MMS Conformance Requirement

Candidate Version 1.2 – 09 Jun 2003

Open Mobile Alliance

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Contents

1. Scope (Informative)

This document sets the requirements for defining a set of guidelines to achieve interoperability for MMS. Four broad areas of interoperability have been identified for MMS. They are:

- Peer to peer and content provider to peer with respect to generation, rendering and presentation of media.
- Network to network of different types, e.g. 3GPP to 3GPP2.
- Network to network of same types, e.g. support of optional features such as address hiding and delivery reporting.
- Forward-lock as defined by OMA Digital Rights Management.

The scope of this document is focused on setting the requirements to achieve interoperability for MMS enabler realease v1.2. More specifics of the requirements to realize this interoperability and the specific level of this interworking is defined in the subsections of this manuscript.

2. References

2.1 Normative References

[MMSCONF] "MMS Conformance Document, Version 2.0.0", OMA-IOP-MMSCONF-2_0_0-20020206C, Open Mobile AllianceTM. URI: http://www.openmobilealliance.org/

[MMSCTR] "Multimedia Messaging Service, Client Transactions, Version 1.2", OMA-WAP-MMS-CTR-v1_2, Open Mobile AllianceTM. URI: http://www.openmobilealliance.org/

[MMSENCAPS] "Multimedia Messaging Service, Encapsulation Protocol, Version 1.2", OMA-WAP-MMS-ENC-v1_2, Open Mobile AllianceTM. URI: http://www.openmobilealliance.org/

[P0042-200] "Multimedia Messaging Service Stage 2, Functional Description" 3rd Generation Partnership Project 2 TSG-N N.P0042-200, URI: http://www.3gpp2.org

[P0042-310] "Multimedia Messaging Service MM1 Stage 3 Using OMA/WAP" 3rd Generation Partnership Project 2 TSG-N N.P0042-310, URI: http://www.3gpp2.org

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels". S. Bradner. March 1997. URL:http://www.ietf.org/rfc/rfc2119.txt

[S.R0064] "Multimedia Messaging Service Stage 1, Requirements", 3rd Generation Partnership Project 2, S.R0064, URI: http://www.3gpp2.org

[TS22140] "Multimedia Messaging Service: Service aspects; Stage 1", 3rd Generation Partnership Project TS 22.140 Release 5. URI: http://www.3gpp.org/ftp/Specs/

[TS23140] "Multimedia Messaging Service: Functional description; Stage 2", 3rd Generation Partnership Project TS 23.140 Release 5. URI: http://www.3gpp.org/ftp/Specs/

2.2 Informative References

[MMSARCH] " Multimedia Messaging Service, Architecture Overview, Version 1.2", OMA-WAP-MMS-ARCH-v1_2, Open Mobile Alliance. URL: 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.

3.2 Definitions

MMS Client	The MMS service endpoint located on the WAP client device.
MMS Proxy-Relay	A server which provides access to various messaging systems. It may operate as a WAP origin server in which case it may be able to utilise features of the WAP system.
MMS SMIL	A SMIL subset defined for MMS purposes
Multimedia Messaging Service	A system application by which a WAP client is able to provide a messaging operation with a variety of media types.
MMSE	A collection of MMS-specific network elements under the control of a single administration.
MMS VAS Application	An application providing Value Added Services (e.g. news service or weather forecasts) to MMS users.

3.3 Abbreviations

Email	Electronic mail
HTTP	HyperText Transfer Protocol
MM	Multimedia Message
MMS	Multimedia Messaging Service
WAP	Wireless Application Protocol
WSP	Wireless Session Protocol
VASP	Value Added Service Provider
MMSE	Multimedia Messaging Service Environment
MMS CD	Multimedia Messaging Service Conformance Document

4. Introduction (Informative)

A key factor in making MMS a commercial success is to ensure interoperability. To achieve that, it is not sufficient to only work from specificationssuch as [TS23140], [MMSCTR] and [MMSENCAPS], [P0042-200] and [P0042-310] which define protocols and architectures. There must be additional documented guidance which can be referenced. This additional documentation is refered to as a conformance document.

