

Т	ONEM2M ECHNICAL SPECIFICATION
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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 TS-0008 [3], TS-0009 [4] and 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" V1.6.1.
[2]	oneM2M TS-0004: "Service Layer Core protocol Specification" V1.3.0.
[3]	oneM2M TS-0008: "CoAP Protocol Binding" V1.1.0.
[4]	oneM2M TS-0009: "HTTP Protocol Binding" V1.2.0.
[5]	oneM2M TS-0010: "MQTT Protocol Binding" V1.2.0.
[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)".
[11]	oneM2M TS-0006: "Management Enablement (BBF)".

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 reference 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 RulesNOTE: Available at (http://www.onem2m.org/images/files/oneM2M-Drafting-Rules.pdf)
```

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,

OMA DM, 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

BBF BroadBand Forum

CoAP Constrained Application Protocol

CSE Common Services Entity

CSE-ID Common Service Entity Identifier

DM Device Management
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

JSON JavaScript Object Notation

LWM2M Lightweight M2M M2M Machine to Machine

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

MQTT Message Queuing Telemetry Transport

OMA Open Mobile Alliance SP Service Provider SUT System Under Test TD Test Description

URI Uniform Resource Identifier XML eXtensible Markup Language

4 Conventions

The key words "Shall", "Shall not", "May", "Need not", "Should", "Should not" in this 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 methodogy 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 **Error! Reference source not found.**.

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 may also contain the conformance checks as part of the observations.

Table 1: Interoperability test description

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 ressources
	ЗΠ	on Mca + Mcc
	MH	Multi Hop
<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 (TS-0008 [3]), basic XML and JSON mediatype 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 TS-0004 [2].

Host Address: refers to the authority part of a target URI as defined in RFC 3986 [8] and 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 orginator 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 aquired 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> represesents 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 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 payload
               <?xml version="1.0" encoding="UTF-8"?>
                   <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>
                               <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 = <From>
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
	RemoteCSE		Registree CSE registers to Registrar CSE
2	RemoteCSE		
3	}	TD_M2M_NH_03	Registree CSE retrieves RemoteCSE from Registrar CSE
4		TD_M2M_NH_04	Registree CSE updates RemoteCSE from Registrar CSE
5	A college College Early	TD_M2M_NH_05	Registree CSE deletes RemoteCSE from Registrar CSE
6	Application Entity	TD_M2M_NH_06	AE registers to its registrar CSE via an AE Create Request
7		TD_M2M_NH_07	AE retrieves <ae> resource via an AE Retrieve Request</ae>
8		TD_M2M_NH_08	AE updates attribute in <ae> resource via an AE Update Request</ae>
9		TD_M2M_NH_09	AE de-registers by deleting <ae> resource via an AE Delete</ae>
10	Container	TD MOM NILL 40	Request
10	Container	TD_M2M_NH_10	AE creates a container resource in registrar CSE via a container Create Request
44		TD MOM NILL 44	AE retrieves information of a container resource via a container
11		TD_M2M_NH_11	
10		TD MOM NILL 40	Retrieve Request
12		TD_M2M_NH_12	AE updates attribute in application resource via a container Update
12		TD_M2M_NH_13	Request AE deletes a specific container resource via a container Delete
13		I D_IVIZIVI_INH_13	Request
14	ContentInstance	TD_M2M_NH_14	AE adds a contentInstance resource <contentinstance> to a</contentinstance>
14	Contentinstance	I D_IVIZIVI_INI I_14	specific container in Registrar CSE via a contentinstance Create
			Request
15		TD_M2M_NH_15	AE retrieves information of a contentInstance resource via a
10		I D_IVIZIVI_IVI I_10	container Retrieve Request
17		TD_M2M_NH_17	AE deletes contentInstance resource via a container Delete
''		I B_IMZIM_INIT_IT	Request
18	Discovery	TD_M2M_NH_18	AE discovers resources residing in Registrar CSE
19]		AE discovers accessible resources residing in Registrar CSE using
10		I B_IMZIN_INI_IO	the label filter criteria
20		TD_M2M_NH_20	AE discovers accessible resources residing in Registrar CSE
		10_1112111_11111_20	limiting the number of matching resources to the specified value.
21		TD_M2M_NH_21	AE discovers accessible resources residing in Registrar CSE using
			multiple Filter Criteria
22	Subscription	TD_M2M_NH_22	AE creates a subscription to Application Entity resource via
	·		subscription Create Request
23		TD_M2M_NH_23	AE retrieves information about a subscription via subscription
			Retrieve Request such as expirationTime, labels, etc.
24		TD_M2M_NH_24	AE updates information about a subscription via subscription
			Retrieve Request
25		TD_M2M_NH_25	AE cancels subscription via an subscription Delete Request
26	AccessControlPolicy	TD_M2M_NH_26	AE creates an accessControlPolicy resource
27		TD_M2M_NH_27	AE retrieves accessControlPolicy resource
28		TD_M2M_NH_28	AE updates attribute in accessControlPolicy resource
29		TD_M2M_NH_29	AE deletes accessControlPolicy resource
30		TD_M2M_NH_30	AE delete request is rejected due to accessControlPolicy
31	Group	TD_M2M_NH_31	AE creates a group resource
32		TD_M2M_NH_32	AE retrieves group resource
33			AE updates attribute in group resource
34		TD_M2M_NH_34	AE deletes group resource
	Node		AE creates a node resource
36		TD_M2M_NH_36	AE retrieves node resource
37		TD_M2M_NH_37	AE updates attribute in node resource
38		TD_M2M_NH_38	AE deletes node resource
39	PollingChannel	TD_M2M_NH_39	AE creates a <pollingchannel> resource in registrar CSE via a</pollingchannel>
			Create Request
40		TD_M2M_NH_40	AE retrieves information of a pollingChannel resource via a Retrieve
			Request
41		TD_M2M_NH_41	AE updates attribute in pollingChannel resource via a Update
			Request
42		TD_M2M_NH_42	AE deletes a pollingChannel resource via a Delete Request

Nb	Procedure/Resource	TD ID	TD Description
43		TD_M2M_NH_43	AE retrieves information of a pollingChannel resource via a Retrieve
			Request
	FanoutPoint	TD_M2M_NH_44	AE creates a <contentinstance> resource in each group member</contentinstance>
45		TD_M2M_NH_45	AE retrieves the <container> resource from in each group member</container>
46			AE updates an <container> resource of each member resource</container>
47			AE deletes a <container> ofeach member</container>
	Notification		AE receives a notification request from the HOST CSE
49	Synchronous request	TD_M2M_NB_01	AE creates a container resource using non blocking synchronous
			request in registrar CSE
50		TD_M2M_NB_02	AE retrieves a Container resource using non blocking synchronous
			request in registrar CSE
51		TD_M2M_NB_03	AE updates a Container resource using non blocking synchronous
			request in registrar CSE
52		TD_M2M_NB_04	AE deletes a Container resource using non blocking synchronous
			request
53	Asynchronous request	TD_M2M_NB_05	AE creates a container resource using non blocking asynchronous
		TD 14014 ND 00	request
54		TD_M2M_NB_06	AE retrieves a Container resource using non blocking
		TD MOM ND 07	asynchronous request
55		TD_M2M_NB_07	AE updates a Container resource using non blocking asynchronous request
56		TD_M2M_NB_08	AE deletes a Container resource using non blocking asynchronous
50		I D_IVIZIVI_IND_00	request
57	Retargeting	TD_M2M_SH_01	AE creates a remote <resource> resource</resource>
58			AE retrieves a remote <resource> resource</resource>
59			AE updates a remote <resource> resource</resource>
60			AE delete a remote <resource> resource</resource>
	Discovery		AE discovers accessible resources residing in the remote Hosting
0.	Diocovery	I D_MZM_OH_00	CSE using multiple Filter Criteria
62	Unauthorized operation	TD_M2M_SH_10	AE delete request is rejected after access rights verification using
-	onaamonii operamen		retargeting.
63	Notification	TD_M2M_SH_11	AE receives a notification request from the remote hosting CSE
64	<mgmtobj></mgmtobj>		AE creates a <mgmtobj> resource</mgmtobj>
65	,		AE updates a <mgmtobj> resource</mgmtobj>
66			AE retrieves a <mgmtobj> resource</mgmtobj>
67			AE deletes a <mgmtobj> resource</mgmtobj>

Configuration

7.1 **Test Configuration**

7.1.1 No hop

M2M_CFG_01 7.1.1.1

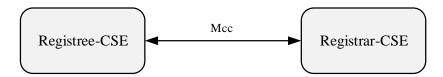
The AE manages resources on the registrar CSE (Hosting CSE)

oneM2M entities model



7.1.1.2 M2M_CFG_02

oneM2M entities model



7.1.2 Single hop

7.1.1.1 M2M_CFG_03

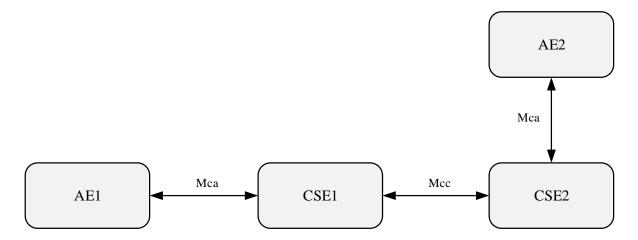
The AE manages resources on the remote CSE

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 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:

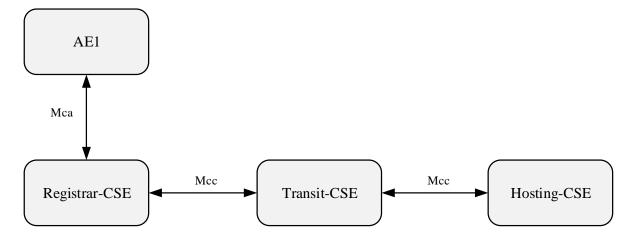
The AE sends a request addressing <mgmtObj> to IN-CSE. IN-CSE then further acts as a Management Server
to send management commands to Managed Entity over the mc interface. The management command is
defined in OMA DM, BBF TR069 or LWM2M.



7.1.3 Multi hops

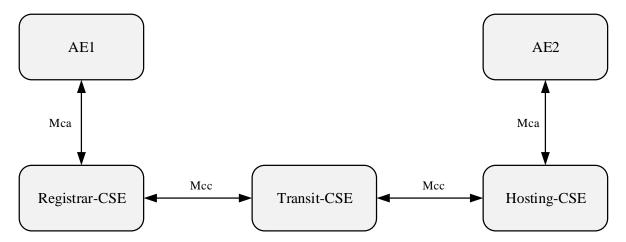
7.1.3.1 M2M_CFG_06

oneM2M entities model



M2M_CFG_07 7.1.3.2

oneM2M entities model



Test Descriptions 8

No Hop configuration testing 8.1

8.1.1 **CSEBase Management**

8.1.1.1 CSEBase Retrieve on Mca

Identifier: TD_M2M_NH_01 Objective: AE retrieves the CSEBase resource Configuration: M2M_CFG_01 References: TS-0001 [1], clause 10.2.3.2 TS-0004 [2], clause 7.3.2 Pre-test conditions: • 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 CSE with name {CSEBaseNam} • Operation (op) = 2 (Retrieve)	
Configuration: M2M_CFG_01 References: TS-0001 [1], clause 10.2.3.2 TS-0004 [2], clause 7.3.2 Pre-test conditions:	
References: TS-0001 [1], clause 10.2.3.2 TS-0004 [2], clause 7.3.2 Pre-test conditions: • 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 CSE with name {CSEBaseNam} • Operation (op) = 2 (Retrieve)	
TS-0004 [2], clause 7.3.2 Pre-test conditions:	
Pre-test conditions:	
Test Sequence Step RP Type Description 1 Stimulus AE is requested to send a retrieve Request to CSE CSE with name {CSEBaseNam} • Operation (op) = 2 (Retrieve)	
Test Sequence Step RP Type Description 1 Stimulus AE is requested to send a retrieve Request to CSE CSE with name {CSEBaseNam} • Operation (op) = 2 (Retrieve)	
Step RP Type Description 1 Stimulus AE is requested to send a retrieve Request to CSE CSE with name {CSEBaseNam • Operation (op) = 2 (Retrieve)	
1 Stimulus AE is requested to send a retrieve Request to CSE CSE with name {CSEBaseNam • Operation (op) = 2 (Retrieve)	
Operation (op) = 2 (Retrieve)	
PRO Check • To (to) = Resource-ID of requested <csebase> resource, assumed CSE-relative</csebase>	'e
Primitive nere	
• From (from) = AE-ID of request originator	
Request Identifier (rqi) = (token-string)	
Sent GET request contains	
Request method = GET	
PRO Check • Request-Target:{CSEBaseName}	
HTTP • Host: Host Address of registrar CSE	
X-M2M-RI: value of rqi primitive parameter	
• X-M2M-Origin: AE-ID	
2 Mca Payload: empty	
Sent GET request contains	
• Method: 0.01 (GET)	
PRO Check • Uri-Host: Registrar CSE host	
CoAP	
• Uri-Path: <csebase></csebase>	
Sent a MQTT PUBLISH protocol packet to the request topic "/oneM2M/req/ <sp-re< td=""><td>ative-</td></sp-re<>	ative-
AE-ID>/ <registrar cse-id="">"</registrar>	
Payload:	
PRO Check • op = 2	
MQTT • to = <csebase></csebase>	
• fr = <ae-id></ae-id>	
• rqi = <request id=""></request>	
PRO Check • Response Status Code (rsc) = 2000 (OK)	
• Request Identifier (rqi) = same string as received in request message	
Content (pc) = Serialized Representation of <csebase> resource</csebase>	
Registrar CSE sends response containing:	
• Status Code = 200	
PRO Check • X-M2M-RSC: 2000	
HTTP ◆ X-M2M-RI: value of rqi primitive parameter	
Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res	+json
Mca Content-Length = size of payload in the message body in bytes	
Payload: Serialized Representation of <csebase> resource</csebase>	
PRO Check Registrar sends response containing:	
• Response Code = 2.05	
Payload: <csebase> resource</csebase>	
Sent a MQTT PUBLISH protocol packet to the response topic "/oneM2M/resp/ <sp-< td=""><td></td></sp-<>	
PRO Check Relative-AE-ID>/ <registrar cse-id="">"</registrar>	
MOTT Fayload.	
● to = <sp-relative-ae-id></sp-relative-ae-id>	
• fr = <registrar cse-id=""></registrar>	

	Interoperability Test Description			
			• rqi = <request id=""></request>	
			• rsc = <response code(2000)="" status=""></response>	
			 pc = <content(<csebase> resource representation)></content(<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			
Configuration: M2M_CFG_02			
References: TS-0001 [1], clause 10.2.2.1			TS-0001 [1], clause 10.2.2.1
Neierences.			TS-0004 [2], clause 7.3.3.2.1
Pre-te	st cond	itions:	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
			• op = 1 (Create)
			• to = {CSEBaseName}
		PRO Check	• fr = Registree CSE-ID
		Primitive	• rqi = (token-string)
			• ty = 16 (RemoteCSE)
			 pc = Serialized representation of <remotecse> resource</remotecse>
			Sent request contains
			Request method = POST
			Request-Target:{CSEBaseName}
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			X-M2M-Origin: Registree CSE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=16 or application/vnd.onem2m-
			res+json; ty=16
			Message-body: Serialized representation of <remotecse> resource</remotecse>
			Sent request contains
2	Mcc		• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}
		PRO Check CoAP	Content-type: application/vnd.onem2m-res+xmlor application/vnd.onem2m-res+json
			• oneM2M-TY: 16
			oneM2M-FR: Registree CSE-ID
			• oneM2M-RQI: (token-string)
			Payload: Serialized representation of <remotecse> resource</remotecse>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< Registree CSE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check MQTT	• op = 1 (Create)
			• to = {CSEBaseName}
			• fr = Registree CSE-ID
			• rqi = (token-string)
			• ty = 16 (RemoteCSE)
			 pc = Serialized representation of <remotecse> resource</remotecse>
			- po - Gonanzou representation of ArtemoteGGEZ resource

	Interoperability Test Description				
		DDO Chast	• rsc = 2001 (CREATED)		
		PRO Check Primitive	• rqi = (token-string) same as received in request message		
		Fillilliuve	 pc = Serialized representation of <remotecse> resource</remotecse> 		
			Registrar CSE sends response containing:		
			• Status Code = 201 (Created)		
		PRO Check	• X-M2M-RSC: 2001		
		HTTP	X-M2M-RI: (token-string) same as received in request message		
			Content-Location: URI of the created RemoteCSE resource.		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of <remotecse> resource</remotecse>		
			Registrar sends response containing:		
	Мсс	PRO Check CoAP	• Response Code = 2.01		
3			• oneM2M-RSC: 2001		
			 oneM2M-RQI: (token-string) same as received in request message 		
			Location-Path: URI of the created RemoteCSE resource		
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Payload: Serialized representation of <remotecse> resource</remotecse>		
		PRO Check	Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
			• to = Registree CSE-ID		
		MQTT	• fr = Registrar CSE-ID		
			• rsc = 2001 (CREATED)		
			rqi = (token-string) same as received in request message		
			pc = Serialized representation of <remotecse> resource</remotecse>		
4		IOP Check	Check if possible that the <remotecse> resource has been created in registrar CSE.</remotecse>		
5		IOP Check	Check if possible that the corresponding <remotecse> resource has been also created in</remotecse>		
6		IOP Check	registree CSE.		
6 IOB \	/erdict	IOP Check	Registree CSE indicates successful operation.		
	Verdict				
FINU	veruit				

8.1.2.2 remoteCSE Retrieve

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_03
Objective:			Registree CSE retrieves RemoteCSE from Registrar CSE
Confi	guration	1:	M2M_CFG_02
	ences:		TS-0001 [1], clause 10.2.2.2
			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	Туре	Description
1		Stimulus	Registree CSE is requested to send a RemoteCSE retrieve request to Registrar CSE
	Мсс	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/{remoteCSEName} fr = Registree CSE-ID rqi = (token-string) pc = empty
2		PRO Check HTTP	Sent request contains Request method = GET Request-Target: {CSEBaseName}/{remoteCSEName} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: Registree CSE-ID Message-body: empty Sent request contains Method: 0.01 (GET)
		CoAP	Uri-Host: IP address or the FQDN of Registrar CSE

	Interoperability Test Description				
			Uri-Path: {CSEBaseName}/{remoteCSEName}		
			• oneM2M-FR: Registree CSE-ID		
			• oneM2M-RQI: (token-string)		
			Payload: empty		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< Registree CSE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 2 (Retrieve)		
		MQTT	to = {CSEBaseName}/{remoteCSEName}		
			• fr = Registree CSE-ID		
			• rqi = (token-string)		
			• pc = empty		
			Registrar CSE sends response containing:		
		PRO Check	• rsc = 2000 (OK)		
		Primitive	 rqi = (token-string) same as received in request message 		
			• pc = Serialized representation of <remotecse> resource</remotecse>		
		PRO Check HTTP	Registrar CSE sends response containing:		
			• Status Code = 200 (OK)		
			• X-M2M-RSC: 2000		
			X-M2M-RI: (token-string) same as received in request message		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			 Message-body: Serialized representation of <remotecse> resource</remotecse> 		
		PRO Check	Registrar sends response containing:		
3			• Response Code = 2.05 (OK)		
	Mcc		• oneM2M-RSC: 2000		
		CoAP	 oneM2M-RQI: (token-string) same as received in request message 		
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Payload: Serialized representation of <remotecse> resource</remotecse>		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/ <registree cse-id="">/<registrar cse-id="">"</registrar></registree>		
			Payload:		
		PRO Check	• to = Registree CSE-ID		
		MQTT	• fr = Registrar CSE-ID		
			• rsc = 2000 (OK)		
			• rqi = (token-string) same as received in request message		
		IOD Ob a all	pc = Serialized representation of <remotecse> resource Designation</remotecse>		
4	/erdict	IOP Check	Registree CSE indicates successful operation		
	Verdict				
PRU	veruict				

remoteCSE Update 8.1.2.3

			Interoperability Test Description
Identi	fier:		TD M2M NH 04
Objec			Registree CSE updates RemoteCSE from Registrar CSE
	guration	1:	M2M_CFG_02
	ences:		TS-0001 [1], clause 10.2.2.3
			TS-0004 [2], clause 7.3.3.2.3
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 update request to Registrar CSE
			• op = 3 (Update)
		PRO Check	to = {CSEBaseName}/{remoteCSEName}
		Primitive	• fr = Registree CSE-ID
2	Мсс	1 minuve	• rqi = (token-string)
			pc = Serialized representation of updated <remotecse> resource</remotecse>
		PRO Check	Sent request contains
1		HTTP	Request method = PUT

			Interoperability Test Description
			Request-Target: {CSEBaseName}/{remoteCSEName}
			Host: IP address or the FQDN of Registrar CSE V MOM Bl. (folian atria)
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: Registree CSE-ID
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of updated <remotecse> resource</remotecse>
			Sent request contains
			• Method: 0.03 (PUT)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/{remoteCSEName}
		CoAP	oneM2M-FR: Registree CSE-ID
			oneM2M-RQI: (token-string)
			• Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of updated <remotecse> resource</remotecse>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< Registree CSE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	• 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>
- 5		101 Officer	Registrar CSE sends response containing:
		PRO Check	• rsc = 2004 (UPDATED)
		Primitive	• rqi = (token-string) same as received in request message
		1 1111111110	• pc = Serialized representation of <remotecse> resource</remotecse>
	Мсс	PRO Check HTTP	Registrar CSE sends response containing:
			Status Code = 200 (OK)
			• X-M2M-RSC: 2004
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <remotecse> resource RemoteCSE> resource</remotecse>
			Registrar sends response containing:
1			Response Code = 2.04 (UPDATED)
4		DDO Obselv	MOM BCC: 2004
4	Mcc	PRO Check	oneM2M-RSC: 2004 MOM ROL (table a string) and a string of the s
4	Mcc	PRO Check CoAP	• oneM2M-RQI: (token-string) same as received in request message
4	Mcc		 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
4	Mcc		 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource</remotecse>
4	Mcc		oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message:</remotecse>
4	Mcc		oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">"</registrar></registree></remotecse>
4	Mcc	CoAP	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload:</registrar></registree></remotecse>
4	Mcc	CoAP PRO Check	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID</registrar></registree></remotecse>
4	Mcc	CoAP	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID</registrar></registree></remotecse>
4	Mcc	CoAP PRO Check	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID rsc = 2004 (Updated)</registrar></registree></remotecse>
4	Mcc	CoAP PRO Check	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID rsc = 2004 (Updated) rqi = (token-string) same as received in request message</registrar></registree></remotecse>
	МСС	CoAP PRO Check MQTT	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <remotecse> resource</remotecse></registrar></registree></remotecse>
5		CoAP PRO Check	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID rsc = 2004 (Updated) rqi = (token-string) same as received in request message</registrar></registree></remotecse>
5 IOP \	/erdict	CoAP PRO Check MQTT	oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <remotecse> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/<registree cse-id="">/<registrar cse-id="">" Payload: to = Registree CSE-ID fr = Registrar CSE-ID rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <remotecse> resource</remotecse></registrar></registree></remotecse>

8.1.2.4 remoteCSE Delete

			Interoperability Test Description
Identi			TD_M2M_NH_05
Objec			Registree CSE deletes RemoteCSE from Registrar CSE
	guratior	1:	M2M_CFG_02
References:			TS-0001 [1], clause 10.2.2.4
			TS-0004 [2], clause 7.3.3.2.4
Pre-test conditions:			CSEBase resource has been created in registrar CSE with name {CSEBaseName} Registree CSE has created a remoteCSE resource on registrar CSE with name {RemoteCSEName}
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	Registree CSE is requested to send a RemoteCSE delete request to Registrar CSE
		PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{remoteCSEName} fr = Registree CSE-ID rqi = (token-string) pc = empty
		PRO Check HTTP	Sent request contains Request method = DELETE Request-Target: {CSEBaseName}/{remoteCSEName} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: Registree CSE-ID Message-body: empty
2	Мсс	PRO Check CoAP	Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{remoteCSEName} • oneM2M-FR: Registree CSE-ID • oneM2M-RQI: (token-string) • Payload: empty
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <registree cse-id="">/<registrar cse-id="">" Payload:</registrar></registree>
		PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message • pc = empty
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2002 X-M2M-RI: (token-string) same as received in request message Message-body: empty
3	Мсс	PRO Check CoAP	Registrar sends response containing: Response Code = 2.01 (OK) oneM2M-RSC: 2002 oneM2M-RQI: (token-string) same as received in request message Payload: empty
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registree cse-id="">/<registrar cse-id="">" Payload: • to = Registree CSE-ID • fr = Registrar CSE-ID • rsc = 2002 • rqi = (token-string) same as received in request message • pc = empty</registrar></registree>

	Interoperability Test Description			
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 \	/erdict			
PRO Verdict				

Application Entity Registration 8.1.3

8.1.3.1 **AE Create**

			Interoperability Test Description
Identi			TD_M2M_NH_06
Objec			AE registers to its registrar CSE via an AE Create Request
Confi	guration):	M2M_CFG_01
References:			TS-0001 [1], clause 10.2.1.1
			TS-0004 [2], clause 7.3.5.2.1
Pre-te	st cond	itions:	 CSEBase resource has been created in CSE with name {CSEBaseName}
			AE does not have an AE-ID, i.e. it registers from scratch
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a AE Create request to register to the Registrar CSE
			• op = 1 (Create)
			• to = {CSEBaseName}
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• ty = 2 (AE)
			 pc = Serialized representation of <ae> resource</ae>
			Sent request contains
			Request method = POST
			Request-Target:{CSEBaseName}
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=2 or application/vnd.onem2m-
			res+json; ty=2
			Message-body: Serialized representation of <ae> resource</ae>
			Sent request contains
2			• Method: 0.02 (POST)
	Mca		Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}
		PRO Check	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
		CoAP	• oneM2M-TY: 2
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <ae> resource</ae>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• op = 1 (Create)
		PRO Check	• to = {CSEBaseName}
		MQTT	• 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>
			• rsc = 2001 (CREATED)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	pc = Serialized representation of <ae> resource</ae>
4	Mca	PRO Check	Registrar CSE sends response containing:
		HTTP	• Status Code = 201 (OK)
			• X-M2M-RSC: 2001

	Interoperability Test Description			
<u> </u>			X-M2M-RI: (token-string) same as received in request message	
			Content-Location: URI of the created AE resource.	
