Enabler Test Specification for Presence XDM Interoperability

Candidate Version 1.1 – 31 Mar 2008

Open Mobile Alliance

OMA-ETS-Presence_XDM_INT-V1_1-20080331-C

Contents

1. Scope

This document describes in detail available test cases for XDM V1.1 enabler (http://www.openmobilealliance.org).

The coverage of the tests includes Presence XDMS. Presence SIMPLE Enabler should also consider test cases included in the XDM-ETS document.

2. References

2.1 Normative References

[IOPPROC] "OMA Interoperability Policy and Process", Version 1.5, Open Mobile Alliance™, OMA-IOP-Process-V1_5, www.openmobilealliance.org

[OMA-PoC-AD] "Push to Talk over Cellular Architecture", Version 1.1, Open Mobile Alliance™, OMA-AD_PoC-V1_0, www.openmobilealliance.org

[OMA-PoC-CP] "Push to Talk over Cellular Control Plane", Version 1.1, Open Mobile Alliance™, OMA-CP_PoC-V1_0, www.openmobilealliance.org

[OMA-PoC-RD] "Push to Talk over Cellular Requirements", Version 1.1, Open Mobile Alliance™, OMA-RD_PoC-V1_0, www.openmobilealliance.org

[OMA-TS_XDM_Shared] "Shared XDM Specification ", Version 1.1, Open Mobile Alliance™, OMA-TS-XDM_Shared-V1_1, www.openmobilealliance.org

[OMA-TS-XDM_Core] "XML Document Management (XDM) Specification", Version 1.1, Open Mobile Alliance™, OMA-TS-XDM_Core-V1_1, www.openmobilealliance.org

[PoC_XDM] "PoC XDM Specification", Open Mobile Alliance_, OMA-TS-XDM_PoC-V1_0, Version 1.0, http://www.openmobilealliance.org/

[Presence_XDM] "Resource List Service (RLS) XDM Specification", Open Mobile Alliance_, OMA-TSPresence_ SIMPLE_RLS_XDM-V1_0, Version 1.1, http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, www.ietf.org/rfc/rfc2119.txt

[RLS_XDM] "Presence XML Document Management Specification", Version 1.1, Open Mobile Alliance_, OMA-TS-Presence_SIMPLE_XDM-V1_1, Version 1.1, http://www.openmobilealliance.org/

[XDM-ETS] "Enabler Test Specification for XML Document Management (Interoperability)", Open Mobile Alliance, OMA-ETS-XDM_INT-V1_0-20050902-D, http://www.openmobilealliance.org/

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Open Mobile Alliance™. OMA-Dictionary, www.openmobilealliance.org

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope”, are normative, unless they are explicitly indicated to be informative.

Following test case numbering scheme is followed in the ETS for different Test Sections.

Note: In following numbering scheme “int” stands for “Interoperability Test Cases”.

Following is the definition of fields in the naming convention:

XDM-1.1	int	01	00
Specification Release (XDM Version) number.	int – interoperability	Test-category	Test Sequence Number

3.2 Definitions

UE	A client terminal with assigned User[N] used for testing.
URI List	Number of URIs grouped together and as a list conforming to the definition in [OMA-TS_XDM_Shared].
user	A person using UE.
User[N]	A subscriber assigned to UE, where N is an integer number (i.e. User1, User2, etc.)

3.3 Abbreviations

AD	Architecture Document
ETS	Enabler Test Specification
IMS	IP Multimedia Subsystem
IP	Internet Protocol
OMA	Open Mobile Alliance
PoC	Push to talk over Cellular
RD	Requirements Document
RLS	Resource List Server
SIP	Session Initiation Protocol
UE	User Equipment
URI	Universal Resource Identifier
XCAP	XML Configuration Access Protocol
XDM	XML Document Management
XDMC	XDM Client
XDMS	XDM Server
XML	Extensible Mark-up Language

3.4 Testing Policies

This section is intended to describe the testing policies used throughout the document.

It should be noted that the requirement of multi-company testing is compulsory for TestFest events, bilateral testing events and similar multi-company IOT events.

For the UE testing, the focus is on UE1 (from Company1) and UE2 (from Company2). UE1, UE2 and the XDMS MUST be from different vendors.

UE1 is used for test case execution (storage, retrieval and modification of the XML documents in XDMS).
UE2 is used only for verification of UE1's test cases execution (storage, retrieval and modification of the XML documents in XDMS).