The concept of conformance is to give shape or to contour an entity, bringing harmony among the components. Keeping this phylosphoy in mind, the objective of the MMS Conformance Document (MMS CD) is to add clarification to areas that lack the necessary definition for vendors to develop products that allow MMS to function in an interoperable manner. In some cases, this clarification is made with new text added to a conformance document, and in other cases the clarification is resolved by making reference to existing specifications.

5. Use Cases (Informative)

The use cases describe how users enjoy end-to-end interoperability when sending and recieving MMs. The variation in the use cases come from the type of MMSE the receiving and sending MMS Clients reside on. The following definitions of actors are consistent throughout this section.

- 3GPP-MMSE, this is an MMS Service Environment which is implemented according to the specifications of 3GPP. I.e. [TS23140], [MMSCTR] and [MMSENCAPS].
- 3GPP2-MMSE, this is an MMS Service Environment which is implemented according to the specifications of 3GPP2. I.e. [P0042-200] and [P0042-310].
- MMS Client A, this is the MMS Client which is sending an MM.
- MMS Client B, this is the MMS Client which is receiving the MM that Client A or a VASP has sent.
- User A, the user who is sending an MM through MMS Client A.
- User B, the user who viewing and/or listening to the MM that Client A or a VASP has sent.
- VASP, an application providing value added services to MMS users.

5.1 Use Case A – Sending MM end to end in same MMSE

5.1.1 Short Description

This use case describes how User A sends an MM to User B residing on the same MMSE. MMS Client A sets header values in a compatible way but uses a video media format which MMS Client B can't play. The MMSE detects that MMS Client B don't support video and performs an appropriate transcoding.

5.1.2 Actors

- User A
- User B
- MMS Client A
- MMS Client B
- MMSE, this is a 3GPP- or 3GPP2-MMSE which is serving both User A and User B.

5.1.2.1 Actor Specific Issues

- User A issues:
    - Uncertain if User B will receive the MM.
    - Uncertain if User B will see and hear the MM at least reasonably close to how it was intended.
- User B issues:
    - Uncertain that all incoming MMs are actually received or if some are thrown away.
    - Uncertain if received MMs are played/rendered the way User A intended.
- MMS Client A issues:

- Some header values maybe set to long or encoded in a way so that MMS Client B won't be able to parse and understand all the necessary information.
- Media elements included in the MM may not be able to be played or rendered by MMS Client B.

- MMS Client B issues:
  - Headers in incoming MMs may be unparsable or misinterpreted.
  - MM may contain media elements that can't be played or rendered.
- MMSE issue:
  - Several possible cases of media transcoding.

5.1.2.2 Actor Specific Benefits

- User A benefits:
  - To be reasonably certain that the MM reaches User B.
  - To be reasonably certain that the MM is rendered or played in a manner similar to the original intent.
- User B benefits:
  - To be able to receive the MM.
  - To be reasonably certain that when the MM is rendered or played it is similar to User A's original intent.
- MMS Client A benefits:
  - To set header values so that MMS Client B can at least parse them without crashing or causing unpredicatable behaviour.
  - To use media formats that with reasonable certainty can be rendered or played by MMS Client B.
- MMS Client B benefits:
  - To be able to handle all incoming MMs.
  - To be able to render/play media elements of incoming MMs.
- MMSE benefits:
  - Efficent and more simple transcoding.

5.1.3 Pre-conditions

- Both User A and User B subscribe to the same MMSE.

5.1.4 Post-conditions

- The MM that User B received and watched was reasonably close to what User A intended.

5.1.5 Normal Flow

1. User A composes a MM with a video clip and some text.
2. User A enters User B's telephone number and presses send.
3. MMS Client A formats all header fields according to interoperability guidelines.

