Enabler Release Definition for MMS

Approved Version 1.3 – 13 Sep 2011

Open Mobile Alliance

OMA-ERELD-MMS-V1_3-20110913-A

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1. Scope

The scope of this document is limited to the Enabler Release Definition of Multimedia Messaging Service according to OMA Release process and the Enabler Release specification baseline listed in section 0.

Multimedia Messaging Service (MMS) is a system application by which a client is able to provide a messaging operation with a variety of media types. The service is described in terms of actions taken by the MMS Client and its service partner, the MMS Proxy-Relay, a device that operates as an Origin Server for this specialised service. [MMSARCH] provides the overall architectural picture of MMS and its protocol entities.

2. References

2.1 Normative References

[MMSAC] "Application Characteristics for OMA MMS", Open Mobile AllianceTM, OMA-SUP-AC_ap0005_mms-V1_3, URL: http://www.openmobilealliance.org/

[MMSCONF] "MMS Conformance Document", Open Mobile AllianceTM, OMA-TS-MMS-CONF-V1_3, URL: http://www.openmobilealliance.org/

[MMSCTR] "MMS Client Transactions", Open Mobile AllianceTM, OMA-TS-MMS-CTR -V1_3, URL: http://www.openmobilealliance.org/

[MMSMTDDTD] "DTD for the MMS Message Template Definition", Open Mobile Alliance™, OMA-SUP-DTD_mms_mtd-V1_3, URL: http://www.openmobilealliance.org/

[MMSENC] "MMS Encapsulation Protocol", Open Mobile Alliance™, OMA-TS-MMS-ENC-V1_3, URL: http://www.openmobilealliance.org/

[MMSMTDSCHEMA] "XML Schema for the MMS Message Template Definition", Open Mobile Alliance™, OMA-SUP-XSD_mms_mtd-V1_3. URL: http://www.openmobilealliance.org/

[MMSMO] "OMA Management Object for MMS", Open Mobile Alliance™, OMA-TS-MMS_MO-V1_3, URL: http://www.openmobilealliance.org/

[MMSMODDF] "DDF for the MMS Management Object", Open Mobile Alliance™, OMA-SUP-MO_mms-V1_3

[MMSRD] "MMS Requirements", Open Mobile AllianceTM, OMA-RD-MMS-V1_3, URL: http://www.openmobilealliance.org/

[MMSTEMP] "MMS Message Template Specification", Open Mobile AllianceTM, OMA-TS-MMS-TEMP-V1_3, URL: http://www.openmobilealliance.org/

[MMSUAPROF] "UAProf Schema for MMS Characteristics", Open Mobile Alliance™, OMA-SUP-RDF_ccppschema_mms-V1_3. 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

[SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:http://www.openmobilealliance.org/

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version x.y, Open Mobile Alliance™, OMA-ORG-Dictionary-Vx_y, URL:http://www.openmobilealliance.org/

[MMSARCH] "MMS Architecture", Open Mobile Alliance™, OMA-AD-MMS -V1_3, 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”, "Release Version Overview" and “Conformance Requirements Notation Details”, 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

Enabler Release	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.
Minimum Functionality Description	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.
MMS Encapsulation	The definition of the protocol data units, the fields and their encodings necessary to send and receive multimedia messages including multimedia objects.

3.3 Abbreviations

ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
HTTP	Hyper Text Transfer Protocol
IMAP	Internet Message Access Protocol
MM	Multimedia Message
MMS	Multimedia Messaging Service
OMA	Open Mobile Alliance
PDU	Protocol Data Unit
POP	Post Office Protocol
SMS	Short Message Service
SMTP	Simple Mail Transfer Protocol
WSP	Wireless Session Protocol

4. Release Version Overview

This section is informative.

This document outlines the Enabler Release Definition for OMA Multimedia Messaging Service (MMS) and the respective conformance requirements for clients and servers implementing and claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

A key feature of MMS is the ability to support messaging activities with other available messaging systems. Figure 1 below shows which shows an abstract view of an MMS network diagram. It is expected that specific MMS networks may have one or more such connections as well as include specific messaging services not directly represented (e.g. fax or voice mail systems).

