



Enabler Validation Plan for DM Smart Card

Candidate Version 1.0 – 18 OCT 2011

Open Mobile Alliance
OMA-EVP-DM_SC-V1_0-20111018-C

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1. Scope

This document details the Validation plan for the OMA DM Smart Card v1.0 Enabler Release. The successful accomplishment of the validation activities will be required for the Enabler to be considered for Approved status.

The validation plan for the OMA DM Smart Card v1.0 Enabler Release specifications is based on testing expectations in the Enabler Test Requirements (ETR) [DMSCETR]. While the specific test activities to be performed are described in the Enabler Test Specification (ETS) [DMSCETS] the test environment is described in this plan. This test environment details infrastructure, operational and participation requirements identified for the needed testing activities.

1.1 Assumptions

As this enabler re-uses DM 1.2 and SCWS 1.1 it is assumed that products participating to formal OMA Test Fests or Bi-Lateral Testing are fully compliant with these enablers, and have passed the corresponding Conformance Testing.

1.2 Exclusions

None.

2. References

2.1 Normative References

- [DMSCCEICS] “Enabler Implementation Conformance Statement DM Client Implementation of OMA DM Smart Card”, Version 1.0, Open Mobile Alliance™. OMA-EICS-DM_SC_Client-V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMSCERELD] “Enabler Release Definition for OMA Device Management Smart Card”, Version 1.0, Open Mobile Alliance™. OMA-ERELD-DM_SC-V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMSCETR] “Enabler Test Requirements for OMA DM Smart Card”, Version 1.0, Open Mobile Alliance™. OMA-ETR-DM_SC-V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMSCETS] “Enabler Test Specification for OMA DM Smart Card”, Version 1.0, Open Mobile Alliance™. OMA-ETS-DM_SC-V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMSCSCEICS] “Enabler Implementation Conformance Statement Smart card Implementation of OMA DM Smart Card”, Version 1.0, Open Mobile Alliance™. OMA-EICS-DM_SC_SmartCard-V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMSCTS] “DM Smart Card Technical Specification”, Version 1.0, Open Mobile Alliance™. OMA-TS-DM_SC_V1_0. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [IOPPROC] “OMA Interoperability Policy and Process”, Version 1.9, Open Mobile Alliance™, OMA-ORG-IOP_Process-V1_9, [URL:http://www.openmobilealliance.org/](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](http://www.ietf.org/rfc/rfc2119.txt)

2.2 Informative References

- [ACMOWP] “White Paper on Provisioning Objects”, OMA-WP-AC_MO, Open Mobile Alliance™, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMERELD] “Enabler Release Definition for DM 1.2”, Version 1.2, Open Mobile Alliance™. OMA-ERELD-DM-V1_2_1. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMETG] “Enabler Test Guidelines for Device Management”, Version 1.2, Open Mobile Alliance™. OMA-ETG-DM-V1_2. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMADICT] “Dictionary for OMA Specifications”, Version 2.8, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_8, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [SCWSERELD] “Enabler Release Definition for Smartcard-Web-Server, version 1.1”. Open Mobile Alliance™. OMA-ERELD-Smartcard_Web_Server-V1_1. [URL: http://www.openmobilealliance.org](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”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

Device Management	See [DMERELD]
DM_SC Server	See [DMSCTS]
Management Authority	See [ACMOWP]
Management Object	See [OMADICT]

3.3 Abbreviations

DM	Device Management
DM_SC	Device Management Smart Card
ERELD	Enabler Release Definition
OMA	Open Mobile Alliance
TF	Test Fest
UICC	Universal Integrated Circuit Card

4. Enabler Validation Description

Section 5 of this specification includes a description for full testing activities of [DMSCERELD] during Test Fests. Considerations for testing during bilateral tests are provided in section 6.