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Managed bady Socialized representation of AFE, resources	
			Message-body: Serialized representation of <ae> resource</ae>	
			Registrar sends response containing:	
			• Response Code = 2.01	
		PRO Check	• oneM2M-RSC: 2001	
		CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
			Location-Path: URI of the created AE resource	
			Payload: Serialized representation of <ae> resource</ae>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• 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			

8.1.3.2 AE Retrieve

			Interoperability Test Description
Identi	fier:		TD M2M NH 07
Objec			AE retrieves <ae> resource via an AE Retrieve Request</ae>
Configuration:			M2M CFG 01
	ences:	••	TS-0001 [1], clause 10.2.1.2
			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 accessControlPolicy retrieve request to Registrar CSE
			• op = 2 (Retrieve)
		PRO Check	• to = {CSEBaseName}/{AE}
		Primitive	• fr = AE-ID of request originator
			• rqi = (token-string)
		PRO Check HTTP	Sent request contains
			Request method = GET
			Request-Target: {CSEBaseName}/{{AE}}
			Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: empty
_			Sent request contains
2	Mca		• Method: 0.01 (GET)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	Uri-Path: {CSEBaseName}/{AE} }
		COAP	• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
		PRO Check	Payload:
		MQTT	• op = 2 (Retrieve)
			• to = {CSEBaseName}/{AE}
			• fr = AE-ID
			• rqi = (token-string)

			Interoperability Test Description
			• pc = empty
		PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <ae> resource</ae>
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of <ae> resource</ae>
3	Mca	PRO Check CoAP	Registrar sends response containing: Response Code = 2.05 (OK) oneM2M-RSC: 2000 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <ae> resource</ae>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <ae> resource</ae></registrar></ae-id>
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.1.3.3 AE Update

	Interoperability Test Description					
Identifier:			TD_M2M_NH_08			
Objective:			AE updates attribute in <ae> resource</ae>			
	guratior	1:	M2M_CFG_01			
Refer	ences:		TS-0001 [1], clause 10.2.1.3			
			TS-0004 [2], clause 7.3.5.2.3			
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>			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send an AE Update Request			
	Mca	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) pc = Serialized representation of updated <ae> resource</ae> 			
2		PRO Check HTTP	Sent request contains Request method = PUT Request-Target: {CSEBaseName}/{AE} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <ae> resource</ae>			
		PRO Check CoAP	Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{AE}			

			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of updated <ae> resource</ae>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	• 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>
			Registrar CSE sends response containing:
		PRO Check	• rsc = 2004 (UPDATED)
		Primitive	 rqi = (token-string) same as received in request message
			pc = Serialized representation of <ae> resource</ae>
			Registrar CSE sends response containing:
		PRO Check	• Status Code = 200 (OK)
		HTTP	• X-M2M-RSC: 2004
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <ae> resource</ae>
		PRO Check	Registrar sends response containing:
4			• Response Code = 2.04 (UPDATED)
	Mca		• oneM2M-RSC: 2004
		CoAP	 oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <ae> resource</ae>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2004 (Updated)
			• rqi = (token-string) same as received in request message
<u> </u>		100.01	pc = Serialized representation of <ae> resource</ae>
5	/ l: t	IOP Check	AE indicates successful operation
	/erdict		
PKO,	√erdict		

8.1.3.4 AE Delete

	Interoperability Test Description				
Identi	fier:		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:		TS-0001 [1], clause 10.2.1.4 TS-0004 [2], clause 7.3.5.2.4		
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 AE Delete Request		
2	Мса	PRO Check Primitive PRO Check HTTP	 op = 4 (Delete) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) pc = empty Sent request contains Request method = DELETE 		

			Interoperability Test Description
			Request-Target: {CSEBaseName}/{AE}
			Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: empty
			Sent request contains
			Method: 0.04 (DELETE)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/{AE}
		CoAP	• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
	•		Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 4 (Delete)
		MQTT	• to = {CSEBaseName}/{AE}
			• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
		PRO Check Primitive	Registrar CSE sends response containing:
			• rsc = 2002 (DELETED)
			• rqi = (token-string) same as received in request message
			• pc = empty
			Registrar CSE sends response containing:
		PRO Check	• Status Code = 200 (OK)
		HTTP	• X-M2M-RSC: 2002
			X-M2M-RI: (token-string) same as received in request message
			Message-body: empty
		PRO Check CoAP	Registrar sends response containing:
3			• Response Code = 2.05 (OK)
	Mca		• oneM2M-RSC: 2002
			oneM2M-RQI: (token-string) same as received in request message
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		DDO Charle	Payload: • to = AE-ID
		PRO Check MQTT	• fr = Registrar CSE-ID
		IVIQTI	• rsc = 2002
			rqi = (token-string) same as received in request message
			rqi = (tokeri-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
	erdict	.O. OHOOK	p in managed adoption operation
PRO \			
PRU V	eraict		

Container Management 8.1.4

Container Create 8.1.4.1

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_10	
Objec	tive:		AE creates a container resource in registrar CSE via a container Create Request	
Config	guration	ո։	M2M_CFG_01	
Refere	ences:		TS-0001 [1], clause 10.2.4.1	
			TS-0004 [2], clause 7.3.5.2.1	
Pre-te	st cond	litions:	AE has created an application resource <ae> on registrar CSE</ae>	
			Test Sequence	
Step	Step RP Type		Description	
1		Stimulus	AE sends a request to create a <container></container>	

			Interoperability Test Description
			• op = 1 (Create)
		PRO Check	• to = {CSEBaseName}/URI of <ae> resource</ae>
			• fr = AE-ID
		Primitive	• rqi = (token-string)
			• ty = 3 (Container)
			 pc = Serialized representation of <container> resource</container>
			Sent request contains
			Request method = POST
			Request-Target:{CSEBaseName}/URI of <ae> resource</ae>
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			 Content-Type: application/vnd.onem2m-res+xml; ty=3 or application/vnd.onem2m-
			res+json; ty=3 • Message-body: Serialized representation of <container> resource Sent request contains • Method: 0.02 (POST) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <ae> resource • Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m res+json • oneM2M-TY: 3 • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <container> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: • op = 1 (Create) • to = {CSEBaseName}/URI of <ae> resource • fr = AE-ID • rqi = (token-string) • ty = 3 (Container) • pc = Serialized representation of <container> resource Check Ch</container></ae></registrar></container></ae></container>
			· ·
2	Mca		
		PRO Check	
		CoAP	
			· · · · · · · · · · · · · · · · · · ·
		PRO Check MQTT	
			 to = {CSEBaseName}/URI of <ae> resource</ae>
			• fr = AE-ID
		105.01	
3		IOP Check	
		PRO Check Primitive	
			• pc = Serialized representation of <container> resource</container>
			Registrar CSE sends response containing:
			Status Code = 201 (Created)
		PRO Check HTTP	• X-M2M-RSC: 2001
			X-M2M-RI: (token-string) same as received in request message
			Content-Location: URI of the created resource.
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <container> resource</container>
			Registrar sends response containing:
			• Response Code = 2.01
4	Mca	PRO Check	• oneM2M-RSC: 2001
	50	CoAP	 oneM2M-RQI: (token-string) same as received in request message
		00/11	Location-Path: URI of the created resource
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <container> resource</container>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload:</registrar>
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
		MQTI	• rsc = 2001 (CREATED)
			• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <container> resource</container>
5		IOP Check	AE indicates successful operation
	,		·
IOP \	Verdict		

8.1.4.2 Container Retrieve

Identifi	•		Interoperability Test Description		
	ier:		TD_M2M_NH_11		
Objective:			AE retrieves information of a container resource via a container Retrieve Request		
Config	uration	1:	M2M_CFG_01		
References:			TS-0001 [1], clause 10.2.4.2		
			TS-0004 [2], clause 7.3.5.2.2		
Dro too	1 00nd	itiona	AF has avoided an Application Fatitures are AF, an Denistran CCF		
Pre-tes	st cona	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 <subscription></subscription>		
		PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID rqi = (token-string) pc = empty 		
		PRO Check HTTP	Sent request contains Request method = GET Request-Target: {CSEBaseName}/URI of <container> resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty</container>		
Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE	 Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) 				
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty</container></registrar>		
		PRO Check Primitive	 rsc =2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 		
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of <container> resource</container>		
3	Мса	PRO Check CoAP	Registrar sends response containing: Response Code = 2.05 (OK) oneM2M-RSC: 2000(OK) oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <container> resource</container>		
				PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc 2000(OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <container> resource</container></registrar>
4		IOP Check	AE indicates successful operation		

Interoperability Test Description				
IOP Verdict				
PRO Verdict				

8.1.4.3 Container Update

			Interoperability Test Description
Identi	fior		
Objec			TD_M2M_NH_12 AE updates attribute in application resource via a container Update Request
		·-	M2M_CFG_01
	guratior ences:	1.	TS-0001 [1], clause 10.2.4.3
Kelei	ences.		TS-0001 [1], clause 10.2.4.3 TS-0004 [2], clause 7.3.5.2.3
			13-0004 [2], Clause 1.3.3.2.3
Pro-to	st cond	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>
110-10	St Conc	illions.	AE has created a container resource <container> on Registrar CSE</container>
			Test Sequence
Step	RP	Туре	Description
		Stimulus	AE is requested to send a subscription Update Request to update the lifetime of the
1		C 1	resource.
			• op = 3 (Update)
			• to = {CSEBaseName}/URI of <container> resource</container>
		PRO Check	• fr = AE-ID
		Primitive	• rgi = (token-string)
			• pc = Serialized representation of updated <container> resource</container>
			Sent request contains
			Request method = PUT
			 Request-Target:{CSEBaseName}/URI of <container> resource</container>
	PRO Check Host IP address or the FODN of Registrar CSF	Host : IP address or the FQDN of Registrar CSE	
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of updated <container> resource</container>
			Sent request contains
2	Maa		• Method: 0.03 (PUT)
	Mca Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Registrar CSE PRO Check CoAP Uri-Path: {CSEBaseName}/URI of <container> resource oneM2M-FR: AE-ID</container>	Uri-Host: IP address or the FQDN of Registrar CSE	
			oneM2M-RQI: (token-string)
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of updated <container> resource</container>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	 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.
		PRO Check	• rsc = 2004 (Updated)
		Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <container> resource</container>
			Registrar CSE sends response containing:
		PRO Check	• Code = 200 (Ok)
		HTTP	• X-M2M-RSC: 2004
4	Mac		X-M2M-RI: (token-string) same as received in request message
	Mca		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Massage hadry Carielized representation of vacatainer resources.
			Message-body: Serialized representation of <container> resource Degistrar goods response containing:</container>
			Registrar sends response containing:
		PRO Check CoAP	Response Code = 2.04oneM2M-RSC: 2004
			• oneM2M-RQI: (token-string) same as received in request message
	l		Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json

	Interoperability Test Description			
			Payload : Serialized representation of <container> resource</container>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc = 2004 (Updated)	
			 rqi = (token-string) same as received in request message 	
			• pc = Serialized representation of modified <container> resource</container>	
5		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO	Verdict			

8.1.4.4 Container Delete

	Letonomia Director Describera			
1.1			Interoperability Test Description	
Identi			TD_M2M_NH_13	
Objec			AE deletes a specific container resource via a container Delete Request	
	guration	1:	M2M_CFG_01	
Refere	ences:		TS-0001 [1], clause 10.2.4.4	
			TS-0004 [2], clause 7.3.5.2.4	
_			T	
Pre-te	st cond	itions:	,,	
0.		_		
Step	RP			
1		Stimulus		
		PRO Check	,	
	Primitive • fr = AE-ID			
			1 (3)	
		• AE has created an Application Entity resource <ae> on Registrar CSE • AE has created a container resource <container> on Registrar CSE Test Sequence RP Type Description Stimulus AE is requested to send a subscription Delete Request • op = 4 (Delete) • to = {CSEBaseName}/URI of <container> resource • fr = AE-ID • rqi = (token-string) • pc = empty Sent request contains • Request method = DELETE • Request-Target: {CSEBaseName}/URI of <container> resource • Host: IP address or the FQDN of Registrar CSE • X-M2M-Origin: AE-ID • Message-body: Empty Sent request contains • Method: 0.04 (DELETE) • Uri-Path: {CSEBaseName}/URI of <container> resource • Uri-Path: {CSEBaseName}/URI of <container> resource • OneM2M-FR: AE-ID • OneM2M-FR: AE-ID • OneM2M-FR: AE-ID • OneM2M-RQI: (token-string) • Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check • Op = 4 (Delete)</registrar></container></container></container></container></container></ae>		
	Sent request contains • Request method = DELETE • Request-Target: {CSEBaseName}/URI of <container> resource • Host: IP address or the FQDN of Registrar CSE</container>	· ·		
		PRO Check PRO Check HTTP PRO Check PRO Check HTTP PRO Check P		
		HTTP		
			• X-M2M-Origin: AE-ID	
			0 , 1,	
			Sent request contains	
2				
		PRO Chack		
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>	
		00/11		
		MQTT	• to = {CSEBaseName}/URI of <container> resource</container>	
			• fr = AE-ID	
			• rqi = (token-string)	
\vdash		IOD Ob a st	• pc = empty	
3		IOP Check	Check if possible that the <container> resource is deleted in registrar CSE.</container>	
		PRO Check	• rsc = 2002 (DELETED)	
		Primitive	• rqi = (token-string) same as received in request message	
,			• pc = empty	
4	Mca	PRO Check	Registrar CSE sends response containing:	
	Mod	HTTP	• Status Code = 200 (OK)	
			• X-M2M-RSC: 2002	
			X-M2M-RI: (token-string) same as received in request message	

			Interoperability Test Description
			Message-body: empty
			Registrar sends response containing:
		PRO Check	• Response Code = 2.02
		CoAP	oneM2M-RSC: 2002(DELETED)
		COAI	oneM2M-RQI: (token-string) same as received in request message
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
		PRO Check	Payload:
		MQTT	• to = AE-ID
		IVIQTI	• fr = Registrar CSE-ID
			• rsc = 2002(DELETED)
			rqi = (token-string) same as received in request message
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 \	erdict/		
PRO \	√erdict		

8.1.5 ContentInstance Management

ContentInstance Create 8.1.5.1

			Interoperability Test Description
Identi	fior		TD_M2M_NH_14
			AE adds a contentInstance resource <contentinstance> to a specific container in</contentinstance>
Objective:			Registrar CSE via a contentinstance Create Request
Confi			
	guratior ences:	1:	M2M_CFG_01
Refer	ences:		TS-0001 [1], clause 10.2.19.2
			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>
			AE has created a container resource <container> on registrar CSE</container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE sends a request to create a <container></container>
			• op = 1 (Create)
			 to = {CSEBaseName}/URI of < container > resource
		PRO Check	• fr = AE-ID
	• to = {CSEBaseName}/URI of < container > resource • fr = AE-ID • rqi = (token-string) • ty = 4 (contentInstance) • pc = Serialized representation of <contentinstance> resource Sent request contains • Request method = POST • Request-Target:{CSEBaseName}/URI of < container > resource</contentinstance>		
		• ty = 4 (contentInstance)	
			 pc = Serialized representation of <contentinstance> resource</contentinstance>
	Sent request contains		
		Request method = POST	
			 Request-Target:{CSEBaseName}/URI of < container > resource
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		• X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=4 or application/vnd.onem2m-
2	N4		res+json; ty=4
	Mca		Message-body: Serialized representation of <contentinstance> resource</contentinstance>
			Sent request contains
			• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/URI of < container > resource
		PRO Check	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-
		CoAP	res+ison
			• oneM2M-TY: 4
			oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <contentinstance> resource</contentinstance>
		PRO Check	Sent MQTT PUBLISH message:
		MQTT	Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			1. aleran i amangan and i aman

Interoperability Test Description			
			Payload:
			• 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 <container> resource is created in registrar CSE.</container>
			• rsc = 2001 (CREATED)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	pc = Serialized representation of <contentinstance> resource</contentinstance>
			Registrar CSE sends response containing:
			• Status Code = 201 (Created)
		PRO Check	• X-M2M-RSC: 2001
		HTTP	X-M2M-RI: (token-string) same as received in request message
			Content-Location: URI of the created resource.
			Content-Type: application/vnd.onem2m-res+;son
			Message-body: Serialized representation of <contentinstance> resource</contentinstance>
		PRO Check CoAP	Registrar sends response containing:
			• Response Code = 2.01
4			• oneM2M-RSC: 2001
	Mca		 oneM2M-RQI: (token-string) same as received in request message
			Location-Path: URI of the created resource
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <contentinstance> resource</contentinstance>
			Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• to = AE-ID
			• fr = Registrar CSE-ID
			• 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 operation
_	/erdict		
PRO '	Verdict		

8.1.5.2 ContentInstance Retrieve

Interoperability Test Description			
Identifier:			TD M2M NH 15
Objective:			AE retrieves information of a contentInstance resource via a container Retrieve Request
Configuration:			M2M_CFG_01
	ences:		TS-0001 [1], clause 10.2.19.3
			TS-0004 [2], clause 7.3.6.2.2
Pre-test conditions:		itions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>
			AE has created a container resource <container> on Registrar CSE</container>
Test Sequence			
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Retrieve Request for a <contentinstance></contentinstance>
	Мса	PRO Check Primitive	• op = 2 (Retrieve)
			 to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
			• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
2		PRO Check HTTP	Sent request contains
			Request method = GET
			 Request-Target: {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
			Host: IP address or the FQDN of Registrar CSE
			X-M2M-RI: (token-string)
			X-M2M-Origin: AE-ID

Interoperability Test Description			
			Message-body: empty
			Sent request contains
			Method: 0.01 (GET)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check CoAP	Uri-Path: {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 2 (Retrieve)
			• to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
		MQTT	• to = {CSEBaseName}/ORI of <contentinistance> resource • fr = AE-ID</contentinistance>
			• rqi = (token-string)
			• rqi = (token-sting) • pc = empty
			• rsc =2000 (OK)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	• pc = Serialized representation of <contentinstance> resource</contentinstance>
			Registrar CSE sends response containing:
			Status Code = 200 (OK)
	Мса	PRO Check HTTP	• X-M2M-RSC: 2000
			• X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <contentinstance> resource</contentinstance>
			Registrar sends response containing:
		PRO Check CoAP	Response Code = 2.05 (OK)
3			• neM2M-RSC: 2000(OK)
			oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <contentinstance> resource</contentinstance>
			Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• to = AE-ID
			• fr = Registrar CSE-ID
			• 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
	/erdict		
PRO '	Verdict		

8.1.5.3 ContentInstance Delete

	Interoperability Test Description				
Identifier:			TD_M2M_NH_17		
Objective:			AE deletes contentInstance resource via a container Delete Request		
Confi	guratior	1:	M2M_CFG_01		
Refer	ences:		TS-0001 [1], clause 10.2.19.5		
			TS-0004 [2], clause 7.3.6.2.4		
Pre-te	st cond	itions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>		
			AE has created a container resource <container> on Registrar CSE</container>		
	Test Sequence				
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a subscription Delete Request		
	Мса	PRO Check Primitive	• op = 4 (Delete)		
			 to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> 		
2			• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		

Sent request contains Request method = DELETE Request-Target: {CSEBaseName}/URI of <contentinstance> resource Host: IP address or the FQDN of Registrar CSE X-M2M-Origin: AE-ID Message-body: Empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT Op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource of r = AE-ID orqi = (token-string) op c = empty On Check MOD Check On Calculation and the deleted in the content instance is deleted in the content instance in the content instance is deleted in the content instance in the content instance is deleted in the content instance in the content instance is deleted in the content instance i</contentinstance></registrar></contentinstance></contentinstance>	
PRO Check HTTP Request method = DELETE Request-Target: {CSEBaseName}/URI of <contentinstance> resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: Empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT One M2M/req/< AE-ID>/<registrar cse-id="">" Payload: op = 4 (Delete) ot = {CSEBaseName}/URI of <contentinstance> resource of re = AE-ID original contentInstance> resource</contentinstance></registrar></registrar></contentinstance></contentinstance>	
PRO Check HTTP Request-Target: {CSEBaseName}/URI of <contentinstance> resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: Empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: PRO Check MQTT Propic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT Frace Op = 4 (Delete) or qi = (token-string) or qi = (token-string) or qi = (token-string) or qi = empty</registrar></contentinstance></contentinstance>	
HTTP • Host: IP address or the FQDN of Registrar CSE • X-M2M-RI: (token-string) • X-M2M-Origin: AE-ID • Message-body: Empty Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <contentinstance> resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty</contentinstance></registrar></contentinstance>	
X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: Empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT Op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar></contentinstance>	
PRO Check COAP PRO Check COAP One Message-body: Empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar></contentinstance>	
PRO Check COAP One Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT Projoad: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource of r = AE-ID orqi = (token-string) opc = empty</contentinstance></registrar></contentinstance>	
Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <contentinstance> resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty</contentinstance></registrar></contentinstance>	
Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar></contentinstance>	
PRO Check CoAP Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar></contentinstance>	
PRO Check CoAP Uri-Path: {CSEBaseName}/URI of <contentinstance> resource</contentinstance>	
CoAP • Url-Path: {CSEBaseName}/URI of <contentinstance> resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty</contentinstance></registrar></contentinstance>	
oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: PRO Check MQTT op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID orqi = (token-string) pc = empty</contentinstance></registrar>	
Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: PRO Check MQTT op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar>	
Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty</contentinstance></registrar>	
Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar>	
PRO Check MQTT Payload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance>	
Payload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance>	
 MQTT to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> fr = AE-ID rqi = (token-string) pc = empty 	
 MQTT to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance> fr = AE-ID rqi = (token-string) pc = empty 	
 fr = AE-ID rqi = (token-string) pc = empty 	
rqi = (token-string)pc = empty	
• pc = empty	
3 IOP Check Check if possible that the <contentinstance> resource is deleted in registrar</contentinstance>	r CSF
• rsc = 2002 (DELETED)	002.
PRO Check • rai = (token-string) same as received in request message	
Primitive • pc = empty	
Registrar CSE sends response containing:	
PRO Check • Status Code = 200 (OK)	
HTTP • X-M2M-RSC: 2002	
X-M2M-RI: (token-string) same as received in request message	
Message-body: empty	
Registrar sends response containing:	
4 PRO Check • Response Code = 2.02	
MCa CoAP • oneM2M-RSC: 2002(DELETED)	
oneM2M-RQI: (token-string) same as received in request message	
Payload: empty	
Sent MQTT PUBLISH message:	
Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
PRO Check Payload:	
I I • TO = AF-II)	
MQTT • fr = Registrar CSE-ID	
• rsc = 2002(DELETED)	
• rqi = (token-string) same as received in request message	
Check if possible that the contentingtances resource has been removed in	n registrar
5 OP Check CSE.	
6 IOP Check AE indicates successful operation.	
IOP Verdict	
TOT FORMICE	

Discovery 8.1.6

8.1.6.1 Discovery of all resources

	Interoperability Test Description			
Identifier:			TD M2M NH 18	
Objective:			AE discovers all accessible resources from registrar CSE	
Configuration:			M2M_CFG_01	
References:			TS-0001 [1], clause 10.2.6	
References:			TS-0001 [1], clause 10.2.0 TS-0004 [2], clause 7.2.3.13	
			13-0004 [2], clause 1.2.3.13	
Dro to	st cond	itions	CCEPage recourse her been greated in registrar CCE with name	
rie-le	St Cond	itions.	 CSEBase resource has been created in registrar CSE with name {CSEBaseName} 	
			Test Sequence	
Cton	DD	Time		
Step	RP	Type	Description	
1		Stimulus	AE is requested to send a discovery request to registrar CSE	
			Sent request contains	
			• op = 2 (Retrieve)	
		PRO Check	• to = {CSEBaseName}	
		Primitive	• fr = AE-ID	
			• rqi = (token-string)	
			• fu=1	
			• pc = empty	
			Sent request contains	
			Request method = GET	
		PRO Check	Request-Target: {CSEBaseName}?fu=1	
		HTTP	Host: IP address or the FQDN of Registrar CSE	
			• X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID	
			Message-body: empty	
			Sent request contains	
2			• Method: 0.01 (GET)	
_	Mca		Uri-Host: IP address or the FQDN of Registrar CSE	
		PRO Check CoAP	Uri-Path: {CSEBaseName}	
			• oneM2M-FR: AE-ID	
			oneM2M-RQI: (token-string) Hei Overruft: 4	
			Uri-Query: fu=1	
			Payload: empty	
			Sent MQTT PUBLISH message:	
		PRO Check MQTT	Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
			• op = 2 (Retrieve)	
			• to = {CSEBaseName}	
			• fr = Registree CSE-ID	
			• rqi = (token-string)	
			• fu = 1	
			• pc = empty	
	Мса	PRO Check Primitive	Registrar CSE sends response containing:	
			• rsc = 2000 (OK)	
			 rqi = (token-string) same as received in request message 	
			pc = Serialized representation of data object containing addresses of all discovered	
			resources	
		PRO Check HTTP	Registrar CSE sends response containing:	
			• Status Code = 200 (OK)	
			• X-M2M-RSC: 2000	
3			X-M2M-RI: (token-string) same as received in request message	
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Message-body: Serialized representation of data object containing addresses of all	
			discovered resources	
		PRO Check CoAP	Registrar sends response containing:	
			• Response Code = 2.05	
			• oneM2M-RSC: 2000	
			oneM2M-RQI: (token-string) same as received in request message	
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
	L	l	Transfer of the second of the	

	Interoperability Test Description		
			Payload: Serialized representation of data object containing addresses of all discovered resources
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = Registree CSE-ID • fr = Registrar CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of data object containing addresses of all discovered resources</registrar></ae-id>
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO	Verdict		

8.1.6.2 Discovery with label filter criteria

	International life Took Description			
1.1	·		Interoperability Test Description	
Identi			TD_M2M_NH_19	
Objec			AE discovers accessible resources residing in Registrar CSE using the label filter criteria	
Configuration:			M2M_CFG_01	
Refere	ences:		TS-0001 [1], clause 10.2.6	
			TS-0004 [2], clause 7.2.3.13	
Pre-te	st cond	itions:	 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	Type	Description	
1		Stimulus	AE is requested to send a Discovery request in order to discover the <container></container>	
' '			resource using the label filter criteria	
			Sent request contains	
			• op = 2 (Retrieve)	
			• to = {CSEBaseName}	
		PRO Check	• fr = AE-ID	
		Primitive	• rqi = (token-string)	
			• fu=1	
			• lbl=key1	
			• pc = empty	
			Sent request contains	
			Request method = GET	
		PRO Check HTTP	Request-Target: {CSEBaseName}?fu=1&lbl=key1	
			Host: IP address or the FQDN of Registrar CSE	
			• X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID	
			Message-body: empty	
			Sent request contains	
2			·	
	Mca		Method: 0.01 (GET) Heit Heat IR address on the FORM of Registron CSF.	