4. MMS Client A creates the content of the MM using a SMIL format according to interoperability guidelines.
5. MMS Client A submits the MM to the MMSE.
6. MMSE detects that MMS Client B do not support video.
7. MMSE transcodes the video to an image format that MMS Client B supports.
8. MMSE sends the MM to MMS Client B.
9. MMS Client B parses headers and header field values.
10. MMS Client B shows the MM for User B.

5.1.6 Alternative Flow

No alternative flow has been identified.

5.1.7 Operational and Quality of Experience Requirements

No specific operational or QoE related requirements have been identified.

5.2 Use Case B – Sending MM end to end between MMSEs

5.2.1 Short Description

This use case describes how User A sends an MM to User B residing on a different MMSE. MMS Client A sets header values in a compatible way but uses a voice codec which MMS Client B can't play. MMSE B detects that MMS Client B don't support that voice codec and performs an appropriate transcoding.

5.2.2 Actors

- User A
- User B
- MMS Client A
- MMS Client B
- MMSE A, this is a 3GPP-MMSE which is serving User A.
- MMSE B, this is a 3GPP2-MMSE which is serving User B.

5.2.2.1 Actor Specific Issues

- User A issues:
  - Same issues as defined in section 5.1.2.1.
- User B issues:
  - Same issues as defined in section 5.1.2.1.
- MMS Client A issues:
  - Same issues as defined in section 5.1.2.1.
- MMS Client B issues:

- Same issues as defined in section 5.1.2.1.

- MMSE B issue:
  - Several possible cases of media transcoding.

5.2.2.2 Actor Specific Benefits

- User A benefits:
  - Same benefits as defined in section 5.1.2.2.
- User B benefits:
  - Same benefits as defined in section 5.1.2.2.
- MMS Client A benefits:
  - Same benefits as defined in section 5.1.2.2.
- MMS Client B benefits:
  - Same benefits as defined in section 5.1.2.2.
- MMSE B benefits:
  - Efficent and more simple transcoding.

5.2.3 Pre-conditions

- User A subscribes to a 3GPP-MMSE which is different from the MMSE which User B subscribes to.
- User B subscribes to a 3GPP2-MMSE which is different from the MMSE which User A subscribes to.

5.2.4 Post-conditions

- The MM that User B received and watched was reasonably close to what User A intended.

5.2.5 Normal Flow

1. User A composes a MM with a voice clip and a picture.
2. User A enters User B's telephone number and presses send.
3. MMS Client A formats all header fields according to interoperability guidelines.
4. MMS Client A creates the content of the MM using a SMIL format according to interoperability guidelines.
5. MMS Client A submits the MM to MMSE A.
6. MMSE A forwards the MM to MMSE B.
7. MMSE B receives the MM.
8. MMSE B detects that MMS Client B do not support the codec of the voice clip included in the MM.
9. MMSE B transcodes the voice clip to a format that MMS Client B supports.
10. MMSE B sends the MM to MMS Client B.
11. MMS Client B parses headers and header field values.

12. MMS Client B shows the MM for User B.

5.2.6 Alternative Flow

No alternative flow has been identified.

5.2.7 Operational and Quality of Experience Requirements

No specific operational or QoE related requirements have been identified.Use Case C – DRM protection of MM

5.3 Use Case C – Sending MM from VASP to User

5.3.1 Short Description

A VASP sends an MM containing an image that is copy righted. To make sure that User B does not forward the image once it has been received DRM technology is utilised. The VASP formats the MM with DRM forward-lock protection in a way which is certain to be understood by MMS Client B.

5.3.2 Actors

- VASP
- User B
- MMS Client B

5.3.2.1 Actor Specific Issues

- VASP issues:
    - Copyrighted content may be abused by users, e.g. by superdistribution without control of the VASP.
    - Uncertainty about how to format the MM DRM protection in a compatible manner.
- User B issue:
    - A DRM protected MM may be unviewable even if it is legitimately paid for.
- MMS Client B issue:
    - If the DRM protection of the MM is not formatted correctly it will not be possible to parse the MM and display the content to User B.