5. TestFest Activities

5.1 Enabler Test Guidelines

The DM_SC Enabler [DMSCERELD] provides indications on how to establish OMA DM sessions between an OMA DM Client in the Device and a DM Server implemented in the UICC, called DM_SC Server. The DM Protocol exchanges make use of SCWS [SCWSERELD] as HTTP transport. This re-use of OMA enablers requires a rationalization of the testing effort:

- The OMA DM protocol exchanged between the DM Client and the DM_SC Server, the OMA DM Notification message, bootstrap, security considerations and different transport bindings, such as HTTP/HTTPS, are fully described in [DMERELD].
- The communication between a device and a UICC making use of HTTP is fully described in SCWS [SCWSERELD].
- The mechanisms to initiate an OMA DM Session over HTTP/HTTPS from the DM_SC Server are fully described in [DMSCERELD].

It is out of the scope of this specification to perform full testing of [DMERELD] or [SCWSERELD]. The main objective is to fully test [DMSCERELD]. This testing will implicitly lead to the testing of several [SCWSERELD] and [DMERELD] features.

5.1.1 Minimal Test Configuration

The minimum test configuration requires the following items:

1. Infrastructure:
 - **Device** with an OMA DM Client which conforms to [DMSCERELD] requirements (e.g. support of OMA DM v1.2, or any later compatible release; support of the Bearer Independent Protocol; support of several wake-up mechanisms, etc).
 - **Smart Card** including a Cellular Network subscription and a DM_SC Server which conforms to [DMSCERELD] requirements.
 - **Cellular Network** supporting short messages (e.g. GSM, UMTS, etc).
2. Tools:
 - **Smart Card reader/writer** to retrieve from the Smart Card data that was read (e.g. using GET command) from the Device's DM Tree; or to store in the Smart Card data that will be conveyed (e.g. using ADD/REPLACE commands) to the Device's DM Tree.
 - **Smart Card Tracer** to analyze and record the data exchanges between the Device and the Smart Card during the execution of the test cases.
3. Data:
 - **Content Files** to be stored in the Smart Card prior to the execution of test cases (i.e. Management Objects or sub-trees of Management Objects).
 - **Device bootstrap (pre)configuration** to ensure execution of test cases (e.g. DM Account settings specific to the DM_SC Server that will ensure adequate bootstrap of the Device and thus proper execution of the test cases).

5.1.2 Minimal Participation Guidelines

The minimum participation required to engage a **prototype testing** (or Bi-Lateral Testing) of the enabler is:

- 1 DM Client

- 1 DM_SC Server

The minimum participation required to perform **meaningful testing** of this enabler during a formal OMA Hosted Test Fest or formal Bi-Lateral Testing is:

- 1 DM Client implementations
- 1 DM_SC Server implementation

Due to the implicit physical constraints related to Devices and Smart Cards implementing [DMSCERELD] (i.e. the DM_SC Server runs in the UICC currently inserted in the Device) only formal OMA Hosted Test Fests and formal Bi-Lateral Testing can be performed on the DM_SC 1.0 Enabler Release.

The minimum number of implementations tested prior to the **Approval** of this enabler is:

- 2 DM Clients
- 2 DM_SC Servers

5.1.3 Optimal TestFest Achievement Test Case Priority Guidelines

The [DMSCETS] Test Cases listed below represent all the Test Cases for the Enabler that it is thought can be executed during a single test session at an OMA Test Fest. This list is not intended to be the only tests executed at a Test Fest, and teams are encouraged to execute more tests if they are able to do so in the time allowed.

In order to facilitate maximum test coverage of the functionality of the enabler over a number of Test Fests, the following list may be modified by the IOP WG between test events to reflect the latest priorities.

The list includes:

Description	Test Case Id	Priority
Off-line trigger to replace data in the DM Tree over HTTPS using ISO interface	DMSC-1.0-int-001	High
On-line trigger to add data in the DM Tree over HTTPS using ISO interface	DMSC-1.0-int-002	High
Off-line trigger to replace data in the DM Tree over HTTPS using USB interface	DMSC-1.0-int-101	High
On-line trigger to add data in the DM Tree over HTTPS using USB interface	DMSC-1.0-int-102	High

Table 1: Description of Test Cases

5.2 Enabler Test Requirements

5.2.1 Test Infrastructure Requirements

Test infrastructure will include one or several Devices, one or several Smart Cards and one Cellular Network which comply to the infrastructure's minimum test configuration described in section 5.1.1 of the present document.

