Enabler Test Report

Firmware Update Management Object v1.0

OMA TestFest (December 2006)
Version 15-Dec-2006

Open Mobile Alliance
OMA-Enabler_Test_Report-FUMO-10-2006-12-15

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1. Scope

This report describes the results from the testing carried out at OMA TestFest-17 (December 2006) concerning the Firmware Update Management Object version 1.0.

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2. References

2.1 Normative References

[OMAIOPPROC] OMA Interoperability Policy and Process, 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

[ERELD] ”Enabler Release Definition for FUMO”, OMA-ERP-FUMO-V1_0-20060615-C, URL:http://www.openmobilealliance.org/

[FUMO] "Firmware Update Management Object", OMA-TS-DM-FUMO-V1_0-20060615-C, URL:http://www.openmobilealliance.org/

[ETS] “Enabler Test Specification”, OMA-ETS-FUMO-V1_0-20061019-D, URL:http://www.openmobilealliance.org/

[ETG] “Enabler Test Guidelines”, OMA-ETG-FUMO-V1_0-20060713-A, URL:http://www.openmobilealliance.org/

[EICS] Enabler Test Specification [ETS]“Enabler Implementation Conformance Statement”, OMA-EICS-FUMO-V1_0-20060713-A, URL:http://www.openmobilealliance.org/

2.2 Informative References

[DM-v1.2] “OMA Device Management”, OMA-DRM-DM-v1_2, URL:http://www.openmobilealliance.com/.

[DM-V1_2 ETS] OMA-ETS-DM-V1_2, URL:http://www.openmobilealliance.org/

[OMADICT] Dictionary for OMA Specification, OMA-Dictionary 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

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3. Terminology and Conventions

3.1 Conventions

This is an informative document, i.e. the document does not intend to contain normative statements.

3.2 Definitions

Test Object The implementation under test is referred to as the Test Object. In this document, the Client.

Test Case A Test Case is an individual test used to verify the conformance of the Test Object to a particular mandatory feature of the protocol. A 4-digit number identifies Test Cases where the first two digits denote the Test Group ID.

Firmware Update The process of transferring an update package to a mobile device and subsequently invoking an update agent to conduct firmware update in the device.

Alternate Download The mechanism, alternative to OMA DM protocol, by which the update package can be downloaded to the device. For example, the OMA OTA v1.0 and later versions developed by the BAC-DLOTA working group is considered to be an alternative download mechanism.

Final Notification An Alert 1226 based notification message sent to the DM server from the mobile device to indicate the successful or unsuccessful completion of some activity in the mobile device.

3.3 Abbreviations

OMA	Open Mobile Alliance
DDF	Device Description Framework
DL	Download
DLOTA	Download Over-The-Air
DM	Device Management
EICS	Enabler Implementation Conformance Statement
ETG	Enabler Test Guidelines
ETS	Enabler Test Specification
FW	Firmware
FUMO	Firmware Update Management Object
MO	Management Object
OTA	Over The Air
PR	Problem Report

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4. Summary

This report gives details of the testing carried out during the OMA TestFest-17 (December 2006) for FUMO v1.0.

The report is compiled on behalf of OMA by the OMA Trusted Zone.

The work and reporting has followed the OMA IOP processes and policies [OMAIOPPROC].

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5. Test Details

5.1 Documentation

This chapter lists the details of the enabler and any documentation, tools or test suites used to prove the enabler.

Date:	1st to 8th December 2006
Location:	Montreal, Canada
Enabler:	FUMO v1.0
Process:	OMA Interoperability Policy and Process [OMAIOPPROC]
Type of Testing	Interoperability Testing
Products tested:	Client-to-server
Test Guidlines:	FUMO Enabler Test Guidlines [ETG] OMA-ETG-FUMO-V1_0-20060713-A
Test Specification:	FUMO Enabler Test Specification [ETS] OMA-ETS-FUMO-V1_0-20061019-D
Test Tool:	None
Test Code:	None
Type of Test event:	TestFest
Participants:	Bitfone Corp., InnoPath Software, Red Bend, Samsung, mFormation technologies Inc., Nokia, Synchronica plc *plus two other participants*
Number of Client Products:	5
Participating Technology Providers for clients:	Bitfone Corp., InnoPath Software, Red Bend, Samsung *plus one other Client*
Number of Server Products:	5
Participating Technology Providers for servers:	Bitfone Corp., mFormation technologies Inc., Nokia, Synchronica plc *plus one other Server*
Number of test sessions completed:	23

