



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

**Candidate Version 1.0 – 15 Jun 2006**

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**Open Mobile Alliance**  
OMA-ERELED-FUMO-V1\_0-20060615-C

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# 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.

## 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)
- [IOPPROC] “OMA Interoperability Policy and Process”, Version 1.3, Open Mobile Alliance™, OMA-IOP-Process-V1\_3, [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

- [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-ERELD-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 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [IOPPROC].

### 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>ERELED</b>	Enabler Release Definition
<b>OMA</b>	Open Mobile Alliance

## 4. Introduction

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].

## 5. Enabler Release Specification Baseline

This section is normative.

Doc Ref	Permanent Document Reference	Description
<b>Requirement Document</b>		
[DM_RD]	OMA-RD-DM-V1_2-20060424-C	Requirement Document for FUMO Enabler
<b>Architecture Document</b>		
[FUMO-AD]	OMA-AD-FUMO-V1_0-20060517-D	Architecture Document for FUMO Enabler
<b>Technical Specifications</b>		
[FUMO]	OMA-TS-DM-FUMO-V1_0-20060606-D	
<b>Supporting Files</b>		
[FUMO-DDF]	OMA-SUP-DTD_DM_FUMO_DDF-V1_0-20060606-D	<p>DTD that describes the DDF language elements for FUMO.</p> <p>Working file in DTD directory:</p> <p>file: dm_fumo_ddf-v1_0.dtd</p> <p>path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a></p>

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



## 6. Minimum Functionality Description for Firmware Update Management Object (Informative)

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 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].

## 7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

- Item:** Entry in this column MUST be a valid ScrItem according to [IOPPROC].
- Feature/Application:** Entry in this column SHOULD be a short descriptive label to the **Item** in question.
- Status:** Entry in this column MUST accurately reflect the architectural status of the **Item** in question.
- M means the **Item** is mandatory for the class
  - O means the **Item** is optional for the class
  - NA means the **Item** is not applicable for the class
- Requirement:** Expression in the column MUST be a valid TerminalExpression according to [IOPPROC] and it MUST accurately reflect the architectural requirement of the **Item** in question.

## 8. 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**

## 9. 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
n/a	n/a	No prior version

### A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELED-FUMO-V1_0	16 June 2004		Initial Version
	04 Jan 2005		Intermediate Version
	21 Feb 2005		Newer Template Used
	02 Mar 2005	2.1, 6	Feedback from Paris Interim Incorporated
	07 Feb 2006	Sections 4, 6	General cleanup – minor editorial changes
	08 Feb 2006	Section 2, 4, 6	Added FUMO-AD
	09 Feb 2006	Section 8, 9	Dropped OMA-DM from Client and Server dependency
	23 Mar 2006	All	Editorial clean up for Consistency review
	17 May 2006	All	Implemented OMA-DM-FUMO-2006-0001-CR_ERELED.
	06 Jun 2006	All	Editorial clean up, added in reference to DDF.
Candidate Versions OMA-ERELED-FUMO-V1_0	13 June 2006	All	Editorial clean up
	15 June 2006	All	Conversion to Candidate following OMA-TP-2006-0224R03-ERP-FUMO-V1_0-for-candidate-approval.zip approval in Osaka