Enabler Test Requirements for OMA DM Smart Card

Candidate Version 1.0 – 27 Apr 2010

Open Mobile Alliance

OMA-ETR-DM_SC-V1_0-20100427-C

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Figures

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1. Scope

The Enabler Test Requirements (ETR) document for the Enabler under consideration is created and maintained by the Technical Working Group (TWG) responsible for the technical specifications for the corresponding Enabler.

The ETR document is intended to cover at least those requirements collected in the Requirements Document [DMSCRD] and the Architecture Document [DMSCAD] in addition to any other items the TWG has identified as important enough to warrant attention from interoperability perspective and identify any technical functionalities that should be covered by testing.

2. References

2.1 Normative References

[DMERELD]	"Enabler Release Definition for OMA Device Management", OMA-ERELD-DM- V1_2, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/
[DMETR]	"Enabler Test Requirements for Device Management", OMA-ETR-DM- V1_2, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/
[DMETS]	"Enabler Test Specification for Device Management", OMA-ETS-DM- V1_2, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/
[DMNOTI]	"OMA Device Management Notification Initiated Session", OMA-TS-DM_Notification-V1_2, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/
[DMPRO]	"OMA Device Management Protocol", OMA-TS-DM_Protocol-V1_2, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/
[DMSCAD]	"DM Smart Card Architecture", Open Mobile Alliance™, OMA-AD-DM_SC-V1_0, URL:http://www.openmobilealliance.org/
[DMSCERELD]	"Enabler Relese Definition for OMA Device Management Smart Card", Open Mobile Alliance™, OMA-ERELD-DM_SC-V1_0, URL:http://www.openmobilealliance.org/
[DMSCRD]	"DM Smart Card Requirements", Open Mobile Alliance™, OMA-RD-DM_SC-V1_0, URL:http://www.openmobilealliance.org/
[IOPPROC]	"OMA Interoperability Policy and Process", Version 1.3, Open Mobile Alliance™, OMA-ORG-IOP_Process-V1_3, URL:http://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
[SCWSERELD]	"Enabler Release Definition for Smartcard-Web-Server", Open Mobile Alliance™, OMA-ERELD-Smartcard_Web_Server-V1_1, URL:http://www.openmobilealliance.org/
[SCWSETR]	"Enabler Test Requirements for Smartcard-Web-Server", Open Mobile Alliance™, OMA-ETR-Smartcard_Web_Server-V1_1, URL:http://www.openmobilealliance.org/
[SCWSETS]	"Enabler Test Specification for Smartcard-Web-Server", Open Mobile Alliance™, OMA-ETS-Smartcard_Web_Server-V1_1, URL:http://www.openmobilealliance.org/
[SCWSTS]	"Smartcard-Web-Server", Open Mobile Alliance™, OMA-TS-Smartcard_Web_Server-V1_1, URL:http://www.openmobilealliance.org/

2.2 Informative References

[OMADICT]	"Dictionary for OMA Specifications", Version 2.7, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_7, URL:http://www.openmobilealliance.org/

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" and "Introduction", are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

TestFest   Multi-lateral interoperability testing event

3.3 Abbreviations

AD   Architecture Document

DM_SC   Device Management Smart Card

OMA   Open Mobile Alliance

RD   Requirements Document

SCWS   Smartcard Web Server

4. Introduction

The purpose of this Enabler Test Requirements document is to help guide the testing effort for the Enabler OMA DM Smart Card V1.0, documenting those areas where testing is most important to ensure interoperability of implementations.

The Enabler under consideration comprises the following specifications:

- OMA DM Smart Card Requirements, version 1.0: Specifying the requirements for the enabler.

- OMA DM Smart Card Architecture, version 1.0: Specifying the architectural design for the enabler.

- OMA DM Smart Card Technical Specification, version 1.0: Specifying the technical details that allow the implementation of a DM Server in a Smart Card that is able to establish DM Sessions as defined in [DMPRO] with DM Client residing in the device.

