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Reference

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Foreword

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

1 Scope

The present document specifies Interoperability Test Descriptions (TDs) for the oneM2M Primitives as specified in ETSI TS 118 101 [1], ETSI TS 118 104 [2], the bindings ETSI TS 118 108 [3], ETSI TS 118 109 [4] and ETSI TS 118 110 [5].

2 References

2.1 Normative references

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

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

[1]	ETSI TS 118 101: "oneM2M; Functional Architecture (oneM2M TS-0001 version 1.6.1 Release 1)".
[2]	ETSI TS 118 104: "oneM2M; Service Layer Core protocol Specification (oneM2M TS-0004 version 1.3.0 Release 1).
[3]	ETSI TS 118 108: "oneM2M; CoAP Protocol Binding (oneM2M TS-0008 version 1.1.0 Release 1).
[4]	ETSI TS 118 109: "oneM2M; HTTP Protocol Binding (oneM2M TS-0009 version 1.2.0 Release 1).
[5]	ETSI TS 118 110: "oneM2M; MQTT Protocol Binding (oneM2M ETSI TS 118 110 version 1.2.0 Release 1).
[6]	oneM2M TS-0015: "Testing Framework".
[7]	ETSI TS 118 111: "oneM2M; Common Terminology (oneM2M TS-0011)".
[8]	IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".
[9]	IETF RFC 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".
[10]	ETSI TS 118 105: "oneM2M; Management Enablement (OMA) (oneM2M TS-0005)".
[11]	ETSI TS 118 106: "oneM2M; Management Enablement (BBF) (oneM2M TS-0006)".

2.2 Informative references

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

[i.1] oneM2M Drafting Rules

NOTE: Available at 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 ETSITS 118 111 [7] and the following apply.

NOTE: A term defined in the present document takes precedence over the definition of the same term, if any, in

ETSI TS 118 111 [7].

hosting CSE: CSE where the addressed resource is hosted

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

mc: interface between the management server and the management client

NOTE: This interface can be realized by the existing device management technologies such as BBF TR-069,

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

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 1.

Table 1: Interoperability test description

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

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

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

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

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

5.2 Test Description naming convention

TD/ <root>/<gr>/<nn></nn></gr></root>		
<root> = root</root>	M2M	oneM2M
<gr> = group</gr>	NH	No Hop: Testing on Mca reference point
	NB	Non Blocking scenario
	SH	Single Hop: management of remote ressources
	311	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 (ETSI TS 118 108 [3]), basic XML and JSON media-type numbers shall be used in the contentFormat option.

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

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 ETSI TS 118 104 [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 originator is allowed to be connected with the oneM2M system by contract between the owner of the application and the service provider of the oneM2M system. This may require a corresponding information record in the <m2mServiceSubscriptionProfile> resource.