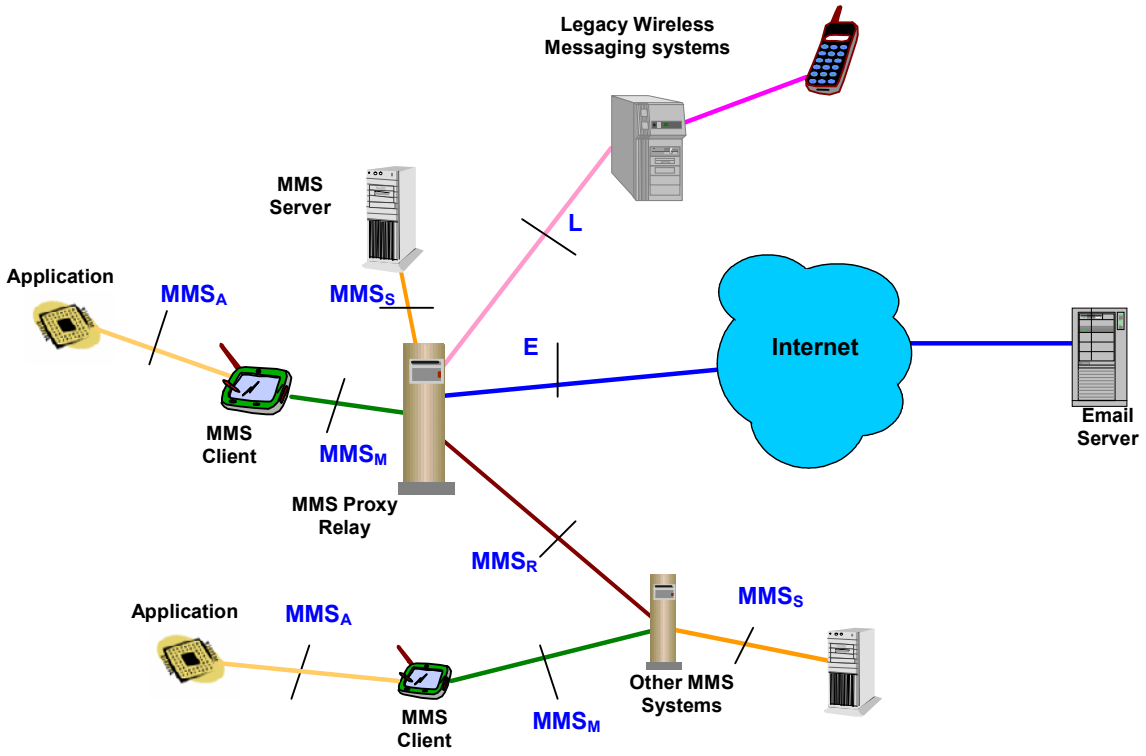

Figure 1: MMS Network Representation

Note that although Figure 1 identifies various interfaces, in some cases, their definition will be for further study. The mention of these interfaces in this document does not imply that the OMA will develop the specifications necessary to describe them in detail.

The system elements shown in Figure 1 can be summarised as follows:

- **MMS Client** – This is the system element that interacts with the user and the MMS Proxy-Relay. It is expected to be implemented as an application on the user's wireless device.
- **Application** – This system element may interact with the MMS Client in order to transport application specific data via MMS.
- **MMS Proxy-Relay** – This is the system element that the MMS Client interacts with. It provides access to the components that provide message storage services, and it is responsible for messaging activities with other available messaging systems. Some implementations may combine this component with the MMS Server.
- **MMS Server** – This system element provides storage services for MM messages. Some implementations may combine this component with the MMS Proxy-Relay.

- **Email Server** – This system element provides traditional Internet email services. It supports the SMTP protocol to send messages as well as POP and/or IMAP protocols to retrieve messages.
- **Legacy Wireless Messaging Systems** – This system element represents various systems that currently exist in support of wireless messaging systems. This would include paging and SMS systems that provide messaging to a large number of subscribers.

