



Multimedia Messaging Service
Encapsulation Protocol
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1. Scope

The Wireless Application Protocol (WAP) is a result of continuous work, provided by the WAP Forum originally and succeeded by the Open Mobile Alliance™ (OMA), to define an industry-wide specification for developing applications that operate over wireless communication networks. The scope for the OMA is to define a set of specifications to be used by service applications. The wireless market is growing very quickly, and reaching new customers and services. To enable operators and manufacturers to meet the challenges in advanced services, differentiation and fast/flexible service creation OMA defines a set of protocols in transport, security, transaction, session, and application layers. For additional information on the WAP/OMA architecture, please refer to “*Wireless Application Protocol Architecture Specification*” [WAPARCH].

Multimedia Messaging Service (MMS) is a system application by which a WAP 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 WAP MMS Client and its service partner, the MMS Proxy-Relay, a device which operates as a WAP Origin Server for this specialised service.

This document is part of the OMA MMS specification suite and complies with the requirements and service behaviour descriptions described in the technical specifications of the 3rd Generation Partnership Project (3GPP) and the 3rd Generation Partnership Project 2 (3GPP2). These include the service aspects of MMS and the functional description of MMS, which are contained in [TS23140] for 3GPP and [XS0016200] for 3GPP2.

The transaction between MMS Client and MMS Proxy-Relay for the multimedia messaging service can be found in [MMSCTR]. This specification defines the message encapsulation, i.e., the message structure and encodings for the multimedia messaging service.

2. References

2.1 Normative References

- [CREQ] OMA Interoperability Policy & Process, OMA-IOP-Process. URL: <http://www.openmobilealliance.org>
- [MMSCONF] "MMS Conformance Document", OMA-TS-MMS-CONF-V1_3, Open Mobile Alliance. 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>
- [RFC2396] "Uniform Resource Identifiers (URI): Generic Syntax", T. Berners-Lee, et al., August 1998. URL: <http://www.ietf.org/rfc/rfc2396.txt>
- [RFC2045] "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", Freed N., November 1996. URL: <http://www.ietf.org/rfc/rfc2045.txt>
- [RFC2046] "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types", Freed N., November 1996. URL: <http://www.ietf.org/rfc/rfc2046.txt>
- [RFC2047] "Multipurpose Internet Mail Extensions (MIME) Part Three: Message Header Extensions for Non-ASCII Text", Moore K., November 1996. URL: <http://www.ietf.org/rfc/rfc2047.txt>
- [RFC2234] "Augmented BNF for Syntax Specifications: ABNF", Crocker D., Overell P., November 1997. URL: <http://www.ietf.org/rfc/rfc2234.txt>
- [RFC2387] "The MIME Multipart/related content type", Levinson E., August 1998. URL: <http://www.ietf.org/rfc/rfc2387.txt>
- [RFC2392] "Content-ID and Message-ID Uniform Resource Locators", Levinson E., August 1998. URL: <http://www.ietf.org/rfc/rfc2392.txt>
- [RFC2616] "Hypertext Transfer Protocol HTTP/1.1", Fielding R., Gettys J., Mogul J., Frystyk H., Masinter L., Leach P., Berners-Lee T., June 1999. URL: <http://www.ietf.org/rfc/rfc2616.txt>
- [RFC2822] "Internet Message Format", Resnick P., April, 2001. URL: <http://www.ietf.org/rfc/rfc2822.txt>
- [WAPWSP] "Wireless Application Protocol, Wireless Session Protocol Specification", WAP-203-WSP, WAP Forum™. URL: <http://www.openmobilealliance.org>
- [WDP] "Wireless Datagram Protocol", WAP-259-WDP, WAP Forum™. URL: <http://www.openmobilealliance.org>

2.2 Informative References

- [WAPARCH] "WAP Architecture", WAP-210-Arch, WAP Forum™. URL: <http://www.openmobilealliance.org>
- [MMSCTR] "MMS Client Transactions", OMA-TS-MMS-CTR-v1_3, Open Mobile Alliance. URL: <http://www.openmobilealliance.org>
- [PPG] "Wireless Application Protocol, Push Proxy Gateway Service Specification", WAP-249-PPGService, WAP Forum™. URL: <http://www.openmobilealliance.org>
- [RFC1893] "Enhanced Mail System Status Codes", G. Vaudreuil, January 1996. URL: <http://www.ietf.org/rfc/rfc1893.txt>
- [SMIL] "Synchronized Multimedia Integration Language (SMIL 2.0)", W3C Recommendation 07 August 2001. URI: <http://www.w3.org/TR/smil20/>
- [TS22140] "Multimedia Messaging Service: Service aspects; Stage 1", 3rd Generation Partnership Project TS 22.140 Rel-6 . URL: <http://www.3gpp.org/ftp/Specs/>

- [TS23140] “Multimedia Messaging Service: Functional description; Stage 2”, 3rd Generation Partnership Project TS 23.140 Rel-6. URL: <http://www.3gpp.org/ftp/Specs/>
- [WML] "Wireless Application Protocol, Wireless Markup Language Specification, Version 1.3", WAP-191-WML, WAP Forum™. URL: <http://www.openmobilealliance.org>.
- [WSP230] "Wireless Application Protocol, Wireless Session Protocol Specification", WAP-230-WSP, WAP Forum™. URL: <http://www.openmobilealliance.org>.
- [XS0016200] “Multimedia Messaging Service Stage 2, Service Description”, 3rd Generation Partnership Project 2, X.S0016-200, URI: <http://www.3gpp2.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

Application Data	Data submitted and received by applications that may reside on top of an MMS Client or a network entity.
Multimedia Messaging Service (MMS)	A system application by which a WAP client is able to provide a messaging operation with a variety of media types.
MMBox	Network storage associated with a user into which MMs, along with an MM State and MM Flags, may be stored, retrieved from, or deleted.
MM Flags	List of zero, one, or more keyword flags, defined by the MMS Client, associated with the MM.
MM State	The state of an MM within the MMBox, as one of several, mutually exclusive, enumerated values.
MMS Encapsulation	The definition of the protocol data units, the fields and their encodings necessary to send and receive multimedia messages including multimedia objects.
MMS Entity	MMS Proxy-Relay or MMS Client.
MMS Proxy-Relay	A server which provides access to various messaging systems. It may operate as WAP origin server in which case it may be able to utilise features of the WAP system.
MMS Client	The MMS service endpoint located on the WAP client device.
MMS Terminal	A mobile station (MS, terminal) that implements the MMS Client to provide the MMS service.
MMS Originating Terminal	The MMS Terminal which sends a multimedia message.
MMS Recipient Terminal	The MMS Terminal which receives a multimedia message.
Original-MM	In case of Reply-Charging a (initial) MM sent from an originator to a recipient.
Reply-MM	In case of Reply-Charging the reply to the Original-MM.
Reply-Charging	An originator may request a Reply-Charging functionality when submitting an Original-MM, i.e. she may express her willingness to accept charges for a reply to this particular Original-MM.

3.3 Abbreviations

HTTP	Hypertext Transfer Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
MIME	Multipurpose Internet Mail Extensions
MM	Multimedia Message
MMS	Multimedia Messaging Service
MS	Mobile Station, Terminal
PDU	Protocol Data Unit
PLMN	Public Land Mobile Network

SMIL	Synchronized Multimedia Integration Language
RFC	Request For Comments
URI	Uniform Resource Identifier
WAP	Wireless Application Protocol
WINA	WAP Interim Naming Authority
WML	Wireless Markup Language
WSP	Wireless Session Protocol

4. Introduction

This section is informative.

This specification defines the structure, content and encoding of the protocol data units (PDUs) for the Multimedia Messaging Service (MMS) Version 1.3.

The OMA Multimedia Messaging Service uses WAP WSP/HTTP as underlying protocols to transfer MMS PDUs between MMS Client which resides on the terminal (MS) and the MMS Proxy-Relay. The WSP session management and the related capability negotiation mechanisms as well as security functions are out of the scope of this document.

Chapter 5 of this specification contains a general description of the message structure to be applied to MMS PDUs. This structure is based on the well-known message structure of Internet email which is defined in [RFC2822], [RFC2045] and [RFC2387]. [WAPWSP] provides mechanisms for binary encoding of such messages and serves as a basis for the binary encoding of MMS PDUs.

Because of the limited bandwidth of the air interface of mobile networks MMS PDUs are transferred between an MMS Client and an MMS Proxy-Relay in binary encoded message format. This process is called encapsulation. WSP PDUs or HTTP messages which contain MMS PDUs as their body are used for this transport.

There are basically fifteen types of PDUs in MMS level:

- Send message to MMS Proxy-Relay (M-Send.req, M-Send.conf)
- Fetch message from MMS Proxy-Relay (WSP/HTTP GET.req, M-Retrieve.conf)
- MMS Notification about new message (M-Notification.ind, M-NotifyResp.ind)
- Delivery Report about sent message (M-Delivery.ind)
- Acknowledgement of message delivery (M-Acknowledge.ind)
- Read Report about sent message (M-Read-Rec.ind, M-Read-Orig.ind)
- Forward transaction (MMS Client sending a request to forward a message to MMS Proxy-Relay, M-Forward.req and M-Forward.conf)
- Request the MMS Proxy-Relay to delete (from its internal storage) an MM not retrieved by the MMS client (M-Delete.req and M-delete.conf)
- Request the MMS Client to cancel an already retrieved MM (M-Cancel-req and M-Cancel.conf)

In addition to these basic PDUs there is an additional optional set of PDU to be used in conjunction with support for an optional MMBox. Support for the MMBox is optional for both the MMS Client and the MMS Proxy-Relay. The MMBox may be used to store all or some of the MM that arrive for a particular MMS Client depending on user profiling or MMS Client actions. Issues related to profiling are outside the scope of this specification. The following four types of PDUs support direct actions related to the MMBox:

- Store or update MM currently in the MMS Proxy-Relay into the MMBox (M-Mbox-Store.req, M-Mbox-Store.conf)
- View the contents of the MMBox (M-Mbox-View.req, M-Mbox-View.conf)
- Upload an MM that is currently on the MMS Client and store it into the MMBox (M-Mbox-Upload.req, M-Mbox-Upload.conf)
- Delete an MM from the MMBox (M-Mbox-Delete.req, M-Mbox-Delete.conf)

In addition, it may be possible to use optional parameters of the basic PDUs to –

- Save a copy of an MM in the MMBox parallel to sending it to a destination.
- Retrieve an MM from the MMBox

- Forward an MM that is stored in the MMBox to another MMS Client.

Chapter 6 of this specification contains definitions of the MMS PDU types. The header fields and the values included are described in detail.

Chapter 7 of this specification defines the binary encoding of MMS PDUs to be transferred via WSP/HTTP. Binary codes for header field names as well as header field values are assigned.

Textual encoding of MMS PDUs is out of scope of this specification.

5. Message Structure Overview

MMS PDUs which are described in this specification SHALL be included in WSP PDUs/HTTP messages of different types. See [MMSCTR] for more detailed information about this topic. The entire MMS information is contained in MMS PDUs which are encapsulated in WSP PDUs/HTTP messages.

The content type of WSP PDUs/HTTP messages containing MMS PDUs SHALL be application/vnd.wap.mms-message.

The WSP content type application/vnd.wap.multipart.related provides a good example how multimedia content and presentation information can be encapsulated to a single message. Figure 1 depicts the conceptual model and example of the encapsulation.

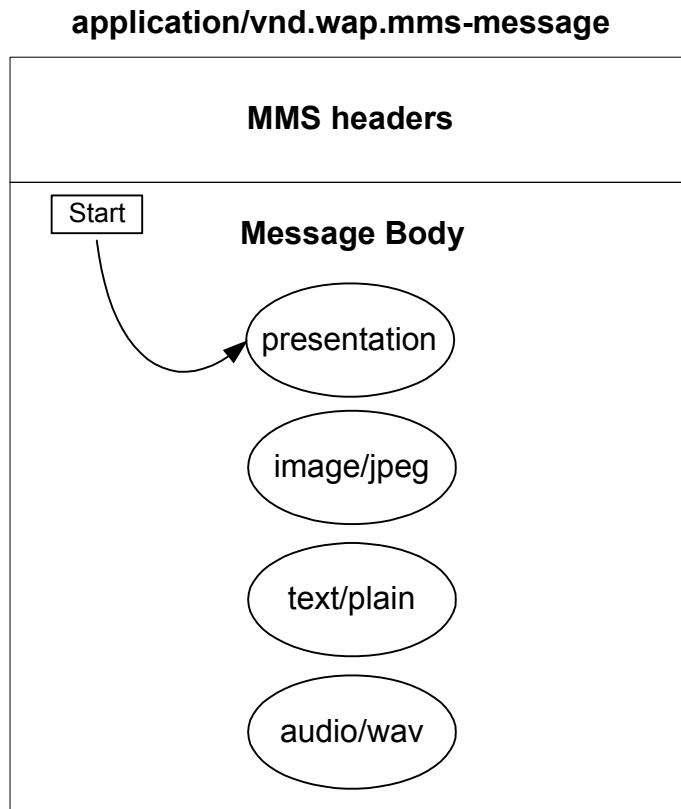


Figure 1: Model of MMS PDU containing a multipart/related message body.

If the message body consists of multipart/related structure [RFC2387] it contains multimedia objects, each in a separate part, as well as an optional presentation part. The order of the parts has no significance. The presentation part, if present, contains instructions on how the multimedia content should be rendered to the display and speakers etc, on the terminal. There MAY be multiple presentation parts, but one of them MUST be the root part. In case of multipart/related, the root part is pointed from the Start parameter. If the Start parameter is not present, the presentation part, if present at all, MUST be the first part in the multipart structure.

If the presentation part does not exist, it is up to the implementation of the terminal how the multimedia content is presented. Examples of the presentation techniques are SMIL [SMIL] and WML [WML].

Multimedia object text/plain MUST be supported by the MMS Client. The character-set encoding UTF-8 SHOULD be supported by the MMS Client.

The header of an MMS PDU consists of header fields which in general consist of a field name and a field value. Some of the header fields are common [RFC2822] header fields and others are specific to the Multimedia Messaging Service.

6. MMS Protocol Data Units and Header Fields

The header fields for sending, notification, retrieving, reporting and acknowledging of a Multimedia Message (MM) are described in the tables 1-11. The header fields for basic MMS functionality are described in tables 12-24. The names of the fields that do not originate from [RFC2822] are preceded by "X-Mms-". The MMS Protocol Data Units MAY contain additional header fields that are conformant to [RFC2822] and are not explicitly referenced in this document.

All header fields, listed in the following tables, SHOULD only appear once per MMS PDU, unless stated otherwise.

6.1 Sending of Multimedia Message

The Send transaction of the MM consists of two messages: M-Send.req and M-Send.conf. The transaction identifier is created and used by the originating MMS Client and it is unique within the send transaction only.

6.1.1 Send Request

This chapter describes the header fields of the M-Send.req sent by the MMS Client to the MMS Proxy-Relay, and how these header fields may be modified by the sender's MMS Proxy-Relay. These header fields are used to generate the MMS notification to the recipient, and are delivered with the message body parts to the recipient MMS Client at retrieval.

Table 1 contains the field names, the field values and descriptions of the header fields of M-Send.req PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-send-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the PDU. This transaction ID identifies the M-Send.req and the corresponding reply only.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
Date	Date-value	Optional. Date and time of submission of the M-Send.req PDU. If the field was not provided by the sending MMS Client, the MMS Proxy-Relay SHALL insert the time of arrival of the M-Send.req PDU at the MMS Proxy-Relay.
From	From-value	Mandatory. Address of the originator MMS Client. The originator MMS Client MUST send either its address or an Insert-address-token. In case of token, the MMS Proxy-Relay MUST insert the correct address of the originator MMS Client.
To	To-value	Optional ¹ . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.

¹ At least one of these address fields (To, Cc or Bcc) MUST be present.

Cc	Cc-value	Optional ¹ . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.
Bcc	Bcc-value	Optional ¹ . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.
Subject	Subject-value	Optional. Subject of the MM.
X-Mms-Message-Class	Message-class-value	Optional. Class of the MM. Value Auto indicates a MM that is automatically generated by the client. If the field value is Auto, then the originating terminal SHALL NOT request Delivery-Report or Read-Report. If field is not present, the receiver interprets the message as personal.
X-Mms-Expiry	Expiry-value	Optional, default: maximum. Length of time the MM will be stored in MMS Proxy-Relay or time to delete the MM. The field has two formats, either absolute or relative.
X-Mms-Delivery-Time	Delivery-time-value	Optional: default: immediate. Time of desired delivery. Indicates the earliest possible delivery of the MM to the recipient. The field has two formats, either absolute or relative.
X-Mms-Priority	Priority-value	Optional. Default: Normal. Priority of the MM assigned by the originator MMS Client.
X-Mms-Sender-Visibility	Sender-visibility-value	Optional. The originator of the MM may include her wish to show or hide her address. If this header field is not present, the network preferences for the sender anonymity feature should be used.
X-Mms-Delivery-Report	Delivery-report-value	Optional. Specifies whether the originator MMS Client requests a delivery report from each recipient. When X-Mms-Message-Class is Auto, the field SHALL always be present and the value SHALL be No.
X-Mms-Read-Report	Read-report-value	Optional. Specifies whether the originator MMS Client wants a read report from each recipient. When X-Mms-Message-Class is Auto, the field SHALL always be present and the value SHALL be No.
X-Mms-Store	Store-sent-value	Optional. Specifies whether the originator MMS Client wants the submitted MM to be saved in the user's MMBox, in addition to sending it. If the MMBox is not supported by the MMS Proxy-Relay then this field SHOULD be ignored.

X-Mms-MM-State	MM-state-value	Optional. Specifies the value to set in the MM State field of the stored MM, if X-Mms-Store is present and its value is Yes. If X-Mms-Store is Yes and X-Mms-MM-State is not present then the MM State shall default to Sent. If the MMBBox is not supported by the MMS Proxy-Relay then this field SHOULD be ignored.
X-Mms-MM-Flags	MM-flags-value	Optional. Specifies a keyword to add or detract from the list of keywords associated with a stored MM, if X-Mms-Store is present and its value is Yes. If the MMBBox is not supported by the MMS Proxy-Relay then this field SHOULD be ignored.
X-Mms-Reply-Charging	Reply-charging-value	Optional. This header field SHALL only be present if the originator is willing to pay for the Reply-MM of the recipient(s). Only the field values “requested” and “requested text only” are allowed. The MMS Proxy-Relay SHALL reject an M-Send.req PDU that includes this field if it doesn’t support reply-charging. The MMS Proxy-Relay SHALL reject an M-Send.req PDU if the values ‘Accepted’ or ‘Accepted text only’ are used for this field.
X-Mms-Reply-Charging-Deadline	Reply-charging-deadline-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It specifies the latest time of the recipient(s) to submit the Reply-MM. After this time the originator of the Original-MM will not pay for the Reply-MM any more.
X-Mms-Reply-Charging-Size	Reply-charging-size-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It specifies the maximum size (number of octets) for the Reply-MM.
X-Mms-Reply-Charging-ID	Reply-charging-ID-value	Optional. This header field SHALL only be present if this PDU contains the Reply-MM that was offered by the value “accepted” or “accepted text only” in the X-Mms-Reply-Charging header field in M-Retrieve.conf received earlier and if the Reply-Charging limitations are met. The value of this header field SHALL be the same as the Message-ID of the Original-MM that is replied to.
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the destination application.
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of an application to which replies, delivery reports, and read reports are addressed.
X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application
X-Mms-Content-Class	Content-class-value	Optional. Classifies the content of the MM to the smallest content class to which the message belongs.

X-Mms-DRM-Content	DRM-content-value	Optional. Indicates if the MM contains any DRM-protected element.
X-Mms-Adaptation-Allowed	Adaptation-allowed-value	Optional. Default: Yes. Indicates if the originator wishes the MM to be adapted or not. This wish can be overridden by DRM protection rules or MMS service provider / network operator configuration.
Content-Type	Content-type-value	Mandatory. The content type of the MM.

Table 1: Header fields of M-Send.req PDU

The message body follows the MMS header.

6.1.2 Send Confirmation

When the MMS Proxy-Relay has received the M-Send.req PDU, it sends an M-Send.conf PDU back to the MMS Client indicating the status of the operation. The response PDU contains MMS header only.