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5.2 Test Case Statistics

5.2.1 Test Case Summary

This chapter gives an overview of the result for all test cases included in [ETS].

The following status is used in the tables below:

- **Number of test sessions**: Used in the summary to indicate the total number of time slots used for the official testing.
- **Total number of TCs:** Used in the summary to indicate how many test cases there are in total (total number of the interoperability test cases in the ETS).
- **Number of Passed:** Used in the summary to indicate how many test cases have been run and successfully passed.
- **Number of Failed**: Used in the summary to indicate how many test cases have been run and failed (used when the failure reason is known).
- **Number of INC**: Used in the summary to indicate how many test cases have been run and did not pass due to other nature than conclusive implementation or specification failure (e.g.: the failure reason cannot be clearly determined).
- **Number of N/A:** Used in the summary to indicate how many test cases have not be run due to lack of support for the required functionality to run this test case by one or more involved implementations.
- **Number of OT:** Used in the summary to indicate how many test cases have not been run due to lack of time.

Test Section:	Number of test sessions:	Total number of TCs:	Number of Passed:	Number of Failed:	Number of N/A:	Number of OT:	Number of INC:	Total:
Client to Server TCs	23	16	328	0	40	0	0	368
Total	**23**	**16**	**328**	**0**	**40**	**0**	**0**	**368**

Table 1. Test Summary Table

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5.2.2 Test Case List

This chapter lists the statistics for all all interoperability test cases included in [ETS].

The following status is used in the tables below:

- **Runs (R)**: Used to indicate the total number of times the test case have been run (R = P + F + I).
- **Pass (P):** Used to indicate how many times the test case have been run and successfully passed.
- **Fail (F):** Used to indicate how many times the test cases have been run and failed (used when the failure reason is known).
- **Inconclusive (I)**: Used to indicate how many times the test cases have been run and did not pass due to other nature than conclusive implementation or specification failure (e.g.: the failure reason cannot be clearly determined).
- **Not Applicable (N/A):** Used to indicate how many times the test cases have not be run due to lack of support for the required functionality to run this test case by one or more involved implementations.
- **Out of Time (O):** Used to indicate how many times the test cases have not been run due to lack of time.
- **Problem Report (PR):** Used to indicate how many PRs have been issued for the test case.
- **Note:** Used to indicate the cause of the Inconclusive or Failed results.

Tests for FUMO Enabler TestFest Taken From OMA-ETS-FUMO-V1_0-20061019-D

Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-int-001	The purpose of this test is to verify that- The client supports the required FUMO elements and the required nodes in the DM tree The client can set and retrieve the optional elements of FUMO, if the optional elements are supported by the client	23	23	0	0	0	0	0006	
FUMO-1.0-int-002	The purpose of this test is to verify that- The client supports the required FUMO elements and the required nodes in the DM tree GET commands sent to the required elements to verify standard node inclusion in the DM tree are successful	23	23	0	0	0	0		

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Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-int-003	The purpose of this test is to verify that- The client supports the required FUMO elements and the required nodes in the DM tree GET commands sent to the required elements to verify standard node inclusion in the DM tree are successful	23	23	0	0	0	0		
FUMO-1.0-int-004	The purpose of this test is to verify that- The client supports the required FUMO elements and the required nodes in the DM tree GET commands sent to the required elements to verify standard node inclusion in the DM tree are successful	23	23	0	0	0	0		
FUMO-1.0-int-005	The purpose of this test is to verify that- GET commands on the mandatory FUMO objects in the DM tree are successful	23	23	0	0	0	0		
FUMO-1.0-int-006	The purpose of this test is to verify that- A client device supporting FUMO, downloads an update package from a DM server using OMA-DM protocol The client device performs a successful firmware update on the client device The client device reports the State value successfully to the DM server	23	23	0	0	0	0		
FUMO-1.0-int-007	The purpose of this test is to verify that- A client device supporting FUMO, downloads an update package from a DM server using Alternative Download mechanism (e.g. DLOTA) The client device performs a successful firmware update on the client device using Exec on Update node The client device reports the State value successfully to the DM Server	23	23	0	0	0	0		