The interfaces shown in the diagram are described as follows:

- **MMS_m** – the interface defined between the MMS Client and the MMS Proxy-Relay.
- **MMS_S** - the interface defined between the MMS Server and the MMS Proxy-Relay. This interface may be transcendental when the MMS Server and MMS Proxy-Relay are combined into a single component.
- **MMS_R** - the interface defined between MMS Proxy-Relays of separate MMS Systems.
- **MMS_A** - the interface defined between the MMS Client and an application.
- **E** - the standard email interface used between the MMS Proxy-Relay and internet-based email systems utilising SMTP, POP and IMAP transport protocols.
- **L** - the interfaces used between the MMS Proxy-Relay and legacy wireless messaging systems. As there are various such systems, this is viewed as being a set of interfaces.

Example Use Case

The following example information flow for a use case is provided to further illustrate the functions and roles of the various system elements in the MMS framework. The example given here concerns end-to-end MMS messaging between terminals.

1. User activates MMS Client (assumed to be available on terminal).
2. User selects or enters MM target address(es).
3. User composes/edits MM to be sent.
4. User requests that MM be sent.
5. MMS Client submits the message to its associated MMS Proxy-Relay via the MMS_M interface.
6. MMS Proxy-Relay resolves the MM target address(es).
7. MMS Proxy-Relay routes forward the MM to each target MMS Proxy-Relay via the MMS_R interface.
8. The MM is stored by the MMS Server associated with the target MMS Proxy-Relay.
9. Target MMS Proxy-Relay sends a notification to target MMS Client via the MMS_M interface.
10. Target MMS Client retrieves the MM from the MMS Server.
11. Target MMS Client notifies target user of new MM available.
12. Target user requests rendering of received MM.
13. Target MMS Client renders MM on target user's terminal.

Note that steps 1-3 and 12-13 concern the User Interface on the terminal which is considered implementation dependent and therefore outside the scope of this specification. Also note that steps 10 and 11 could occur in reverse order depending on MMS Client implementation, that is, an MM retrieval policy could cause the MMS Client to retrieve an MM only when so allowed by the user.

4.1 Version 1.0 Functionality

This version was not released in OMA.

4.2 Version 1.1 Functionality

The minimum functionality for a device implementing OMA MMS 1.1 is to support the following client-server transactions specified in the MMS Client Transactions specification.

1. MMS Client Sending Message to MMS Proxy-Relay
2. MMS Proxy-Relay Sending Notification to MMS Client
3. MMS Client Retrieving Message from MMS Proxy-Relay
4. MMS Proxy-Relay Sending Delivery Report to MMS Client

Note that a client device can implement either of message sending transactions that are (1) & (4), or message receiving transactions that are (2) and (3), or both of sending and receiving.

Besides, the following functionality may be supported for a device implementing OMA MMS 1.1:

5. Receiving MMS Client generating Read Reports and sending it to originating MMS Client
6. MMS Client Sending Forward Request to MMS Proxy-Relay

In addition, MMS Encapsulation specification provides the corresponding PDUs used in the transactions and thus a device implementing OMA MMS 1.1 and supporting a transaction also needs to support the mandatory features in the corresponding PDU listed below. Correspondence between the transaction and PDU is provided by the SCR table (Appendix B) of [MMSCTR].

- PDU for “Sending an MMS message to MMS Proxy-Relay” (M-Send.req, M-Send.conf)
- PDU for “Retrieving an MMS message from MMS Proxy-Relay” (WSP/HTTP GET.req, M-Retrieve.conf)
- PDU for “Notification about a new MMS message” (M-Notification.ind, M-NotifyResp.ind)
- PDU for “Delivery Report about a sent MMS message” (M-Delivery.ind)
- PDU for “Acknowledgement of an MMS message delivery” (M-Acknowledge.ind)
- PDU for “Forwarding an MMS message” (M-Forward.req, M-Forward.conf)

Since MMS is an application-level protocol framework to enable messaging transactions, a device implementing OMA MMS 1.1 must have either of WAP WSP stack or HTTP/TCP/IP stack, with WAP PUSH functionality to support Notification transaction and Delivery Report transaction, in order to convey PDUs above. More detail of transport binding and the dependencies are provided in the chapter 8.1 and 8.2 respectively in [MMSCTR]

A device implementing OMA MMS 1.1 must support text/plain MIME type according to [MMSENC]. This enables a basic messaging service. If a device supports more media types than text/plain, it must conform a minimum set of the requirements related to the content of the message, the message presentation, media object formats as defined in [MMSCONF]. That document also specifies the minimum requirements for lower-layer protocol capabilities such as WTP SAR, in order to guarantee the delivery of the message content. See [MMSENC] for more detail.