			Uri-Host: IP address or the FQDN of Registrar CSE Hei Batte (CSEB and Name)	
		PRO Check	Uri-Path: {CSEBaseName}	
		CoAP	• oneM2M-FR: AE-ID	
			oneM2M-RQI: (token-string) List Overright A	
			• Uri-Query: fu=1	
			Uri-Query: lbl=key1	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
		PRO Check	• op = 2 (Retrieve)	
		MQTT	• to = {CSEBaseName}	
			• fr = Registree CSE-ID	
			• rqi = (token-string)	
			• fu = 1	
			Ibl=key1	

	Interoperability Test Description		
			pc = empty
		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 addresse of the <container> address</container>
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of data object containing the address of the <container> address</container>
3	Мса	PRO Check CoAP	Registrar sends response containing: Response Code = 2.05 oneM2M-RSC: 2000 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of data object containing the address of the Container> address
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = Registree CSE-ID • fr = Registrar CSE-ID • 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></registrar></ae-id>
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO'	Verdict		

8.1.6.3 Discovery with limit filter criteria

			Interoperability Test Description	
Identi	fier:		TD_M2M_NH_20	
Objective:			AE discovers accessible resources residing in Registrar CSE limiting the number of	
			matching resources to the specified value.	
	guratior	1:	M2M_CFG_01	
Refer	ences:		TS-0001 [1], clause 10.2.6	
			TS-0004 [2], clause 7.2.3.13	
Pre-te	est 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 in order to discover at most 2 resources in	
			registrar CSE.	
		PRO Check Primitive	Sent request contains	
			• op = 2 (Retrieve)	
			• to = {CSEBaseName}	
			• fr = AE-ID	
			• rqi = (token-string)	
			• fu=1	
			• lim=2	
2	Mca		• pc = empty	
	IVICA		Sent request contains	
			Request method = GET	
		PRO Check	 Request-Target: {CSEBaseName}?fu=1&lim=2 	
		HTTP	Host: IP address or the FQDN of Registrar CSE	
			• X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID	
			Message-body: empty	

			Interoperability Test Description
			Sent request contains
			Method: 0.01 (GET)
			Uri-Host: IP address or the FQDN of Registrar CSE It is Particular (COEFF and Name)
		PRO Check	Uri-Path: {CSEBaseName}
		CoAP	• oneM2M-FR: AE-ID
		COA	• oneM2M-RQI: (token-string)
			• Uri-Query: fu=1
			• Uri-Query: lim=2
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• op = 2 (Retrieve)
		PRO Check	• to = {CSEBaseName}
		MQTT	• fr = Registree CSE-ID
		Wistri	• rqi = (token-string)
			• fu = 1
			• lim=2
			• pc = empty
			Registrar CSE sends response containing:
		PRO Check Primitive	• 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>
		PRO Check HTTP	Registrar CSE sends response containing:
			• Status Code = 200 (OK)
			• X-M2M-RSC: 2000
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of data object containing at most 2
			addresses of discovered resources
			Registrar sends response containing:
_			• Response Code = 2.05
3	Mca		• oneM2M-RSC: 2000
		PRO Check	oneM2M-RQI: (token-string) same as received in request message
		CoAP	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of data object containing at most 2 addresses of
			discovered resources
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• to = Registree CSE-ID
		PRO Check	<u> </u>
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2000 (OK)
			rqi = (token-string) same as received in request message
			• pc = Serialized representation of data object containing at most 2 addresses of
		105.6:	discovered resources
4		IOP Check	AE indicates successful operation
	/erdict		
PRO '	Verdict		

8.1.6.4 Discovery with multiple filter criteria

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_21
Objec			AE discovers accessible resources residing in Registrar CSE using multiple Filter Criteria
	guratio	n·	M2M_CFG_01
	ences:		TS-0001 [1], clause 10.2.6
			TS-0004 [2], clause 7.2.3.13
Pre-test conditions:			Two <container> resources with labels "key1" and "key2" are created in Registrar</container>
			CSE.
			A <group> resources with labels "key1" and "key2" is created in Registrar CSE. Test Sequence</group>
Step	RP	Туре	Description
-		Stimulus	AE is requested to send a Discovery request in order to discover specific resources
1			located in Registrar CSE using multiple filter criteria (label, resource type and limit)
			Sent request contains
			• op = 2 (Retrieve)
ľ			• to = {CSEBaseName}
ľ			• fr = AE-ID
ľ			• rqi = (token-string)
		PRO Check	• fu=1
		Primitive	• lbl=key1
ľ			
 Ibl=key2 rty=3 lim=1 pc = empty Sent request contains Request method = GET Request-Target: {CSEBaseName}?fu=1&key=1&key=2&rty=3&lim=1 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID 			
l			
l		PRO Chack	
			•
		11111	
			9
			Message-body: empty
			Sent request contains
			Method: 0.01 (GET) Height library in the FORM of Pagintage CCF.
2			Uri-Host: IP address or the FQDN of Registrar CSE It is Path (COSE Para Name)
-	Mca		Uri-Path: {CSEBaseName}
			• oneM2M-FR: AE-ID
		PRO Check	• oneM2M-RQI: (token-string)
		CoAP	Uri-Query: fu=1 Uri-Query: https://doi.org/10.1001/10
			Uri-Query: lbl=key1 Uri-Query: lbl=key1
			Uri-Query: lbl=key2 Uri-Query: tbl=key2
			• Uri-Query: rty=3
			Uri-Query: lim=1 Payload: ampty
		-	Payload: empty Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• op = 2 (Retrieve)
			• to = {CSEBaseName}
			• fr = AE-ID
		PRO Check	• rqi = (token-string)
		MQTT	• fu = 1
			• lbl=key1
			• lbl=key2
			• rty=3
			• lim=1
			• pc = empty
	<u> </u>		Registrar CSE sends response containing:
			• rsc = 2000 (OK)
		PRO Check	• rqi = (token-string) same as received in request message
3	Mca	Primitive	• pc = Serialized representation of data object containing the address of one of the
1	50		Containers resources
		PRO Check	Registrar CSE sends response containing:
	1		1 3

		Interoperability Test Description
	НТТР	Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of data object containing the address of one of the <container> resources</container>
	PRO Check CoAP	Registrar sends response containing: Response Code = 2.05 oneM2M-RSC: 2000 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of data object containing the address of one of the <container> resources</container>
	PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = Registree CSE-ID • fr = Registrar CSE-ID • 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></registrar></ae-id>
4	IOP Check	AE indicates successful operation
IOP Verdic		
PRO Verdi	ct	

Subscription Management 8.1.7

Subscription Create 8.1.7.1

			Interoperability Test Description
Identi	_		TD_M2M_NH_22
Objective:			AE creates a subscription to Application Entity resource via subscription Create Request
Confi	guratior	ո ։	M2M_CFG_01
References:			TS-0001 [1], clause 10.2.11.2
			TS-0004 [2], clause 7.3.7.2
Pre-te	est cond	litions:	AE has created an application resource <ae> on registrar CSE</ae>
			AE has created a container resource <container> on registrar CSE</container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a AE Create request to register to the Registrar CSE
			• op = 1 (Create)
		PRO Check Primitive	 to = {CSEBaseName}/URI of <container> resource</container>
			• fr = AE-ID
			• rqi = (token-string)
			• ty = 23 (Subscription)
			• pc = Serialized representation of <subscription> resource</subscription>
		PRO Check	Sent request contains
			• Request method = POST
			Request-Target:{CSEBaseName}/URI of <container> resource</container>
			Host: IP address or the FQDN of Registrar CSE
2	Mca	HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=23 or application/vnd.onem2m-
			res+json; ty=23
			Message-body: Serialized representation of <subscription> resource</subscription>
			Sent request contains
		PRO Check	Method: 0.02 (POST) Hither IP and I a FORM (Parist and OSF)
		CoAP	Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>
			 Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json

	Interoperability Test Description			
			oneM2M-TY: 23	
			oneM2M-FR: AE-ID	
			oneM2M-RQI: (token-string) Produced Control in a control in a factor of Control in a contr	
			Payload: Serialized representation of <subscription> resource</subscription>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• op = 1 (Create)	
		MQTT	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>	
		PRO Check	• rsc = 2001 (CREATED)	
		Primitive	• rqi = (token-string) same as received in request message	
		1 1111111110	pc = Serialized representation of <subscription> resource</subscription>	
		PRO Check HTTP	Registrar CSE sends response containing:	
			• Status Code = 201 (Created)	
			• X-M2M-RSC: 2001	
			X-M2M-RI: (token-string) same as received in request message	
			Content-Location: URI of the created resource.	
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Message-body: Serialized representation of <subscription> resource</subscription>	
			Registrar sends response containing:	
_			• Response Code = 2.01	
4	Mca	PRO Check	• oneM2M-RSC: 2001	
	IVICA	CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
		00/11	Location-Path: URI of the created resource	
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Payload: Serialized representation of <subscription> resource</subscription>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc = 2001 (CREATED)	
			• rqi = (token-string) same as received in request message	
		105.01	pc = Serialized representation of <subscription> resource</subscription>	
5		IOP Check	AE indicates successful operation	
	<u>/erdict</u>			
LKO /	√erdict_			

Subscription Retrieve 8.1.7.2

			Interoperability Test Description
Identifier:			TD_M2M_NH_23
Objective:			AE retrieves subscription resource from Registrar CSE
Confi	guration	1:	M2M_CFG_01
References:			TS-0001 [1], clause 10.2.11.3 TS-0004 [2], clause 7.3.7.2
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 subscription resource <subscription> on Registrar CSE</subscription></container></ae>
		T	Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Retrieve Request for a <subscription></subscription>
2	Мса	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <subscription> resource</subscription> fr = AE-ID rqi = (token-string)

	Interoperability Test Description			
			• pc = empty	
			• pc = Crripty	
			Sent request contains	
			Request method = GET	
		PRO Check	 Request-Target: {CSEBaseName}/URI of <subscription> resource</subscription> 	
		HTTP	Host: IP address or the FQDN of Registrar CSE	
		ппг	X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID	
			Message-body: empty	
			Sent request contains	
			• Method: 0.01 (GET)	
		DD0 011	Uri-Host: IP address or the FQDN of Registrar CSE	
		PRO Check	Uri-Path: {CSEBaseName}/URI of <subscription> resource</subscription>	
		CoAP	• oneM2M-FR: AE-ID	
			oneM2M-RQI: (token-string)	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• op = 2 (Retrieve)	
		MQTT	 to = {CSEBaseName}/URI of <subscription> resource</subscription> 	
			• fr = AE-ID	
			• rqi = (token-string)	
			• pc = empty	
		PRO Check Primitive	• rsc =2000 (OK)	
			 rqi = (token-string) same as received in request message 	
			 pc = Serialized representation of <subscription> resource</subscription> 	
			Registrar CSE sends response containing:	
		PRO Check HTTP	• Status Code = 200 (OK)	
			• X-M2M-RSC: 2000	
			X-M2M-RI: (token-string) same as received in request message	
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Message-body: Serialized representation of <subscription> resource</subscription>	
			Registrar sends response containing:	
			• Response Code = 2.05	
3	Mca	PRO Check	• oneM2M-RSC: 2000(OK)	
	ivioa	CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Payload: Serialized representation of <subscription> resource</subscription>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc 2000(OK)	
			rqi = (token-string) same as received in request message	
\sqcup		100.0:	pc = Serialized representation of <subscription> resource</subscription>	
4	/ l' (IOP Check	AE indicates successful operation	
	/erdict			
PKO /	√erdict			

8.1.7.3 Subscription Update

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_24		
Objec			AE updates information about a subscription via subscription Update Request		
	guration	1:	M2M_CFG_01		
	ences:		TS-0001 [1], clause 10.2.11.4		
			TS-0004 [2], clause 7.3.7.2		
Pre-te	st cond	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>		
			AE has created a container resource <container> on Registrar CSE</container>		
			AE has created a subscription resource <subscription> on Registrar CSE</subscription>		
Step	RP	Туре	Test Sequence Description		
	KF	Stimulus	AE is requested to send a subscription Update Request to update the lifetime of the		
1		Stillialas	resource.		
			• op = 3 (Update)		
		55000	• to = {CSEBaseName}/URI of <subscription> resource</subscription>		
		PRO Check	• fr = AE-ID		
		Primitive	• rgi = (token-string)		
	1 \	• pc = Serialized representation of updated <subscription> resource</subscription>			
			Sent request contains		
			Request method = PUT		
		PRO Check	 Request-Target:{CSEBaseName}/URI of <subscription> resource</subscription> 		
		HTTP	Host: IP address or the FQDN of Registrar CSE		
		11111	• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of updated <subscription> resource</subscription>		
		PRO Check CoAP	Sent request contains		
2	Mca		Method: 0.03 (PUT)		
			Uri-Host: IP address or the FQDN of Registrar CSE It is a contract to the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}/URI of <subscription> resource Page 45 Pa</subscription>		
			oneM2M-FR: AE-ID oneM3M POI: (taken string)		
			 oneM2M-RQI: (token-string) Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json 		
			Payload: Serialized representation of updated <subscription> resource</subscription>		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 3 (Update)		
		MQTT	 to = {CSEBaseName}/URI of <subscription> resource</subscription> 		
			• fr = AE-ID		
			• rqi = (token-string)		
			pc = Serialized representation of updated <subscription> resource</subscription>		
3		IOP Check	Check if possible that the <subscription> resource is updated in Registrar CSE.</subscription>		
		PRO Check	• rsc = 2004 (Updated)		
		Primitive	• rqi = (token-string) same as received in request message		
			pc = Serialized representation of <subscription> resource Registrar CSE sends response containing:</subscription>		
			Code = 200 (Ok)		
		PRO Check	• Code = 200 (OK) • X-M2M-RSC: 2004		
		HTTP	X-M2M-R3: (token-string) same as received in request message		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of <subscription> resource</subscription>		
4	Mca		Registrar sends response containing:		
	ivica		• Response Code = 2.04		
		PRO Check	• oneM2M-RSC: 2004		
		CoAP	oneM2M-RQI: (token-string) same as received in request message		
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Payload : Serialized representation of <subscription> resource</subscription>		
		BBC 61 .	Sent MQTT PUBLISH message:		
		PRO Check	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>		
		MQTT	Payload:		
		<u> </u>	• to = AE-ID		

	Interoperability Test Description			
			fr = Registrar CSE-IDrsc = 2004 (Updated)	
			rqi = (token-string) same as received in request message	
			 pc = Serialized representation of modified <subscription> resource</subscription> 	
5		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO'	Verdict			

8.1.7.4 Subscription Delete

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_25
Objec	tive:		AE cancels subscription via an subscription Delete Request
	guration	:	M2M_CFG_01
	ences:		TS-0001 [1], clause 10.2.11.5
			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 subscription Delete Request
			• op = 4 (Delete)
		PRO Check	to = {CSEBaseName}/URI of <subscription> resource</subscription>
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			Sent request contains
		PRO Check	 Request method = DELETE Request-Target: {CSEBaseName}/URI of <subscription> resource</subscription>
		HTTP	Host: IP address or the FQDN of Registrar CSE
		HIIP	X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: Empty
			Sent request contains
2	_	PRO Check	Method: 0.04 (DELETE)
_	Mca		Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/URI of <subscription> resource</subscription>
		CoAP	• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 4 (Delete)
		MQTT	 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>
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	• rqi = (token-string) same as received in request message
			• pc = empty
		BBO OL I	Registrar CSE sends response containing:
,	Мса	PRO Check HTTP	Status Code = 200 (OK)X-M2M-RSC: 2002
4			
			X-M2M-RI: (token-string) same as received in request message Message-body: empty
			Message-body: empty Registrar sends response containing:
		PRO Check	Response Code = 2.02
		CoAP	• neM2M-RSC: 2002(DELETED)
			- OHOMEN 1100. 2002(DELETED)

	Interoperability Test Description			
			 oneM2M-RQI: (token-string) same as received in request message 	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
		PRO Check MQTT	Payload:	
			• to = AE-ID	
			• fr = Registrar CSE-ID	
			• rsc = 2002(DELETED)	
			 rqi = (token-string) same as received in request message 	
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 \	/erdict			
PRO'	Verdict			

8.1.8 accessControlPolicy Management

accessControlPolicy Create 8.1.8.1

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_26
Objec			AE creates an accessControlPolicy resource
Configuration:			M2M_CFG_01
Refere	ences:		1] 10.2.21.1
			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>
_			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send an accessControlPolicy Create Request
			• op = 1 (Create)
			• to = {CSEBaseName}/{AE}
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• ty = 1 (accessControlPolicy)
			 pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
			Sent request contains
			Request method = POST
			Request-Target:{CSEBaseName}/{AE}
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			 Content-Type: application/vnd.onem2m-res+xml; ty=1 or application/vnd.onem2m-
			res+json; ty=1
			 Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
2	Mca		Sent request contains
	ivioa		Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/{AE}
		CoAP	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
		COAI	• oneM2M-TY: 1
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
		PRO Check	Payload:
		MQTT	• op = 1 (Create)
		IVIQTI	• to = {CSEBaseName}/{AE}
			• fr = AE-ID
			• rqi = (token-string)

		Interoperability Test Description				
			• ty = 1 (RemoteCSE)			
			• pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>			
3		IOP Check	Check if possible that the <container> resource is created in registrar CSE.</container>			
		DDO Observa	• rsc = 2001 (CREATED)			
		PRO Check Primitive	 rqi = (token-string) same as received in request message 			
		Primitive	• pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>			
			Registrar CSE sends response containing:			
			Status Code = 201 (Created)			
		PRO Check	• X-M2M-RSC: 2001			
		HTTP	X-M2M-RI: (token-string) same as received in request message			
			Content-Location: URI of the created <accesscontrolpolicy> resource.</accesscontrolpolicy>			
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json			
			Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>			
	Мса	PRO Check CoAP	Registrar sends response containing:			
			• Response Code = 2.01			
4			• oneM2M-RSC: 2001			
			 oneM2M-RQI: (token-string) same as received in request message 			
			Location-Path: URI of the created <accesscontrolpolicy> resource</accesscontrolpolicy>			
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json			
			Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>			
			Sent MQTT PUBLISH message:			
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>			
			Payload:			
		PRO Check	• to = AE-ID			
		MQTT	• fr = Registrar CSE-ID			
			• rsc = 2001 (CREATED)			
			• rqi = (token-string) same as received in request message			
-		IOD Chastr	pc = Serialized representation of <accesscontrolpolicy> resource AE indicates suggested expection</accesscontrolpolicy>			
5	/erdict	IOP Check	AE indicates successful operation			
	Verdict					
PRU	veralct					

8.1.8.2 accessControlPolicy Retrieve

	Interoperability Test Description					
Identi	fier:		TD_M2M_NH_27			
Objective:			AE retrieves accessControlPolicy resource			
Confi	guration	1:	M2M_CFG_01			
	ences:		TS-0001 [1], clause 10.2.21.2			
			TS-0004 [2], clause 7.3.1.2			
Pre-te	st cond	litions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName}			
			 AE has created a <ae> resource on registrar CSE with name {AE}</ae> 			
			 accessControlPolicy resource has been created in registrar CSE under <ae></ae> 			
			resource with name {accessControlPolicyName}			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send a accessControlPolicy retrieve request to Registrar CSE			
			• op = 2 (Retrieve)			
		PRO Check	to = {CSEBaseName}/{AE}/{accessControlPolicyName}			
		Primitive	• fr = AE-ID			
		Fillillite	• rqi = (token-string)			
			• pc = empty			
			Sent request contains			
2			• Request method = GET			
	Mca	PRO Check	 Request-Target: {CSEBaseName}/{{AE}/{accessControlPolicyName} 			
		HTTP	Host: IP address or the FQDN of Registrar CSE			
			X-M2M-RI: (token-string)			
			• X-M2M-Origin: AE-ID			
			Message-body: empty			
		PRO Check	Sent request contains			
		CoAP	• Method: 0.01 (GET)			

			Interoperability Test Description
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/{AE}/{accessControlPolicyName}
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 2 (Retrieve)
		MQTT	 to = {CSEBaseName}/{AE}/{accessControlPolicyName}
		IVIQTT	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			Registrar CSE sends response containing:
		PRO Check	• rsc = 2000 (OK)
		Primitive	• rqi = (token-string) same as received in request message
			pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
		PRO Check HTTP	Registrar CSE sends response containing:
			• Status Code = 200 (OK)
			• X-M2M-RSC: 2000
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
			Registrar sends response containing:
0		PRO Check CoAP	• Response Code = 2.05 (OK)
3	Mca		• oneM2M-RSC: 2000
			 oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• 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
	/erdict		
PRO \	√erdict		

8.1.8.3 accessControlPolicy Update

			Interoperability Test Description
Identifier:			TD M2M NH 28
Objec			AE updates attribute in accessControlPolicy resource
Config	guratio	n:	M2M_CFG_01
Refere	ences:		TS-0001 [1], clause 10.2.21.3
			TS-0004 [2], clause 7.3.1.2
Pre-te	st cond	litions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName}
			 AE has created a <ae> resource on registrar CSE with name {AE}</ae>
			 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 an accessControlPolicy update request to Registrar CSE
2	Mca	PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string)
			 pc = Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy>

		Interoperability Test Description
		Sent request contains
		Request method = PUT
		 Request-Target: {CSEBaseName}/{AE}/{accessControlPolicyName}
	DDO Chook	Host: IP address or the FQDN of Registrar CSE
		• X-M2M-RI: (token-string)
	ппг	• X-M2M-Origin: AE-ID
		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-
		res+json
		Message-body: Serialized representation of updated <accesscontrolpolicy></accesscontrolpolicy>
		resource
		Sent request contains
		• Method: 0.03 (PUT)
		Uri-Host: IP address or the FQDN of Registrar CSE
		Uri-Path: {CSEBaseName}/{AE}/{accessControlPolicyName}
		• oneM2M-FR: AE-ID
	CoAP	• oneM2M-RQI: (token-string)
		Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-
		res+ison
		Payload: Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy>
		Sent MQTT PUBLISH message:
		Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		Payload:
	DDO Chaale	• op = 3 (Update)
		 to = {CSEBaseName}/{AE}/{accessControlPolicyName}
	IVIQTI	• fr = AE-ID
		• rqi = (token-string)
		1 (0/
		pc = Serialized representation of updated <accesscontrolpolicy> resource Charles if a serialized teaching a serial ser</accesscontrolpolicy>
	IOP Check	Check if possible that the <accesscontrolpolicy> resource has been updated in registrar CSE.</accesscontrolpolicy>
		Registrar CSE sends response containing:
	DDO Chook	• rsc = 2004 (UPDATED)
		• rqi = (token-string) same as received in request message
	Primitive	
		pc = Serialized representation of <accesscontrolpolicy> resource Designer CSE goods representations:</accesscontrolpolicy>
		Registrar CSE sends response containing:
	DDO Obrada	• Status Code = 200 (OK)
		• X-M2M-RSC: 2004
	ппр	X-M2M-RI: (token-string) same as received in request message
		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m- res+xml or application/vnd.onem2m-
		res+json
		Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
		Registrar sends response containing:
		• Response Code = 2.04 (UPDATED)
Mca	PRO Check	• oneM2M-RSC: 2004
		oneM2M-RQI: (token-string) same as received in request message
	00/ ti	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-
		res+json
]]		Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
[Sent MQTT PUBLISH message:
		Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		Payload:
	PRO Check	• to = AE-ID
	MQTT	• fr = Registrar CSE-ID
	MQTT	• rsc = 2004 (Updated)
		• rqi = (token-string) same as received in request message
	IOP Check	 rqi = (token-string) same as received in request message pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
erdict	IOP Check	• rqi = (token-string) same as received in request message
erdict	IOP Check	 rqi = (token-string) same as received in request message pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
	Mca	PRO Check Primitive PRO Check HTTP Mca PRO Check CoAP

8.1.8.4 accessControlPolicy Delete

	Interoperability Test Description				
Identi	fior:		TD_M2M_NH_29		
Objec	_		AE deletes accessControlPolicy resource		
	guratio	n·	M2M_CFG_01		
	ences:	•••	TS-0001 [1], clause 10.2.21.4		
Treferences.			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} accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}</ae></ae>		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send an accessControlPolicy delete request to Registrar CSE		
		PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty 		
		PRO Check HTTP	Sent request contains Request method = DELETE Request-Target: {CSEBaseName}/{AE}/{accessControlPolicyName} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty		
2	Mca	PRO Check CoAP	Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{AE}/{accessControlPolicyName} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>		
		PRO Check Primitive PRO Check HTTP PRO Check CoAP	Registrar CSE sends response containing: • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message • pc = empty		
	Мса		Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2002 X-M2M-RI: (token-string) same as received in request message Message-body: empty		
3			Registrar sends response containing: Response Code = 2.05 (OK) oneM2M-RSC: 2002 oneM2M-RQI: (token-string) same as received in request message Payload: empty		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2002 • rqi = (token-string) same as received in request message • pc = empty</registrar></ae-id>		

	Interoperability Test Description			
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 Verdict				
PRO Verdict				

Unauthorized operation (Insufficient Access Rights) 8.1.8.5

			Interoperability Test Description		
Identi	fier:		TD_M2M_NH_30		
Objec	tive:		AE delete request is rejected due to accessControlPolicy		
Configuration:			M2M_CFG_01		
Refer	ences:		[2]] 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} accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}, which forbids to delete container AE has created a <container> resource on registrar CSE under <ae>, with name {containerName}</ae></container></ae></ae>		
_			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a container Delete Request for resource <container></container>		
		PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty 		
	Мса	PRO Check HTTP	Sent request contains Request method = DELETE Request-Target: {CSEBaseName}/{AE}/{containerName} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty		
2		PRO Check CoAP	Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{AE}/{containerName} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty		
					PRO Check MQTT
		PRO Check Primitive PRO Check HTTP	Registrar CSE sends response containing: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message pc = empty		
3	Мса		Registrar CSE sends response containing: • Status Code = 403 (Forbidden) • X-M2M-RSC: 4103 • X-M2M-RI: (token-string) same as received in request message • Message-body: empty		
		PRO Check CoAP	Registrar sends response containing: Response Code = 4.03 (Forbidden) oneM2M-RSC: 4103 oneM2M-RQI: (token-string) same as received in request message		

			Interoperability Test Description