UE1 and UE2 are from different companies and are preloaded with the same user credentials to validate that UE1 correctly manipulated XML documents.

3.5 Testing Assumptions

For all test cases throughout the document, the following assumptions are valid unless stated otherwise. Therefore, these assumptions shall be seen as a part of the preconditions:

General:

- The UE implements XDMC and is able to communicate with an XDMS.
- The XDMC establishes a connection to and downloads the required information from the XDMS during power up or during the initial retrieval of XML documents.
- The UE is capable of indicating a successful retrieval of documents from an XDMS.
- The UE is capable of indicating an unsuccessful retrieval of documents from an XDMS.
- The UE is capable of indicating an unsuccessful authentication.

4. Introduction

The purpose of this document is to provide test cases for XDM Enabler Release V1.1.

The following items on an overall level are needed to adequately test the XDM Enabler:

- A Client that is comprised of XDMC plus Watcher and/or Presence Source logical components
- Presence XDMS and optionally Shared XDMS.

Detailed information will be included in the specific test cases description.

The XDM Enabler tests are carried out using XCAP and SIP protocols. The transport protocols used are UDP, TCP and/or TLS.

5. Test Cases

This section lists the steps needed for the execution of the Presence XDM test cases.

5.1 Aggregation Proxy Test Cases

This section represents the test cases that will be executed by the following configurations of enablers:

- Client with XDMC
- Aggregation Proxy with a Shared XDMS
- Aggregation Proxy with an Presence XDMS

5.1.1 Authentication Test Cases

5.1.1.1 Normal Flow

5.1.1.1.1 Presence-XDM-1.1-int-0100 Authentication of XDMC in the UE

Test Case Id	Presence-XDM-1.1-int-0100
Test Object	UE with XDMC, Aggregation Proxy, Presence XDMS, optionally, Shared XDMS
Test Case Description	Verify that UE can be successfully authenticated by the Aggregation Proxy when retrieving documents over the XCAP interface. TEST CASE GOAL: Verify that when the UE initiates the communication with an XDMS, the Aggregation Proxy authenticates it.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o UE (with User1 credentials) o Aggregation Proxy o Presence XDMS, optionally, Shared XDMS • Prerequisite for this test: o XDM-1.1-int-0150 – authentication failure test case executes successfully. This is to verify that the Aggregation Proxy is challenging the requests. o Both, the UE and the Aggregation Proxy support the same type of authentication (definition of the authentication is outside of the scope of the ETS) o User1 is preconfigured in the network with valid credentials o The UE is powered off o Authentication is enabled in the Aggregation Proxy o The XDMC communicates with an XDMS when the user accesses the documents for the first time after power up o UE does not have any documents stored locally for User1 o Logging might be requred for this test case, in o rder to fully verify the successfull authentication

Test Procedure	1. UE is powered on. 2. XDMS is contacted to retrieve User1 presence document (s).
Pass-Criteria	2. No failed authentication indication is displayed to the user. (The UE may display the retrieved XDMS documents).

5.1.1.2 Error Flow

5.1.1.2.1 Presence-XDM-1.1-int-0150 Too Many Failed Authentication Attempts by XDMC in UE

Test Case Id	Presence-XDM-1.1-int-0150
Test Object	UE with XDMC, Aggregation Proxy
Test Case Description	Verify that the Aggregation Proxy rejects too many failed authentication attempts by the UE. TEST CASE GOAL: Verify that the client will not be able to access XML documents during the initial communication attempt with an XDMS.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o UE (with User1 credentials) o Aggregation Proxy • Prerequisite for this test: o The UE is powered off o Both, the UE and the Aggregation Proxy support the same type of authentication o User1 is preconfigured in the network with wrong credentials (for the Aggregation Proxy to reject authentication requests) o Authentication is enabled in the Aggregation Proxy o The "count of allowed challenges" in the Aggregation Proxy is set to 5 or less o UE does not have any documents for User1
Test Procedure	1. UE is powered on. 2. XDMS is contacted to retrieve User1 presence document (s).
Pass-Criteria	2. Failed authentication indication is displayed to the user.