4.3 Version 1.2 Functionality

The MMS 1.2 enabler release establishes the basis for interoperable device-to-device multimedia messaging. In this release, the rules of interoperable multimedia messaging are developed by: introducing the concepts of the MM core content domain and MM content classes; bridging the gaps in interoperability between the content classes by introducing functions for content adaptation and creation modes; and guaranteeing interoperability by defining a minimum set of conformance requirements. The functionality of the MMS 1.2 release provides a sound foundation for applications focused on person-to-person use cases with an emphasis on image and video messaging.

All requirements and functionalities that must or may be supported by a device implementing OMA MMS 1.2 are the same as described in Section 4.2 for a device implementing OMA MMS 1.1. In addition, the following client-server transactions may be supported for a device implementing OMA MMS 1.2:

- MMS Client Sending Request about an MM in the MMBox to MMS Proxy-Relay (store/update an MM, request information about an MM in the MMBox, upload an MM, delete an MM)

If a transaction is supported, a device implementing OMA MMS 1.2 also needs to support the mandatory features in each of the corresponding PDU listed in Section 4.2 and below. Correspondence between the transaction and PDU is provided by the SCR table (Appendix B) of [MMSCTR].

- PDUs for MMBox-related transactions (M-Mbox-Store.req/.conf, M-Mbox-View.req/.conf, M-Mbox-Descr, M-Mbox-Upload.req/.conf, M-Mbox-Delete.req/.conf)

4.4 Version 1.3 Functionality

The functionality of the MMS 1.3 release, while emphasizing backward compatibility and interoperability, is enhanced to improve the user experience with richer content capability, especially with regard to imaging and presentation features. In addition, the concept of Template is introduced as an enabling mechanism to facilitate the implementation of applications utilizing many of these new features. With this release, it is expected that applications for contents-person and person-service use cases will have the potential to greatly expand.

All requirements and functionalities that must or may be supported by a device implementing OMA MMS 1.3 are the same as described in Sections 4.2 and 4.3 for a device implementing OMA MMS 1.1 and 1.2 respectively.

In addition, the following client-server transactions can be supported for a device implementing OMA MMS 1.3:

- MMS Proxy-Relay Sending Cancel Request to MMS Client
- MMS Client Deleting an MM from the MMS Proxy Relay

If a transaction is supported, a device implementing OMA MMS 1.3 also needs to support the mandatory features in each of the corresponding PDU listed in Sections 4.2, 4.3 and below. Correspondence between the transaction and PDU is provided by the SCR table (Appendix B) of [MMSCTR].

- PDU for “Cancelling an MMS Message” (M-Cancel.req, M-Cancel.conf)
- PDU for “Deleting an MM from the MMS Proxy-Relay” (M-Delete.req, M-Delete.conf)