Table 2 contains the field names, the field values and descriptions of the header fields of the M-Send.conf PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-send-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. This transaction ID identifies the M-Send.conf and the corresponding M-Send.req only.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Response-Status	Response-status-value	Mandatory. MMS specific status.
X-Mms-Response-Text	Response-text-value	Optional. Description which qualifies the Response-status-value. The description may be based on the status code names contained in [RFC1893].
Message-ID	Message-ID-value	Optional. This is a unique reference assigned to the MM. This ID SHALL always be present after the MMS Proxy-Relay accepted the corresponding M-Send.req PDU. The ID enables a MMS Client to match delivery reports or read-report PDUs with previously sent MM.

X-Mms-Content-Location	Content-location-value	Optional. This field SHALL appear only if the MMS Proxy-Relay supports the MMBBox feature - the X-Mms-Store field was present in the M-Send.req and X-Mms-Store-Status indicates Success. If it appears then this specifies a reference to the stored version of the MM that can be retrieved or can be used to obtain information about the MM using the WSP/HTTP GET or M-Mbox-View.req.
X-Mms-Store-Status	Store-status-value	Optional. This field SHALL appear only if the X-Mms-Store field was present in the M-Send.req and the MMS Proxy-Relay supports the MMBBox feature. If the field appears it indicates if the submitted MM was successfully stored into the MMBBox.
X-Mms-Store-Status-Text	Store-status-text-value	Optional. Description that qualifies the X-Mms-Store-Status field value.

Table 2: Header fields of M-Send.conf PDU

The MMS Proxy-Relay MUST always assign a Message-ID header field to the message when successfully received for delivery. The value of Message-ID shall be globally unique according to the needs of the MMS Proxy-Relay that receives the MM for delivery.

6.2 Multimedia Message Notification

MMS Notifications provide the MMS Client with information (e.g. message class and expiry time) about a MM located at the recipient MMS Proxy-Relay and waiting for retrieval. The purpose of the notification is to allow the client to automatically fetch a MM from the location indicated in the notification.

The Detailed Notification Feature: The MMS Proxy-Relay may supply detailed information about the top level message content (e.g. application/vnd.wap.multipart.* or image/jpeg) which includes the following attributes:

Content-Reference: The Proxy-Relay shall supply a reference identifier to a message element.

Type/format-Parameter: The MMS Proxy-Relay may include the type/format as conveyed in the WSP header for the top level message content prior to content adaptation.

The MMS Client may use the additional information from the message element descriptors in order to inform the user of the MM content.

The transaction identifier is created by the MMS Proxy-Relay and is unique up to the following M-NotifyResp.ind only.

Note: If the MMS Notification is resent at a later point in time - prior to receiving a corresponding M-NotifyResp.ind - then this MMS Notification must be identical to the original MMS Notification.

If the MMS Client requests deferred retrieval with M-NotifyResp.ind, the MMS Proxy-Relay MAY create a new transaction identifier.

Table 3 contains the field names, the field values and descriptions of the header fields of the M-Notification.ind PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-notification-ind	Mandatory. Specifies the PDU type.

X-Mms-Transaction-ID	Transaction-id-value	Mandatory. This transaction ID identifies the M-Notification.ind and the corresponding M-NotifyResp.ind
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
From	From-value	Optional. Address of the last MMS Client that handled the MM, i.e. that sent or forwarded the MM. If hiding the address of the sender from the recipient is requested by the originating MMS Client and supported and accepted by the MMS Proxy-Relay, the MMS Proxy-Relay MUST NOT add this field to the M-Notification.ind PDU. The insert-address-token MUST NOT be used as the value of the field.
Subject	Subject-value	Optional. Subject of the message.
X-Mms-Delivery-Report	Delivery-report-value	Optional. Specifies whether the user wants a delivery report from each recipient. The absence of the field does not indicate any default value.
X-Mms-Stored	MM-stored-value	Optional. If this field is present and its value is Yes it indicates that the MM was stored to the user's MMBox and that the X-Mms-Content-Location field is a reference to the MM in the MMBox.
X-Mms-Message-Class	Message-class-value	Mandatory. Class of the message. The MMS Proxy-Relay MUST provide the Personal message class if the original submission did not include the X-Mms-Message-Class field.
X-Mms-Priority	Priority-value	Optional. Priority of the MM.
X-Mms-Message-Size	Message-size-value	Mandatory. Size of the MM as defined in [TS23140] for 3GPP and [XS0016200] for 3GPP2.
X-Mms-Expiry	Expiry-value	Mandatory. Length of time the message will be available. The field has only one format, relative. The recipient client calculates this length of time relative to the time it receives the notification.
X-Mms-Reply-Charging	Reply-charging-value	Optional. If this field is present its value is set to "accepted" or "accepted text only" and the MMS-version-value of the M-Notification.ind PDU is higher than 1.0, this header field will indicate that a reply to this particular MM is free of charge for the recipient. If the Reply-Charging service is offered and the request for reply-charging has been accepted by the MMS service provider the value of this header field SHALL be set to "accepted" or "accepted text only".

X-Mms-Reply-Charging-Deadline	Reply-charging-deadline-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It SHALL only be interpreted if the value of X-Mms-Reply-Charging header field is set to "accepted" or "accepted text only". It specifies the latest time the recipient has to submit the Reply-MM. After this time the originator of the Original-MM will not pay for the Reply-MM any more.
X-Mms-Reply-Charging-Size	Reply-charging-size-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It specifies the maximum size (number of octets) for the Reply-MM.
X-Mms-Reply-Charging-ID	Reply-charging-ID-value	Optional. This header field SHALL only be present in PDUs that notify a recipient about a Reply-MM. The value of this header field SHALL be the same as the Message-ID of the Original-MM that is replied to.
X-Mms-Distribution-Indicator	Distribution-indicator-value	Optional. This field MAY be present for an MM that originated from a Value Added Service Provider and the original included this indicator. A "No" value indicates to the user that the originator requested the content of the MM is not supposed to be distributed further. This field is only for informational purposes and thus does not impose any requirements on the MMS Client.
X-Mms-Element-Descriptor	Element-Descriptor-value	Optional This header field SHALL contain the Content-Reference associated with the corresponding top level message content of the MM waiting for retrieval and MAY additionally contain the type/format of the message content.
X-Mms-Recommended-Retrieval-Mode	Recommended-Retrieval-Mode-value	Optional If present this header indicates that manual retrieval mode is recommended for this MM
X-Mms-Recommended-Retrieval-Mode-Text	Recommended-Retrieval-Mode-Text-value	Optional This header SHALL explain the reasons why manual retrieval mode is recommended for this MM
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the destination application.
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of an application to which replies and read reports are addressed.
X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application
X-Mms-Content-Class	Content-Class-value	Optional. Classifies the content of the MM to the smallest content class [MMSCONF] to which the associated message belongs.

X-Mms-DRM-Content	DRM-Content-value	Optional. Indicates if the associated MM contains any DRM-protected element.
X-Mms-Replace-ID	Replace-id-value	Optional This field indicates the reference (i.e. Message-ID) of the previous MM that is replaced by the current MM.
X-Mms-Content-Location	Content-location-value	Mandatory. This field defines the location of the MM to be retrieved.

Table 3: Header fields of M-Notification.ind PDU.

The M-Notification.ind PDU does not contain a message body.

The standard URI format according to [RFC2396] SHALL be set as the Content-location-value, for example:

http://mmsc/message-id

Table 4 contains the field names, the field values and descriptions of the header fields of the M-NotifyResp.ind PDU which has the purpose to acknowledge the transaction to the MMS Proxy-Relay.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-notifyresp-ind	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. Identifies the transaction started by M-Notification.ind PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Status	Status-value	Mandatory. Message status. The status Retrieved SHALL be used only after successful retrieval of the MM.
X-Mms-Report-Allowed	Report-allowed-value	Optional. Default: Yes. Indication whether or not the sending of delivery report is allowed by the recipient MMS Client.

Table 4: Header fields of M-NotifyResp.ind PDU.

M-NotifyResp.ind PDU doesn't contain a message body.

6.3 Retrieval of Multimedia Message

A MMS Client SHALL request the retrieval of an MM by sending a WSP/HTTP GET request to the MMS Proxy-Relay containing a URI that indicates the location of the MM to be retrieved. The URI is the value of the X-Mms-Content-Location header field that can be received from different PDUs. Examples of such PDUs are M-Notification.ind, M-Send.conf, M-Forward.conf, M-Mbox-View.conf, M-Mbox-Upload.conf, M-Mbox-Store.conf.

When successful, the response to the retrieve request will be M-Retrieve.conf PDU containing MMS header and the MM.

Table 5 contains the field names, the field values and descriptions of the header fields of the M-Retrieve.conf PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-retrieve-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Conditional Identifies either the transaction that has been started by M-Notification.ind PDU without M-NotifyResp.ind PDU (immediate retrieval) or a new transaction when deferred retrieval was requested. This header field SHALL be present when the MMS Proxy relay seeks an acknowledgement for the MM delivered though M-Retrieve.conf PDU during deferred retrieval. This transaction ID is used by the MMS Client and MMS Proxy-Relay to provide linkage between the originated M-Retrieve.conf and the response M-Acknowledge.ind PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
Message-ID	Message-ID-value	Conditional. This is an unique reference assigned to the MM. The ID enables an MMS Client to match read report PDUs, cancel PDUs or Reply-MMs with previously sent or forwarded MM. This header field SHALL be present when the M-Retrieve.conf PDU includes the requested MM.
Date	Date-value	Mandatory. Date and time of latest submission or forwarding of the message by an MMS Client or reception of the MMS Proxy-Relay.
From	From-value	Optional. Address of the last MMS Client that handled the MM, i.e. that either sent or forwarded the MM. If hiding the address of the sender from the recipient is requested by the originating MMS Client and supported and accepted by the MMS Proxy-Relay, the MMS Proxy-Relay MUST NOT add this field to the M-Retrieve.conf PDU. The MMS Client MUST be able to process the From field if it is present, i.e. the originating MMS Client did not request address hiding. The insert-address-token MUST NOT be used as the value of the field.
X-Mms-Previously-Sent-By	Previously-sent-by-value	Optional. Address of the MMS Client that forwarded or originally sent the message and a sequence number. A higher sequence number indicates a forwarding event at a later point in time. This header field MAY appear multiple times.

X-Mms-Previously-Sent-Date	Previously-sent-date-value	Optional. Date and time of a forwarding or original send transaction of the message and a sequence number. The sequence number indicates the correspondence to the MMS Client's address in the "X-Mms-Previously-Sent-By" header field with the same sequence number. This header field MAY appear multiple times.
To	To-value	Optional. Address of the recipient. Addressing will be handled in Chapter 8. This header field MAY appear multiple times.
Cc	Cc-value	Optional. Address of the recipient. Addressing will be handled in Chapter 8. This header field MAY appear multiple times.
Subject	Subject-value	Optional. Message subject
X-Mms-MM-State	MM-state-value	Optional. This field shall only appear for an MM that is retrieved from the MMBox, if the MMBox is supported by the MMS Proxy-Relay. The value SHALL indicate the state of the MM as one of the following: Draft, Sent, New, Retrieved, Forwarded.
X-Mms-MM-Flags	MM-flags-value	Optional. This field shall only appear for an MM that is retrieved from the MMBox, if the MMBox is supported by the MMS Proxy-Relay. The value SHOULD indicate the list of keywords that are associated with the MM. If more than one keyword is associated with the MM this field SHALL appear multiple times (equal to the number of keywords). If no keywords are associated with the MM then this field MAY NOT appear.
X-Mms-Message-Class	Message-class-value	Optional. Message class. If field is not present, the receiver interprets the MM as personal.
X-Mms-Priority	Priority-value	Optional. Default: Normal Priority of the MM.
X-Mms-Delivery-Report	Delivery-report-value	Optional. Default: No. Specifies whether the originator MMS Client requested a delivery report from each recipient.
X-Mms-Read-Report	Read-report-value	Optional. Default: No. Specifies whether the originator MMS Client wants a read report from each recipient as a new message.

X-Mms-Reply-Charging	Reply-charging-value	Optional. If this field is present its value is set to “accepted” or “accepted text only” and the MMS-version-value of the M-Retrieve.conf PDU is higher than 1.0, this header field indicates that a reply to this particular MM is free of charge for the recipient. If the Reply-Charging service is offered and the request for reply-charging has been accepted by the MMS service provider the value of this header field SHALL be set to “accepted” or “accepted text only”.
X-Mms-Reply-Charging-Deadline	Reply-charging-deadline-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It SHALL be interpreted only if the value of X-Mms-Reply-Charging header field is set to “accepted” or “accepted text only”. It specifies the latest time the recipient has to submit the Reply-MM. After this time the originator of the Original-MM will not pay for the Reply-MM any more.
X-Mms-Reply-Charging-Size	Reply-charging-Size-value	Optional. This header field SHALL NOT be present if the X-Mms-Reply-Charging header field is not present. It SHALL be interpreted only if the value of X-Mms-Reply-Charging header field is set to “accepted” or “accepted text only”. It specifies the maximum size (number of octets) for the Reply-MM.
X-Mms-Reply-Charging-ID	Reply-charging-ID-value	Optional. This header field SHALL only be present in PDUs with which a Reply-MM is retrieved. The value of this header field SHALL be the same as the Message-ID of the Original-MM that is replied to.
X-Mms-Retrieve-Status	Retrieve-status-value	Optional. MMS specific status.
X-Mms-Retrieve-Text	Retrieve-text-value	Optional. Description which qualifies the retrieve status value. The description may be based on the status code names contained in [RFC1893].
X-Mms-Distribution-Indicator	Distribution-indicator-value	Optional. This field MAY be present for an MM that originated from a Value Added Service Provider and the original included this indicator. A “No” value indicates to the user that the originator requested the content of the MM is not supposed to be distributed further. This field is only for informational purposes and thus does not impose any requirements on the MMS Client.
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the destination application.
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of an application to which replies and read reports are addressed.

X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application
X-Mms-Content-Class	Content-Class-value	Optional. Classifies the content of the MM to the smallest content class [MMSCONF] to which the associated message belongs.
X-Mms-DRM-Content	DRM-Content-value	Optional. Indicates if the associated MM contains any DRM-protected element.
X-Mms-Replace-ID	Replace-id-value	Optional This field indicates the reference (i.e. Message-ID) of the previous MM that is replaced by the current MM.
Content-Type	Content-type-value	Mandatory. The content type of the MM.

Table 5: Header fields of M-Retrieve.conf PDU.

Upon retrieving a new MM containing the Replace-id-value, the MMS Client SHOULD replace the previously retrieved MM, having the same Message-ID as indicated by the Replace-id-value, by the new MM. The MMS Client MAY provide means (e.g. terminal setting, per message request) to a user to forbid such replacement. If forbidden, the MMS Client SHOULD NOT replace the previously retrieved MM. The MMS Client MAY provide different options in the terminal setting depending on the implementation. Options and/or behaviour MAY vary based on the state of the original message. For example,

- the user is unaware of the original MM
- the user is aware of the original MM, but has not handled it
- the user is reading the MM
- the user has handled the MM

The message body follows the headers. In case the M-Retrieve.conf message carries the X-Mms-Retrieve-Status header field, the MMS Proxy-Relay SHALL also include a message body in the message, for backward compatibility reasons. The MMS Proxy-Relay may elaborate the description of the corresponding value of the header field in the message body. The description may be based on the status code names contained in [RFC1893].

If the MMS Proxy-Relay supports MMBBox and the MM being retrieved is stored in the user's MMBBox then the X-Mms-MM-State value SHALL reflect the value prior to the retrieval. After the completion of the retrieve transaction the MMS Proxy-Relay SHOULD change the MM State to Retrieved. The X-Mms-MM-Flags field SHALL reflect the keywords that were assigned by the MMS Client in a previous M-Send.req, M-Mbox-Store.req, M-Forward.req, or M-Mbox-Upload.req.

6.4 Delivery Acknowledgement

A M-Acknowledge.ind PDU confirms the delivery of the MM to the MMS Proxy-Relay.

Table 6 contains the field names, the field values and descriptions of the header fields of the M-Acknowledge.ind PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-acknowledge-ind	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. This transaction ID identifies the M-Acknowledge.ind PDU and the corresponding M-Retrieve.conf PDU

X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Report-Allowed	Report-allowed-value	Optional. Default: Yes. Sending of delivery report allowed to the user.

Table 6: Header fields of M-Acknowledge.ind PDU

M-Acknowledge.ind PDU does not contain a message body.

6.5 Forwarding of Multimedia Message

The forward transaction consists of the M-Forward.req message sent from the MMS Client to the MMS Proxy-Relay in order to request an MM to be forwarded that is located at the MMS Proxy-Relay and the corresponding confirmation message (M-Forward.conf) sent from the MMS Proxy-Relay to the MMS Client.

The request for Reply-Charging SHALL NOT be forwarded. The MMS Proxy-Relay MAY reject a request to forward a MM that includes Reply-Charging fields or the MMS Proxy-Relay MAY accept the forward request but it MUST remove the Reply-Charging fields from the forwarded MM.

The MMS Client MUST include a unique transaction identifier in the M-Forward.req message.

6.5.1 Forward Request

This chapter describes the M-Forward.req message sent by the MMS Client to the MMS Proxy-Relay to request forwarding of an MMS message.

Some of the header fields described in this chapter that are generated by the forwarding MMS Client and sent to the MMS Proxy-Relay are used by the MMS Proxy-Relay to generate the MMS notification to the recipient MMS Client and are delivered with the retrieval message to the recipient MMS Client.

In addition to the header fields described in the table below, it is also possible to provide header extensibility using WSP mechanism for encoding of header fields not defined in this specification.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-forward-req	Mandatory. Specifies the message type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the forward transaction that provides linkage between the M-Forward.req and corresponding M-Forward.conf message.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
Date	Date-value	Optional. Date and time the M-Forward.req was sent to the MMS Proxy-Relay. The MMS Proxy-Relay will generate this field when not supplied by the MMS Client.
From	From-value	Mandatory. Address of the MMS Client that requests forwarding of the message The forwarding MMS Client MUST send either its address or an Insert-address-token. In latter case, the MMS Proxy-Relay MUST insert the correct address of

		the MMS Client that forwards the message.
To	To-value	Optional ² . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.
Cc	Cc-value	Optional ² . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.
Bcc	Bcc-value	Optional ² . Address of the recipient. Addressing is handled in Chapter 8. This header field MAY appear multiple times.
X-Mms-Expiry	Expiry-value	Optional, default: maximum. Period of time the message will be stored in MMS Proxy-Relay or time to delete the message. The field has two formats, either absolute or relative.
X-Mms-Delivery-Time	Delivery-time-value	Optional: default: immediate. Time of desired delivery. Indicates the earliest possible delivery of the message to the recipient. The field has two formats, either absolute or relative.
X-Mms-Report-Allowed	Report-allowed-value	Optional. Default: Yes. Sending of delivery report allowed to the previous sender of the message to be forwarded.
X-Mms-Delivery-Report	Delivery-report-value	Optional. Specifies whether the user wants a delivery report from each recipient.
X-Mms-Read-Report	Read-report-value	Optional. Specifies whether the user wants a read report from each recipient.
X-Mms-Store	Store-sent-value	Optional. Specifies whether the originator MMS Client wants the submitted MM to be saved in the user's MMBox, in addition to sending it. If the X-Mms-Content-Location refers to a MM already in the MMBox then this field SHOULD be ignored. If the MMBox is not supported by the MMS Proxy-Relay then this field SHOULD be ignored.
X-Mms-MM-State	MM-state-value	Optional. Specifies the value to set in the MM State field of the stored MM, if X-Mms-Store is present and its value is Yes or if the X-Mms-Content-Location refers to an MM already in the MMBox. If X-Mms-Store is Yes and X-Mms-MM-State is not present then the MM State SHALL default to Forwarded. If the MMBox is not supported by the MMS Proxy-Relay then this field SHOULD be ignored.

² At least one of these address fields (To, Cc or Bcc) MUST be present.

X-Mms-MM-Flags	MM-flags-value	Optional. Specifies a keyword to add or detract from the list of keywords associated with a stored MM, if X-Mms-Store is present and its value is Yes. If the MMS Proxy-Relay then this field SHOULD be ignored. This field MAY appear multiple times.
X-Mms-Content-Location	Content-location-value	Mandatory. This field specifies the location of the message to be forwarded, as received in the M-Notification.ind message.
X-Mms-Reply-Charging	Reply-charging-value	Optional. A request for reply-charging from the forwarding MMS Client which indicates the forwarding user's willingness to pay for the reply-MM from the recipient.
X-Mms-Reply-Deadline	Reply-deadline-value	Optional. In case of reply-charging, the latest time of submission of replies granted to the recipient(s) (time stamp).
X-Mms-Reply-Charging-Size	Reply-charging-size-value	Optional. In case of reply-charging, the maximum size for reply-MM(s) granted to the recipient(s).

