



Enabler Test Report
FUMO (Firmware Update Management Object) v1.0

OMA TestFest (November 2008)
Version 1st December 2008

Open Mobile Alliance
OMA-EnablerTestReport-TestFest-26-Nov2008-FUMO-10-
20081201

This document is a work in process and is not an approved Open Mobile Alliance™ specification. This document is subject to revision or removal without notice. No part of this document may be used to claim conformance or interoperability with the Open Mobile Alliance specifications.

Use of this document is subject to all of the terms and conditions of the Use Agreement located at http://www.openmobilealliance.org/Use_Agreement.aspx.

Unless this document is clearly designated as an approved specification, this document is a work in process, is not an approved Open Mobile Alliance™ specification, and is subject to revision or removal without notice.

You may use this document or any part of the document for internal or educational purposes only, provided you do not modify, edit or take out of context the information in this document in any manner. Information contained in this document may be used, at your sole risk, for any purposes. You may not use this document in any other manner without the prior written permission of the Open Mobile Alliance. The Open Mobile Alliance authorizes you to copy this document, provided that you retain all copyright and other proprietary notices contained in the original materials on any copies of the materials and that you comply strictly with these terms. This copyright permission does not constitute an endorsement of the products or services. The Open Mobile Alliance assumes no responsibility for errors or omissions in this document.

Each Open Mobile Alliance member has agreed to use reasonable endeavors to inform the Open Mobile Alliance in a timely manner of Essential IPR as it becomes aware that the Essential IPR is related to the prepared or published specification. However, the members do not have an obligation to conduct IPR searches. The declared Essential IPR is publicly available to members and non-members of the Open Mobile Alliance and may be found on the “OMA IPR Declarations” list at <http://www.openmobilealliance.org/AboutOMA/IPR.aspx>. The Open Mobile Alliance has not conducted an independent IPR review of this document and the information contained herein, and makes no representations or warranties regarding third party IPR, including without limitation patents, copyrights or trade secret rights. This document may contain inventions for which you must obtain licenses from third parties before making, using or selling the inventions. Defined terms above are set forth in the schedule to the Open Mobile Alliance Application Form.

NO REPRESENTATIONS OR WARRANTIES (WHETHER EXPRESS OR IMPLIED) ARE MADE BY THE OPEN MOBILE ALLIANCE OR ANY OPEN MOBILE ALLIANCE MEMBER OR ITS AFFILIATES REGARDING ANY OF THE IPR'S REPRESENTED ON THE “OMA IPR DECLARATIONS” LIST, INCLUDING, BUT NOT LIMITED TO THE ACCURACY, COMPLETENESS, VALIDITY OR RELEVANCE OF THE INFORMATION OR WHETHER OR NOT SUCH RIGHTS ARE ESSENTIAL OR NON-ESSENTIAL.

THE OPEN MOBILE ALLIANCE IS NOT LIABLE FOR AND HEREBY DISCLAIMS ANY DIRECT, INDIRECT, PUNITIVE, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OF DOCUMENTS AND THE INFORMATION CONTAINED IN THE DOCUMENTS.

© 2008 Open Mobile Alliance Ltd. All Rights Reserved.

Used with the permission of the Open Mobile Alliance Ltd. under the terms set forth above.

Contents

1. SCOPE	4
2. REFERENCES.....	5
2.1 NORMATIVE REFERENCES	5
2.2 INFORMATIVE REFERENCES	5
3. TERMINOLOGY AND CONVENTIONS	6
3.1 CONVENTIONS	6
3.2 DEFINITIONS	6
3.3 ABBREVIATIONS	6
4. SUMMARY	8
5. TEST DETAILS.....	9
5.1 DOCUMENTATION.....	9
5.2 TEST CASE STATISTICS	10
5.2.1 Test Case Summary.....	10
5.2.2 Test Case List.....	11
5.3 PROBLEM REPORTS.....	15
6. CONFIRMATION	16
APPENDIX A. CHANGE HISTORY (INFORMATIVE)	17

1. Scope

This report describes the results from the testing carried out at OMA TestFest-26 (November 2008) concerning the Firmware Update Management Object 1.0 Enabler.

2. References

2.1 Normative References

- [IOPPROC] “OMA Interoperability Policy and Process”, Version 1.7, Open Mobile Alliance™, OMA-ORG-IOP_Process-V1_7, [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)
- [ERELD] ”Enabler Release Definition for Firmware Update Management Object”, OMA-ERELD-FUMO-V1_0_2-20080616-A, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [ERP] “Enabler Release Package”, OMA-ERP-FUMO-V1_0-20080617-A, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [ETG] “Enabler Test Guidelines”, OMA-ETG-FUMO-V1_0-20071207-A, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [ETS] “Enabler Test Specification”, OMA-ETS-FUMO-V1_0-20061215-C, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [EICS] “Enabler Implementation Conformance Statement”, OMA FUMO 1.0, OMA-EICS-FUMO-V1_0-20071101-A, <http://www.openmobilealliance.org/>

2.2 Informative References

- [OMADICT] Dictionary for OMA Specification, OMA-Dictionary <http://www.openmobilealliance.org/>

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 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.
Test Group	A Test Group is a collection of Test Cases, which are executed, in a single session
Test Object	The implementation under test is referred to as the Test Object. In this document, the Client.
TestFest	Multi-lateral interoperability testing event
Trusted Zone	An OMA staff function to provide a neutral confidential information and results collection service to OMA Members. The Trusted Zone is responsible for all reports resulting from an OMA Test Event and to ensure that all general reports cannot attributed to any one individual participating company
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