5.2 Presence XDMS Test Cases

5.2.1 Document Management and Authorization Test Cases

5.2.1.1 Normal Flow

5.2.1.1.1 Presence-XDM-1.1-int-0200 Presence XDMS Document Creation, Retrieval and Validation

Test Case Id	Presence-XDM-1.1-int-0200
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS)
Test Case Description	Verify that the user can create and retrieve an XML document from the Presence XDMS. TEST CASE GOAL: Verify creation and retrieval of Presence Authorization Rules document. This test case if for the UEs that are able to create the Presence Authorization Rules document.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o 2 UEs (both with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes successfully o UE1 and UE2 are powered off o No local Presence Authorization Rules document is stored on UE1 and UE2. o A common set of authorization rules is supported by UE1and UE2 o UE1 is able to create Presence Authorization Rules document o UE1 and UE2 are able to set and display the authorization rules for users per Presence Authorization Rules document stored in Presence XDMS
Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is created with set of rules for User2 using UE1. 3. UE1 is powered off. 4. UE2 is powered on. 5. The Presence Authorization Rules document is retrieved from Presence XDMS using UE2.

Pass-Criteria	2. UE1 displays the authorization rules for User2. The rules are noted. 5. UE2 displays the authorization rules for User2. The rules are identical to those in Step 1.

5.2.1.1.2 Presence-XDM-1.1-int-0201 Presence XDMS Document Retrieval and Validation

Test Case Id	Presence-XDM-1.1-int-0201
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if documents in Presence XDMS refer to Shared XDMS)
Test Case Description	Verify that the user can retrieve an XML document from the Presence XDMS. TEST CASE GOAL: Verify retrieval of Presence Authorization Rules document.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o UE (with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required documents in Presence XDMS refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes successfully o UE1 is powered off o Presence Authorization Rules document is stored in Presence XDMS. The document includes the authorization rules for User2. o No local Presence Authorization Rules document is stored on UE1. o A common set of authorization rules is supported by UE1and UE2 o UE1 is able to set and display the authorization rules for users per Presence Authorization Rules document stored in Presence XDMS
Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is retrieved from Presence XDMS.
Pass-Criteria	1. UE1 displays the authorization rules for User2.

5.2.1.1.3 Presence-XDM-1.1-int-0202 Presence XDMS Element Creation, Retrieval and Validation.

Test Case Id	Presence-XDM-1.1-int-0202
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS)

Test Case Description	Verify that the UE can create and retrieve XML elements from the Presence XDMS. TEST CASE GOAL: Add an additional rule to already existing Presence Authorization Rules document stored in the Presence XDMS. Verify that the Presence Authorization Rules document has been updated correctly in the Presence XDMS.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o 2 UEs (both with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required if documents in Presence XDMS refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes succesfully o UE1 and UE2 are powered off o Presence Authorization Rules document is already stored in Presence XDMS. The document includes a set of the authorization rules for User2. o No local Presence Authorization Rules document is stored on UE1 and UE2. o UE1 is able to modify Presence Authorization Rules document (User1 is a primary principal of the document). o A common set of authorization rules is supported by UE1and UE2 o UE1 and UE2 are able to set and display the authorization rules for users per Presence Authorization Rules document stored in the Presence XDMS
Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is retrieved from Presence XDMS using UE1. 3. An additional rule is added to the retrieved set of User2's authorization rules using UE1. The new set of rules for User2 is noted. 4. UE1 is powered off. 5. UE2 is powered. 6. The Presence Authorization Rules document is retrieved from Presence XDMS using UE2.
Pass-Criteria	2. UE1 displays the authorization rules for User2. 3. UE1 displays the authorization rules for User2. The result is a set of rules from Step 2 plus one additional rule. 6. UE2 displays the authorization rules for User2. The set of rules is identical to the set of rules noted in Step 3.

5.2.1.1.4 Presence-XDM-1.1-int-0203 Presence XDMS Document and Element Modification, Retrieval and Validation

Test Case Id	Presence-XDM-1.1-int-0203
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS)
Test Case Description	Verify that the UE can modify and retrieve XML elements and documents from the Presence XDMS. TEST CASE GOAL: Modify and retrieve an already existing rule in Presence Authorization Rules document stored in the Presence XDMS. Verify that the rule has been updated correctly in the Presence XDMS.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o 2 UEs (both with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required if documents in Presence XDMS refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes succesfully o UE1 and UE2 are powered off o Presence Authorization Rules document is already stored in Presence XDMS. The document includes a set of the authorization rules for User2. o No local Presence Authorization Rules document is stored on UE1 and UE2. o UE1 is able to modify Presence Authorization Rules document (User1 is a primary principal of the document). o A common set of authorization rules is supported by UE1and UE2 o UE1 and UE2 are able to set and display the authorization rules for users per Presence Authorization Rules document stored in the Presence XDMS
Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is retrieved from Presence XDMS using UE1. 3. One of the displayed rules is modified using UE1 (i.e. an old value of therule is changed to a new value). The new version of rules for User2 is noted. 4. UE1 is powered off. 5. UE2 is powered on. 6. The Presence Authorization Rules document is retrieved from Presence XDMS using UE2.