5.4.4 ID allocation

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

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

```
<?xml version="1.0" encoding="UTF-8"?>
XML payload
                   <m2m:req xmlns:m2m="http://www.onem2m.org/xml/protocols"
example for
              xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
MQTT binding
              xsi:schemaLocation="http://www.onem2m.org/xml/protocols CDT-requestPrimitive-
              v1_0_0.xsd">
                       <op>1</op>
                       <to>CSE1Base</to>
                       <fr>/CSE1/C_AE1</fr>
                       <rgi>2001</rgi>
                       <ty>3</ty>
                       <nm>cont1</nm>
                       <rti><rt>3</rt></rti>
                       <pc>
                           <cnt>
                               <lbl>SmartMeter</lbl>
                               <et>20141003T112033</et>
                           </cnt>
                       </pc>
               </m2m:req>
Abstracted
              op = 1
              to = CSE1Base
payload
              fr = /CSE1/C\_AE01
example for
              rqi = 3001
MQTT binding
              ty = 3
              name = cont1
              rti.rt = 3
              pc.cnt.lbl = SmartMeter
              pc.cnt.et = 20141003T112033
              op = 1
Abstracted
              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
2	RemoteCSE	TD_M2M_NH_02	Registree CSE registers to Registrar CSE
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		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>

Nb	Procedure/Resource	TD ID	TD Description
9	1 Tocedure/Resource	TD_M2M_NH_09	AE de-registers by deleting <ae> resource via an AE Delete</ae>
9		ID_IVIZIVI_IVI I_09	Request
10	Container	TD_M2M_NH_10	AE creates a container resource in registrar CSE via a container
10	Container	D_INIZINI_IVII_IO	Create Request
11		TD_M2M_NH_11	AE retrieves information of a container resource via a container
		ID_IVIZIVI_IVII_II	Retrieve Request
12	1	TD_M2M_NH_12	AE updates attribute in application resource via a container Update
'-			Request
13	1	TD_M2M_NH_13	AE deletes a specific container resource via a container Delete
1.0			Request
14	ContentInstance	TD_M2M_NH_14	AE adds a contentInstance resource <contentinstance> to a</contentinstance>
			specific container in Registrar CSE via a contentInstance Create
			Request
15		TD_M2M_NH_15	AE retrieves information of a contentInstance resource via a
			container Retrieve Request
17		TD_M2M_NH_17	AE deletes contentInstance resource via a container Delete
			Request
18	Discovery	TD_M2M_NH_18	AE discovers resources residing in Registrar CSE
19			AE discovers accessible resources residing in Registrar CSE using
			the label filter criteria
20		TD_M2M_NH_20	AE discovers accessible resources residing in Registrar CSE
			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			AE cancels subscription via an subscription Delete Request
26	AccessControlPolicy		AE creates an accessControlPolicy resource
27			AE retrieves accessControlPolicy resource
28			
29			AE deletes accessControlPolicy resource
30	C		AE delete request is rejected due to accessControlPolicy
31	Group	TD_M2M_NH_31	AE creates a group resource
32 33	-	TD_WZW_NH_32	AE retrieves group resource
34	1		AE updates attribute in group resource AE deletes group resource
	Node		AE creates a node resource
36	Node		
37	1		AE retrieves node resource AE updates attribute in node resource
38	1		
39	PollingChannel	TD_M2M_NH_39	AE creates a <pollingchannel> resource in registrar CSE via a</pollingchannel>
39		I D_IVIZIVI_IVI I_39	Create Request
40		TD_M2M_NH_40	AE retrieves information of a pollingChannel resource via a Retrieve
40		I D_IVIZIVI_IVI I_40	Request
41	1	TD_M2M_NH_41	AE updates attribute in pollingChannel resource via a Update
- '			Request
42	1	TD_M2M_NH_42	AE deletes a pollingChannel resource via a Delete Request
43	1	TD M2M NH 43	AE retrieves information of a pollingChannel resource via a Retrieve
.~			Request Request
44	FanoutPoint	TD_M2M_NH_44	AE creates a <contentinstance> resource in each group member</contentinstance>
45	1	TD_M2M_NH_45	AE retrieves the <container> resource from in each group member</container>
46	1		AE updates an <container> resource of each member resource</container>
47	1	TD_M2M_NH_47	AE deletes a <container> ofeach member</container>
48	Notification	TD_M2M_NH_48	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	1	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
L			request in registrar CSE
-	•		

Nb	Procedure/Resource	TD ID	TD Description
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
			request
54		TD_M2M_NB_06	AE retrieves a Container resource using non blocking
			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
			request
57	Retargeting	TD_M2M_SH_01	AE creates a remote <resource> resource</resource>
58		TD_M2M_SH_02	AE retrieves a remote <resource> resource</resource>
59		TD_M2M_SH_03	AE updates a remote <resource> resource</resource>
60		TD_M2M_SH_04	AE delete a remote <resource> resource</resource>
61	Discovery	TD_M2M_SH_09	AE discovers accessible resources residing in the remote Hosting
			CSE using multiple Filter Criteria
62	Unauthorized operation	TD_M2M_SH_10	AE delete request is rejected after access rights verification using
			retargeting.
63	Notification	TD_M2M_SH_11	AE receives a notification request from the remote hosting CSE
64	<mgmtobj></mgmtobj>	TD_M2M_SH_05	AE creates a <mgmtobj> resource</mgmtobj>
65		TD_M2M_SH_06	AE updates a <mgmtobj> resource</mgmtobj>
66		TD_M2M_SH_07	AE retrieves a <mgmtobj> resource</mgmtobj>
67		TD_M2M_SH_08	AE deletes a <mgmtobj> resource</mgmtobj>

7 Configuration

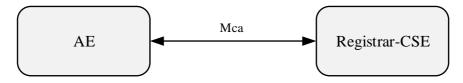
7.1 Test Configuration

7.1.1 No hop

7.1.1.1 M2M_CFG_01

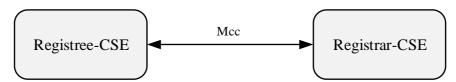
The AE manages resources on the registrar CSE (Hosting CSE)

oneM2M entities model



7.1.1.2 M2M_CFG_02

oneM2M entities model



7.1.2 Single hop

7.1.1.1 M2M_CFG_03

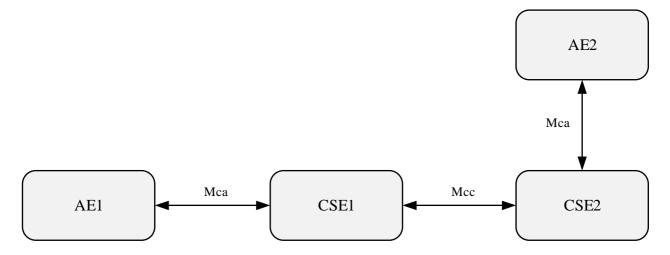
The AE manages resources on the remote CSE

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:

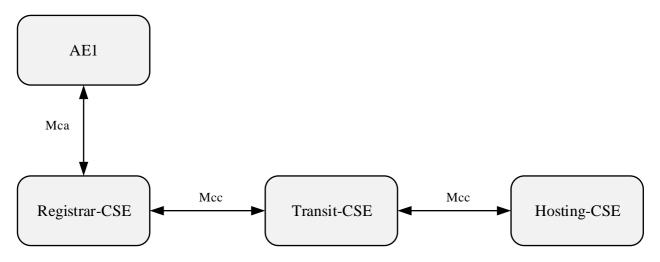
• The AE sends a request addressing <mgmtObj> to IN-CSE. IN-CSE then further acts as a Management Server to send management commands to Managed Entity over the mc interface. The management command is defined in OMA DM, BBF TR069 or LWM2M.



7.1.3 Multi hops

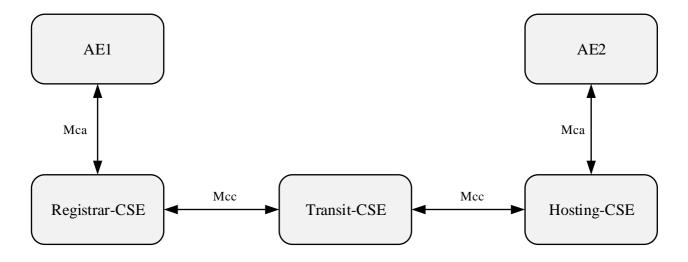
7.1.3.1 M2M_CFG_06

oneM2M entities model



7.1.3.2 M2M_CFG_07

oneM2M entities model



8 Test Descriptions

8.1 No Hop configuration testing

8.1.1 CSEBase Management

8.1.1.1 CSEBase Retrieve on Mca

	Interoperability Test Description				
Identifier:			TD_M2M_NH_01		
Objective:			AE retrieves the CSEBase resource		
Confi	guratior	1:	M2M_CFG_01		
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.3.2		
			ETSI TS 118 104 [2], clause 7.3.2		
Pre-te	st cond	itions:	CSEBase resource has been automatically created in CSE		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a retrieve Request to CSE CSE with name {CSEBaseName}		
			Operation (op) = 2 (Retrieve)		
		PRO Check	To (to) = Resource-ID of requested <csebase> resource, assumed CSE-relative</csebase>		
		Primitive	here		
		Primitive	From (from) = AE-ID of request originator		
			Request Identifier (rqi) = (token-string)		
			Sent GET request contains		
			Request method = GET		
	Мса	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			Payload: empty		
-		ia	Sent GET request contains		
		DDO Chaale	• Method: 0.01 (GET)		
		PRO Check CoAP	Uri-Host: Registrar CSE host		
			Uri-Port: Registrar CSE port		
			Uri-Path: <csebase></csebase>		
			Sent a MQTT PUBLISH protocol packet to the request topic "/oneM2M/req/ <sp-relative-< td=""></sp-relative-<>		
		PRO Check MQTT	AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
			• op = 2		
			• to = <csebase></csebase>		
			• fr = <ae-id></ae-id>		
			• rqi = <request id=""></request>		

	Interoperability Test Description			
		PRO Check Primitive	 Response Status Code (rsc) = 2000 (OK) Request Identifier (rqi) = same string as received in request message Content (pc) = Serialized Representation of <csebase> resource</csebase> 	
		PRO Check HTTP	Registrar CSE sends response containing: Status Code = 200 X-M2M-RSC: 2000 X-M2M-RI: value of rqi primitive parameter Content-Type; application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Content-Length = size of payload in the message body in bytes Payload: Serialized Representation of <csebase> resource</csebase>	
3	Mca	PRO Check CoAP	Registrar sends response containing: Response Code = 2.05 Payload: <csebase> resource</csebase>	
		PRO Check MQTT	Sent a MQTT PUBLISH protocol packet to the response topic "/oneM2M/resp/ <sp-relative-ae-id>/<registrar cse-id="">" Payload: • to = <sp-relative-ae-id> • fr = <registrar cse-id=""> • rqi = <request id=""> • rsc = <response code(2000)="" status=""> • pc = <content(<csebase> resource representation)></content(<csebase></response></request></registrar></sp-relative-ae-id></registrar></sp-relative-ae-id>	
4		IOP Check	AE indicates successful operation	
IOP V	erdict/			
PRO \	/erdict			

8.1.2 RemoteCSE Management

8.1.2.1 RemoteCSE Create

	Interoperability Test Description		
Identi	fier:		TD_M2M_NH_02
Objective:			Registree CSE registers to Registrar CSE
Configuration:			M2M_CFG_02
References:			ETSI TS 118 101 [1], clause 10.2.2.1
			ETSI TS 118 104 [2], clause 7.3.3.2.1
Pre-test conditions:			 CSEBase resource has been created in registrar CSE with name
			{CSEBaseName}
		T	Test Sequence
Step	RP	Туре	Description
1		Stimulus	Registree CSE is requested to send a RemoteCSE Create request to Registrar CSE
		PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName} fr = Registree CSE-ID rqi = (token-string) ty = 16 (RemoteCSE) pc = Serialized representation of <remotecse> resource</remotecse>
2	Мсс	PRO Check HTTP	Sent request contains Request method = POST Request-Target:{CSEBaseName} Host: IP address or the FQDN of Registrar CSE 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>

			Interoperability Test Description
			Sent request contains
			• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
	PRO Check CoAP	Uri-Path: {CSEBaseName}	
		Content-type: application/vnd.onem2m-res+xmlor application/vnd.onem2m-res+json	
		CoAP	• 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	• op = 1 (Create)	
		PRO Check MQTT	• to = {CSEBaseName}
			 fr = Registree CSE-ID rqi = (token-string)
			• ty = 16 (RemoteCSE)
			pc = Serialized representation of <remotecse> resource 2004 (OREATER)</remotecse>
		PRO Check	• rsc = 2001 (CREATED)
		Primitive	• rqi = (token-string) same as received in request message
			pc = Serialized representation of <remotecse> resource Designation CSE and a resource containing:</remotecse>
			Registrar CSE sends response containing:
			Status Code = 201 (Created) NAME ROOM
		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:
			• Response Code = 2.01
3	Mcc	PRO Check	• oneM2M-RSC: 2001
		CoAP	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>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		PRO Check	to = Registree CSE-ID
		MQTT	• fr = Registrar CSE-ID
			• rsc = 2001 (CREATED)
			rqi = (token-string) same as received in request message
		100.01	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>
			registree CSE.
6	ordist	IOP Check	Registree CSE indicates successful operation.
	erdict erdict		
LKO (/ eruict		

8.1.2.2 remoteCSE Retrieve

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_03
Objec			Registree CSE retrieves RemoteCSE from Registrar CSE
	guratio	1:	M2M_CFG_02
	ences:		ETSI TS 118 101 [1], clause 10.2.2.2
			ETSI TS 118 104 [2], clause 7.3.3.2.2
Pre-test conditions:		litions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName} Registree CSE has created a remoteCSE resource on registrar CSE with name
			{RemoteCSEName}
Cton	0		Test Sequence
Step	RP	Type	Description
1		Stimulus	Registree CSE is requested to send a RemoteCSE retrieve request to Registrar CSE
			• op = 2 (Retrieve)
		PRO Check	 to = {CSEBaseName}/{remoteCSEName}
		Primitive	• fr = Registree CSE-ID
			• rqi = (token-string)
			• pc = empty
			Sent request contains
			• Request method = GET
		PRO Check	Request-Target: {CSEBaseName}/{remoteCSEName}
		HTTP	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
2	Мсс		• Method: 0.01 (GET)
	IVICC	PRO Check CoAP	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
			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 Pagistrar CSE conde recognized containing:
		PRO Check	Registrar CSE sends response containing: • rsc = 2000 (OK)
		Primitive	• rqi = (token-string) same as received in request message
		1 minuve	• pc = Serialized representation of <remotecse> resource</remotecse>
			Registrar CSE sends response containing:
			Status Code = 200 (OK)
3		PRO Check	• X-M2M-RSC: 2000
		HTTP	X-M2M-R3c. 2000 X-M2M-R1: (token-string) same as received in request message
	Мсс		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
	IVICC		Message-body: Serialized representation of <remotecse> resource</remotecse>
			Registrar sends response containing:
			• Response Code = 2.05 (OK)
		PRO Check	• Response Code = 2.05 (OR) • oneM2M-RSC: 2000
		CoAP	oneM2M-RQI: (token-string) same as received in request message
		JUAN	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of <remotecse> resource</remotecse>
	Ì	1	- 1 ayroad. Condition topicsonitation of themotecot. / lestune

		Interoperability Test Description
	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 = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <remotecse> resource</remotecse></registrar></registree>
4	IOP Check	Registree CSE indicates successful operation
IOP Ver	dict	
PRO Ver	rdict	

8.1.2.3 remoteCSE Update

0.1.	o. 1.2.0 Temolecoe opuale				
			Interoperability Test Description		
Identi			TD_M2M_NH_04		
Objec			Registree CSE updates RemoteCSE from Registrar CSE		
	guratior	າ:	M2M_CFG_02		
References:			ETSI TS 118 101 [1], clause 10.2.2.3		
			ETSI TS 118 104 [2], clause 7.3.3.2.3		
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)		
			{RemoteCSEName} Test Sequence		
Step	RP	Туре	Description		
1	111	Stimulus	Registree CSE is requested to send a RemoteCSE update request to Registrar CSE		
-		Carraido	op = 3 (Update)		
			 to = {CSEBaseName}/{remoteCSEName} 		
		PRO Check	• fr = Registree CSE-ID		
		Primitive	• rqi = (token-string)		
			pc = Serialized representation of updated <remotecse> resource</remotecse>		
			Sent request contains		
		PRO Check	• Request method = PUT		
			 Request-Target: {CSEBaseName}/{remoteCSEName} 		
			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 or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of updated <remotecse> resource</remotecse>		
_			Sent request contains		
2	Мсс		• 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>		
			Registrar CSE sends response containing:		
4		PRO Check	• rsc = 2004 (UPDATED)		
, r	Mcc	Primitive	• rqi = (token-string) same as received in request message		
			• pc = Serialized representation of <remotecse> resource</remotecse>		

		Interoperability Test Description
	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
	PRO Check CoAP	Message-body: Serialized representation of <remotecse> resource Registrar sends response containing: Response Code = 2.04 (UPDATED) 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 <remotecse> resource</remotecse></remotecse>
	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 = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <remotecse> resource</remotecse></registrar></registree>
5	IOP Check	Registree CSE indicates successful operation
IOP Verdict		
PRO Verdict		

8.1.2.4 remoteCSE Delete

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_05
Objective:			Registree CSE deletes RemoteCSE from Registrar CSE
Configuration:			M2M_CFG_02
References:			ETSI TS 118 101 [1], clause 10.2.2.4
			ETSI TS 118 104 [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
2	Мсс	PRO Check Primitive PRO Check HTTP	 op = 4 (Delete) to = {CSEBaseName}/{remoteCSEName} fr = Registree CSE-ID rqi = (token-string) pc = empty 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
		PRO Check CoAP	Message-body: empty 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

	Interoperability Test Description			
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/ <registree cse-id="">/<registrar cse-id="">"</registrar></registree>	
			Payload:	
		PRO Check	• op = 4 (Delete)	
		MQTT	to = {CSEBaseName}/{remoteCSEName}	
			• fr = Registree CSE-ID	
			• rqi = (token-string)	
			• pc = empty	
			Registrar CSE sends response containing:	
		PRO Check Primitive	• 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	
			Registrar sends response containing:	
3		PRO Check	• Response Code = 2.01 (OK)	
	Mcc	CoAP	• oneM2M-RSC: 2002	
		00/11	oneM2M-RQI: (token-string) same as received in request message	
			Payload: empty	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/ <registree cse-id="">/<registrar cse-id="">"</registrar></registree>	
		DDO Ob I	Payload: • to = Registree CSF-ID	
		PRO Check MQTT	 to = Registree CSE-ID fr = Registrar CSE-ID 	
		IVIQTI	• rsc = 2002	
			 rqi = (token-string) same as received in request message 	
			pc = empty	
4		IOP Check	Check if possible that the <remotecse> resource has been removed from registrar CSE.</remotecse>	
5		IOP Check	Check if possible that the <remotecse> resource is also removed from registree CSE.</remotecse>	
4		IOP Check	Registree CSE indicates successful operation.	
IOP \	/erdict			
PRO \	Verdict			

8.1.3 Application Entity Registration

8.1.3.1 AE Create

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_06
Objective:			AE registers to its registrar CSE via an AE Create Request
Configuration:			M2M_CFG_01
References:			ETSI TS 118 101 [1], clause 10.2.1.1
			ETSI TS 118 104 [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}
2		PRO Check	• fr = AE-ID
	Mca	Primitive	• rqi = (token-string)
			• ty = 2 (AE)
			 pc = Serialized representation of <ae> resource</ae>

Interoperability Test Description Sent request contains • Request method = POST • Request-Target:{CSEBaseName} • 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=2 or application.	
 Request method = POST Request-Target:{CSEBaseName} 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=2 or application/vnd.onem2m-res+xml; ty=2 or application/vnd.onem2m-res+xml 	
 Request-Target:{CSEBaseName} 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=2 or application/ 	
PRO Check HTTP 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=2 or application/	
 HTTP X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; ty=2 or applicatio	
 X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; ty=2 or application/ 	
 Content-Type: application/vnd.onem2m-res+xml; ty=2 or application. 	
 Content-Type: application/vnd.onem2m-res+xml; ty=2 or application. 	
	n/vnd.onem2m-
res+json; ty=2	
Message-body: Serialized representation of <ae> resource</ae>	
Sent request contains	
Method: 0.02 (POST)	
Uri-Host: IP address or the FQDN of Registrar CSE	
Uri-Path: {CSEBaseName}	
	namûm raa i iaan
Content-type: application/vnd.onem2m-res+xml or application/vnd.or	nemzm-res+json
• 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:	
PRO Check op = 1 (Create)	
MQTT • to = {CSEBaseName}	
• fr = AE-ID	
• rqi = (token-string)	
 rqi = (token-string) ty = 2 (AE) 	
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check	
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check Check if possible that the <ae> resource is created in registrar CSE.</ae> 	
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check PRO Check Primitive rqi = (token-string) same as received in request message 	
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check PRO Check Primitive resc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae> 	
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive rightarrow rightarrow representation of <ae> resource is created in registrar CSE. PRO Check Primitive rightarrow rightar</ae></ae></ae>	
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check PRO Check Primitive resc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae> 	
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive rightarrow rightarrow request message pc = Serialized representation of <ae> resource </ae></ae></ae>	
ty = 2 (AE) pc = Serialized representation of <ae> resource Check of possible that the <ae> resource is created in registrar CSE. PRO Check of primitive of the content of</ae></ae>	
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive</ae></ae>	
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive rigide = (token-string) same as received in request message pc = Serialized representation of <ae> resource Registrar CSE sends response containing: Status Code = 201 (OK) PRO Check HTTP X-M2M-RSC: 2001 X-M2M-RI: (token-string) same as received in request message x-M2M-RI: (token-string) x-M2M-RI: (token-strin</ae></ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource Check pc pc pc pc pc </ae>	onem2m-res+json
 ty = 2 (AE) pc = Serialized representation of <ae> resource</ae> IOP Check Check if possible that the <ae> resource is created in registrar CSE.</ae> PRO Check Primitive rgi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae> Registrar CSE sends response containing: Status Code = 201 (OK) PRO Check HTTP X-M2M-RSC: 2001 X-M2M-RSC: 2001 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+xml 	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource Check pc pc pc pc pc </ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource 10P Check</ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check Primitive PRO Check PRO Ch</ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check Primitive PRO Check PRO Ch</ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO C</ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive PRO Check Primi</ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource Check PRO Check Check If possible that the <ae> resource is created in registrar CSE. PRO Check Primitive Frimitive PRO Check Primitive PRO Check Primitive PRO Check Payload: Serialized representation of <ae> resource Payload: Serialized</ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check Primitive PRO Check Payload: Serialized representation of <ae> resource Payload: Ser</ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource Check if possible that the <ae> resource is created in registrar CSE. PRO Check Primitive</ae></ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check Primitive Primit</ae>	onem2m-res+json
Ty = 2 (AE) pc = Serialized representation of <ae> resource </ae>	onem2m-res+json
ty = 2 (AE) pc = Serialized representation of <ae> resource PRO Check</ae>	onem2m-res+json
Ty = 2 (AE) Ty = 3 (AE) Ty = 4 (AE)	onem2m-res+json
## PRO Check PRO Check	onem2m-res+json
## Ty = 2 (AE) ## DC = Serialized representation of <ae> resource ## Check if possible that the <ae> resource is created in registrar CSE. ## PRO Check Primitive</ae></ae>	onem2m-res+json

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>	
	guratio	n:	M2M_CFG_01	
	ences:	••	ETSI TS 118 101 [1], clause 10.2.1.2	
			ETSI TS 118 104 [2], clause 7.3.5.2.2	
			- · · · · · · · · · · · - j, states · · · · · · · · · · ·	
Pre-te	st cond	litions:	CSEBase resource has been created in registrar CSE with name	
			{CSEBaseName}	
			ĀE has created a <ae> resource on registrar CSE with name {AE}bgf</ae>	
			Test Sequence	
Step	RP	Туре	Description	
1		Stimulus	AE is requested to send a accessControlPolicy retrieve request to Registrar CSE	
			• op = 2 (Retrieve)	
		PRO Check	• to = {CSEBaseName}/{AE}	
		Primitive	• fr = AE-ID of request originator	
			• rqi = (token-string)	
			Sent request contains	
			Request method = GET	
		PRO Check	Request-Target: {CSEBaseName}/{{AE}}	
		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	
		PRO Check CoAP	Method: 0.01 (GET)	
2	Mca		Uri-Host: IP address or the FQDN of Registrar CSE	
			Uri-Path: {CSEBaseName}/{AE} }	
			• 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}	
			• 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 <ae> resource</ae>	
			Registrar CSE sends response containing:	
		PRO Check	• Status Code = 200 (OK)	
		HTTP	• X-M2M-RSC: 2000	
3		''''	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	
			Message-body: Serialized representation of <ae> resource</ae>	
			Registrar sends response containing:	
			• Response Code = 2.05 (OK)	
		PRO Check	• 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 <ae> resource</ae>	

		Interoperability Test Description
	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 Verdict	t	
PRO Verdict		

8.1.3.3 AE Update

0	o. 1.3.5 NE opuate					
	Interoperability Test Description					
Identi	fier:		TD_M2M_NH_08			
Objec	tive:		AE updates attribute in <ae> resource</ae>			
Configuration:			M2M_CFG_01			
References:			ETSI TS 118 101 [1], clause 10.2.1.3			
			ETSI TS 118 104 [2], clause 7.3.5.2.3			
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 Update Request			
			• op = 3 (Update)			
		PRO Check	• to = {CSEBaseName}/{AE}			
		Primitive	• fr = AE-ID			
		1 minuve	• rqi = (token-string)			
			 pc = Serialized representation of updated <ae> resource</ae> 			
			Sent request contains			
		PRO Check HTTP	• 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>			
	Mca	PRO Check CoAP	Sent request contains			
2			• 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:			
4		PRO Check	• rsc = 2004 (UPDATED)			
"	Mca	Primitive	 rqi = (token-string) same as received in request message 			
			• pc = Serialized representation of <ae> resource</ae>			

	Interoperability Test Description		
	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 <ae> resource</ae>	
	PRO Check CoAP	Registrar sends response containing: Response Code = 2.04 (UPDATED) 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 <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 = 2004 (Updated) rqi = (token-string) same as received in request message pc = Serialized representation of <ae> resource</ae></registrar></ae-id>	
5	IOP Check	AE indicates successful operation	
IOP Verdict			
PRO Verdict			

8.1.3.4 AE Delete

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_09
Objective:			AE de-registers by deleting <ae> resource via an AE Delete Request</ae>
Configuration:			M2M_CFG_01
			ETSI TS 118 101 [1], clause 10.2.1.4
			ETSI TS 118 104 [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
	Мса	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) pc = empty
2		PRO Check HTTP	Sent request contains Request method = DELETE 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
		PRO Check CoAP	Sent request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{AE} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: empty

	Interoperability Test Description			
			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	
			Registrar CSE sends response containing:	
		PRO Check	• rsc = 2002 (DELETED)	
		Primitive	 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)	
3	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>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID	
			• rsc = 2002	
			 rqi = (token-string) same as received in request message 	
			• pc = empty	
4		IOP Check	Check if possible that the <ae> resource has been removed from registrar CSE.</ae>	
5		IOP Check	AE indicates successful operation	
	'erdict			
PRO \	/erdict			

8.1.4 Container Management

8.1.4.1 Container Create

	Interoperability Test Description				
Identifier:			TD_M2M_NH_10		
Objective:			AE creates a container resource in registrar CSE via a container Create Request		
Configuration:			M2M_CFG_01		
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.4.1		
			ETSI TS 118 104 [2], clause 7.3.5.2.1		
Pre-te	est cond	litions:	AE has created an application resource <ae> on registrar CSE</ae>		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE sends a request to create a <container></container>		
			• op = 1 (Create)		
			 to = {CSEBaseName}/URI of <ae> resource</ae> 		
2		PRO Check	• fr = AE-ID		
	Mca	Primitive	• rqi = (token-string)		
			• ty = 3 (Container)		
			pc = Serialized representation of <container> resource</container>		

			Interoperability Test Description
			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)
		111115	
			• 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</container>
			Sent request contains
			• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
		BB 0 01 1	 Uri-Path: {CSEBaseName}/URI of <ae> resource</ae>
		PRO Check	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m res+json
		CoAP	• oneM2M-TY: 3
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string) Devland: Socialized representation of countries resource.
			Payload: Serialized representation of <container> resource Cont MOTT BUBLISH recognition</container>
			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>
		IVIQTI	• fr = AE-ID
			• rqi = (token-string)
			• ty = 3 (Container)
			 pc = Serialized representation of <container> resource</container>
3		IOP Check	Check if possible that the <container> resource is created in registrar CSE.</container>
3			Check if possible that the <container> resource is created in registrar CSE. • rsc = 2001 (CREATED)</container>
3		PRO Check	• rsc = 2001 (CREATED)
3			 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message
3		PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container>
3		PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing:
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created)
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 X-M2M-RI: (token-string) same as received in request message
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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.
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container>
3		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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
		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar sends response containing: Response Code = 2.01
3	Мса	PRO Check Primitive PRO Check HTTP	rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource 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 <container> resource Registrar sends response containing:</container></container>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar sends response containing: Response Code = 2.01
	Mca	PRO Check Primitive PRO Check HTTP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar sends response containing: Response Code = 2.01 oneM2M-RSC: 2001
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 resource
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 resource Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 resource Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <container> resource</container>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 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:
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 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="">"</registrar>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 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="">"</registrar> Payload:
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> 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 <container> resource</container> Registrar 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 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="">"</registrar> Payload: to = AE-ID
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">"</registrar> Payload: to = AE-ID fr = Registrar CSE-ID
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/<registrar cse-id="">"</registrar> Payload: to = AE-ID fr = Registrar CSE-ID rsc = 2001 (CREATED)
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: 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
4	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: 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 <container> resource</container>
4		PRO Check Primitive PRO Check HTTP PRO Check CoAP	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: 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
4 5 IOP V	Mca /erdict /erdict	PRO Check Primitive PRO Check HTTP PRO Check CoAP PRO Check	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <container> resource</container> Registrar CSE sends response containing: Status Code = 201 (Created) X-M2M-RSC: 2001 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 oneM2M-RSC: 2001 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 <container> resource</container> Sent MQTT PUBLISH message: 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 <container> resource</container>

8.1.4.2 Container Retrieve

Interoperability Test Description Identifier: TD_M2M_NH_11 Objective: AE retrieves information of a container resource via a container Retrieve Reques Configuration: M2M_CFG_01 References: ETSI TS 118 101 [1], clause 10.2.4.2 ETSI TS 118 104 [2], clause 7.3.5.2.2 Pre-test conditions: AE has created an Application Entity resource <ae> on Registrar CSE AE has created a container resource <container> on Registrar CSE Test Sequence Step RP Type 1 Stimulus AE is requested to send a Retrieve Request for a <subscription 1="" <subscription="" a="" ae="" for="" is="" request="" requested="" retrieve="" send="" stimulus="" to=""> Op = 2 (Retrieve) Op = 4 (Retriev</subscription></container></ae>	et
AE retrieves information of a container resource via a container Retrieve Request Configuration: M2M_CFG_01	st
Configuration: M2M_CFG_01	
