	Response with status code 2.02 Deleted. Details can be found in clause 6.4 oneM2M TS-0005 [10]
7	Mca	PRO Check Primitive	 rsc = 2002 (DELETED) rqi = (token-string) same as received in request message
8		IOP Check	AE indicates successful operation
	erdict/		
PRO \	/erdict		

8.3.3 Announcement Management

8.3.3.1 AEAnnc Create

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_12		
Objec	tive:		AE1 announces itself to CSE2		
Configuration:			M2M_CFG_04		
Refere	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> CSE1 is registered to CSE2 		
Ctore	RP	Turna	Test Sequence		
Step 1	KP	Type Stimulus	Description AE1 is requested to send a an AE Update Request with announceTo attribute set to CSE2 CSE-ID		
2	Mca	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{AE} fr = AE-ID 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>		
4	Мсс	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName2}/{CSEBaseName1} fr = CSE1-ID 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 attributes.</aeannc>		
6	Мсс	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <aeannc> resource</aeannc> 		
7		IOP Check	CSE1 sends a UPDATED response to the AE1.		
8	Mca	PRO Check Primitive	 rsc = 2004 (UPDATED) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae> 		
9		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO \	Verdict				

8.3.3.2 ContainerAnnc Create

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_13
Objec	tive:		AE1 announces a child container to CSE2
Confi	guratio	n:	M2M_CFG_04
Refer	ences:		
Pre-te	est cond	ditions	 <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
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE1 is requested to send a an <container> Update Request with announceTo attribute set to CSE2 CSE-ID</container>

			Interoperability Test Description
2	Mca	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{container} fr = AE-ID rqi = (token-string) 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>
4	Мсс	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName2}/{AE1Annc} fr = CSE1-ID 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 attributes.
6	Мсс	PRO Check Primitive	 rsc = 2001 (CREATED) 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	Mca	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		

8.3.3.3 ContainerAnnc Update

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_14		
Objective:			AE1 announces an Optional Announce attribute to CSE2		
Confi	guratior	າ:	M2M_CFG_04		
	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	Type	Description		
1		Stimulus	AE1 is requested to send a an <container> Update Request with announcedAttribute = maxNrOfInstances</container>		
2	Мса	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{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}/{ 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.		

	Interoperability Test Description			
			• rsc = 2004 (UPDATED)	
8	Mca		 rqi = (token-string) same as received in request message 	
	ivica		 pc = Serialized representation of <container> resource</container> 	
9		IOP Check	AE1 indicates successful operation	
IOP \	/erdict	_		
PRO \	√erdict			

8.3.3.4 ContainerAnnc Retrieve

	Interoperability Test Description				
			TD_M2M_SH_15		
Objective:			AE2 retrieves an Announced Resource		
Config	guration	า:	M2M_CFG_04		
Refere	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 		
Ston	RP	Type	Description		
Step 1	KF	Type Stimulus	AE2 is requested to send a Retrieve Request for a < containerAnnc >		
2	Mca	PRO Check Primitive	op = 2 (Retrieve) to = {CSEBaseName2}/URI of < containerAnnc > resource fr = AE2-ID rqi = (token-string) pc = empty		
3	Mca	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 \	√erdict				

8.3.3.5 ContainerAnnc Retrieve Original

			Interoperability Test Description
Identifier:			TD_M2M_SH_16
Objective:			AE2 retrieves the original resource representation of an announced resource
Configuration:			M2M_CFG_04
Refer	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> AE1 is announced on CSE2
			<container> is announced on CSE2</container>
Cton		Toma	Test Sequence
Step 1	RP	Type Stimulus	Description AE2 is requested to send a Retrieve Request to a < containerAnnc > with rcn = 7
1	1	Stimulus	
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	Mcc	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	Mca	PRO Check Primitive	 rsc =2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container>
9	<u> </u>	IOP Check	AE indicates successful operation
	/erdict		
PRO '	Verdict		

8.3.4 Single Hop <fanOutPoint> operations

8.3.4.1 Create <fanOutPoint>

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_17		
Objective:			AE creates a <contentinstance> resource in each group member, where some memberIDs are on a remoteCSE</contentinstance>		
Config	guration	1:	M2M_CFG_08		
References:			oneM2M TS-0001 [1], clause 10.2.7.7 oneM2M TS-0004 [2], clause 7.4.15.2, 7.4.15.3		
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 Create Request to create <contentinstance> in each group member</contentinstance>		