Generally, the testing activity should aim at validating the normal working behaviour of the client/server interactions, as well as testing the error conditions whenever it is possible to set up the appropriate scenarios. As OMA DM Smart Card V1.0 re-uses [DMERELD] and [SCWSERELD] enablers testing of those enablers is outside the scope of this specification; nevertheless, minimum features required from those enablers to build OMA DM Smart Card V1.0 are included in the present specification to provide a testing framework. The following sections provide a more detailed description of the testing requirements for OMA DM_SC V1.0.

This document also intends to provide some guidance on the prioritization of the specifications and features to be tested within Enabler OMA DM Smart Card V1.0.

5. Test Requirements

The OMA DM Smart Card enabler (DM_SC) allows the implementation of a DM Server in a Smart Card and provides the mechanisms required to trigger DM sessions with DM Client residing in the device.

5.1   Enabler Test Requirements

The test requirements collected in this section are related to the Enabler DM_SC V1.0.

In this section, it should be defined what specific functionalities of this Enabler shall or should be tested to ensure adequate operational of the implementations, including any security requirements and constraints on usage if specified (e.g. user can forward a media object but can not visualize it). That means that devices (clients/serves) shall do what they have to do and they shall not do what they are not allowed to do. Both types of test requirements (positive and negative testing) should be included here if so required.

Besides this information, OMA Architecture specifies a "Framework Architecture", consisting of a set of common functions that need to be invoked in most use cases involving the different Service Enablers. The functionality requirements defined in the OMA Framework Architecture, i.e. authentication, authorization, charging, billing, common directory, etc. should also be listed in this table.Use cases are the main input to identify test requirements.

The following test requirements should cover both Conformance test requirements (i.e. functionality to be tested to verify wheter it is implemented either in the client side or in the server side) and Interoperability test requirements (i.e. client/server interactions one with another)

The following sections (Mandatory and Optional test requirements) could also be separated for client and server test requirements.

The tables for the mandatory and optional test requirements include the following columns:

FEATURE KEY: A set of characters uniquely identifying the enabler test requirement to be tested. It is suggested that the Feature Key is no longer than 4 to 5 characters. The purpose of the Feature Key is that when used, it distinctly refers to only one feature to be tested.

FEATURE DESCRIPTION: A description of a technical specification feature to be tested.

FEATURE TEST REQUIREMENTS: A description of what shall be tested for the feature,

5.1.1 Mandatory Test Requirements

Mandatory test requirements are covering mandatory features/functions of an Enabler which shall always be implemented in the client/server

NOTE: These tables need to be filled out at a level where ambiguity is not present but details are not overwhelming.

Ambiguity means that the details do not have several meanings nor have more than one possible implementation path following.

5.1.1.1 DM Client

No new test requirements for DM Clients are introduced in this specification. Testing of the DM Client mandatory features is a prerequisite and MUST be performed according to [DMETS].

Table 1 lists some options of [DMERELD] along with their test requirements (i.e. [DMETR]) that become mandatory within the context of DM_SC. Testing of such features MUST be performed according to the corresponding test specification (i.e. [DMETS]).

	Feature Key	Feature Description (e.g. Feature from [DMETR])	Feature Test Requirements
Normal Flow	NOTI_C_M_01	Server Initiated Notification	Required to test server initiated notification
	HTTP_C_M_02	HTTP binding	Required to test the transport is utilized
Error Flow			

Table 1: DM Client Applicability Table for Enabler Specific Mandatory Test Requirements

5.1.1.2 DM_SC Server

No new test requirements for DM Servers are introduced in this specification. Testing of the DM Server mandatory features MUST be performed according to [DMETS].

Table 2 lists some options of [DMERELD] along with their test requirements (i.e. [DMETR]) that become mandatory within the context of DM_SC. Testing of such features MUST be performed according to the corresponding test specification (i.e. [DMETS]).

Mandatory features for a SCWS MUST comply with their corresponding requirements and test specification (i.e. [SCWSETR] and [SCWSETS]).