Pre-test conditions: AE has created an Application Entity resource <ae> on Registrar CSE AE has created a container resource <container> on Registrar CSE Test Sequence Step RP Type Description AE is requested to send a Retrieve Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 2 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Request for a <subscription> Op = 2 (Retrieve) Op = 4 (Retrieve</subscription></subscription></subscription></subscription></subscription></subscription></subscription></subscription></subscription></subscription></subscription></container></ae>	
Pre-test conditions: AE has created an Application Entity resource <ae> on Registrar CSE AE has created a container resource <container> on Registrar CSE Test Sequence Test Sequence Step RP Type Description AE is requested to send a Retrieve Request for a <subscription> op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty Sent request contains Request method = GET 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 Nethod: 0.01 (GET) Wiri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container></container></subscription></container></ae>	
AE has created a container resource <container> on Registrar CSE Test Sequence Step RP Type Description AE is requested to send a Retrieve Request for a <subscription> op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty 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 Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container></container></subscription></container>	
AE has created a container resource <container> on Registrar CSE Test Sequence Step RP Type Description AE is requested to send a Retrieve Request for a <subscription> op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty 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 Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container></container></subscription></container>	
Test Sequence Step RP Type	
Step RP Type Description	
AE is requested to send a Retrieve Request for a <subscription> op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty 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 Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container></container></subscription>	
PRO Check Primitive to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) pc = empty 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 Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container></container>	
PRO Check HTTP 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 Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource</container></container>	
Mca PRO Check CoAP CoAP CoAP	
oneM2M-RQI: (token-string) Payload: empty	
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>	
Registrar CSE sends response containing: Status Code = 200 (OK) 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 a	res+json
Registrar sends response containing: Response Code = 2.05 (OK) 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 Payload: Serialized representation of <container> resource</container>	n-res+json
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	fier:		TD_M2M_NH_12			
Objec			AE updates attribute in application resource via a container Update Request			
	guration	า:	M2M_CFG_01			
References:			ETSI TS 118 101 [1], clause 10.2.4.3			
			ETSI TS 118 104 [2], clause 7.3.5.2.3			
Pre-test conditions:			AE has created an Application Entity resource <ae> on Registrar CSE</ae>			
			AE has created a container resource <container> on Registrar CSE</container>			
			Test Sequence			
Step	RP	Type	Description			
1		Stimulus	AE is requested to send a subscription Update Request to update the lifetime of the			
			resource.			
			• op = 3 (Update)			
		PRO Check	to = {CSEBaseName}/URI of <container> resource</container>			
		Primitive	• fr = AE-ID			
		1 111111111	• rqi = (token-string)			
			pc = Serialized representation of updated <container> resource</container>			
			Sent request contains			
			• Request method = PUT			
		PRO Check	Request-Target:{CSEBaseName}/URI of <container> resource</container>			
		HTTP	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 <container> resource</container>			
		PRO Check CoAP	Sent request contains			
2	Mca		• Method: 0.03 (PUT)			
			Uri-Host: IP address or the FQDN of Registrar CSE It is not a continuous and a con			
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>			
			• oneM2M-FR: AE-ID			
			• oneM2M-RQI: (token-string)			
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Poyload: Socialized representation of undeted generalizers resource.			
			Payload: Serialized representation of updated <container> resource Sent MQTT PUBLISH message:</container>			
		PRO Check MQTT	Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>			
			Payload:			
			• op = 3 (Update)			
			to = {CSEBaseName}/URI of <container> resource</container>			
			• fr = AE-ID			
			• rqi = (token-string)			
			 pc = Serialized representation of updated <container> resource</container> 			
3		IOP Check	Check if possible that the < container > resource is updated in Registrar CSE.			
		PRO Check	• rsc = 2004 (Updated)			
		Primitive	 rqi = (token-string) same as received in request message 			
		Tillilliuve	• pc = Serialized representation of <container> resource</container>			
			Registrar CSE sends response containing:			
		PRO Check	• Code = 200 (Ok)			
		HTTP	• X-M2M-RSC: 2004			
			X-M2M-RI: (token-string) same as received in request message			
4	Mca		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:			
		DDO 041	• Response Code = 2.04			
		PRO Check	oneM2M-RSC: 2004 coneM3M ROLL (taken atting) same as received in request massage.			
		CoAP	oneM2M-RQI: (token-string) same as received in request message Content format: application and application and application and application and application and application are properly application.			
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Socialized representation of generalizers, resources			
	<u> </u>	Ī	Payload : Serialized representation of <container> resource</container>			

	Interoperability Test Description			
	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 <container> resource</container></registrar>		
5	IOP Check	AE indicates successful operation		
IOP Verdi	ict			
PRO Verd	lict			

8.1.4.4 Container Delete

0.1.	6.1.4.4 Container Delete					
	Interoperability Test Description					
Identi	fier:		TD_M2M_NH_13			
Objec	tive:		AE deletes a specific container resource via a container Delete Request			
Confi	guratior	1:	M2M_CFG_01			
	ences:		ETSI TS 118 101 [1], clause 10.2.4.4			
			ETSI TS 118 104 [2], clause 7.3.5.2.4			
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	Туре	Description			
1		Stimulus	AE is requested to send a subscription Delete Request			
			• op = 4 (Delete)			
		PRO Check	to = {CSEBaseName}/URI of <container> resource</container>			
		Primitive	• fr = AE-ID			
		1 1111111111	• rqi = (token-string)			
			• pc = empty			
			Sent request contains			
			Request method = DELETE			
		PRO Check	 Request-Target: (CSEBaseName)/URI of <container> resource</container> 			
		HTTP	Host: IP address or the FQDN of Registrar CSE			
			X-M2M-RI: (token-string)			
			• X-M2M-Origin: AE-ID			
			Message-body: Empty			
	Мса	PRO Check	Sent request contains			
2			Method: 0.04 (DELETE)			
			Uri-Host: IP address or the FQDN of Registrar CSE			
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>			
		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 <container> resource</container> 			
			• fr = AE-ID			
			• rqi = (token-string)			
			• pc = empty			
3		IOP Check	Check if possible that the <container> resource is deleted in registrar CSE.</container>			
		PRO Check	• rsc = 2002 (DELETED)			
		Primitive	 rqi = (token-string) same as received in request message 			
			• pc = empty			
4			Registrar CSE sends response containing:			
-	Mca	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			

	Interoperability Test Description			
		PRO Check CoAP	Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • 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(DELETED) • rqi = (token-string) same as received in request message</registrar>	
5		IOP Check	Check if possible that the <container> resource has been removed in registrar CSE.</container>	
6		IOP Check	AE indicates successful operation.	
IOP V	/erdict			
PRO \	√erdict			

8.1.5 ContentInstance Management

8.1.5.1 ContentInstance Create

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_14
Objec	tive:		AE adds a contentInstance resource <contentinstance> to a specific container in</contentinstance>
			Registrar CSE via a contentInstance Create Request
Confi	guratior	1:	M2M_CFG_01
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.19.2
			ETSI TS 118 104 [2], clause 7.3.6.2.1
Pre-te	st cond	itions:	AE has created an application resource <ae> on registrar CSE</ae>
			AE has created a container resource <container> on registrar CSE</container>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE sends a request to create a <container></container>
			• op = 1 (Create)
			 to = {CSEBaseName}/URI of < container > resource
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• 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
		HTTP	X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
2	Mca		 Content-Type: application/vnd.onem2m-res+xml; ty=4 or application/vnd.onem2m-
	IVICA		res+json; ty=4
			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+json
			oneM2M-TY: 4
			oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <contentinstance> resource</contentinstance>

			Interoperability Test Description
			Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 1 (Create)</registrar>
		PRO Check MQTT	 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>
		PRO Check Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <contentinstance> resource</contentinstance>
		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 <contentinstance> resource</contentinstance>
4	Mca	PRO Check CoAP	Registrar 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 resource Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <contentinstance> resource</contentinstance>
		PRO Check MQTT	Sent 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 <contentinstance> resource</contentinstance></registrar>
5		IOP Check	AE indicates successful operation
IOP V	'erdict		
PRO \	/erdict		

8.1.5.2 ContentInstance Retrieve

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_15
Objec	tive:		AE retrieves information of a contentInstance resource via a container Retrieve Request
Confi	guratior	1:	M2M_CFG_01
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.19.3
			ETSI TS 118 104 [2], clause 7.3.6.2.2
Pre-te	st cond	itions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>
			AE has created a container resource <container> on Registrar CSE</container>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a Retrieve Request for a <contentinstance></contentinstance>
			op = 2 (Retrieve)
		PRO Check	 to = {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
2	Mca	Primitive	• fr = AE-ID
	ivica	i illillilive	• rqi = (token-string)
			• pc = empty

			Interoperability Test Description
		PRO Check HTTP	Sent request contains Request method = GET 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</contentinstance>
		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 <contentinstance> resource oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty</contentinstance>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty</contentinstance></registrar>
		PRO Check Primitive	rsc =2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <contentinstance> resource</contentinstance>
		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 <contentinstance> resource</contentinstance>
3 1	Mca	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 <contentinstance> resource</contentinstance>
		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 <contentinstance> resource</contentinstance></registrar>
4		IOP Check	AE indicates successful operation
IOP Ver			
PRO Ve	eraict		

8.1.5.3 ContentInstance Delete

			Interoperability Test Description
Identif	fier:		TD_M2M_NH_17
Objec			AE deletes contentInstance resource via a container Delete Request
Config	guration	າ:	M2M_CFG_01
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.19.5
			ETSI TS 118 104 [2], clause 7.3.6.2.4
Pre-te	st cond	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>
			AE has created a container resource <container> on Registrar CSE</container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a subscription Delete Request

PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO Check PRO Check PRO Check HTTP Accepted PRO Check PRO Check PRO Check PRO Check CoAP PRO Check PRO Check PRO Check CoAP PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check Primitive PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check P
PRO Check Primitive • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Sent request contains • 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: "/oneM2Wreq/< AE-ID>/<registrar cse-id="">" Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty 3 IOP Check PRO Check Primitive • fr = AE-ID • rqi = (token-string) • pc = empty • rqi = (token-string) • rqi = (token-string)</contentinstance></registrar></contentinstance></contentinstance></contentinstance>
PRO Check Primitive PRO Check Primitive Fr = AE-ID
Primitive Primitive Primitive Procession
PRO Check HTTP Mca Mca PRO Check CoAP Mca Mca PRO Check CoAP Mca Mca PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP Description PRO Check CoAP PRO Check CoAP PRO Check CoAP Description PRO Check CoAP Description Properties PRO Check CoAP Description Properties PRO Check CoAP Description Properties PRO Check CoAP PRO Check PRO Check PRO Check PRO Check Primitive PR
Sent request contains Request method = DELETE Request-Target: {CSEBaseName}/URI of <contentinstance> resource} HTTP **Name Request contains** Request rethod = DELETE Request-Target: {CSEBaseName}/URI of <contentinstance> resource} **Host: IP address or the FQDN of Registrar CSE **Name Registrar CSE</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-RRI: (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 f = AE-ID origin (token-string) origi</contentinstance></registrar></contentinstance></contentinstance>
PRO Check HTTP Request-Target: {CSEBaseName}/URI of <contentinstance> resource</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-RR: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "foneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT Prayload: op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource of r = AE-ID orqi = (token-string) pc = empty IDP Check PRO Check PRO Check Primitive PRO Check Primitive rqi = (token-string) same as received in request message orginal registrar CSE **N2M-RI: (token-string) **One Message-body: Empty One Message-body: One Message-body: One ContentInstance> resource One Message-body: One Me</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-RQI: (token-string)** Payload: empty** Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload:** PRO Check MQTT</registrar></contentinstance>
Mca Mca Mca PRO Check CoAP PRO Check Primitive PRO Check PRO Check Primitive PRO Check PRO Check Primitive PRO Chec
Mca
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 Procedure of real of the following of the follow</registrar></contentinstance>
PRO Check CoAP • 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 3 IOP Check PRO Check Primitive • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty • rgi = (token-string) same as received in request message</contentinstance></contentinstance></registrar></contentinstance>
PRO Check CoAP Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <contentinstance> resource oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT one 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty IOP Check PRO Check Primitive PRO Check Primitive Uri-Host: IP address or the FQDN of Registrar CSE One AC-ID contentInstance> resource one AC-ID>" contentInstance> resource one AC-ID> resource one AC-ID one AC-ID>" contentInstance> resource is deleted in registrar CSE. one AC-ID one AC-ID</contentinstance></registrar></contentinstance>
Uri-Path: {CSEBaseName}/URI of <contentinstance> resource</contentinstance>
CoAP Oni-Path: {CSEBaseName}/ORI of <contentinistance> resource</contentinistance>
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 IOP Check Primitive PRO Check Primitive Procedure op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource is deleted in registrar CSE. op = 2002 (DELETED) rqi = (token-string) same as received in request message</contentinstance></contentinstance></registrar>
Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: PRO Check MQTT op = 4 (Delete) op = 4</registrar>
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 Check if possible that the <contentinstance> resource is deleted in registrar CSE. PRO Check Primitive PRO Check Primitive PRO Check Primitive Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" o rqi = (token-string) From Check Primitive PRO Check Primitive PRO Check Primitive Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">" o rqi = (token-string) o rqi = (token-string) same as received in request message</registrar></registrar></contentinstance></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 3 IOP Check Primitive • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message</contentinstance></registrar>
Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty Check if possible that the <contentinstance> resource is deleted in registrar CSE. PRO Check Primitive • rqi = (token-string) same as received in request message</contentinstance></contentinstance>
PRO Check MQTT op = 4 (Delete) to = {CSEBaseName}/URI of <contentinstance> resource fr = AE-ID rqi = (token-string) pc = empty IOP Check Primitive rqi = (token-string) same as received in request message</contentinstance>
MQTT • to = {CSEBaseName}/URI of <contentinstance> resource • fr = AE-ID • rqi = (token-string) • pc = empty 3 IOP Check PRO Check Primitive • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message</contentinstance>
• fr = AE-ID • rqi = (token-string) • pc = empty 3 IOP Check Primitive PRO Check Primitive Primitive • fr = AE-ID • rqi = (token-string) • pc = empty Check if possible that the <contentinstance> resource is deleted in registrar CSE. • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message</contentinstance>
rqi = (token-string) pc = empty IOP Check Primitive rqi = (token-string) pc = empty Check if possible that the <contentinstance> resource is deleted in registrar CSE. rsc = 2002 (DELETED) rqi = (token-string) same as received in request message</contentinstance>
PRO Check Primitive Primiti
3 IOP Check Check if possible that the <contentinstance> resource is deleted in registrar CSE. PRO Check Primitive rigid = (token-string) same as received in request message</contentinstance>
PRO Check Primitive • rsc = 2002 (DELETED) • rqi = (token-string) same as received in request message
Primitive • rqi = (token-string) same as received in request message
• pc = empty
Registrar CSÉ 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
vicosaye-bouy. citipty
Registrar sends response containing:
Registrar sends response containing: • Response Code = 2.02
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED)
Registrar sends response containing: • Response Code = 2.02
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: • Response Code = 2.02 • 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>
A Mca Registrar sends response containing: • Response Code = 2.02 • 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="">" Payload:</registrar>
A Mca Registrar sends response containing: • Response Code = 2.02 • 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="">" Payload: • to = AE-ID</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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="">" Payload: to = AE-ID of r = Registrar CSE-ID</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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="">" Payload: to = AE-ID of r = Registrar CSE-ID orsc = 2002(DELETED)</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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="">" Payload: to = AE-ID orsc = 2002(DELETED) reqi = (token-string) same as received in request message</registrar>
Registrar sends response containing: Response Code = 2.02 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="">" Payload: PRO Check MQTT PRO Check MQTT Proposition of r = Registrar CSE-ID of r = Registrar CSE-ID of received in request message Topic token-string) same as received in request message Check if possible that the <contentinstance> resource has been removed in registrar</contentinstance></registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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="">" Payload: to = AE-ID of r = Registrar CSE-ID of rsc = 2002(DELETED) orgi = (token-string) same as received in request message Check if possible that the <contentinstance> resource has been removed in registrar CSE.</contentinstance></registrar>
Registrar sends response containing: Response Code = 2.02 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="">" Payload: PRO Check MQTT PRO Check MQTT Proposition of r = Registrar CSE-ID of r = Registrar CSE-ID of received in request message Check if possible that the <contentinstance> resource has been removed in registrar</contentinstance></registrar>
HTTP • X-M2M-RSC: 2002
I ▼ IVIGOOGUGTUUUV, GIIIUIV
Registrar sends response containing:
Registrar sends response containing: • Response Code = 2.02
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED)
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED)
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED)
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED)
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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="">" Payload:</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 new 2M-RSC: 2002(DELETED) new 2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">" Payload:</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: • Response Code = 2.02 • 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 neM2M-RSC: 2002(DELETED) neM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: • Response Code = 2.02 • 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>
A Mca Registrar sends response containing: • Response Code = 2.02 • 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 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>
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
A Mca PRO Check CoAP Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • oneM2M-RQI: (token-string) same as received in request message • Payload: empty
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:
A Mca Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) oneM2M-RQI: (token-string) same as received in request message Payload: empty Sent MQTT PUBLISH message:

8.1.6 Discovery

8.1.6.1 Discovery of all resources

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_18		
Objec	_		AE discovers all accessible resources from registrar CSE		
	guration	າ:	M2M_CFG_01		
References:			ETSI TS 118 101 [1], clause 10.2.6		
			ETSI TS 118 104 [2], clause 7.2.3.13		
Pre-te	st cond	litions:	CSEBase resource has been created in registrar CSE with name		
			{CSEBaseName}		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a discovery request to registrar CSE		
			Sent request contains		
			• op = 2 (Retrieve)		
		PRO Check	• to = {CSEBaseName}		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			• fu=1		
			• pc = empty		
	 Request method = GET PRO Check HTTP Request method = GET Request-Target: {CSEBaseName}?fu=1 Host: IP address or the FQDN of Registrar CSE 				
		· · · · · · · · · · · · · · · · · · ·			
			• fu=1 • pc = empty Sent request contains • Request method = GET • Request-Target: {CSEBaseName}?fu=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 sk • Uri-Path: {CSEBaseName} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string)		
		HIIP			
2	Mca		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: {CSEBaseName} oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Uri-Query: fu=1		
		555			
		PRO Check			
			· I		
			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		
			• rqi = (token-string)		
			• fu = 1		
			• pc = empty		
			Registrar CSE sends response containing:		
		PRO Check	• rsc = 2000 (OK)		
		Primitive	 rqi = (token-string) same as received in request message 		
		Fillilluve	• pc = Serialized representation of data object containing addresses of all discovered		
			resources		
3			Registrar CSE sends response containing:		
3	Mca		• 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 addresses of all		
			discovered resources		

			Interoperability Test Description
		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 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 \	√erdict		

8.1.6.2 Discovery with label filter criteria

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_19
Objec	tive:		AE discovers accessible resources residing in Registrar CSE using the label filter criteria
Confi	guration	ո։	M2M_CFG_01
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.6 ETSI TS 118 104 [2], clause 7.2.3.13
Pre-te	est cond	litions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName}
			A <container> resource with label "key1" is created on Registrar CSE .</container>
0.1		T =	Test Sequence
Step	RP	Туре	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
	PRO Check Primitive • op = 2 (Retrieve) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • fu=1 • lbl=key1 • pc = empty Sent request contains • Request method = GET • 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 • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName} • OneM2M-FR: AE-ID • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Uri-Query: fu=1 • Uri-Query: lbl=key1		 op = 2 (Retrieve) to = {CSEBaseName} fr = AE-ID rqi = (token-string) fu=1 lbl=key1 pc = empty Sent request contains
2		 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 	
			Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Uri-Query: fu=1

	Interoperability Test Description		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName} fr = Registree CSE-ID rqi = (token-string) fu = 1</registrar></ae-id>
		PRO Check Primitive	Ibl=key1 pc = empty 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	Mca	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 Ve	erdict		
PRO V	erdict		

8.1.6.3 Discovery with limit filter criteria

	Interoperability Test Description			
Identifier:			TD_M2M_NH_20	
Objec	tive:		AE discovers accessible resources residing in Registrar CSE limiting the number of	
			matching resources to the specified value.	
Config	guratior):	M2M_CFG_01	
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.6	
			ETSI TS 118 104 [2], clause 7.2.3.13	
Pre-te	st cond	itions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName}	
			Test Sequence	
Step RP Type		Type	Description	
1		Stimulus	AE is requested to send a Discovery request in order to discover at most 2 resources in registrar CSE.	

	Interoperability Test Description			
	Mca	PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = {CSEBaseName} fr = AE-ID rqi = (token-string) fu=1 lim=2 pc = empty	
		PRO Check HTTP	Sent request contains Request method = GET Request-Target: {CSEBaseName}?fu=1&lim=2 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} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Uri-Query: fu=1 • Uri-Query: lim=2 • Payload: empty	
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>	
		PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of data object containing the address of the <container> address</container>	
		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	
3	Mca	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 at most 2 addresses of 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 at most 2 addresses of discovered resources</registrar></ae-id>	
4		IOP Check	AE indicates successful operation	

	Interoperability Test Description			
IOP Verdict				
PRO Verdict				

8.1.6.4 Discovery with multiple filter criteria

	Interoperability Test Description			
Identi	fier:		TD_M2M_NH_21	
Objec	tive:		AE discovers accessible resources residing in Registrar CSE using multiple Filter Criteria	
	guration	n:	M2M_CFG_01	
	References:		ETSI TS 118 101 [1], clause 10.2.6	
			ETSI TS 118 104 [2], clause 7.2.3.13	
Pre-te	st cond	litions:	Two <container> resources with labels "key1" and "key2" are created in Registrar CSE.</container>	
			A <group> resources with labels "key1" and "key2" is created in Registrar CSE. Table 0 and 1 and "key2" is created in Registrar CSE.</group>	
Cton		T		
Step	RP	Type		
1		Stimulus		
			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: {CSEBaseName} oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Uri-Query: fu=1	
			• rqi = (token-string)	
		PRO Check	• fu=1	
		Primitive	• lbl=kev1	
 pc = empty Sent request contains Request method = GET Request-Target: {CSEBaseName}?fu=1&key=2&rty=3&lim=1 				
		DDO Charle		
		PRO Check		
		HTTP		
	X-M2M-Origin: AE-IDMessage-body: empty	• 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	
2	N/			
	Mca		· · · · · · · · · · · · · · · · · · ·	
		DDO Chask		
		PRO Check		
		CoAP	Uri-Query: lbl=key1	
			Uri-Query: lbl=key2	
			• Uri-Query: rty=3	
			• Uri-Query: lim=1	
			· ·	
			Payload: empty Cont MOTT BUBLISH massage:	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
			• op = 2 (Retrieve)	
			• to = {CSEBaseName}	
		DDO Chaale	• fr = AE-ID	
		PRO Check	• rqi = (token-string)	
		MQTT	• fu = 1	
			• lbl=key1	
			• lbl=key2	
			• rty=3	
			● lim=1	
			• pc = empty	
		I	1 F	

	Interoperability Test Description		
			Registrar CSE sends response containing:
		PRO Check	• rsc = 2000 (OK)
		Primitive	 rqi = (token-string) same as received in request message
		i illilliuve	• pc = Serialized representation of data object containing the address of one of the
			<container> resources</container>
			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 data object containing the address of one
			of the <container> resources</container>
			Registrar sends response containing:
3	Mca		• Response Code = 2.05
	ivica	PRO Check	oneM2M-RSC: 2000 And MOM ROLL (follows a trice) And Momentum and the second and the secon
		CoAP	oneM2M-RQI: (token-string) same as received in request message
			Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Produced a Content-format: application/vnd.onem2m-res+json Output Description of the content-format: application of the content-format:
			Payload: Serialized representation of data object containing the address of one of the Container> 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>
4		IOP Check	AE indicates successful operation
	/erdict		
PRO \	√erdict		

8.1.7 Subscription Management

8.1.7.1 Subscription Create

			Interes each liter Test Description
	<i>-</i> .		Interoperability Test Description
Identifier:			TD_M2M_NH_22
Objective:			AE creates a subscription to Application Entity resource via subscription Create Request
Config	guratior	n:	M2M_CFG_01
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.11.2
			ETSI TS 118 104 [2], clause 7.3.7.2
Pre-te	st cond	itions:	AE has created an application resource <ae> on registrar CSE</ae>
			AE has created a container resource <container> on registrar CSE</container>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a AE Create request to register to the Registrar CSE
2	Мса	PRO Check Primitive	 op = 1 (Create) to = {CSEBaseName}/URI of <container> resource</container> fr = AE-ID rqi = (token-string) ty = 23 (Subscription) pc = Serialized representation of <subscription> resource</subscription> Sent request contains
		PRO Check HTTP	 Request method = POST Request-Target:{CSEBaseName}/URI of <container> resource</container> 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=23 or application/vnd.onem2m-res+json; ty=23 Message-body: Serialized representation of <subscription> resource</subscription>

			Interoperability Test Description
			Sent request contains
			Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/URI of <container> resource</container>
		CoAP	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			• oneM2M-TY: 23
			oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: Serialized representation of <subscription> resource</subscription>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
		55000	• op = 1 (Create)
		PRO Check	 to = {CSEBaseName}/URI of <container> resource</container>
		MQTT	• 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>
		101 Officer	• rsc = 2001 (CREATED)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	• pc = Serialized representation of <subscription> resource</subscription>
			Registrar CSE sends response containing:
		DD0 01 1	• 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+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
	moa	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 <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
			• pc = Serialized representation of <subscription> resource</subscription>
5		IOP Check	AE indicates successful operation
	/erdict	101 Officer	In the interior of the property of the interior of the interio
	Verdict		
110	v Graici		

8.1.7.2 Subscription Retrieve

			Interoperability Test Description		
Identif	fier:		TD_M2M_NH_23		