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = <response access_denied="" code(4103,="" status=""></response>
			• rqi = (token-string) same as received in request message
			• pc = empty
4		IOP Check	Check if possible that the <container> resource has not been removed in registrar CSE.</container>
5		IOP Check	AE indicates unsuccessful operation (Delete error – no privilege)
IOP \	/erdict		
PRO '	Verdict		

8.1.9 **Group Management**

8.1.9.1

interoperability rest bescription	Interoperability Test Description				
Identifier: TD_M2M_NH_32					
Objective: AE retrieves group resource Configuration: M2M_CFG_01					
TS-0004 [2], clause 7.3.12.2.2					
Pro test conditions:					
Pre-test conditions: • 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					
PRO Check Primitive op = 2 (RETRIEVE) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string) Sent request contains Request method = GET Request-Target: {CSEBaseName}/{group} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; Sent request contains					
1 1 1 1 O OHOOK 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
	 fr = AE-ID rqi = (token-string) Sent request contains Request method = GET Request-Target: {CSEBaseName}/{group} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m- 				
• rqi = (token-string)					
Sent request contains					
 Request method = GET Request-Target: {CSEBaseName}/{group} 					
· ·					
 Request method = GET Request-Target: {CSEBaseName}/{group} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m- 					
	Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json;				
- Mca • Method: 0.01 (GET)					
PRO Check • Uri-Path: {CSEBaseName}/{group}					
 CoAP Content-format: application/vnd.onem2m-res+xml; or application 	tion/vnd.onem2m-				
res+json;					
• oneM2M-FR: AE-ID					
oneM2M-RQI: (token-string)					
Sent a MQTT PUBLISH message:					
Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>					
PRO Check Payload:					
• op = 2 (Retrieve)					
• to = {CSEBaseName}/{group}					
• fr = <ae-id></ae-id>					
• rqi = (token-string)					
PRO Check • rsc = 2000 (OK)					
• rqi = (token-string) same as received in request message					
3 Mca					
PRO Check Registrar CSE sends response containing:					
HTTP • Status Code =200 (OK)					

			Interoperability Test Description
			• X-M2M-RSC: 2000
			X-M2M-RI: (token-string) same as received in request message
			Message-body: Serialized representation of <group> resource</group>
			Registrar CSE sends response containing:
		PRO Check	• Response Code = 2.05
		CoAP	• oneM2M-RSC: 2000
		COAF	 oneM2M-RQI: (token-string) same as received in request message
			Payload: Serialized representation of <group> resource</group>
			Sent a MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2000
			 rqi = (token-string) same as received in request message
			pc = Serialized representation of <group> resource</group>
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.1.9.2 **Group Create**

			Interoperability Test Description		
Identifie	er:		TD_M2M_NH_31		
Objective:			AE creates a group resource		
Configu	ıration:		M2M_CFG_01		
Referen	ices:		TS-0001 [1], clause 10.2.7.2		
			TS-0004 [2], clause 7.3.12.2.1		
_					
Pre-test conditions: • void					
Cton	RP	Tuno	Test Sequence Description		
Step	KP	Type Stimulus	AE is requested to send a group Create Request		
1		Stimulus			
			op = 1 (Create)to = {CSEBaseName}		
		DDO Obsests			
		PRO Check Primitive	• fr = AE-ID		
		Pililliuve	• rqi = (token-string)		
			• ty = 9 (group)		
			pc = Serialized representation of <group> resource</group>		
		PRO Check HTTP	Sent request contains		
			• Request method = POST		
			Request-Target: {CSEBaseName} Heat IB address as the FORM of Basistan COE		
			Host: IP address or the FQDN of Registrar CSE MANA Ph. (felces paring)		
			• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
			 Content-Type: application/vnd.onem2m-res+xml; ty=9 or application/vnd.onem2m-res+json; ty=9 		
			Message-body: Serialized representation of <group> resource</group>		
2	Mca		Sent request contains		
			Method: 0.02 (POST)		
			Uri-Host: IP address or the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}		
		PRO Check	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-		
		CoAP	res+json		
			• oneM2M-TY: 9		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			Payload: Serialized representation of <group> resource</group>		
			Sent MQTT PUBLISH message:		
		DDO Chast	Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
		PRO Check MQTT	Payload:		
			• op = 1 (Create)		
			• to = {CSEBaseName}		

	Interoperability Test Description				
			• 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>		
		DDO Charle	• rsc = 2001 (CREATED)		
		PRO Check Primitive	• rqi = (token-string) same as received in request message		
		Fillillite	• pc = Serialized representation of <group> resource</group>		
			Registrar CSE sends response containing:		
			• Status Code = 201 (OK)		
		DDO Charle	PRO Check • X-M2M-RSC: 2001		
		HTTP	X-M2M-RI: (token-string) same as received in request message		
		пп	Content-Location : URI of the created <group> resource</group>		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-		
			res+json		
			Message-body: Serialized representation of <group> resource</group>		
			Registrar CSE sends response containing:		
4	Mca		Response Code = 2.01		
	IVICA	PRO Check CoAP	• oneM2M-RSC: 2001		
			oneM2M-RQI: (token-string) same as received in request message		
			Location-Path: URI of the created <group> resource</group>		
			Payload: Serialized representation of <group> resource</group>		
			Sent a MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
			Payload:		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Registrar CSE-ID		
			• rsc = 2001 (CREATED)		
			rqi = (token-string) same as received in request message		
			pc = Serialized representation of <group> resource</group>		
5	<u> </u>	IOP Check	AE indicates successful operation		
IOP V					
PRO V	/erdict				

Group Update 8.1.9.3

			Interoperability Test Description
Identi	fier:		TD M2M NH 33
Objective:			AE updates attribute in group resource
	guration	1:	M2M_CFG_01
	ences:		TS-0001 [1], clause 10.2.7.4
			TS-0004 [2], clause 7.3.12.2.3
Pre-te	st cond	litions:	 AE has created a <group> resource on Registrar CSE</group>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a group Update Request
		PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string) pc = Serialized representation of <group> resource</group>
2	Mca	PRO Check HTTP	Sent request contains Request method = PUT Request-Target: {CSEBaseName}/{group} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; Message-body: Serialized representation of <group> resource Sent request contains</group>
		CoAP	Method: 0.03 (PUT)

			Later and 1996. That Beautiful
	ı	T	Interoperability Test Description
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/{group}
			Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-
			res+json;
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: Serialized representation of <group> resource</group>
			Sent MQTT PUBLISH message
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	• 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>
		PRO Check Primitive	• rsc = 2004 (CHANGED)
			 rqi = (token-string) same as received in request message
			• pc = Serialized representation of <group> resource</group>
		PRO Check HTTP	Registrar CSE sends response containing:
			• Code = 200
			• X-M2M-RSC: 2004
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <group> resource</group>
		DDO Ob a als	Registrar CSE sends response containing:
4			• Response Code = 2.05
4	Mca	PRO Check CoAP	• oneM2M-RSC: 2004
		COAP	 oneM2M-RQI: (token-string) same as received in request message
			Payload: Serialized representation of <group> resource</group>
			Sent a MQTT PUBLISH message
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 2004
	<u></u>		• pc = Serialized representation of <group> resource</group>
5		IOP Check	AE indicates successful operation
	/erdict		
PRO'	Verdict		

8.1.9.4 **Group Delete**

			Interoperability Test Description
Identifier: TD_M2M_NH_34			
Objec	tive:		AE deletes group resource
Confi	guration	1:	M2M_CFG_01
Refer	ences:		TS-0001 [1], clause 10.2.7.5 TS-0004 [2], clause 7.3.12.2.4
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 Delete Request
2	Mca	PRO Check Primitive	 op = 4 (DELETE) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string)
	34	PRO Check HTTP	Sent DELETE request contains • Request method = DELETE • Request-Target: {CSEBaseName}/{group}

	Interoperability Test Description		
			Host: IP address or the FQDN of Registrar CSE
			X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Sent DELETE request contains
			Method: 0.04 (DELETE)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	Uri-Path: {CSEBaseName}/{group}
		00/11	• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Sent a MQTT PUBLISH message
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 4
		MQTT	to = {CSEBaseName}/{group}
			• fr = AE-ID
			• rqi = (token-string)
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	rqi = (token-string) same as received in request message
		PRO Check HTTP	Registrar CSE sends response containing:
			• Status Code = 200
			• X-M2M-RSC: 2002
	Mca		X-M2M-RI: (token-string) same as received in request message
		PRO Check CoAP	Registrar sends response containing:
			• Response Code = 2.05
3			oneM2M-RSC: 2002
			oneM2M-RQI: (token-string) same as received in request message
			Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 2002
4		IOP Check	Check if possible that the <group> resource is deleted in Registrar CSE.</group>
5		IOP Check	AE indicates successful operation.
IOP V	/erdict		
PRO \	√erdict		

8.1.10 Node Management

8.1.10.1 **Node Create**

			Interoperability Test Description
Identific	er:		TD_M2M_NH_35
Objecti			AE creates a node resource
Configu	uration:		M2M_CFG_01
Referer	nces:		TS-0001 [1], clause 10.2.14.1
			TS-0004 [2], clause 7.3.18.2.1
Pre-tes	t conditi	ons:	• void
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a node Create Request
			• op = 1 (Create)
		PRO Check	• to = {CSEBaseName}
			• fr = AE-ID
		Primitive	• rqi = (token-string)
2	Mca		• ty = 14 (node)
	IVICa		 pc = Serialized representation of <node> resource</node>
		PRO Check	Sent request contains
		HTTP	• Request method = POST
			Request-Target: {CSEBaseName}

			Interoperability Test Description
			Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=14 or application/vnd.onem2m-
			res+json; ty=14
			Message-body: Serialized representation of <node> resource</node>
			Sent request contains
			• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}
		PRO Check	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-
		CoAP	res+json
			• oneM2M-TY: 14
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <node> resource</node>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• op = 1 (Create)
		PRO Check	• to = {CSEBaseName}
		MQTT	• fr = AE-ID
			• rqi = (token-string)
			1 (0/
			• ty = 14 (node)
		IOD OL I	pc = Serialized representation of <node> resource</node>
3		IOP Check	Check if possible that the <node> resource is created in Registrar CSE.</node>
		PRO Check	• rsc = 2001 (CREATED)
		Primitive	• rqi = (token-string) same as received in request message
			pc = Serialized representation of <node> resource</node>
			Registrar CSE sends response containing:
			• Status Code = 201 (OK)
		PRO Check	• X-M2M-RSC: 2001
		HTTP	X-M2M-RI: (token-string) same as received in request message
		HIIF	Content-Location : URI of the created <node> resource</node>
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-
			res+json
			Message-body: Serialized representation of <node> resource</node>
			Registrar CSE sends response containing:
4	Mca		• Response Code = 2.01
	IVICA	PRO Check	• oneM2M-RSC: 2001
		CoAP	 oneM2M-RQI: (token-string) same as received in request message
			Location-Path: URI of the created <node> resource</node>
			Payload: Serialized representation of <node> resource</node>
			Sent a MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2001 (CREATED)
			• rqi = (token-string) same as received in request message
			T - 191 - (tokon stilly) same as received in request message
			• nc - Serialized representation of <node> resource</node>
5		IOP Chack	pc = Serialized representation of <node> resource AF indicates successful operation</node>
5 IOP V	erdict	IOP Check	pc = Serialized representation of <node> resource AE indicates successful operation</node>
5 IOP V		IOP Check	

8.1.10.2 Node Retrieve

Identifier:			Interoperability Test Description TD_M2M_NH_36
Objecti			AE retrieves node resource
Configu			M2M CFG 01
Referer			TS-0001 [1], clause 10.2.14.2
11010101			TS-0004 [2], clause 7.3.18.2.2
			10 000 1 [2], 010000 110.10.212
Pre-tes	t cond	itions:	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 Retrieve Request
		PRO Check Primitive	 op = 2 (RETRIEVE) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) Sent request contains Page 1 to 1 to 2 to 3
	PRO Check HTTP • Request-Target: {CSEBaseName}/{node} • Host: IP address or the FQDN of Registrar CSE • X-M2M-RI: (token-string) • X-M2M-Origin: AE-ID • Content-Type: application/vnd.onem2m-res+xml; or application res+json; Sent request contains • Method: 0.01 (GET)	 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m- 	
2	Mca	PRO Check CoAP	· ·
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>
		PRO Check Primitive	 rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node>
		PRO Check HTTP	Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/{node} Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Sent a MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/{node} fr = <ae-id> rqi = (token-string) rqi = (token-string) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource Registrar CSE sends response containing: Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RSC: 2000 Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2000 oneM2M-RSC: 2000</node></ae-id></registrar></ae-id>
3	Мса	PRO Check CoAP	Registrar CSE sends response containing: • Response Code = 2.05 • oneM2M-RSC: 2000
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2000 • rqi = (token-string) same as received in request message • pc = Serialized representation of <node> resource</node></registrar></ae-id>
4		IOP Check	AE indicates successful operation
IOP Ve			
PRO Ve	erdict		

8.1.10 Node Update

	Interoperability Test Description					
Identi	fier:		TD_M2M_NH_37			
Objec			AE updates attribute in node resource			
	guration	1:	M2M_CFG_01			
	ences:	<u>- </u>	TS-0001 [1], clause 10.2.14.3			
			TS-0004 [2], clause 7.3.18.2.3			
Pre-te	st cond	itions:	AE has created a <node> resource on Registrar CSE</node>			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send a node Update Request			
		PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) pc = Serialized representation of <node> resource</node> Sent request contains 			
		PRO Check HTTP	 Request method = PUT Request-Target: {CSEBaseName}/{node} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; Message-body: Serialized representation of <node> resource</node> 			
2	Mca	PRO Check CoAP	Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{node} • Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <node> resource</node>			
		PRO Check MQTT	Sent MQTT PUBLISH message Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>			
3		IOP Check	Check if possible that the <node> resource is updated in Registrar CSE</node>			
		PRO Check Primitive	 rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 			
4	Mca	PRO Check HTTP	Registrar CSE sends response containing: • Code = 200 • X-M2M-RSC: 2004 • X-M2M-RI: (token-string) same as received in request message • Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Message-body: Serialized representation of <node> resource</node>			
		PRO Check CoAP	Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Payload: Serialized representation of <node> resource</node>			
		PRO Check MQTT	Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID</registrar></ae-id>			

	Interoperability Test Description			
			 fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 2004 pc = Serialized representation of <node> resource</node> 	
5		IOP Check	AE indicates successful operation	
	l	IOP Check	AE indicates successful operation	
IOP Verdict				
PRO Verdict				

8.1.10.4 Node Delete

			International Illian Test Description
1.1	·		Interoperability Test Description
Identi			TD_M2M_NH_38
Objec			AE deletes node resource
	guration	1 :	M2M_CFG_01
Refere	ences:		TS-0001 [1], clause 10.2.14.4
			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	Туре	Description
1		Stimulus	AE is requested to send a node Delete Request
		Otimalas	• op = 4 (DELETE)
		PRO Check	to = {CSEBaseName}/{node}
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			Sent DELETE request contains
			Request method = DELETE
		PRO Check	
		HTTP	Request-Target: {CSEBaseName}/{node}
			Host: IP address or the FQDN of Registrar CSE
			X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Sent DELETE request contains
2	Mca	PRO Check CoAP	Method: 0.04 (DELETE)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/{node}
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Sent a MQTT PUBLISH message
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	
		MQTT	• op = 4
			to = {CSEBaseName}/{node}
			• fr = AE-ID
			• rqi = (token-string)
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	• rqi = (token-string) same as received in request message
		DDO Obselv	Registrar CSE sends response containing:
		PRO Check	• Status Code = 200
		HTTP	• X-M2M-RSC: 2002
			X-M2M-RI: (token-string) same as received in request message
			Registrar sends response containing:
		PRO Check	• Response Code = 2.05
3		CoAP	• oneM2M-RSC: 2002
"	Mca	COAI	
			oneM2M-RQI: (token-string) same as received in request message
			Sent a MQTT PUBLISH message
		1	Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		PRO Check	Payload:
		MQTT	• to = AE-ID
			• fr = Registrar CSE-ID
		1	 rqi = (token-string) same as received in request message
<u></u>			• rsc = 2002
4		IOP Check	Check if possible that the <node> resource is deleted in Registrar CSE.</node>

	Interoperability Test Description				
5	5 IOP Check AE indicates successful operation				
IOP \	/erdict				
PRO Verdict					

PollingChannel Management 8.1.11

8.1.11.1PollingChannel Create

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_39		
Objec			AE creates a <pollingchannel> resource in registrar CSE via a Create Request</pollingchannel>		
	guratior	1:	M2M_CFG_01		
Refere	ences:		TS-0001 [1], clause 10.2.13.2		
			TS-0004 [2], clause 7.3.21.2.1		
			,		
Pre-te	st cond	litions:	AE has created an application resource <ae> on registrar CSE</ae>		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE sends a request to create a < pollingChannel >		
			• op = 1 (Create)		
			 to = {CSEBaseName}/URI of <ae> resource</ae> 		
		PRO Check	• fr = AE-ID		
		Primitive	• rqi = (token-string)		
			• ty = 15 (pollingChannel)		
			pc = Serialized representation of < pollingChannel > resource		
			Sent request contains		
			Request method = POST		
			 Request-Target:{CSEBaseName}/URI of <ae> resource</ae> 		
		PRO Check	Host: IP address or the FQDN of Registrar CSE		
		НТТР	• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
			 Content-Type: application/vnd.onem2m-res+xml; ty=15 or 		
			application/vnd.onem2m-res+json; ty=15		
			 Message-body: Serialized representation of < pollingChannel > resource 		
		DDO Ob a di	Sent request contains		
2	Mca		Method: 0.02 (POST)		
	IVICA		Uri-Host: IP address or the FQDN of Registrar CSE		
			 Uri-Path: {CSEBaseName}/URI of <ae> resource</ae> 		
		PRO Check CoAP	Content-type: application/vnd.onem2m-res+xmlor application/vnd.onem2m-res+json		
		COAF	• oneM2M-TY: 15		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			 Payload: Serialized representation of < pollingChannel > resource 		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 1 (Create)		
		MQTT	 to = {CSEBaseName}/URI of <ae> resource</ae> 		
		WIG(11	• 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.		
		PRO Check	• rsc = 2001 (CREATED)		
		Primitive	rqi = (token-string) same as received in request message		
			pc = Serialized representation of < pollingChannel > resource		
			Registrar CSE sends response containing:		
4	Mca	PRO Check	• Status Code = 201 (Created)		
	11134	HTTP	• X-M2M-RSC: 2001		
		HILL	X-M2M-RI: (token-string) same as received in request message		
			Content-Location: URI of the created resource.		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		

	Interoperability Test Description			
			Message-body: Serialized representation of < pollingChannel > resource	
			Registrar sends response containing:	
			• Response Code = 2.01	
		DDO 01	• oneM2M-RSC: 2001	
		PRO Check CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
		COAP	Location-Path: URI of the created resource	
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Payload: Serialized representation of < pollingChannel > resource	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• 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 \	/erdict			
PRO '	Verdict			

8.1.11.2 PollingChannel Retrieve

	Interoperability Test Description					
Identif	fier:		TD_M2M_NH_40			
Objective:			AE retrieves information of a pollingChannel resource via a Retrieve Request			
	guration	1:	M2M CFG 01			
	ences:		TS-0001 [1], clause 10.2.13.3			
			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 >			
		PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = empty 			
	Мса	PRO Check HTTP	Sent request contains Request method = GET Request-Target: {CSEBaseName}/URI of < pollingChannel > resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty			
2		PRO Check CoAP	Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of < pollingChannel > resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty			
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = empty</registrar>			
3		PRO Check	• rsc =2000 (OK)			

			Interoperability Test Description
	Mca	Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of < pollingChannel > resource
			Registrar CSE sends response containing:
			• Status Code = 200 (OK)
		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of < pollingChannel > resource
			Registrar sends response containing:
			• Response Code = 2.05 (OK)
		PRO Check	• oneM2M-RSC: 2000(OK)
		CoAP	 oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of < pollingChannel > resource
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc 2000(OK)
			• rqi = (token-string) same as received in request message
		10001	pc = Serialized representation of < pollingChannel > resource
4	/ l: - t	IOP Check	AE indicates successful operation
	/erdict		
PRO	Verdict		

8.1.11.3 pollingChannel Update

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_41
Objective:			AE updates attribute in pollingChannel resource via a Update Request
Configuration:			M2M_CFG_01
Refer	ences:		TS-0001 [1], clause 10.2.13.4
			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>
			, and the second
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a pollingChannel Update Request to update the lifetime of the
			resource.
		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
		PRO Check	Sent request contains
			• Request method = PUT
			 Request-Target:{CSEBaseName}/URI of < pollingChannel > resource
			Host: IP address or the FQDN of Registrar CSE
2		ппг	X-M2M-RI: (token-string)
	Mca		• X-M2M-Origin: AE-ID
			 Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			 Message-body: Serialized representation of updated < pollingChannel > resource
			Sent request contains
			• Method: 0.03 (PUT)
		DDO Chaale	Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check CoAP	Uri-Path: {CSEBaseName}/URI of < pollingChannel > resource
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json

	Interoperability Test Description				
			Payload: Serialized representation of updated < pollingChannel > resource		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">" Payload:</registrar>		
3		IOP Check	Check if possible that the < pollingChannel > resource is updated in Registrar CSE.		
		PRO Check Primitive	 rsc = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of < pollingChannel > resource 		
	Mca	PRO Check HTTP	Registrar CSE sends response containing: • Code = 200 (Ok) • X-M2M-RSC: 2004 • X-M2M-RI: (token-string) same as received in request message • Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Message-body: Serialized representation of < pollingChannel > resource		
4		PRO Check CoAP	Registrar sends response containing: Response Code = 2.04 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of < pollingChannel > resource		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2004 (Updated) • rqi = (token-string) same as received in request message • pc = Serialized representation of modified < pollingChannel > resource</registrar>		
5		IOP Check	AE indicates successful operation		
	/erdict				
PRO '	Verdict				

pollingChannel Delete 8.1.11.4

	Interoperability Test Description				
Identi	fier:		TD M2M NH 42		
Objective:			AE deletes a pollingChannel resource via a Delete Request		
	guration	1:	M2M CFG 01		
	ences:		TS-0001 [1], clause 10.2.13.5		
			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	Type	Description		
1		Stimulus	AE is requested to send a subscription Delete Request		
			• op = 4 (Delete)		
		PRO Check	 to = {CSEBaseName}/URI of < pollingChannel > resource 		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		
2	Mca		Sent request contains		
	IVICa	DDO Obrada	Request method = DELETE		
		PRO Check	 Request-Target: {CSEBaseName}/URI of < pollingChannel > resource 		
		HTTP	Host: IP address or the FQDN of Registrar CSE		
			• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		

	Interoperability Test Description				
			Message-body: Empty		
			Sent request contains		
			Method: 0.04 (DELETE)		
			Uri-Host: IP address or the FQDN of Registrar CSE		
		PRO Check	Uri-Path: {CSEBaseName}/URI of < pollingChannel > resource		
		CoAP	• oneM2M-FR: AE-ID		
			• oneM2M-RQI: (token-string)		
			Payload: empty		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 4 (Delete)		
		MQTT	 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.		
		PRO Check Primitive	• rsc = 2002 (DELETED)		
	Mca		 rqi = (token-string) same as received in request message 		
			• pc = empty		
		PRO Check	Registrar CSE sends response containing:		
			• Status Code = 200 (OK)		
		HTTP	• X-M2M-RSC: 2002		
			X-M2M-RI: (token-string) same as received in request message		
			Message-body: empty		
		PRO Check	Registrar sends response containing:		
4			• Response Code = 2.02		
		CoAP	 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message 		
			Payload: empty		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Registrar CSE-ID		
			• rsc = 2002(DELETED)		
			• rqi = (token-string) same as received in request message		
5		IOP Check	Check if possible that the < pollingChannel > resource has been removed in registrar		
			CSE.		
6	, ,	IOP Check	AE indicates successful operation		
_	/erdict				
PRO,	Verdict				

8.1.11.5 Long Polling on a PollingChannel Retrieve

	Interconnectability Toot Description				
	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_43		
Objec	tive:		AE retrieves information of a pollingChannel resource via a Retrieve Request		
Confi	guratior	1:	M2M_CFG_01		
References:			TS-0001 [1], clause 10.2.13.7		
			TS-0004 [2], clause 7.3.22.2.2		
Pre-te	est cond	litions:	 A pollingChannel resource < pollingChannel > has been created in application <ae> on the Registrar CSE</ae> 		
			 A subscription to a <container> resource has been created using the <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	Type	Description		
1		Stimulus	AE is requested to send a pollingChannelURI Retrieve Request for <pollingchanneluri></pollingchanneluri>		

			Interoperability Test Description
			Sent RETRIEVE request contains
		PRO Check	• To: <csebase>/<ae>/<pollingchannel>/pollingChannelURI</pollingchannel></ae></csebase>
		Primitive	• Fr. AE-ID
			Sent GET request contains
		PRO Check	Request URI < CSEBase > /< AE > /< polling Channel > /polling Channel URI
		HTTP	Host: Registar CSE
			Payload: empty
			Sent GET request contains
2			Method: 0.01 (GET)
_	Mca		Uri-Host: Registrar CSE host
		PRO Check	Uri-Port: Registrar CSE port
		CoAP	Uri-Path: <csebase></csebase>
		00/11	• Uri-Path: <ae></ae>
			Uri-Path: < pollingChannel >
			URI-Path: pollingChannelURI
		PRO Check	- Gran and pointing or a minoral
		MQTT	
			Sent RETRIEVE response contains
		PRO Check	• <i>To</i> : AE-ID
		Primitive	• Fr. CSE-ID
		1 minuve	Response Statuse Code : OK
			Cn: pending Notification request
_		ca PRO Check	Registrar CSE sends response containing:
3	Mca		• Code = 200
			Payload: Response PRO Check Primitive with Content set with Notification request
		PRO Check CoAP	Registrar sends response containing:
			Response Code = 2.05 Parkenda Barrense BBO Charle Britishing with Contract and with Natification assured.