5.2.2 Enabler Execution Flow

5.2.2.1 Off-line Trigger after Power On

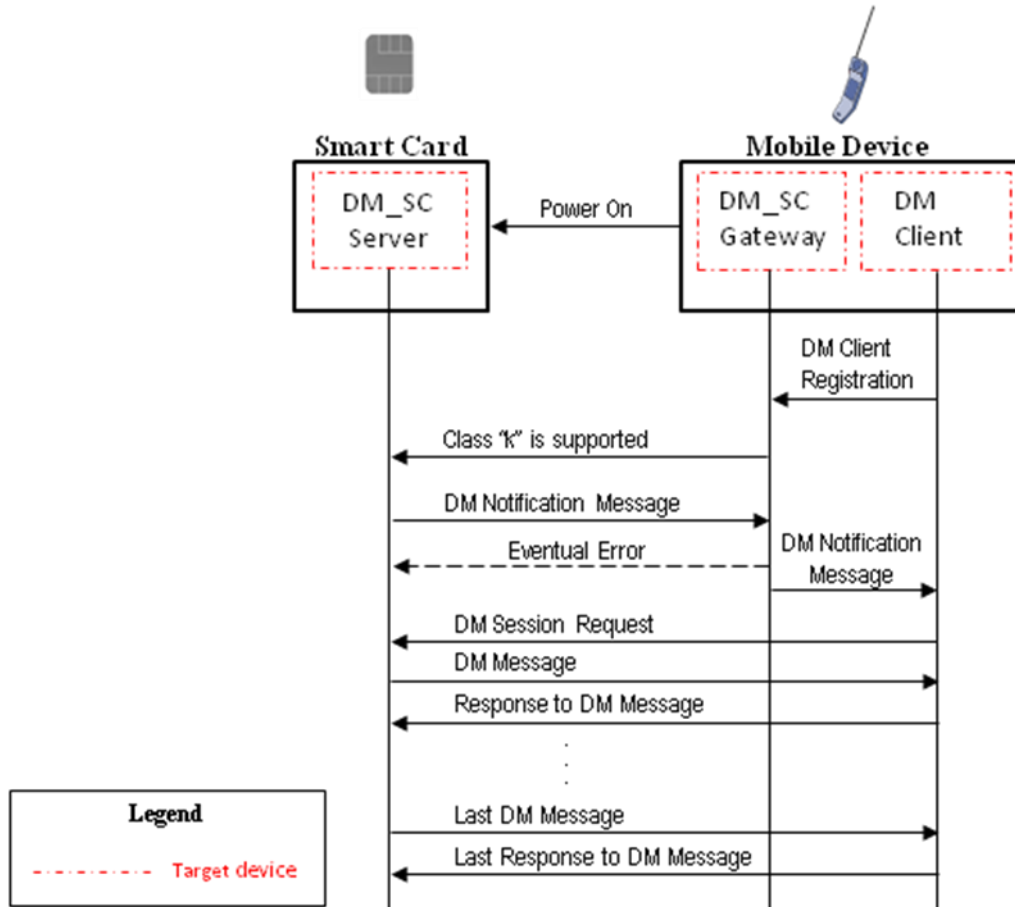


Figure 1: Off-line Trigger after Power On Flow

5.2.2.2 On-line Trigger after Power On

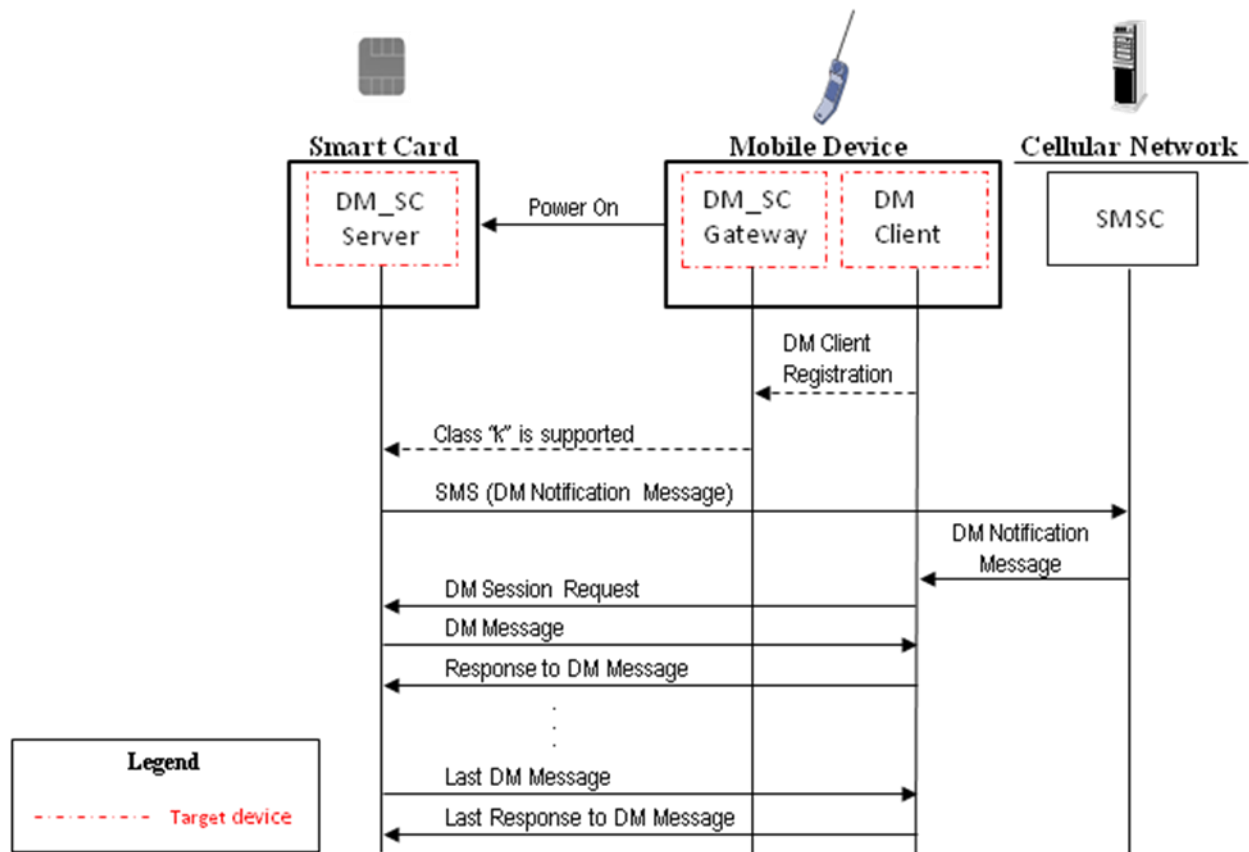


Figure 2: On-line Trigger after Power On Flow

5.2.3 Test Content Requirements

5.2.3.1 DM Account

The DM Client has to be pre-configured (i.e. bootstrapped) with DM Account information, such as AppAddr, as indicated in [DMSCETS]. Other DM Account information, such as server identifier, connectivity settings and authentication parameters, shall be configured as defined in [DMSCETS]. Sample bootstrap data is available in the OMA Content Server: <http://testfest.openmobilealliance.org>.

5.2.3.2 DM Notification

The information relative to configuration of DM Notifications sent by the DM_SC Server shall be configured as defined in [DMSCETS].

5.2.4 Test Limitations

5.2.4.1 Physical

None.

5.2.4.2 Resources

None.

5.2.5 Test Restrictions

This enabler is not to be tested through Virtual Test Fests.

5.2.6 Test Tools

TBD

5.2.6.1 Existing Tools to be Used

TBD

5.2.6.2 Test Tool Requirements

It is strongly recommended to have a Smartcard protocol analyzer to allow verification of the DM protocol messages exchanged between the Device and the DM_SC Server. The Smartcard or the Mobile Device providers can bring this tool.

5.2.7 Resources Required

It is expected that both DM Client/Device and DM_SC Server implementations have at least ONE dedicated human resource to supporting the testing during the entire duration of a test session. The resource SHOULD be familiar with the actual implementation of [DMSCERELD] and [DMERELD] so that he/she can answer any pertinent questions immediately and if necessary make changes to connection setup and other implementation aspects.