Pass-Criteria	2. UE1 displays the authorization rules for User2. 3. UE1 displays the authorization rules for User2. The result is a set of rules from Step 2 with a modification of one of the rules. 6. UE2 displays the authorization rules for User2. The set of rules is identical to the set of rules noted in Step 3.

5.2.1.1.5 Presence-XDM-1.1-int-0204 Presence XDMS Element Deletion, Retrieval and Validation

Test Case Id	Presence-XDM-1.1-int-0204
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS)
Test Case Description	Verify that the UE can delete XML elements from the Presence XDMS. TEST CASE GOAL: Delete a rule from the Presence Authorization Rules document stored in the Presence XDMS and verify that the rule is removed from the Presence XDMS.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.
Preconditions	• Equipment: o 2 UEs (both with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required if documents in Presence XDMS refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes succesfully o UE1 and UE2 are powered off o Presence Authorization Rules document is already stored in Presence XDMS. The document includes a set of the authorization rules for User2. o No local Presence Authorization Rules document is stored on UE1 and UE2. o UE1 is able to modify Presence Authorization Rules document (User1 is a primary principal of the document). o A common set of authorization rules is supported by UE1and UE2 o UE1 and UE2 are able to set and display the authorization rules for users per Presence Authorization Rules document stored in the Presence XDMS

Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is retrieved from Presence XDMS using UE1. 3. One of the displayed rules is deleted using UE1. The new version of rules for User2 is noted. 4. UE1 is powered off. 5. UE2 is powered on. 6. The Presence Authorization Rules document is retrieved from Presence XDMS using UE2.
Pass-Criteria	2. UE1 displays the authorization rules for User2. 3. UE1 displays the authorization rules for User2. The result is a set of rules from Step 2 less one of the rules. 6. UE2 displays the authorization rules for User2. The set of rules is identical to the set of rules noted in Step 3.

5.2.1.1.6 Presence-XDM-1.1-int-0205 Presence XDMS Document Deletion, Retrieval and Validation

Test Case Id	Presence-XDM-1.1-int-0205
Test Object	UE with Presence XDMC, Aggregation Proxy, Presence XDMS, Shared XDMS (only required if UE stores documents in Presence XDMS that refer to Shared XDMS)
Test Case Description	Verify that the UE can delete an XML document from the Presence XDMS. TEST CASE GOAL: Delete the Presence Authorization Rules document stored in the Presence XDMS and verify that the document no longer exists in the Presence XDMS.
Specification Reference	Refer to Appendix A
SCR Reference	Refer to Appendix A
Tool	Not available.
Test code	Not available.

Preconditions	• Equipment: o 2 UEs (both with User1 credentials) o Aggregation Proxy o Presence XDMS o Shared XDMS (only required if documents in Presence XDMS refer to Shared XDMS) • Prerequisite for this test: o XDM-1.1-int-0100 – executes succesfully o UE1 and UE2 are powered off o Presence Authorization Rules document is already stored in Presence XDMS. It includes rules for at least one Watcher. o No local Presence Authorization Rules document is stored on UE1 and UE2. o UE1 is able to remove Presence Authorization Rules document (User1 is a primary principal of the document). o A common set of authorization rules is supported by UE1and UE2 o UE1 and UE2 are able to set and display the authorization rules for users per Presence Authorization Rules document stored in the Presence XDMS
Test Procedure	1. UE1 is powered on. 2. The Presence Authorization Rules document is retrieved from Presence XDMS using UE1. 3. The retrieved Presence Authorization Rules document is deleted from Presence XDMS using UE1. 4. UE1 is powered off. 5. UE2 is powered on. 6. The Presence Authorization Rules document is retrieved from Presence XDMS using UE2.
Pass-Criteria	2. UE1 displays the authorization rules for the users. 3. UE1 does not display any authorization rules for the users. 6. UE2 does not display any authorization rules for the users.