Objec	tive:		AE retrieves subscription resource from Registrar CSE		
Config	guratior	ւ :	M2M_CFG_01		
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.11.3		
			ETSI TS 118 104 [2], clause 7.3.7.2		
Pre-te	st cond	itions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>		
			AE has created a container resource <container> on Registrar CSE</container>		
			AE has created a subscription resource <subscription> on Registrar CSE</subscription>		
	Test Sequence				
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a Retrieve Request for a <subscription></subscription>		

			Interoperability Test Description
-			
		PRO Check	op = 2 (Retrieve) to = (CSER page Name) / IRL of
			to = {CSEBaseName}/URI of <subscription> resource AF ID</subscription>
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			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
			X-M2M-RI: (token-string)
			X-M2M-Origin: AE-ID
			Message-body: empty
			Sent request contains
2	Mca		Method: 0.01 (GET)
	I Wilde	PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	 Uri-Path: {CSEBaseName}/URI of <subscription> resource</subscription>
		COAI	oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 2 (Retrieve)
			 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>
		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 <subscription> resource</subscription>
			Registrar sends response containing:
			• Response Code = 2.05
3	Mca	PRO Check	• oneM2M-RSC: 2000(OK)
	11.00	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
			• pc = Serialized representation of <subscription> resource</subscription>
4	, ,	IOP Check	AE indicates successful operation
	/erdict		
PRO \	√erdict		

8.1.7.3 Subscription Update

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_24		
Objec	tive:		AE updates information about a subscription via subscription Update Request		
	guration	າ:	M2M_CFG_01		
References:			ETSI TS 118 101 [1], clause 10.2.11.4		
			ETSI TS 118 104 [2], clause 7.3.7.2		
Dro to	st cond	litions	AF has avested an Application Fatitures aves AF, an Registrar CCF		
Fre-le	St Cond	iitions.	AE has created an Application Entity resource <ae> on Registrar CSE AE has asset at a container resource of Parietra CSE.</ae>		
			 AE has created a container resource <container> on Registrar CSE</container> AE has created a subscription resource <subscription> on Registrar CSE</subscription> 		
			Test Sequence		
Step	RP	Туре	Description		
		Stimulus	AE is requested to send a subscription Update Request to update the lifetime of the		
1			resource.		
			• op = 3 (Update)		
		PRO Check	to = {CSEBaseName}/URI of <subscription> resource</subscription>		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			pc = Serialized representation of updated <subscription> resource</subscription>		
			Sent request contains		
			• Request method = PUT		
		PRO Check	Request-Target:{CSEBaseName}/URI of <subscription> resource Heat ID address on the FORM of Parietres CSE.</subscription>		
		HTTP	Host: IP address or the FQDN of Registrar CSE NASM RIV (teleproperties)		
			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		
			Uri-Path: {CSEBaseName}/URI of <subscription> resource</subscription>		
			• 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 <subscription> resource</subscription>		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>		
		DD0 01 1	Payload:		
		PRO Check MQTT	 op = 3 (Update) to = {CSEBaseName}/URI of <subscription> resource</subscription> 		
		IVIQTI	• fr = AF-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>		
			• rsc = 2004 (Updated)		
		PRO Check Primitive	• rqi = (token-string) same as received in request message		
		Fillillive	 pc = Serialized representation of <subscription> resource</subscription> 		
			Registrar CSE sends response containing:		
		PRO Check	• Code = 200 (Ok)		
		HTTP	• X-M2M-RSC: 2004		
_			X-M2M-RI: (token-string) same as received in request message		
4	Mca		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Magazine had a Qualification of a Qual		
			Message-body: Serialized representation of <subscription> resource Registrar sends representationing:</subscription>		
			Registrar sends response containing: • Response Code = 2.04		
		PRO Check	• Response Code = 2.04 • oneM2M-RSC: 2004		
		CoAP	oneM2M-RQI: (token-string) same as received in request message		
		33711	Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Payload : Serialized representation of <subscription> resource</subscription>		
	ı	L	- Lystal Seminated representation of reasoniphone roots and		

	Interoperability Test Description			
	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 <subscription> resource</subscription></registrar>		
5	IOP Check	AE indicates successful operation		
IOP Verdic	ot			
PRO Verdio	ct	·		

8.1.7.4 Subscription Delete

8.1.	7.4	Subscrip	tion Delete
			Interoperability Test Description
Identi			TD_M2M_NH_25
Objec			AE cancels subscription via an subscription Delete Request
Config	guratior	າ:	M2M_CFG_01
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.11.5
			ETSI TS 118 104 [2], clause 7.3.7.2
Dro to	st cond	litiono	AF has asset at an Application Full transcriptor AF and Designation COF
Fre-le	St Cond	illions.	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 Took Service =</subscription>
Ctore	DD	T	Test Sequence
Step	RP	Type	Description Police Powers
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
			• Request method = DELETE
		PRO Check HTTP	 Request-Target: {CSEBaseName}/URI of <subscription> resource</subscription>
			Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
	Мса		• X-M2M-Origin: AE-ID
			Message-body: Empty
			Sent request contains
2			Method: 0.04 (DELETE)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	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)
		105.01	• 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
4	N4 = =	DD0 6: .	Registrar CSE sends response containing:
	Mca		• Status Code = 200 (OK)
		HTTP	• X-M2M-RSC: 2002
			X-M2M-RI: (token-string) same as received in request message
			Message-body: empty

			Interoperability Test Description
		PRO Check CoAP	Registrar sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002(DELETED) • 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(DELETED) • rqi = (token-string) same as received in request message</registrar>
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 V	/erdict		
PRO \	√erdict		

8.1.8 accessControlPolicy Management

8.1.8.1 accessControlPolicy Create

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_26		
Objective:			AE creates an accessControlPolicy resource		
Confi	guratior	ւ :	M2M_CFG_01		
Refer	ences:		1] 10.2.21.1		
			ETSI TS 118 104 [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 Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			• ty = 1 (accessControlPolicy)		
			 pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy> 		
		PRO Check HTTP	Sent request contains		
			• Request method = POST		
			Request-Target:{CSEBaseName}/{AE}		
			Host: IP address or the FQDN of Registrar CSE		
			X-M2M-RI: (token-string)		
2			• X-M2M-Origin: AE-ID		
	Mca		 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>		
			Sent request contains		
			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		
		00/11	• oneM2M-TY: 1		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>		

	Interoperability Test Description			
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 1 (Create) to = {CSEBaseName}/{AE} fr = AE-ID rqi = (token-string) ty = 1 (RemoteCSE) pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy></registrar>	
3		IOP Check	Check if possible that the <container> resource is created in registrar CSE.</container>	
		PRO Check Primitive	 rsc = 2001 (CREATED) 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 = 201 (Created) X-M2M-RSC: 2001 X-M2M-RI: (token-string) same as received in request message Content-Location: URI of the created <accesscontrolpolicy> resource. Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy></accesscontrolpolicy>	
4	Мса	PRO Check CoAP	Registrar 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 <accesscontrolpolicy> resource Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy></accesscontrolpolicy>	
		PRO Check MQTT	Sent 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 <accesscontrolpolicy> resource</accesscontrolpolicy></registrar>	
5		IOP Check	AE indicates successful operation	
IOP V	'erdict			
PRO \	/erdict			

8.1.8.2 accessControlPolicy Retrieve

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_27
Objec	tive:		AE retrieves accessControlPolicy resource
Confi	guratior	1 :	M2M_CFG_01
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.21.2 ETSI TS 118 104 [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} Test Sequence</ae></ae>
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a accessControlPolicy retrieve request to Registrar CSE
2	Mca	PRO Check Primitive	 op = 2 (Retrieve) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty

			Interoperability Test Description
			Sent request contains
		55000	• Request method = GET
		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
			Sent request contains
			• Method: 0.01 (GET)
		DD0 01 1	Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	 Uri-Path: {CSEBaseName}/{AE}/{accessControlPolicyName}
		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 Ob I	
		PRO Check	
		MQTT	 to = {CSEBaseName}/{AE}/{accessControlPolicyName}
			• fr = AE-ID
			• rqi = (token-string)
			• 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 <accesscontrolpolicy> resource</accesscontrolpolicy>
			Registrar CSE sends response containing:
		PRO Check	• Status Code = 200 (OK)
		HTTP	• X-M2M-RSC: 2000
		HITE	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:
3			• Response Code = 2.05 (OK)
3	Mca	PRO Check	• 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 <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	TOT STICOR	p. 12 managed Supposition operation
	Verdict		
		1	

8.1.8.3 accessControlPolicy Update

			Later and 1996. The A.B. and A.C.
1-1			Interoperability Test Description
Identif			TD_M2M_NH_28
Objec			AE updates attribute in accessControlPolicy resource
	guratio	n:	M2M_CFG_01
References:			ETSI TS 118 101 [1], clause 10.2.21.3
			ETSI TS 118 104 [2], clause 7.3.1.2
Dro to	ot oon	ditions:	COED
Pre-te	St Cond	aitions:	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> accessControlPolicy resource (accessControlPolicy Alarra)</ae>
			resource with name {accessControlPolicyName}
Cton	DD	Time	Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send an accessControlPolicy update request to Registrar CSE
			• op = 3 (Update)
		PRO Check	 to = {CSEBaseName}/{AE}/{accessControlPolicyName}
2		Primitive	• fr = AE-ID
			rqi = (token-string) rqi = (token-string)
			pc = Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy>
			Sent request contains
			• Request method = PUT
			Request-Target: {CSEBaseName}/{AE}/{accessControlPolicyName}
		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 <accesscontrolpolicy></accesscontrolpolicy>
			resource
	Mca		Sent request contains
	IVICa		Method: 0.03 (PUT) Heit Heat ID address on the FORM of Pagintage CSF.
			Uri-Host: IP address or the FQDN of Registrar CSE Hei Paths (COEPassAlarsa) (AE) (Coepass Coepas (Patient)) The state of the FQDN of Registrar CSE The state o
		PRO Check	Uri-Path: {CSEBaseName}/{AE}/{accessControlPolicyName}
		CoAP	oneM2M-FR: AE-ID oneM2M POI: (taken etring)
			oneM2M-RQI: (token-string) Content format: application/and anom2m required or application/and anom2m.
			 Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Payload: Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy>
-			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}/{accessControlPolicyName}
			• fr = AE-ID
			• rqi = (token-string)
			pc = Serialized representation of updated <accesscontrolpolicy> resource</accesscontrolpolicy>
_		IOD OF	Check if possible that the <accesscontrolpolicy> resource has been updated in</accesscontrolpolicy>
3		IOP Check	registrar CSE.
			Registrar CSE sends response containing:
		PRO Check	• rsc = 2004 (UPDATED)
4		Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>
]		Registrar CSE sends response containing:
	Mac		• Status Code = 200 (OK)
	Mca	PRO Check	• X-M2M-RSC: 2004
		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
	<u> </u>		Message-body: Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>

	Interoperability Test Description			
			Registrar sends response containing:	
			• Response Code = 2.04 (UPDATED)	
		PRO Check	• oneM2M-RSC: 2004	
		CoAP	 oneM2M-RQI: (token-string) same as received in request message 	
		COAI	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 = 2004 (Updated)	
			 rqi = (token-string) same as received in request message 	
			• pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>	
5		IOP Check	AE indicates successful operation	
IOP V	erdict			
PR	RO			
Ver	dict			

8.1.8.4 accessControlPolicy Delete

	Interoperability Test Description					
Identi	fier:		TD_M2M_NH_29			
Objective:			AE deletes accessControlPolicy resource			
Confi	guratio	n:	M2M_CFG_01			
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.21.4			
			ETSI TS 118 104 [2], clause 7.3.1.2			
Pre-te	st cond	ditions:	CSEBase resource has been created in registrar CSE with name {CSEBaseName}			
			AE has created a <ae> resource on registrar CSE with name {AE}</ae>			
			 accessControlPolicy resource has been created in registrar CSE under <ae></ae> 			
			resource with name {accessControlPolicyName}			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send an accessControlPolicy delete request to Registrar CSE			
	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{accessControlPolicyName} fr = AE-ID rqi = (token-string) pc = empty 			
2		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			
		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			

	Interoperability Test Description			
			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}/{accessControlPolicyName}	
			• fr = AE-ID	
			• rqi = (token-string)	
			• pc = empty	
			Registrar CSE sends response containing:	
		PRO Check	• rsc = 2002 (DELETED)	
		Primitive	rqi = (token-string) same as received in request message	
			• pc = empty	
			Registrar CSE sends response containing:	
		PRO Check	• Status Code = 200 (OK)	
	Мса	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)	
			• 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>	
			Payload:	
		PRO Check	• to = AE-ID	
		MQTT	• fr = Registrar CSE-ID • rsc = 2002	
			=	
			• rqi = (token-string) same as received in request message	
			• pc = empty Check if possible that the <accesscontrolpolicy> resource has been removed from registrar</accesscontrolpolicy>	
4		IOP Check	CSE.	
5		IOP Check	AE indicates successful operation	
IOP V	erdict			
PRO \	/erdict			

8.1.8.5 Unauthorized operation (Insufficient Access Rights)

			Interoperability Test Description
Identi	fier:		TD_M2M_NH_30
Objec	tive:		AE delete request is rejected due to accessControlPolicy
Confi	guration	ո։	M2M_CFG_01
Refere	ences:		[2]] 7.3.1.2
Pre-te	est cond	litions:	 CSEBase resource has been created in registrar CSE with name {CSEBaseName} AE has created a <ae> resource on registrar CSE with name {AE}</ae> accessControlPolicy resource has been created in registrar CSE under <ae> resource with name {accessControlPolicyName}, which forbids to delete container</ae> AE has created a <container> resource on registrar CSE under <ae>, with name {containerName}</ae></container>
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a container Delete Request for resource <container></container>
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/{AE}/{containerName} fr = AE-ID rqi = (token-string) pc = empty

			Interoperability Test Description
			Sent request contains
			Request method = DELETE
		PRO Check	 Request-Target: {CSEBaseName}/{AE}/{containerName}
		HTTP	Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			<u> </u>
			Message-body: empty Cont request contains
			Sent request contains
			Method: 0.04 (DELETE)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2058) (2
		CoAP	Uri-Path: {CSEBaseName}/{AE}/{containerName}
			• 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}/{containerName}
			• fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			Registrar CSE sends response containing:
		PRO Check Primitive	• rsc = 4103 (ACCESS_DENIED)
			 rqi = (token-string) same as received in request message
			pc = empty
			Registrar CSE sends response containing:
		PRO Check	• Status Code = 403 (Forbidden)
		HTTP	• X-M2M-RSC: 4103
			X-M2M-RI: (token-string) same as received in request message
			Message-body: empty
		_	Registrar sends response containing:
0		DD 0 01 1	• Response Code = 4.03 (Forbidden)
3	Mca	PRO Check	• oneM2M-RSC: 4103
		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></ae-id>
			Payload:
		PRO Check	• to = AE-ID
		MQTT	• fr = Registrar CSE-ID
		Wiscii	• 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)
	/erdict	TOT OTTECK	pric indicates ansaccessial operation (Delete ent) - no privilege)
	Verdict		
i NO	v C ruict	1	

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Group Management 8.1.9

8.1.9.1

Interoperability Test Description			
Identifier:	TD_M2M_NH_32		
Objective:	AE retrieves group resource		
Configuration:	M2M_CFG_01		
References:	ETSI TS 118 101 [1], clause 10.2.7.3		
ETSI TS 118 104 [2], clause 7.3.12.2.2			
Pre-test conditions:	 AE has created a <group> resource on Registrar CSE</group> 		

	Interoperability Test Description			
Step	RP	Tymo	Test Sequence Description	
3tep	KF	Type 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) 	
		PRO Check HTTP	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;	
2	Mca	PRO Check CoAP	 Sent request contains Method: 0.01 (GET) 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) 	
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/{group} fr = <ae-id> rqi = (token-string)</ae-id></registrar></ae-id>	
		PRO Check Primitive	rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <group> resource</group>	
		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: Serialized representation of <group> resource</group>	
3	Мса	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: Serialized representation of <group> resource</group>	
		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 <group> resource</group></registrar></ae-id>	
4		IOP Check	AE indicates successful operation	
	erdict/			
PRO \	/erdict			

8.1.9.2 Group Create

	Interoperability Test Description				
Identifier:			TD_M2M_NH_31		
Objective			AE creates a group resource		
Configura			M2M_CFG_01		
Reference	es:		ETSI TS 118 101 [1], clause 10.2.7.2		
			ETSI TS 118 104 [2], clause 7.3.12.2.1		
Pre-test c	conditio	ne:	- void		
rie-lesi c	Jonanie	лі э.	void Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a group Create Request		
			• op = 1 (Create)		
			• to = {CSEBaseName}		
		PRO Check	• fr = AE-ID		
		Primitive	• rqi = (token-string)		
			• ty = 9 (group)		
			pc = Serialized representation of <group> resource</group>		
			Sent request contains		
			• Request method = POST		
		DD 0 01 1	Request-Target: {CSEBaseName}		
		PRO Check	Host: IP address or the FQDN of Registrar CSE MANA Black (Indian action)		
		HTTP	• 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>		
	ŀ		Sent request contains		
2			• Method: 0.02 (POST)		
2	Mca		Uri-Host: IP address or the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}		
		PRO Check CoAP	Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-		
			res+json		
	1		• oneM2M-TY: 9		
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string) Devland: Springer depresentation of correspondence		
			Payload: Serialized representation of <group> resource Sent MQTT PUBLISH message:</group>		
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>		
			Payload:		
		DDO Charle	• op = 1 (Create)		
		PRO Check MQTT	• to = {CSEBaseName}		
			• fr = AE-ID		
			• rqi = (token-string)		
			• ty = 9 (group)		
3		IOP Check	 pc = Serialized representation of <group> resource</group> Check if possible that the <group> resource is created in Registrar CSE.</group> 		
			• rsc = 2001 (CREATED)		
		PRO Check	• rqi = (token-string) same as received in request message		
		Primitive	• pc = Serialized representation of <group> resource</group>		
			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		
			Content-Location: URI of the created <group> resource Content Type: analysis for the department of an analysis for the department of the</group>		
4	Mca		Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of <group> resource</group>		
	ŀ		Registrar CSE 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 <group> resource</group>		
			Payload: Serialized representation of <group> resource</group>		

Interoperability Test Description			
	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 = Serialized representation of <group> resource</group></registrar></ae-id>	
5	IOP Check	AE indicates successful operation	
IOP Verdict			
PRO Verdict			

8.1.9.3 Group Update

	Interenerability Test Description				
Identi	fior:				
Objec					
	guration	1:			
	ences:	••			
110.0.1					
Pre-te	st cond	litions:	AE has created a <group> resource on Registrar CSE</group>		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a group Update Request		
			• op = 3 (Update)		
		DDO Ob I	to = {CSEBaseName}/{group}		
		PRO Check Primitive	• fr = AE-ID		
		Primitive	• rgi = (token-string)		
			Test Sequence Description AE is requested to send a group Update Request op = 3 (Update) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string) pc = Serialized representation of <group> resource 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; Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Registrar CSE Sent request contains Method: 0.03 (PUT) Uri-Path: {CSEBaseName}/{group} Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-res+json; oneM2M-FR: AE-ID oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: Serialized representation of <group> resource Sent MQTT PUBLISH message Topic: "/oneM2M/req/<ae-id>/<registrar cse-id="">" Payload: op = 3 (Update) to = {CSEBaseName}/{group} fr = AE-ID or (icken-string) op = 3 (Update) to = {CSEBaseName}/{group} ere (icken-string) pc = Serialized representation of <group> resource code (check if possible that the <group> resource is updated in Registrar CSE</group></group></registrar></ae-id></group></group>		
	Sent request contains • Request method = PUT • Request-Target: {CSEBaseName}/{group} • Host: IP address or the FODN of Registrar CSE				
		PRO Check HTTP			
	 X-M2M-Origin: AE-ID Content-Type: application/vnd.onem2m-res+xml; or application/vnd.on 				
			 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</group> Sent request contains Method: 0.03 (PUT) 		
2	Mca				
	PRO Check • Uri-Path: {CSEBaseName}/{group} • Content-format: application/ynd opem?m-res+yml: or application/ynd opem.	555001			
		I COAP I ''			
			• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string)		
			Payload: Serialized representation of <group> resource</group>		
			Sent MQTT PUBLISH message		
		PRO Check			
		MQTT	to = {CSEBaseName}/{group}		
			• rqi = (token-string)		
3		IOP Check			
		DBO Chook	• rsc = 2004 (CHANGED)		
4	Mca	PRO Check Primitive	 rqi = (token-string) same as received in request message 		
	ivica	1 IIIIIIIVE	• pc = Serialized representation of <group> resource</group>		

	Interoperability Test Description		
		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>
		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 <group> resource</group>
		PRO Check MQTT	Sent 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 <group> resource</group></registrar></ae-id>
5		IOP Check	AE indicates successful operation
IOP V	erdict/		
PRO \	/erdict		

8.1.9.4 Group Delete

	Interoperability Test Description					
Identi	fier:		TD M2M NH_34			
Objec	tive:		AE deletes group resource			
	guration	n:	M2M_CFG_01			
	ences:		ETSI TS 118 101 [1], clause 10.2.7.5			
			ETSI TS 118 104 [2], clause 7.3.12.2.4			
Pre-te	est cond	itions:	AE has created a <group> resource on Registrar CSE</group>			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send a group Delete Request			
		PRO Check Primitive	 op = 4 (DELETE) to = {CSEBaseName}/{group} fr = AE-ID rqi = (token-string) 			
		PRO Check HTTP	Sent DELETE request contains • Request method = DELETE • Request-Target: {CSEBaseName}/{group} • Host: IP address or the FQDN of Registrar CSE • X-M2M-RI: (token-string) • X-M2M-Origin: AE-ID			
2	Mca	PRO Check CoAP	Sent DELETE request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{group} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string)			
		PRO Check MQTT	Sent a MQTT PUBLISH message Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: • op = 4 • to = {CSEBaseName}/{group} • fr = AE-ID • rqi = (token-string)</registrar>			

	Interoperability Test Description			
		PRO Check	• rsc = 2002 (DELETED)	
		Primitive	• rqi = (token-string) same as received in request message	
		PRO Check	Registrar CSE sends response containing:	
		HTTP	• Status Code = 200	
		******	• X-M2M-RSC: 2002	
			X-M2M-RI: (token-string) same as received in request message	
			Registrar sends response containing:	
	Mca	PRO Check CoAP	• Response Code = 2.05	
3			• oneM2M-RSC: 2002	
			oneM2M-RQI: (token-string) same as received in request message	
		PRO Check MQTT	Sent a MQTT PUBLISH message	
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>	
			Payload:	
			• to = AE-ID	
			• 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.	
	/erdict			
PRO \	√erdict			

8.1.10 Node Management

8.1.10.1 Node Create

	Interoperability Test Description				
Identifie	er:		TD_M2M_NH_35		
Objectiv	ve:		AE creates a node resource		
Configu	ıration:		M2M_CFG_01		
Referen	ices:		ETSI TS 118 101 [1], clause 10.2.14.1		
			ETSI TS 118 104 [2], clause 7.3.18.2.1		
Pre-test	t conditie	ons:	• void		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a node Create Request		
			• op = 1 (Create)		
			• to = {CSEBaseName}		
		PRO Check	• fr = AE-ID		
		Primitive	• rqi = (token-string)		
			• ty = 14 (node)		
			pc = Serialized representation of <node> resource</node>		
		PRO Check HTTP	Sent request contains		
			• Request method = POST		
			Request-Target: {CSEBaseName}		
			Host: IP address or the FQDN of Registrar CSE		
			• X-M2M-RI: (token-string)		
			• X-M2M-Origin: AE-ID		
2	Mca		• 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>		

	Interoperability Test Description				
			Sent MQTT PUBLISH message:		
		PRO Check MQTT	Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: • op = 1 (Create) • to = {CSEBaseName} • fr = AE-ID • rqi = (token-string) • ty = 14 (node)</registrar></ae-id>		
			• 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 Primitive	 rsc = 2001 (CREATED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 		
	Mca	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-Location: URI of the created <node> resource Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of <node> resource</node></node>		
4		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 Location-Path: URI of the created <node> resource Payload: Serialized representation of <node> resource</node></node>		
		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 = Serialized representation of <node> resource</node></registrar></ae-id>		
5		IOP Check	AE indicates successful operation		
IOP V	erdict	101 Official	The indicator odococord operation		
PRO V					
	GIUIUL				

8.1.10.2 Node Retrieve

	Interoperability Test Description				
Identifier:			TD_M2M_NH_36		
Objec			AE retrieves node resource		
Confi	guration	1:	M2M_CFG_01		
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.14.2		
			ETSI TS 118 104 [2], clause 7.3.18.2.2		
Pre-te	st cond	itions:	AE has created a <node> resource on Registrar CSE</node>		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE is requested to send a node Retrieve Request		
2	Mca	PRO Check Primitive	 op = 2 (RETRIEVE) to = {CSEBaseName}/{node} fr = AE-ID rqi = (token-string) 		

			Interoperability Test Description
			Sent request contains
			Request method = GET
			Request-Target: {CSEBaseName}/{node}
		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;
			Sent request contains
			• Method: 0.01 (GET)
			Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/{node}
		CoAP	 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="">"</registrar></ae-id>
		55000	Payload:
		PRO Check	• op = 2 (Retrieve)
		MQTT	• to = {CSEBaseName}/{node}
			• fr = <ae-id></ae-id>
			• rqi = (token-string)
			• rsc = 2000 (OK)
		PRO Check Primitive	• rqi = (token-string) same as received in request message
			• pc = Serialized representation of <node> resource</node>
			Registrar CSE sends response containing:
		PRO Check	Status Code =200 (OK)
		HTTP	• X-M2M-RSC: 2000
		пп	X-M2M-R3c. 2000 X-M2M-R1: (token-string) same as received in request message
			Message-body: Serialized representation of <node> resource Pegistrar CSE conde response containing:</node>
			Registrar CSE sends response containing:
		PRO Check	• Response Code = 2.05
3	Mca	CoAP	oneM2M-RSC: 2000 MOM BOL (tale a string) assessed in a second in a second in the second in
			oneM2M-RQI: (token-string) same as received in request message
			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 = 2000
			 rqi = (token-string) same as received in request message
			• pc = Serialized representation of <node> resource</node>
4		IOP Check	AE indicates successful operation
	erdict/		
PRO \	/erdict		

8.1.10.3 Node Update

	Interoperability Test Description				
Identi	fier:		TD_M2M_NH_37		
Objec			AE updates attribute in node resource		
Config	guratior	n:	M2M_CFG_01		
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.14.3		
			ETSI TS 118 104 [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	Type	Description		
1		Stimulus	AE is requested to send a node Update Request		

			Interoperability Test Description
		<u> </u>	Interoperability Test Description op = 3 (Update)
			· · · · ·
		PRO Check	• to = {CSEBaseName}/{node}
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			pc = Serialized representation of <node> resource</node>
			Sent request contains
			• Request method = PUT
		PRO Check	Request-Target: {CSEBaseName}/{node}
		HTTP	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>
			Sent request contains
2			• Method: 0.03 (PUT)
	Mca		Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check	Uri-Path: {CSEBaseName}/{node}
		CoAP	Content-format: application/vnd.onem2m-res+xml; or application/vnd.onem2m-
		007	res+json;
			• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: Serialized representation of <node> resource</node>
			Sent MQTT PUBLISH message
		PRO Check MQTT	Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
			• op = 3 (Update)
			• to = {CSEBaseName}/{node}
l			• fr = AE-ID
1			
			• rqi = (token-string)
		IOD Chaale	• pc = Serialized representation of <node> resource</node>
3		IOP Check	• pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE</node></node>
3		IOP Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED)
3			 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message
3		PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node>
3		PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> Registrar CSE sends response containing:
3		PRO Check	pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource Registrar CSE sends response containing: Code = 200</node></node></node>
3		PRO Check Primitive	pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource Registrar CSE sends response containing: Code = 200 X-M2M-RSC: 2004</node></node></node>
3		PRO Check Primitive	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> Registrar CSE sends response containing: Code = 200 X-M2M-RSC: 2004 X-M2M-RI: (token-string) same as received in request message
3		PRO Check Primitive	pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource 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</node></node></node>
3		PRO Check Primitive	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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>
3		PRO Check Primitive	pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource 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 Registrar CSE sends response containing:</node></node></node></node>
3	Mea	PRO Check Primitive	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> Registrar CSE sends response containing: Response Code = 2.05
	Mca	PRO Check Primitive PRO Check HTTP	pc = Serialized representation of <node> resource Check if possible that the <node> resource is updated in Registrar CSE rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource 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 Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004</node></node></node></node>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message
	Mca	PRO Check Primitive PRO Check HTTP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">"</registrar></ae-id>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Payload:</registrar></ae-id>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">"</registrar></ae-id> Payload: to = AE-ID
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">"</registrar></ae-id> Payload: to = AE-ID fr = Registrar CSE-ID
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> Registrar CSE sends response containing: Code = 200 X-M2M-RSC: 2004 X-M2M-RSI: (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> 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> Sent 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 </registrar></ae-id>