		PRO Check	Payload: Response PRO Check Primitive with Content set with Notification request
		MQTT	
4		IOP Check	AE indicates successful operation
-			Repeat steps 1-2. There is no pending request. When the Request Expiration Timestamp
5			expires Registrar sends response indicating "REQUEST_TIMEOUT"
			Sent RETRIEVE response contains
		PRO Check	• To: AE-ID
		Primitive	• Fr. CSE-ID
			Response Statuse Code: REQUEST_TIMEOUT
		PRO Check	Registrar CSE sends response containing:
6	Mca	HTTP	• Code = 408
	ivica		Registrar sends response containing:
		PRO Check	• Response Code = 4.04
		CoAP	• oneM2M-RSC = 4008
		PRO Check	
		MQTT	
	/erdict		
PRO '	Verdict		

8.1.12 FanoutPoint Management

FanoutPoint Create 8.1.12.1

Interoperability Test Description				
Identifier:	TD_M2M_NH_44			
Objective:	AE creates a <contentinstance> resource in each group member</contentinstance>			
Configuration:	M2M_CFG_01			
References:	TS-0001 [1], clause 10.2.7.6			
	TS-0004 [2], clause 7.3.14.3.1			
Pre-test conditions:	 A group is created containing 2 members of type <container></container> 			
	Test Sequence			
Step RP Type	Description			

			Interoperability Test Description
1		Stimulus	AE is requested to send a Create Request to create <contentinstance> in each group member</contentinstance>
	Check Mca	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/{group}/fanOutPoint fr = AE-ID rqi = (token-string) ty = 4 (contentInstance) pc = Serialized representation of <contentinstance> resource</contentinstance>
		PRO Check HTTP	Sent request contains Request method = POST Request-Target: {CSEBaseName}/{group}/fanOutPoint Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; ty=4 or application/vnd.onem2m-res+json; ty=4 Message-body: Serialized representation of < contentInstance > resource
2		PRO Check CoAP	Sent request contains • Method: 0.02 (POST) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{group}/fanoutPoint} • Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • oneM2M-TY: 4 • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <contentinstance> resource</contentinstance>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: • op = 1 (Create) • to = {CSEBaseName}/{group}/fanOutPoint • fr = AE-ID • rqi = (token-string) • ty = 4 (contentInstance) • pc = Serialized representation of <contentinstance> resource</contentinstance></registrar></ae-id>
4		IOP Check	Check if possible that the <contentinstance> resource is created in each member hosting CSE</contentinstance>
	Check Mca	PRO Check Primitive	rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = aggregated response
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 201 (OK) X-M2M-RSC: 2001 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: aggregated response
7		PRO Check CoAP	Registrar CSE sends response containing: Response Code = 2.01 oneM2M-RSC: 2001 oneM2M-RQI: (token-string) same as received in request message Payload: aggregated response
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2001 (CREATED) • rqi = (token-string) same as received in request message • pc = aggregated response</registrar></ae-id>
8		IOP Check	AE indicates successful operation
	/erdict	Verify that the a	aggregrate response includes responses from each member of the group
PKO.	Verdict		

8.1.12.2 FanoutPoint Retrieve

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_45	
Objec			AE retrieves the <container> resource from in each group member</container>	
	guration	:	M2M_CFG_01	
References:			TS-0001 [1], clause 10.2.7.8	
			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	Туре	Description Description	
1		Stimulus	AE is requested to send a Retrieve Request to the fanoutPoint of <group> resource</group>	
		PRO Check	op = 2 (Retrieve)to = {CSEBaseName}/{group}/fanOutPoint	
		Primitive	• fr = AE-ID	
		1 IIIIIIIIVO	• rqi = (token-string)	
			Sent request contains	
			Request method = GET	
		PRO Check	Request-Target: {CSEBaseName}/{group}/fanOutPoint	
		HTTP	Host: IP address or the FQDN of Registrar CSE	
			• X-M2M-RI: (token-string)	
			• X-M2M-Origin: AE-ID	
	Check		Sent request contains	
2	Mca		• Method: 0.01 (GET)	
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE	
		CoAP	Uri-Path: {CSEBaseName}/{group}/fanoutPoint	
			• oneM2M-FR: AE-ID	
		PRO Check	oneM2M-RQI: (token-string) Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
			• op = 2 (Retrieve)	
		MQTT	• to = {CSEBaseName}/{group}/fanOutPoint	
			• fr = AE-ID	
			• rqi = (token-string)	
4		IOP Check	2000 (01/)	
		PRO Check	• rsc = 2000 (OK)	
		Primitive	 rqi = (token-string) same as received in request message pc = aggregated response 	
			Registrar CSE sends response containing:	
			• Status Code = 200 (OK)	
		PRO Check	• X-M2M-RSC: 2000	
		HTTP	X-M2M-RI: (token-string) same as received in request message	
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json	
			Message-body: aggregated response	
			Registrar CSE sends response containing:	
7	Check	PRO Check	• Response Code = 2.05	
	Mca	CoAP	• oneM2M-RSC: 2000	
			 oneM2M-RQI: (token-string) same as received in request message Payload: aggregated response 	
			Sent a MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc = 2000 (OK)	
			• rqi = (token-string) same as received in request message	
			• pc = aggregated response	
8	,	IOP Check	AE indicates successful operation	
		Verify that the a	ggregrate response includes responses from each member of the group	
י טאאו	√erdict			

8.1.12.3 FanoutPoint Update

	Interoperability Test Description				
Ident	ifier:		TD_M2M_NH_46		
Objec			AE updates an <container> resource of each member resource</container>		
	iguration):	M2M CFG 01		
	ences:		TS-0001 [1], clause 10.2.7.9		
			TS-0004 [2], clause 7.3.14.3.3		
Pre-te	est cond	itions:	A group is created containing 2 members of type <container></container>		
_			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a Update Request to the fanoutPoint of <group> resource to lifetime of the resource.</group>		
		PRO Check	 op = 3 (Update) to = {CSEBaseName}/{group}/fanOutPoint fr = AE-ID rqi = (token-string) pc = Serialized representation of <container> resource</container> Sent request contains Request method = PUT Request-Target: {CSEBaseName}/{group}/fanOutPoint 		
	 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application Message-body: Serialized representation of < container > reso Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/{group}/fanoutPoint Content-format: application/vnd.onem2m-res+xml; or application res+json; oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/{group}/fanoutPoint Content-format: application/vnd.onem2m-res+xml; or application res+json; OneM2M-RQI: (token-string) 	 X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; Message-body: Serialized representation of < container > resource 			
2			 Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/{group}/fanoutPoint Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; oneM2M-FR: AE-ID 		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>		
3		IOP Check	Check if possible that both of the <container> resources have been updated in registrar CSE.</container>		
		PRO Check Primitive	 rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = aggregated response 		
	PRO Check HTTP Registrar CSE sends res • Status Code = 200 (0 • X-M2M-RSC: 2004 • X-M2M-RI: (token-str • Content-Type: applic	Registrar CSE sends response containing: • Status Code = 200 (OK) • X-M2M-RSC: 2004 • X-M2M-RI: (token-string) same as received in request message • Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Message-body: aggregated response			
4	Check Mca	PRO Check CoAP	Registrar CSE sends response containing: Response Code = 2.04 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Payload: aggregated response		
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID</registrar></ae-id>		

	Interoperability Test Description			
			• rsc = 2004 (CHANGED)	
			• rqi = (token-string) same as received in request message	
			• pc = aggregated response	
5		IOP Check	AE indicates successful operation	
IOP Verdict		Verify that the a	ggregrate response includes responses from each member of the group	
PRO Verdict				

8.1.12.4 FanoutPoint Delete

	Interoperability Test Description				
Identifie	er:		TD_M2M_NH_47		
Objecti	ve:		AE deletes a <container> ofeach member</container>		
Configu	ıration:		M2M_CFG_01		
Referen	ices:		TS-0001 [1], clause 10.2.7.10		
			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>		
Ston	RP	Type	Test Sequence Description		
Step	KF	Type Stimulus	AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group></group>		
1		Stillialas	resource		
			• op = 4 (Delete)		
		PRO Check	to = {CSEBaseName}/{group}/fanOutPoint		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			Sent request contains		
		DD 0 01 1	Request method = DELETE		
		PRO Check	Request-Target: {CSEBaseName}/{group}/fanOutPoint		
		HTTP	Host: IP address or the FQDN of Registrar CSE		
			• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
	Check		Sent request contains		
2	Mca		Method: 0.04 (DELETE)		
	IVICA	PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE		
		CoAP	Uri-Path: {CSEBaseName}/{group}/fanoutPoint		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
		PRO Check	Payload:		
		MQTT	op = 4 (Delete)to = {CSEBaseName}/{group}/fanOutPoint		
			• fr = AE-ID		
			• rqi = (token-string)		
			• rsc = 2002 (DELETED)		
		PRO Check	• rqi = (token-string) same as received in request message		
		Primitive	• pc = aggregated response		
			Registrar CSE sends response containing:		
			• Status Code = 200 (OK)		
		PRO Check	• X-M2M-RSC: 2002		
		HTTP	X-M2M-RI: (token-string) same as received in request message		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-		
3	Check		res+json		
	Mca		Message-body: aggregated response		
			Registrar CSE sends response containing:		
		PRO Check	• Response Code = 2.02		
		CoAP	• oneM2M-RSC: 2002		
			oneM2M-RQI: (token-string) same as received in request message Powlead: aggregated response.		
			Payload: aggregated response Sent a MQTT PUBLISH message:		
		PRO Check	Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
		MQTT	Payload:		
	1		1 - 2		

	Interoperability Test Description			
			• to = AE-ID	
			• fr = Registrar CSE-ID	
			• rsc = 2002 (DELETED)	
			• rqi = (token-string) same as received in request message	
			• pc = aggregated response	
4		Verify	Check if possible that the <i>oldest</i> <contentinstance> resource has been removed in registrar CSE.</contentinstance>	
5		Verify	AE indicates successful operation	
IOP Verdict		Verify that the a	aggregrate response includes responses from each member of the group	
PRO Verdict				

8.1.13 Notifcation Management

8.1.13.1 **Notification Create**

			Interoperability Test Description
Identif	fier:		TD_M2M_NH_48
Objec			AE receives a notification request from the HOST CSE
Configuration:			M2M_CFG_01
Refere	ences:		TS-0001 [1], clause 10.2.12
			TS-0004 [2], clause 7.4.1
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 <subscription> as a child resource of a <container></container></subscription>
			AE2 has created an application resource <ae> on registrar CSE</ae>
			AE2 has permisions to CREATE a Content Instance in the container created by
			AE1
Cton	RP	Tuno	Test Sequence
Step	KP	Type Stimulus	Description AE2 is requested to send a Create request to create <contentinstance> in the</contentinstance>
1		Sumulus	<container></container> created by AE1. This triggers or causes the HOST CSE to send a notification
'			to AE1.
			• op = 5 (Notify)
		DDO OL I	to = notificationURI of subscription resource
		PRO Check Primitive	from = Registrar CSE-ID
			• rqi = (token-string)
			• pc = Serialized representation of Notification data object
		PRO Check HTTP	Sent request contains
			Request method = POST
			Request-Target: notificationURI of subscription resource
			Host: IP address or FQDN of notificationURI
			X-M2M-RI: (token-string)
			X-M2M-Origin: {CSEBaseName}
			Content-Type: application/vnd.onem2m-ntfy+xml;
			or application/vnd.onem2m-ntfy+json;
	Check		Message-body: Serialized Representation of Notification data object
2	Mca		Sent request contains
	Mod		• Method: 0.02 (POST)
			Uri-Host: notificationURI host
			Uri-Port: notificationURI port
		PRO Check	Uri-Path: AE1 AE-ID
		CoAP	oneM2M-FR: Registrar CSE-ID
			oneM2M-RQI: (token-string)
			Content-Format: application/vnd.onem2m-ntfy+xml; or application/vnd.onem2m-
			ntfy+json;
			Payload: Serialized Representation of Notification data object
			Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/req/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>
			Payload:
		-	• op = 5 (Notify)
			to = notificationURI of subscription resource

	Interoperability Test Description		
			fr = Registrar CSE-ID
			• rqi = (token-string)
			• pc = empty
4		IOP Check	Check if the notification representation
		PRO Check Primitive	Sent response contains • rsc = 2000 (OK) • rqi = (token-string) same as received in request message
	Check Mca	PRO Check HTTP	Sent response contains: • Status Code = 200 (OK) • X-M2M-RSC: 2000 • X-M2M-RI: (token-string) same as received in request message
7		PRO Check CoAP	Sent response contains: Response Code = 2.01 oneM2M-RSC: 2000(OK) oneM2M-RQI: (token-string) same as received in request message
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = Registrar CSE-ID • fr = AE1 AE-ID • rsc = 2000(OK) • rqi = (token-string) same as received in request message</ae-id></registrar>
8		IOP Check	AE1 indicates notification received
	/erdict		
PRO	Verdict		

Non blocking configuration testing 8.2

8.2.1 Synchronous request

8.2.1.1 Container management

Container Create 8.2.1.1.1

	Interoperability Test Description					
Identi	fier:		TD_M2M_NB_01			
Objective:			AE creates a <container> resource using non blocking synchronous request in registrar CSE.</container>			
Confi	guration) :	M2M CFG 01			
	ences:		TS-0001 [1], clause 10.2.4.1			
			TS-0004 [2], clause 7.3.6.2.1			
Pre-te	st cond	itions:				
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send a non blocking synchronous request to create a <container> resource in registrar CSE</container>			
2	Мса	PRO Check Primitive	Sent request contains			
			• X-M2M-RI: (token-string)			

A**A****A***Contain **A****A*** A**** A****Contain **A**** A*** A****Contain **A**** A**** A****Contain **A**** A**** A**** A****Contain **A**** A**** A***				Interoperability Test Description
• Content Type = application/vnd onem2m-res+xml; ty=3 or application/vnd.onem2m-res+sion; types or application/vnd.onem2m-res+sion; types or the selection of containers or the selection of the t				
Message-Body: Serialized Representation of <container> resource **Sent request contains **Method: 0.02 (POST) **Uni-Host: IP address or the FQDN of Registrar CSE **Uni-Path: (CSEBaseAlame) **Uni-Path: (CSEBaseAlame) **Uni-Path: (CSEBaseAlame) **Uni-Path: (CSEBaseAlame) **Uni-Path: (CSEBaseAlame) **OneM2M-FR: AE-ID **oneM2M-FR: AE-ID **oneM2M-FR: AE-ID **oneM2M-FR: AE-ID **oneM2M-FR: AE-ID-/-Registrar CSE-ID-** **Payload: Serialized Representation of <container> resource **Sent MOTT PUBLISH message: Topic: 'noneM2M/reg/< AE-ID-/-Registrar CSE-ID-** **Payload: op = 1 (Greate) **PRO Check **MQTT** **PRO Check **Primitive** **PRO Check **Primitive** **PRO Check **Primitive** **PRO Check **PRO Check **Primitive** **PRO Check **PRO Check **Primitive** **PRO Check **PRO Check **PRO Check **Primitive** **PRO Check **COAP** **PRO Check **MQTT* **PRO Check **Primitive* **PRO Check **Primitive* **PRO Check **Primitive* **PRO Check **PRO Check **Primitive* **PRO</container></container>				
Sent request contains • Method: Ozo (POST) • Uni-Host: IP address or the FQDN of Registrar CSE • Uni-Part, (CSEBaseName) • Uni-Part, (CSEBaseName) • Uni-Query, rt=1 • oneM2M-RQI: (token-string) • Conient Type = application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • meM2M-RQI: (token-string) • Conient Type = application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • meM2M-RQI: (token-string) • PRO Check MQTT • De 1 (Create) PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO Check Primitive PRO Check PRO Check HTTP Registrar CSE creates an internal «Request» resource and sends acknowledgement response containing: • De = Reference to the created «Request» resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: (1000 • Mcaa Mca Mca Mca Mca PRO Check COAP PRO Check COAP Registrar CSE creates an internal «Request» resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: (1000 • Mcaa New Farena (Registrar CSE reates) • Response Containing: * Registrar CSE creates an internal «Request» resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: (1000 • Mcaa New Farena (Registrar CSE reates) • Response Containing: • Response Code = None • nem2m-RSC=(1000 • nem2m-RSC=(1000 • nem2m-RSC=(1000) •				
Mica Note				Message-Body: Serialized Representation of <container> resource</container>
PRO Check CoAP PRO Check CoAP Uni-Path: (CSEBaseAlame) Uni-Query, rt=1 oneM2M-RR: (loken-string) Payload: Sent MQTT PUBLISH message: Topic: "oneM2M/reg/< AE-ID>/-Registrar CSE-ID>" Payload: op = 1 (Create) PRO Check MQTT or qi = (loken-string) or = 1 (Inon blocking synchronous) or = 2 sent sent sent sent sent sent sent sent				·
PRO Check CoAP PRO Check CoAP OneMZM-FR: AE-ID operation of -Container> resource Sent MGTT PUBLISH message: operation of -Container> operation of -Containers operation of -Container operation of				
PRO Check CoAP - oneMZM-RCI: (token-string) - oneMZM-TY: 3 - oneMZM-TY: 3 - Payload: Serialized Representation of <container> resource Sent MGTT PUBLISH message: Topic: YoneMzM/reg/< AE-IDs/</container>				
oneMZM-FR: AE-ID oneMZM-RO: (token-string) coneMZM-RO: (token-string) coneMZM-TY: 3 oneMZM-MZN: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json oneMZM-TY: 3 oneMZM-MZN: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json oneMZM-TY: 3 oneMZM-MZN: application of <container> resource Sent MQTT PUBLISH message: Topic: 'JoneMZM/req/- AE-ID>/<registrar cse-id="">'' Payload: op = 1 (Create) in = (CSEBaseName) in = 1 (non blocking synchronous) in = 2 (sontainer) in = 1 (token-string) in = 1 (token</registrar></container>			55000	
eneM2M-RCI: (token-string)				
Content Type = application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json OneM2M-TY: 3 Payload: Serialized Representation of <container> resource Sent MQTT PUBLISH message: Topic: 'JoneM2M/req' AE-ID>/-Registrar CSE-ID>* PRO Check MQTT</container>			COAP	
				, = ;
PRO Check Primitive PRO Check CoAP				
Sent MGTT PUBLISH message: Topic: "knewb2M/req/< AE-IDs/ <registrar cse-id="">" Payload:</registrar>				
Topic: "oneM2M/req/< AE-ID>/-Registrar CSE-ID>" Payload:				
## op = 1 (Create) **i to = (CSEBaseName)** **i to = (CSEBaseName)** **i to = (CSEBaseName)** **i to = (CSEBaseName)** **i to = (Costension)** **i to = (Costension)*				
PRO Check MQTT				Payload:
### AE-ID rig = (token-string) rig = 1 (non blocking synchronous) rig = 3 (container) p = 3 (container) p = 5 (creates an internal < Request> resource and sends acknowledgement response containing: s = 1 (non blocking synchronous) rig = 3 (container) p = 5 (creates an internal < Request> resource and sends acknowledgement response containing: s = 1 (non blocking synchronous) p = 3 (container) p = 6 (creates an internal < Request> resource and sends acknowledgement response containing: s = 1 (non blocking synchronous) rig = 1 (noken-string) same as received in request message rig = 1 (non blocking synchronous) rig = 1 (non blocking synchron				
• rqi = (token-string)				
or t = 1 (non blocking synchronous) or ty = 3 (container) or ce Serialized Representation of the <container> resource PRO Check Primitive PRO Check HTTP A Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: or seeference to the created <request> resource and sends acknowledgement response containing: or status Code = 202 or x-M2M-RSC: 1000 or x-M2M-RSI: 1000</request></request></container>			MQTT	
Ity = 3 (container) Open Serialized Representation of the <container> resource PRO Check Primitive</container>				
PRO Check Primitive Maca Mca Mca Mca Mca Mca Mca M				
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 and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: 1000 • X-M2M-RI= token-string) same as received in request message • Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Mca Mca Mca Mca Mca Mca Mca Mca</request></request></request></request>				
PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO Check HTTP Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Status Code = 202 X-M2M-RI= token-string) same as received in request message Mca Mca Mca Mca Mca Mca Mca Mc</request>				
## PRO Check Primitive • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: 1000 • X-M2M-RI= token-string) same as received in request message • Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Response Code = None • oneM2M-RSC: 1000 • oneM2M-RQI = token-string) same as received in request message • Payload: Reference to the created <request> resource Sent MQTT PuBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: • fr = Registrar CSE-ID • fr = Registrar CSE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 4 IOP Check AE indicates successful operation 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 Sent GT request contains • Request method = GET</request></request></request></registrar></request></request></request></request></request></request>				
Primitive Filmilive Fig. = token-string) same as received in request message p.c. = Reference to the created <request> resource </request>				
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Status Code = 202 X-M2M-RSC: 1000 X-M2M-RI= token-string) same as received in request message Mca Mca Mca Mca Mca Mca Mca Mc</request>			Primitive	
response containing: • Status Code = 202 • X-M2M-RSC: 1000 • X-M2M-RI= token-string) same as received in request message • Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Response Code = None • oneM2M-RSC=1000 • oneM2M-RSC=1000 • oneM2M-RSC=1000 • oneM2M-RSC=1000 • oneM2M-RSC=1000 • oneM2M-RSC=1000 • ropic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • fr = Registrar CSE-ID • rgi = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 4 IOP Check • Registrar CSE-ID • fr = Registrar CSE-ID • rgi = (token-string) operation 5 Stimulus A 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 • pc = empty • Sent GET request contains • Request method = GET</request></request></request></registrar></request></request>				
PRO Check HTTP Status Code = 202 • X-M2M-RSC: 1000 • X-M2M-RI token-string) same as received in request message • Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Response Code = None • oneM2M-RSC=1000 • oneM2M-RSC=1000 • oneM2M-RQI = token-string) same as received in request message • Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: • fr = Registrar CSE-ID • fri = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 4 IOP Check AE indicates successful operation AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains • op = 2 (Retrieve) • fr = AE-ID • rqi = (token-string) • pc = empty Sent GET request contains • Request method = GET</request></request></registrar></request></request></request>				
### Action				i i

Mca				
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Response Code = None oneM2M-RSC=1000 oneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: to = AE-ID fr = Registrar CSE-ID fr = Registrar CSE-ID of re = Registrar CSE-ID of re = Registrar CSE-ID fr = Registrar CSE-ID fr = Registrar CSE-ID of re = Registrar CSE-ID of re = Reference to the created <request> resource IOP Check Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains op = 2 (Retrieve) of = AE-ID of =</request></request></registrar></request></request>				
response containing: Response Code = None oneM2M-RSC=1000 oneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT PRO Check MQTT PRO Check MQTT Provided Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: Of the Registrar CSE-ID Of the Registrar CSE</registrar></registrar></request>				
PRO Check CoAP Response Code = None oneM2M-RSC=1000 oneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: oto = AE-ID of r = Registrar CSE-ID of r = Registrar CSE-ID of r = Registrar CSE-ID of r = Reference to the created <request> resource 4 IOP Check AE indicates successful operation AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains op = 2 (Retrieve) PRO Check Primitive PRO Check Primitive Fr = AE-ID of r = AE-ID</request></request></registrar></request>	3	Mca		
CoAP oneM2M-RSC=1000 oneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: oto = AE-ID of r = Registrar CSE-ID of rqi = (token-string) same as received in request message of rsc = 1000 (Accepted) of pc = Reference to the created <request> resource 4 IOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains of pc = 2 (Retrieve) of r = AE-ID of rqi = (token-string) of pc = empty Sent GET request contains Request method = GET</request></request></registrar></request>	0	IVICA	PRO Check	
OneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT</registrar></request>				
Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 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 6 Mca Sent GET request contains • Request method = GET</request></request></request></registrar>			30711	
Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 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 6 Mca Sent GET request contains • Request method = GET</request></request></request></registrar>				Payload: Reference to the created <request> resource</request>
PRO Check MQTT PRO Check MQTT of r = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 1000 (Accepted) pc = Reference to the created <request> resource IOP Check Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains op = 2 (Retrieve) PRO Check Primitive PRO Check Primitive of r = AE-ID orqi = (token-string) opc = empty Sent GET request contains Request method = GET</request></request>				
PRO Check MQTT to = AE-ID fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 1000 (Accepted) pc = Reference to the created <request> resource IOP Check AE indicates successful operation Stimulus AE is requested to wait then send a retrieve request to <request> reference Sent Retrieve request contains op = 2 (Retrieve) PRO Check Primitive PRO Check Primitive fr = AE-ID rqi = (token-string) pc = empty Sent GET request contains Request method = GET</request></request>				· · · · · · · · · · · · · · · · · · ·
 fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 1000 (Accepted) 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 fr = AE-ID rqi = (token-string) pc = empty Mca Sent GET request contains Request method = GET 			DDG 6: :	,
• rqi = (token-string) same as received in request message • rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 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) PRO Check Primitive • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty 6 Mca Sent GET request contains • Request method = GET</request></request></request>				
• rsc = 1000 (Accepted) • pc = Reference to the created <request> resource 4 IOP Check</request>			IVIQTI	· · · · · · · · · · · · · · · · · · ·
Pc = Reference to the created <request> resource IOP Check</request>				
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 Sent GET request contains • Request method = GET</request></request>				
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 Sent GET request contains • Request method = GET</request></request>	4		IOP Check	
PRO Check Primitive • op = 2 (Retrieve) • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty Sent GET request contains • Request method = GET</request>				
PRO Check Primitive • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty Sent GET request contains • Request method = GET</request>				Sent Retrieve request contains
Primitive • fr = AE-ID • rqi = (token-string) • pc = empty Sent GET request contains • Request method = GET				
• rqi = (token-string) • pc = empty 6 Mca Sent GET request contains • Request method = GET				· ·
		Mca	Primitive	1 —
6 Mca Sent GET request contains • Request method = GET				- · · · · · · · · · · · · · · ·
• Request method = GET	6			
	0			·
I I I I I I I I I I I I I I I I I I I			PRO Check	·
HTTP • Host: IP address or the FQDN of Registrar CSE				
• X-M2M-RI: (token-string)				
• X-M2M-Origin: AE-ID				
Message-Body: empty		<u></u>		

	Interoperability Test Description				
			Sent GET request contains		
			• Method: 0.01 (GET)		
			Uri-Host: IP address or the FQDN of Registrar CSE		
		PRO Check	Uri-Path: <request> reference</request>		
		CoAP	·		
			• oneM2M-FR: AE-ID		
			• oneM2M-RQI: (token-string)		
			Payload: empty		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 2		
		MQTT	• to = <request> reference</request>		
			• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		
			• rsc = 2000 (OK)		
		PRO Check	 rqi = (token-string) same as received in request message 		
		Primitive	• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>		
			and the "operationResult" parameter containing the <container> resource.</container>		
			Registrar CSE sends response to AE containing:		
	Mca	PRO Check HTTP	• Status Code = 200		
			• X-M2M-RSC: 2000		
			• X-M2M-RI= (token-string) same as received in request message		
			Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Message-Body: <request> resource with the parameter "requestStatus" set to 1</request>		
			(COMPLETED) and the "operationResult" parameter containing the <container></container>		
			resource.		