5. Document Listing for MMS 1.3

This section is normative.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
[MMSRD]	OMA-RD-MMS-V1_3-20110913-A	Requirement Document for MMS Enabler
Architecture Document		
[MMSAD]	OMA-AD-MMS-V1_3-20110913-A	Architecture Document for MMS Enabler
Technical Specifications		
[MMSCONF]	OMA-TS-MMS_CONF-V1_3-20110913-A	Specification that defines the minimum set of requirements and guidelines for end-to-end interoperability of MMS handsets and servers. It further serves as a baseline for MMS interoperability testing.
[MMSCTR]	OMA-TS-MMS_CTR-V1_3-20110913-A	Specification that defines the operational flow of the MMS Protocol Data Units (PDUs) that transit between the MMS Client and the MMS Proxy-Relay.
[MMSENC]	OMA-TS-MMS_ENC-V1_3-20110913-A	Specification that defines the message encapsulation, i.e., the message structure and encodings of the MMS Protocol Data Units (PDUs) that transit between the MMS Client and the MMS Proxy-Relay.
[MMSMO]	OMA-TS-MMS_MO-V1_3-20110913-A	Specification that describes the OMA MMS management object syntax that allows configuration deployment to OMA MMS clients.
[MMSTEMP]	OMA-TS-MMS_TEMP-V1_3-20110913-A	Specification that describes the MMS Message Template profile and its conformance. The MMS Message Template Profile specifies a framework to enable template functionality for MMS.
Supporting Files		
[MMSAC]	OMA-SUP-AC_ap0005_mms-V1_3-20110913-A	Application Characteristics for MMS. Public reachable information: Working file in Application Characteristics directory: File: ac_ap0005_mms-v1_3.txt Path: http://www.openmobilealliance.org/tech/omna/dm-ac/
[MMSMODDF]	OMA-SUP-MO_mms-V1_3-20110913-A	Description of the OMA MMS management object, according to the OMA DM Description Framework Working file in DTD directory: File: mms_mo-v1_3.dtd Path: http://www.openmobilealliance.org/tech/DTD/
[MMSMTDDTD]	OMA-SUP-DTD_mms_mtd-V1_3-20110913-A	DTD for the MMS Message Template Definition. Public reachable information: Working file in DTD directory: File: mms_mtd-v1_3.dtd Path: http://www.openmobilealliance.org/tech/DTD/
[MMSMTD SCHEMA]	OMA-SUP-XSD_mms_mtd-V1_3-20110913-A	XML Schema for the MMS Message Template Definition. Public reachable information: Working file in Schema directory: File: mms_mtd-v1_3.xsd Path: http://www.openmobilealliance.org/tech/profiles/

[MMSUAPROF]	OMA-SUP-RDF_cccpschema_mms-V1_3-20110913-A	UAProf Schema for MMS Characteristics. Public reachable information: Working file in Schema directory: File: ccppschema_mms-v1_3 Path: http://www.openmobilealliance.org/tech/profiles/

Table 1: Listing of Documents in MMS Enabler

6. 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 [SCRRULES].

Feature/Application: Entry in this column SHOULD be a short descriptive label to the **Item** in question.

Requirement: Expression in the column MUST be a valid TerminalExpression according to [SCRRULES] and it MUST accurately reflect the architectural requirement of the **Item** in question.

7. ERDEF for MMS - Client Requirements

This section is normative.

Item	Feature / Application	Requirement
OMA-ERDEF-MMS-C-001 M	Text-only Messaging Client	MMSCTR:MCF AND MMSENC:MCF
OMA-ERDEF-MMS-C-002 O	Basic MMS Client	OMA-ERDEF-MMS-C-001 AND MMSCONF:MCF
OMA-ERELD-MMS-C-003 O	MMS Template Capability	MMSTEMP:MCF

Table 2: ERDEF for MMS Client-side Requirements

8. ERDEF for MMS - Server Requirements

This section is normative.

Item	Feature / Application	Requirement
OMA-ERDEF-MMS-S-001 M	MMS Proxy-Relay Server	MMSCTR:MSF AND MMSENC:MSF AND MMSCONF:MSF
OMA-ERELD-MMS-S-002 O	MMS Template Capability	MMSTEMP:MSF

Table 3: ERDEF for MMS Server-side Requirements

Appendix A. Change History (Informative)

A.1 Approved Version 1.3 History

Reference	Date	Description
OMA-ERELD-MMS-v1_1	15 Jul 2004	Approved version of MMS 1.1 in OMA
OMA-ERELD-MMS-v1_2	10 May 2005	Approved version of MMS 1.2 in OMA
OMA-ERELD-MMS-V1.3-20110913-A	13 Sep 2011	Status changed to Approved by TP: OMA-TP-2011-0329-INP_MMS_V1_3_ERP_for_final_Approval