	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> Registrar CSE sends response containing: Code = 200 X-M2M-RSC: 2004 X-M2M-RSI: (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> Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Payload: Serialized representation of <node> resource</node> Sent 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 </registrar></ae-id>
4	Mca	PRO Check Primitive PRO Check HTTP PRO Check CoAP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">"</registrar></ae-id> Payload: to = AE-ID fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 2004 pc = Serialized representation of <node> resource</node>
4		PRO Check Primitive PRO Check HTTP PRO Check CoAP	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> Registrar CSE sends response containing: Code = 200 X-M2M-RSC: 2004 X-M2M-RSI: (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> Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2004 oneM2M-RSC: 2004 oneM2M-RQI: (token-string) same as received in request message Payload: Serialized representation of <node> resource</node> Sent 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 </registrar></ae-id>
4 5 IOP V	Mca /erdict	PRO Check Primitive PRO Check HTTP PRO Check CoAP PRO Check	 pc = Serialized representation of <node> resource</node> Check if possible that the <node> resource is updated in Registrar CSE</node> rsc = 2004 (CHANGED) rqi = (token-string) same as received in request message pc = Serialized representation of <node> resource</node> 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> 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> Sent a MQTT PUBLISH message Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">"</registrar></ae-id> Payload: to = AE-ID fr = Registrar CSE-ID rqi = (token-string) same as received in request message rsc = 2004 pc = Serialized representation of <node> resource</node>

8.1.10.4 Node Delete

	Interoperability Test Description				
Identi	fier:		TD M2M NH 38		
Objec			AE deletes node resource		
	guration	า:	M2M_CFG_01		
References:			ETSI TS 118 101 [1], clause 10.2.14.4		
			ETSI TS 118 104 [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		
			• op = 4 (DELETE)		
		PRO Check	• to = {CSEBaseName}/{node}		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			Sent DELETE request contains		
			Request method = DELETE		
		PRO Check	Request-Target: {CSEBaseName}/{node}		
		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)		
	IVICa	PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE		
		CoAP	Uri-Path: {CSEBaseName}/{node}		
		COAI	• oneM2M-FR: AE-ID		
			oneM2M-RQI: (token-string) Sent a MOTT PURILENT massage.		
			Sent a MQTT PUBLISH message Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 4		
		MQTT	• to = {CSEBaseName}/{node}		
			• fr = AE-ID		
			• rqi = (token-string)		
		PRO Check	• rsc = 2002 (DELETED)		
		Primitive	• rqi = (token-string) same as received in request message		
		1 1111111111	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	00/11	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 <node> resource is deleted in Registrar CSE.</node>		
5		IOP Check	AE indicates successful operation		
IOP V	/erdict				
	/erdict				

8.1.11 PollingChannel Management

8.1.11.1PollingChannel Create

	Interoperability Test Description				
Identif	ier:		TD_M2M_NH_39		
Object	tive:		AE creates a <pollingchannel> resource in registrar CSE via a Create Request</pollingchannel>		
Config	juration):	M2M_CFG_01		
References:			ETSI TS 118 101 [1], clause 10.2.13.2		
			ETSI TS 118 104 [2], clause 7.3.21.2.1		
_		•.•			
Pre-te	st cond	itions:	AE has created an application resource <ae> on registrar CSE</ae>		
0.			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE sends a request to create a < pollingChannel >		
			• op = 1 (Create)		
		BB 0 01 1	to = {CSEBaseName}/URI of <ae> resource</ae>		
		PRO Check	• fr = AE-ID		
		Primitive	• rqi = (token-string)		
			ty = 15 (pollingChannel) Optic line of a polling Channel Op		
			pc = Serialized representation of < pollingChannel > resource Continuous contains Continuous contain		
			Sent request contains • Request method = POST		
			·		
		PRO Check	 Request-Target:{CSEBaseName}/URI of <ae> resource</ae> Host: IP address or the FQDN of Registrar CSE 		
		HTTP	Nost. IF address of the FQDN of Registral CSE X-M2M-RI: (token-string)		
		HIIP	• 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		
			Sent request contains		
2			Method: 0.02 (POST)		
	Mca		Uri-Host: IP address or the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}/URI of <ae> resource</ae>		
		PRO Check	Content-type: application/vnd.onem2m-res+xmlor application/vnd.onem2m-res+json		
		CoAP	• 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>		
			• fr = AE-ID		
			 rqi = (token-string) ty = 15 (pollingChannel) 		
			 ty = 13 (pollingChannel) pc = Serialized representation of < pollingChannel > resource 		
3		IOP Check	Check if possible that the < pollingChannel > resource is created in registrar CSE.		
			• rsc = 2001 (CREATED)		
		PRO Check	• rqi = (token-string) same as received in request message		
		Primitive	• pc = Serialized representation of < pollingChannel > resource		
			Registrar CSE sends response containing:		
4			Status Code = 201 (Created)		
4	Mca	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+xml or application/vnd.onem2m-res+json		
			Message-body: Serialized representation of < pollingChannel > resource		

	Interoperability Test Description			
		PRO Check CoAP	Registrar 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 resource 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 = 2001 (CREATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of < pollingChannel > resource</registrar>	
5		IOP Check	AE indicates successful operation	
IOP \	/erdict			
PRO \	Verdict			

8.1.11.2 PollingChannel Retrieve

	Interoperability Test Description				
Identi	fier:		TD M2M NH 40		
Objec			AE retrieves information of a pollingChannel resource via a Retrieve Request		
	Configuration:		M2M_CFG_01		
	ences:	1.	ETSI TS 118 101 [1], clause 10.2.13.3		
IVEIG	ciices.		ETSI TS 118 101 [1], clause 10.2.13.3 ETSI TS 118 104 [2], clause 7.3.21.2.2		
			L13 13 110 104 [2], clause 1.3.21.2.2		
Pro-to	st cond	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>		
110-10	St Cond	iitions.	AE has created an Application Entity resource < AE> on Registrar CSE AE has created a container resource < pollingChannel > on Registrar CSE		
			Test Sequence		
Step	RP	Typo	Description		
1	NF	Type Stimulus	AE is requested to send a Retrieve Request for a < pollingChannel >		
<u> </u>		Sumulus			
			op = 2 (Retrieve) (205 Base Name) // IBL of a selling Observed.		
		PRO Check	to = {CSEBaseName}/URI of < pollingChannel > resource		
		Primitive	• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		
			Sent request contains		
		PRO Check HTTP	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		
			Sent request contains		
2	Mca		Method: 0.01 (GET)		
	IVICA	DDO Chaole	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/reg/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 2 (Retrieve)		
		MQTT	 to = {CSEBaseName}/URI of < pollingChannel > resource 		
			• fr = AE-ID		
			• rqi = (token-string)		
			• pc = empty		
			• rsc =2000 (OK)		
3	l	PRO Check	• rqi = (token-string) same as received in request message		
	Mca	Primitive	 pc = Serialized representation of < pollingChannel > resource 		
			Fig. 1 → pc = Senanzed representation of < poining channel > resource		

	Interoperability Test Description		
			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 Produced a Content-format: 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
			• pc = Serialized representation of < pollingChannel > resource
4		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO \	√erdict		

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
	ences:		ETSI TS 118 101 [1], clause 10.2.13.4
			ETSI TS 118 104 [2], clause 7.3.21.2.3
Pre-te	st cond	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>
			AE has created a container resource <container> on Registrar CSE</container>
			Test Sequence
Step	RP	Туре	Description
1		Stimulus	AE is requested to send a pollingChannel Update Request to update the lifetime of the resource.
2	Mca	PRO Check Primitive PRO Check HTTP	 op = 3 (Update) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = Serialized representation of updated < pollingChannel > resource Sent request contains Request method = PUT 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 Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of updated < pollingChannel > resource
		PRO Check CoAP	Sent request contains • Method: 0.03 (PUT) • 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) • Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json • Payload: Serialized representation of updated < pollingChannel > resource

	Interoperability Test Description				
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• op = 3 (Update)		
		MQTT	 to = {CSEBaseName}/URI of < pollingChannel > resource 		
			• fr = AE-ID		
			• rqi = (token-string)		
			 pc = Serialized representation of updated < pollingChannel > resource 		
3		IOP Check	Check if possible that the < pollingChannel > resource is updated in Registrar CSE.		
		PRO Check	• rsc = 2004 (Updated)		
		Primitive	 rqi = (token-string) same as received in request message 		
		Tillillill	 pc = Serialized representation of < pollingChannel > resource 		
			Registrar CSE sends response containing:		
		PRO Check	• 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 < pollingChannel > resource		
			Registrar sends response containing:		
		PRO Check CoAP	• Response Code = 2.04		
4	Mca		• 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		
			Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Registrar CSE-ID		
		IVIQTI	• rsc = 2004 (Updated)		
			 rqi = (token-string) same as received in request message 		
			 pc = Serialized representation of modified < pollingChannel > resource 		
5		IOP Check	AE indicates successful operation		
	/erdict	3. 223.			
	√erdict				

8.1.11.4 pollingChannel Delete

	Interoperability Test Description						
Identi	fier:		TD_M2M_NH_42				
Objec	tive:		AE deletes a pollingChannel resource via a Delete Request				
Confi	guratio	า:	M2M_CFG_01				
	ences:		ETSI TS 118 101 [1], clause 10.2.13.5				
			ETSI TS 118 104 [2], clause 7.3.21.2.4				
Pre-te	st conc	litions:	AE has created an Application Entity resource <ae> on Registrar CSE</ae>				
			AE has created a container resource <container> on Registrar CSE</container>				
			Test Sequence				
Step	RP	Туре	Description				
1		Stimulus	AE is requested to send a subscription Delete Request				
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = empty 				
		PRO Check HTTP	Sent request contains Request method = DELETE 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				

	Interoperability Test Description				
		PRO Check CoAP	Sent request contains • Method: 0.04 (DELETE) • 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 = 4 (Delete) to = {CSEBaseName}/URI of < pollingChannel > resource fr = AE-ID rqi = (token-string) pc = empty</registrar>		
3		IOP Check	Check if possible that the < pollingChannel > resource is deleted in registrar CSE.		
		PRO Check Primitive	 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		
4	Mca	PRO Check CoAP	Registrar sends response containing: Response Code = 2.02 oneM2M-RSC: 2002(DELETED) 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(DELETED) • rqi = (token-string) same as received in request message</registrar>		
5		IOP Check	Check if possible that the < pollingChannel > resource has been removed in registrar CSE.		
6		IOP Check	AE indicates successful operation		
	erdict	75. 5110011			
PRO \	/erdict				

8.1.11.5 Long Polling on a PollingChannel Retrieve

	Interoperability Test Description					
Identifier:			TD_M2M_NH_43			
Objec	tive:		AE retrieves information of a pollingChannel resource via a Retrieve Request			
Confi	guratior	າ:	M2M_CFG_01			
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.13.7			
			ETSI TS 118 104 [2], clause 7.3.22.2.2			
Pre-test conditions:			 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>			
2	Mca	PRO Check Primitive	Sent RETRIEVE request contains • To: <csebase>/<ae>/<pollingchannel>/pollingChannelURI • Fr. AE-ID</pollingchannel></ae></csebase>			

	Interoperability Test Description				
	Sent GET request contains				
		PRO Check	Request URI <csebase>/<ae>/<pollingchannel>/pollingChannelURI</pollingchannel></ae></csebase>		
		HTTP	Host: Registar CSE		
			Payload: empty		
			Sent GET request contains		
			• Method: 0.01 (GET)		
			Uri-Host: Registrar CSE host		
		PRO Check	Uri-Port: Registrar CSE port		
		CoAP	Uri-Path: <csebase></csebase>		
			• Uri-Path: <ae></ae>		
			Uri-Path: < pollingChannel >		
			URI-Path: pollingChannelURI		
		PRO Check			
		MQTT			
			Sent RETRIEVE response contains		
		DDO Obrada	• <i>To</i> : AE-ID		
		PRO Check	• Fr. CSE-ID		
		Primitive	Response Statuse Code : OK		
			Cn: pending Notification request		
		PRO Check	Registrar CSE sends response containing:		
3		HTTP	• Code = 200		
	Mca		Payload: Response PRO Check Primitive with Content set with Notification request		
			Registrar sends response containing:		
		PRO Check	• Response Code = 2.05		
		CoAP	 Payload: Response PRO Check Primitive with Content set with Notification request 		
		PRO Check	T ayload. Nesponse i No oncok i ilililave with content set with notineation request		
		MQTT			
4		IOP Check	AE indicates successful operation		
5			Repeat steps 1-2. There is no pending request. When the Request Expiration Timestamp		
э			expires Registrar sends response indicating "REQUEST_TIMEOUT"		
			Sent RETRIEVE response contains		
		PRO Check	• <i>To</i> : AE-ID		
		Primitive	• Fr. CSE-ID		
			Response Statuse Code: REQUEST_TIMEOUT		
		PRO Check	Registrar CSE sends response containing:		
6	Мса	HTTP	• Code = 408		
ס					
		PRO Check CoAP	Registrar sends response containing:		
			• Response Code = 4.04		
			• oneM2M-RSC = 4008		
		PRO Check			
		MQTT			
	erdict/				
PRO \	/erdict				

8.1.12 FanoutPoint Management

8.1.12.1 FanoutPoint Create

			Interoperability Test Description	
Identi	fier:		TD_M2M_NH_44	
Objec	tive:		AE creates a <contentinstance> resource in each group member</contentinstance>	
Confi	guratio	n:	M2M_CFG_01	
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.7.6	
			ETSI TS 118 104 [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	
1		Stimulus	AE is requested to send a Create Request to create <contentinstance> in each group member</contentinstance>	

			Interoperability Test Description
			• op = 1 (Create)
			 to = {CSEBaseName}/{group}/fanOutPoint
		PRO Check	• fr = AE-ID
		Primitive	• rqi = (token-string)
			• ty = 4 (contentInstance)
			 pc = Serialized representation of <contentinstance> resource</contentinstance>
			Sent request contains
			• Request method = POST
			Request-Target: {CSEBaseName}/{group}/fanOutPoint
		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=4 or application/vnd.onem2m-
			res+json; ty=4
			 Message-body: Serialized representation of < contentInstance > resource
	Ch a ale		Sent request contains
2	Check		• Method: 0.02 (POST)
	Mca		Uri-Host: IP address or the FQDN of Registrar CSE
		DDO Obrada	Uri-Path: {CSEBaseName}/{group}/fanoutPoint
		PRO Check CoAP	 Content-type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
		COAP	• oneM2M-TY: 4
			• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Payload: Serialized representation of <contentinstance> resource</contentinstance>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		PRO Check MQTT	Payload:
			• op = 1 (Create)
			to = {CSEBaseName}/{group}/fanOutPoint
			• fr = AE-ID
			• rqi = (token-string)
			• ty = 4 (contentInstance)
			pc = Serialized representation of <contentinstance> resource</contentinstance>
4		IOP Check	Check if possible that the <contentinstance> resource is created in each member hosting CSE</contentinstance>
			• rsc = 2001 (CREATED)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	• pc = aggregated response
			Registrar CSE sends response containing:
		DDO C' '	• Status Code = 201 (OK)
		PRO Check HTTP	• X-M2M-RSC: 2001
		111117	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 = 2.01
'	Mca	CoAP	• oneM2M-RSC: 2001
		COAP	 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>
		PRO Check MQTT	Payload:
			• to = AE-ID
			• fr = Registrar CSE-ID
			• rsc = 2001 (CREATED)
			rqi = (token-string) same as received in request message
-	1	IOD Charle	pc = aggregated response A F indicates successful energian
8 IOP \	/erdict	IOP Check	AE indicates successful operation aggregrate response includes responses from each member of the group
	Verdict	verily triat trie a	aggregrate response includes responses nom each member of the group
LKO	verdict		

8.1.12.2 FanoutPoint Retrieve

Check Mca PRO Check CoAP Province Topic: "/oneM2M/RQI: (token-string) same as received in request message Province Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">" Province Topic: "/oneM2M/resp/<ae-id>/<registrar cse-id="">/ Province Topic: "/oneM2M/resp/<ae-id>/ Province</ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id>				Interoperability Test Description
Configuration: M2M_CFG_01				
ETSI TS 118 101 [1], clause 10.2.7.8				AE retrieves the <container> resource from in each group member</container>
Pre-test conditions: • A group is created containing 2 members of type <container> Step RP Type</container>	Config	juration	:	
Pre-test conditions:	References:			
Test Sequence PRP Type				ETSI TS 118 104 [2], clause 7.3.14.3.2
Test Sequence PRP Type	_			
Step	Pre-tes	st cond	itions:	
Stimulus				
PRO Check Primitive PRO Check Pro Check PRO Check Mca PRO Check Mcar PRO Check Mca PRO Check HTTP PRO Check Mca PRO Check Mca PRO Check HTTP PRO Check Mca PRO Check Mca PRO Check HTTP PRO Check Mca PRO Check		RP	Туре	
PRO Check Primitive To = (CSEBaseName)/(group)/fanOutPoint	1		Stimulus	
## ACTT OF 2 (Retireve)	2		Primitive PRO Check HTTP PRO Check CoAP	 to = {CSEBaseName}/{group}/fanOutPoint fr = AE-ID rqi = (token-string) Sent request contains Request method = GET Request-Target: {CSEBaseName}/{group}/fanOutPoint Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE 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> Payload:
PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO Check HTTP PRO Check HTTP PRO Check HTTP Check Mca PRO Check CoAP PRO Check Mca PRO Chec			MQTT	to = {CSEBaseName}/{group}/fanOutPointfr = AE-ID
PRO Check Primitive • rqi = (token-string) same as received in request message • pc = aggregated response 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+j • Message-body: aggregated response Registrar CSE sends response containing: • Response Code = 2.05 • 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="">" Payload: • ft = Registrar CSE-ID • fr = Registrar CSE-ID • rsc = 2000 (OK) • rqi = (token-string) same as received in request message</registrar></ae-id>	4		IOP Check	
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+j Message-body: aggregated response Registrar CSE sends response containing: Response Code = 2.05 oneM2M-RSC: 2000 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="">" Payload: PRO Check MQTT fr = Registrar CSE-ID orsc = 2000 (OK) orqi = (token-string) same as received in request message</registrar></ae-id>				 rqi = (token-string) same as received in request message
Registrar CSE sends response containing: Response Code = 2.05 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="">" Payload: PRO Check MQTT PRO Check MQTT of r = Registrar CSE-ID of rsc = 2000 (OK) orqi = (token-string) same as received in request message</registrar></ae-id>				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
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</registrar></ae-id>	7		Ica PRO Check	 Response Code = 2.05 oneM2M-RSC: 2000 oneM2M-RQI: (token-string) same as received in request message Payload: aggregated response
			MQTT	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 = aggregated response</registrar></ae-id>
8 IOP Check AE indicates successful operation				
IOP Verdict Verify that the aggregrate response includes responses from each member of the group			Verify that the a	ggregrate response includes responses from each member of the group
PRO Verdict	PRO V	/erdict		

8.1.12.3 FanoutPoint Update

			Interoperability Test Description
Identi			TD_M2M_NH_46
Objec			AE updates an <container> resource of each member resource</container>
	guration):	M2M_CFG_01
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.7.9
			ETSI TS 118 104 [2], clause 7.3.14.3.3
Dro-to	est cond	itions:	A group is greated containing 2 members of type grountainers
F16-16	ssi conu	itions.	A group is created containing 2 members of type <container> Test Sequence</container>
Step	RP	Туре	Description
		Stimulus	AE is requested to send a Update Request to the fanoutPoint of <group> resource to</group>
1		C 1a.c	lifetime of the resource.
		PRO Check Primitive	 op = 3 (Update) to = {CSEBaseName}/{group}/fanOutPoint fr = AE-ID rqi = (token-string) pc = Serialized representation of <container> resource</container>
		PRO Check HTTP	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/vnd.onem2m-res+json; Message-body: Serialized representation of < container > resource
2	Check Mca	PRO Check CoAP	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/vnd.onem2m-res+json; • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string) • Payload: Serialized representation of <container> resource</container>
		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
4	Check Mca	-	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
		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

	Interoperability Test Description			
		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 = 2004 (CHANGED) • rqi = (token-string) same as received in request message • pc = aggregated response</registrar></ae-id>	
5		IOP Check	AE indicates successful operation	
IOP \	/erdict	Verify that the a	aggregrate 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
Objective:			AE deletes a <container> ofeach member</container>
Configu	uration:		M2M_CFG_01
Referen	nces:		ETSI TS 118 101 [1], clause 10.2.7.10
			ETSI TS 118 104 [2], clause 7.3.14.3.4
_			
Pre-test	t conditi	ons:	A group is created containing 2 members of type <container></container>
			Test Sequence
Step	RP	Type	Description (Prince)
1		Stimulus	AE is requested to send a Delete 'oldest' Request to the fanoutPoint of <group> resource</group>
			• op = 4 (Delete)
		PRO Check	 to = {CSEBaseName}/{group}/fanOutPoint
		Primitive	• fr = AE-ID
			• rqi = (token-string)
			Sent request contains
		PRO Check	Request method = DELETE
		HTTP	Request-Target: {CSEBaseName}/{group}/fanOutPoint
			Host: IP address or the FQDN of Registrar CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
2	Check	DD0 01 1	Sent request contains
2	Mca		Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE
		PRO Check CoAP	Uri-Path: {CSEBaseName}/{group}/fanoutPoint
		COAP	• oneM2M-FR: AE-ID
			oneM2M-RQI: (token-string)
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/reg/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 4 (Delete)
		MQTT	to = {CSEBaseName}/{group}/fanOutPoint
			• fr = AE-ID
			rqi = (token-string)
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	 rqi = (token-string) same as received in request message
	Check Mca	Fillillive	• pc = aggregated response
			Registrar CSE sends response containing:
3		PRO Check HTTP	• Status Code = 200 (OK)
			• X-M2M-RSC: 2002
			X-M2M-RI: (token-string) same as received in request message
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-
1			res+json
			Message-body: aggregated response

	Interoperability Test Description			
	PRO Check CoAP	Registrar CSE sends response containing: • Response Code = 2.02 • oneM2M-RSC: 2002 • 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 = 2002 (DELETED) • rqi = (token-string) same as received in request message • pc = aggregated response</registrar></ae-id>		
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 Verdi	ct Verify that the	aggregrate response includes responses from each member of the group		
PRO Verd	lict			

8.1.13 Notifcation Management

8.1.13.1 Notification Create

	Interoperability Test Description				
Identi	ifier:		TD_M2M_NH_48		
Objective:			AE receives a notification request from the HOST CSE		
Confi	guratior	1:	M2M_CFG_01		
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.12 ETSI TS 118 104 [2], clause 7.4.1		
			, 		
Pre-te	est cond	litions:	 AE1 has created an application resource <ae> on registrar CSE</ae> AE1 has created a container resource <container> on registrar CSE</container> AE1 has created a <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 		
			Test Sequence		
Step	RP	Type	Description		
1		Stimulus	AE2 is requested to send a Create request to create <contentinstance> in the <container> created by AE1. This triggers or causes the HOST CSE to send a notification to AE1.</container></contentinstance>		
		PRO Check Primitive	 op = 5 (Notify) to = notificationURI of subscription resource from = Registrar CSE-ID rqi = (token-string) pc = Serialized representation of Notification data object 		
2	Check Mca	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; Message-body: Serialized Representation of Notification data object		

	Interoperability Test Description			
		PRO Check CoAP	Sent request contains • Method: 0.02 (POST) • Uri-Host: notificationURI host • Uri-Port: notificationURI port • Uri-Path: AE1 AE-ID • 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	
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/ <registrar cse-id="">/<ae-id>" Payload: op = 5 (Notify) to = notificationURI of subscription resource fr = Registrar CSE-ID rqi = (token-string) pc = empty</ae-id></registrar>	
4		IOP Check	Check if the notification representation	
	Check Mca	PRO Check Primitive	Sent response contains • rsc = 2000 (OK) • rqi = (token-string) same as received in request message	
		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 \	√erdict			

8.2 Non blocking configuration testing

8.2.1 Synchronous request

8.2.1.1 Container management

8.2.1.1.1 Container Create

	Interoperability Test Description					
Identif	ier:		TD_M2M_NB_01			
Objec	Objective:		AE creates a <container> resource using non blocking synchronous request in registrar</container>			
			CSE.			
Config	guratior	ո։	M2M_CFG_01			
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.4.1			
			ETSI TS 118 104 [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></container>			
'			resource in registrar CSE			

	Interoperability Test Description				
			Sent request contains		
			• op = 1 (Create)		
			• to = {CSEBaseName}		
		PRO Check	• fr= AE-ID		
		Primitive	 rqi = (token-string) rt = 1 (non blocking synchronous) 		
			• ty = 3 (container)		
			 ty = 6 (container) pc = Serialized Representation of the <container> resource</container> 		
			Sent request contains		
			• Request method = POST		
			• Reques-Target: {CSEBaseName}?rt=1		
		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</container>		
			Sent request contains		
2	Mca		• Method: 0.02 (POST)		
			Uri-Host: IP address or the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}		
		PRO Check	• Uri-Query: rt=1		
		CoAP	 oneM2M-FR: AE-ID oneM2M-RQI: (token-string) 		
			Onemizivi-RQI. (loken-string) Content Type = application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json		
			• oneM2M-TY: 3		
			Payload: Serialized Representation of <container> resource</container>		
			Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>		
			Payload:		
		PRO Check MQTT	• op = 1 (Create)		
			to = {CSEBaseName}fr= AE-ID		
			• rqi = (token-string)		
			• rt = 1 (non blocking synchronous)		
			• ty = 3 (container)		
			• pc = Serialized Representation of the <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</request> 		
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>		
		DD 0 01 1	response containing:		
		PRO Check HTTP	• Status Code = 202		
		ппг	• 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 greates on internal all Page 1991. Registrar CSE greates on internal all Page 1991. Registrar CSE greates on internal all Page 1991.</request>		
3	Mca		Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request>		
3	IVICA	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>		
		PRO Check MQTT	Payload: • to = AE-ID		
			• fr = Registrar CSE-ID		
			• rqi = (token-string) same as received in request message		
			• rsc = 1000 (Accepted)		
	<u> </u>		• 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>		

			Interoperability Test Description
			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	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	Uri-Path: <request> reference</request>
		00/	• oneM2M-FR: AE-ID
			• oneM2M-RQI: (token-string)
			Payload: empty
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
		DD0 01 1	Payload:
		PRO Check	op = 2to = <request> reference</request>
		MQTT	• 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>
			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
		11111	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		• Response Code= 2.03 • oneM2M-RSC: 2000
'	IVICA	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
		00/11	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>
8		IOP Check	and the "operationResult" parameter containing the <container> resource. AE indicates successful operation</container>
	'erdict	IOI OHECK	The indicates successful operation
	/erdict		

8.2.1.1.2 Container Retrieve

Identifier: TD_M2M_NB_02		Interoperability Test Description				
Configuration: M2M CFG 01	Identifier:					
Configuration: M2M_CFG_01 References: ETSI TS 118 101 [1], clause 10.2.4.1 ETSI TS 118 104 [2], clause 7.3.6.2.1 Pre-test conditions:	Objec	tive:				
ETSI TS 118 101 [1], clause 10.2.4.1	Confi					
Pre-test conditions:						
Pre-test conditions:	IVEIGI	ciices.				
Test Sequence Step RP Type						
Step RP Type Stimulus	Pre-te	st cond	litions:			
AE is requested to send a non blocking synchronous request to retrieve the <container> resource from registrar CSE. Sent request contains • op = 2 (Retrieve) • to = (CSEBaseName)/URI of <container> resource • fr= AE-ID • rr = (loken-string) • rt = 1 (non blocking synchronous) • pc = empty Sent request contains • Request method = POST • Request method = POST • Request Target* (CSEBaseName)/URI of <container> resource ?rt=1 Host: IP address or the FQDN of Registrar CSE **X-M2M-MR: (token-string) • X-M2M-MR: (token-string) • X-M2M-MR: (token-string) • Mestador (OAP) **Sent Nort PubLISH message: Topic: 'OneM2M-RG: '(koken-string) • payload: **PRO Check MOTT **PRO Check MOTT **PRO Check MOTT **PRO Check Primitive **PRO Check PRO Check Primitive **PRO Check PRO Check Primitive **PRO Check PRO Check Primitive **PRO Check PRO Check Primitive **PRO Check PRO Check PRO Check PRO Check PRO Check HTTP **PRO Check PRO Check P</container></container></container>	_					
PRO Check Primitive PRO Check CoAP PRO Check Primitive PRO Check PRO Check Primitive PRO Check P	Step	RP				
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 Request method = POST Request request (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: 0.01 (GET) Uri-Path: (CSEBaseName)/URI of <container> resource ?rt=1 Host: IP address or the FQDN of Registrar CSE Uri-Query: rt=1 Uri-Path: (CSEBaseName)/URI of <container> resource Uri-Query: rt=1 oneM2M-FR: AE-ID oneM2M2M2M2 oneM2M2 oneM2M2 oneM2M2 oneM2M2 oneM2M2 oneM2M</container></container></container></container>	1		Stimulus			
PRO Check Primitive - in p = 2 (Retrieve)						
PRO Check HTTP Acquest method = POST Request contains Request method = POST Request contains Request method = POST Request method =				·		
Primitive Primitive Frace			PRO Chack			
# rqi = (token-string)						
PRO Check HTTP Mca Mca Mca Mca Mca Mca Mca Mc						
Sent request contains Request method = POST Request method = POST Request 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: 0.01 (GET) Uri-Path: (CSEBaseName)/URI of <container> resource Uri-Query: rt=1 OneM2M-RE: AE-ID OneM2M-RE: AE-ID OneM2M-RE: AE-ID PRO Check MQTT PRO Check MQTT PRO Check Primitive Registrar CSE (reates an internal <request> resource and sends acknowledgement response containing: Size = 1000 (Accepted) Origi = token-string) same as received in request message PRO Check HTTP Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Sixue CSE creates an internal <request> resource and sends acknowledgement response containing: Sixue CSE creates an internal <request> resource and sends acknowledgement response containing: Sixue Code = 202 X-M2M-RSC: 1000 X-M2M-RIC token-string) same as received in request message Message-Body: Reference to the created <request> resource and sends acknowledgement response containing: Sixue Code = 202 X-M2M-RSC: 1000 X-M2M-RIC token-string) same as received in request message Message-Body: Reference to the created <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Response Code = None OneM2M-RSC=1000 NoneM2M-RSC=1000 NoneM2M-RSC=1000</request></request></request></request></request></request></request></container></container>				,		
PRO Check HTTP Request method = POST 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-RI: (token-string) X.M2M-Porigin: AE-ID Message-Body: empty Sent request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP add</container>						