			Registrar CSE sends response to AE containing:		
		PRO Check	• Response Code= 2.05		
7			• oneM2M-RSC: 2000		
			 oneM2M-RQI: (token-string) same as received in request message 		
		CoAP	• Content-format; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			 Payload: <request> resource with the parameter "requestStatus" set to 1</request> 		
			(COMPLETED) and the "operationResult" parameter containing the <container></container>		
			resource.		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Registrar CSE-ID		
			 rqi = (token-string) same as received in request message 		
			• rsc = 2000 (OK)		
			• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>		
			and the "operationResult" parameter containing the <container> resource.</container>		
8		IOP Check	AE indicates successful operation		
	/erdict				
PRO '	Verdict				

8.2.1.1.2 Container Retrieve

	Interoperability Test Description				
Identi	Identifier:		TD_M2M_NB_02		
Objective:			AE retrieves a <container> resource using non blocking synchronous request from registrar CSE.</container>		
Confi	guration	1:	M2M_CFG_01		
Refer	References:		TS-0001 [1], clause 10.2.4.1 TS-0004 [2], clause 7.3.6.2.1		
Pre-te	st cond	litions:	AE has created a <container> resource in registrar CSE.</container>		
			Test Sequence		
Step RP Type		Type	Description		
1		Stimulus	AE is requested to send a non blocking synchronous request to retrieve the <container> resource from registrar CSE.</container>		

Interoperability Test Description Sent request contains op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr= AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty Sent request contains</container>	
PRO Check Primitive • op = 2 (Retrieve) • to = {CSEBaseName}/URI of <container> resource • fr= AE-ID • rqi = (token-string) • rt = 1 (non blocking synchronous) • pc = empty</container>	
PRO Check Primitive • to = {CSEBaseName}/URI of <container> resource • fr= AE-ID • rqi = (token-string) • rt = 1 (non blocking synchronous) • pc = empty</container>	
PRO Check Primitive • fr= AE-ID • rqi = (token-string) • rt = 1 (non blocking synchronous) • pc = empty	
 rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty 	
• pc = empty	
Sent request contains	
■ Request method = POST	
PRO Check • Reques-Target: {CSEBaseName}/URI of <container> resource ?rl</container>	t=1
◆ Host: IP address or the FQDN of Registrar CSE	
• X-M2M-RI: (token-string)	
• X-M2M-Origin: AE-ID	
Message-Body: empty	
Sent request contains Mea • Method: 0.01 (GET)	
-	
Uri-Host: IP address or the FQDN of Registrar CSE PRO Check	
PRO Check OCAP • Uri-Path: {CSEBaseName}/URI of <container> resource • Uri-Query: rt=1</container>	
• oneM2M-FR: AE-ID	
• oneM2M-RQI: (token-string) • oneM2M-RQI: (token-string)	
• Payload: empty	
Sent MQTT PUBLISH message:	
Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>	
Payload:	
• op = 2 (Retrieve)	
PRO Check • to = {CSEBaseName}/URI of <container> resource</container>	
MQTT • fr= AE-ID	
• rqi = (token-string)	
• rt = 1 (non blocking synchronous)	
• pc = empty	
Registrar CSE creates an internal <request> resource and sends ack</request>	nowledgement
PRO Check response containing:	
Primitive • rsc = 1000 (Accepted)	
• rqi = token-string) same as received in request message	
• pc = Reference to the created <request> resource</request>	un accida da anno ant
Registrar CSE creates an internal <request> resource and sends ack response containing:</request>	mowieagement
PRO Check • Status Code = 202	
HTTP • Status Gode = 202 • X-M2M-RSC: 1000	
X-M2M-RI= token-string) same as received in request message	
Message-Body: Reference to the created <reguest> resource</reguest>	
Registrar CSE creates an internal <request> resource and sends ack</request>	nowledgement
3 Mca response containing:	g · · ·
PRO Check • Response Code = None	
CoAP • oneM2M-RSC=1000	
 oneM2M-RQI = (token-string) same as received in request message 	ge
Payload: Reference to the created <request> resource</request>	
Sent MQTT PUBLISH message:	
Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
Payload:	
PRO Check • to = AE-ID	
MQTT • fr = Registrar CSE-ID • roi = token string) same as required in request massage	
 rqi = token-string) same as received in request message rsc = 1000 (Accepted) 	
• rsc = 1000 (Accepted) • 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	
Sent Retrieve request contains • op = 2 (Retrieve)	
• op = 2 (Retrieve) PRO Check • to = < Request> reference	
• op = 2 (Retrieve)	
• op = 2 (Retrieve) • to = <request> reference</request>	

			Interoperability Test Description
			Sent GET request contains
			• Request method = GET
		DD0 01 1	
		PRO Check	Request URI: <request> reference Head IR address and to FORM of Remisters COF.</request>
		HTTP	Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-Body: empty
			Sent GET request contains
			Method: 0.01 (GET)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: <request> reference</request>
		CoAP	oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		DDO Obsest	
		PRO Check	• op = 2
		MQTT	• to = <request> reference</request>
			• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			• rsc = 2000 (OK)
		PRO Check Primitive	 rqi = (token-string) same as received in request message
			• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>
			and the "operationResult" parameter containing the <container> resource.</container>
		PRO Check HTTP	Registrar CSE sends response to AE containing:
			• Status Code = 200
			• X-M2M-RSC: 2000
			X-M2M-RI= (token-string) same as received in request message
			Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-Body: <request> resource with the parameter "requestStatus" set to 1</request>
			(COMPLETED) and the "operationResult" parameter containing the <container></container>
			resource.
			Registrar CSE sends response to AE containing:
			• Response Code= 2.05
7	Mca		• oneM2M-RSC: 2000
,	iviou		
		PRO Check CoAP	• oneM2M-RQI: (token-string) same as received in request message
		CUAF	Content-format; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Deviced: "Request resource with the parameter "request Status" and to define the second of th
			Payload: <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "apparation Page VIII" parameter containing the "Container".</request>
			(COMPLETED) and the "operationResult" parameter containing the <container></container>
			resource.
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
		PRO Check MQTT	Payload:
			• to = AE-ID
			• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 2000 (OK)
			• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>
			and the "operationResult" parameter containing the <container> resource.</container>
8		IOP Check	AE indicates successful operation
	erdict/		
PR∩\	√erdict		

8.2.1.1.3 Container Update

			Interoperability Test Description
Identi			TD_M2M_NB_03
Objec			AE updates a <container> resource using non blocking synchronous request in registrar CSE.</container>
Configuration:			M2M_CFG_01
Refere	ences:		TS-0001 [1], clause 10.2.4.1
			TS-0004 [2], clause 7.3.6.2.1
Pre-te	st cond	litions:	AE has created a <container> resource in registrar CSE.</container>
01		T	Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a non blocking synchronous request to update the <container> resource.</container>
			Sent request contains
Ī			• op = 3 (Update)
Ī			• to = {CSEBaseName}/URI of <container> resource</container>
		PRO Check	• fr= AE-ID
		Primitive	• rqi = (token-string)
			• rt = 1 (non blocking synchronous)
			• pc = Serialized Representation of the updated <container> resource</container>
			Sent request contains
			• Request method = UPDATE
			Reques-Target: {CSEBaseName}/URI of <container> resource?rt=1</container>
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content Type = application/vnd.onem2m-res+xml; or application/vnd.onem2m-
			res+json;
			Message-Body: Serialized Representation of updated <container> resource Container></container>
2	Mca	PRO Check CoAP	Sent request contains • Method: 0.03 (UPDATE)
_	IVICa		Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>
			• Uri-Query: rt=1
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			• Content Type = application/vnd.onem2m-res+xml; or application/vnd.onem2m-
			res+json;
			Payload: Serialized Representation of updated <container> resource</container>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload: • op = 3 (Update)
		PRO Check	• to = {CSEBaseName}/URI of <container> resource</container>
		MQTT	• fr= AE-ID
			• rqi = (token-string)
			• rt = 1 (non blocking synchronous)
			• pc = Serialized Representation of updated <container> resource</container>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
		PRO Check	response containing:
		Primitive	• rsc = 1000 (Accepted)
			• rqi = token-string) same as received in request message
			pc = Reference to the created <request> resource Registers CSE expets an internal allocation resource and condensations and condensations.</request>
3		a PRO Check HTTP	Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
	Mca		response containing: • Status Code = 202
3	ivica		• Status Code = 202 • X-M2M-RSC: 1000
			• X-M2M-RI= token-string) same as received in request message
			Message-Body: Reference to the created <request> resource</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
		PRO Check	response containing:
		CoAP	• Response Code = None
	i	1	• oneM2M-RSC=1000

			Interoperability Test Description
			• oneM2M-RQI = token-string) same as received in request message
			Payload: Reference to the created <request> resource</request>
			Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			 rqi = token-string) same as received in request message
			• rsc = 1000 (Accepted)
			 pc = Reference to the created <request> resource</request>
4		IOP Check	AE indicates successful operation
5		Stimulus	AE is requested to wait then send a retrieve request to <request> reference</request>
			Sent Retrieve request contains
			• op = 2 (Retrieve)
		PRO Check	• to = <request> reference</request>
		Primitive	• fr = AE-ID
			rqi = (token-string)pc = empty
			Sent GET request contains
			• Request method = GET
		PRO Check	Request URI: <request> reference</request>
		HTTP	Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-Body: empty
6	Mca		Sent GET request contains
			• Method: 0.01 (GET)
		PRO Check CoAP	Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: <request> reference Page 100 APRILED</request>
			oneM2M-FR: AE-ID oneM3M POI: (token string)
			oneM2M-RQI: (token-string) Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 2
		MQTT	• to = <request> reference</request>
			•fr = AE-ID
			• rqi = (token-string)
			• pc = empty
		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>
		1 111111111	and the "operationResult" parameter containing the <container> resource.</container>
			Registrar CSE sends response to AE containing:
			• Status Code = 200
		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-RI= (token-string) same as received in request message
			Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-Body: <request> resource with the parameter "requestStatus" set to 1</request>
			(COMPLETED) and the "operationResult" parameter containing the <container></container>
7	Mca		resource. Registrar CSE sends response to AE containing:
			Response Code= 2.05
			• oneM2M-RSC: 2000
		PRO Check	oneM2M-RQI: (token-string) same as received in request message
		CoAP	Content-format; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			 Payload: <request> resource with the parameter "requestStatus" set to 1</request>
			(COMPLETED) and the "operationResult" parameter containing the <container></container>
			resource.
		DDO OF!	Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload:</registrar>
		IVIQII	• to = AE-ID
	1	ı	1

	Interoperability Test Description			
			• fr = Registrar CSE-ID	
			rqi = (token-string) same as received in request message	
			• rsc = 2000 (OK)	
			• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>	
			and the "operationResult" parameter containing the <container> resource.</container>	
8		IOP Check	AE indicates successful operation	
IOP Verdict				
PRO Verdict				

Container Delete 8.2.1.1.4

0.2.	0.2.1.1.4 Container Delete				
			Interoperability Test Description		
Identi	fier:		TD_M2M_NB_04		
Objec	tive:		AE deletes a Container resource using non blocking synchronous request.		
Configuration:			M2M_CFG_01		
Refer	ences:		TS-0001 [1], clause 10.2.4.1		
			TS-0004 [2], clause 7.3.6.2.1		
Pre-te	st cond	itions:	AE has created <container> resource on registrar CSE.</container>		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a non blocking synchronous request to delete the <container></container>		
			resource.		
			Sent request contains		
			• op = 4 (Delete)		
		PRO Check	to = {CSEBaseName}/URI of <container> resource</container>		
		Primitive	• fr= AE-ID		
			• rqi = (token-string)		
			• rt = 1 (non blocking synchronous)		
			• pc = empty		
			Sent request contains		
	<u> </u>				
	• X-M2M-Origin: AE-ID				
			Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=1 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-Body: empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE</container>		
	Sent request contains				
2	Mca		Method: 0.04 (DELETE)		
		PRO Check	1		
		CoAP	• Uri-Query: rt=1		
			• oneM2M-FR: AE-ID		
			• oneM2M-RQI: (token-string)		
	Payload: empty				
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload:</registrar>		
			● op = 4 (Delete)		
		PRO Check	• to = {CSEBaseName}/URI of <container> resource</container>		
		MQTT	• fr= AE-ID		
			• rqi = (token-string)		
			• rt = 1 (non blocking synchronous)		
			• pc = empty		
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>		
			response containing:		
3		PRO Check	• rsc = 1000 (Accepted)		
		Primitive	• rqi = token-string) same as received in request message		
	Mca		• pc = Reference to the created <request> resource</request>		
		DDO C' '	Registrar CSE creates an internal <request> resource and sends acknowledgement</request>		
		PRO Check HTTP	response containing:		
			• Status Code = 202		
			• X-M2M-RSC: 1000		
	•		-		

			Interoperability Test Description
			X-M2M-RI= token-string) same as received in request message
			Message-Body: Reference to the created <request> resource</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
			response containing:
		PRO Check	Response Code = None
		CoAP	• oneM2M-RSC=1000
			• oneM2M-RQI = (token-string) same as received in request message
			Payload: Reference to the created <request> resource</request>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = token-string) same as received in request message
			• rsc = 1000 (Accepted)
			• 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)
		PRO Check	• to = <request> reference</request>
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			Sent GET request contains
			Request method = GET
		PRO Check	Request URI: <request> reference</request>
		HTTP	Host: IP address or the FQDN of Registrar CSE
			X-M2M-RI: (token-string)
	Мса		• X-M2M-Origin: AE-ID
			Message-Body: empty
			Sent GET request contains
6		PRO Check	Method: 0.01 (GET)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: <request> reference</request>
		CoAP	• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
		PRO Check	Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 2
		MQTT	• to = <request> reference</request>
		WQTT	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
		DDO OL SI	• rsc = 2000 (OK)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>
			Registrar CSE sends response to AE containing:
			• Status Code = 200
		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-RI= (token-string) same as received in request message
	Maa		Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
7			Message-Body: <request> resource with the parameter "requestStatus" set to 1</request>
7	Mca		(COMPLETED)
			Registrar CSE sends response to AE containing:
			• Response Code= 2.05
		DDC 61 :	• oneM2M-RSC: 2000
		PRO Check	oneM2M-RQI: (token-string) same as received in request message
		CoAP	Content-format; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: <request> resource with the parameter "requestStatus" set to 1</request>
			(COMPLETED)
		PRO Check	Sent MQTT PUBLISH message:
			<u>.</u>

	Interoperability Test Description			
		MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
			Payload:	
			to = AE-ID	
			• fr = Registrar CSE-ID	
			 rqi = (token-string) same as received in request message 	
			• rsc = 2000 (OK)	
			• pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>	
8		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO '	Verdict			

8.2.2 Asynchronous request

8.2.2.1 Container management

Container Create 8.2.2.1.1

	Interes were killer. Took December on				
1.1	· · · ·		Interoperability Test Description		
Identi			TD_M2M_NB_05		
	Objective:		AE creates a <container> resource using non blocking asynchronous request</container>		
	guration	1:	M2M_CFG_01		
Refere	ences:		TS-0001 [1], clause 10.2.4.1		
			TS-0004 [2], clause 7.3.6.2.1		
Dro to	st cond	itions	AE is vessional IDI "AE Notification LIDI"		
Fre-te	st cond	itions:	AE is reachable on the URI: "AE-Notification-URI" Test Sequence		
Ston	RP	Type	Description		
Step	KF	Type Stimulus	AE is requested to send a non blocking asynchronous request to create the <container></container>		
1		Sumulus	resource in registrar CSE.		
-			Sent request contains		
			• op = 1 (Create)		
			• to = {CSEBaseName}		
			• fr= AE-ID		
		DDO Chaole			
	PRO Check Primitive • rqi = (token-string) • rt = 2 (non blocking asynchronous) • ty = 3 (container)				
		Fillillive			
			 nu= AE-Notification-URI oneM2M-RQI: Request-ID pc = Serialized Representation of the <container> resource</container> Sent request contains Request method = POST Reques-Target: {CSEBaseName}?rt=2 		
	PRO Check HTTP • Host: IP address or the FQDN of Registrar CSE • X-M2M-RI: (token-string)				
			` 5,		
2	1400		• X-M2M-Origin: AE-ID		
	Mca		X-M2M-RTU: AE-Notification-URI Content Time and lighting for discovering the content to the content time for discovering for discovering the content time for discovering the content time for discovering time for d		
			• Content Type = application/vnd.onem2m-res+xml; ty=3 or application/vnd.onem2m-		
			res+json; ty=3		
			Message-Body: Serialized Representation of <container> resource Sent request contains</container>		
			Sent request contains		
			 Method: 0.02 (POST) Uri-Host: IP address or the FQDN of Registrar CSE 		
			· · · · · · · · · · · · · · · · · · ·		
			Uri-Path: {CSEBaseName}Uri-Query: rt=1		
		PRO Check	oneM2M-FR: AE-ID		
		CoAP	oneM2M-RQI: (token-string)		
			 oneM2M-RTURI: AE-Notification-URI Content Type = application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json 		
			 Content Type = application/vnd.onemzm-res+xml or application/vnd.onemzm-res+json oneM2M-TY: 3 		
		DDO Chask	Payload: Serialized Representation of <container> resource Cont MOTT PUBLISH measures:</container>		
		PRO Check	Sent MQTT PUBLISH message:		

			Interoperability Test Description
		MQTT	Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 1 (Create)
			• to = {CSEBaseName}
			• fr = AE-ID
			• rqi = (token-string)
			• rt = 2 (non blocking asynchronous)
			• ty = 3 (container)
			• nu= AE-Notification-URI
			pc = Serialized Representation of the <container> resource Description CSE expense on internal above to provide a polynomial and provide description. </container>
			Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request>
		PRO Check	• rsc = 1000 (Accepted)
		Primitive	• rqi = token-string) same as received in request message
			• pc = Reference to the created <request> resource</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
			response containing:
		PRO Check	• Status Code = 202
		HTTP	• X-M2M-RSC: 1000
			X-M2M-RI= token-string) same as received in request message
			Message-Body: Reference to the created <request> resource</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
3	Man		response containing:
	Mca	PRO Check	• Response Code = None
		CoAP	• oneM2M-RSC = 1000
			 oneM2M-RQI = token-string) same as received in request message
			Payload: Reference to the created <request> resource</request>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 1000 (Accepted)
		IOP Check	pc = Reference to the created <request> resource A F indicates suggestful exerction</request>
5		IOP Check	AE indicates successful operation Registrar CSE sends notify request to AE
3		101 CHECK	Sent request contains
			• op = 5 (Notify)
		PRO Check	• to = AE-Notification-URI
		Primitive	• fr = registrar CSE-ID
			• rqi = (token-string)
			• pc = Serialized representation of notification data object
			Sent request contains
			Request method = POST
		PRO Check	Request URI: AE-Notification-URI
		HTTP	Host: IP address or the FQDN of Registrar AE
			• X-M2M-RI: (token-string)
			X-M2M-Origin: Registrar CSE-ID
			Message-Body: Serialized representation of notification data object
6	Mca		Sent request contains
	IVIOG		Method: 0.02 (POST)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar AE
		CoAP	Uri-Path: AE-Notification-URI
		33/11	oneM2M-RQI: (token-string)
			oneM2M-FR: Registrar CSE-ID
			Payload: Serialized representation of notification data object
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>"</ae-id>
		PRO Check	Payload:
		MQTT	• op = 5 (Notify)
			• to = AE-Notification-URI
	1		• fr = Registrar CSE-ID
			• rqi = (token-string)

	Interoperability Test Description			
			• pc = empty	
		PRO Check	AE sends notify response to Registrar CSE containing:	
		Primitive	• rsc = 2000 (OK)	
			• rqi = (token-string) same as received in request message	
			AE sends notify response to Registrar CSE containing:	
		PRO Check	• Code = 200	
		HTTP	• X-M2M-RSC: 2000	
			X-M2M-RI= (token-string) same as received in request message	
			Message-Body = empty	
_	Mca	PRO Check CoAP	AE sends notify response to Registrar CSE containing:	
7			Response Code= 2.05	
			 oneM2M-RQI = (token-string) same as received in request message 	
			Payload = empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>	
		PRO Check	Payload:	
		MQTT	• to = AE-ID	
			• fr = Registrar CSE-ID	
			rqi = (token-string) same as received in request message	
		10001	• rsc = 2000 (OK)	
8	/ !: - t	IOP Check	Registrar CSE indicates successful operation	
	/erdict			
PRO	Verdict			

Container Retrieve 8.2.2.1.2

			Interoperability Test Description
Identi	fier:		TD M2M NB 06
Objective:			AE retrieves a <container> resource using non blocking asynchronous request</container>
Configuration:			M2M CFG 01
	ences:	-	TS-0001 [1], clause 10.2.4.1
			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 PRO Check HTTP PRO Check CoAP	Sent request contains • op = 2 (Retrieve) • to = {CSEBaseName}/URI of <container> resource • fr = AE-ID • rqi = (token-string) • rt = 2 (non blocking asynchronous) • nu = AE-Notification-URI • pc = empty Sent request contains • Request method = POST • Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=2 • Host: IP address or the FQDN of Registrar CSE • X-M2M-RI: (token-string) • X-M2M-ROrigin: AE-ID • X-M2M-RTU: AE-Notification-URI • Message-Body: empty Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <container> resource • Uri-Query: rt=2 • oneM2M-RRI: (token-string) • oneM2M-RQI: (token-string) • oneM2M-RQI: (token-string)</container></container></container>

			Interoperability Test Description
			Payload: empty
			Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload:</registrar>
		PRO Check MQTT	 op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID
			 rqi = (token-string) rt = 2 (non blocking synchronous) nu = AE-Notification-URI
			• pc = empty
		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</request>
			 pc = Reference to the created <request> resource</request> Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request>
		PRO Check HTTP	 Status Code = 202 X-M2M-RSC: 1000 X-M2M-RI= token-string) same as received in request message
	Mca	PRO Check CoAP	 Message-Body: Reference to the created <request> resource</request> Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request> Response Code = None
			oneM2M-RSC = 1000 oneM2M-RQI = token-string) same as received in request message Payload: Reference to the created <request> resource</request>
			Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID</registrar>
			 fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 1000 (Accepted)
1		IOP Check	pc = Reference to the created <request> resource AE indicates successful operation</request>
5		IOP Check	Registrar CSE sends notify request to AE
J		TOT OTICOR	Sent request contains • op = 5 (Notify)
		PRO Check Primitive	 to = AE-Notification-URI fr = registrar CSE-ID rqi = (token-string) pc = Serialized representation of notification data object
6	Mca	PRO Check HTTP	Sent request contains Request method = POST Request URI: AE-Notification-URI Host: IP address or the FQDN of Registrar AE X-M2M-RI: (token-string) X-M2M-Origin: Registrar CSE-ID Message-Body: Serialized representation of notification data object
		PRO Check CoAP	Sent request contains • Method: 0.02 (POST) • Uri-Host: IP address or the FQDN of Registrar AE • Uri-Path: AE-Notification-URI • oneM2M-RQI: (token-string) • oneM2M-FR: Registrar CSE-ID • Payload: Serialized representation of notification data object
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>" Payload: • op = 5 (Notify) • to = AE-Notification-URI • fr = Registrar CSE-ID</ae-id>

	Interoperability Test Description		
			• rqi = (token-string)
			• pc=empty
		PRO Check	AE sends notify response to Registrar CSE containing:
		Primitive	• rsc = 2000 (OK)
			rqi = (token-string) same as received in request message
			AE sends notify response to Registrar CSE containing:
		PRO Check	• Code = 200
		HTTP	• X-M2M-RSC: 2000
			 X-M2M-RI= (token-string) same as received in request message
			Message-Body = empty
		PRO Check CoAP	AE sends notify response to Registrar CSE containing:
7	Mca		• Response Code= 2.05
	IVIOG		 oneM2M-RQI = (token-string) same as received in request message
			Payload = empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>
		PRO Check	Payload:
		MOTT	• to = AE-ID
		Wickin	• fr = Registrar CSE-ID
			rqi = (token-string) same as received in request message
			• rsc = 2000 (OK)
8		IOP Check	Registrar CSE indicates successful operation
	/erdict		
PRO '	Verdict		

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>
	guration	1:	M2M_CFG_01
	ences:		TS-0001 [1], clause 10.2.4.1
			TS-0004 [2], clause 7.3.6.2.1
Pre-te	st cond	itions:	AE has created a Container resource <container> 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 update the <container></container>
			resource in registrar CSE.