Table 7: Header fields of M-Forward.req PDU

When accepting the forwarding request the MMS Proxy-Relay SHALL insert the address of the forwarding MMS Client into the header field From of the forwarded message. Furthermore the MMS Proxy-Relay MAY insert the address contained in the former From header field of the forwarded message into a new header field X-Mms-Previously-Sent-By and assign a sequence number to that address. That sequence number is an increment of the highest sequence number of the already existing X-Mms-Previously-Sent-By header fields of the same type within the forwarded MM. If there is no X-Mms-Previously-Sent-By header field present in the message to be forwarded the new header field of that type SHALL be allocated and have the sequence number "0", which then identifies the original sender of the message.

Additionally, the MMS Proxy-Relay MAY insert the date and time contained in the Date header field of the message to be forwarded into a new header field X-Mms-Previously-Sent-Date and assign a sequence number to that header field. In that case the sequence number SHALL be the same as the sequence number of the corresponding X-Mms-Previously-Sent-By header field. Thus, the MMS Proxy-Relay MUST provide a corresponding X-Mms-Previously-Sent-By header field for each (optional) X-Mms-Previously-Sent-Date header field.

6.5.2 Forward Confirmation

When the MMS Proxy-Relay has received the Forward request (M-Forward.req message), it SHALL send a confirmation message (M-Forward.conf message) back to the MMS Client indicating the status of the operation.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-forward-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the forward transaction that provides linkage between the M-Forward.req and corresponding M-Forward.conf PDU. It originates from the M-Forward.req PDU.

X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Response-Status	Response-status-value	Mandatory. MMS specific status.
X-Mms-Response-Text	Response-text-value	Optional. Description which qualifies the response status value. The description may be based on the status code names contained in [RFC1893].
Message-ID	Message-ID-value	Optional. This is a unique reference assigned to message. This ID SHALL always be present when the MMS Proxy-Relay accepted the request to forward the MMS message. The ID enables an MMS Client to match delivery reports or read report PDUs with forwarded MMS messages.
X-Mms-Content-Location	Content-location-value	Optional. This field SHALL appear only if the MMS Proxy-Relay supports the MMBox feature - the X-Mms-Store field was present in the M-Forward.req and X-Mms-Store-Status indicates Success. If X-Mms-Content-Location appears then this specifies a reference to the stored version of the MM that can be retrieved or can be used to obtain information about the MM using the WSP/HTTP GET or M-Mbox-View.req.
X-Mms-Store-Status	Store-status-value	Optional. This field SHALL appear only if the X-Mms-Store field was present in the M-Forward.req and the MMS Proxy-Relay supports the MMBox feature. If the field appears it indicates if the submitted MM was successfully stored into the MMBox.
X-Mms-Store-Status-Text	Store-status-text-value	Optional. Description that qualifies the X- Mms-Store-Status field value.

Table 8: Header fields of M-Forward.conf PDU

The MMS Proxy-Relay MUST always assign a message ID to the message when it successfully received the forwarding request. The message ID shall be globally unique according to the needs of the MMS Proxy-Relay that received the forwarding request.

6.6 Delivery Reporting

A MMS Delivery Report MUST be sent from the MMS Proxy-Relay to the originator MMS Client or the forwarding MMS Client when a delivery report has been requested and the recipient MMS Client has not explicitly requested for denial of the report. As for example, the recipient can request for denial of the Delivery Report by using the X-Mms-Report-Allowed field of M-Acknowledge.ind or M-NotifyResp.ind PDU. There will be a separate delivery report from each recipient. There is no response PDU to the delivery report.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-delivery-ind	Mandatory. Specifies the PDU type.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.

Message-ID	Message-ID-value	Mandatory. This is the reference that was originally assigned to the MM by the MMS Proxy-Relay and included in the corresponding M-Send.conf or M-Forward.conf PDU. The ID enables an MMS Client to match delivery reports with previously sent or forwarded MMs.
To	To-value	Mandatory. Needed for reporting in case of point-to-multipoint message.
Date	Date-value	Mandatory. Date and time the message was handled (fetched, expired, etc.) by the recipient or MMS Proxy-Relay.
X-Mms-Status	Status-value	Mandatory. The status of the message.
X-Mms-Status-Text	Status-text-value	Optional. Description which qualifies the X-Mms-Status field value.
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the destination application.
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of a “reply path” to this delivery report.
X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application

Table 9: Header fields of M-Delivery.ind PDU

6.7 Read Reporting

Read reporting can be done either in the form of a new MM or be handled by specific PDUs. Backward compatibility between these methods is handled with the **X-Mms-MMS-Version** header field and a transformation mechanism in the originating Proxy-Relay. If the MMS Client is of higher version than 1.0 and if it supports read reporting it **MUST** also support the handling of Read Report PDUs.

6.7.1 Multimedia Message Read Report

When the originating terminal requested the Read Report in the MM, the recipient MMS Client **MAY** send a new MM back to the originating MMS Client when the user has handled the MM. The content of the MM is a terminal implementation issue. The Read Report MM **MUST** have the X-Mms-Message-Class as Auto in the MMS header.

The MMS Proxy-Relay **MUST** deliver the Read Report as ordinary MM.

When the originating terminal receives the Read Report, it **SHALL NOT** create Read Report or indicate to the Proxy-Relay to create a Delivery Report.

6.7.2 PDU Read Report

There are two types of PDUs used for the handling of Read Reports. On the MM recipient side the **M-Read-Rec.ind** **MUST** be used and on the MM originating side the **M-Read-Orig.ind** **MUST** be used.

Field Name	Field Value	Description
X-Mms-Message-Type	m-read-rec-ind	Mandatory. Identifies the PDU type

X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
Message-ID	Message-ID-value	Mandatory. This is the reference that was originally assigned to the MM by the MMS Proxy-Relay and included in the corresponding M-Retrieve.conf PDU. The ID enables an MMS Client to match read report PDUs with previously sent or forwarded MMs.
To	To-value	Mandatory The address of the recipient of the Read Report, i.e. the originator of the original multimedia message.
From	From-value	Mandatory Address of the sender of the Read Report. The sending client MUST send either its address or insert an address token. In case of token, the MMS Proxy-Relay MUST insert the correct address of the sender.
Date	Date-value	Optional Time the message was handled by the recipient MMS Client.
X-Mms-Read-Status	Read-status-value	Mandatory The status of the message.
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the application this read report is intended for
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of a 'reply path' to this read report.
X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application

Table 10: Header Fields of M-Read-Rec.ind PDU

Field Name	Field Value	Description
X-Mms-Message-Type	m-read-orig-ind	Mandatory. Identifies the PDU type
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
Message-ID	Message-ID-value	Mandatory. This is the reference that was originally assigned to the MM by the MMS Proxy-Relay and included in the corresponding M-Send.conf or M-Forward.conf PDU. The ID enables an MMS Client to match read report PDUs with previously sent or forwarded MMs.
To	To-value	Mandatory The address of the recipient of the Read Report, i.e. the originator of the original multimedia message.

From	From-value	Mandatory The address of the originator of the Read Report, i.e. the recipient of the original multimedia message. The insert-address-token MUST NOT be used as the value of the field.
Date	Date-value	Mandatory Time the message was handled by the recipient MMS Client. The Recipient MMS Proxy-Relay SHALL generate the Date field according to [TS23140] when the time stamp is missing.
X-Mms-Read-Status	Read-status-value	Mandatory The status of the message.
X-Mms-Applic-ID	Applic-ID-value	Optional. Identification of the application this read report is intended for
X-Mms-Reply-Applic-ID	Applic-ID-value	Optional. Identification of a 'reply path' to this read report.
X-Mms-Aux-Applic-Info	Aux-Applic-Info-value	Optional. Auxiliary application information for internal use of the destination application

Table 11: Header Fields of M-Read-Orig.ind PDU

If the originating MMS Client does not support the M-read-orig.ind PDU the originating Proxy-Relay MAY convert the PDU into a MM, as described in [MMSCTR].

6.8 Storing and Updating a Message to MMBox

This section describes the transaction of a MMS Client that decides to save a MM that has not been retrieved as yet. The transaction is based on the M-Mbox-Store.req that is sent from the MMS Client to the MMS Proxy-Relay and confirmation of the operation that is returned via the M-Mbox-Store.conf PDU. This transaction may also be used to change the MM Status or MM Flags keywords associated with an MM that already resides in the MMBox. This transaction MUST be supported only if the MMS Proxy-Relay supports the MMBox functionality.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-store-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the store/update transaction that provides linkage between the M-Mbox-Store.req and corresponding M-Mbox-Store.conf PDUs. It originates from the M-Mbox-Store.req PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-value	Mandatory. This field specifies the location of the message to be stored or updated. This reference is obtained from either the M-Notification.ind, M-Mbox-View.conf, or any transaction that stored a message to the user's MMBox.

X-Mms-MM-State	MM-state-value	Optional. The new value to give the state of the stored message. If X-Mms-Content-Location refers to a message to be stored (i.e. a message reference that was obtained from an M-Notification.ind) then this shall default to New. Otherwise, there is no default value.
X-Mms-MM-Flags	MM-flags-value	Optional. The keyword values to add or detract to the MM Flags of the stored message. There is no default. This field MAY appear multiple times.

Table 12: Header fields for M-Mbox-Store.req PDU

If the X-Mms-Content-Location refers to a MM that is not in the user's MMBBox then the MMS Proxy-Relay SHOULD transfer the contents of the referenced MM together with the relevant header information and the MM State and MM Flags fields indicated in the request. If the X-Mms-MM-State field is not present the message SHALL be stored with MM State set to New.

If the X-Mms-Content-Location refers to a MM that is currently in the user's MMBBox, then the MMS Proxy-Relay SHOULD use the values of the X-Mms-MM-State and X-Mms-MM-Flags fields to update the current values stored in the message.

In either case the MMS Proxy-Relay SHALL respond to the request with a M-Mbox-Store.conf indicating that the MM has been relocated to the user's MMBBox or updated appropriately. If the request was successful then the MMS Proxy-Relay MUST supply a reference to the location of the message in the user's MMBBox.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-store-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the store/update transaction that provides linkage between the M-Mbox-Store.req and corresponding M-Mbox-Store.conf PDU. It originates from the M-Mbox-Store.req PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-value	Optional. This field SHALL appear only if X-Mms-Store-Status indicates Success. If it appears then this specifies a reference to the stored version of the MM that can be retrieved or can be used to obtain information about the MM using the WSP/HTTP GET or M-Mbox-View.req.
X-Mms-Store-Status	Store-status-value	Mandatory. The status of the store/update request.
X-Mms-Store-Status-Text	Store-status-text-value	Optional. Description which qualifies the X-Mms-Store-Status.

Table 13: Header fields for M-Mbox-Store.conf PDU

6.9 Viewing Information of Messages in MMBox

The MMS Client may request a listing of the MM that are stored in the user's MMBox or obtain information concerning a set of MM known to be stored in the MMBox. The transaction used to obtain this information is started with the M-Mbox-View.req. The MMS Proxy-Relay SHOULD reply with an M-Mbox-View.conf.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-view-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the viewing transaction that provides linkage between the M-Mbox-View.req and corresponding M-Mbox-View.conf PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-value	Optional. A message reference obtained from any transaction that stored a message to the MMBox or a previous result from the M-Mbox-View.conf. Attributes of the specific message that is referenced should be returned. This field MAY appear multiple times.
X-Mms-MM-State	MM-state-value	Optional. Specifies a MM State value to use in selecting the messages to return their information. This field MAY appear multiple times. If this appears multiple times the selection SHALL be the <i>union</i> of all the selection values.
X-Mms-MM-Flags	MM-flags-value	Optional. Specifies a MM Flags keyword to use in selecting the messages to return their information. This field MAY appear multiple times. If this appears multiple times the selection SHALL be the <i>union</i> of all the selection values.
X-Mms-Start	Index-value	Optional. A number, indicating the index of the first MM of those selected to have information returned in the response. If this is absent, the first item selected SHALL be returned.
X-Mms-Limit	Index-value	Optional. A number indicating the maximum number of selected MMs whose information SHALL be returned in the response. If this is absent, information elements from all remaining MMs SHALL be returned. If this is zero then no MM-related information SHALL be returned.
X-Mms-Attributes	Attributes-value	Optional. A list of information elements that should appear in the view for each selected message. If this field does not appear then MMS Proxy-Relay SHOULD use a system default. If no system default is defined then the subset of message fields that appear in the M-Notification.ind

		PDU SHALL be used. This field MAY appear multiple times.
X-Mms-Totals	Mbox-totals-req	Optional. Indicates that MMS Client is requesting a total count of messages currently stored in MMBox. Default is No.
X-Mms-Quotas	Mbox-quotas-req	Optional. Indicates that MMS Client is requesting an indication of the quotas defined for user's MMBox. Default is No.

Table 14: Header fields for M-Mbox-View.req PDU

The MMS Proxy-Relay SHALL determine the selection process indicated in the request, search the MMBox for all messages that comply with the union of all selection criteria, i.e X-Mms-Content-Location, X-Mms-MM-State, and X-Mms-MM-Flags values. The MMS Proxy-Relay shall then limit this selection according to the indexing indicated by the X-Mms-Start and X-Mms-Limit field values and return the requested information for this list of MM. In addition, the MMS Proxy-Relay SHALL return information for all MM in the MMBox as requested by the X-Mms-Totals and X-Mms-Quotas fields.

The following table describes the header information for the X-Mbox-View.conf PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-view-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the viewing transaction that provides linkage between the M-Mbox-View.req and corresponding M-Mbox-View.conf PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Response-Status	Response-status-value	Mandatory. Indicates the result of the selection. Empty set of selected messages should be indicated by a success status and the X-Mms-Message-Count SHALL be set to zero (0).
X-Mms-Response-Text	Response -text-value	Optional. Description that qualifies the Response-status-value.
X-Mms-Content-Location	Content-location-value	Optional. The list of MM that were specified in the corresponding request. If there were no X-Mms-Content-Location specified in the request this SHALL not appear in reply. This field MAY appear multiple times.
X-Mms-MM-State	MM-state-value	Optional. Specifies the MM State values to use in selecting the messages. If no X-Mms-MM-State fields appeared in the request this SHALL not appear in the reply. This field MAY appear multiple times.
X-Mms-MM-Flags	MM-flags-value	Optional. Specifies the MM Flags values to use in selecting the messages. If no X-Mms-MM-Flags fields appeared in the request this SHALL not appear in the reply. This field MAY appear multiple times.

X-Mms-Start	Index-value	Optional. A number, indicating the index of the first MM of those selected to have information returned in the response. If no X-Mms-Start field appeared in the request this SHALL not appear in the reply.
X-Mms-Limit	Index-value	Optional. A number, indicating the number of MM that the MMS Client requested to be displayed. If no X-Mms-Limit field appeared in the request this SHALL not appear in the reply.
X-Mms-Attributes	Attributes-value	Optional. The list of information elements that are included for each selected message. If the list was not specified in the request this MAY not appear in the response PDU. This field MAY appear multiple times.
X-Mms-Mbox-Totals	Mbox-totals-value	Optional. Gives the total number of messages or bytes in the user's MMBox. This field MUST appear if the X-Mms-Totals field was "Yes" in the corresponding request. If this field is supplied, it SHOULD indicate the same type(s) (messages and/or bytes) as in X-Mms-Mbox-Quotas.
X-Mms-Mbox-Quotas	Mbox-quotas-value	Optional. Gives the quotas defined for the user's MMBox in messages and/or bytes. This field MAY appear more than once. This field MUST appear at least once if the X-Mms-Quotas field was "Yes" in the corresponding request. If this field is supplied, it SHOULD indicate the same type(s) (messages and/or bytes) as in X-Mms-Mbox-Totals.
X-Mms-Message-Count	Message-count-value	Optional. Number of messages listed in content of the PDU.
Content-Type	Content-type-value	Mandatory The content type of the body. This field SHALL appear as the last field of the PDU header. If there is no body then this field SHALL be set to "*/*" (encoded as 0x00).

Table 15: Header fields for M-Mbox-View.conf PDU

The response PDU SHALL include content that contains the information for the messages that were requested, and the original selection parameters included in the M-Mbox-View.req. The content SHALL be encoded in a nested "application/vnd.wap.multipart.mixed" entity, as specified in [WAPWSP], where each MM description is contained in a separate part of this structure. Each MM description part SHALL have a content-type, e.g. "application/vnd.wap.mms-message", and SHALL be described by the PDU described in section 6.9.1.

6.9.1 MMBox Description PDU

The following PDU SHALL be used by the M-Mbox-View.conf and the M-Mbox-Upload.req data payload to describe the MM.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox -descr	Mandatory. Specifies that this is a MMBoxMM descriptor.
X-Mms-Content-Location	Content-location-value	Conditional. This field shall only be used in conjunction with the M-

		Mbox-View.conf PDU. Specifies the location URI that may be used to retrieve this MM in a future operation.
Message-ID	Message-ID-value	Conditional. This field SHALL be present when included in the M-Mbox-View.conf PDU. This field SHALL be present when included in the M-Mbox-Upload.req if the MM being uploaded has been assigned a Message-ID by a previous transaction. If the MM being uploaded does not have an assigned Message-ID then this field SHOULD NOT appear.
X-Mms-MM-State	MM-state-value	Conditional. When included in the M-Mbox-View.conf PDU, the field SHALL be present and the value SHALL indicate the current stored state of the MM as one of the following: Draft, Sent, New, Retrieved, Forwarded. When included in the M-Mbox-Upload.req PDU, this field is OPTIONAL. In any case the value of the X-Mms-MM-State field of the M-Mbox-Upload.req PDU may overwrite the value of the MM State.
X-Mms-MM-Flags	MM-flags-value	Optional. The value shall indicate the list of keywords that are associated with the MM. If more than one keyword is associated with the MM this field SHALL appear multiple times (equal to the number of keywords). If no keywords are associated with the MM then this field MAY not appear.
Date	Date-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
From	From-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. Note- the "Insert-address-token" is a valid value but no meaning should be attached to this value.
To	To-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. This header field MAY appear multiple times.
Cc	Cc-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. This header field MAY appear multiple times.
Bcc	Bcc-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. This header field MAY appear multiple times.
X-Mms-Message-Class	Message-class-value	Optional.

		This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
Subject	Subject-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Priority	Priority-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Delivery-Time	Delivery-time-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Expiry	Expiry-time-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Delivery-Report	Delivery-report-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Read-Report	Read-report-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Message-Size	Message-size-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request.
X-Mms-Reply-Charging	Reply-charging-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Reply-Charging-ID	Reply-charging-ID-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Reply-Charging-Deadline	Reply-charging-deadline-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Reply-Charging-Size	Reply-charging-size-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.
X-Mms-Previously-Sent-By	Previously-sent-by-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. This header field MAY appear multiple times.

X-Mms-Previously-Sent-Date	Previously-sent-date-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM. This header field MAY appear multiple times.
Content-type	Content-type-value	Optional. This value SHALL appear only if requested as part of the Attributes-list in the request and is present in the associated MM.

Table 16: Header fields for the M-Mbox-Descr PDU

In addition to these header fields additional headers MAY be included, using the encoding rules specified in chapter 7 of this specification, if the “Additional-headers” value appeared in the X-Mms-Attributes field of the request.

If the “Content” was requested as part of the X-Mms-Attributes field and the associated MM includes a body then the body SHALL appear as the Data of the Multipart Entry, as specified in [WAPWSP].

6.10 Uploading a MM to MMBox

The MMS Client may decide to save a MM that is on the MMS Terminal (as a result of a previous retrieval or a MM generating application) to the user’s MMBox. The MM will be transferred to the MMS Proxy-Relay using the M-Mbox-Upload.req PDU and the operation will be confirmed using the M-Mbox-Upload.conf PDU.

The MM that is uploaded to the MMBox SHALL be transferred “as is” to the MMBox without the MMS Proxy-Relay attributing any meaning to any part of the contents. The one exception to this is that if the M-Mbox-Descr included a Message-ID then the MMS Proxy-Relay SHALL guarantee that the Message-ID remains unique within the MMBox.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-upload-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the upload transaction that provides linkage between the M-Mbox-Upload.req and corresponding M-Mbox-Upload.conf PDU.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-MM-State	MM-state-value	Optional. Specifies the value to set in the MM State field of the stored MM. If the field does not appear then the MM State defined in the M-Mbox-Descr PDU SHOULD be used. If no MM State appears in either this PDU or the M-Mbox-Descr PDU then the value SHALL default to Draft.
X-Mms-MM-Flags	MM-flags-value	Optional. Specifies a keyword to add or delete from the list of keywords associated with a stored MM. Field MAY appear multiple times.
Content-Type	Content-type-value	Mandatory. The content type of the MM.