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Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-int-008	The purpose of this test is to verify that - A client device supporting FUMO, downloads an update package from a DM server using Alternative Download mechanism (e.g. DLOTA). The client device performs a successful firmware update on the client device using Exec on DownloadAndUpdate node The client device Reports the State value successfully to the DM server	23	23	0	0	0	0		
FUMO-1.0-int-009	The purpose of this test is to verify that- The client device supporting FUMO, downloads an update package from a DM server using OMA-DM protocol When an EXEC command is performed on the ../x*/Update, the client uses the existing update package on the client for the firmware update and does NOT download a new package even though a REPLACE has been performed on the x*/Download/PkgURL node. The client device performs a successful firmware update on the client device The client device reports the State value successfully to the DM server	23	23	0	0	0	0		
FUMO-1.0-int-013	The purpose of this test is to verify that- A client device supporting FUMO, fails to download an update package due to Malformed or Bad URL The client device reports the appropriate Result Code successfully to the DM server	18	18	0	0	0	5		

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Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-int-014	The purpose of this test is to verify that- A client device supporting FUMO, fails to download an update package due to missing Update packages i.e. The URI provided by the download descriptor is wrong. The client device reports the Result Code successfully to the DM server	18	18	0	0	0	5		
FUMO-1.0-int-015	The purpose of this test is to verify- Client behaviour when the download of an Update package using OMA-DM protocol is interrupted. The client device reports the appropriate Result Code successfully to the DM server	14	14	0	0	0	9		
FUMO-1.0-int-016	The purpose of this test is to verify- Client behaviour when the download of an Update package using Alternate Download Mechanism (e.g. DLOTA) is interrupted. The client device reports the appropriate Result Code successfully to the DM server	19	19	0	0	0	4		
FUMO-1.0-int-017	The purpose of this test is to verify- Client behaviour when Update package is corrupted The client device reports the appropriate Result Code successfully to the DM server	16	16	0	0	0	7		
FUMO-1.0-int-018	The purpose of this test is to verify - A client can schedule a query to the server to check if a firmware update is available A client device sends a Generic Alert to the server with appropriate fields and information A server device responds to a Generic Alert with correct Status code	18	18	0	0	0	5		

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Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-int-019	The purpose of this test is to verify - A user can initiate a query to check if a firmware update is available A client device sends a Generic Alert to the server with appropriate fields and information. A server device responds to a Generic Alert with correct Status code	18	18	0	0	0	5		

Table 2. Test Case Counts

5.2.3 Problem Reports

During the activities for TestFest-17, the following problem reports were generated relating to the test materials and test process:

PR Number	Affecting	Description	Test Case reference / Specification reference
0006	Specification	FUMO Management Object identifier specified differently in ETS (urn:oma:mo:oma-fumo:1.0) and TS DM (urn:oma:mo:fumo:1.0) documents	OMA-ETS-FUMO-V1_0_0-20060712-D(6.1)/OMA-ERP-FUMO-V1.0_20060615-C

Full details of all Problem Reports can be found at:

http://www.openmobilealliance.org/OMA-Problem-Reporting-System.html

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6. Confirmation

This signature states that the included information is true and valid.

OMA Trusted Zone

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Appendix A. Change History (Informative)

Type of Change	Date	Section	Description
Draft Version	8th December 2006	All	Draft version produced at end of TestFest for IOP PRC checking
Final Version	15th December 2006	All	New Agreed Version For TestFest-17

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