5.3.2.2 Actor Specific Benefits

- VASP benefit:
    - A trusted DRM solution will yield in more premium content being distributed with more revenues.
- User B benefit:
    - Enjoyment of a transparent DRM solution that will not infringe on the user experience more than necessary.
- MMS Client B benefit:
    - To be able to handle DRM protected content delivered via MMS in a consistent manner.

5.3.3 Pre-conditions

- User B and VASP are served by the same MMSE.

5.3.4 Post-conditions

- User B can view the MM as many times as he or she wishes but is prohibited to forward it by enforcement of MMS Client B.

5.3.5 Normal Flow

1. The VASP creates a MM with copyright protected content, the DRM information is formatted according to interoperability guidelines and relevant specifications.
2. The VASP sends the MM to User B.
3. MMS Client B parses headers and header field values.
4. MMS Client B recognises that the content of the MM shall not be forwarded.
5. MMS Client B shows the content of the MM to User B.
6. User B attempts to forward the MM.
7. MMS Client B prevents forwarding and indicates this to User B.

5.3.6 Alternative Flow

No alternative flow has been identified.

5.3.7 Operational and Quality of Experience Requirements

No specific operational or QoE related requirements have been identified.

6. Requirements (Normative)

6.1 High level functional requirements

The high level requirements defined here are limited to those necessary to achieve MMS interoperability for the exchange of media content. More specifically, it is the requirements to accomplish interoperability of the generation, rendering, and presentation of multiple forms of media when exchanged between MMS clients or when distributed from a content provider to an MMS client.

6.1.1 Security

For security requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.1.2 Charging

For charging requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.1.3 Administration and configuration

For administration and configuration requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.1.4 Usability

For usability requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.1.5 Interoperability

The functional requirements to achive the desired interoperability of content can be partitioned into 3 areas.

- The organization and classification of media types into groups that reflect predominant use cases.
- Profiling of device capabilities.
- Performing content adaptation or transcoding of media to match the media classifications supported and defined in the profiles of devices.

The specifics of these areas are:

- Definition of message classes and MMS domains including header information within messages identifying such.
- The structuring and layout of media in a consistent fashion on the display of a terminal.
- To define convential ways of creating, submitting, retrieving, and presenting multiple forms of media.
- Define the specifics of content transcoding or adaptation between on media type to another.
- Create a Mobile SMIL Profile for presentation and display of media
- Description to achieve minimum level of authorship protection of media.

6.1.6 Privacy

For privacy requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.2 Overall System Requirements

For overall system requirements, please refer to the appropriate specifications as defined by 3GPP and 3GPP2 ([TS22140] and [S.R0064]).

6.3 System Elements

The elements that comprise the system are:

- MMS Client
- MMS Proxy-Relay
- WAP Gateway
- Push Proxy Gateway

These systems elements and their interfaces are defined in [MMSARCH].

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No previous version within OMA

A.2 Draft/Candidate Version 1.2 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-MMS-RD-CONF-V1_2	15 Apr 2003	1, 2, 3, 4, 5	The document was created by inserting scope, definitions, abbreviations, introduction and use case A.
	25 Apr 2003	1, 2, 3, 4, 5, 6.1	Improvement of text and wording overall. Addition of use case B. Addition of high level requirements in section 6.1.
	28 Apr 2003	2, 6.2, 6.3, 5.2	Addition of references to the 3GPP/2 stage 1 and stage 2 descriptions of MMS in sections 6.2 and 6.3. Addition of use case for sending MM between MMSEs.
	23 May 2003	6.1	Incorporated changes proposed on the OMA-REQ mailing list 030518.
	09 Jun 2003	cover sheet	Changed version to 1.2 to align with other MMS specifications from OMA.
Candidate Version OMA-MMS-RD-CONF-V1_2	09 Jun 2003	n/a	