5.2.1.2 Error Flow

Not Available.

5.2.2 Data Consistency Test Cases

The data consistency scenarios for the same end user are tested in section 5.4.1 with additions in this section.

The data consistency scenarios tested with multiple users are not available in the release 1 of XDM Enabler. Only the primary principal (the creator) of the document will be able to read, write, modify, and delete his/her documents; and therefore, other users will not be able to test with primary principle's documents.

5.2.2.1 Normal Flow

Not Available.

5.2.2.2 Error Flow

Not Available.

5.2.3 Authorization Test Cases

5.2.3.1 Normal Flow

In the release 1 of XDM Enabler, only the owner of the document can be its primary principal. Currently, it is also not possible to change the primary principal. The owner authorization rules are tested in the section 5.3.1. Successful execution of these test cases represents successful authorization.

5.2.3.2 Error Flow

Not Available

Appendix A. SCR and Specification References

Test Case Number in ETS	SCR-reference	Spec (AD,CP,UP)-reference
Presence-XDM-1.1-int-0100	XDM-XDMC-C-001:M XDM-XDMC-C-002:M XDM-XDMC-C-005:M XDM-XDMC-C-006:M XDM-XDMS-S-001:M XDM-XDMS-S-005:M XDM-AP-S-001:M XDM-AP-S-002:M XDM-AP-S-004:M XDM-AP-S-005:M XDM-AP-S-007:O	**OMA-XDM-Spec:** 5.2 6.3.1 6.4.1 6.1.1.1 6.1.1.2 6.2.1 6.3 6.3.2 6.3.3 6.4 6.4.2 6.4.3 RFC 2617
Presence-XDM-1.1-int-0150	XDM-XDMC-C-001:M XDM-XDMC-C-002:M XDM-XDMC-C-005:M XDM-XDMC-C-006:M XDM-XDMS-S-001:M XDM-XDMS-S-005:M XDM-AP-S-001:M XDM-AP-S-002:M XDM-AP-S-004:M XDM-AP-S-007:M	**OMA-XDM-Spec:** 5.2 6.3.1 6.4.1 6.1.1.1 6.1.1.2 6.2.1 6.3 6.3.2 6.3.3 6.4 6.4.2 6.4.3 RFC 2617
Presence-XDM-1.1-int-0200 Presence-XDM-1.1-int-0201 Presence-XDM-1.1-int-0202 Presence-XDM-1.1-int-0203 Presence-XDM-1.1-int-0204 Presence-XDM-1.1-int-0205	XDM-XDMC-C-001:M XDM-XDMC-C-002:M XDM-XDMC-C-005:M XDM-XDMC-C-006:M XDM-XDMS-S-001:M XDM-XDMS-S-005:M XDM-AP-S-001:M XDM-AP-S-002:M XDM-AP-S-004:M XDM-AP-S-007:M Presence_XDM-AUS-001 Presence_XDM-AUS-002 Presence_XDM-AUS-004 Presence_XDM-AUS-006 Presence_XDM-AUS-008 Presence_XDM-AUC-001 Presence_XDM-AUC-002 Presence_XDM-AUC-004 Presence_XDM-AUC-006	**OMA-XDM-Spec:** 5.2 6.1.1.1 6.1.1.2 6.2.1 6.3 6.3.1 6.3.2 6.4 6.4.1 6.4.2 6.4.3 **Presence_XDM:** 5.1 5.1.1.1 5.1.1.4 5.1.1.6 5.1.1.7 5.1.1.11 5.1.2.1 5.1.2.4

		5.1.2.6 5.1.2.7 5.1.2.11

Appendix B. Change History (Informative)

B.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version –or- No previous version within OMA

B.2 Draft/Candidate Version 1.1 History

Document Identifier	Date	Sections	Description
Draft Version OMA-ETS-Presence_XDM_INT-V1_1	04 Dec 2007	n/a	Initial version based on OMA-ETS-Presence_XDM_INT-V1_0-20051220-A, References to PRS 1.0 specifications changed to PRS 1.1 and template updated
Candidate Version OMA-ETS-Presence_XDM_INT-V1_1	31 Mar 2008	n/a	TP approval document reference: OMA-TP-2008-0107