Table 17: Header fields for M-Mbox-Upload.req PDU

The complete MMS PDU follows the MMS Header Fields. The MM SHALL be described using the PDU described in section 6.9.1, i.e. the M-Mbox-Deser PDU.

The MMS Proxy-Relay SHALL acknowledge the receipt of the M-Mbox-Upload.req and the completion of the storage operation by issuing a M-Mbox-Upload.conf PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-upload-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the upload transaction that provides linkage between the M-Mbox-Upload.req and corresponding M-Mbox-Upload.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-value	Optional. Specifies a reference to the stored version of the MM that can be retrieved or can be used to obtain information about the MM using the M-Mbox-View.req.
X-Mms-Store-Status	Store-status-value	Mandatory. Indicates if the submitted MM was successfully stored into the MMBox.
X-Mms-Store-Status-Text	Store-status-text-value	Optional. Description that qualifies the X-Mms-Store-Status field value.

Table 18: Header fields for M-Mbox-Upload.conf PDU

MM that is stored into the MMBox using the M-Mbox-Upload transaction SHOULD NOT be retrieved using the M-Retrieve transaction but rather SHOULD be retrieved using the M-Mbox-View transaction indicating that the Content is requested in the X-Mms-Attributes field.

6.11 Deleting Stored MM

To delete one or more MM from the user's MMBox the MMS Client SHALL send a M-Mbox-Delete.req indicating the location reference of all messages to be deleted.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-delete-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the deleting transaction that provides linkage between the M-Mbox-Delete.req and corresponding M-Mbox-Delete.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.

X-Mms-Content-Location	Content-location-value	Mandatory. Specifies a reference to the stored MM that was obtained from any of the storing PDU, M-Notification.ind, or M-Mbox-View.conf This field MAY appear multiple times.
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Table 19: Header fields for M-Mbox-Delete.req PDU

The MMS Proxy-Relay SHALL respond to the deletion request with a M-Mbox-Delete.conf PDU indicating if the deletion was successful. If the deletion was either partially successful or completely unsuccessful then the MMS Proxy-Relay SHALL include a list of MM that were not deleted and indicate the appropriate error status.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-mbox-delete-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the deleting transaction that provides linkage between the M-Mbox-Delete.req and corresponding M-Mbox-Delete.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-Del-value	Optional. Specifies a reference to the MM that was not successfully deleted. The sequence number indicates the correspondence to the status value in the “X-Mms-Response-Status” header field with the same sequence number. This field MAY appear multiple times.
X-Mms-Response-Status	Response-status-Del-value	Mandatory. Indicates the status of the MM deletion operation The sequence number indicates the unique identification of a delete request status that may apply to more than one of the indicated MM references. This field MAY appear multiple times.
X-Mms-Response-Text	Response-text-Del-value	Optional. Descriptive text that qualifies the Response-status-value. The sequence number indicates the correspondence to the status value in the “X-Mms-Response-Status” header field with the same sequence number. This field MAY appear multiple times.

Table 20: Header fields for the M-Mbox-Delete.conf PDU

If the delete operation was either successful or unsuccessful for more than one MM with the same reason, then the corresponding X-Mms-Response-Status value and X-Mms-Response-Text value SHOULD appear only once along with the unique sequence number.

6.12 Deleting MM from the MMS Proxy-Relay

To delete one or more MM from the MM recipient’s MMS Proxy-Relay, the MM recipient’s Client SHALL send a M-Delete.req indicating the location reference of all the messages to be deleted.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-delete-req	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the deleting transaction that provides linkage between the M-Delete.req and corresponding M-Delete.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Content-Location	Content-location-value	Mandatory. Specifies a reference to the MM that was obtained from the M-Notification.ind. This field MAY appear multiple times.

Table 21: Header fields for M-Delete.req PDU

The MMS Proxy-Relay SHALL respond to the deletion request with a M-Delete.conf PDU indicating if the deletion was successful. If the deletion was either partially successful or completely unsuccessful then the MMS Proxy-Relay SHALL include a list of MM that were not deleted and indicate the appropriate error status.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-delete-conf	Mandatory. Specifies the PDU type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory. A unique identifier for the deleting transaction that provides linkage between the M-Delete.req and corresponding M-Delete.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3
X-Mms-Content-Location	Content-location-Del-value	Optional. Specifies a reference to the MM that was not successfully deleted. The sequence number indicates the correspondence to the status value in the “X-Mms-Response-Status” header field with the same sequence number. This field MAY appear multiple times.
X-Mms-Response-Status	Response-status-Del-value	Mandatory. Indicates the status of the MM deletion operation The sequence number indicates the unique identification of a delete request status that may apply to more than one of the indicated MM references. This field MAY appear multiple times.

X-Mms-Response-Text	Response-text-Del-value	Optional. Descriptive text that qualifies the Response-status-value. The sequence number indicates the correspondence to the status value in the “X-Mms-Response-Status” header field with the same sequence number. This field MAY appear multiple times.
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Table 22: Header fields for the M-Delete.conf PDU

If the delete operation was either successful or unsuccessful for more than one MM with the same reason, then the corresponding X-Mms-Response-Status value and X-Mms-Response-Text value SHOULD appear only once. The Status-count-value of the fields X-Mms-Content-Location, X-Mms-Response-Status and X-Mms-Response-Text provides linkage between the delete MM operation and the result.

6.13 Cancelling a Multimedia Message

A MMS Proxy-Relay MAY request an MMS Client, that an MM, which the MMS Client has already retrieved to be cancelled. The cancel request is sent from the MMS Proxy-Relay to the MMS Client in terms of M-Cancel.req PDU and the corresponding confirmation message is sent in terms of M-Cancel.conf PDU from the MMS Client to the MMS Proxy-Relay.

6.13.1 Cancel Request

This chapter describes the M-Cancel.req PDU sent by the MMS Proxy-Relay to the MMS Client. **Table 23** contains the field names, the field values and descriptions of the header fields of the PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-cancel-req	Mandatory Specifies the message type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory A unique identifier for the cancel transaction that provides linkage between the M-Cancel.req and corresponding M-Cancel.conf PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Cancel-ID	Cancel-id-value	Mandatory Indicates the reference (i.e. Message-ID) of the MM to be cancelled.

Table 23: Header fields of M-Cancel.req PDU.

Upon receiving a valid M-Cancel.req PDU, the MMS Client SHOULD cancel the previously retrieved MM having the same Message-ID as indicated by the Cancel-id-value. The MMS Client MAY provide means (e.g. terminal setting, per message request) to a user to forbid such cancelling. If forbidden, the MMS Client SHOULD NOT cancel the previously retrieved MM. The MMS Client MAY provide different options in the terminal setting depending on the implementation. Options and/or behaviour MAY vary based on the state of the original message. For example,

- the user is unaware of the original MM
- the user is aware of the original MM, but has not handled it
- the user is reading the MM
- the user has handled the MM

6.13.2 Cancel Response

This chapter describes the M-Cancel.conf PDU sent by the MMS Client to the MMS Proxy-Relay. **Table 24** contains the field names, the field values and descriptions of the header fields of the PDU.

Field Name	Field Value	Description
X-Mms-Message-Type	Message-type-value = m-cancel-conf	Mandatory Specifies the message type.
X-Mms-Transaction-ID	Transaction-id-value	Mandatory A unique identifier for the cancel transaction that provides linkage between the M-Cancel.req and corresponding M-Cancel.conf PDU. It originates from the M-Cancel.req PDUs.
X-Mms-MMS-Version	MMS-version-value	Mandatory. The MMS version number. According to this specification, the version is 1.3.
X-Mms-Cancel-Status	Cancel-status-value	Optional If the cancel request is successfully received

Table 24: Header fields of M-Cancel.conf PDU.

6.14 Error Considerations

6.14.1 Interoperability Considerations with Version Numbering

The MMS version number is divided into two parts: major version number and minor version number. MMS versions with only minor version number differences SHALL provide full backward compatibility. MMS versions with major version number differences SHALL NOT provide backward compatibility.

All major MMS versions MUST support MMS 1.0 M-Send.conf PDU and MMS 1.0 M-NotifyResp.ind PDU.

6.14.2 Interoperability between MMS Entities Implementing MMS Versions with the Same Major Version Number

The following rules SHALL be followed between MMS Entities implementing different MMS versions having the same major version number but different minor version number.

When a MMS Client or MMS Proxy-Relay receives a PDU containing a particular minor version number it MAY respond with a PDU containing a different minor version number.

Unless a specific behaviour has been defined, the receiving MMS Client or MMS Proxy-Relay SHALL ignore all unrecognised fields and recognised fields with unrecognised values and a receiving MMS Proxy-Relay SHALL pass all unrecognised fields and SHOULD pass all recognised fields with unrecognised values unchanged.

The receiving MMS Proxy-Relay SHALL respond to any unknown PDU with M-Send.conf PDU containing Response-status-value 'Error-unsupported-message'.

The receiving MMS Client SHALL respond to any unknown PDU with M-NotifyResp.ind PDU containing Status-value 'Unrecognised'.

6.14.3 Interoperability between MMS Entities Implementing MMS Versions with Different Major Version Numbers

The following rules SHALL be followed between MMS Entities implementing MMS versions with different major version numbers.

The receiving MMS Proxy-Relay SHALL respond to any PDU having major version number which it does not support with MMS 1.0 M-Send.conf PDU containing Response-status-value 'Error-unsupported-message'.

The receiving MMS Client SHALL respond to any PDU having major version number which it does not support with MMS 1.0 M-NotifyResp.ind PDU containing Status-value 'Unrecognised'.

If the receiving MMS Client or MMS Proxy-Relay supports multiple major versions including the version number of the received PDU, it MUST respond to the received PDU with a PDU from the same major version.

6.14.4 Transient and Permanent Failures

The confirmation PDUs sent from the MMS Proxy-Relay to the MMS Client, i.e., M-Send.conf, M-Retrieve.conf, and M-Forward.conf, each contain a field for reporting a resulting status for the corresponding MMS Client request. The possible status values fall in three complementary classes, similar to the classification used in [RFC1893]:

- Success. This class includes the status value 'Ok'. Indication is that the MMS Client request was successfully received, understood, and accepted.
- Transient failure. This class includes the status value 'Error-transient-failure' for unspecified errors, a number of other assigned values, and certain reserved values. Indication is that the request PDU as received was valid, but some temporary event prevented successful fulfillment. Sending the request in the future may be successful.
- Permanent failure. This class includes the status value 'Error-permanent-failure' for unspecified errors, 'Error-unsupported-message' for version mismatch detection, a number of other assigned values, and certain reserved values. Indication is that the failure is not likely to be resolved by resending the request PDU in its current form. Some change to the request PDU must be made to achieve a successful outcome.

In addition the legacy type status values that have been obsoleted for use in the X-Mms-Response-Status field, see section 7.2.27, are all indicative of transient or permanent failures. For backward compatibility reasons, these status values are however not explicitly mapped to either the transient or the permanent failure class. Instead close counterparts to these legacy values have been defined as appropriate in the transient and permanent failure classes.

The status values contained in the X-Mms-Response-Status and X-Mms-Retrieve-Status fields are intended for use by the MMS Client. An accompanying description contained in the X-Mms-Response-Text or X-Mms-Retrieve-Text field is intended for the human user.

7. Binary Encoding of Protocol Data Units

The basic encoding mechanisms for binary encoded MMS PDUs originates from WSP specification [WAPWSP], because this is very tight encoding intended to optimize amount of data transmitted over the air.

The MMS PDU is stored to the Data field of the Post, Reply and Push PDUs [WAPWSP] when using the WSP based stack, and to the Message Body of the POST or Response HTTP message when using the HTTP based stack. Thus, the MMS header fields are NOT encoded into WSP/HTTP PDU headers using WSP code page technique. MMS Clients and MMS Proxy-Relays that support this version of MMS MUST recognise the encoding of all of the MMS header fields defined in this chapter.

If user-defined header fields are used in MMS PDU, the mechanism described in Chapter 7.2 (Application-header) MUST be used.

In the encoding of the header fields, the order of the fields is not significant, except that X-Mms-Message-Type, X-Mms-Transaction-ID (when present) and X-Mms-MMS-Version MUST be at the beginning of the message headers, in that order, and if the PDU contains a message body the Content Type MUST be the last header field, followed by message body.

According to WSP definitions, comma separated lists of header field values are coded as multiple header fields with identical name. If the header fields are converted between binary encoding and textual format, several header fields with the same name are combined into a comma-separated list, and vice versa. The order of the header fields is preserved.

The definitions for non-terminals not found in this document MUST follow the definitions in [WAPWSP].

Note: The term "non-terminal" comes from the same context as described in [RFC2234].

7.1 Special Considerations Regarding Usage of WSP in MMS

Header fields included in a MM SHALL be encoded according to WSP Binary Encoding version 1.3 [WAPWSP] whenever possible. Otherwise, textual encoding is used. If binary encoding of MMS PDUs is applied, it is also possible to provide header extensibility using WSP mechanism of encoding of new unassigned header field names.

Any newer header field or header field value binary encoding than [WAPWSP] MUST NOT be used, including changes specified in SINs against [WAPWSP]. When attempting to use newer header or value, the entire header field and value MUST be encoded in textual format.

In the case of the Content-Disposition header; if the Content-disposition header is of WSP encoding version 1.3 or below, i.e. with the header field name assignment 0x2E, then the entire header SHALL be binary encoded with the values found in [WAPWSP]. If the Content-disposition header is of WSP encoding version 1.4 and above, then the entire header (including the header field name) SHALL be encoded in textual format.

Note: Referenced WSP version for binary encoding has been fixed to [WAPWSP] in order to avoid an incompatibility between different versions of MMS PDU.

Table 38 in [WAPWSP] contains bugs at Expected BNF Rules for Value. "Text-value" MUST be used for parameter values instead of "Text-string".

Values encoded as "Text-String" MUST NOT start with the following ASCII characters:

- CR, carriage return (13)
- LF, linefeed (10)
- HT, horizontal-tab (9)

7.2 Encoding Rules

The following rules are used to encode header fields:

Header-field = MMS-header | Application-header

MMS-header = MMS-field-name MMS-value

Application-header = Token-text Application-specific-value

Token-text = Token End-of-string

MMS-field-name = Short-integer

Application-specific-value = Text-string

MMS-value = Adaptation-allowed-value |
 Applic-ID-value |
 Attributes-value |
 Aux-Applic-Info-value |
 Bcc-value |
 Cancel-id-value |
 Cancel-status-value |
 Cc-value |
 Content-location-value |
 Content-location-Del-value |
 Content-class-value |
 Content-type-value |
 Date-value |
 Delivery-report-value |
 Delivery-time-value |
 Delta-seconds-value |
 Distribution-indicator-value |
 DRM-content-value |
 Element-Descriptor-value |
 Expiry-value |
 From-value |
 Index-value |
 Mbox-quotas-req |
 Mbox-quotas-value |

Mbox-totals-req |
Mbox-totals-value |
Message-class-value |
Message-count-value |
Message-ID-value |
Message-type-value |
Message-size-value |
MM-flags-value |
MM-state-value |
MM-stored-value |
MMS-version-value |
Previously-sent-by-value |
Previously-sent-date-value |
Priority-value |
Read-report-value |
Read-status-value |
Recommended-Retrieval-Mode-value |
Recommended-Retrieval-Mode-Text-value |
Replace-id-value |
Reply-charging-value |
Reply-charging-deadline-value |
Reply-charging-ID-value |
Reply-charging-size-value |
Report-allowed-value |
Response-status-value |
Response-status-Del-value |
Response-text-value |
Response-text-Del-value |
Retrieve-status-value |
Retrieve-text-value |
Sender-visibility-value |
Status-value |

Status-text-value |
 Store-sent-value |
 Store-status-text-value |
 Store-status-value |
 Subject-value |
 To-value |
 Transaction-id-value

7.3 Header Field Values and Assigned Numbers

7.3.1 X-Mms-Adaptation-Allowed Field

Adaptation-allowed-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.2 X-Mms-Applic-ID Field

Applic-ID-value = Text-string

7.3.3 X-Mms-Attributes Field

Attributes-value = X-Mms-Applic-ID | X-Mms-Aux-Applic-Info | Bcc | Cc | Content | Content-type |
 Date | X-Mms-Delivery-Report | X-Mms-Delivery-Time | X-Mms-Expiry |
 From | X-Mms-Message-Class | Message-ID | X-Mms-Message-Size | X-Mms-
 Priority | X-Mms-Read-Report | Subject | To | X-Mms-Reply-Applic-ID | X-
 Mms-Reply-Charging | X-Mms-Reply-Charging-ID | X-Mms-Reply-Charging-
 Deadline | X-Mms-Reply-Charging-Size | X-Mms-Previously-Sent-By | X-
 Mms-Previously-Sent-Date | Additional-headers

The values are as defined in section 7.3.

7.3.4 X-Mms-Aux-Applic-Info Field

Aux-Applic-Info-value = Text-string

7.3.5 Bcc Field

Bcc-value = Encoded-string-value

See Chapter 8 for addressing model.

7.3.6 X-Mms-Cancel-ID Field

Cancel-id-value = Text-string

Encoded as in email address as per [RFC2822]. The characters "<" and ">" are not included.

7.3.7 X-Mms-Cancel-Status Field

Cancel-status-value = Cancel Request Successfully received | Cancel Request corrupted

Cancel Request Successfully received = <Octet 128>

Cancel Request corrupted = <Octet 129>

7.3.8 Cc Field

Cc-value = Encoded-string-value

See Chapter 8 for addressing model.

7.3.9 X-Mms-Content-Class Field

Content-class-value = text | image-basic | image-rich | video-basic | video-rich | megapixel | content-basic | content-rich

text = <Octet 128>

image-basic = <Octet 129>

image-rich = <Octet 130>

video-basic = <Octet 131>

video-rich = <Octet 132>

megapixel = <Octet 133>

content-basic = <Octet 134>

content-rich = <Octet 135>

7.3.10 X-Mms-Content-Location Field

When used in a PDU other than M-Mbox-Delete.conf and M-Delete.conf:

Content-location-value = Uri-value

When used in the M-Mbox-Delete.conf and M-Delete.conf PDU:

Content-location-Del-value = Value-length Status-count-value Content-location-value

Status-count-value = Integer-value

Uri-value = Text-string

URI value SHOULD be encoded per [RFC2616], but service user MAY use a different format.

7.3.11 Content-Type Field

The Content-Type field is encoded as Content-type-value defined in [WAPWSP 8.4.2.24]. Preassigned content-types can be found in [WAPWSP Appendix A, Table 40]. The use of start-parameter in case of multipart/related is defined in [RFC2387] and SHOULD be encoded according to [WAPWSP].

7.3.12 Date Field

Date-value = Long-integer

In seconds from 1970-01-01, 00:00:00 GMT.

7.3.13 X-Mms-Delivery-Report Field

Delivery-report-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.14 X-Mms-Delivery-Time Field

Delivery-time-value = Value-length (Absolute-token Date-value | Relative-token Delta-seconds-value)

Absolute-token = <Octet 128>

Relative-token = <Octet 129>

7.3.15 Delta-Seconds-Value

Delta-seconds-value = Long-integer

7.3.16 X-Mms-DRM-Content Field

DRM-content-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.17 X-Mms-Distribution-Indicator Field

Distribution-indicator-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.18 X-Mms-Element-Descriptor Field

Element-Descriptor-value = Value-length Content-Reference-value *(Parameter)

Content-Reference-value = Text-string

Parameter = Parameter-name Parameter-value

Parameter-name = Short-integer | Text-string

Parameter-value = Constrained-encoding | Text-string

For well-known parameter names binary tokens MUST be used as defined in Table 27.

Content-types are encoded as short-integer according to [WAPWSP Table 40 “Content Type Assignments”] or as Text-string.

7.3.19 Encoded-String-Value

Encoded-string-value = Text-string | Value-length Char-set Text-string

The Char-set values are registered by IANA as MIBEnum value.

UTF-8 character-set encoding SHOULD be supported in Encoded-string-value. If the MMS Client uses UTF-8 character-set encoding, the Char-set parameter SHOULD be used to indicate its usage.

Encoding according to [RFC2047] MAY be supported in the MMS Client and/or MMS Proxy-Relay. Encoding according to [RFC2047] SHOULD only be used without “Value-length Char-set” parameters. [RFC2047] encoding for UTF-8 character-set encoding MAY be supported in the MMS Client and/or MMS Proxy-Relay.