DLOTA	Download Over The Air
DM	Device Management
EICS	Enabler Implementation Conformance Statement
ERELED	Enabler Release Definition
ERP	Enabler Release Package
ETG	Enabler Test Guidelines
ETS	Enabler Test Specification
FUMO	Firmware Update Management Object
INC	Inconclusive
N/A	Not Applicable
OMA	Open Mobile Alliance
OT	Out of Time

PR Problem Report
SCTS SncML Conformance Test Suite
TC Test Case

4. Summary

This report gives details of the testing carried out during the OMA TestFest-26 (November 2008) for Firmware Update Management Object 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].

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:	13 th to 21 st November 2008
Location:	Seoul, Korea
Enabler:	FUMO v1.0
Process:	OMA Interoperability Policy and Process [OMAIOPPROC]
Type of Testing	Interoperability Testing
Products tested:	Client-to-server
Test Guidelines:	FUMO 1.0 Enabler Test Guidelines [ETG] OMA-ETG-FUMO-V1_0-20071207-A
Test Specification:	FUMO 1.0 Enabler Test Specification [ETS]: OMA-ETS-FUMO-V1_0-20061215-C
Test Tool:	None
Test Code:	None
Type of Test event:	TestFest
Participants:	Motive Product Group/Alcatel-Lucent, Nokia Siemens Networks, Smithmicro
Number of Client Implementations:	1
Participating Technology Providers for clients:	Smithmicro
Implementation IDs for each client:	OMC
Number of Server Implementations:	2
Participating Technology Providers for servers:	Motive Product Group/Alcatel-Lucent, Nokia Siemens Networks
Implementation IDs for each server:	Firmware Update Mng Object (FUMO) v1.0, Nokia Terminal Management Server
Number of test sessions completed:	2

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:

- Total number of TCs: Used in the summary to indicate how many test cases there are in total.
- Number of passed: Used in the summary to indicate how many of the total testcases that successfully has been passed.
- Number of failed: Used in the summary to indicate how many of the total testcases that has failed.
- Number of N/A: Used in the summary to indicate how many of the total testcases that has not be run due to that the implementation(s) do not support the functionality required to run this test case.
- Number of OT: Used in the summary to indicate how many of the total testcases that has not be run due to no time to run the test case.
- Number of INC: Used in the summary to indicate how many of the total testcases that has not been run due to that the functionality could not be tested due to an error in the implementation in another functionality that is required to run this test case.

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	2	16	32	0	0	0	0	32
Total	2	16	32	0	0	0	0	32

Table 1. Test Summary Table

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 v1.0 Enabler TestFest taken from OMA-ETS-FUMO-V1_0-20061215-C

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	2	2	0	0	0	0		
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	2	2	0	0	0	0		

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	2	2	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	2	2	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	2	2	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	2	2	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	2	2	0	0	0	0		

Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
FUMO-1.0-INT-008	<p>The purpose of this test is to verify that -</p> <p>A client device supporting FUMO, downloads an update package from a DM server using Alternative Download mechanism (e.g. DLOTA).</p> <p>The client device performs a successful firmware update on the client device using Exec on DownloadAndUpdate node</p> <p>The client device Reports the State value successfully to the DM server</p>	2	2	0	0	0	0		
FUMO-1.0-INT-009	<p>The purpose of this test is to verify that-</p> <p>The client device supporting FUMO, downloads an update package from a DM server using OMA-DM protocol</p> <p>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 ADD/REPLACE has been performed on the x*/Download/PkgURL node.</p> <p>The client device performs a successful firmware update on the client device</p> <p>The client device reports the State value successfully to the DM server</p>	2	2	0	0	0	0		
FUMO-1.0-INT-013	<p>The purpose of this test is to verify that-</p> <p>A client device supporting FUMO, fails to download an update package due to Malformed or Bad URL</p> <p>The client device reports the appropriate Result Code successfully to the DM server</p>	2	2	0	0	0	0		
FUMO-1.0-INT-014	<p>The purpose of this test is to verify that-</p> <p>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.</p> <p>The client device reports the Result Code successfully to the DM server</p>	2	2	0	0	0	0		

Test Case id:	Description:	Test Counts						PR:	Note:
		R	P	F	O	I	N/A		
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	2	2	0	0	0	0		
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	2	2	0	0	0	0		
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	2	2	0	0	0	0		
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	2	2	0	0	0	0		
FUMO-1.0-INT-019	Purpose of this test is to check that a Device Management client supports bootstrap from the Smart Card using the Device Management Profile and WBXML encoded TNDIS objects for the bootstrap information	2	2	0	0	0	0		

Table 2. Test Case Counts

5.3 Problem Reports

During the activities for TestFest-26, no problem reports were generated relating to the test materials and test process.

PR Number	Affecting	Description	Test Case reference / Specification reference

Full details of all Problem Reports can be found at:

http://www.openmobilealliance.org/TestFests/Problem_Reporting.aspx

6. Confirmation

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

A handwritten signature in black ink, appearing to read "M. J. ...".

OMA Trusted Zone

Appendix A. Change History (Informative)

Type of Change	Date	Section	Description
New Version	1 st December 2008	All	First Version for TestFest-26