	Feature Key	Feature Description (e.g. Feature from [DMETR])	Feature Test Requirements
Normal Flow	NOTI_S_M_01	Server Initiated Notification	Required to test server initiated notification
	HTTP_S_M_02	HTTP binding	Mandated to test the transport is utilized
Error Flow			

Table 2: DM_SC Server Applicability Table for Enabler Specific Mandatory Test Requirements

5.1.1.3 DM_SC Gateway

Feature Key	Feature Description	Feature Test Requirements

	Feature Key	Feature Description	Feature Test Requirements
Normal Flow	OFTCFG_D_M_01	Support of off-line trigger method configuration	Required to test that *Registry Application* data is properly communicated to the Smart card
	WUP_D_M_02	Support of wake-up mechanism	Required to test that the Smart card is able to send a DM Notification using either an off-line trigger, or an on-line trigger.
	TRIG_D_M_03	Support of trigger method	Required to test that DM Notification is locally sent from the Smart card to the DM Client.
	TRNS_D_M_04	Use local transport protocols with the Smart card	Required to test whether local transport protocols can be used with smart card. i.e. BIP protocol or TCP/IP protocol
Error Flow	TERR_D_M_01	Support of trigger method errors	Required to test that error cases (e.g. DM Client busy) are properly handled by the Smart card.

Table 3: DM_SC Gateway Applicability Table for Enabler Specific Mandatory Test Requirements

5.1.2 Optional Test Requirements

Optional test requirements are covering optional features/functions of an Enabler.

If an optional requirement of the Enabler is implemented in the client/server, this requirement SHALL be tested.
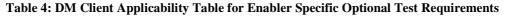
NOTE: These tables need to be filled out at a level where ambiguity is not present but details are not overwhelming.

Ambiguity means that the details do not have several meanings nor have more than one possible implementation path following.

5.1.2.1 DM Client

Testing of the DM Client optional features used by the DM_SC enabler MUST be performed according to the corresponding test specification (i.e. [DMETS]). Those features MUST be included in the [DMSCTS] and are listed hereafter for completeness.

	Feature Key	Feature Description	Feature Test Requirements
Normal Flow	HTTPS_C_O_01	HTTPS support	Required to test the transport is utilized
Error Flow			

Table 4: DM Client Applicability Table for Enabler Specific Optional Test Requirements

5.1.2.2 DM_SC Server

Testing of the DM Server and SCWS optional features used by the DM_SC enabler MUST be performed according to the corresponding test specification (i.e. [DMETS] and [SCWSETS]).

	Feature Key	Feature Description	Feature Test Requirements
Normal Flow	HTTPS_S_M_01	HTTPS support	Mandated to test the transport is utilized
Error Flow			

Table 5: DM_SC Server Applicability Table for Enabler Specific Optional Test Requirements

5.1.2.3 DM_SC Gateway

	Feature Key	Feature Description	Feature Test Requirements
Normal Flow			
Error Flow			

Table 6: DM_SC Gateway Applicability Table for Enabler Specific Optional Test Requirements

5.2   Backwards Compatibility

Smartcards which implement this version of the enabler [DMSCERELD] SHALL be compatible with OMA DM V1.2 Notification [DMNOTI].

Smartcards which implement this version of the enabler [DMSCERELD] SHALL respond to a Pkg#1 from an OMA DM V1.2 client by using OMA DM protocol V1.2 [DMPRO].

5.3   Enabler Dependencies

The DM_SC depends upon two OMA enablers:

1.   OMA Device Management V1.2 enabler [DMERELD]. From which it re-uses transparently:

   o   OMA Device Management Notification Initiated Session V1.2 [DMNOTI]

   o   OMA Device Management Protocol V1.2 [DMPRO] and corresponding DTD.

2.   OMA Smartcard Web Server V1.1 enabler [SCWSERELD]. From which it re-uses transparently:

   o   OMA Smartcard Web Server V1.1 technical specification [SCWSTS]

Appendix A.   Change History   (Informative)

A.1   Approved Version History

Reference	Date	Description
n/a	n/a	No previous version within OMA

A.2   Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Version OMA-ETR-DM_SC-V1_0	03 Dec 2009	All	Incorporates: OMA-DM-SC-2009-0016R02-INP_ETR_baseline
Candidate Version OMA-ETR-DM_SC-V1_0	n/a	n/a	Status changed to Candidate by TP: Ref# OMA-TP-2010-0190R01- INP_DM_Smart_Card_V1_0_ERP_for_Candidate_Approval