	Interoperability Test Description				
2	Мса	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/{group}/fopt fr = AE-ID 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 Member Hosting CSE.		
4	Мсс	PRO Check Primitive	 op = 1 (Create) to = {MemberCSEBaseName}/{subgroupld}/fopt or {MemberCSEBaseName}/{memberId} fr = AE-ID rqi = (token-string) gid = (grpId-token-string) ty = 4 (contentInstance) pc = Serialized representation of <contentinstance> resource</contentinstance> 		
5		IOP Check	Check if possible that the <contentinstance> resource is created in the Member Hosting CSE.</contentinstance>		
6	Мсс	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message gid = (grpld-token-string) same as received in request message pc = Serialized representation of <contentinstance> resource or <aggregated response=""></aggregated></contentinstance> 		
7		IOP Check	Check that the response is aggregated by the group hosting CSE and sent to the AE.		
8	Mca	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <aggregated response=""></aggregated> 		
9		IOP Check	AE indicates successful operation		
	/erdict				
PRO '	Verdict				

8.3.4.2 Retrieve <fanOutPoint>

			Interoperability Test Description
Identi			TD_M2M_SH_18
Objec	tive:		AE retrieves a <container> resource from each group member, where some memberIDs</container>
			are on a remoteCSE
	guration	า:	M2M_CFG_08
Refere	ences:		
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>
0.		_	Test Sequence
Step	RP	Туре	Description Description
1		Stimulus	AE is requested to send a Retrieve Request to the fanoutPoint of <group> resource</group>
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/{group}/fopt fr = AE-ID rqi = (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 = (grpId-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.

	Interoperability Test Description				
7	Mca	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 Verdict					
PRO Verdict					

8.3.4.3 Update <fanOutPoint>

	Interoperability Test Description				
Identifier:			TD_M2M_SH_19		
Objective:			AE updates a <container> resource in each group member, where some memberIDs are</container>		
			on a remoteCSE		
	guratior	า:	M2M_CFG_08		
Refere	ences:				
_					
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</group>		
			lifetime of the resource.		
			• op = 3 (Update)		
		PRO Check	to = {CSEBaseName}/{group}/fopt		
2	Mca	Primitive	• 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.		
		PRO Check Primitive	op = 3 (Update) (Mombas CSE Recollems) / (subgrounds) / fent		
			to = {MemberCSEBaseName}/{subgroupId}/foptor {MemberCSEBaseName}/{memberId}		
4	Mcc		fr = AE-ID		
	IVICC				
			 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>		
		101 CHECK	rsc = 2004 (CHANGED)		
		PRO Check Primitive	 rqi = (token-string) same as received in request message 		
6	Мсс		gid = (grpld-token-string) same as received in request message		
			pc = Serialized representation of <container> resource or <aggregated< td=""></aggregated<></container>		
			response>		
7		IOP Check	Check that the response is aggregated by the group hosting CSE and sent to the AE.		
-			• rsc = 2004 (CHANGED)		
8	Мса	PRO Check Primitive	rqi = (token-string) same as received in request message		
			pc = Serialized representation of <aggregated response=""></aggregated>		
9		IOP Check	AE indicates successful operation		
IOP \	/erdict				
PRO '	Verdict	_			
		•			

8.3.4.4 Delete <fanOutPoint>

			Interoperability Test Description
Identifier:			TD_M2M_SH_20
Objective:			AE deletes a <contentinstance> resource from each group member, where some memberIDs are on a remoteCSE</contentinstance>
Config	guration) :	M2M_CFG_08
Refere	ences:		
Pre-test conditions:			 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>
01		T	Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group> resource</group>
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{group}/fopt/ol 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.
4	Mcc	PRO Check Primitive	 op = 4 (Delete) to = {MemberCSEBaseName}/{subgroupId}/fopt/ol or {MemberCSEBaseName}/{memberId}/ol fr = AE-ID rqi = (token-string) gid = (grpId-token-string)
5		IOP Check	Check if possible that the <resource> resource is deleted in the Hosting CSE.</resource>
6	Mcc	PRO Check Primitive	 rsc = 2002 (DELETED) rqi = (token-string) same as received in request message gid = (grpld-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.
8	Mca	PRO Check Primitive	 rsc = 2002 (DELETED) rqi = (token-string) same as received in request message pc = Serialized representation of <aggregated_response></aggregated_response>
9		IOP Check	AE indicates successful operation
IOP V	/erdict		•
PRO \	√erdict		

8.4 Secure AE Registration

8.4.1 PSK Security Association Establishment Framework

			Interoperability Test Description
Identi	fier:		TD_M2M_SE_01
Objective:			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.
Configuration:			M2M_CFG_01
	ences:	1.	oneM2M TS-0003 [12], clause 8.2.2.1
I CICI			oneM2M TS-0001 [1], clauses 9.6.29, 9.6.19, 9.16.20
			01011211 10 0001 [1], 0100000 010120, 010110, 0110120
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> <ae>APP01</ae>
			•
Cton	DD	Tumo	Test Sequence
Step 1	RP	Type Stimulus	Description AE is requested to send a primitive to the Registrar CSE
1		PRO Check Primitive	Security Association Establishment
2	Mca	PRO Check TCP	TLS Handshake
		PRO Check UDP	DTLS Handshake
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	Mca	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
	/erdict		
PRO '	√erdict		

History

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