Note: The usage of Unicode character-set encoding is recommended. The supported set of actual character-sets in the MMS Client is up to the implementation. The MMS Client must not rely on the MMS Proxy-Relay doing any character-set transformation.

7.3.20 X-Mms-Expiry Field

Expiry-value = Value-length (Absolute-token Date-value | Relative-token Delta-seconds-value)

Absolute-token = <Octet 128>

Relative-token = <Octet 129>

7.3.21 From Field

From-value = Value-length (Address-present-token Encoded-string-value | Insert-address-token)

Address-present-token = <Octet 128>

Insert-address-token = <Octet 129>

See Chapter 8 for addressing model.

7.3.22 X-Mms-Limit Field

Index-value = Integer-value

7.3.23 X-Mms-Previously-Sent-By Field

Previously-sent-by-value = Value-length Forwarded-count-value Encoded-string-value

Forwarded-count-value = Integer-value

See chapter 8 for addressing model.

7.3.24 X-Mms-Previously-Sent-Date Field

Previously-sent-date-value = Value-length Forwarded-count-value Date-value

7.3.25 X-Mms-Mbox-Quotas Field

Mbox-quotas-value = Value-length (Message-quota-token | Size-quota-token) Integer-Value

Message-quota-token = <Octet 128>

Size-quota-token = <Octet 129>

7.3.26 X-Mms-Mbox-Totals Field

Mbox-totals-value = Value-length (Message-total-token | Size-total-token) Integer-Value

Message-total-token = <Octet 128>

Size-total-token = <Octet 129>

7.3.27 X-Mms-Message-Class Field

Message-class-value = Class-identifier | Token-text

Class-identifier = Personal | Advertisement | Informational | Auto

Personal = <Octet 128>

Advertisement = <Octet 129>

Informational = <Octet 130>

Auto = <Octet 131>

The token-text is an extension method to the message class.

7.3.28 X-Mms-Message-Count

Message-count-value = Integer-Value

7.3.29 Message-ID Field

Message-ID-value = Text-string

Encoded as in email address as per [RFC2822]. The characters "<" and ">" are not included.

7.3.30 X-Mms-Message-Type Field

Message-type-value = m-send-req | m-send-conf | m-notification-ind | m-notifyresp-ind | m-retrieve-conf | m-acknowledge-ind | m-delivery-ind | m-read-rec-ind | m-read-orig-ind | m-forward-req | m-forward-conf | m-mbox-store-req | m-mbox-store-conf | m-mbox-view-req | m-mbox-view-conf | m-mbox-upload-req | m-mbox-upload-conf | m-mbox-delete-req | m-mbox-delete-conf | m-mbox-descr | m-delete-req | m-delete-conf | m-cancel-req | m-cancel-conf

m-send-req = <Octet 128>

m-send-conf = <Octet 129>

m-notification-ind = <Octet 130>

m-notifyresp-ind = <Octet 131>

m-retrieve-conf = <Octet 132>

m-acknowledge-ind = <Octet 133>

m-delivery-ind = <Octet 134>

m-read-rec-ind = <Octet 135>

m-read-orig-ind = <Octet 136>

m-forward-req = <Octet 137>

m-forward-conf = <Octet 138>

m-mbox-store-req = <Octet 139>

m-mbox-store-conf = <Octet 140>

m-mbox-view-req = <Octet 141>

m-mbox-view-conf = <Octet 142>

m-mbox-upload-req = <Octet 143>

m-mbox-upload-conf = <Octet 144>

m-mbox-delete-req = <Octet 145>

m-mbox-delete-conf = <Octet 146>

m-mbox-descr = <Octet 147>

m-delete-req = <Octet 148>

m-delete-conf = <Octet 149>

m-cancel-req = <Octet 150>

m-cancel-conf = <Octet 151>

Unknown message types will be discarded.

7.3.31 X-Mms-Message-Size Field

Message-size-value = Long-integer

Message size is in octets.

7.3.32 X-Mms-MM-Flags Field

MM-flags-value = Value-length (Add-token | Remove-token | Filter-token) Encoded-string-value

Add-token = <Octet 128>

Remove-token = <Octet 129>

Filter-token = <Octet 130>

If the Add-token appears then the MMS Proxy-Relay SHALL append the new keyword to the current MM Flags value if the keyword does not already appear. If the Remove-token appears then the MMS Proxy-Relay SHALL remove the indicated keyword from the current value of the MM Flags, if it is present. The Filter-token SHALL appear only in the M-Retrieve.conf or M-Mbox-View.req PDU and indicates that the keyword is intended to be an existing value.

X-Mms-MM-Flags are user-defined keywords to associate with a message. The Encoded-string-value SHALL NOT include whitespace (i.e. LWS as defined in [RFC2616]) characters. The keyword MAY be used to classify the message for viewing with the M-mbox-view.req.

7.3.33 X-Mms-MM-State Field

MM-state-value = Draft | Sent | New | Retrieved | Forwarded

Draft = <Octet 128>

Sent = <Octet 129>

New = <Octet 130>

Retrieved = <Octet 131>

Forwarded = <Octet 132>

7.3.34 X-Mms-MMS-Version Field

MMS-version-value = Short-integer

The three most significant bits of the Short-integer are interpreted to encode a major version number in the range 1-7, and the four least significant bits contain a minor version number in the range 0-14. If there is only a major version number, this is encoded by placing the value 15 in the four least significant bits [WAPWSP].

7.3.35 X-Mms-Priority Field

Priority-value = Low | Normal | High

Low = <Octet 128>

Normal = <Octet 129>

High = <Octet 130>

7.3.36 X-Mms-Quotas Field

Mbox-quotas-req = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.37 X-Mms-Read-Report Field

Read-report-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.38 X-Mms-Read-Status Field

Read-status-value = Read | Deleted without being read

Read = <Octet 128>

Deleted without being read = <Octet 129>

7.3.39 X-Mms-Recommended-Retrieval-Mode Field

Recommended-Retrieval-Mode-value = Manual

Manual = <Octet 128>

7.3.40 X-Mms-Recommended-Retrieval-Mode-Text Field

Recommended-Retrieval-Mode-Text-value = Encoded-string-value

7.3.41 X-Mms-Replace-ID Field

Replace-id-value = Text-string

Encoded as in email address as per [RFC2822]. The characters "<" and ">" are not included.

7.3.42 X-Mms-Reply-Applic-ID

Applic-ID-value = Text-string

7.3.43 X-Mms-Reply-Charging Field

Reply-charging-value = Requested | Requested text only | Accepted | Accepted text only

Requested = <Octet 128>

Requested text only = <Octet 129>

Accepted = <Octet 130>

Accepted text only = <Octet 131>

7.3.44 X-Mms-Reply-Charging-Deadline Field

Reply-charging-deadline-value = Value-length (Absolute-token Date-value | Relative-token Delta-seconds-value)

Absolute-token = <Octet 128>

Relative-token = <Octet 129>

7.3.45 X-Mms-Reply-Charging-ID Field

Reply-charging-ID-value = Text-string

7.3.46 X-Mms-Reply-Charging-Size Field

Reply-charging-size-value = Long-integer

7.3.47 X-Mms-Report-Allowed Field

Report-allowed-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.48 X-Mms-Response-Status Field

When used in a PDU other than M-Mbox-Delete.conf and M-Delete.conf:

Response-status-value = Ok |
Error-unspecified |
Error-service-denied |
Error-message-format-corrupt |
Error-sending-address-unresolved |
Error-message-not-found |
Error-network-problem |
Error-content-not-accepted |
Error-unsupported-message |
Error-transient-failure |
Error-transient-sending-address-unresolved |

Error-transient-message-not-found |
Error-transient-network-problem |
Error-transient-partial-success |
Error-permanent-failure |
Error-permanent-service-denied |
Error-permanent-message-format-corrupt |
Error-permanent-sending-address-unresolved |
Error-permanent-message-not-found |
Error-permanent-content-not-accepted |
Error-permanent-reply-charging-limitations-not-met |
Error-permanent-reply-charging-request-not-accepted |
Error-permanent-reply-charging-forwarding-denied |
Error-permanent-reply-charging-not-supported |
Error-permanent-address-hiding-not-supported |
Error-permanent-lack-of-prepaid

When used in the M-Mbox-Delete.conf and M-Delete.conf PDUs:

Response-status-Del-value = Value-length Status-count-value Response-status-value

Ok = <Octet 128>

Error-unspecified = <Octet 129> (obsolete)

Error- service-denied = <Octet 130> (obsolete)

Error-message-format-corrupt = <Octet 131> (obsolete)

Error-sending-address-unresolved = <Octet 132> (obsolete)

Error-message-not-found = <Octet 133> (obsolete)

Error-network-problem = <Octet 134> (obsolete)

Error- content-not-accepted = <Octet 135> (obsolete)

Error-unsupported-message = <Octet 136>

Error-transient-failure = <Octet 192>

Error-transient-sending-address-unresolved = <Octet 193>

Error-transient-message-not-found = <Octet 194>

Error-transient-network-problem = <Octet 195>

Error-transient-partial-success = <Octet 196>

Error-permanent-failure = <Octet 224>
 Error-permanent-service-denied = <Octet 225>
 Error-permanent-message-format-corrupt = <Octet 226>
 Error-permanent-sending-address-unresolved = <Octet 227>
 Error-permanent-message-not-found = <Octet 228>
 Error-permanent-content-not-accepted = <Octet 229>
 Error-permanent-reply-charging-limitations-not-met = <Octet 230>
 Error-permanent-reply-charging-request-not-accepted = <Octet 231>
 Error-permanent-reply-charging-forwarding-denied = <Octet 232>
 Error-permanent-reply-charging-not-supported = <Octet 233>
 Error-permanent-address-hiding-not-supported = <Octet 234>
 Error-permanent-lack-of-prepaid = <Octet 235>

The values 197 through 223 are reserved for future use to indicate other transient failures. An MMS Client MUST react the same to a value in range 197 to 223 as it does to the value 192 (Error-transient-failure).

The values 236 through 255 are reserved for future use to indicate other permanent failures. An MMS Client MUST react the same to a value in range 236 to 255 as it does to the value 224 (Error-permanent-failure).

Any other values SHALL NOT be used. They are reserved for future use. An MMS Client that receives such a reserved value MUST react the same as it does to the value 224 (Error-permanent-failure). The value Error-unsupported-message is reserved for version and supported feature management purposes only.

The Response-status-values marked 'obsolete', i.e., the values 129 through 135, should only be supported for backward compatibility purposes. Close counterparts to these legacy values have been defined in the ranges 193 through 195 (transient failures) and 225 through 229 (permanent failures) in a numbering realignment.

7.3.49 X-Mms-Response-Text Field

When used in a PDU other than M-Mbox-Delete.conf and M-Delete.conf:

Response-text-value = Encoded-string-value

When used in the M-Mbox-Delete.conf and M-Delete.conf PDUs:

Response-text-Del-value = Value-length Status-count-value Response-text-value

7.3.50 X-Mms-Retrieve-Status Field

Retrieve-status-value =

- Ok |
- Error-transient-failure |
- Error-transient-message-not-found |
- Error-transient-network-problem |
- Error-permanent-failure |

Error-permanent-service-denied |
Error-permanent-message-not-found |
Error-permanent-content-unsupported

Ok = <Octet 128>

Error-transient-failure = <Octet 192>

Error-transient-message-not-found = <Octet 193>

Error-transient-network-problem = <Octet 194>

Error-permanent-failure = <Octet 224>

Error-permanent-service-denied = <Octet 225>

Error-permanent-message-not-found = <Octet 226>

Error-permanent-content-unsupported = <Octet 227>

The values 195 through 223 are reserved for future use to indicate other transient failures. An MMS Client MUST react the same to a value in range 195 to 223 as it does to the value 192 (Error-transient-failure).

The values 228 through 255 are reserved for future use to indicate other permanent failures. An MMS Client MUST react the same to a value in range 228 to 255 as it does to the value 224 (Error-permanent-failure).

Any other values SHALL NOT be used. They are reserved for future use. An MMS Client that receives such a reserved value MUST react the same as it does to the value 224 (Error-permanent-failure).

7.3.51 X-Mms-Retrieve-Text Field

Retrieve-text-value = Encoded-string-value

7.3.52 X-Mms-Sender-Visibility Field

Sender-visibility-value = Hide | Show

Hide = <Octet 128>

Show = <Octet 129>

7.3.53 X-Mms-Start Field

Index-value = Integer-value

7.3.54 X-Mms-Status Field

Status-value = Expired | Retrieved | Rejected | Deferred | Unrecognised | Indeterminate | Forwarded | Unreachable

Expired = <Octet 128>

Retrieved = <Octet 129>

Rejected = <Octet 130>

Deferred = <Octet 131>

Unrecognised = <Octet 132>

Indeterminate = <Octet 133>

Forwarded = <Octet 134>

Unreachable = <Octet 135>

The value Unrecognised is reserved for version management purpose only.

7.3.55 X-Mms-Status-Text Field

Status-text-value = Encoded-string-value

7.3.56 X-Mms-Store Field

Store-sent-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.57 X-Mms-Stored Field

MM-stored-value = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.58 X-Mms-Store-Status Field

Store-status-value = Success |
 Error-transient-failure |
 Error-transient-network-problem |
 Error-permanent-failure |
 Error-permanent-service-denied |
 Error-permanent-message-format-corrupt |
 Error-permanent-message-not-found |
 Error-permanent-mmbox-full

Success = <Octet 128>

Error-transient-failure = <Octet 192>

Error-transient-network-problem = <Octet 193>

Error-permanent-failure = <Octet 224>

Error-permanent-service-denied = <Octet 225>

Error-permanent-message-format-corrupt = <Octet 226>

Error-permanent-message-not-found = <Octet 227>

Error-permanent-mbox-full = <Octet 228>

The values 194 through 223 are reserved for future use to indicate other transient failures. An MMS Client MUST react the same to a value in range 194 to 223 as it does to the value 192 (Error-transient-failure).

The values 229 through 255 are reserved for future use to indicate other permanent failures. An MMS Client MUST react the same to a value in range 229 to 255 as it does to the value 224 (Error-permanent-failure).

Any other values SHALL NOT be used. They are reserved for future use. An MMS Client that receives such a reserved value MUST react the same as it does to the value 224 (Error-permanent-failure).

7.3.59 X-Mms-Store-Status-Text Field

Store-status-text-value = Encoded-string-value

A descriptive string that explains the value of the X-Mms-Store-Status field's value.

7.3.60 Subject Field

Subject-value = Encoded-string-value

7.3.61 To Field

To-value = Encoded-string-value

See Chapter 8 for addressing model.

7.3.62 X-Mms-Totals Field

Mbox-totals-req = Yes | No

Yes = <Octet 128>

No = <Octet 129>

7.3.63 X-Mms-Transaction-Id Field

Transaction-id-value = Text-string

7.4 Header Field Names and Assigned Numbers

The Table 25 contains the field name assignments.

Name	Assigned Number
Bcc	0x01
Cc	0x02
X-Mms-Content-Location	0x03
Content-Type	0x04
Date	0x05
X-Mms-Delivery-Report	0x06
X-Mms-Delivery-Time	0x07
X-Mms-Expiry	0x08
From	0x09

X-Mms-Message-Class	0x0A
Message-ID	0x0B
X-Mms-Message-Type	0x0C
X-Mms-MMS-Version	0x0D
X-Mms-Message-Size	0x0E
X-Mms-Priority	0x0F
X-Mms-Read-Report	0x10
X-Mms-Report-Allowed	0x11
X-Mms-Response-Status	0x12
X-Mms-Response-Text	0x13
X-Mms-Sender-Visibility	0x14
X-Mms-Status	0x15
Subject	0x16
To	0x17
X-Mms-Transaction-Id	0x18
X-Mms-Retrieve-Status	0x19
X-Mms-Retrieve-Text	0x1A
X-Mms-Read-Status	0x1B
X-Mms-Reply-Charging	0x1C
X-Mms-Reply-Charging-Deadline	0x1D
X-Mms-Reply-Charging-ID	0x1E
X-Mms-Reply-Charging-Size	0x1F
X-Mms-Previously-Sent-By	0x20
X-Mms-Previously-Sent-Date	0x21
X-Mms-Store	0x22
X-Mms-MM-State	0x23
X-Mms-MM-Flags	0x24
X-Mms-Store-Status	0x25
X-Mms-Store-Status-Text	0x26
X-Mms-Stored	0x27
X-Mms-Attributes	0x28
X-Mms-Totals	0x29
X-Mms-Mbox-Totals	0x2A
X-Mms-Quotas	0x2B
X-Mms-Mbox-Quotas	0x2C
X-Mms-Message-Count	0x2D
Content	0x2E
X-Mms-Start	0x2F
Additional-headers	0x30
X-Mms-Distribution-Indicator	0x31
X-Mms-Element-Descriptor	0x32
X-Mms-Limit	0x33
X-Mms-Recommended-Retrieval-Mode	0x34
X-Mms-Recommended-Retrieval-Mode-Text	0x35
X-Mms-Status-Text	0x36

X-Mms-Applic-ID	0x37
X-Mms-Reply-Applic-ID	0x38
X-Mms-Aux-Applic-Info	0x39
X-Mms-Content-Class	0x3A
X-Mms-DRM-Content	0x3B
X-Mms-Adaptation-Allowed	0x3C
X-Mms-Replace-ID	0x3D
X-Mms-Cancel-ID	0x3E
X-Mms-Cancel-Status	0x3F

Table 25: Field Name Assignments

Note: The field names Content [0x2E] and Additional-headers [0x30] are only valid as part of the X-Mbox-View.req Attributes-list-value.

Table 26 contains the assignments of the necessary content types.

Name	Assigned Number
Push Application-ID	4
Application/vnd.wap.mms-message	Subject to IANA registration

Table 26: Content Type Assignments

Table 27 contains the parameter name assignments.

The MMS encoding version (second column) indicates the number of the first version the parameter was defined. An MMS Client of version 1.2 is expected to recognize the type/format.

Token	MMS Encoding Version	Assigned Number	Expected BNF Rule for Value	Description
Type	1.2	0x02	Constrained-encoding	The type/format of the top level message content as provided by the WSP header field

Table 27: Parameter Name Assignments

8. MMS Addressing Model

The MMS addressing model contains two addresses: the address of the MMS Proxy-Relay and the address of the recipient user and terminal. The address of the MMS Proxy-Relay shall be the URI of MMS Proxy-Relay given by the MMS service provider. Thus, the URI needs to be configurable in the terminal.

A notation for the address of the recipient user in the terminal needs to be defined. The addressing model allows only single user in the terminal, thus combining the address of the terminal and the user. WAP Push Drafting Committee has solved this issue by using ABNF [RFC2234] notation for defining the address type in the WAP Push Proxy Gateway [PPG] specification. The text below is copied from the PPG specification and edited for usage in this specification.

The external representation of addresses processed by the MMS Proxy-Relay is defined using ABNF. The format is compatible with Internet e-mail addresses [RFC2822]. However, whereas [RFC2822] allows a comma separated list of address values to be used in header fields, MMS, in accordance with WSP definitions, codes such lists into multiple header fields with identical names. [RFC2822] (section 4.4) includes obsolete and significantly complex address formats, these SHOULD not be used for addressing in MMS.

The MMS Proxy-Relay MUST be able to parse the address formats described in this section, and it MUST be able to determine whether it supports the specified address type or not.

```
address = ( e-mail / device-address / alphanum-shortcode / num-shortcode)
```

```
e-mail = mailbox ; to the definition of mailbox as described in
              section 3.4 of [RFC2822], but excluding the
              obsolete definitions as indicated by the "obs-"
              prefix.
```

```
device-address = ( global-phone-number "/"TYPE=PLMN" )
                  / ( ipv4 "/"TYPE=IPv4" )
                  / ( ipv6 "/"TYPE=IPv6" )
                  / ( escaped-value "/"TYPE=" address-type )
```

```
address-type = 1*address-char
```

```
; A network bearer address type [WDP]
```

```
address-char = ( ALPHA / DIGIT / "_" )
```

```
escaped-value = 1*( safe-char )
```

```
; the actual value escaped to use only safe characters by replacing
```

```
; any unsafe-octet with its hex-escape
```

```
safe-char = ALPHA / DIGIT / "+" / "-" / "." / "%" / "_"
```

```
unsafe-octet = %x00-2A / %x2C / %x2F / %x3A-40 / %x5B-60 / %x7B-FF
```

```
hex-escape = "%" 2HEXDIG ; value of octet as hexadecimal value
```

```
global-phone-number = ["+"] 1*( DIGIT / written-sep )
```

```
written-sep = ("-"/".")
```

```
ipv4 = 1*3DIGIT 3( "." 1*3DIGIT ) ; IPv4 address value
```

ipv6 = 4HEXDIG 7 (":" 4HEXDIG) ; IPv6 address per RFC 2373

num-shortcode = [("+" / "*" / "#")] 1 *DIGIT

alphanum-shortcode = 1*(ALPHA / DIGIT)

Each value of a user-defined-identifier is a sequence of arbitrary octets. They can be safely embedded in this address syntax only by escaping potentially offending values. The conversion to escaped-value is done by replacing each instance of unsafe-octet by a hex-escape which encodes the numeric value of the octet.