5.3 Tests to be performed

The following sections describe the tests related to the formal TestFest validation activities.

5.3.1 Entry Criteria for TestFest

Implementations by members wishing to participate in the TestFest need to ensure minimal requisite capability of their implementations, specifically support of [DMERELD] and [SCWSERELD], consult ETS [DMSCETS] for further details, and any special comments.

5.3.2 Testing to be Performed at TestFest

The following tests need to be performed to fully cover the range of capabilities of the enabler and defined protocols. These tests are to be covered in the TestFest. The tests are defined in the ETS [DMSCETS] and any special comments are noted.

Test Case Id	Special Conditions
DMSC-1.0-int-001	
DMSC-1.0-int-002	
DMSC-1.0-int-101	
DMSC-1.0-int-102	

Table 1: Listing of Tests to be Performed at TestFest

5.4 Enabler Test Reporting

5.4.1 Problem Reporting Requirements

Normal Reporting, no special reporting required.

5.4.2 Enabler Test Requirements

No special requirements. Please consult [DMSCETR].

6. Alternative Validation Activities

6.1.1 Bi-Lateral Tests

Entry criteria and tests to be performed during bi-lateral testing must comply with provisions made in chapter 5.3.

7. Approval Criteria

According to section 11.1 in [IOPPROC]: “Enabler Release Approval Criteria”, the OMA DM Smart Card v1.0 Enabler Release can be moved to Approved state when:

- The Enabler has been tested successfully at least one formal Test Fest
- Whose results can be improved by bi-lateral test sessions results that have been reported, along with any issues, to OMA.
- No open PRs exist.

7.1 Enabler Validation Test Cases

The following table should list the set of tests that are used for enabler validation.

Test Case Id	ETR Requirement Id	ETR Status	Notes
DMSC-1.0-int-001	NOTI_C_M_01	M	
	HTTPS_C_M_02	M	
	NOTI_S_M_01	M	
	HTTPS_S_M_02	M	
	OFTCFG_D_M_01	M	
DMSC-1.0-int-002	NOTI_C_M_01	M	
	HTTPS_C_M_02	M	
	NOTI_S_M_01	M	
	HTTPS_S_M_02	M	
	WUP_D_M_02	M	
DMSC-1.0-int-101	NOTI_C_M_01	M	
	HTTPS_C_M_02	M	
	NOTI_S_M_01	M	
	HTTPS_S_M_02	M	
	OFTCFG_D_M_01	M	
DMSC-1.0-int-102	NOTI_C_M_01	M	
	HTTPS_C_M_02	M	
	NOTI_S_M_01	M	
	HTTPS_S_M_02	M	
	WUP_D_M_02	M	

Table 2: Enabler Validation Test Cases

7.2 Non-Covered ETR Requirements

None.

Appendix A. Change History (Informative)

A.1 Approved Version History

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

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-EVP-DM_SC-V1_0	13 Sep 2010	All	Incorporates draft baseline through input contribution: OMA-IOP-MEC-2010-0077-INP_DMSC_EVP_baseline
	28 Sep 2010	Coversheet, Table of content, §5.1.3, §5.3.2, §7.1	Date updated on the coversheet, renumbering Test Case Ids: OMA-IOP-MEC-2010-0077R01-INP_DMSC_EVP_baseline
	26 Sep 2011	Table of content, §5.1.3, §5.3.2, §7.1	Tables updated in sections 5.1.3, 5.3.2 and 7.1: OMA-IOP-MEC-2011-0066-CR_New_Entries_on_DM_SC_Testing
Candidate Versions OMA-EVP-DM_SC-V1_0	18 Oct 2011	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2011-0355- INP_DMSC_1_0_EVP_for_Candidate_Approval

Appendix B. <Additional Information>

xxx

B.1 App Headers

xxx

B.1.1 More Headers

xxx

B.1.1.1 More Headers

xxx

	Column 1	Column 2
Row 1	Grid 1,1 data	Grid 1,2 data
Row 2	Grid 2,1 data	Grid 2,2 data

Table 3: Example Table