			Sent request contains
			• op = 3 (Update)
			 to = {CSEBaseName}/URI of <container> resource</container>
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• rt = 2 (non blocking asynchronous)
			• nu = AE-Notification-URI
			• pc = Serialized Representation of the updated <container> resource</container>
			Sent request contains
			Request method = UPDATE
			 Reques-Target: {CSEBaseName}/URI of <container> resource?rt=2</container>
2	Mca	PRO Check	Host: IP address or the FQDN of Registrar CSE
	IVICA	HTTP	• X-M2M-RI: (token-string)
		11111	• X-M2M-Origin: AE-ID
			X-M2M-RTU: AE-Notification-URI
			 Content Type = application/vnd.onem2m-res+xml; or application/vnd.onem2m-
			res+json;
			Message-Body: Serialized Representation of updated <container> resource</container>
			Sent request contains
		PRO Check	Method: 0.03 (UPDATE)
		CoAP	Uri-Host: IP address or the FQDN of Registrar CSE
		CUAF	Uri-Path: {CSEBaseName}/URI of <container> resource</container>
			• Uri-Query: rt=2

			Interoperability Test Description
<u> </u>			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			• oneM2M-RTURI = AE-Notification-URI
			Content Type = application/vnd.onem2m-res+xml; or application/vnd.onem2m-
			res+json;
			Payload: Serialized Representation of updated <container> resource</container>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 3 (Update)
		PRO Check	• to = {CSEBaseName}/URI of <container> resource</container>
		MQTT	• fr = AE-ID
			• rqi = (token-string)
			• rt = 2 (non blocking asynchronous)
			• nu= AE-Notification-URI
			pc = Serialized Representation of updated <container> resource</container>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
			response containing:
		PRO Check	• rsc = 1000 (Accepted)
		Primitive	• rqi = token-string) same as received in request message
			• pc = Reference to the created <request> resource</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
			response containing:
		PRO Check	• Status Code = 202
		HTTP	• X-M2M-RSC: 1000
			X-M2M-RI= token-string) same as received in request message
			Message-Body: Reference to the created <request> resource</request>
		PRO Check CoAP	Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
3			response containing:
	Mca		• Response Code = None
			• oneM2M-RSC = 1000
			oneM2M-RQI = token-string) same as received in request message
			Payload: Reference to the created <request> resource</request>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 1000 (Accepted)
			• 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
			• op = 5 (Notify)
		PRO Check	• to = AE-Notification-URI
		Primitive	• fr = registrar CSE-ID
			• rqi = (token-string)
			• pc = Serialized representation of notification data object
			Sent request contains
			• Request method = POST
		PRO Check	Request URI: AE-Notification-URI
		HTTP	Host: IP address or the FQDN of Registrar AE
6	١.,		• X-M2M-RI: (token-string)
	Mca		• X-M2M-Origin: Registrar CSE-ID
			Message-Body: Serialized representation of notification data object
			Sent request contains
			Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar AE
		PRO Check	Uri-Path: AE-Notification-URI
		CoAP	oneM2M-RQI: (token-string)
			• oneM2M-FR: Registrar CSE-ID
			Payload: Serialized representation of notification data object
		PRO Check	Sent MQTT PUBLISH message:
	1	I I NO OHECK	point weg it i oblight message.

			Interoperability Test Description
		MQTT	Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>" Payload:</ae-id>
			• op = 5 (Notify)
			• to = AE-Notification-URI
			• fr = Registrar CSE-ID
			• rqi = (token-string)
			• pc = empty
		PRO Check	AE sends notify response to Registrar CSE containing:
		Primitive	• rsc = 2000 (OK)
		1 minuve	rqi = (token-string) same as received in request message
			AE sends notify response to Registrar CSE containing:
		PRO Check	• Code = 200
		HTTP	• X-M2M-RSC: 2000
			 X-M2M-RI = (token-string) same as received in request message
			Message-Body = empty
		PRO Check CoAP	AE sends notify response to Registrar CSE containing:
7	Mca		• Response Code = 2.05
	ivica		 oneM2M-RQI = (token-string) same as received in request message
			Payload = empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>
		DDO Obrada	Payload:
		PRO Check MQTT	• to = AE-ID
		IVIQTI	• fr = Registrar CSE-ID
			 rqi = (token-string) same as received in request message
			• rsc = 2000 (OK)
8		IOP Check	Registrar CSE indicates successful operation
IOP \	/erdict		
PRO \	Verdict		

8.2.2.1.4 Container Delete

			Interoperability Test Description
Identi	fier:		TD_M2M_NB_08
Objective:			AE deletes a Container resource using non blocking asynchronous request
Confi	guratior	1:	M2M_CFG_01
Refer	ences:		TS-0001 [1], clause 10.2.4.1
			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	Туре	Description
1		Stimulus	AE is requested to send a non blocking asynchronous request to delete the <container></container>
'			resource in registrar CSE.
			Sent request contains
			• op = 4 (Delete)
			to = {CSEBaseName}/URI of <container> resource</container>
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• rt = 2 (non blocking asynchronous)
			• nu = AE-Notification-URI
			• pc = empty
			Sent request contains
2	Mca		Request method = DELETE
			 Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=2</container>
		PRO Check	Host: IP address or the FQDN of Registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			• X-M2M-RTU = AE-Notification-URI
			Message-Body: empty
		PRO Check	Sent request contains
		CoAP	Method: 0.04 (DELETE)

			Interoperability Test Description
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>
			• Uri-Query: rt=2
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			• oneM2M-RTURI = AE-Notification-URI
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload: • op = 4 (Delete)
		PRO Check	• to = {CSEBaseName}/URI of <container> resource</container>
		MQTT	• 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</request>
		PRO Check	response containing:
		Primitive	• rsc = 1000 (Accepted)
			rqi = token-string) same as received in request message
			pc = Reference to the created <request> resource Registrar CSE creates an internal <reguest> resource and sends acknowledgement</reguest></request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request>
		PRO Check HTTP	• Status Code = 202
			• X-M2M-RSC: 1000
			X-M2M-RI= token-string) same as received in request message
			Message-Body: Reference to the created <request> resource</request>
	Мса	PRO Check CoAP	Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
3			response containing:
			Response Code = None
			• oneM2M-RSC = 1000
			oneM2M-RQI = token-string) same as received in request message Powled Reference to the greated a Request, recovered.
			Payload: Reference to the created <request> resource Sent MQTT PUBLISH message:</request>
		PRO Check MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• to = AE-ID
			• fr = Registrar CSE-ID
			 rqi = (token-string) same as received in request message
			• rsc = 1000 (Accepted)
		IOD Ob!	pc = Reference to the created <request> resource A F indicates successful progretion</request>
5		IOP Check	AE indicates successful operation Registrar CSE sends notify request to AE
		101 OHEOR	Sent request contains
			• op = 5 (Notify)
		PRO Check	• to = AE-Notification-URI
		Primitive	• fr = registrar CSE-ID
			• rqi = (token-string)
			pc = Serialized representation of notification data object
			Sent request contains
		DDC Charl	Request LIPL: AE Notification LIPL
		PRO Check HTTP	Request URI: AE-Notification-URI Host: IP address or the FODN of Registrar AE
6	Mca	11115	 Host: IP address or the FQDN of Registrar AE X-M2M-RI: (token-string)
			X-M2M-Origin: Registrar CSE-ID
			Message-Body: Serialized representation of notification data object
			Sent request contains
			Method: 0.02 (POST)
		DDO Chaale	Uri-Host: IP address or the FQDN of Registrar AE
		PRO Check CoAP	Uri-Path: AE-Notification-URI
			oneM2M-RQI: (token-string)
			oneM2M-FR: Registrar CSE-ID
ĺ			Payload: Serialized representation of notification data object

Interoperability Test Description			
-			
			Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>"</ae-id>
		550 01 1	Payload:
		PRO Check	• op = 5 (Notify)
		MQTT	• to = AE-Notification-URI
			• fr = Registrar CSE-ID
			• rqi = (token-string)
			• pc = empty
		PRO Check	AE sends notify response to Registrar CSE containing:
		Primitive	• rsc = 2000 (OK)
		1 minuve	rqi = (token-string) same as received in request message
			AE sends notify response to Registrar CSE containing:
		PRO Check HTTP	• Code = 200
			• X-M2M-RSC: 2000
			• X-M2M-RI = (token-string) same as received in request message
			Message-Body = empty
			AE sends notify response to Registrar CSE containing:
7	Mca	PRO Check	• Response Code = 2.05
	ivica	CoAP	 oneM2M-RQI = (token-string) same as received in request message
			Payload = empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>
		550 01 1	Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rqi = (token-string) same as received in request message
			• rsc = 2000 (OK)
8		IOP Check	Registrar CSE indicates successful operation
IOP V	'erdict		
PRO \	/erdict		

Single hop configuration testing 8.3

8.3.1 Retargeting

RetargetingResource Create (Generic Test Description) 8.3.1.1

	Interoperability Test Description				
Identifier:			TD_M2M_SH_01		
Objec	tive:		AE creates a remote <resource> resource</resource>		
Config	guration):	M2M_CFG_03		
Refere	ences:				
Pre-te	st cond	itions	Parents resources need to be created on the hosting CSE		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a Create Request to create <resource> on the Hosting CSE.</resource>		
2		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> Sent request contains		
2	Mca	PRO Check HTTP	 Request contains Request method = POST Request-Target: URI of the parent resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; ty=<resource> type number or</resource> 		

			Interoperability Test Description
-			application/vnd.onem2m-res+json; ty= <resource> type number</resource>
			Message-body: Serialized representation of <resource> resource</resource>
			Sent request contains • Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of the parent resource
		PRO Check CoAP	 On-Path: OR of the parent resource Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json oneM2M-TY: <resource> type number</resource> oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: Serialized representation of <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload:</registrar></resource>
		PRO Check MQTT	 op = 1 (Create) to = URI of the parent resource fr = AE-ID
			rqi = (token-string)ty = <resource> type number</resource>
3		IOP Check	 pc = Serialized representation of <resource> resource</resource> Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.
3		IOF CHECK	op = 1 (Create)
	Mcc	PRO Check Primitive	 to = URI of the parent resource fr = AE-ID rqi = (token-string)
			 ty = m2m:resourceType pc = Serialized representation of <resource> resource</resource> Sent request contains
		PRO Check HTTP	 Request method = POST Request-Target: URI of the parent resource Host: IP address or the FQDN of Hosting CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; ty=<resource> type number or application/vnd.onem2m-res+json; ty=<resource> type number</resource></resource>
4		PRO Check CoAP	Message-body: Serialized representation of <resource> resource Sent request contains Method: 0.02 (POST) Uri-Host: IP address or the FQDN of Hosting CSE Uri-Path: URI of the parent resource Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json oneM2M-TY: <resource> type number oneM2M-FR: AE-ID resource</resource></resource>
			oneM2M-RQI: (token-string) Payload: Serialized representation of <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< Registrar CSE-ID>/< Hosting CSE-ID>"</resource>
		PRO Check MQTT	Payload: op = 1 (Create) to = URI of the parent resource fr = AE-ID rqi = (token-string) ty = <resource> type number pc = Serialized representation of <resource> resource</resource></resource>
5		IOP Check	Check if possible that the <resource> resource is created in the Hosting CSE.</resource>
		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource>
6	Мсс	PRO Check HTTP	Hosting CSE sends response to Registrar CSE containing: Status Code = 201 (Created) X-M2M-RSC: 2001

			International Hiter Test Description
<u> </u>	ı	1	Interoperability Test Description
			X-M2M-RI: (token-string) same as received in request message
			Content-Location: URI of the created resource.
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <resource> resource</resource>
			Hosting CSE sends response to Registrar CSE containing:
			• Response Code = 2.01
		PRO Check	• oneM2M-RSC: 2001
		CoAP	 oneM2M-RQI: (token-string) same as received in request message
		COAF	Location-Path: URI of the created resource
			• Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of < resource > resource
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< RegistrarCSE -ID>/ <hosting cse-id="">"</hosting>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Hosting CSE-ID
			• rsc = 2001 (CREATED)
			• rqi = (token-string) same as received in request message
			• pc = Serialized representation of < resource > resource
7		IOP Check	Check if possible that the response is forwarded by the registrar CSE to the AE.
		PRO Check Primitive	• rsc = 2001 (CREATED)
			• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <resource> resource</resource>
		PRO Check	Registrar CSE sends response to AE containing:
			Status Code = 201 (Created)
			• X-M2M-RSC: 2001
		HTTP	X-M2M-RI: (token-string) same as received in request message
			Content-Location: URI of the created resource.
			Content-Type: application/vnd.onem2m-res+;son
			Message-body: Serialized representation of <resource> resource</resource>
			Registrar CSE sends response to AE containing:
			• Response Code = 2.01
8			• oneM2M-RSC: 2001
	Mca	PRO Check	oneM2M-RQI: (token-string) same as received in request message
		CoAP	Location-Path: URI of the created resource
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+ison
			Payload: Serialized representation of < resource > resource
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2001 (CREATED)
			• rqi = (token-string) same as received in request message
			• pc = Serialized representation of < resource > resource
9		IOP Check	AE indicates successful operation
	/erdict	.c. Shook	
	Verdict		
		1	

8.3.1.2 <Resource> Create

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_01#01	TS-0001 [1], clause 10.2.4.1 TS-0004 [2], clause 7.3.5.2.1		
<contentinstance></contentinstance>	TD_M2M_SH_01#02	TS-0001 [1], clause 10.2.19.2 TS-0004 [2], clause 7.3.7.2		

<subscription></subscription>	TD_M2M_SH_01#03	TS-0001 [1],
(Subscription)	18_1012101_611_611166	clause
		10.2.11.2
		TS-0004 [2],
		clause 7.3.7.2
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_01#04	TS-0001 [1],
<accesscontroleoncy></accesscontroleoncy>	1D_WZW_3H_01#04	clause
		10.2.21.1
		TS-0004 [2],
	TD MOM OUL 04/05	clause 7.3.1.2
<group></group>	TD_M2M_SH_01#05	TS-0001 [1],
		clause 10.2.7.2
		TS-0004 [2],
		clause
		7.3.12.2.1
<pollingchannel></pollingchannel>	TD_M2M_SH_01#06	TS-0001 [1],
		clause
		10.2.13.2
		TS-0004 [2],
		clause
		7.3.21.2.1
<fanoutpoint></fanoutpoint>	TD_M2M_SH_01#07	TS-0001 [1],
		clause 10.2.7.6
		TS-0004 [2],
		clause
		7.3.14.3.1
<node></node>	TD_M2M_SH_01#08	TS-0001 [1],
		clause
		10.2.14.1
		TS-0004 [2],
		clause
		7.3.18.2.1

Resource Retrieve (Generic Test Description) 8.3.1.3

			Interoperability Test Description		
Identi	fier:		TD M2M SH 02		
Objective:			AE retrieves a remote <resource> resource</resource>		
Configuration:			M2M_CFG_03		
References:					
Pre-te	st cond	litions:	Parents resources need to be created on the hosting CSE		
			Resource < Resource > has been created in Hosting CSE		
	1	T	Test Sequence		
Step	RP	Type	Description		
1	Stimulus AE is requested to send a Retrieve Request to retrieve <resource> on the Hosting CSE.</resource>				
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = URI of the <resource> resource U</resource> fr = AE-ID rqi = (token-string) 		
		PRO Check HTTP	Sent request contains Request method = GET Request-Target: URI of the <resource> resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty</resource>		
		PRO Check CoAP	Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string)</resource>		

	Interoperability Test Description				
			Payload: empty		
			a sylvada omp y		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 2 (Retrieve)		
		MQTT	• to = URI of the <resource> resource</resource>		
			• fr = AE-ID		
			• rqi = (token-string)		
		IOD Ob a als	• pc = empty		
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.		
		PRO Check	op = 2 (Retrieve) to URI of the <resource> resource</resource>		
		Primitive	• fr = AE-ID		
		1 minuve	• rqi = (token-string)		
			Sent request contains		
			Request method = GET		
		PRO Check	Request-Target: URI of the <resource> resource</resource>		
		HTTP	Host: IP address or the FQDN of Hosting CSE		
			X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
			Message-body: empty		
		PRO Check CoAP	Sent request contains		
4	Мсс		Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Hosting CSE		
	Wice		Uri-Path: URI of the <resource> resource</resource>		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			Payload: empty		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>		
			Payload:		
		PRO Check	• op = 2 (Retrieve)		
		MQTT	• to = URI of the <resource> resource</resource>		
			• fr = AE-ID		
			rqi = (token-string)pc = empty		
			• rsc = 2000 (OK)		
5		PRO Check	• rqi = (token-string) same as received in request message		
		Primitive	pc = Serialized representation of <resource> resource</resource>		
			Hosting CSE sends response containing:		
		PRO Check	• Status Code = 200 (OK)		
		HTTP	• X-M2M-RSC: 2000		
			X-M2M-RI: (token-string) same as received in request message		
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Massage back a Content of the Content		
			Message-body: Serialized representation of <resource> resource Hosting CSE sends response containing:</resource>		
			Response Code = 2.05 (OK)		
		PRO Check	• Response Code = 2.03 (OK) • oneM2M-RSC: 2000(OK)		
	Mcc	CoAP	oneM2M-RQI: (token-string) same as received in request message		
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Payload: Serialized representation of <resource> resource</resource>		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/resp/< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>		
			Payload:		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Hosting CSE-ID • rsc 2000(OK)		
			rgi = (token-string) same as received in request message		
			• pc = Serialized representation of <resource> resource</resource>		
6		IOP Check	Check if possible that the response is forwarded by the registrar CSE to the AE.		

			Interoperability Test Description
	Мса	PRO Check Primitive	rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <resource> resource</resource>
		PRO Check HTTP	Registrar CSE forwards response containing: Status Code = 200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of <resource> resource</resource>
7		PRO Check CoAP	Registrar forwards response containing: Response Code = 2.05 (OK) oneM2M-RSC: 2000(OK) oneM2M-RQI: (token-string) same as received in request message Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <resource> resource</resource>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <hosting cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc 2000(OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <resource> resource</resource></hosting>
8		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.3.1.4 <Resource> retrieve

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_02#01	TS-0001 [1],		
		clause 10.2.4.2		
		TS-0004 [2],		
		clause		
		7.3.5.2.2		
<contentinstance></contentinstance>	TD_M2M_SH_02#02	TS-0001 [1],		
		clause		
		10.2.19.3		
		TS-0004 [2],		
		clause		
		7.3.6.2.2		
<subscription></subscription>	TD_M2M_SH_02#03	TS-0001 [1],		
		clause		
		10.2.11.3		
		TS-0004 [2],		
		clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_02#04	TS-0001 [1],		
		clause		
		10.2.21.2		
		TS-0004 [2],		
		clause 7.3.1.2		
<group></group>	TD_M2M_SH_02#05	TS-0001 [1],		
		clause 10.2.7.3		
		TS-0004 [2],		
		clause		
		7.3.12.2.2		
<pollingchannel></pollingchannel>	TD_M2M_SH_02#06	TS-0001 [1],		
-		clause		
		10.2.13.3		
		TS-0004 [2],		
		clause		
		7.3.21.2.2		

<fanoutpoint></fanoutpoint>	TD_M2M_SH_02#07	TS-0001 [1],
		clause 10.2.7.8
		TS-0004 [2],
		clause
		7.3.14.3.2
<node></node>	TD_M2M_SH_02#08	TS-0001 [1],
		clause
		10.2.14.2
		TS-0004 [2],
		clause
		7.3.18.2.2
<remotecse></remotecse>	TD_M2M_SH_02#09	TS-0001 [1],
		clause 10.2.2.3
		TS-0004 [2],
		clause
		7.3.3.2.3
<ae></ae>	TD_M2M_SH_02#10	TS-0001 [1],
		clause 10.2.1.2
		TS-0004 [2],
		clause
		7.3.5.2.2
<csebase></csebase>	TD_M2M_SH_02#11	TS-0001 [1],
		clause 10.2.3.2
		TS-0004 [2],
		clause 7.3.2

8.3.1.5 Resource Update (Generic Test Description)

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_03		
Objec			AE updates a remote <resource> resource</resource>		
	guratior	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		
_			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>		
	Мса	PRO Check Primitive	 op = 3 (Update) to = URI of the resource <resource></resource> fr = AE-ID rqi = (token-string) pc = Serialized representation of <resource> resource</resource> Sent request contains		
2		PRO Check HTTP	 Request method = PUT Request-Target: URI of the <resource> resource</resource> Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource</resource> 		
		PRO Check CoAP	Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Payload: Serialized representation of updated <resource> resource</resource></resource>		

			Interaperability Test Description
			Interoperability Test Description Sent MQTT PUBLISH message:
			Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	• to = URI of the <resource> resource</resource>
		IVIGETT	• fr = AE-ID
			• rqi = (token-string)
			• pc = Serialized representation of updated <resource> resource</resource>
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.
		101 Officer	• op = 3 (Update)
			• to = URI of the resource <resource></resource>
		PRO Check	• fr = AE-ID
		Primitive	• rgi = (token-string)
			1 ()
			pc = Serialized representation of <resource> resource Sent request contains</resource>
			Request method = PUT
		PRO Check	 Request-Target: URI of the <resource> resource</resource> Host: IP address or the FQDN of Hosting CSE
		HTTP	9
			• X-M2M-RI: (token-string)
			X-M2M-Origin: AE-ID Content Type condition (and energy recovered or emplication (and energy recovered or emplication).
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Macana hadru Spripling dynamics of undeted application vnd.onem2m-res+json
			Message-body: Serialized representation of updated <resource> resource Contract contains</resource>
4			Sent request contains
4	Mcc		Method: 0.03 (PUT) Height ID address as the FORM of Heating COF.
		PRO Check CoAP	Uri-Host: IP address or the FQDN of Hosting CSE
			Uri-Path: URI of the <resource> resource</resource>
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
		PRO Check MQTT	Payload: Serialized representation of updated <resource> resource</resource>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/ req /< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>
			Payload: • op = 3 (Update)
			• to = URI of the <resource> resource</resource>
			• fr = AE-ID
			• rgi = (token-string)
			• pc = Serialized representation of updated <resource> resource</resource>
5		IOP Check	Check if possible that the <resource> resource is updated in the Hosting CSE.</resource>
3		IOF CHECK	resc = 2004 (CHANGED) • rsc = 2004 (CHANGED)
		PRO Check	,
		Primitive	• rqi = (token-string) same as received in request message
			pc = Serialized representation of <resource> resource Hesting CSE conds response containing:</resource>
			Hosting CSE sends response containing:
		PRO Check	Code = 200 (Ok)X-M2M-RSC: 2004
		HTTP	
			X-M2M-RI: (token-string) same as received in request message Content Type, application find anomaly required anomaly
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Macagan badia Carialized representation of application/vnd.onem2m-res+json
			Message-body: Serialized representation of <resource> resource Hosting sends response containing:</resource>
6		DDC CL st	• Response Code = 2.04
0	Mcc	PRO Check	• oneM2M-RSC: 2004
		CoAP	oneM2M-RQI: (token-string) same as received in request message Content formation and anomalize received in a continuous message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Declarate Carialized representation of Page 1972 and 197
			Payload: Serialized representation of <resource> resource</resource>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>
		DDC C' '	Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Hosting CSE-ID
			• rsc = 2004 (Updated)
			• rqi = (token-string) same as received in request message
7		IOD Charle	pc = Serialized representation of modified <resource> resource Check if people that the representation of modified developers of the people to the AE.</resource>
7		IOP Check	Check if possible that the response is forwarded by the registrar CSE to the AE.
8		PRO Check	• rsc = 2004 (CHANGED)

			Interoperability Test Description
	Mca	Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <resource> resource</resource>
			Registrar CSE forwards response containing:
		PRO Check	• Code = 200 (Ok)
		HTTP	• X-M2M-RSC: 2004
		пп	X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <resource> resource</resource>
			Registrar forwards response containing:
			• Response Code = 2.04
		PRO Check CoAP	• oneM2M-RSC: 2004
			oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <resource> resource</resource>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2004 (Updated)
			rqi = (token-string) same as received in request message
			pc = Serialized representation of modified <resource> resource</resource>
9		IOP Check	AE indicates successful operation
	/erdict		
PRO \	Verdict		

8.3.1.6 <Resource> update

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_03#01	TS-0001 [1], clause 10.2.4.3		
		TS-0004 [2], clause 7.3.5.2.3		
<subscription></subscription>	TD_M2M_SH_03#02	TS-0001 [1], clause 10.2.11.4		
		TS-0004 [2], clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_03#03	TS-0001 [1], clause 10.2.21.3		
		TS-0004 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_03#04	TS-0001 [1], clause 10.2.7.4		
		TS-0004 [2], clause 7.3.12.2.3		
<pollingchannel></pollingchannel>	TD_M2M_SH_03#05	TS-0001 [1], clause 10.2.13.4		
		TS-0004 [2], clause 7.3.21.2.3		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_03#06	TS-0001 [1], clause 10.2.7.9		
		TS-0004 [2], clause 7.3.14.3.3		
<node></node>	TD_M2M_SH_03#07	TS-0001 [1], clause 10.2.14.3		
		TS-0004 [2], clause 7.3.18.2.3		
<remotecse></remotecse>	TD_M2M_SH_03#08	TS-0001 [1], clause 10.2.2.3		
		TS-0004 [2], clause 7.3.3.2.3		
<ae></ae>	TD_M2M_SH_03#09	TS-0001 [1], clause 10.2.1.3		
		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>		
Config	guration):	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		
	Test Sequence				
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a Delete Request to delete <resource> on the Hosting CSE.</resource>		

			Interoperability Test Description
			• op = 4 (Delete)
		PRO Check	• to = URI of the resource <resource></resource>
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			Sent request contains
			Request method = DELETE
		PRO Check	Request-Target: URI of the resource < Resource >
		HTTP	Host: IP address or the FQDN of Registrar CSE
			X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: Empty
			Sent request contains • Method: 0.04 (DELETE)
2	Mca		Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: URI of the resource <resource></resource>
		CoAP	• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
		DDO Obseste	Payload: • op = 4 (Delete)
		PRO Check MQTT	• to = URI of the resource <resource></resource>
		IVIQTI	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.
		PRO Check Primitive	• op = 4 (Delete)
			• to = URI of the resource < Resource >
			fr = AE-IDrqi = (token-string)
			Sent request contains
			Request method = DELETE
		PRO Check	Request-Target: URI of the resource < Resource >
		HTTP	Host: IP address or the FQDN of Hosting CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: Empty Sent request contains
			Sent request contains • Method: 0.04 (DELETE)
4	Мсс		Uri-Host: IP address or the FQDN of Hosting CSE
		PRO Check	Uri-Path: URI of the resource <resource></resource>
		CoAP	• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< Registrar CSE-ID>/ <hosting cse-id="">" Payload:</hosting>
		PRO Check	• op = 4 (Delete)
		MQTT	• to = URI of the resource <resource></resource>
		-	• fr = AE-ID
			• rqi = (token-string)
<u> </u>		100.0:	• pc = empty
5		IOP Check	Check if possible that the <resource> resource is deleted in the Hosting CSE.</resource>
		PRO Check Primitive	 rsc = 2002 (DELETED) rqi = (token-string) same as received in request message
		1 1111111111111111111111111111111111111	Hosting CSE sends response containing:
		PRO Check	Status Code = 200 (OK) • Status Code = 200 (OK)
6	Mcc	HTTP	• X-M2M-RSC: 2002
			X-M2M-RI: (token-string) same as received in request message
			Message-body: empty
		PRO Check	Hosting sends response containing:
		CoAP	Response Code = 2.02

	Interoperability Test Description			
			oneM2M-RSC: 2002(DELETED)	
			oneM2M-RQI: (token-string) same as received in request message	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>	
		PRO Check MQTT	Payload:	
			to = AE-ID	
			• fr = Registrar CSE-ID	
			• rsc = 2002(DELETED)	
			 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.	