Some examples of the mechanism:

To: 0401234567/TYPE=PLMN

To: +358501234567/TYPE=PLMN

To: Joe User <joe@user.org>

To: FEDC:BA98:7654:3210:FEDC:BA98:7654:3210/TYPE=IPv6

To: 195.153.199.30/TYPE=IPv4

The terminal MUST support at least one of the addressing methods. The addressing model may be expanded later to cover other formats of addresses, such as URI-based addressing [RFC2396].

9. Clarification of Status Codes and Status Text

This section gives more detail about the meaning of the different values that the X-Mms-Response-Status, X-Mms-Retrieve-Status, X-Mms-Status and X-Mms-Read-Status may have.

For more information about transient and permanent errors, please see section 6.14.4.

If an error occurs which is not covered by existing status code definitions a default Error code SHALL be sent by the MMS Proxy-Relay. If additional information needs to be conveyed, the MMS Proxy-Relay MAY add a status text in X-Mms-Response-Text, X-Mms-Retrieve-Text or X-Mms-Status-Text.

If an appropriate Error code is available but more detailed information is needed, the MMS Proxy-Relay MAY also add a status text in X-Mms-Response-Text, X-Mms-Retrieve-Text or X-Mms-Status-Text. The error text which is added in this case SHALL be consistent with the error code sent by the MMS Proxy-Relay.

The MMS client SHOULD display the status text in those headers if it is present.

If an error text is included by the MMS Proxy Relay, the MMS Proxy-Relay MAY use any convenient language.

The MMS Proxy-Relay MAY use the following mechanisms to determine the user's preferred language:

- Accept-Language header [RFC2616], [WSP230]
- Configurable user profile entries

The status code value SHALL be used to determine the behaviour of the terminal.

9.1 X-Mms-Response-Status

X-Mms-Response-Status must be included in the M-Send.conf and M-Forward.conf PDUs.

It is used by the originating MMS Proxy-Relay to inform the MMS Client, which has performed a submission (M-Send.req) or a forward (M-Forward.req) the result of that particular operation. There may be several scenarios indicated in the table below (meaning) where the status codes shall be returned to the originator.

X-Mms-Response-Status	Meaning in M-Send.conf	Proposed action by the MMS Client
Ok	The corresponding M-Send.req and some or all of its contents were accepted without errors.	
Error-unspecified	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-service-denied	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-message-format-corrupt	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-sending-address-unresolved	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.

Error-message-not-found	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-network-problem	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-content-not-accepted	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-unsupported-message	Only used for version management. Used in a response to an unknown PDU or PDU with different major version number.	
Error-transient-failure	The corresponding M-Send.req as received was valid and understood by the MMS Proxy-Relay, but some temporary condition or event caused an error to occur.	The MMS Client SHOULD attempt to retransmit the M-Send.req unaltered at a later time with the same header fields, including the same X-Mms-Transaction-Id. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-transient-sending-address-unresolved	None, this X-Mms-Response-Status value SHOULD not be used in the M-Send.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-transient-message-not-found	None, this X-Mms-Response-Status value SHOULD not be used in the M-Send.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-transient-network-problem	The MMS Proxy-Relay was not able to handle the corresponding M-Send.req due to unspecified error on the transport layer or capacity overload.	The MMS Client SHOULD attempt to retransmit the M-Send.req unaltered at a later time with the same header fields. If this error persists, the MMS Client MAY increase its retransmit interval.
Error-transient-partial-success	None, this X-Mms-Response-Status value SHOULD not be used in the M-Send.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-permanent-failure	An unspecified permanent error occurred during the processing or reception of the corresponding M-Send.req.	The MMS Client SHALL not retransmit the corresponding M-Send.req. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.

Error-permanent-service-denied	The corresponding M-Send.req was rejected due to failure of authentication or authorization due to different reasons of the originating MMS Client.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'. The MMS Proxy-Relay can provide an additional ResponseText to indicate the exact reason why service was denied.
Error-permanent-message-format-corrupt	An inconsistency with the formats for optional or mandatory header fields or an error with header field values was detected when the corresponding M-Send.req was parsed. Mandatory parameters missing.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-sending-address-unresolved	The MMS Proxy-Relay was not able to resolve the insert-address-token into a valid sending address.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-message-not-found	None, this X-Mms-Response-Status value SHOULD not be used in the M-Send.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-content-not-accepted	The MM content in the M-Send.req was not accepted due to size, media type, copyrights or some other reason.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'. The MMS Proxy-Relay can provide an additional ResponseText to indicate the exact reason why service was denied.
Error-permanent-reply-charging-limitations-not-met	The corresponding request contained a reply MM that was too large, not within the reply charging deadline and/or contained non-text media elements when only text was allowed.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-request-not-accepted	The M-Send.req contained an X-Mms-Reply-Charging header field with the value 'Accepted' or 'Accepted text only'.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-forwarding-denied	None, this X-Mms-Response-Status value SHOULD not be used in the M-Send.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-not-supported	The MMS Proxy-Relay does not support reply charging. The corresponding M-Send.req contained reply-charging parameters and was rejected.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-address-hiding-not-supported	The MMS Proxy-Relay does not support address hiding. The corresponding M-Send.req had the X-Mms-Sender-Visibility set to 'Hide' and was thus rejected.	The MMS Client may retransmit the M-Send.req after removing the request for address hiding. The MMS Client SHALL not remove the request for address hiding without prompting the user.

Error-permanent-lack-of-prepaid	The MM was not accepted due to insufficient credit of the user.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
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Table 28: X-Mms-Response status in M-Send.conf

X-Mms-Response-Status	Meaning in M-Forward.conf	Proposed action by the MMS Client
Ok	The corresponding request and some or all of its contents were accepted without errors.	
Error-unspecified	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-service-denied	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-message-format-corrupt	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-sending-address-unresolved	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-message-not-found	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-network-problem	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-content-not-accepted	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-unsupported-message	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-transient-failure	The corresponding M-Forward.req as received was valid and understood by the MMS Proxy-Relay, but some temporary condition or event caused an error to occur.	The MMS Client SHOULD attempt to retransmit the M-Forward.req unaltered at a later time. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-transient-sending-address-unresolved	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-transient-message-not-found	The MMS Proxy-Relay has temporary lost contact with where the MMs are stored, e.g. the MMS Server.	The MMS Client SHOULD attempt to retransmit the M-Forward.req unaltered at a later time, including the same X-Mms-Transaction-Id.

Error-transient-network-problem	The MMS Proxy-Relay was not able to handle the corresponding M-Forward.req due to unspecified error on the transport layer or capacity overload.	The MMS Client SHOULD attempt to retransmit the M-Forward.req unaltered at a later time, including the same X-Mms-Transaction-Id. If this error persists, the MMS Client MAY increase its retransmit interval.
Error-transient-partial-success	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-permanent-failure	An unspecified permanent error occurred during the processing or reception of the corresponding M-Forward.req. No assumptions can be made on where the error lays.	The MMS Client SHALL not retransmit the M-Forward.req unaltered. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-permanent-service-denied	The corresponding M-Forward.req was rejected due to failure of authentication or authorization due to different reasons of the originating MMS Client.	The MMS Proxy-Relay can provide an additional ResponseText to indicate the exact reason why service was denied.
Error-permanent-message-format-corrupt	An inconsistency with the formats for optional or mandatory header fields or an error with header field values was detected when the corresponding M-Forward.req was parsed. Mandatory parameters missing.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-sending-address-unresolved	The MMS Proxy-Relay is not able to resolve the insert-address-token into a valid sending address.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-message-not-found	The value in the X-Mms-Content-Location header field contains a invalid URL and does not point to a MM.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-content-not-accepted	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-limitations-not-met	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-request-not-accepted	The M-Forward.req contained an X-Mms-Reply-Charging header field with the value 'Accepted' or 'Accepted text only'.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.

Error-permanent-reply-charging-forwarding-denied	The corresponding M-Forward.req referred to a MM that contained a reply charging request and the MMS Proxy-Relay is not able to remove just the reply-charging parameters.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-reply-charging-not-supported	The MMS Proxy-Relay does not support reply charging. The corresponding M-Forward.req contained reply-charging parameters and was rejected.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-address-hiding-not-supported	None, this X-Mms-Response-Status value SHOULD not be used in the M-Forward.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-permanent-lack-of-prepaid	The required action was not proceeded due to insufficient credit of the user.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.

Table 29: X-Mms-Response-Status in M-Forward.conf

X-Mms-Response-Status	Meaning in M-Mbox-Delete.conf, M-Delete.conf and M-Mbox-View.conf	Proposed action by the MMS Client
Ok	The corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req and some or all of its contents were accepted without errors.	
Error-unspecified	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-service-denied	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-message-format-corrupt	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-sending-address-unresolved	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-message-not-found	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-network-problem	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
Error-content-not-accepted	This code is obsolete.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.

Error-unsupported-message	Only used for version management. Used in a response to an unknown PDU or PDU with different major version number.	
Error-transient-failure	The corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req as received was valid and understood by the MMS Proxy-Relay, but some temporary condition or event caused an error to occur.	The MMS Client SHOULD attempt to retransmit the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req unaltered at a later time with the same header fields, including the same X-Mms-Transaction-Id. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-transient-sending-address-unresolved	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-transient-failure'.
Error-transient-message-not-found	The MMS Proxy-Relay has temporary lost contact with where the MMs are stored, e.g. the MMBox storage	The MMS Client SHOULD attempt to retransmit the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req unaltered at a later time with the same header fields, including the same X-Mms-Transaction-Id.
Error-transient-network-problem	The MMS Proxy-Relay was not able to handle the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req due to unspecified error on the transport layer or capacity overload.	The MMS Client SHOULD attempt to retransmit the M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req unaltered at a later time, including the same X-Mms-Transaction-Id. If this error persists, the MMS Client MAY increase its retransmit interval.
Error-transient-partial-success	The MMS Proxy-Relay was not able to successfully complete the requested action (Delete or View) for all of the indicated MM. This status SHOULD be accompanied with a X-Mms-Response-Text field indicating the list of MM that the action failed for.	The MMS Client MAY attempt to retransmit the M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req with the list of failed MM and using a new X-Mms-Transaction-ID. Alternately, the MMS Client MAY elect to notify the end-user of the problem.

Error-permanent-failure	An unspecified permanent error occurred during the processing or reception of the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req.	The MMS Client SHALL not retransmit the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req. In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-permanent-service-denied	The corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req was rejected due to failure of authentication or authorization due to different reasons of the originating MMS Client.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'. The MMS Proxy-Relay can provide an additional ResponseText to indicate the exact reason why service was denied.
Error-permanent-message-format-corrupt	An inconsistency with the formats for optional or mandatory header fields or an error with header field values was detected when the corresponding M-Mbox-Delete.req, M-Delete.req or M-Mbox-View.req was parsed. Mandatory parameters missing.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-sending-address-unresolved	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-message-not-found	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-content-not-accepted	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-reply-charging-limitations-not-met	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-reply-charging-request-not-accepted	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-reply-charging-forwarding-denied	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-reply-charging-not-supported	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'

Error-permanent-address-hiding-not-supported	None, this X-Mms-Response-Status value SHOULD not be used in the M-Mbox-Delete.conf, M-Delete.conf or M-Mbox-View.conf PDU.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-lack-of-prepaid	The required action was not proceeded due to insufficient credit of the user	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.

Table 30: X-Mms-Response-Status in M-Mbox-Delete.conf, M-Delete.conf and M-Mbox-View.conf

9.2 X-Mms-Retrieve-Status

X-Mms-Retrieve-Status is optionally included in the M-Retrieve.conf PDU. It is used by the recipient MMS Proxy-Relay to inform the recipient MMS Client about errors, if any that occurred during the preceding retrieval operation.

X-Mms-Retrieve-Status value	Meaning in M-Retrieve.conf	Proposed action by the MMS Client
Ok	The retrieve request was accepted and processed without any errors.	
Error-transient-failure	The corresponding retrieve request as received was valid and understood by the MMS Proxy-Relay, but some temporary condition or event caused an error to occur.	The MMS Client SHOULD perform a new retrieval attempt at a later time, using the same content location URL.
Error-transient-message-not-found	The MMS Proxy-Relay has temporary lost contact with where the MM's are stored, e.g. the MMS Server.	The MMS Client SHOULD perform a new retrieval attempt at a later time, using the same content location URL.
Error-transient-network-problem	The MMS Proxy-Relay was not able to handle the corresponding retrieve request due to capacity overload.	The MMS Client SHOULD perform a new retrieval attempt at a later time, using the same content location URL.
Error-permanent-failure	An unspecified permanent error occurred during the processing of the retrieval attempt of the MM in question.	The MMS Client SHALL not perform a new retrieval attempt using the same content location URL.
Error-permanent-service-denied	The corresponding retrieval attempt was rejected due to failure of authentication or authorization of the originating MMS Client.	The same action as for the X-Mms-Retrieve-Status 'Error-permanent-failure'.
Error-permanent-message-not-found	The content location URL in the retrieval attempt does not point to an MM.	The same action as for the X-Mms-Retrieve-Status 'Error-permanent-failure'.
Error-permanent-content-unsupported	The MM that the retrieval attempt referred to contained media elements that the recipient MMS Client cannot handle, and the recipient MMS Proxy-Relay cannot perform the proper content adaptation.	The same action as for the X-Mms-Retrieve-Status 'Error-permanent-failure'.

Error-permanent-lack-of-prepaid	The MM was not delivered due to insufficient credit of the user.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'.
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Table 31: X-Mms-Retrieve-Status in M-Retrieve.conf

9.3 X-Mms-Status

X-Mms-Status is included in the M-NotifyResp.ind and M-Delivery.ind PDUs.

In the M-Delivery.ind the X-Mms-Status is used to inform the originating MMS Client of the status of an MM that a delivery report was requested for.

X-Mms-Status value	Meaning in M-Delivery.ind
Expired	The MM in question reached the recipient MMS Proxy-Relay but the recipient MMS Client did not retrieve it before expiration.
Retrieved	The MM in question was successfully retrieved by the recipient MMS Client.
Rejected	The MM in question reached the recipient MMS Proxy-Relay but the recipient MMS Client rejected it.
Deferred	The MM in question reached the recipient MMS Proxy-Relay but the recipient MMS Client decided to retrieve it at a later time.
Unrecognised	This value SHALL not be used in the M-Delivery.ind PDU.
Indeterminate	It is not possible to determine if the MM in question reached its destination.
Forwarded	The MM in question reached the recipient MMS Proxy-Relay but the recipient MMS Client forwarded it without retrieving it first.
Unreachable	The recipient MMS Client is not reachable due to MMS Proxy-Relay interworking, routing failure or some other condition that prevents the MM to reach it's final destination.

Table 32: X-Mms-Status in M-Delivery.ind

In the M-NotifyResp.ind PDU the X-Mms-Status value is used by the recipient MMS Client to inform the recipient MMS Proxy-Relay of how the MM in question should be handled further. It is also used for version management.

X-Mms-Status value	Meaning in M-NotifyResp.ind	Proposed action by the MMS Proxy-Relay
Expired	None, this X-Mms-Status value SHOULD not be used in the M-NotifyResp.ind PDU.	Same action as for the X-Mms-Status value Rejected.
Retrieved	The MM that the notification is question referred to has already been retrieved through immediate retrieval.	No further action is necessary by the MMS Proxy-Relay.
Rejected	The recipient MMS Client rejected the MM that the notification in question referred to. It will not be retrieved at a later time.	The MMS Proxy-Relay has no responsibility to store the MM in question any longer, it may be deleted.
Deferred	The recipient MMS Client processed the notification is question correctly and decided to handle the referred MM at a later time.	The MMS Proxy-Relay must store the MM in question at least until it has been retrieved or it expires.

Unrecognised	The MMS Client is of an incompatible version or the MMS Client did not recognize the corresponding request PDU. See also section 6.8	
Indeterminate	None, this X-Mms-Status value SHOULD not be used in the M-NotifyResp.ind PDU.	Same action as for the X-Mms-Status value Rejected.
Forwarded	None, this X-Mms-Status value SHOULD not be used in the M-NotifyResp.ind PDU.	Same action as for the X-Mms-Status value Rejected.
Unreachable	None, this X-Mms-Status value SHOULD not be used in the M-NotifyResp.ind PDU.	Same action as for the X-Mms-Status value Rejected.

Table 33: X-Mms-Status in M-NotifyResp.ind

9.4 X-Mms-Read-Status

X-Mms-Read-Status must be included in the M-Read-Rec.ind and M-Read-Orig.ind PDUs. It is used to convey information from the recipient MMS Client to the originating MMS Client whether an MM, for which a read report was requested, was read or not.

X-Mms-Read-Status value	Meaning
Read	Some or all of the multimedia contents of the MM in question was rendered or played by the recipient terminal.
Deleted without being read	The MM in question was retrieved by the MMS Client but deleted without any of its contents being rendered or played by the recipient terminal.

Table 34: X-Mms-Read-Status in M-Read-Rec-Orig.ind

9.5 X-Mms-Store-Status

The X-Mms-Store-Status may be included in any of the following PDUs if the MMS Client requested that the MMS Proxy-Relay transfer the MM to the user’s MMBBox:

- M-Send.conf
- M-Forward.conf
- M-Mbox-Store.conf
- M-Mbox-Upload.conf

It is used by the MMS Proxy-Relay to inform the MMS Client, which has requested that a MM be copied or moved to the user’s MMBBox, the result of the storing action. This status is in addition and, possibly, without connection to the X-Mms-Response-Status that may also appear in the same PDU.

X-Mms-Store-Status value	Meaning in M-Send.conf and M-Forward.conf	Proposed action by the MMS Client
Ok	The store request was accepted and processed without any errors.	
Error-transient-failure	The corresponding store request as received was valid and understood by the MMS Proxy-	The MMS Client MAY inform the end-user of the situation using this code in conjunction with

	Relay, but some temporary condition or event caused an error to occur.	additional information provided by the X-Mms-Store-Status-Text field.
Error-transient-network-failure	The MMS Proxy-Relay was not able to handle the corresponding store request due to capacity overload.	The same action as for the X-Store-Status 'Error-transient-failure'.
Error-permanent-failure	An unspecified permanent error occurred during the processing or reception of the corresponding request.	The MMS Client SHALL not retransmit the corresponding storage request In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-permanent-service-denied	The corresponding storage request was rejected due to failure of authentication or authorization due to store the MM into the MMBox.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'. The MMS Proxy-Relay can provide an additional Store-Status-Text to indicate the exact reason why service was denied.
Error-permanent-message-format-corrupt	None, this X-Mms-Store-Status value SHOULD not be used in the M-Send.conf or M-Forward.conf PDU	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-message-not-found	None, this X-Mms-Store-Status value SHOULD not be used in the M-Send.conf or M-Forward.conf PDU	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-mmbox-full	The corresponding storage request failed since the user's MMBox quota was exhausted.	The MMS Client SHOULD inform the end-user of the situation and allow the user to correct the situation prior to attempting a similar storage request.