PRO Check HTTP Request-Target: (CSEBaseName)/URI of <container> resource ?rt=1 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (koken-string) X-M2M-Origin: AE-ID Message-Body: empty Sent request contains Method: 0.01 (GET) Uri-Path: (CSEBaseName)/URI of <container> resource Uri-Query: rt=1 oneM2M-FR: AE-ID oneM2M-FR</container></container>						
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: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE PRO Check CoAP Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Uri-Host: IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve) Op = Q (Retrieve) IP address or the FQDN of Registrar CSE Op = Q (Retrieve)			PRO Check			
Mca						
Mca Mca Sent request contains						
Sent request contains • Method: 0.01 (GET) • Uri-Host: IP address or the FQDN of Registrar CSE Uri-Query: rt=1 • oneMZM-R: AE-ID • oneMZM-RQI: (token-string) • Payload: empty Sent MQTT PUBLISH message: Topic: "/oneMZM'req/< AE-ID>" Payload: • op = 2 (Retrieve) • to = (CSEBaseName)/URI of <container> resource fr = AE-ID • one MZM-RQI: (token-string) • payload: • op = 2 (Retrieve) • to = (CSEBaseName)/URI of <container> resource • fr = AE-ID • rqi = (token-string) • rt = 1 (non blocking synchronous) • pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: 1000 • X-M2M-RSC: 1000 • X-M2M-RSC: 1000 • Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Response Code = None Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Response Code = None • oneMZM-RSC=1000</request></request></request></request></container></container>				X-M2M-Origin: AE-ID		
Mca						
PRO Check CoAP Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: (CSEBaseName)/URI of <container> resource Uri-Query: rt=1</container>						
PRO Check CoAP Uri-Path: (CSEBaseName)/URI of <container> resource 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: o p = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource ff= AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: rsc = 1000 (Accepted) rqi = token-string) same as received in request message pc = Reference to the created <request> resource and sends acknowledgement response containing: Status Code = 202 X-M2M-RSC: 1000 X-M2M-RSI: 1000 X-M2M-RI= token-string) same as received in request message Message-Body: Reference to the created <request> resource and sends acknowledgement response containing: Status Code = 202 X-M2M-RSI: 1000 X-M2M-RI= token-string) same as received in request message Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Response Code = None Response Code = None Response Code = None Response Code = None</request></request></request></request></request></request></request></container></registrar></container>	2	Mca				
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OneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: Op = 2 (Retrieve)</registrar>						
PRO Check Primitive PRO Check Primitive PRO Check HTTP PRO Check Primitive PRO Check Primitive PRO Check HTTP PRO Check Primitive PRO Check Primiti				·		
PRO Check Primitive Maximitive PRO Check HTTP PRO Check Primitive Maximitive PRO Check Primitive PRO Check PRO Check Primitive PRO Check PRO Check PRO Check Primitive PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO Che						
Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: resc = 1000 (Accepted) rqi = token-string) same as received in request message pc = Reference to the created <request> resource 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 Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request></request></request></request></request></request></request></request></request></request></request></request></request></request></request></container></registrar>						
PRO Check MQTT PRO Check Primitive PRO Check Primitive PRO Check HTTP PRO Check PRO Check HTTP PRO Check PRO Chec						
PRO Check MQTT op = 2 (Retrieve) to = {CSEBaseName}/URI of <container> resource fr = AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: resonse containing: resonse containing: response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing:</request></request></request></request></request></request></container>						
** to = {CSEBaseName}/URI of <container> resource ** fr= AE-ID ** rqi = (token-string) ** rt = 1 (non blocking synchronous) ** pc = empty PRO Check Primitive</container>						
MQTT			PRO Check			
PRO Check Primitive PRO Check Processian internal contains an internal contains an internal contains and internal con			MQTT			
PRO Check Primitive PRO Check PRO Check HTTP PRO Check PRO Check HTTP Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Status Code = 202 X-M2M-RSC: 1000 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: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Registrar CSE creates An internal <request> resource and sends acknowledgement response containing: Registrar CSE creates An internal <request> resource and sends acknowledgement response containing: Registrar CSE creates An internal <request> resource and sends acknowledgement response containing: Registrar CSE creates An internal <request> resource and sends acknowledgement response containing: Registrar CSE creates An internal <request> resource and sends acknowledgement response containing:</request></request></request></request></request></request></request></request></request>						
PRO Check Primitive Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • Status Code = 202 • X-M2M-RSC: 1000 • 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</request></request></request></request></request>						
PRO Check Primitive response containing:						
PRO Check 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 <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: PRO Check CoAP • rsc = 1000 (Accepted) • rqi = 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</request></request></request></request></request></request>						
PRO Check HTTP PRO Check COAP PRO Check HTTP			PRO Check			
PRO Check HTTP 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 Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check COAP Response Code = None oneM2M-RSC=1000</request></request></request>			Primitive			
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 Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Response Code = None oneM2M-RSC=1000</request></request></request></request></request>						
PRO Check HTTP Status Code = 202						
Mca HTTP 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: PRO Check CoAP Response Code = None oneM2M-RSC=1000</request></request>			DDO Chaak			
X-M2M-RSC: 1000						
Message-Body: Reference to the created <request> resource Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Response Code = None oneM2M-RSC=1000</request></request>	3	Mca				
Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: PRO Check CoAP Registrar CSE creates an internal <request> resource and sends acknowledgement response Containing: • Response Code = None • oneM2M-RSC=1000</request></request>						
response containing: PRO Check CoAP Response Code = None oneM2M-RSC=1000						
PRO Check • Response Code = None CoAP • oneM2M-RSC=1000						
CoAP • oneM2M-RSC=1000			PRO Check			
oneM2M-RQI = (token-string) same as received in request message						
Payload: Reference to the created <request> resource</request>				Payload: Reference to the created <request> resource</request>		

	Interoperability Test Description				
			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)		
			X-M2M-Origin: AE-ID		
			Message-Body: empty		
6	Mca		Sent GET request contains		
			Method: 0.01 (GET)		
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE		
		CoAP	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		
		BB0 6: 1	• 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:		
			Status Code = 200 NAMA BOOL 2000		
		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		
7	Mca		Message-Body: <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "language to parameter and the complete to the compl</request>		
			(COMPLETED) and the "operationResult" parameter containing the <container></container>		
			resource.		
			Registrar CSE sends response to AE containing:		
			• Response Code= 2.05		
		DDO Chaal	• 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 (COMPLETED) and the "operation Popult" parameter containing the «Container».</request>		
			(COMPLETED) and the "operationResult" parameter containing the <container></container>		
			resource.		

	Interoperability Test Description			
		PRO Check MQTT	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 = 2000 (OK) • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request></registrar>	
8		IOP Check	AE indicates successful operation	
IOP \	√erdict			
PRO '	Verdict			

8.2.1.1.3 Container Update

0	1.1.5	Conta	inei Opuale
			Interoperability Test Description
Identifier:			TD_M2M_NB_03
Objective:			AE updates a <container> resource using non blocking synchronous request in registrar CSE.</container>
Config	guration	า:	M2M_CFG_01
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.4.1
			ETSI TS 118 104 [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	Туре	Description
1		Stimulus	AE is requested to send a non blocking synchronous request to update the <container> resource.</container>
		PRO Check Primitive	Sent request contains op = 3 (Update) to = {CSEBaseName}/URI of <container> resource fr= AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = Serialized Representation of the updated <container> resource</container></container>
		PRO Check HTTP	 Sent request contains Request method = UPDATE Reques-Target: {CSEBaseName}/URI of <container> resource?rt=1</container> 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 <container> resource</container>
2	Mca	PRO Check CoAP	Sent request contains • Method: 0.03 (UPDATE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/URI of <container> resource • 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></container>
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: op = 3 (Update) to = {CSEBaseName}/URI of <container> resource fr= AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = Serialized Representation of updated <container> resource</container></container></registrar>

			Interoperability Test Description
			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	Mca		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)
4		IOD Ob a als	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
		DDO Chook	 op = 2 (Retrieve) to = <request> reference</request>
		PRO Check Primitive	to = <request> reference</request>fr = AE-ID
			• rqi = (token-string)
			• pc = empty
			Sent GET request contains
			Request method = GET
		PRO Check	Request URI: <request> reference</request>
		HTTP	1 Request of the street of the
		HIIP	Host: IP address or the FODN of Registrar CSF
			Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string)
			X-M2M-RI: (token-string)
			X-M2M-RI: (token-string)X-M2M-Origin: AE-ID
•			 X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-Body: empty
6	Мса		X-M2M-RI: (token-string)X-M2M-Origin: AE-ID
6	Мса		 X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-Body: empty Sent GET request contains Method: 0.01 (GET)
6	Мса	PRO Check	 X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-Body: empty Sent GET request contains Method: 0.01 (GET)
6	Мса		 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
6	Mca	PRO Check	 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 Uri-Path: <request> reference</request>
6	Мса	PRO Check	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string)
6	Mca	PRO Check	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID
6	Mca	PRO Check	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty
6	Mca	PRO Check	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message:
6	Mca	PRO Check	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2
6	Mca	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request>
6	Mca	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2
6	Mca	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request>
6	Мса	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request> fr = AE-ID
6	Mca	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request> fr = AE-ID rqi = (token-string)
		PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request> fr = AE-ID rqi = (token-string) pc = empty rsc = 2000 (OK) rqi = (token-string) same as received in request message
7	Mca Mca	PRO Check CoAP	 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 Uri-Path: <request> reference</request> oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/<registrar cse-id="">"</registrar> Payload: op = 2 to = <request> reference</request> fr = AE-ID rqi = (token-string) pc = empty rsc = 2000 (OK)

	Interoperability Test Description		
		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 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request>
		PRO Check CoAP	Registrar CSE sends response to AE 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: <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request>
		PRO Check MQTT	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 = 2000 (OK) • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED) and the "operationResult" parameter containing the <container> resource.</container></request></registrar>
8		IOP Check	AE indicates successful operation
	erdict		
PRO \	/erdict		

8.2.1.1.4 Container Delete

	Interoperability Test Description			
Identi	fier:		TD M2M NB 04	
Objective:			AE deletes a Container resource using non blocking synchronous request.	
Configuration:			M2M_CFG_01	
References:			ETSI TS 118 101 [1], clause 10.2.4.1	
			ETSI TS 118 104 [2], clause 7.3.6.2.1	
Pre-te	est cond	litions:	 AE has created <container> resource on registrar CSE.</container> 	
			Test Sequence	
Step	RP	Туре	Description	
1		Stimulus	AE is requested to send a non blocking synchronous request to delete the <container></container>	
			resource.	
2	Мса	PRO Check Primitive	Sent request contains op = 4 (Delete) to = {CSEBaseName}/URI of <container> resource fr= AE-ID rqi = (token-string) rt = 1 (non blocking synchronous) pc = empty</container>	
		Mca	PRO Check HTTP	 Sent request contains Request method = DELETE Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=1</container> 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				
		PRO Check CoAP	Sent request contains Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: {CSEBaseName}/URI of <container> resource Uri-Query: rt=1 oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty</container>		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: • op = 4 (Delete) • to = {CSEBaseName}/URI of <container> resource • fr= AE-ID • rqi = (token-string) • rt = 1 (non blocking synchronous) • pc = empty</container></registrar>		
		PRO Check Primitive	Registrar CSE creates an internal <request> resource and sends acknowledgement response containing: • rsc = 1000 (Accepted) • rqi = token-string) same as received in request message • pc = Reference to the created <request> resource</request></request>		
		PRO Check HTTP	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 • Message-Body: Reference to the created <request> resource</request></request>		
3	Мса	PRO Check CoAP	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</request></request>		
		PRO Check MQTT	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</request></registrar>		
4		IOP Check	AE indicates successful operation		
5		Stimulus	AE is requested to send a retrieve request to <request> reference</request>		
		PRO Check Primitive	Sent Retrieve request contains op = 2 (Retrieve) to = <request> reference fr = AE-ID rqi = (token-string) pc = empty</request>		
6	Mca	PRO Check HTTP	Sent GET request contains Request method = GET Request URI: <request> reference Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID Message-Body: empty</request>		
			PRO Check CoAP	Sent GET request contains Method: 0.01 (GET) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: <request> reference oneM2M-FR: AE-ID oneM2M-RQI: (token-string) Payload: empty</request>	

	Interoperability Test Description		
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: • op = 2 • to = <request> reference • fr = AE-ID • rqi = (token-string) • pc = empty</request></registrar>
		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>
		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 (COMPLETED)</request>
7	Мса	PRO Check CoAP	Registrar CSE sends response to AE 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: <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request>
		PRO Check MQTT	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 = 2000 (OK) • pc = <request> resource with the parameter "requestStatus" set to 1 (COMPLETED)</request></registrar>
8		IOP Check	AE indicates successful operation
	'erdict		
PRO \	/erdict		

8.2.2 Asynchronous request

8.2.2.1 Container management

8.2.2.1.1 Container Create

	Interoperability Test Description			
Identi	fier:		TD_M2M_NB_05	
Objec	tive:		AE creates a <container> resource using non blocking asynchronous request</container>	
Confi	guration	า:	M2M_CFG_01	
References:			ETSI TS 118 101 [1], clause 10.2.4.1 ETSI TS 118 104 [2], clause 7.3.6.2.1	
Pre-te	st cond	litions:	AE is reachable on the URI: "AE-Notification-URI"	
			Test Sequence	
Step	RP	Type	Description	
1		Stimulus	AE is requested to send a non blocking asynchronous request to create the <container> resource in registrar CSE.</container>	

			Interoperability Test Description
			Sent request contains
			• op = 1 (Create)
			• to = {CSEBaseName}
			• fr= AE-ID
		PRO Check	• rqi = (token-string)
		Primitive	• rt = 2 (non blocking asynchronous)
			• ty = 3 (container)
			• nu= AE-Notification-URI
			• oneM2M-RQI: Request-ID
			• pc = Serialized Representation of the <container> resource</container>
			Sent request contains
			Request method = POST
			Reques-Target: {CSEBaseName}?rt=2
			Host: IP address or the FQDN of Registrar CSE
		PRO Check	=
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			• X-M2M-RTU: AE-Notification-URI
			• Content Type = application/vnd.onem2m-res+xml; ty=3 or application/vnd.onem2m-
			res+json; ty=3
			Message-Body: Serialized Representation of <container> resource</container>
2	N/		Sent request contains
	Mca		• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE
			Uri-Path: {CSEBaseName}
		PRO Check CoAP	• Uri-Query: rt=1
			• 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
			• oneM2M-TY: 3
			Payload: Serialized Representation of <container> resource</container>
			Sent MQTT PUBLISH message:
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 1 (Create)
		PRO Check	• to = {CSEBaseName}
		MQTT	• 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</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</request>
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>
		PRO Check	response containing:
1 _		HTTP	• Status Code = 202
3	Mca		• X-M2M-RSC: 1000
	50		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
I	I		Payload: Reference to the created <request> resource</request>

Sent MOTT PUBLISH message: Topic: "oneMDW/respix" AE-ID>/-kegistrar CSE-ID>" PRO Check MOTT PRO Check MOTT ** to = AE-ID ** fr = Registrar CSE-ID ** host: IP address or the FODN of Registrar AE ** X-MZM-Nrigin: Registrar CSE-ID ** Message-Body: Serialized representation of notification data object ** Sent request contains ** Method: 0.02 (POST) ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-Host: IP address or the FODN of Registrar AE ** Uri-		Interoperability Test Description				
Topic: 'YoneM2M/respir's AE-ID-/s-Registrar CSE-ID-' Payload: PRO Check						
PRO Check MOTT **10 = AE-ID **10 = AE-ID **10 = IT = Registrar CSE-ID **10 = IT = Registrar CSE-ID **10 = IT = I						
PRO Check MQTT If a Registrar CSE-ID if a R				· · ·		
Fig. (loken-string) same as received in request message Fisc 100 (Accepted)			PRO Check	• to = AE-ID		
Secrit 100 (Accepted)			MQTT	• fr = Registrar CSE-ID		
PC Reference to the created A equest				 rqi = (token-string) same as received in request message 		
A IOP Check AE indicates successful operation						
A IOP Check AE indicates successful operation				 pc = Reference to the created <request> resource</request> 		
Sent request contains o op 5 (Notify) PRO Check Primitive if r = registrar CSE-ID or q = (token-string) or pc = Serialized representation of notification data object Sent request contains Request method = POST PRO Check HTTP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check MGTT Are a sent sequest contains Are sequest contains Are sequest contains Are sequest seque	4		IOP Check			
PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check HTTP Request URI: AE-Notification-URI PRO Check HTTP PRO Check HTTP PRO Check CoAP PRO Check MQTT PRO Check Primitive PRO Check Primitive PRO Check HTTP AE sends notify response to Registrar CSE containing: **re = 2000 (DK) **re = 2000 **AM2M-RSC:	5		IOP Check			
PRO Check Primitive To = AE-Notification-UR				·		
Primitive						
* rgi = (token-string) * pc = Serialized representation of notification data object Sent request contains * Request method = POST * Request URI: AE-Notification-URI * Host: IP address or the FQDN of Registrar AE * X-MZM-RI: (token-string) * X-MZM-Origin: Registrar CSE-ID * Message-Body: Serialized representation of notification data object Sent request contains * Method: 0.02 (POST) * Uri-Path: AE-Notification-URI * Uri-Path: AE-Notification-URI * Uri-Path: AE-Notification-URI * OneMZM-RCI: (token-string) * oneMZM-RCI: (token-stri						
PRO Check HTTP Mca PRO Check HTTP Request whether a sequent with the properties of the propertie			Primitive			
Sent request contains Request without = POST Request URI: AE-Notification-URI Host: IP address or the FODN of Registrar AE X-M2M-RI: (token-string) **NM2M-Origin: Registrar CSE-ID **Message-Body: Serialized representation of notification data object Sent request contains **Method: 0.02 (POST) **Uri-Path: AE-Notification-URI **OneM2M-RGI: (token-string) **oneM2M-RGI: (token-string) **oneM2M-RGI: (token-string) **oneM2M-RGI: (token-string) **oneM2M-RGI: (token-string) **OneM2M-RGI: (token-string) **Payload: Serialized representation of notification data object Sent MCTT PUBLISH message: Topic: **foneM2M/req/< Registrar CSE-ID >/ <ae-id>** Payload: Serialized representation of notification data object Sent MCTT PUBLISH message: Topic: **foneM2M/req/< Registrar CSE-ID >/<ae-id>** Payload: ** **Payload: Serialized representation of notification data object Sent MCTT PUBLISH message: Topic: **foneM2M/req/< Registrar CSE-ID >/<ae-id>** Payload: ** **Payload: ** **PRO Check Primitive **PRO Check Primitive</ae-id></ae-id></ae-id>						
# Request method = POST Request URI: AE-Notification-URI HTTP # Request URI: AE-Notification-URI HOST: IP address or the FQDN of Registrar AE **X-M2M-RI: (foken-string) ***N.M2M-Origin: Registrar CSE-ID ***Message-Body: Serialized representation of notification data object # Sent request contains ** Method: 0.02 (POST) ** Uri-Path: AE-Notification-URI ** OneM2M-RD: (token-string) ** One Payload: Serialized representation of notification data object ## Sent MQTT PUBLISH message: Topic: "OneM2M/req/« Registrar CSE-ID >/ <ae-id>" ## Payload: ## PRO Check Primitive ## PRO Check Primitive ## PRO Check PRO Check PRO Check Primitive ## PRO Check PRO Check PRO Check Primitive ## PRO Check PRO Check PRO Check PRO Check Primitive ## PRO Check PR</ae-id>						
PRO Check HTTP PRO Check HTTP PRO Check HTTP PRO Check HTTP PRO Check CoAP Mca Mca Mca PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check MQTT Mca PRO Check MQTT Mca PRO Check Primitive PRO Check Primitiv				·		
HTTP Host: IP address or the FQDN of Registrar AE *-M2M-RI: (token-string) *-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 Uri-Path: AE-Notification-URI *						
Name						
S-MCM2M-Origin: Registrar CSE-ID			HTTP			
Mca						
Sent request contains Method: 0.02 (POST) Uni-Hots: IP address or the FQDN of Registrar AE Uni-Path: AE-Notification-URI oneM2M-RQI: (token-string) 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>" Payload: PRO Check MQTT of Registrar CSE-ID of a Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: AE sends notify response to Regi</ae-id>						
Mca PRO Check CoAP PRO Check MQTT PRO Check Primitive PRO Check ATTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: PRO Check CoAP AE sends notify response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE containing: Response Code = 2.05 OneM2M/response to Registrar CSE						
• Method: 0.02 (POST) • PRO Check CoAP PRO Check CoAP • Uri-Host: IP address or the FQDN of Registrar AE • Uri-Path: AE-Notification-URI • oneM2M-RR: Registrar CSE-ID • Payload: Serialized representation of notification data object Sent MQTT PUBLISH message: Topic: "oneM2M/RR: Registrar CSE-ID >/ <ae-id>" Payload: PRO Check MQTT • to = AE-Notification-URI • fr = Registrar CSE-ID • rqi = (token-string) • pc = empty AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • 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: • 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>" Payload: • to = AE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK)</ae-id></registrar></ae-id>	6					
Uri-Path: AE-Notification-URI oneMZM-RCI: (token-string) oneMZM-RR: Registrar CSE-ID Payload: Serialized representation of notification data object Sent MQTT PUBLISH message: Topic: "loneMZM/req/< Registrar CSE-ID >/ <ae-id>" Payload: PRO Check MQTT PRO Check MQTT PRO Check Primitive PRO Check Primitive PRO Check HTTP ALE Sends notify response to Registrar CSE containing: - code = 200 - X-M2M-RSC: 2000 - x-M2M-RSC: 2000</ae-id>		Mca				
OcaP On-Main: Ac-Notincation-URI OneM2M-RCI: (token-string) OneM2M-FR: Registrar CSE-ID PRO Check Primitive PRO Check HTTP Mca PRO Check ACAP PRO Check COAP PRO Check ACAP PRO Check ACAP PRO Check ACAP PRO Check ACAP PRO Check COAP PRO Check ACAP PRO Check COAP PRO Check ACAP PRO Check ACAP PRO Check ACAP PRO Check ACAP PRO Check COAP PRO Check ACAP PRO Check A				<u>-</u>		
OneMZM-RCI: (token-string) oneMZM-RCI: Registrar CSE-ID Payload: Serialized representation of notification data object Sent MQTT PUBLISH message: Topic: "loneMZM/req/< Registrar CSE-ID >/ <ae-id>" Payload: PRO Check MQTT Op = 5 (Notify)</ae-id>						
PRO Check Primitive PRO Check HTTP Mca PRO Check MCAT MCAT PRO Check HTTP PRO Check CoAP PRO Check CoAP PRO Check CoAP PRO Check HTTP						
Sent MOTT PUBLISH message: Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>" Payload:</ae-id>						
Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>" Payload:</ae-id>						
PRO Check MQTT PRO Check MQTT No to = AE-Notification-URI No trip = (token-string) PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive AE sends notify response to Registrar CSE containing: PRO Check HTTP ACA ACA PRO Check COAP PRO						
PRO Check MQTT op = 5 (Notify) to = AE-Notification-URI of r = Registrar CSE-ID rqi = (token-string) pc = empty AE sends notify response to Registrar CSE containing: rgi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: PRO Check HTTP AE sends notify response to Registrar CSE containing: Code = 200 X-M2M-RSC: 2000 X-M2M-RSC: 2000 X-M2M-RSC: 2000 X-M2M-RSC: 2000 AE sends notify response to Registrar CSE containing: PRO Check CoAP AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: PRO Check CoAP AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: PRO Check CoAP AE sends notify response to Registrar CSE containing: AE sends notify response to Registrar CSE containing: PRO Check CoAP AE sends notify response to Registrar CSE containing: A E sends notify response to Registrar CSE containing: A E sends notify response to Registrar CSE containing: A Code = 200 A-M2M-RSC: 2000 A-M						
## Note						
PRO Check Primitive PRO Check Primitive PRO Check Primitive AE sends notify response to Registrar CSE containing: • fsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • fsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • 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: • Response Code = 2.05 • oneM2M-ROI = (token-string) same as received in request message • Payload = empty Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = AE-ID • fr = Registrar CSE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>						
PRO Check Primitive AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rgi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • Code = 200 • X-M2M-RSC: 2000 • X-M2M-RQI = (token-string) same as received in request message • PRO Check CoAP PRO Check CoAP PRO Check MQTT PRO Check MQTD			MQTI			
PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • Code = 200 • X-M2M-RSC: 2000 • 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: • 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>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>						
PRO Check Primitive AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • Code = 200 • X-M2M-RSC: 2000 • 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: • 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>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>				1		
PRO Check Primitive • rsc = 2000 (OK) • rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: • Code = 200 • X-M2M-RSC: 2000 • X-M2M-RSC: 2000 • X-M2M-RSC: 2000 • Message-Body = empty AE sends notify response to Registrar CSE containing: • Message-Body = empty AE sends notify response to Registrar CSE containing: • Response Code= 2.05 • oneM2M-RQI = (token-string) same as received in request message • Payload = empty Sent MQTT PUBLISH message: Topic: "foneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>	-					
PRO Check HTTP AE sends notify response to Registrar CSE containing: Code = 200 X-M2M-RSC: 2000 X-M2M-RSC: (token-string) same as received in request message Message-Body = empty AE sends notify response to Registrar CSE containing: 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>" Payload: Topic: "/oneM2M/resp/<registrar cse-id="">/<ae-id>" Payload: Topic: "/oneM2M/resp/segistrar CSE-ID =/<ae-id>" Payload: Topic: "/oneM2M/resp/segistrar CSE-ID =/ Payload: Topic:</ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></registrar></ae-id></registrar>			PRO Check			
AE sends notify response to Registrar CSE containing: • 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: • 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>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>			Primitive			
PRO Check HTTP PRO Check HTTP Action PRO Check HTTP Action PRO Check CoAP PRO Check MQTT Propic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: Propic: "/oneM2M/resp/<registrar cse-id="">/<ae-id>" Payload: Propic: "/oneM2M/resp/<ae-id>" Propic: "/oneM2M/resp/<</ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar>				AF sends notify response to Registrar CSE containing:		
A HTTP * 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: * 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>" Payload: * to = AE-ID * fr = Registrar CSE-ID * rqi = (token-string) same as received in request message * rsc = 2000 (OK) * Registrar CSE indicates successful operation IOP Verdict * NCA * AE-ID * AE-I</ae-id></registrar>			DDO Chaal	, ,		
**X-M2M-RI= (token-string) same as received in request message **Message-Body = empty **A sends notify response to Registrar CSE containing: **Response Code= 2.05 **OneM2M-RQI = (token-string) same as received in request message **Payload = empty PRO Check MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: **OneM2M/resp/<registrar cse-id="">/<ae-id>" Payload: **OneM2M2M2M2 **OneM2M2M2 **OneM2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2 **OneM2M2M2</ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar></ae-id></registrar>						
Mca PRO Check CoAP PRO Check MQTT Pro Check Pro Check MQTT Pro Check Pro Check NQTT Pro Check Pro Check NQTT NQTT Pro Check NQTT NQ			''''			
AE sends notify response to Registrar CSE containing: • 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>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8 IOP Check Registrar CSE indicates successful operation</ae-id></registrar>						
PRO Check CoAP 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>" Payload: oto = AE-ID of r = Registrar CSE-ID orqi = (token-string) same as received in request message rsc = 2000 (OK) Registrar CSE indicates successful operation</ae-id></registrar>						
OOAP oneM2M-RQI = (token-string) same as received in request message Payload = empty Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: oto = AE-ID of r = Registrar CSE-ID orqi = (token-string) same as received in request message orsc = 2000 (OK) Registrar CSE indicates successful operation IOP Verdict</ae-id></registrar>	7		PRO Chack			
Payload = empty Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) Registrar CSE indicates successful operation IOP Verdict</ae-id></registrar>	1	Mca				
PRO Check MQTT Publish message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) Registrar CSE indicates successful operation IOP Verdict</ae-id></registrar>			30/11	, , , , , , , , , , , , , , , , , , , ,		
Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload:</ae-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) Registrar CSE indicates successful operation IOP Verdict						
• to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8						
• fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK) 8						
rqi = (token-string) same as received in request message rsc = 2000 (OK) IOP Check Registrar CSE indicates successful operation IOP Verdict			MQTT			
8 IOP Check Registrar CSE indicates successful operation IOP Verdict						
IOP Verdict	8		IOP Check			
PRO Verdict	IOP V	erdict				

8.2.2.1.2 Container Retrieve

	Interoperability Test Description				
