



# **Enabler Release Definition for Firmware Update Management Object**

Approved Version 1.0.4 – 28 Aug 2009

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**Open Mobile Alliance**  
OMA-ERELD-FUMO-V1\_0\_4-20090828-A

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# 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. RELEASE VERSION OVERVIEW .....7
  - 4.1 VERSION 1.0 FUNCTIONALITY .....7
- 5. DOCUMENT LISTING FOR FUMO V 1.0.4 .....8
- 6. CONFORMANCE REQUIREMENTS NOTATION DETAILS .....9
- 7. ERDEF FOR FUMO - CLIENT REQUIREMENTS .....10
- 8. ERDEF FOR FUMO - SERVER REQUIREMENTS .....11
- APPENDIX A. CHANGE HISTORY (INFORMATIVE) .....12
  - A.1 APPROVED VERSION HISTORY .....12

# Tables

- Table 1: Listing of Documents in FUMO Enabler .....8
- Table 2 ERDEF for FUMO Client-side Requirements .....10
- Table 3 ERDEF for FUMO Server-side Requirements .....11

# 1. Scope

The scope of this document is limited to the Enabler Release Definition of Firmware Update Management Object specifications according to OMA Release process and the Enabler Release specification baseline listed in section 5.

## 2. References

### 2.1 Normative References

- [DM-RD] “OMA Device Management Requirements, Version 1.2”. Open Mobile Alliance™, OMA-RD-DM-V1\_2.  
[URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [FUMO] Firmware Update Management Object, Version 1.0, Open Mobile Alliance™, OMA-TS-DM-FUMO-V1\_0, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [FUMO-AD] FUMO Architecture, Version 1.0, Open Mobile Alliance™, OMA-AD-FUMO-V1\_0,  
[URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [FUMO-DDF] Firmware Update Management Object DDF, Version 1.0, Open Mobile Alliance™, OMA-SUP-DTD\_DM\_FUMO\_DDF-V1\_0,  
[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)
- [SCRRULES] “SCR Rules and Procedures”, Open Mobile Alliance™, OMA-ORG-SCR\_Rules\_and\_Procedures,  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

### 2.2 Informative References

- [DLOTA] “Generic Content Download Over The Air Specification Version 1.0”, Open Mobile Alliance™, OMA-Download-OTA-v1\_0.  
[URL:http://www.openmobilealliance.org/documents.html](http://www.openmobilealliance.org/documents.html)
- [OMA-DM] “Enabler Release Definition for OMA Device Management, Version 1.2”. Open Mobile Alliance™, OMA-ERELED-DM-V1\_2.  
[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” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 7 and 8 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [SCRRULES].

### 3.2 Definitions

<b>Device Management</b>	Management of the Device configuration and other managed objects of Devices from the point of view of the various Management Authorities. Device Management includes, but is not restricted to setting initial configuration information in Devices, subsequent updates of persistent information in Devices, retrieval of management information from Devices and processing events and alarms generated by Devices.
<b>Enabler Release</b>	Collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfil a number of related market requirements.
<b>Minimum Functionality Description</b>	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.

### 3.3 Abbreviations

<b>DM</b>	Device Management
<b>DTD</b>	Document Type Definition
<b>ERDEF</b>	Enabler Requirement Definition
<b>ERELD</b>	Enabler Release Definition
<b>OMA</b>	Open Mobile Alliance

## 4. Release Version Overview

This document outlines the Enabler Release Definition for Firmware Update Management Object V1.0 and the respective conformance requirements for clients and servers implementing or claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

OMA “Firmware Update Management Object” (FUMO) enables firmware updates by specifying the locations in the management tree where update packages could be downloaded. It also specifies commands that need to be invoked on specific nodes of the management tree to start an update activity. OMA DM [OMA-DM] work addresses the various technical aspects of this system by providing appropriate specifications for download protocols, management tree objects, and DM commands.

This scope for the OMA FUMO 1.0 enabler release is to define the management tree objects, DM commands, messages and mechanisms necessary to implement the download of firmware update packages and the update of the firmware in the devices. It builds upon the OMA DM 1.2 enabler release to address the specific requirements enumerated in the OMA DM 1.2 Requirements document [DM-RD].