Table 35. X-Mms-Store-Status in M-Send.conf and M-Forward.conf

X-Mms-Store-Status value	Meaning in M-Mbox-Store.conf and M-Mbox-Upload.conf	Proposed action by the MMS Client
Ok	The store request was accepted and processed without any errors.	
Error-transient-failure	The corresponding store request as received was valid and understood by the MMS Proxy-Relay, but some temporary condition or event caused an error to occur.	The MMS Client SHOULD attempt to retransmit the corresponding request unaltered at a later time, using the same header field values and including the same X-Mms-Transaction-Id. If this error persists, the MMS Client MAY use this code and additional information from the X-Mms-Store-Status-Text field to

		indicate the actual error to the end-user
Error-transient-network-failure	The MMS Proxy-Relay was not able to handle the corresponding store request due to capacity overload.	The MMS Client SHOULD attempt to retransmit the corresponding request unaltered at a later time, using the same header field values and including the same X-Mms-Transaction-Id.
Error-permanent-failure	An unspecified permanent error occurred during the processing or reception of the corresponding request.	The MMS Client SHALL not retransmit the corresponding storage request In the case of errors resulting from additional functionality in a MMS Proxy-Relay, this code can be used in combination with the Response-Text to indicate the actual error to the end-user.
Error-permanent-service-denied	The corresponding storage request was rejected due to failure of authentication or authorization due to store the MM into the MMBox.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'. The MMS Proxy-Relay can provide an additional Store-Status-Text to indicate the exact reason why service was denied.
Error-permanent-message-format-corrupt	An inconsistency with the formats for optional or mandatory header fields or an error with header field values was detected when the corresponding M-Mbox-Store.req or M-Mbox-Upload.req was parsed. Mandatory parameters missing.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-message-not-found	The value in the X-Mms-Content-Location header field contains an invalid URI and does not point to a MM.	The same action as for the X-Mms-Response-Status 'Error-permanent-failure'
Error-permanent-mmbox-full	The corresponding storage request failed since the user's MMBox quota was exhausted.	The MMS Client SHOULD inform the end-user of the situation and allow the user to correct the situation prior to attempting a similar storage request.

Table 36: X-Mms-Store-Status in M-Mbox-Store.conf and M-Mbox-Upload.conf

9.6 X-Mms-Cancel-Status

X-Mms-Cancel-Status MAY be included in the M-Cancel.conf PDU from the MMS Client to the MMS Proxy-Relay to confirm that the cancel request made by the M-Cancel.req PDU was received.

X-Mms-Cancel-Status value	Meaning
Cancel Request Successfully received	The MM cancel request is received and understood.
Cancel Request corrupted	The MM cancel request is corrupted

Table 37 X-Mms-Cancel-Status in M-Cancel.conf

Appendix A. Change History

(Informative)

A.1 Approved Version 1.3 History

Reference	Date	Description
OMA-MMS_ENC-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

Appendix B. Static Conformance Requirements (Normative)

Static Conformance Requirement is presented as a set of tables below. The format, contents and syntax of the tables are mandated by [CREQ].

B.1 MMS Client

B.1.1 General Message Structure

Item	Function	Reference	Status	Requirement
MMSE-C-001	Support for application/vnd.wap.mms-message	5	M	
MMSE-C-002	Support for MMS presentation part in multipart structure	5	O	
MMSE-C-003	Sending additional headers	5	O	
MMSE-C-004	Functionality for additional headers	6	O	MMSE-C-003
MMSE-C-005	Support of presentation without presentation part	5	O	
MMSE-C-006	Support for text/plain multimedia objects	5	M	
MMSE-C-007	Support for other multimedia objects than text	5	O	
MMSE-C-ORI-001	Ignore unrecognised fields (i.e. MMS headers).	6.14.2.	M	
MMSE-C-ORI-002	Ignore recognised fields (i.e. MMS headers) with unrecognised values.	6.14.2	M	

Table 38: Static Conformance Requirement for general message structure, originating terminal

Item	Function	Reference	Status	Requirement
MMSE-C-008	Support for application/vnd.wap.mms-message	5	M	
MMSE-C-009	Support for MMS presentation part in multipart structure	5	O	
MMSE-C-010	Recognising encoding of all MMS header fields	7	M	
MMSE-C-011	Recognising additional headers	6,7	M	
MMSE-C-012	Functionality for additional headers	6,7	O	MMSE-C-011
MMSE-C-013	Support of presentation without presentation part	5	M	
MMSE-C-014	Support for text/plain multimedia objects	5	M	
MMSE-C-015	Support for other multimedia objects than text	5	O	

MMSE-C-REC-001	Ignore unrecognised fields (i.e. MMS headers).	6.14.2.	M	
MMSE-C-REC-002	Ignore recognised fields (i.e. MMS headers) with unrecognised values.	6.14.2	M	

Table 39: Static Conformance Requirement for general message structure, recipient terminal

B.1.2 Sending of Multimedia Message

Item	Function	Reference	Status	Requirement
MMSE-C-016	X-Mms-Message-Type field	Table 1,2	M	
MMSE-C-017	X-Mms-Transaction-ID field	Table 1,2	M	
MMSE-C-018	X-Mms-MMS-Version field	Table 1,2	M	
MMSE-C-019	Date field	Table 1	O	
MMSE-C-020	From field	Table 1	M	
MMSE-C-021	To field	Table 1	O	
MMSE-C-022	Cc field	Table 1	O	
MMSE-C-023	Bcc field	Table 1	O	
MMSE-C-024	Support for at least one To, Cc or Bcc field	Table 1	M	MMSE-C-021 OR MMSE-C-022 OR MMSE-C-023
MMSE-C-025	Subject field	Table 1	O	
MMSE-C-026	X-Mms-Message-Class field	Table 1	O	
MMSE-C-027	X-Mms-Expiry field	Table 1	O	
MMSE-C-028	X-Mms-Delivery-Time field	Table 1	O	
MMSE-C-029	X-Mms-Priority field	Table 1	O	
MMSE-C-030	X-Mms-Sender-Visibility field	Table 1	O	
MMSE-C-031	X-Mms-Delivery-Report field	Table 1	O	
MMSE-C-032	X-Mms-Read-Report field	Table 1	O	
MMSE-C-033	Content-Type field	Table 1	M	
MMSE-C-034	X-Mms-Response-Status field	Table 2	M	

MMSE-C-035	X-Mms-Response-Text field	Table 2	O	
MMSE-C-036	In the case of application/vnd.wap.multipart.related the presentation is the root part of the aggregate document.	5	M	
MMSE-C-037	Message-ID field in case of successful delivery to MMS Proxy-Relay	Table 2	M	
MMSE-C-038	X-Mms-Reply-Charging field	Table 1	O	
MMSE-C-039	X-Mms-Reply-Charging-Deadline field	Table 1	O	MMSE-C-038
MMSE-C-040	X-Mms-Reply-Charging-Size field	Table 1	O	MMSE-C-038
MMSE-C-041	X-Mms-Reply-Charging-ID field	Table 1	O	
MMSE-SND-C-026	X-Mms-Store field	Table 1	O	
MMSE-SND-C-027	X-Mms-MM-State field	Table 1	O	MMSE-SND-C-026
MMSE-SND-C-028	X-Mms-MM-Flags field	Table 1	O	MMSE-SND-C-026
MMSE-SND-C-029	X-Mms-Store-Status field	Table 2	O	
MMSE-SND-C-030	X-Mms-Content-Location field	Table 2	O	
MMSE-SND-C-031	X-Mms-Store-Status-Text field	Table 2	O	MMSE-SND-C-029
MMSE-SND-C-032	X-Mms-Applic-ID	Table 1	O	
MMSE-SND-C-033	X-Mms-Reply-Applic-ID	Table 1	O	MMSE-SND-C-032
MMSE-SND-C-034	X-Mms-Aux-Applic-Info	Table 1	O	MMSE-SND-C-032
MMSE-SND-C-035	X-Mms-Content-Class	Table 1	O	
MMSE-SND-C-036	X-Mms-DRM-Content	Table 1	O	
MMSE-SND-C-037	X-Mms-Adaptation-Allowed	Table 1	O	

Table 40: Static Conformance Requirement for sent multimedia message and corresponding reply.

B.1.3 MMS Notification

Item	Function	Reference	Status	Requirement
MMSE-C-042	X-Mms-Message-Type field	Table 3,4	M	
MMSE-C-043	X-Mms-Transaction-ID field	Table 3,4	M	

MMSE-C-044	X-Mms-MMS-Version field	Table 3,4	M	
MMSE-C-045	From field	Table 3	O	
MMSE-C-046	Subject field	Table 3	O	
MMSE-C-047	X-Mms-Message-Class field	Table 3	M	
MMSE-C-048	X-Mms-Message-Size field	Table 3	M	
MMSE-C-049	X-Mms-Expiry field	Table 3	M	
MMSE-C-050	X-Mms-Content-Location field	Table 3	M	
MMSE-C-051	Status field	Table 4	M	
MMSE-C-052	X-Mms-Report-Allowed field	Table 4	O	
MMSE-C-053	X-Mms-Delivery-Report field	Table 3	O	
MMSE-C-054	X-Mms-Reply-Charging field	Table 3	O	
MMSE-C-055	X-Mms-Reply-Charging-Deadline field	Table 3	O	MMSE-C-054
MMSE-C-056	X-Mms-Reply-Charging-ID field	Table 3	O	
MMSE-C-057	X-Mms-Reply-Charging-Size field	Table 3	O	MMSE-C-054
MMSE-NTF-C-016	X-Mms-Stored field	Table 3	O	
MMSE-NTF-C-017	X-Mms-Priority field	Table 3	O	
MMSE-NTF-C-018	X-Mms-Distribution-Indicator field	Table 3	O	
MMSE-NTF-C-019	X-Mms-Element-Descriptor field	Table 3	O	
MMSE-NTF-C-020	X-Mms-Recommended-Retrieval-Mode field	Table 3	O	
MMSE-NTF-C-021	X-Mms-Recommended-Retrieval-Mode-Text field	Table 3	O	MMSE-NTF-C-020
MMSE-NTF-C-022	X-Mms-Applic-ID	Table 3	O	
MMSE-NTF-C-023	X-Mms-Reply-Applic-ID	Table 3	O	MMSE-NTF-C-022
MMSE-NTF-C-024	X-Mms-Aux-Applic-Info	Table 3	O	MMSE-NTF-C-022
MMSE-NTF-C-025	X-Mms-Content-Class field	Table 3	O	
MMSE-NTF-C-026	X-Mms-DRM-Content field	Table 3	O	

MMSE-NTF-C-027	X-Mms-Replace-ID field	Table 3	O	
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Table 41: Static Conformance Requirement for received MMS notification and corresponding reply.

B.1.4 Retrieval of Multimedia Message

Item	Function	Reference	Status	Requirement
MMSE-C-058	X-Mms-Message-Type field	Table 5	M	
MMSE-C-059	X-Mms-Transaction-ID field	Table 5	O	
MMSE-C-060	Message-ID field	Table 5	O ³	
MMSE-C-061	Support the functionality of X-Mms-Transaction-ID field when present	Table 5	M	
MMSE-C-062	X-Mms-MMS-Version field	Table 5	M	
MMSE-C-063	Date field	Table 5	M	
MMSE-C-064	From field	Table 5	O	
MMSE-C-065	To field	Table 5	O	
MMSE-C-066	Cc field	Table 5	O	
MMSE-C-067	Subject field	Table 5	O	
MMSE-C-068	X-Mms-Message-Class field	Table 5	O	
MMSE-C-069	X-Mms-Priority field	Table 5	O	
MMSE-C-070	X-Mms-Delivery-Report field	Table 5	O	
MMSE-C-071	X-Mms-Read-Report field	Table 5	O	
MMSE-C-072	Content-Type field	Table 5	M	
MMSE-C-073	X-Mms-Report-Allowed field	Table 6	O	
MMSE-C-074	Support for recognising of read-report message	Table 5	O	MMSE-C-068
MMSE-C-075	X-Mms-Retrieve-Status field	Table 5	O	
MMSE-C-076	X-Mms-Retrieve-Text field	Table 5	O	
MMSE-C-077	X-Mms-Reply-Charging field	Table 5	O	

³ This header field SHALL be present when the M-Retrieve.conf PDU includes the requested MM.

MMSE-C-078	X-Mms-Reply-Charging-Deadline field	Table 5	O	MMSE-C-077
MMSE-C-079	X-Mms-Reply-Charging-Size field	Table 5	O	MMSE-C-077
MMSE-C-080	X-Mms-Reply-Charging-ID field	Table 5	O	
MMSE-C-081	X-Mms-Previously-Sent-By field	Table 5	O	
MMSE-C-082	X-Mms-Previously-Sent-Date field	Table 5	O	
MMSE-RTV-C-027	X-Mms-MM-State field	Table 5	O	
MMSE-RTV-C-028	X-Mms-MM-Flags field	Table 5	O	
MMSE-RTV-C-029	X-Mms-Distribution-Indicator field	Table 5	O	
MMSE-RTV-C-030	X-Mms-Applic-ID	Table 5	O	
MMSE-RTV-C-031	X-Mms-Reply-Applic-ID	Table 5	O	MMSE-RTV-C-028
MMSE-RTV-C-032	X-Mms-Aux-Applic-Info	Table 5	O	MMSE-RTV-C-028
MMSE-RTV-C-33	X-Mms-Content-Class field	Table 5	O	
MMSE-RTV-C-34	X-Mms-DRM-Content field	Table 5	O	
MMSE-RTV-C-035	X-Mms-Replace-ID field	Table 5	O	

Table 42: Static Conformance Requirement for received multimedia message and the corresponding reply.

B.1.5 Acknowledge and Delivery Report

Item	Function	Reference	Status	Requirement
MMSE-C-083	X-Mms-Message-Type field	Tables 6,9	M	
MMSE-C-084	X-Mms-Transaction-ID field	Tables 6	M	
MMSE-C-085	X-Mms-MMS-Version field	Tables 6,9	M	
MMSE-C-086	X-Mms-Report-Allowed field	Table 6	O	
MMSE-C-087	Message-ID field	Table 9	M	
MMSE-C-088	To field	Table 9	M	
MMSE-C-089	Date field	Table 9	M	
MMSE-C-090	X-Mms-Status field	Table 9	M	

MMSE-C-091	X-Mms-Status-Text field	Table 9	O	
MMSE-ACK-C-001	X-Mms-Applic-ID	Table 9	O	
MMSE-ACK-C-002	X-Mms-Reply-Applic-ID	Table 9	O	MMSE-ACK-C-001
MMSE-ACK-C-003	X-Mms-Aux-Applic-Info	Table 9	O	MMSE-ACK-C-001

Table 43: Static Conformance Requirement for received delivery report.

B.1.6 Forwarding of Multimedia Message

Item	Function	Reference	Status	Requirement
MMSE-FWD-C-001	Support for M-Forward Transaction	Tables 7,8	O	MMSE-FWD-C-002 AND MMSE-FWD-C-003 AND MMSE-FWD-C-004 AND MMSE-FWD-C-006 AND MMSE-FWD-C-015AND MMSE-FWD-C-016 AND MMSE-FWD-C-018 AND MMSE-FWD-C-019
MMSE-FWD-C-002	X-Mms-Message-Type field	Tables 7,8	O	
MMSE-FWD-C-003	X-Mms-Transaction-ID field	Table 7,8	O	
MMSE-FWD-C-004	X-Mms-MMS-Version field	Table 7,8	O	
MMSE-FWD-C-005	Date field	Table 7	O	
MMSE-FWD-C-006	From field	Table 7	O	
MMSE-FWD-C-007	To field	Table 7	O	
MMSE-FWD-C-008	Cc field	Table 7	O	
MMSE-FWD-C-009	Bcc field	Table 7	O	
MMSE-FWD-C-010	X-Mms-Expiry field	Table 7	O	
MMSE-FWD-C-011	X-Mms-Delivery-Time field	Table 7	O	
MMSE-FWD-C-012	X-Mms-Report-Allowed field	Table 7	O	

MMSE-FWD-C-013	X-Mms-Delivery-Report field	Table 7	O	
MMSE-FWD-C-014	X-Mms-Read-Report field	Table 7	O	
MMSE-FWD-C-015	X-Mms-Content-Location field	Table 7	O	
MMSE-FWD-C-016	X-Mms-Response-Status field	Table 8	O	
MMSE-FWD-C-017	X-Mms-Response-Text field	Table 8	O	
MMSE-FWD-C-018	Message-ID field in case of acceptance by MMS Proxy-Relay	Table 8	O	
MMSE-FWD-C-019	Support for at least one To, Cc or Bcc field	Table 7	O	MMSE-FWD-C-007 OR MMSE-FWD-C-008 OR MMSE-FWD-C-009
MMSE-FWD-C-020	X-Mms-Store field	Table 7	O	
MMSE-FWD-C-021	X-Mms-MM-State field	Table 7	O	MMSE-FWD-C-020
MMSE-FWD-C-022	X-Mms-MM-Flags field	Table 7	O	MMSE-FWD-C-020
MMSE-FWD-C-023	X-Mms-Content-Location field	Table 8	O	
MMSE-FWD-C-024	X-Mms-Store-Status field	Table 8	O	
MMSE-FWD-C-025	X-Mms-Store-Status-Text field	Table 8	O	MMSE-FWD-C-024
MMSE-FWD-C-026	X-Mms-Reply-Charging field	Table 7	O	
MMSE-FWD-C-027	X-Mms-Reply-Charging-Deadline field	Table 7	O	MMSE-FWD-C-026
MMSE-FWD-C-028	X-Mms-Reply-Charging-Size field	Table 7	O	MMSE-FWD-C-026

Table 44: Static Conformance Requirement for forwarding a multimedia message.

B.1.7 Read Reporting

Item	Function	Reference	Status	Requirement
MMSE-RDR-C-001	Support of Read Reporting functionality	6.7	O	MMSE-RDR-C-003
MMSE-RDR-C-002	Support of Multimedia Message Read Report	6.7.1	O	MMSE-C-071
MMSE-RDR-C-003	Support for PDU Read Reporting functionality	Tables 10,11	O	MMSE-C-058 AND MMSE-C-071 AND MMSE-RDR-C-004 AND

				MMSE-RDR-C-005 AND MMSE-RDR-C-006 AND MMSE-RDR-C-007 AND MMSE-RDR-C-008 AND MMSE-RDR-C-010 AND MMSE-RDR-C-011
MMSE-RDR-C-004	X-Mms-Message-Type field	Tables 10,11	O	
MMSE-RDR-C-005	X-Mms-MMS-Version field	Tables 10,11	O	
MMSE-RDR-C-006	Message-ID field	Tables 10,11	O	
MMSE-RDR-C-007	To field	Tables 10,11	O	
MMSE-RDR-C-008	From field	Tables 10,11	O	
MMSE-RDR-C-009	Date field in M-Read-Rec.ind PDU	Tables 10	O	
MMSE-RDR-C-010	Date field in M-Read-Orig.ind PDU	Table 11	O	
MMSE-RDR-C-011	X-Mms-Read-Status field	Tables 10,11	O	
MMSE-RDR-C-012	X-Mms-Applic-ID	Tables 10,11	O	
MMSE-RDR-C-013	X-Mms-Reply-Applic-ID	Tables 10,11	O	MMSE-RDR-C-012
MMSE-RDR-C-014	X-Mms-Aux-Applic-Info	Tables 10,11	O	MMSE-RDR-C-012

Table 45: Static Conformance Requirement for read report PDU.