Identi	fier:		TD_M2M_NB_06		
Objec			AE retrieves a <container> resource using non blocking asynchronous request</container>		
	guration	า:	M2M_CFG_01		
References:			ETSI TS 118 101 [1], clause 10.2.4.1		
			ETSI TS 118 104 [2], clause 7.3.6.2.1		
Pre-te	est cond	litions:	AE has created a <container> resource on registrar CSE.</container>		
			AE is reachable on the URI: "AE-Notification-URI" Took Someone To		
Ston	RP	Typo	Test Sequence Description		
Step	KF	Type Stimulus	AE is requested to send a non blocking asynchronous request to retrieve the <container></container>		
1		Ottillalas	resource from registrar CSE		
			Sent request contains		
			• op = 2 (Retrieve)		
			• 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		
			Request method = POST Request Terret (CSEReachlane) (LIRI of Container, recourse 3rt 3		
		PRO Check	Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=2 Heat: IR address or the EODN of Registrar CSE</container>		
		HTTP	 Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) 		
			• X-M2M-Origin: AE-ID		
			X-M2M-RTU: AE-Notification-URI		
			Message-Body: empty		
			Sent request contains		
2	N4		• Method: 0.01 (GET)		
	Mca		Uri-Host: IP address or the FQDN of Registrar CSE		
		PRO Check	Uri-Path: {CSEBaseName}/URI of <container> resource</container>		
		CoAP	Uri-Query: rt=2		
		00/11	• 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 = 2 (Retrieve)		
		PRO Check	• to = {CSEBaseName}/URI of <container> resource</container>		
		MQTT	• fr = AE-ID		
			• rqi = (token-string)		
			• rt = 2 (non blocking synchronous)		
			• nu = AE-Notification-URI		
			• pc = empty		
			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>		
	Mca	DDC OL I	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>		

	Interoperability Test Description				
			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="">" Payload:</registrar>		
		PRO Check	• to = AE-ID		
		MQTT	• fr = Registrar CSE-ID		
		IVIQTI	• 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		
		DD0 01 1	op = 5 (Notify) A S Notification LID!		
		PRO Check Primitive	• to = AE-Notification-URI		
		i illilluve	fr = registrar CSE-IDrqi = (token-string)		
			 pc = Serialized representation of notification data object 		
			Sent request contains		
			Reguest 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		
	ivica		 Method: 0.02 (POST) 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		
			Payload: Serialized representation of notification data object		
		_	Sent MQTT PUBLISH message:		
			Topic: "/oneM2M/req/< Registrar CSE-ID >/ <ae-id>"</ae-id>		
		55000	Payload: • op = 5 (Notify)		
		PRO Check MQTT	• op = 5 (Notify) • to = AE-Notification-URI		
		IVIQII	• to = AE-Notification-ORI • fr = Registrar CSE-ID		
			• rqi = (token-string)		
			• pc=empty		
		DDO Charle	AE sends notify response to Registrar CSE containing:		
		PRO Check Primitive	• rsc = 2000 (OK)		
		i illilliuve	• rqi = (token-string) same as received in request message		
		DD0 6: /	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 		
			AE sends notify response to Registrar CSE containing:		
7	N/	PRO Check	• Response Code= 2.05		
	Mca	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>		
		PRO Check	Payload:		
		MQTT	• to = AE-ID		
			 fr = Registrar CSE-ID rqi = (token-string) same as received in request message 		
			• rsc = 2000 (OK)		
8		IOP Check	Registrar CSE indicates successful operation		

	Interoperability Test Description				
IOP Verdict					
PRO Verdict					

8.2.2.1.3 Container Update

Interest	Interoperability Test Description Identifier: TD M2M NB 07				
			TD_M2M_NB_07		
Objec			AE updates a <container> resource using non blocking asynchronous request</container>		
Configuration:		า:	M2M_CFG_01		
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.4.1		
			ETSI TS 118 104 [2], clause 7.3.6.2.1		
Pre-te	st cond	litions:	AE has created a Container resource < Container > on registrar CSE		
			AE is reachable on the URI: "AE-Notification-URI"		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a non blocking asynchronous request to update the <container></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		
			Reguest method = UPDATE		
			Reques-Target: {CSEBaseName}/URI of <container> resource?rt=2</container>		
			Host: IP address or the FQDN of Registrar CSE		
		PRO Check	X-M2M-RI: (token-string)		
		HTTP			
			• 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		
2	Mca		Method: 0.03 (UPDATE)		
			Uri-Host: IP address or the FQDN of Registrar CSE		
			Uri-Path: {CSEBaseName}/URI of <container> resource</container>		
		PRO Check	Uri-Query: rt=2		
		CoAP	• 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>		
		DDC CL :	response containing:		
3	N4==	PRO Check	• rsc = 1000 (Accepted)		
	Mca	Primitive	 rqi = token-string) same as received in request message 		
			• pc = Reference to the created <request> resource</request>		
		1	The state of the s		

	Interoperability Test Description				
		PRO Check HTTP	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 • Message-Body: Reference to the created <request> resource</request></request>		
		PRO Check CoAP	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</request></request>		
		PRO Check MQTT	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</request></registrar>		
4		IOP Check	AE indicates successful operation		
5		IOP Check	Registrar CSE sends notify request to AE		
		PRO Check Primitive	Sent request contains op = 5 (Notify) to = AE-Notification-URI fr = registrar CSE-ID rqi = (token-string) pc = Serialized representation of notification data object		
		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		
6	Мса	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 • rqi = (token-string) • pc = empty</ae-id>		
		PRO Check Primitive	AE sends notify response to Registrar CSE containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message		
7	Мса	PRO Check HTTP	AE sends notify response to Registrar CSE containing: Code = 200 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: • Response Code = 2.05 • oneM2M-RQI = (token-string) same as received in request message • Payload = empty		

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

8.2.2.1.4 Container Delete

0.2.2	2.1. 4	Contai	iller Delete			
			Interoperability Test Description			
Identi	fier:		TD_M2M_NB_08			
Objec	tive:		AE deletes a Container resource using non blocking asynchronous request			
	guration	1:	M2M_CFG_01			
	ences:		ETSI TS 118 101 [1], clause 10.2.4.1			
			ETSI TS 118 104 [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			
		PRO Check HTTP	Sent request contains			
			Request method = DELETE			
			 Reques-Target: {CSEBaseName}/URI of <container> resource ?rt=2</container> 			
			Host: IP address or the FQDN of Registrar CSE			
			X-M2M-RI: (token-string)			
			• X-M2M-Origin: AE-ID			
			• X-M2M-RTU = AE-Notification-URI			
			Message-Body: empty			
			Sent request contains			
2	Mca		Method: 0.04 (DELETE)			
	Wica		Uri-Host: IP address or the FQDN of Registrar CSE			
		PRO Check	 Uri-Path: {CSEBaseName}/URI of <container> resource</container> 			
		CoAP	• Uri-Query: rt=2			
		00/11	• 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:			
		DD 0 0: /	• 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			

Interoperability Test Description				
			Registrar CSE creates an internal <request> resource and sends acknowledgement</request>	
		DDC 6: .	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>	
		DD0 01 1	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	Mca		response containing:	
	IVIOG	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>	
		DD 0 01 1	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	
		PRO Check Primitive	Sent request contains	
			• op = 5 (Notify)	
			• to = AE-Notification-URI	
			• fr = registrar CSE-ID	
			• rqi = (token-string)	
			• pc = Serialized representation of notification data object	
			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			Sent request contains	
U	Mca		Method: 0.02 (POST)	
		PRO Check	Uri-Host: IP address or the FQDN of Registrar AE	
		CoAP	Uri-Path: AE-Notification-URI	
		OOAI	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>	
		DDC CL '	Payload:	
		PRO Check	• op = 5 (Notify)	
		MQTT	• to = AE-Notification-URI	
			• fr = Registrar CSE-ID	
			• rqi = (token-string)	
			pc = empty AE sends notify response to Registrar CSE containing:	
		PRO Check	• rsc = 2000 (OK)	
		Primitive	· ·	
			 rqi = (token-string) same as received in request message AE sends notify response to Registrar CSE containing: 	
7	Mca	PRO Check	• Code = 200	
	ivica	HTTP	• X-M2M-RSC: 2000	
		11111		
			• X-M2M-RI = (token-string) same as received in request message	
			 X-M2M-RI = (token-string) same as received in request message Message-Body = empty 	

			Interoperability Test Description
		PRO Check CoAP	AE sends notify response to Registrar CSE containing: • Response Code = 2.05 • oneM2M-RQI = (token-string) same as received in request message • Payload = empty
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<ae-id>" Payload: • to = AE-ID • fr = Registrar CSE-ID • rqi = (token-string) same as received in request message • rsc = 2000 (OK)</ae-id></registrar>
8		IOP Check	Registrar CSE indicates successful operation
IOP \	√erdict		
PRO	Verdict		

8.3 Single hop configuration testing

8.3.1 Retargeting

8.3.1.1 RetargetingResource Create (Generic Test Description)

Interoperability Test Description						
Identi	fier:		TD_M2M_SH_01			
Objec			AE creates a remote <resource> resource</resource>			
Confi	guration	1 :	M2M_CFG_03			
Refer	ences:					
Pre-te	st cond	itions	Parents resources need to be created on the hosting CSE			
			Test Sequence			
Step	RP	Туре	Description			
1		Stimulus	AE is requested to send a Create Request to create <resource> on the Hosting CSE.</resource>			
	Мса	PRO Check Primitive	 op = 1 (Create) to = URI of the parent resource fr = AE-ID rqi = (token-string) ty = <resource> type number</resource> pc = Serialized representation of <resource> resource</resource> Sent request contains			
2		PRO Check HTTP	 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 application/vnd.onem2m-res+json; ty=<resource> type number</resource></resource> Message-body: Serialized representation of <resource> resource</resource> 			
		PRO Check CoAP	Sent request contains • Method: 0.02 (POST) • Uri-Host: IP address or the FQDN of Registrar 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 • oneM2M-RQI: (token-string) • Payload: Serialized representation of <resource> resource</resource></resource>			

	Interenerability Test Description					
	Interoperability Test Description Sent MQTT PUBLISH message:					
			Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>			
			Payload:			
			• op = 1 (Create)			
		PRO Check	• to = URI of the parent resource			
		MQTT	• fr = AE-ID			
			• rqi = (token-string)			
			• tql = (token-string) • ty = <resource> type number</resource>			
		IOD Charle	pc = Serialized representation of <resource> resource Check if receible that the request is forwarded by the registery CCF to the Heating CCF.</resource>			
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.			
			 op = 1 (Create) to = URI of the parent resource 			
		PRO Check	• to = ORI of the parent resource • fr = AE-ID			
		Primitive	• rqi = (token-string)			
			• ty = m2m:resourceType			
			• pc = Serialized representation of <resource> resource</resource>			
			Sent request contains			
			Request method = POST			
			Request-Target: URI of the parent resource			
		PRO Check	Host: IP address or the FQDN of Hosting CSE			
		HTTP	• X-M2M-RI: (token-string)			
			• X-M2M-Origin: AE-ID			
			 Content-Type: application/vnd.onem2m-res+xml; ty=<resource> type number or</resource> 			
			application/vnd.onem2m-res+json; ty= <resource> type number</resource>			
			Message-body: Serialized representation of <resource> resource</resource>			
			Sent request contains			
4	Mcc	PRO Check CoAP	Method: 0.02 (POST)			
	IVIOO		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</resource>			
			• oneM2M-FR: AE-ID			
			 oneM2M-RQI: (token-string) 			
			Payload: Serialized representation of <resource> resource</resource>			
		PRO Check	Sent MQTT PUBLISH message:			
			Topic: "/oneM2M/req/< Registrar CSE-ID>/< Hosting CSE-ID>"			
			Payload:			
			• op = 1 (Create)			
			• to = URI of the parent resource			
		MQTT	• fr = AE-ID			
			• rqi = (token-string)			
			• ty = <resource> type number</resource>			
	<u> </u>		 pc = Serialized representation of <resource> resource</resource> 			
5		IOP Check	Check if possible that the <resource> resource is created in the Hosting CSE.</resource>			
		PRO Check	• rsc = 2001 (CREATED)			
			 rqi = (token-string) same as received in request message 			
		Primitive	• pc = Serialized representation of <resource> resource</resource>			
			Hosting CSE sends response to Registrar CSE 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.			
6			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json			
•	Mcc		Message-body: Serialized representation of <resource> resource</resource>			
			Hosting CSE sends response to Registrar CSE containing:			
			• Response Code = 2.01			
			• oneM2M-RSC: 2001			
		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+json			
			Payload: Serialized representation of < resource > resource			
	l	l .	- Layiodd. Gendized representation of tesource > resource			

	Interoperability Test Description			
		PRO Check MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< RegistrarCSE -ID>/ <hosting cse-id="">" Payload: • to = AE-ID</hosting>	
			 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> 	
	Мса	PRO Check HTTP	Registrar CSE sends response to AE 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 <resource> resource</resource>	
8		PRO Check CoAP	Registrar CSE sends response to AE containing: Response Code = 2.01 oneM2M-RSC: 2001 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 < resource > 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 = 2001 (CREATED) • rqi = (token-string) same as received in request message • pc = Serialized representation of < resource > resource</registrar>	
9		IOP Check	AE indicates successful operation	
	/erdict			
PRO '	√erdict			

8.3.1.2 <Resource> Create

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_01#01	ETSI TS 118 101 [1], clause 10.2.4.1 ETSI TS 118 104 [2], clause 7.3.5.2.1		
<contentinstance></contentinstance>	TD_M2M_SH_01#02	ETSI TS 118 101 [1], clause 10.2.19.2 ETSI TS 118 104 [2], clause 7.3.7.2		
<subscription></subscription>	TD_M2M_SH_01#03	ETSI TS 118 101 [1], clause 10.2.11.2 ETSI TS 118 104 [2], clause 7.3.7.2		

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_01#04	ETSI TS 118 101 [1], clause 10.2.21.1 ETSI TS 118 104 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_01#05	ETSI TS 118 101 [1], clause 10.2.7.2 ETSI TS 118 104 [2], clause 7.3.12.2.1		
<pollingchannel></pollingchannel>	TD_M2M_SH_01#06	ETSI TS 118 101 [1], clause 10.2.13.2 ETSI TS 118 104 [2], clause 7.3.21.2.1		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_01#07	ETSI TS 118 101 [1], clause 10.2.7.6 ETSI TS 118 104 [2], clause 7.3.14.3.1		
<node></node>	TD_M2M_SH_01#08	ETSI TS 118 101 [1], clause 10.2.14.1 ETSI TS 118 104 [2], clause 7.3.18.2.1		

8.3.1.3 Resource Retrieve (Generic Test Description)

0.0.1	.0	110000100	Trouleve (Collette 1000 Boothpubli)		
			Interoperability Test Description		
Identi	fier:		TD_M2M_SH_02		
Objec	tive:		AE retrieves a remote <resource> resource</resource>		
Confi	guratio	า:	M2M_CFG_03		
Refer	ences:				
Pre-te	est cond	litions:	 Parents resources need to be created on the hosting CSE 		
			Resource < Resource > has been created in Hosting CSE		
			Test Sequence		
Step	RP	Туре	Description		
1		Stimulus	AE is requested to send a Retrieve Request to retrieve <resource> on the remote Hosting CSE.</resource>		
		PRO Check Primitive	 op = 2 (Retrieve) to = URI of the <resource> resource U</resource> fr = AE-ID rqi = (token-string) 		
2	Mca	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>		

	Interoperability Test Description				
			Sent request contains		
			• Method: 0.01 (GET)		
			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) Product to strain to the street to the strain to the street to the		
			Payload: empty		
			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)		
			• pc = empty		
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.		
			• op = 2 (Retrieve)		
		PRO Check	• to URI of the <resource> resource</resource>		
]	Primitive	• fr = AF-ID		
		1 minuve			
			• rqi = (token-string)		
			Sent request contains		
			Request method = GET		
		PRO Check	 Request-Target: URI of the <resource> resource</resource> 		
		НТТР	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		
1			• Method: 0.01 (GET)		
4	Мсс		Uri-Host: IP address or the FQDN of Hosting CSE		
	inee	PRO Check	Uri-Path: URI of the <resource> resource</resource>		
		CoAP	• oneM2M-FR: AE-ID		
			• oneM2M-RQI: (token-string)		
			Payload: empty Cart MOTT PUBLISH recognition		
			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		
		PRO Check	• rsc = 2000 (OK)		
5		Primitive	 rqi = (token-string) same as received in request message 		
		i illilluve	 pc = Serialized representation of <resource> resource</resource> 		
			Hosting CSE sends response containing:		
		DDC 31 1	• 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		
	Mcc		Message-body: Serialized representation of <resource> resource</resource>		
]				
			Hosting CSE sends response containing:		
		DDO OL I	• 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		
I]		Payload: Serialized representation of <resource> resource</resource>		

	Interoperability Test Description				
Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< Registrar CSE-ID>/ <hosting cse-id="">" Payload: • to = AE-ID • fr = Hosting CSE-ID • rsc 2000(OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of <resource> resource</resource></hosting>					
6		IOP Check	Check if possible that the response is forwarded by the registrar CSE to the AE.		
		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	Мса	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		
	/erdict				
PRO \	Verdict				

8.3.1.4 <Resource> retrieve

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_02#01	ETSI TS 118 101 [1], clause 10.2.4.2 ETSI TS 118 104 [2], clause 7.3.5.2.2		
<contentinstance></contentinstance>	TD_M2M_SH_02#02	ETSI TS 118 101 [1], clause 10.2.19.3 ETSI TS 118 104 [2], clause 7.3.6.2.2		
<subscription></subscription>	TD_M2M_SH_02#03	ETSI TS 118 101 [1], clause 10.2.11.3 ETSI TS 118 104 [2], clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_02#04	ETSI TS 118 101 [1],		

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
		clause 10.2.21.2 ETSI TS 118 104 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_02#05	ETSI TS 118 101 [1], clause 10.2.7.3 ETSI TS 118 104 [2], clause 7.3.12.2.2		
<pollingchannel></pollingchannel>	TD_M2M_SH_02#06	ETSI TS 118 101 [1], clause 10.2.13.3 ETSI TS 118 104 [2], clause 7.3.21.2.2		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_02#07	ETSI TS 118 101 [1], clause 10.2.7.8 ETSI TS 118 104 [2], clause 7.3.14.3.2		
<node></node>	TD_M2M_SH_02#08	ETSI TS 118 101 [1], clause 10.2.14.2 ETSI TS 118 104 [2], clause 7.3.18.2.2		
<remotecse></remotecse>	TD_M2M_SH_02#09	ETSI TS 118 101 [1], clause 10.2.2.3 ETSI TS 118 104 [2], clause 7.3.3.2.3		
<ae></ae>	TD_M2M_SH_02#10	ETSI TS 118 101 [1], clause 10.2.1.2 ETSI TS 118 104 [2], clause 7.3.5.2.2		
<csebase></csebase>	TD_M2M_SH_02#11	ETSI TS 118 101 [1], clause 10.2.3.2 ETSI TS 118 104 [2], clause 7.3.2		

8.3.1.5 Resource Update (Generic Test Description)

Interoperability Test Description Interoperability Test Descri				Later and Market Breed Breed and			
Objective:	l al a sa til	(!					
Pre-test conditions: M2M CFG.03							
Pre-test conditions: Parents resources need to be created on the hosting CSE Resource Resources has been created in Hosting CSE **Resource Resources has been created in Hosting CSE **Test Sequence** **Provided Sequence**			· ·	'			
Pre-test conditions: Parents resources need to be created on the hosting CSE Resource -Resources has been created in Hosting CSE Test Sequence Procedure - Test Sequence Bescription As Is requested to send an Update Request to update the -Resource> on the Hosting CSE. PRO Check Primitive - Test Is a E-ID - Test Sequence - Test S			1.	VIZ.IVI_UFU_US			
Resource - PRO Check - Primitive 0 - 9 - 3 (Update) 0 - 9 - 5 (Update) 0 - 9	Velet	511CCS.					
Resource - PRO Check - Primitive - PRO Check	Pre-te	st cond	litions:	Parents resources need to be created on the hosting CSF			
Test Sequence Stimulus							
Step RP Type							
AE is requested to send an Update Request to update the <resource> on the Hosting CSE. CSE. • op = 3 (Update) • to = URI of the resource <resource> • fr = AE-ID • rq i = (token-string) • pc = Serialized representation of <resource> resource Sent request contains • Request tentod = PUT • Request-Target: URI of the <resource> resource • Host: IP address or the FODN 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 • oneM2M-FR: AE-ID • one Serialized representation of updated <resource> resource • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of updated <resource> resource • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of version of updated = Resource> resource • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of version of ve</resource></resource></resource></resource></resource></resource></resource>	Step	RP	Type	Description			
PRO Check Primitive op = 3 (Update)	1		Stimulus				
PRO Check Primitive PRO Check Primitive In a Let ID In	'						
PRO Check Primitive Promitive Promother Prom							
Primitive Primitive Frame			PRO Check				
## PC Serialized representation of Resource ## PRO Check CoAP ## Acai ## PRO Check CoAP ## PRO Check ## PRO							
Sent request contains PRO Check HTTP Acquest: Target: URI of the <resource> resource Host: IP address or the FQDN of Registrar CSE **X-M2M-R: (token-string) **X-M2M-R: (tok</resource>							
PRO Check HTTP Request method = PUT Request Target: URI of the <resource> resource Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-RI: (token</resource>							
PRO Check HTTP A Request-Target: URI of the -Resource resource - Host: IP address or the FQDN of Registrar CSE - X-M2M-RI: (token-string) - Message-body: Serialized representation of updated <resource> resource Sent request contains - Mesthoot: 0.03 (PUT) - Uri-Host: IP address or the FQDN of Registrar CSE - Message-body: Serialized representation of updated <resource> resource - oneM2M-R: AE-ID - oneM2M-R: AE-ID - oneM2M-Ri: (token-string) - Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json - Payload: Serialized representation of updated <resource> resource - Sent Natural Payload: - PRO Check - MQTT - PRO Check - MQTT - PRO Check - HTTP - PRO Check - PRO Check - HTTP - PRO Check - HTTP - PRO Check - HTTP - Request-Target: URI of the <resource> resource - Host: IP address or the FQDN of Hosting CSE - X-M2M-R: (token-string) - x-M2M-R: (token-str</resource></resource></resource></resource>				· • • • • • • • • • • • • • • • • • •			
A 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 Mesage-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uni-host: IP address or the FQDN of Registrar CSE Vini-Path: URI of the <resource> resource Sent MCTP PUBLISH message: Topic: 'VoneM2M/ req /< AE-ID>/<registrar cse-id="">* Payload: PRO Check MQTT PRO Check MQTT Open Serialized representation of updated <resource> resource Sent MGTT PUBLISH message: Topic: 'VoneM2M/ req /< AE-ID>/<registrar cse-id="">* Payload: PRO Check MQTT Open Serialized representation of updated <resource> resource If = AE-ID open 3 (Update) ope 3 (Update) open 4 (</resource></registrar></resource></registrar></resource></resource>							
HTTP - Host: IP address or the FQDN of Registrar CSE - X-M2M-RI: (loken-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 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-RQI: (token-string) - Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json - Payload: Serialized representation of updated <resource> resource Sent MQTT PUBLISH message: Topic: 'OneM2M' req /< AE-ID>/<registrar cse-id="">" Payload: - PRO Check - MQTT - VIELISH message: Topic: 'OneM2M' req /< AE-ID>/<registrar cse-id="">" Payload: - op = 3 (Update) - to = URI of the <resource> resource - fr = AE-ID - riq = (token-string) - pc = Serialized representation of updated <resource> resource Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE. - Op = 3 (Update) - to = URI of the resource <resource> - fr = AE-ID - riq = (token-string) - pc = Serialized representation of <resource> resource - frimitive - right (token-string) - pc = Serialized representation of Resource> resource - Host: IP address or the FQDN of Hosting CSE - X-M2M-RI: (token-string) - X-M2M-RI: (token-strin</resource></resource></resource></resource></registrar></registrar></resource></resource></resource>			PRO Check				
A. MZM-Origin: AE-ID							
Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json							
Mca							
Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of the Very least URI of the <a href="Very least URI of the <a href=" td="" very<=""><td></td><td></td><td></td><td></td>							
Mca Mca PRO Check CoAP Out-Path: URl of the New York PRO Check CoAP Out-Path: URl of the New York PRO Check CoAP Out-Path: URl of the New York PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check HTTP PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP Out-Path: URl of the New York PRO Check PRO Check HTTP Out-Path: URl of the New York PRO Check PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP Out-Path: URl of the New York PRO Check HTTP New York Path Path Path Path Path Path Path Path							
PRO Check CoAP Ouri-Host: IP address or the FQDN of Registrar CSE Uri-Path: URI of the <resource> resource oneM2M-RQI: (token-string) Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json PRO Check MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT Ourie (token-string) o pc = Serialized representation of updated <resource> resource IOP Check PRO Check Primitive PRO Check Primitive PRO Check HTTP Mcc Mcc Mcc PRO Check PRO Check HTTP Amage: A content of the Resource of the Resource</resource></registrar></resource>	2						
PRO Check CoAP OneMZM-FR: AE-ID oneMZM-RQI: (token-string) Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of updated <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check MQTT One Updated O</registrar></resource>		Mca					
## CoAP OneM2M-RQI: (token-string)			DPO Chack				
OneM2M-RQI: (token-string) Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of updated <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: op = 3 (Update) it = URI of the <resource> resource if = AE-ID</resource></registrar></resource>							
Content-format: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Payload: Serialized representation of updated <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT</registrar></resource>			COAF				
Payload: Serialized representation of updated <resource> resource Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: PRO Check MQTT PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check Primitive PRO Check PRO Check HTTP PRO Check HTTP</registrar></resource>							
Sent MQTT PUBLISH message: Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">" Payload: op = 3 (Update) to = URI of the <resource> resource of r = AE-ID or qi = (token-string) op = 3 (Update) Topic: "oneM2M/ req /< AE-ID>/<registrar cse-id="">" Payload: op = 3 (Update) op = 3 (Update) to = URI of the resource> resource IOP Check PRO Check Primitive PRO Check Primitive PRO Check HTTP PRO Check HTTP Acquest request contains Request method = PUT Request Target: URI of the <resource> resource Sent request contains Request PADN of Hosting CSE X-M2M-RI: (token-string) ox-M2M-RI: (token-string) Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE Viri-Path: URI of the <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID Order the Content of the Content</resource></resource></resource></resource></registrar></resource></registrar>							
Topic: "/oneM2M/ req /< AE-ID>/ <registrar cse-id="">" Payload: PRO Check MQTT op = 3 (Update) to = URI of the <resource> resource of r = AE-ID rqi = (token-string) pc = Serialized representation of updated <resource> resource Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE. op = 3 (Update) to = URI of the resource <resource> op = 3 (Update) to = URI of the resource <resource> of r = AE-ID rqi = (token-string) pc = Serialized representation of <resource> resource Sent request contains Request method = PUT Request method = PUT Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID Viri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource></resource></resource></resource></resource></resource></resource></resource></resource></registrar>							
PRO Check MQTT PRO Check MQTT Op = 3 (Update) to = URI of the <resource> resource of = AE-ID orgi = (token-string) op = Serialized representation of updated <resource> resource Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE. Op = 3 (Update) to = URI of the resource <resource> of = AE-ID orgi = (token-string) op = Serialized representation of <resource> resource Sent request contains Request method = PUT Request-Target: URI of the <resource> resource HTTP Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE Virl-Path: URI of the <resource> resource OneM2M-FR: AE-ID</resource></resource></resource></resource></resource></resource></resource></resource>							
MQTT • to = URI of the <resource> resource • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of updated <resource> resource 3 IOP Check PRO Check Primitive • to = URI of the request is forwarded by the registrar CSE to the Hosting CSE. • op = 3 (Update) • to = URI of the resource <resource> • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <resource> resource Sent request contains • Request method = PUT • Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json • Message-body: Serialized representation of updated <resource> resource Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource></resource></resource></resource></resource></resource></resource>							
IOP Check			PRO Check	• op = 3 (Update)			
• rqi = (token-string) • pc = Serialized representation of updated <resource> resource 3 IOP Check Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE. • op = 3 (Update) • to = URI of the resource <resource> • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <resource> resource Sent request contains • Request method = PUT • Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json • Message-body: Serialized representation of updated <resource> resource Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE PRO Check COAP • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource></resource></resource></resource></resource></resource>			MQTT	• to = URI of the <resource> resource</resource>			
PRO Check PRO Check PRO Check PRO Check Primitive PRO Check PRO				• fr = AE-ID			
IOP Check Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE. op = 3 (Update) to = URI of the resource <resource> fr = AE-ID orgi = (token-string) orgi = (tok</resource>				• • •			
PRO Check Primitive op = 3 (Update) to = URI of the resource <resource> of r = AE-ID orqi = (token-string) op = Serialized representation of <resource> resource Sent request contains Request method = PUT Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE Uri-Path: URI of the <resource> resource OneM2M-FR: AE-ID</resource></resource></resource></resource></resource>							
PRO Check Primitive • to = URI of the resource <resource> • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <resource> resource Sent request contains • Request method = PUT • Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json • Message-body: Serialized representation of updated <resource> resource Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource></resource></resource></resource></resource>	3		IOP Check				
PRO Check Primitive • fr = AE-ID • rqi = (token-string) • pc = Serialized representation of <resource> resource Sent request contains • Request method = PUT • Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json • Message-body: Serialized representation of updated <resource> resource Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource></resource></resource></resource>							
Primitive If = AE-ID If it is a AE-ID I			PRO Check				
PRO Check HTTP PRO Check HTTP Mcc Mcc PRO Check HTTP PRO Check HTTP PRO Check HTTP PRO Check HTTP Mcc Mcc PRO Check HTTP PRO Check HTTP PRO Check HTTP PRO Check HTTP Mcc PRO Check HTTP PRO Check HTTP Acc PRO Check COAP							
PRO Check HTTP PRO Check HTTP Mcc Mcc Sent request contains Request method = PUT Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource></resource></resource>							
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PRO Check HTTP Request-Target: URI of the <resource> 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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource></resource></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 or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE PRO Check COAP Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource></resource>				· · · · · · · · · · · · · · · · · · ·			
MCC **MCM-RI: (token-string) **X-M2M-RI: (token-string) **Message-body: Serialized representation of updated <resource> resource **Method: 0.03 (PUT) **Uri-Host: IP address or the FQDN of Hosting CSE **Uri-Path: URI of the <resource> resource **OneM2M-FR: AE-ID</resource></resource></resource></resource></resource>			PRO Check				