		PRO Check	• rsc = 2002 (DELETED)	
		Primitive	 rqi = (token-string) same as received in request message 	
			Registrar CSE forwards response containing:	
		PRO Check HTTP	• Status Code = 200 (OK)	
			• X-M2M-RSC: 2002	
			X-M2M-RI: (token-string) same as received in request message	
			Message-body: empty	
			Registrar forwards response containing:	
		DD0 011	• Response Code = 2.02	
8	Mca	PRO Check	oneM2M-RSC: 2002(DELETED)	
	IVICa	CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>	
		550 01 1	Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc = 2002(DELETED)	
			• rqi = (token-string) same as received in request message	
9		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO '	√erdict			

8.3.1.8 <Resource> delete

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_04#01	TS-0001 [1], clause 10.2.4.4 TS-0004 [2], clause 7.3.5.2.4		
<contentinstance></contentinstance>	TD_M2M_SH_04#02	TS-0004 [2], clause 7.3.5.2.4 TS-0001 [1], clause 10.2.19.5 TS-0004 [2], clause 7.3.6.2.4		
<subscription></subscription>	TD_M2M_SH_05#03	TS-0001 [1], clause 10.2.11.5 TS-0004 [2], clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_05#04	TS-0001 [1], clause 10.2.21.4 TS-0004 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_05#05	TS-0001 [1], clause 10.2.7.5 TS-0004 [2], clause 7.3.12.2.4		
<pollingchannel></pollingchannel>	TD_M2M_SH_05#06	TS-0001 [1], clause 10.2.13.5 TS-0004 [2], clause 7.3.21.2.4		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_05#07	TS-0001 [1], clause 10.2.7.10 TS-0004 [2], clause 7.3.14.3.4		
<node></node>	TD_M2M_SH_05#08	TS-0001 [1], clause 10.2.14.4 TS-0004 [2], clause 7.3.18.2.4		

8.3.1.9 Discovery with multiple filter criteria

			Interenerability Test Description		
Identi	fior:		Interoperability Test Description TD_M2M_SH_09		
Objec			AE discovers accessible resources residing in the remote Hosting CSE using multiple		
المراحات			Filter Criteria		
Configuration:		n:	M2M_CFG_03		
	References:		TS-0001 [1], clause 10.2.6		
			TS-0004 [2], clause 7.2.3.13		
Pre-te	Pre-test conditions:		 Two <container> resources with labels "key1" and "key2" are created in Hosting CSE.</container> A <group> resources with labels "key1" and "key2" is created in Hosting CSE.</group> 		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a discovery request to discover specific resources located in hosting CSE using multiple filter critiria (label, resource type and limit)		
2	Мса	PRO Check HTTP PRO Check COAP PRO Check MQTT	Sent request contains o p = 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 Sent request contains Request method = GET Request-Target: {URI of hosting CSEBase}?fu=1&key=2&rty=3&lim=1 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-body: empty Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of hosting CSEBase oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Uri-Query: fu=1 Uri-Query: lbl=key1 Uri-Query: lbl=key2 Uri-Query: lbl=key2 Uri-Query: lbl=key2 Ori-Query: lm=1 Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: op = 2 (Retrieve) to = URI of hosting CSEBase of Fa AE-ID origi (token-string) of u = 1</registrar></ae-id>		
			 Ibl=key1 Ibl=key2 rty=3 Iim=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		

			Interoperability Test Description
			• fr = AE-ID
			• rqi = (token-string)
			• fu=1
			• lbl=key1
			• lbl=key2
			• rty=3
			• lim=1
			• pc = empty
			Sent request contains
			Request method = GET
		PRO Check	Request-Target: {URI of hosting CSEBase }?fu=1&key=1&key=2&rty=3&lim=1
		HTTP	Host: IP address or the FQDN of Hosting CSE
		''''	X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			_
			Message-body: empty Sent request contains
			Sent request contains
			Method: 0.01 (GET) Height ID address as the FORM of Heating COF.
			Uri-Host: IP address or the FQDN of Hosting CSE His But HBL (Hosting CSE)
			Uri-Path: URI of hosting CSEBase
			• oneM2M-FR: AE-ID
		CoAP	oneM2M-RQI: (token-string)
			Uri-Query: fu=1
			Uri-Query: lbl=key1
			Uri-Query: lbl=key2
			Uri-Query: rty=3
			Uri-Query: lim=1
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <registrar cse-id="">/<hosting cse-id="">"</hosting></registrar>
			Payload:
			• op = 2 (Retrieve)
			to = URI of hosting CSEBase
			• fr = AE-ID
		MQTT	• rqi = (token-string)
			• fu = 1
			• lbl=key1
			• lbl=key2
			• rty=3
			• lim=1
L			• pc = empty
5		IOP Check	Check if possible that the response is sent by the hosting CSE to the registrar CSE.
			Hosting CSE sends response containing:
		DDO 041-	• rsc = 2000 (OK)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	• pc = Serialized representation of data object containing the address of one of the
			<container> resources</container>
			Hosting CSE sends response containing:
			• Status Code = 200 (OK)
		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of data object containing the address of one
6	Мсс		of the <container> resources</container>
			Hosting CSE sends response containing:
			• Response Code = 2.05
		DDO OL SI	• oneM2M-RSC: 2000
		PRO Check	oneM2M-RQI: (token-string) same as received in request message
		CoAP	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of data object containing the address of one of the
			Container> resources
			Sent MQTT PUBLISH message:
		MOTT	Topic: "/oneM2M/resp/ <registrar cse-id="">/<hosting cse-id="">"</hosting></registrar>
		MQTT	Payload:
			• to = Registrar CSE-ID
			1 9 7 7 7

			Interenerability Toot Description
	1		Interoperability Test Description
			• fr = Hostring CSE-ID
			• 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
7		IOP Check	Container> resources Check if passible that the resource is forwarded from the registror CSE to AE
		IOP Check	Check if possible that the response is forwarded from the registrar CSE to AE Positive CSE conde response containing:
			Registrar CSE sends response containing:
		PRO Check	• rsc = 2000 (OK)
		Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of data object containing the address of one of the
			<container> resources Registrar CSE sends response containing:</container>
			Status Code = 200 (OK)
		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			 Message-body: Serialized representation of data object containing the address of one of the <container> resources</container>
			Registrar sends response containing:
			Response Code = 2.05
6	Mca	PRO Check CoAP	• neM2M-RSC: 2000
			oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of data object containing the address of one of the
			Containers resources
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• to = Registree CSE-ID
		PRO Check	• fr = Registrar CSE-ID
		MQTT	• 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)

T	Interporability Test Description				
lala m4:	fian.		Interoperability Test Description		
Identifier:			TD_M2M_SH_10		
Objec			AE delete request is rejected after access rights verification using retargeting.		
Confi	guratior):	M2M_CFG_03		
Refer	ences:		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 PRO Check HTTP	op = 4 (Delete) to = URI of addressed resource fr = AE-ID rqi = (token-string) pc = empty Sent request contains Request method = DELETE Request-Target: URI of addressed resource Host: IP address or the FQDN of Registrar CSE		

PRO Check CoAP Provided The Company of the FQDN of Registrar CSE Provided The Coapen of the FQDN of Registra	
Message-body: empty Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of addressed resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty	
Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: URI of addressed resource • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty	
PRO Check CoAP Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of addressed resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty	
PRO Check CoAP	
 Uri-Path: URI of addressed resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty 	
CoAP On-Path: URl of addressed resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty	
oneM2M-RQI: (token-string) Payload: empty	
Payload: empty	
Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
Payload:	
PRO Check • op = 4 (Delete)	
MQTT • 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 retrive
the corresponding remote <accesscontrolpolicy> resource.</accesscontrolpolicy>	
Sent request contains	
• op = 2 (Retrieve)	
PRO Check • to = URI of addressed resource	
Primitive	
• rqi = (token-string)	
• pc = empty	
Sent request contains	
Request method = GET PRO Check Request-Target: URI of addressed resource	
PRO Check HTTP • Request-Target: URI of addressed resource • Host: IP address or the FQDN of Hosting CSE	
The Host. IF address of the FQDN of Hosting CSE X-M2M-RI: (token-string)	
X-M2M-Origin: Registrar CSE-ID	
Message-body: empty	
Sent request contains	
4 Mcc Method: 0.01 (GET)	
• Uri-Host: ID address or the EODN of Hosting CSE	
PRO Check • Uri-Path: URI of addressed resource	
• oneM2M-FR: Registrar CSE-ID	
• oneM2M-RQI: (token-string)	
Payload: empty	
Sent MQTT PUBLISH message:	
Topic: "/oneM2M/req/ <registrar cse-id="">/<hosting cse-id="">"</hosting></registrar>	
Payload:	
PRO Check Op = 2 (Retrieve) MQTT Op = 4 (Retrieve) Op = 4 (Retrieve) Op = 5 (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.
Hosting CSE sends response containing:	
PRO Check • rsc = 2000 (OK)	
Primitive • rqi = (token-string) same as received in request message	
 pc = Serialized representation of <accesscontrolpolicy> reso</accesscontrolpolicy> 	ource
Hosting CSE sends response containing:	
PRO Check Status Code = 200 (OK)	
6 Mcc • X-M2M-RI: (token-string) same as received in request messa	
Content-Type: application/vnd.onem2m-res+xml or applicatio	
Message-body: Serialized representation of <accesscontrolp conds="" cse="" heating="" representations:<="" td=""><td>rollicy> resource</td></accesscontrolp>	rollicy> resource
Hosting CSE sends response containing:	
• Response Code = 2.05 • oneM2M-RSC: 2000	
I I COAP I	ssage
 oneM2M-RQI: (token-string) same as received in request me 	ion/vnd.onem2m-res+json

	Interoperability Test Description				
			Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>		
		MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<hosting cse-id="">" Payload: • to = Registrar CSE-ID • fr = Hosting CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy></hosting></registrar>		
7		IOP Check	Check if possible that an access denied error response is sent by registrar CSE to AE		
		PRO Check Primitive	Registrar CSE sends response containing: • rsc = 4103 (ACCESS_DENIED) • rqi = (token-string) same as received in request message • pc = empty		
	Мса	PRO Check HTTP	Registrar CSE sends response containing: • Status Code = 403 (Forbidden) • X-M2M-RSC: 4103 • X-M2M-RI: (token-string) same as received in request message • Message-body: empty		
8		PRO Check CoAP	Registrar sends response containing: Response Code = 4.03 (Forbidden) oneM2M-RSC: 4103 oneM2M-RQI: (token-string) same as received in request message Payload: empty		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = <response access_denied="" code(4103,="" status=""> • rqi = (token-string) same as received in request message • pc = empty</response></registrar></ae-id>		
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	Identifier:		TD_M2M_SH_11			
Objec	tive:		AE receives a notification request from the remote hosting CSE			
Confi	guratior	1:	M2M_CFG_03			
Refere	ences:		TS-0001 [1], clause 10.2.12			
			TS-0004 [2], clause 7.4.1			
Pre-te	st cond	itions:	A <container> resource has been created on hosting CSE</container>			
			 AE has created an <ae> resource on registrar CSE</ae> 			
			 AE has created a <subscription> resource for the <container> resource on the</container></subscription> 			
			remote hosting CSE.			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	A <contentinstance> sub-resource is created on the the <container> resource. This</container></contentinstance>			
'			triggers or causes the hostting CSE to send a notification to AE.			
			• op = 5 (Notify)			
		PRO Check	• to = URI of AE resource			
		Primitive	• from = Hosting CSE-ID			
		Fillillive	• rqi = (token-string)			
			 pc = Serialized representation of Notification data object 			
2	Mca		Sent request contains			
		550 01 1	• Request method = POST			
		PRO Check	Request-Target: URI of AE resource			
		HTTP	Host: IP address or FQDN registrar CSE			
			• X-M2M-RI: (token-string)			
			• X-M2M-Origin: Hosting CSE-ID			
		l .				

			Interoperability Test Description
			• Content-Type: application/vnd.onem2m-ntfy+xml; or application/vnd.onem2m-ntfy+json;
			Message-body: Serialized Representation of Notification data object
			Sent request contains
			• Method: 0.02 (POST)
			Uri-Host: IP address or FQDN of registrar CSE
		PRO Check	Uri-Path: URI of AE resource
		CoAP	oneM2M-FR: Hosting CSE-ID
		COAF	• oneM2M-RQI: (token-string)
			 Content-Format: application/vnd.onem2m-ntfy+xml; or application/vnd.onem2m-
			ntfy+json;
			Payload: Serialized Representation of Notification data object
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <hosting cse-id="">/<registrar-id>"</registrar-id></hosting>
			Payload:
		PRO Check	• op = 5 (Notify)
		MQTT	• to = URI of AE resource
			• fr = Hosting CSE-ID
			• rqi = (token-string)
			• pc = empty
3		IOP Check	Check if possible that the Notify request is forwarded by the registrar CSE to the AE-ID.
			• op = 5 (Notify)
			• to = AE
		PRO Check	• from = Hosting CSE-ID
		Primitive	• rgi = (token-string)
			• pc = Serialized representation of Notification data object
			Sent request contains
			Request method = POST
			Request-Target: AE
		PRO Check	Host: IP address or FQDN registrar CSE
		НТТР	
			• X-M2M-RI: (token-string)
			X-M2M-Origin: Hosting CSE-ID Content Type application fund an email of the content Type application fund and the content Type a
			Content-Type: application/vnd.onem2m-ntfy+xml; or application/vnd.onem2m-ntfy+json;
			Message-body: Serialized Representation of Notification data object
			Sent request contains
4	Mcc		Method: 0.02 (POST)
			Uri-Host: IP address or FQDN of registrar CSE
		PRO Check	• Uri-Path: AE
		CoAP	oneM2M-FR: Hosting CSE-ID
			• oneM2M-RQI: (token-string)
			Content-Format: application/vnd.onem2m-ntfy+xml; or application/vnd.onem2m-
			ntfy+json;
			Payload: Serialized Representation of Notification data object
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <registrar cse-id="">/<ae-id>"</ae-id></registrar>
			Payload:
		PRO Check	• op = 5 (Notify)
		MQTT	• to = AE
			• fr = Hosting CSE-ID
			• rqi = (token-string)
		105.6:	• pc = empty
5		IOP Check	Check if possible that the response is sent by the AE to the registrar CSE.
			AE sends response containing:
		PRO Check	• rsc = 2000 (OK)
		Primitive	• rqi = (token-string) same as received in request message
			• pc = empty
			AE sends response containing:
	Мсс	PRO Check	• Status Code = 200 (OK)
		HTTP	- V MOM DCC, 2000
6	Мсс	HTTP	• X-M2M-RSC: 2000
6	Мсс	HTTP	X-M2M-R3C: 2000 X-M2M-RI: (token-string) same as received in request message
6	Мсс	HTTP	 X-M2M-RI: (token-string) same as received in request message Message-body: empty
6	Мсс	НТТР	X-M2M-RI: (token-string) same as received in request message
6	Мсс	HTTP PRO Check	 X-M2M-RI: (token-string) same as received in request message Message-body: empty
6	Мсс		 X-M2M-RI: (token-string) same as received in request message Message-body: empty AE sends response containing:

	Interoperability Test Description				
			Payload: empty		
7		MQTT IOP Check	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrarcse-id>/<ae-id>" Payload: • to = Registrar CSE-ID • fr = Hosting CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = empty - Check if possible that the response is forwarded by registrar CSE to Hosting CSE</ae-id></registrarcse-id>		
			Registrar CSE sends response containing:		
		PRO Check Primitive	 rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = empty 		
	Мса	PRO Check HTTP	Registrar CSE sends response containing: • Status Code = 200 (OK) • X-M2M-RSC: 2000 • X-M2M-RI: (token-string) same as received in request message • Message-body: empty		
6		PRO Check CoAP	Registrar CSE sends response containing: • Response Code = 2.05 • oneM2M-RSC: 2000 • oneM2M-RQI: (token-string) same as received in request message • Payload: empty		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <hosting cse-id="">/<registrar cse-id="">" Payload: • to = Registrar CSE-ID • fr = Hosting CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = empty</registrar></hosting>		
		IOP Check	Check if possible that the <container> resource has not been deleted.</container>		
7		IOP Check	AE indicates unsuccessful operation (Delete error - no privilege).		

8.3.2 <mgmtObj> Test Description

8.3.2.1 <mgmtObj> Create

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_05
Objective:			AE creates a <mgmtobj> resource</mgmtobj>
Config	guration	1 :	M2M_CFG_03
Refere	ences:		TS-0001 [1], clause 10.2.8.2
Pre-te	st cond	itions:	Management Session between Management Server and Management Client
	1		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>
		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>
2	Мса	PRO Check HTTP	Sent request contains Request method = POST Request-Target: {CSEBaseName}/{node} Host: IP address or FQDN of the IN-CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+yson; ty=13

			Interoperability Test Description
			Message-body: Serialized representation of the <mgmtobj> resource</mgmtobj>
		PRO Check CoAP	Sent request contains • Method: 0.02 (POST) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{node} • Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • oneM2M-TY: 13 • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <mgmtobj> resource</mgmtobj>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 1 (Create) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) ty = 13 (mgmtObj) pc = Serialized representation of <ae> resource</ae></registrar>
3		IOP Check PRO Check	Check if possible that the <mgmtobj> resource is created in IN-CSE</mgmtobj>
4	mc	PRO Check Primitive PRO Check OMA DM PRO Check BBF TR069	N/A Requests to create the corresponding MO using Add DM command. The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of TS-0005 [10]. 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 TS-0006 [11].</mgmtobj></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 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.
6	mc	PRO Check Primitive PRO Check OMA DM PRO Check BBF TR069	N/A Response with status code (200) OK. Details can be found in clause 5.4 TS-0005 [10]. Successful response of the RPC. Details can be found in clause 8.1 TS-0006 [11].
		PRO Check OMA LWM2M	Response with status code 2.01 Created. Details can be found in clause 6.4 TS-0005 [10].
	Мса	PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj>
		PRO Check HTTP	IN-CSE sends response containing: • Status Code = 201 (OK) • X-M2M-RSC: 2001 • X-M2M-RI: (token-string) same as received in request message • Content-Location: URI of the created <mgmtobj> resource • Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Message-body: Serialized representation of <mgmtobj> resource</mgmtobj></mgmtobj>
7		PRO Check CoAP	IN-CSE sends response containing: Response Code = 2.01 oneM2M-RSC: 2001 oneM2M-RQI: (token-string) same as received in request message Location-Path: URI of the created <mgmtobj> resource Payload: Serialized representation of <mgmtobj> resource</mgmtobj></mgmtobj>
		PRO Check MQTT	IN-CSE MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rsc = 2001 (CREATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of <mgmtobj> resource</mgmtobj></registrar>

	Interoperability Test Description			
8		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO '	Verdict			

8.3.10.2 <mgmtObj> Update

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_06
Objec			AE updates a <mgmtobj> resource</mgmtobj>
		n·	M2M_CFG_03
	Configuration: References:		TS-0001 [1], clause 10.2.8.4
IXCICIX			[10 0001 [1], Glause 10.2.0.4
Pre-te	st cond	litions:	Management Session between Management Server and Management Client
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send an <mgmtobj> Update Request to update an <mgmtobj> on IN-CSE.</mgmtobj></mgmtobj>
		PRO Check Primitive	 op: 3 (UPDATE) fr: AE-ID to: {CSEBaseName}/{node}/{mgmtObj} rqi = (token-string) pc: Serialized representation of the <mgmtobj> resource</mgmtobj>
		PRO Check HTTP	Sent request contains Request method = PUT Request-Target: {CSEBaseName}/{node}/{mgmtObj} Host: IP address or FQDN of the IN-CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; Message-body: Serialized representation of the <mgmtobj> resource</mgmtobj>
2	Mca	PRO Check CoAP	Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{node}/{mgmtObj} • Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <mgmtobj> resource</mgmtobj>
		PRO Check MQTT	Sent MQTT PUBLISH message Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>
3		IOP Check	Check if possible that the <mgmtobj> resource is updated in IN-CSE</mgmtobj>
		PRO Check Primitive PRO Check OMA DM	N/A Requests to update the corresponding MO using Replace DM command. The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of 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 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 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.
6	mc	PRO Check Primitive	N/A

			Interoperability Test Description
		PRO Check OMA DM	Response with status code (200) OK. Details can be found in clause 5.4 TS-0005 [10].
		PRO Check BBF TR069	Successful response of the RPC. Details can be found in clause 8.1 TS-0006 [11].
		PRO Check OMA LWM2M	Response with status code 2.04 Changed. Details can be found in clause 6.4 TS-0005 [10].
		PRO Check Primitive	 rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj>
		PRO Check HTTP	IN-CSE sends response containing: • Code = 200 • X-M2M-RSC: 2004 • X-M2M-RI: (token-string) same as received in request message • Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Message-body: Serialized representation of <mgmtobj> resource</mgmtobj>
7	Mca	PRO Check CoAP	IN-CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Payload: Serialized representation of <mgmtobj> resource</mgmtobj>
		PRO Check MQTT	IN-CSE sends a MQTT PUBLISH message Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2004 • pc = Serialized representation of <mgmtobj> resource</mgmtobj></registrar></ae-id>
8		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO \	√erdict		

8.3.10.3 <mgmtObj> Retrieve

			Interoperability Test Description
Identifier: Objective:			TD_M2M_SH_07
			AE retrieves a <mgmtobj> resource</mgmtobj>
Confi	guratio	n:	M2M_CFG_03
Refer	ences:		TS-0001 [1], clause 10.2.8.3
Pre-te	est conc	litions:	Management Session between Management Server and Management Client
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send an <mgmtobj> Retrieve Request to retrieve an <mgmtobj> on IN-CSE.</mgmtobj></mgmtobj>
2		PRO Check Primitive	 op = 2 (RETRIEVE) to = {CSEBaseName}/{node}/{mgmtObj} fr = AE-ID rqi = (token-string)
	Mca	PRO Check HTTP	Sent request contains Request method = GET Request-Target: {CSEBaseName}/{node}/{mgmtObj} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json;
		PRO Check CoAP	Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{node}/{mgmtObj} • Content-format: application/vnd.onem2m-res+json;

			Interoperability Test Description
			oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Sent a MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 2 (Retrieve)
		MQTT	to = {CSEBaseName}/{node}/{mgmtObj}
			• fr = <ae-id></ae-id>
3		IOP Check	rqi = (token-string) Check if possible that the <mgmtobj> resource is retrieved in IN-CSE</mgmtobj>
3		PRO Check	N/A
		Primitive	IVA
		PRO Check	Requests to retrieve the corresponding MO using Get DM command.
		OMA DM	Trequests to retrieve the corresponding two daining out Divi community.
4	mc	PRO Check	Requests to retrieve the corresponding information model using GetParametersValue
		BBF TR069	RPC.
		PRO Check	Requests to retrieve the corresponding Objects using Retrieve LWM2M Read operation.
		OMA LWM2M	
5		IOP Check	
		PRO Check	N/A
		Primitive	
		PRO Check	Response with status code (200) OK with the information of the MO. Details can be found
6	mc	OMA DM	in clause 5.4 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 TS-0006 [11].
		PRO Check OMA LWM2M	Response with status code 2.05 Content with the information of the Object. Details can be found in clause 6.4 TS-0005 [10].
		OIVIA LVVIVIZIVI	• rsc = 2000 (OK)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	
			pc = Serialized representation of <mgmtobj> resource IN-CSE sends response containing:</mgmtobj>
		PRO Check	Status Code =200 (OK) Status Code =200 (OK)
		HTTP	• X-M2M-RSC: 2000
		HIIP	X-M2M-RI: (token-string) same as received in request message
			Message-body: Serialized representation of <mgmtobj> resource</mgmtobj>
			IN-CSE sends response containing:
			• Response Code = 2.05
7	Mca	PRO Check	• oneM2M-RSC: 2000
		CoAP	oneM2M-RQI: (token-string) same as received in request message
			Payload: Serialized representation of <mgmtobj> resource</mgmtobj>
			IN-CSE sends a MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2000
			• 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		

8.3.10.4 <mgmtObj> Delete

	Interoperability Test Description			
Identifier:		TD_M2M_SH_08		
Objective:		AE deletes a <mgmtobj> resource</mgmtobj>		
Configuratio	n:	M2M_CFG_03		
References:		TS-0001 [1], clause 10.2.8.5		
Pre-test conditions:		Management Session between Management Server and Management Client		
	Test Sequence			
Step RP	Type	Description		

	Interoperability Test Description				
1		Stimulus	AE is requested to send an <mgmtobj> Delete Request to delete an <mgmtobj> on IN-</mgmtobj></mgmtobj>		
' 			CSE.		
		55000	op = 4 (DELETE)to = {CSEBaseName}/{node}/{mgmtObj}		
		PRO Check Primitive	• fr = AE-ID		
		Primitive	• rqi = (token string)		
			Sent DELETE request contains		
			Request method = DELETE		
		PRO Check	Request-Target: {CSEBaseName}/{node}/{mgmtObj}		
		HTTP	Host: IP address or the FQDN of Registrar CSE		
			• X-M2M-RI: (token-string)		
			X-M2M-Origin: AE-ID Sent DELETE request contains		
2	Mca		Method: 0.04 (DELETE)		
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE		
		CoAP	Uri-Path: {CSEBaseName}/{node}/{mgmtObj}		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string) Sent a MQTT PUBLISH message		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
		PRO Check	Payload:		
		MQTT	• op = 4		
			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	N/A		
		Primitive PRO Check	Requests to delete the corresponding MO using Delete DM command.		
	mc	OMA DM	requests to delete the corresponding the deling belief bits community.		
4					
		PRO Check BBF TR069	Requests to delete the corresponding information model using DeleteObject RPC.		
		PRO Check	Requests to delete the corresponding Objects using LWM2M Delete operation.		
		OMA LWM2M			
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	N/A		
		Primitive			
		PRO Check	Response with status code (200) OK. Details can be found in clause 5.4 TS-0005 [10].		
6	mc	OMA DM			
	mc	PRO Check	Successful response of the RPC. Details can be found in clause 8.1 TS-0006 [11].		
		BBF TR069	D		
		PRO Check OMA LWM2M	Response with status code 2.02 Deleted. Details can be found in clause 6.4 TS-0005 [10]		
		PRO Check	• rsc = 2002 (DELETED)		
		Primitive	• rqi = (token-string) same as received in request message		
		PRO Check	IN-CSE sends response containing:		
		HTTP	• Status Code = 200 • X-M2M-RSC: 2002		
			X-M2M-R3c. 2002 X-M2M-RI: (token-string) same as received in request message		
			IN-CSE sends response containing:		
_	١.,	PRO Check	• Response Code = 2.05		
7	Mca	CoAP	oneM2M-RSC: 2002 anoM2M-ROD: (token string) same as received in request message.		
			oneM2M-RQI: (token-string) same as received in request message IN-CSE sends a MQTT PUBLISH message		
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
		PRO Check MQTT	Payload:		
			• to = AE-ID		
			fr = Registrar CSE-ID rqi = (token-string) same as received in request message		
			• rsc = 2002		
8		IOP Check	AE indicates successful operation		

	Interoperability Test Description			
IOP Verdict				
PRO Verdict				

History

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