### 4.1 Version 1.0 Functionality

The minimum mandatory functionality for the Firmware Update Management Object specifications comprises of the following features:

- Support for Device Information Exchange prior to initiating download of a firmware update package.
- Support for invoking an update package download, or an update using the update package, as necessary.
- Support for at least one download mechanisms – an OMA-DM based download mechanism or an alternative download mechanism, such as OMA Download Over The Air v1.0 [DLOTA].
- Support for communicating Final Notification message, employing Generic Alerts, from DM Client to DM Server indicating success / failure of an update activity.

The tables for server and client side conformance requirements are provided in [FUMO].

## 5. Document Listing for FUMO V 1.0.4

This section is normative.

Doc Ref	Permanent Document Reference	Description
<b>Requirement Document</b>		
[DM_RD]	OMA-RD-DM-V1_2-20070209-A	Requirement Document for DM Enabler
<b>Architecture Document</b>		
[FUMO-AD]	OMA-AD-FUMO-V1_0-20070209-A	Architecture Document for FUMO Enabler
<b>Technical Specifications</b>		
[FUMO]	OMA-TS-DM-FUMO-V1_0_4-20090828-A	Technical Specification Document for FUMO Enabler
<b>Supporting Files</b>		
[FUMO-DDF]	OMA-SUP-DTD_DM_FUMO_DDF-V1_0_2-20080616-A	OMA FUMO Device Description File. Working file in DM_MO directory: file: dm_fumo_ddf-v1_0_2.ddf path: <a href="http://www.openmobilealliance.org/tech/omna/dm_mo">http://www.openmobilealliance.org/tech/omna/dm_mo</a>

**Table 1: Listing of Documents in FUMO Enabler**



## 6. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

<b>Item:</b>	Entry in this column <b>MUST</b> be a valid <code>ScrItem</code> according to [IOPPROC].
<b>Feature/Application:</b>	Entry in this column <b>SHOULD</b> be a short descriptive label to the <b>Item</b> in question.
<b>Status:</b>	Entry in this column <b>MUST</b> accurately reflect the architectural status of the <b>Item</b> in question. <ul style="list-style-type: none"><li>• M means the <b>Item</b> is mandatory for the class</li><li>• O means the <b>Item</b> is optional for the class</li><li>• NA means the <b>Item</b> is not applicable for the class</li></ul>
<b>Requirement:</b>	Expression in the column <b>MUST</b> be a valid <code>TerminalExpression</code> according to [IOPPROC] and it <b>MUST</b> accurately reflect the architectural requirement of the <b>Item</b> in question.

## 7. ERDEF for FUMO - Client Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-FUMO-C-001	DM Client, FUMO 1.0 Client	M	[FUMO:MCF]

**Table 2 ERDEF for FUMO Client-side Requirements**

## 8. ERDEF for FUMO - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-FUMO-S-001	DM Server	M	[FUMO:MSF]

**Table 3 ERDEF for FUMO Server-side Requirements**

## Appendix A. Change History

(Informative)

### A.1 Approved Version History

Reference	Date	Description
OMA-EREILD-FUMO-V1_0-A	09 Feb 2007	Approved by TP Ref TP Doc# OMA-TP-2007-0076R01- INP_ERP_FUMO_V1.0_for_Final_Approval
OMA-EREILD-FUMO-V1_0_1A	31 Mar 2008	Status changed to Approved by TP: OMA-TP-2008-0137-INP_FUMO_ERP_V1_0_1_For_Notification Section 5: Document listing updated
OMA-EREILD-FUMO-V1_0_2-A	16 Jun 2008	Section 5, Document listing updated Approved by TP: OMA-TP-2008-0253-INP_FUMO_ERP_V1_0_2_For_Notification
OMA-EREILD-FUMO-V1_0_3-A	19 May 2009	Status changed to Approved by TP: OMA-TP-2009-0199R01-INP_FUMO_V1_0_3_ERP_for_Notification Section 5: Document listing updated
OMA-EREILD-FUMO-V1_0_4-A	28 Aug 2009	Section 5, Document Listing Updated Status Changed to Approved by TP TP Doc Ref # OMA-TP-2009-0312R03- INP_FUMO_V1_0_4_ERP_for_Notification