**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 Sent request contains</resource>			HTTP				
Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json Message-body: Serialized representation of updated <resource> resource Sent request contains Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP PRO Check OneM2M-FR: AE-ID</resource>	4			,			
Message-body: Serialized representation of updated <resource> resource Sent request contains</resource>		Мсс					
Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP CoAP Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource>							
Method: 0.03 (PUT) Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP Vri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource>							
Uri-Host: IP address or the FQDN of Hosting CSE PRO Check CoAP Uri-Path: URI of the <resource> resource oneM2M-FR: AE-ID</resource>				· ·			
PRO Check CoAP • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource>							
CoAP • oneM2M-FR: AE-ID			PRO Check	<u> </u>			
• oneM2M-RQI: (token-string)							
				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>			
				Sent request contains • Method: 0.03 (PUT) • Uri-Host: IP address or the FQDN of Hosting CSE • Uri-Path: URI of the <resource> resource • oneM2M-FR: AE-ID</resource>			
				Payload: Serialized representation of updated <resource> resource</resource>			

			Interoperability Test Description			
			Sent MQTT PUBLISH message:			
			Topic: "/oneM2M/ req /< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>			
			Payload:			
		PRO Check	• op = 3 (Update)			
		MQTT	• to = URI of the <resource> resource</resource>			
			• fr = AE-ID			
	• rqi = (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>			
		PRO Check	• rsc = 2004 (CHANGED)			
		Primitive	• rqi = (token-string) same as received in request message			
			• pc = Serialized representation of <resource> resource</resource>			
			Hosting CSE sends response containing:			
		PRO Check	• 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 <resource> resource</resource>			
			Hosting sends response containing:			
6		DDO Charle	Response Code = 2.04oneM2M-RSC: 2004			
O	Mcc	PRO Check CoAP				
		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 = 2004 (Updated)			
			• rqi = (token-string) same as received in request message			
			• pc = Serialized representation of modified <resource> resource</resource>			
7		IOP Check	Check if possible that the response is forwarded by the registrar CSE to the AE.			
		PRO Check	• rsc = 2004 (CHANGED)			
		Primitive	• rqi = (token-string) same as received in request message			
		1 1111111111111111111111111111111111111	• pc = Serialized representation of <resource> resource</resource>			
			Registrar CSE forwards response containing:			
		PRO Check	• 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 <resource> resource Designation for a serial representation of <resource> resource</resource></resource>			
			Registrar forwards response containing:			
8		DDO Charle	• Response Code = 2.04			
0	Mca	PRO Check CoAP	• oneM2M-RSC: 2004			
		CUAF	 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:			
		PRO Check MQTT	Topic: "/oneM2M/resp/< AE-ID>/ <registrar cse-id="">"</registrar>			
			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 <resource> resource</resource>			
9		IOP Check	AE indicates successful operation			
	/erdict					
	Verdict					
_						

8.3.1.6 <Resource> update

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_03#01	ETSI TS 118 101 [1], clause		
		10.2.4.3		
		ETSI TS 118 104 [2], clause		
		7.3.5.2.3		
<subscription></subscription>	TD_M2M_SH_03#02	ETSI TS 118 101 [1], clause		
		10.2.11.4		
		ETSI TS 118 104 [2], clause		
O t ID - I'	TD MOM OUL 00//00	7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_03#03	ETSI TS 118 101 [1], clause		
		10.2.21.3		
		ETSI TS 118 104 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_03#04	ETSI TS 118 101 [1], clause		
-group>	1D_WZW_311_03#04	10.2.7.4		
		ETSI TS 118 104 [2], clause		
		7.3.12.2.3		
<pollingchannel></pollingchannel>	TD_M2M_SH_03#05	ETSI TS 118 101 [1], clause		
		10.2.13.4		
		ETSI TS 118 104 [2], clause		
		7.3.21.2.3		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_03#06	ETSI TS 118 101 [1], clause		
		10.2.7.9		
		ETSI TS 118 104 [2], clause		
		7.3.14.3.3		
<node></node>	TD_M2M_SH_03#07	ETSI TS 118 101 [1], clause		
		10.2.14.3		
		ETSI TS 118 104 [2], clause		
		7.3.18.2.3		
<remotecse></remotecse>	TD_M2M_SH_03#08	ETSI TS 118 101 [1], clause		
		10.2.2.3		
		ETSI TS 118 104 [2], clause		
<20>	TD_M2M_SH_03#09	7.3.3.2.3 ETSI TS 118 101 [1], clause		
<ae></ae>	1D_IVIZIVI_SH_03#09	10.2.1.3		
		ETSI TS 118 104 [2], clause		
		7.3.5.2.3		
		1.0.0.E.0		1

101

Resource Delete (Generic Test Description) 8.3.1.7

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_04
Objec	tive:		AE delete a remote <resource> resource</resource>
Confi	guratior	1:	M2M_CFG_03
Refer	ences:		
Pre-te	st cond	litions:	Parents resources need to be created on the hosting CSE
			Resource < Resource > has been created in Hosting CSE
			Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Delete Request to delete <resource> on the Hosting CSE.</resource>
		PRO Check Primitive	 op = 4 (Delete) to = URI of the resource <resource></resource> fr = AE-ID rqi = (token-string)
2	Mca	PRO Check HTTP	Sent request contains Request method = DELETE 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>

			Interoperability Test Description
			Sent request contains
			Method: 0.04 (DELETE)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	Uri-Path: URI of the resource < Resource >
		00/11	• 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: • op = 4 (Delete)
		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.
			• 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></resource>
		HTTP	Host: IP address or the FQDN of Hosting CSE
			• X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Message-body: Empty Cant as supplied.
			Sent request contains
4	Мсс		 Method: 0.04 (DELETE) Uri-Host: IP address or the FQDN of Hosting CSE
	Wioo	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="">"</hosting>
			Payload:
		PRO Check	• op = 4 (Delete)
		MQTT	• to = URI of the resource <resource></resource>
			• fr = AE-ID
			rqi = (token-string)pc = empty
5		IOP Check	• pc = empty Check if possible that the <resource> resource is deleted in the Hosting CSE.</resource>
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	• rqi = (token-string) same as received in request message
			Hosting 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
			Hosting sends response containing:
		PRO Check	Response Code = 2.02 Add BEG COSE (RELETER)
6	Мсс	CoAP	oneM2M-RSC: 2002(DELETED)
			oneM2M-RQI: (token-string) same as received in request message Product to a secret.
		PRO Check	Payload: empty Sont MOTT BUBLISH magazage:
			Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/< Registrar CSE-ID>/ <hosting cse-id="">"</hosting>
			Payload:
			• to = AE-ID
		MQTT	• 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.

			Interoperability Test Description
		PRO Check	• rsc = 2002 (DELETED)
		Primitive	 rqi = (token-string) same as received in request message
			Registrar CSE forwards 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 forwards response containing:
		PRO Check	• Response Code = 2.02
8	Mca	CoAP	oneM2M-RSC: 2002(DELETED)
		00/11	 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
		Q.T.	• fr = Registrar CSE-ID
			• rsc = 2002(DELETED)
			rqi = (token-string) same as received in request message
9		IOP Check	AE indicates successful operation
	/erdict		
PRO \	Verdict		

8.3.1.8 <Resource> delete

<resource></resource>	Identifier	Refs	IOP Verdict	PRO Verdict
<container></container>	TD_M2M_SH_04#01	ETSI TS 118 101 [1], clause 10.2.4.4 ETSI TS 118 104 [2], clause 7.3.5.2.4		
<contentinstance></contentinstance>	TD_M2M_SH_04#02	ETSI TS 118 101 [1], clause 10.2.19.5 ETSI TS 118 104 [2], clause 7.3.6.2.4		
<subscription></subscription>	TD_M2M_SH_05#03	ETSI TS 118 101 [1], clause 10.2.11.5 ETSI TS 118 104 [2], clause 7.3.7.2		
<accesscontrolpolicy></accesscontrolpolicy>	TD_M2M_SH_05#04	ETSI TS 118 101 [1], clause 10.2.21.4 ETSI TS 118 104 [2], clause 7.3.1.2		
<group></group>	TD_M2M_SH_05#05	ETSI TS 118 101 [1], clause 10.2.7.5 ETSI TS 118 104 [2], clause 7.3.12.2.4		
<pollingchannel></pollingchannel>	TD_M2M_SH_05#06	ETSI TS 118 101 [1], clause 10.2.13.5 ETSI TS 118 104 [2], clause 7.3.21.2.4		
<fanoutpoint></fanoutpoint>	TD_M2M_SH_05#07	ETSI TS 118 101 [1], clause 10.2.7.10 ETSI TS 118 104 [2], clause 7.3.14.3.4		
<node></node>	TD_M2M_SH_05#08	ETSI TS 118 101 [1], clause 10.2.14.4 ETSI TS 118 104 [2], clause 7.3.18.2.4		

8.3.1.9 Discovery with multiple filter criteria

			Interoperability Test Description			
Identi			TD_M2M_SH_09			
Objec	tive:		AE discovers accessible resources residing in the remote Hosting CSE using multiple Filter Criteria			
Confi	guration	n:	M2M_CFG_03			
	ences:	••	ETSI TS 118 101 [1], clause 10.2.6			
1.0101	011000.		ETSI TS 118 104 [2], clause 7.2.3.13			
			,			
Pre-te	est cond	litions:	Two <container> resources with labels "key1" and "key2" are created in Hosting CSE. CSE. A Croup resources with labels "key1" and "key2" is created in Hosting CSE.</container>			
			A <group> resources with labels "key1" and "key2" is created in Hosting CSE. Test Sequence</group>			
Step	RP	Туре	Description			
		Stimulus	AE is requested to send a discovery request to discover specific resources located in			
1		Cumaido	hosting CSE using multiple filter critiria (label, resource type and limit)			
		PRO Check Primitive	Sent request contains op = 2 (Retrieve) to = URI of hosting CSEBase fr = AE-ID rqi = (token-string) fu=1 lbl=key1 lbl=key2 rty=3 lim=1 pc = empty Sent request contains Request method = GET Request-Target: {URI of hosting CSEBase}?fu=1&key=1&key=2&rty=3&lim=1			
2	Mca	PRO Check CoAP	 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: rty=3 Uri-Query: lim=1 Payload: empty Sent MQTT PUBLISH message: 			
		PRO Check MQTT	Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: • op = 2 (Retrieve) • to = URI of hosting CSEBase • fr = AE-ID • rqi = (token-string) • fu = 1 • lbl=key1 • lbl=key2 • rty=3 • lim=1 • pc = empty</registrar></ae-id>			
3		IOP Check	Check if possible that the request is forwarded by the registrar CSE to the Hosting CSE.			

			Interoperability Test Description
			Forwarded request contains
			• op = 2 (Retrieve)
			• to = hosting CSEBase
			• fr = AE-ID
		PRO Check	• rqi = (token-string)
		Primitive	• fu=1
		rillillive	• lbl=key1
			• lbl=key2
			• rty=3
			• lim=1
			• pc = empty
			Sent request contains
		DDO Ob I	• Request method = GET
		PRO Check HTTP	 Request-Target: {URI of hosting CSEBase }?fu=1&key=2&rty=3&lim=1 Host: IP address or the FQDN of Hosting CSE
		ппг	Nost. IF address of the FQDN of Hosting 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 Hosting CSE
4	Мсс		Uri-Path: URI of hosting CSEBase
			• oneM2M-FR: AE-ID
		CoAP	oneM2M-RQI: (token-string)
		COAP	• 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="">" Payload:</hosting></registrar>
			• 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
			• 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 data object containing the address of one of the
			pc = Serialized representation of data object containing the address of one of the
			Hosting CSE sends response containing:
			Status Code = 200 (OK)
		PRO Check	• X-M2M-RSC: 2000
	Мсс	HTTP	X-M2M-RI: (token-string) same as received in request message
6			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>
			Hosting CSE sends response containing:
			• Response Code = 2.05
		PRO Check	• oneM2M-RSC: 2000
		CoAP	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
<u> </u>	I	<u> </u>	<container> resources</container>

	Interoperability Test Description				
		MQTT	Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrar cse-id="">/<hosting cse-id="">" Payload: • to = Registrar CSE-ID • 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 <container> resources</container></hosting></registrar>		
7		IOP Check	Check if possible that the response is forwarded from the registrar CSE to AE		
		PRO Check Primitive	Registrar CSE sends response containing: • rsc = 2000 (OK) • rqi = (token-string) same as received in request message • pc = Serialized representation of data object containing the address of one of the <container> resources</container>		
		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 one of the <container> resources</container>		
6	Mca	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>		
7		IOP Check	AE indicates successful operation		

8.3.1.10 Unauthorized operation (Insufficient Access Rights)

			Interoperability Test Description
Identi	fier:		TD_M2M_SH_10
Objec	tive:		AE delete request is rejected after access rights verification using retargeting.
Confi	guratior	า:	M2M_CFG_03
Refer	ences:		ETSI TS 118 104 [2], clause 7.3.1.2
Pre-test conditions:		litions:	 An <accesscontrolpolicy> resource with name {ACPName} has been created in remote hosting CSE, not allowing delete operation.</accesscontrolpolicy> AE has created an <ae> resource on registrar CSE with name {AEName}</ae> AE has created a <container> sub-resource in the <ae> resource with name {containerName} and having as accessControlPolicy-ID the ID of the remote <accesscontrolpolicy>.</accesscontrolpolicy></ae></container> Test Sequence
Step	RP	Type	Description
1		Stimulus	AE is requested to send a Request to delete the <container> resource from the registrar CSE.</container>
2	Mca	PRO Check Primitive	 op = 4 (Delete) to = URI of addressed resource fr = AE-ID rqi = (token-string) pc = empty

			Interoperability Test Description
			Sent request contains
			• Request method = DELETE
		PRO Check	Request-Target: URI of addressed 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)
		PRO Check	Uri-Host: IP address or the FQDN of Registrar CSE
		CoAP	Uri-Path: URI of addressed resource And MERICAL ID.
			 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 = 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 Primitive	• to = URI of addressed resource
			• fr = Registrar CSE-ID
			• rqi = (token-string)
			• pc = empty
		PRO Check HTTP	Sent request contains
			• Request method = GET
			Request-Target: URI of addressed resource Heat IR address on the FORM of Heating COF
			Host: IP address or the FQDN of Hosting CSE X M3M RI. (taken atring)
			 X-M2M-RI: (token-string) X-M2M-Origin: Registrar CSE-ID
			Message-body: empty
			Sent request contains
4	Mcc		• Method: 0.01 (GET)
		DDO Ob b	Uri-Host: IP address or the FQDN of Hosting CSE
		PRO Check CoAP	Uri-Path: URI of addressed resource
		COAF	• 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>
		PRO Check	Payload: • op = 2 (Retrieve)
		MQTT	• op = 2 (Retrieve) • to = URI of addressed resource
		IVIQII	• 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> resource Heating CSE conds represe containing:</accesscontrolpolicy>
6	Mcc		Hosting CSE sends response containing: • Status Code = 200 (OK)
		PRO Check	• Status Code = 200 (OK) • X-M2M-RSC: 2000
		HTTP	X-M2M-R3C. 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>
	I	1	1

	Interoperability Test Description			
			Hosting CSE sends response containing:	
			• Response Code = 2.05	
		PRO Check	• 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 <accesscontrolpolicy> resource</accesscontrolpolicy>	
			Sent MQTT PUBLISH message:	
			Topic: "/oneM2M/resp/ <registrar cse-id="">/<hosting cse-id="">"</hosting></registrar>	
			Payload:	
			• to = Registrar CSE-ID	
		MQTT	• fr = Hosting CSE-ID	
			• rsc = 2000 (OK)	
			• rqi = (token-string) same as received in request message	
			• pc = Serialized representation of <accesscontrolpolicy> resource</accesscontrolpolicy>	
7		IOP Check	Check if possible that an access denied error response is sent by registrar CSE to AE	
			Registrar CSE sends response containing:	
		PRO Check Primitive	• rsc = 4103 (ACCESS_DENIED)	
			• rqi = (token-string) same as received in request message	
			• pc = empty	
		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	
			Registrar sends response containing:	
			• Response Code = 4.03 (Forbidden)	
8	Mca	PRO Check	• oneM2M-RSC: 4103	
		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></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	
9		IOP Check	Check if possible that the <container> resource has not been deleted.</container>	
10		IOP Check	AE indicates unsuccessful operation (Delete error – no privilege)	

8.3.1.11 Notification

	Interoperability Test Description				
Identi	fier:		TD_M2M_SH_11		
Objec	tive:		AE receives a notification request from the remote hosting CSE		
Confi	guration	າ:	M2M_CFG_03		
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.12		
			ETSI TS 118 104 [2], clause 7.4.1		
Pre-te	st cond	litions:	 A <container> resource has been created on hosting CSE</container> 		
			 AE has created an <ae> resource on registrar CSE</ae> 		
			 AE has created a <subscription> resource for the <container> resource on the</container></subscription> 		
			remote hosting CSE.		
			Test Sequence		
Step	RP	Type	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		
2	Mca	Primitive	• from = Hosting CSE-ID		
			• rqi = (token-string)		
			pc = Serialized representation of Notification data object		

			Interoperability Test Description
			Sent request contains
			Request method = POST
			Request-Target: URI of AE resource
		PRO Check	Host: IP address or FQDN registrar CSE
		HTTP	• X-M2M-RI: (token-string)
			• X-M2M-Origin: Hosting CSE-ID
			• 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
		DDO Ob I	Uri-Path: URI of AE resource
		PRO Check CoAP	oneM2M-FR: Hosting CSE-ID
		COAP	• 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)
3		IOP Check	 pc = empty Check if possible that the Notify request is forwarded by the registrar CSE to the AE-ID.
		101 Official	• op = 5 (Notify)
		PRO Check Primitive	• to = AE
			• from = Hosting CSE-ID
			• rqi = (token-string)
			• pc = Serialized representation of Notification data object
			Sent request contains
			• Request method = POST
		PRO Check	Request-Target: AE
		HTTP	Host: IP address or FQDN registrar CSE
			• X-M2M-RI: (token-string)
			X-M2M-Origin: Hosting CSE-ID
			• 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) Liri Heat: IR address or FORM of registrar CSE
			Uri-Host: IP address or FQDN of registrar CSE Uri-Path: AE
		PRO Check	oneM2M-FR: Hosting CSE-ID
		CoAP	• 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)
5		IOP Check	 pc = empty Check if possible that the response is sent by the AE to the registrar CSE.
5		TOP CHECK	AE sends response containing:
_		PRO Check	• rsc = 2000 (OK)
6	Mcc	Primitive	• rqi = (token-string) same as received in request message
			• pc = empty

			Interoperability Test Description
			AE sends response containing:
		PRO Check	Status Code = 200 (OK)
		HTTP	• X-M2M-RSC: 2000
		11111	X-M2M-R3c. 2000 X-M2M-R1: (token-string) same as received in request message
			Message-body: empty AE conde response containing:
			AE sends response containing: • Response Code = 2.05
		PRO Check	· ·
		CoAP	• oneM2M-RSC: 2000
			oneM2M-RQI: (token-string) same as received in request message
			Payload: empty Cont MOTT BUBLISH recognition
			Sent MQTT PUBLISH message: Topic: "/oneM2M/resp/ <registrarcse-id>/<ae-id>"</ae-id></registrarcse-id>
			Payload:
			• to = Registrar CSE-ID
		MQTT	• fr = Hosting CSE-ID
			• rsc = 2000 (OK)
			• rqi = (token-string) same as received in request message
7		IOD Charle	• pc = empty Chack if possible that the response is forwarded by registror CSE to Heating CSE.
7		IOP Check	- Check if possible that the response is forwarded by registrar CSE to Hosting CSE
		PRO Check Primitive	Registrar CSE sends response containing:
			• rsc = 2000 (OK)
			• rqi = (token-string) same as received in request message
			pc = empty Registrar CSE sends response containing:
		DDO Chaak	Status Code = 200 (OK)
	Мса	PRO Check HTTP	• Status Code = 200 (OK) • X-M2M-RSC: 2000
			 X-M2M-RI: (token-string) same as received in request message Message-body: empty
			Registrar CSE sends response containing:
			• Response Code = 2.05
6		PRO Check	• Response Code = 2.05 • oneM2M-RSC: 2000
		CoAP	
			oneM2M-RQI: (token-string) same as received in request message Powlead: ampty
			Payload: empty Sent MQTT PUBLISH message:
			Topic: "/oneM2M/resp/ <hosting cse-id="">/<registrar cse-id="">"</registrar></hosting>
			Payload:
		PRO Check	• to = Registrar CSE-ID
		MQTT	• fr = Hosting CSE-ID
		IVIQII	• rsc = 2000 (OK)
			• rqi = (token-string) same as received in request message
			• rqi = (tokeir-stillig) same as received in request message • pc = empty
		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).
	1	TOT OTTOOK	The indicates ansaccessful operation (Delete effor the privilege).

8.3.2 <mgmtObj> Test Description

8.3.2.1 <mgmtObj> Create

	Interoperability Test Description			
Identifier:			TD_M2M_SH_05	
Objec	tive:		AE creates a <mgmtobj> resource</mgmtobj>	
Config	guration	າ:	M2M_CFG_03	
Refere	ences:		ETSI TS 118 101 [1], clause 10.2.8.2	
Pre-te	st cond	litions:	Management Session between Management Server and Management Client	
			Test Sequence	
Step	RP	Type	Description	
1		Stimulus	AE is requested to send an <mgmtobj> Create Request to create an <mgmtobj> on IN-CSE.</mgmtobj></mgmtobj>	

			Interoperability Test Description
			• op: 1 (CREATE)
			• fr: AE-ID
		PRO Check	• to: {CSEBaseName}/{node}
		Primitive	• rqi = (token-string)
			• ty = 13 (mgmtObj)
			pc: Serialized representation of the <mgmtobj> resource</mgmtobj>
			Sent request contains
			Request method = POST
			Request-Target: {CSEBaseName}/{node}
		PRO Check	Host: IP address or FQDN of the IN-CSE
		HTTP	X-M2M-RI: (token-string)
			• X-M2M-Origin: AE-ID
			Content-Type: application/vnd.onem2m-res+xml; ty=13 or application/vnd.onem2m-
			res+json; ty=13
			Message-body: Serialized representation of the <mgmtobj> resource</mgmtobj>
			Sent request contains
2	Mca		• Method: 0.02 (POST)
			Uri-Host: IP address or the FQDN of Registrar CSE Hei Paths (COSE as News) ((see th.))
		PRO Check	Uri-Path: {CSEBaseName}/{node}
		CoAP	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>
			Sent MQTT PUBLISH message:
		PRO Check MQTT	Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">"</registrar>
			Payload:
			• op = 1 (Create)
			• to = {CSEBaseName}/{node}
			• fr = AE-ID
			• rqi = (token-string)
			• ty = 13 (mgmtObj)
		IOD Ob I	pc = Serialized representation of <ae> resource Objects if a pagint of the state of the property of the state of the state of the property of the state of the property of the state o</ae>
3		IOP Check PRO Check	Check if possible that the <mgmtobj> resource is created in IN-CSE N/A</mgmtobj>
		Primitive	IVA
		PRO Check	Requests to create the corresponding MO using Add DM command.
		OMA DM	The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of ETSI</mgmtobj>
		OIVIA DIVI	TS 118 105 [10].
4	mc	PRO Check BBF TR069	Requests to create the corresponding information model using AddObject RPC.
			The mapping of <mgmtobj> and information model or RPC can be referenced from</mgmtobj>
			clause 7 of ETSI TS 118 106 [11]. Requests to create the corresponding Objects using Create LWM2M Create operations.
		PRO Check	The mapping of <mgmtobj> and Object can be referenced from clause 6.3 of ETSI</mgmtobj>
		OMA LWM2M	TS 118 105 [10].
E		IOD Charle	Check if possible that the corresponding MO for OMA DM, information model for BBF
5		IOP Check	TR069 or Object for OMA LWM2M is created on the Managed Entity.
		PRO Check	N/A
		Primitive	D
		PRO Check	Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105
6	mc	OMA DM PRO Check	[10]. Successful response of the RPC. Details can be found in clause 8.1 ETSLTS 118 106
		BBF TR069	[11].
		PRO Check	Response with status code 2.01 Created. Details can be found in clause 6.4 ETSI
		OMA LWM2M	TS 118 105 [10].
			• rsc = 2001 (CREATED)
7	Mca	PRO Check	• rqi = (token-string) same as received in request message
	11.50	Primitive	pc = Serialized representation of <mgmtobj> resource</mgmtobj>
•	•	•	

	Interoperability Test Description		
			IN-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
			Content-Location: URI of the created <mgmtobj> resource</mgmtobj>
			Content-Type: application/vnd.onem2m-res+xml or application/vnd.onem2m-res+json
			Message-body: Serialized representation of <mgmtobj> resource</mgmtobj>
			IN-CSE 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 <mgmtobj> resource</mgmtobj>
			Payload: Serialized representation of <mgmtobj> resource</mgmtobj>
			IN-CSE 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 <mgmtobj> resource</mgmtobj>
8		IOP Check	AE indicates successful operation
_	erdict		
PRO \	/erdict		

8.3.10.2 <mgmtObj> Update

	Interoperability Test Description					
Identi	fier:		TD_M2M_SH_06			
Objective:			AE updates a <mgmtobj> resource</mgmtobj>			
Confi	guration	1:	M2M_CFG_03			
Refer	ences:		ETSI TS 118 101 [1], clause 10.2.8.4			
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> 			
2	Мса	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>			
		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>			

			Interoperability Test Description
			Sent MQTT PUBLISH message
			Topic: "/oneM2M/reg/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
			Payload:
		PRO Check	• op = 3 (Update)
		MQTT	to = {CSEBaseName}/{node}/{mgmtObj}
			• fr = AE-ID
			• rqi = (token-string)
			 pc = Serialized representation of <mgmtobj> resource</mgmtobj>
3		IOP Check	Check if possible that the <mgmtobj> resource is updated in IN-CSE</mgmtobj>
		PRO Check	N/A
		Primitive	
		PRO Check	Requests to update the corresponding MO using Replace DM command.
		OMA DM	The mapping of <mgmtobj> and MO can be referenced from clause 5.3 of ETSI</mgmtobj>
		0.000	TS 118 105 [10].
4	mc	DD 0 01 1	Requests to Update the corresponding information model using SetParameterValues
		PRO Check	RPC.The mapping of <mgmtobj> and information model or RPC can be referenced from</mgmtobj>
		BBF TR069	clause 7 of ETSI TS 118 106 [11].
		DDO Charle	Requests to Update the corresponding Objects using LWM2M Write operations.
		PRO Check OMA LWM2M	The mapping of <mgmtobj> and Object can be referenced from clause 6.3 of ETSI</mgmtobj>
		OIVIA LVVIVIZIVI	TS 118 105 [10].
5		IOP Check	Check if possible that the corresponding MO for OMA DM, information model for BBF
3			TR069 or Object for OMA LWM2M is Updated on the Managed Entity.
		PRO Check	N/A
		Primitive	
	mc	PRO Check	Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105
6		OMA DM	[10].
		PRO Check	Successful response of the RPC. Details can be found in clause 8.1 ETSI TS 118 106
		BBF TR069	[11].
		PRO Check	Response with status code 2.04 Changed. Details can be found in clause 6.4 ETSI TS 118 105 [10].
		OMA LWM2M	• rsc = 2004 (CHANGED)
		PRO Check	• rqi = (token-string) same as received in request message
		Primitive	
			pc = Serialized representation of <mgmtobj> resource CCF condo representation of <mgmtobj> resource </mgmtobj></mgmtobj>
			IN-CSE sends response containing:
		PRO Check	• Code = 200
		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 Assessment and a Content-Type: application/vnd.onem2m-res+json
			Message-body: Serialized representation of <mgmtobj> resource</mgmtobj>
			IN-CSE sends response containing:
7	Mca	PRO Check	• Response Code = 2.05
		CoAP	• oneM2M-RSC: 2004
			oneM2M-RQI: (token-string) same as received in request message
			Payload: Serialized representation of <mgmtobj> resource NOTE and a MOTE BUBLISH resource</mgmtobj>
			IN-CSE sends a MQTT PUBLISH message
			Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>
		DDO Object	Payload: • to = AE-ID
		PRO Check	
		MQTT	• fr = Registrar CSE-ID
			 rqi = (token-string) same as received in request message rsc = 2004
		IOD OF	pc = Serialized representation of <mgmtobj> resource</mgmtobj>
8	/ord:-t	IOP Check	AE indicates successful operation
	/erdict		
PKU	Verdict		

8.3.10.3 <mgmtObj> Retrieve

	Interoperability Test Description				
Identi	ifier:		TD_M2M_SH_07		
Objec			AE retrieves a <mgmtobj> resource</mgmtobj>		
	guratio	n:	M2M_CFG_03		
	ences:		ETSI TS 118 101 [1], clause 10.2.8.3		
Pre-te	est cond	ditions:	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>		
		PRO Check Primitive	 op = 2 (RETRIEVE) to = {CSEBaseName}/{node}/{mgmtObj} fr = AE-ID rqi = (token-string) 		
		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;		
2	Mca	PRO Check CoAP	Sent request contains		
		PRO Check MQTT	Sent a MQTT PUBLISH message: Topic: "/oneM2M/req/ <ae-id>/<registrar cse-id="">" Payload: • op = 2 (Retrieve) • to = {CSEBaseName}/{node}/{mgmtObj} • fr = <ae-id> • rgi = (token-string)</ae-id></registrar></ae-id>		
3		IOP Check	Check if possible that the <mgmtobj> resource is retrieved in IN-CSE</mgmtobj>		
		PRO Check	N/A		
4	mc	Primitive PRO Check OMA DM PRO Check BBF TR069	Requests to retrieve the corresponding MO using Get DM command. Requests to retrieve the corresponding information model using GetParametersValue RPC.		
		PRO Check OMA LWM2M	Requests to retrieve the corresponding Objects using Retrieve LWM2M Read operation.		
5		IOP Check			
		PRO Check Primitive PRO Check	N/A Response with status code (200) OK with the information of the MO. Details can be found		
6	mc	OMA DM PRO Check BBF TR069 PRO Check OMA LWM2M	in clause 5.4 ETSI TS 118 105 [10]. Successful response of the RPC with the information about the management related information. Details can be found in clause 8.1 ETSI TS 118 106 [11]. Response with status code 2.05 Content with the information of the Object. Details can be found in clause 6.4 ETSI TS 118 105 [10].		
		PRO Check Primitive	 rsc = 2000 (OK) rqi = (token-string) same as received in request message pc = Serialized representation of <mgmtobj> resource</mgmtobj> IN-CSE sends response containing: 		
7	Mca	Mca	PRO Check HTTP	Status Code =200 (OK) X-M2M-RSC: 2000 X-M2M-RI: (token-string) same as received in request message Message-body: Serialized representation of <mgmtobj> resource</mgmtobj>	

	Interoperability Test Description		
		PRO Check CoAP	IN-CSE sends response containing: • Response Code = 2.05 • oneM2M-RSC: 2000 • 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 • rsc = 2000 • rqi = (token-string) same as received in request message • pc = Serialized representation of <mgmtobj> resource</mgmtobj></registrar></ae-id>
8		IOP Check	AE indicates successful operation
IOP \	/erdict		
PRO '	Verdict		

8.3.10.4 <mgmtObj> Delete

Interoperability Test Description							
Identi	fier:		TD M2M SH 08				
Objective:			AE deletes a <mgmtobj> resource</mgmtobj>				
Configuration:			M2M_CFG_03				
References:			ETSI TS 118 101 [1], clause 10.2.8.5				
Pre-test conditions:			Management Session between Management Server and Management Client				
			Test Sequence				
Step	RP	Type	Description				
1		Stimulus	AE is requested to send an <mgmtobj> Delete Request to delete an <mgmtobj> on IN-CSE.</mgmtobj></mgmtobj>				
2	Mca	PRO Check Primitive	 op = 4 (DELETE) to = {CSEBaseName}/{node}/{mgmtObj} fr = AE-ID rqi = (token string) 				
		PRO Check HTTP	Sent DELETE request contains Request method = DELETE Request-Target: {CSEBaseName}/{node}/{mgmtObj} Host: IP address or the FQDN of Registrar CSE X-M2M-RI: (token-string) X-M2M-Origin: AE-ID				
		PRO Check CoAP	Sent DELETE request contains • Method: 0.04 (DELETE) • Uri-Host: IP address or the FQDN of Registrar CSE • Uri-Path: {CSEBaseName}/{node}/{mgmtObj} • oneM2M-FR: AE-ID • oneM2M-RQI: (token-string)				
		PRO Check MQTT	Sent a MQTT PUBLISH message Topic: "/oneM2M/req/< AE-ID>/ <registrar cse-id="">" Payload: • op = 4 • to = {CSEBaseName}/{node}/{mgmtObj} • fr = AE-ID • rqi = (token-string)</registrar>				
3		IOP Check	Check if possible that the <mgmtobj> resource is deleted in IN-CSE</mgmtobj>				
4	mc	PRO Check Primitive PRO Check OMA DM	N/A Requests to delete the corresponding MO using Delete DM command.				
		PRO Check BBF TR069	Requests to delete the corresponding information model using DeleteObject RPC.				
		PRO Check OMA LWM2M	Requests to delete the corresponding Objects using LWM2M Delete operation.				

Interoperability Test Description							
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.				
6	mc	PRO Check Primitive	N/A				
		PRO Check OMA DM	Response with status code (200) OK. Details can be found in clause 5.4 ETSI TS 118 105 [10].				
		PRO Check BBF TR069	Successful response of the RPC. Details can be found in clause 8.1 ETSI TS 118 106 [11].				
		PRO Check OMA LWM2M	Response with status code 2.02 Deleted. Details can be found in clause 6.4 ETSI TS 118 105 [10]				
	Мса	PRO Check Primitive	 rsc = 2002 (DELETED) rqi = (token-string) same as received in request message 				
		PRO Check HTTP	IN-CSE sends response containing: • Status Code = 200 • X-M2M-RSC: 2002				
			X-M2M-RI: (token-string) same as received in request message				
		PRO Check CoAP	IN-CSE sends response containing: • Response Code = 2.05				
7			• Response Code = 2.05 • oneM2M-RSC: 2002				
,			oneM2M-RQI: (token-string) same as received in request message				
		PRO Check MQTT	IN-CSE sends a MQTT PUBLISH message Topic: "/oneM2M/resp/ <ae-id>/<registrar cse-id="">"</registrar></ae-id>				
			Payload:				
			• to = AE-ID				
			• fr = Registrar CSE-ID				
			• rqi = (token-string) same as received in request message				
		100.01	• rsc = 2002				
8	/l: - t	IOP Check	AE indicates successful operation				
	/erdict						
LKO,	/erdict						

History

Document history					
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