B.1.8 Storing and Updating a Multimedia Message in MMBbox

Item	Function	Reference	Status	Requirement
MMSE-STR-C-001	Support for M-Mbox-Store Transaction	Tables 12,13	O	MMSE-STR-C-002 AND MMSE-STR-C-003 AND MMSE-STR-C-004 AND MMSE-STR-C-005 AND MMSE-STR-C-009
MMSE-STR-C-002	X-Mms-Message-Type field	Tables 12,13	O	

MMSE-STR-C-003	X-Mms-Transaction-ID field	Table 12,13	O	
MMSE-STR-C-004	X-Mms-MMS-Version field	Table 12,13	O	
MMSE-STR-C-005	X-Mms-Content-Location field	Table 12	O	
MMSE-STR-C-006	X-Mms-MM-State field	Table 12	O	
MMSE-STR-C-007	X-Mms-MM-Flags field	Table 12	O	
MMSE-STR-C-008	X-Mms-Content-Location field	Table 13	O	
MMSE-STR-C-009	X-Mms-Store-Status field	Table 13	O	
MMSE-STR-C-010	X-Mms-Store-Status-Text	Table 13	O	

Table 46: Static Conformance Requirements for storing or updating a MM in MMBox

B.1.9 Viewing Multimedia Message Header Information from MMBox

Item	Function	Reference	Status	Requirement
MMSE-VEW-C-001	Support for M-Mbox-View Transaction	Tables 14,15	O	MMSE-VEW-C-002 AND MMSE-VEW-C-003 AND MMSE-VEW-C-004 AND MMSE-VEW-C-012 AND MMSE-VEW-C-043
MMSE-VEW-C-002	X-Mms-Message-Type field	Tables 14, 15	O	
MMSE-VEW-C-003	X-Mms-Transaction-ID field	Tables 14, 15	O	
MMSE-VEW-C-004	X-Mms-MMS-Version field	Tables 14, 15	O	
MMSE-VEW-C-005	X-Mms-Content-Location field	Tables 14, 15	O	
MMSE-VEW-C-006	X-Mms-Selection field	Tables 14, 15	O	
MMSE-VEW-C-007	X-Mms-Start field	Tables 14, 15	O	
MMSE-VEW-C-008	X-Mms-Limit field	Tables 14, 15	O	
MMSE-VEW-C-009	X-Mms-Attributes field	Tables 14, 15	O	
MMSE-VEW-C-010	X-Mms-Totals field	Table 14	O	
MMSE-VEW-C-011	X-Mms-Quotas field	Table 14	O	

MMSE-VEW-C-012	X-Mms-Response-Status field	Table 15	O	
MMSE-VEW-C-013	X-Mms-Response -Text field	Table 15	O	MMSE-VEW-C-012
MMSE-VEW-C-014	X-Mms-Mbox-Totals field	Table 15	O	
MMSE-VEW-C-015	X-Mms-Mbox-Quotas field	Table 15	O	
MMSE-VEW-C-016	X-Mms-Message-Count field	Table 15	O	
MMSE-VEW-C-017	Support for application/vnd.wap.multipart.mixed content	6.9	O	MMSE-VEW-C-018 AND MMSE-VEW-C-019
MMSE-VEW-C-018	X-Mms-Message-Type field	Table 16	O	
MMSE-VEW-C-019	X-Mms-Content-Location field	Table 16	O	
MMSE-VEW-C-020	Message-ID	Table 16	O	
MMSE-VEW-C-021	X-Mms-MM-State field	Table 16	O	
MMSE-VEW-C-022	X-Mms-MM-Flags field	Table 16	O	
MMSE-VEW-C-023	Date field	Table 16	O	
MMSE-VEW-C-024	From field	Table 16	O	
MMSE-VEW-C-025	To field	Table 16	O	
MMSE-VEW-C-026	Cc field	Table 16	O	
MMSE-VEW-C-027	Bcc field	Table 16	O	
MMSE-VEW-C-028	X-Mms-Message-Class field	Table 16	O	
MMSE-VEW-C-029	Subject field	Table 16	O	
MMSE-VEW-C-030	X-Mms-Priority field	Table 16	O	
MMSE-VEW-C-031	X-Mms-Delivery-Time field	Table 16	O	
MMSE-VEW-C-032	X-Mms-Expiry field	Table 16	O	
MMSE-VEW-C-033	X-Mms-Delivery-Report field	Table 16	O	
MMSE-VEW-C-034	X-Mms-Read-Report field	Table 16	O	
MMSE-VEW-C-035	X-Mms-Message-Size field	Table 16	O	
MMSE-VEW-C-036	X-Mms-Reply-Charging field	Table 16	O	

MMSE-VEW-C-037	X-Mms-Reply-Charging-ID field	Table 16	O	
MMSE-VEW-C-038	X-Mms-Reply-Charging-Deadline field	Table 16	O	
MMSE-VEW-C-039	X-Mms-Reply-Charging-Size field	Table 16	O	
MMSE-VEW-C-040	X-Mms-Previously-Sent-By field	Table 16	O	
MMSE-VEW-C-041	X-Mms-Previously-Sent-Date field	Table 16	O	
MMSE-VEW-C-042	Content-type field	Table 16	O	
MMSE-VEW-C-043	Content-type field in M-Mbox-View.conf	Table 15	O	

Table 47: Static Conformance Requirements for viewing MM information from MMBox

B.1.10 Uploading a Multimedia Message to MMBox

Item	Function	Reference	Status	Requirement
MMSE-UPL-C-001	Support for M-Mbox-Upload Transaction	Tables 17, 18	O	MMSE-UPL-C-002 AND MMSE-UPL-C-003 AND MMSE-UPL-C-004 AND MMSE-UPL-C-007 AND MMSE-UPL-C-008 AND MMSE-UPL-C-010
MMSE-UPL-C-002	X-Mms-Message-Type field	Tables 17, 18	O	
MMSE-UPL-C-003	X-Mms-Transaction-ID field	Table 17, 18	O	
MMSE-UPL-C-004	X-Mms-MMS-Version field	Table 17, 18	O	
MMSE-UPL-C-005	X-Mms-MM-State field	Table 17	O	
MMSE-UPL-C-006	X-Mms-MM-Flags field	Table 17	O	
MMSE-UPL-C-007	Content-Type field	Table 17	O	
MMSE-UPL-C-008	Content body follows headers	6.10	O	
MMSE-UPL-C-009	X-Mms-Content-Location field	Table 18	O	
MMSE-UPL-C-010	X-Mms-Store-Status field	Table 18	O	

MMSE-UPL-C-011	X-Mms-Store-Status-Text field	Table 18	O	
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Table 48: Static Conformance Requirements for uploading a MM to MMBox

B.1.11 Deleting of Multimedia Message from MMBox

Item	Function	Reference	Status	Requirement
MMSE-DLT-C-001	Support for M-Mbox-Delete Transaction	Tables 19, 20	O	MMSE-DLT-C-002 AND MMSE-DLT-C-003 AND MMSE-DLT-C-004 AND MMSE-DLT-C-005 AND MMSE-DLT-C-007
MMSE-DLT-C-002	X-Mms-Message-Type field	Tables 19, 20	O	
MMSE-DLT-C-003	X-Mms-Transaction-ID field	Tables 19, 20	O	
MMSE-DLT-C-004	X-Mms-MMS-Version field	Tables 19, 20	O	
MMSE-DLT-C-005	X-Mms-Content-Location field	Table 19	O	
MMSE-DLT-C-006	X-Mms-Content-Location field	Table 20	O	
MMSE-DLT-C-007	X-Mms-Response-Status field	Table 20	O	
MMSE-DLT-C-008	X-Mms-Response -Text field	Table 20	O	MMSE-DLT-C-007

Table 49: Static Conformance Requirements for deleting a MM from MMBox

B.1.12 Cancelling a Multimedia Message

Item	Function	Reference	Status	Requirement
MMSE-CNC-C-001	Support for M-Cancel Transaction	Tables 23, 24	O	MMSE-CNC-C-002 AND MMSE-CNC-C-003 AND MMSE-CNC-C-004 AND MMSE-CNC-C-005
MMSE-CNC-C-002	X-Mms-Message-Type field	Tables 23, 24	O	
MMSE-CNC-C-003	X-Mms-Transaction-ID field	Tables 23, 24	O	
MMSE-CNC-C-004	X-Mms-MMS-Version field	Tables 23, 24	O	

MMSE-CNC-C-005	X-Mms-Cancel-ID field	Table 23	O	
MMSE-CNC-C-006	X-Mms-Cancel-Status field	Table 24	O	

Table 50: Static Conformance Requirement for cancelling a multimedia message.

B.1.13 Character Sets

Item	Function	Reference	Status	Requirement
MMSE-CHS-C-001	Unicode UTF-8 encoding	5, 7.2.9	O	
MMSE-CHS-C-002	Unicode UTF-16 encoding	5	O	
MMSE-CHS-C-003	ISO 10646-1 UCS-2 encoding	5	O	
MMSE-CHS-C-004	ISO 10646-1 UCS-4 encoding	5	O	
MMSE-CHS-C-005	Other character encoding	5, 7.2.9	O	
MMSE-CHS-C-006	Support for character-set encoding according to [RFC2047]	7.2.9	O	

Table 51: Static Conformance Requirement for character sets in client.

B.1.14 Deleting of Multimedia Message from MMS Proxy-Relay

Item	Function	Reference	Status	Requirement
MMSE-DPR-C-001	Support for M-Delete Transaction	Table 20, 21	O	MMSE-DPR-C-002 AND MMSE-DPR-C-003 AND MMSE-DPR-C-004 AND MMSE-DPR-C-005 AND MMSE-DPR-C-006 AND MMSE-DPR-C-007
MMSE-DPR-C-002	X-Mms-Message-Type field	Table 20, 21	O	
MMSE-DPR-C-003	X-Mms-Transaction-ID field	Table 20, 21	O	
MMSE-DPR-C-004	X-Mms-MMS-Version field	Table 20, 21	O	
MMSE-DPR-C-005	X-Mms-Content-Location field	Table 20, 21	O	
MMSE-DPR-C-006	X-Mms-Response-Status field	Table 21	O	MMSE-DPR-C-007
MMSE-DPR-C-007	X-Mms-Response -Text field	Table 21	O	

Table 52: Static Conformance Requirements for deleting a MM from MMS Proxy-Relay

B.2 MMS Proxy-Relay

B.2.1 Support of PDUs/Header Fields

Item	Function	Reference	Status	Requirement
MMSE-S-076	Reception of multimedia message	6.1	M	
MMSE-S-077	Sending of MMS notification	6.2	M	
MMSE-S-078	Delivery of multimedia message	6.3, 6.4	M	
MMSE-S-079	Creation and delivery of delivery report upon user request	6.6	M	
MMSE-S-080	Delivery of Multimedia Message Read Report	6.7.1	M	
MMSE-S-081	Inserting current date to multimedia message being delivered	6.1.1	M	
MMSE-S-082	Inserting correct address when insert-address-token present	6.1.1	M	
MMSE-S-083	Support for removal of From field in notification & retrieved message when user requested hiding of source	6.2, 6.3	M	
MMSE-S-084	Support for adding X-Mms-Message-Class field to MMS notification when not sent by terminal	Table 3	M	
MMSE-S-085	Support for user-requested time-of-expiration for the message	6.1.1	O	
MMSE-S-086	Support for deferred delivery when user requested with X-Mms-Delivery-Time field	6.1.1	O	
MMSE-S-087	Support to pass indication about the MM Priority qualification for expedited delivery requested, by X-Mms-Priority field	6.1.1	O	
MMSE-S-088	Inserting the X-Mms-Retrieve-Status field in the M-Retrieve.conf PDU	6.3	O	
MMSE-S-089	Inserting the X-Mms-Retrieve-Text field in the M-Retrieve.conf PDU	6.3	O	MMSE-S-088
MMSE-S-090	Include a message body in the M-Retrieve.conf PDU	6.3	M	
MMSE-S-091	Support of Read Report PDUs (reception of M-Read-Rec.ind from the recipient MMS Client and sending M-Read-Orig.ind to the originating MMS Client)	6.7.2	M	
MMSE-S-092	Inserting current Date to Read PDU (M-Read-Rec.ind) being sent obsolete	6.6.2	M	
MMSE-S-093	Rejection of M-Send.req PDU if it contains an "X Mms Reply Charging"	6.1	M	

	header field and reply charging is not supported obsolete			
MMSE-S-094	Rejection of M-Send.req PDU if the value of the X-Mms-Reply-Charging field is 'Accepted' or 'Accepted_text_only' obsolete	6.1	M	
MMSE-S-095	Support for changing the value of X-Mms-Reply-Charging header field if Reply-Charging is requested by the originator MMS Client and accepted by the MMS Proxy-Relay obsolete	6.1, 6.2, 6.3	Ø	
MMSE-S-096	Recognising encoding of all MMS Header fields	7	M	
MMSE-S-097	Support for Forwarding Multimedia Message located at the MMS Proxy-Relay obsolete	6.5	Ø	MMSE-S-101
MMSE-S-098	Support for inserting an address value specified in From header field to X-Mms-Previously-Sent-By header field	6.5	O	
MMSE-S-099	Support for inserting a Date header field value to X-Mms-Previously-Sent-Date header field	6.5	O	
MMSE-S-100	Including Message-ID header field in M-Retrieve.conf PDU when X-Mms-Read-Report value is Yes	Table 5	M	
MMSE-S-101	Not allowing forward of Reply-Charging MM obsolete	6.5	M Ø	MMSE-S-102 OR MMSE-S-103
MMSE-S-102	Rejection of forward request without prior download of MM that includes Reply-Charging related header fields obsolete	6.5	Ø	
MMSE-S-103	Deletion of Reply-Charging related header fields if MM is forwarded without prior download obsolete	6.5	Ø	
MMSE-PDU-S-001	Support for reply-charging header field.	6.5	O	
MMSE-PDU-S-002	Support for changing the value of X-Mms-Reply-Charging header field if Reply-Charging is requested by the forwarding MMS Client and accepted by the MMS Proxy-Relay	6.5	M	MMSE-PDU-S-009 AND MMSE-PDU-S-001
MMSE-PDU-S-003	Rejection of M-Forward.req PDU if it contains an "X-Mms-Reply-Charging" header field and reply-charging is not supported.	6.5	M	MMSE-PDU-S-009 AND MMSE-PDU-S-001
MMSE-PDU-S-004	Rejection of M-Forward.req PDU if the value of the X-Mms-Reply-Charging field is 'Accepted' or 'Accepted_text_only'	6.5	M	MMSE-PDU-S-009 AND MMSE-PDU-S-001
MMSE-PDU-S-005	If the date is not supplied by the recipient MMS Client in the M-Read-Rec.ind PDU, then the MMS Proxy-Relay SHALL use the current Date in	6.7.2	M	

	the resulting PDU (i.e. MM4_Read_Reply_Report.REQ or M-Read-Orig.ind) being sent.			
MMSE-PDU-S-006	Rejection of M-Send.req PDU if it contains an “X-Mms-Reply-Charging” header field and reply-charging is not supported	6.1	M	MMSE-PDU-S-001
MMSE-PDU-S-007	Rejection of M-Send.req PDU if the value of the X-Mms-Reply-Charging field is ‘Accepted’ or ‘Accepted_text_only’.	6.1	M	MMSE-PDU-S-001
MMSE-PDU-S-008	Support for changing the value of X-Mms-Reply-Charging header field if Reply-Charging is requested by the originator MMS Client and accepted by the MMS Proxy-Relay	6.1, 6.2, 6.3	M	MMSE-PDU-S-001
MMSE-PDU-S-009	Support for Forwarding Multimedia Message located at the MMS Proxy-Relay	6.5	O	
MMSE-PDU-S-010	Do not interpret unrecognised fields (i.e., MMS headers).	6.14.2	M	
MMSE-PDU-S-011	Pass on unrecognised fields (i.e., MMS headers).	6.14.2	M	
MMSE-PDU-S-012	Pass on recognised fields (i.e., MMS headers) with unrecognised values.	6.14.2	O	
MMSE-PDU-S-013	Support of cancel PDUs (sending of M-Cancel.req PDU to the MMS Client and reception of M-Cancel.conf PDU from the MMS Client)	6.13	O	

Table 53: Static Conformance Requirement for MMS Proxy-Relay.

B.2.2 Proxy-Relay MMBBox Support

Item	Function	Reference	Status	Requirement
MMSE-MBX-S-001	Support of network-based MMBBox functionality	6.1	O	MMSE-MBX-S-004 AND MMSE-MBX-S-005 AND MMSE-MBX-S-006 AND MMSE-MBX-S-007 AND MMSE-MBX-S-008 AND MMSE-MBX-S-009 AND MMSE-MBX-S-010 AND MMSE-MBX-S-011 AND MMSE-MBX-S-013
MMSE-	Storing MM to MMBBox with MM State	6.1.1	O	

MBX-S-002	of Sent			
MMSE-MBX-S-003	Storing MM Flags keyword together with MM	6.1.1	O	
MMSE-MBX-S-004	Supply Content-location-value for stored MM	6.1.1	O	
MMSE-MBX-S-005	Indicate that MM is stored in MMBox in notification	6.2	O	
MMSE-MBX-S-006	MM State on retrieval reflects state prior to retrieval	6.3	O	
MMSE-MBX-S-007	Storing MM to MMBox when requested	6.8	O	MMSE-MBX-S-002 AND MMSE-MBX-S-003
MMSE-MBX-S-008	Support for generating a list of MM in response to a View MMBox request	6.9	O	
MMSE-MBX-S-009	Return totals information for MMBox if requested	6.9	O	
MMSE-MBX-S-010	Return quota information for MMBox if requested	6.9	O	
MMSE-MBX-S-011	Support uploading MM from MMS Client to MMBox	6.10	O	MMSE-MBX-S-012 AND MMSE-MBX-S-014 AND MMSE-MBX-S-015
MMSE-MBX-S-012	Must not deliver MM that is uploaded to MMBox to any destinations	6.10	O	
MMSE-MBX-S-013	Support deleting MM from MMBox if requested	6.11	O	
MMSE-MBX-S-014	Support retrieval of uploaded MM only with Mbox_View transaction	6.10	O	
MMSE-MBX-S-015	Verify that Message-ID of uploaded MM remains unique in MMBox	6.10	O	

Table 54: Static Conformance Requirements for MMS Proxy-Relay support of MMBox

B.2.3 Character Sets

Item	Function	Reference	Status	Requirement
MMSE-CHS-S-001	Unicode UTF-8 encoding	7.2.9	O	
MMSE-CHS-S-002	Other character encoding	7.2.9	O	
MMSE-CHS-S-003	Support for character-set encoding according to [RFC2047]	7.2.9	O	

Table 55: Static Conformance Requirement for character sets in server.

Appendix C. Mapping of WAP PDU Header Fields to 3GPP Abstract Message Information Elements

This appendix is informative.

In order to provide for an unambiguous relationship between WAP MMS PDU and 3GPP MMS abstract messages and the contained information elements, respectively, this appendix contains a mapping of the header fields of the PDUs defined in this document to the information elements defined in [TS23140] for 3GPP and [XS0016200] for 3GPP2.

WAP PDUs are defined for the interface between the MMS Proxy-Relay and the MMS Client, called MMS_M. This interface corresponds to the interface between the MMS Relay/Server and the MMS User Agent, called “MM1” in the 3GPP specifications.

NOTE: The distinction between immediate and deferred retrieval is only done in the WAP MMS specifications. Therefore the relationship between WAP MMS PDUs and 3GPP MMS abstract messages are slightly different for the two retrieval schemes.

a) Mapping between Header Fields of the WAP MMS PDU M-Send.req and the 3GPP MMS Abstract Message MM1_submit.REQ

The following table describes the relationship between the WAP MMS PDU M-Send.req and the corresponding 3GPP MMS abstract message MM1_submit.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Send.req		MM1_submit.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
To	Optional	Recipient address	Mandatory
Cc	Optional ¹		
Bcc	Optional ¹		
Content-Type	Mandatory	Content type	Mandatory
From	Mandatory	Sender address	Optional
X-Mms-Message-Class	Optional	Message class	Optional
Date	Optional	Date and time	Optional
X-Mms-Expiry	Optional	Time of Expiry	Optional
X-Mms-Delivery-Time	Optional	Earliest delivery time	Optional
X-Mms-Delivery-Report	Optional	Delivery report	Optional
X-Mms-Reply-Charging	Optional	Reply-Charging	Optional

-X-Mms-Reply-Charging-Deadline	Optional	Reply-Deadline	Optional
X-Mms-Reply-Charging-Size	Optional	Reply-Charging-Size	Optional
X-Mms-Priority	Optional	Priority	Optional
X-Mms-Sender-Visibility	Optional	Sender visibility	Optional
X-Mms-Read-Report	Optional	Read reply	Optional
Subject	Optional	Subject	Optional
X-Mms-Store	Optional	Store	Optional
X-Mms-MM-State	Optional	MM State	Optional
X-Mms-MM-Flags	Optional	MM Flags	Optional
X-Mms-Reply-Charging-ID	Optional	Reply-Charging-ID	Optional
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional
X-Mms-Content-Class	Optional	Content Class	Optional
X-Mms-DRM-Content	Optional	DRM Content	Optional
X-Mms-Adaptation-Allowed	Optional	Adaptations	Optional
(Message Body)		Content	Optional

Table 56: Mapping of M-Send.req Header Fields to MM1_submit.REQ Information Elements

b) Mapping between Header Fields of the WAP MMS PDU M-Send.conf and the 3GPP MMS Abstract Message MM1_submit.RES

The following table describes the relationship between the WAP MMS PDU M-Send.conf and the corresponding 3GPP MMS abstract message MM1_submit.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Send.conf		MM1_submit.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory

X-Mms-Response-Status	Mandatory	Request Status	Mandatory
X-Mms-Response-Text	Optional	Request Status Text	Optional
Message-ID	Optional	Message ID	Conditional
X-Mms-Content-Location	Optional	Stored Message Reference	Conditional
X-Mms-Store-Status	Optional	Store Status	Conditional
X-Mms-Store-Status-Text	Optional	Store Status Text	Optional

Table 57: Mapping of M-Send.conf Header Fields to MM1_submit.RES Information Elements

c) Mapping between Header Fields of the WAP MMS PDU M-Notification.ind and the 3GPP MMS Abstract Message MM1_notification.REQ

The following table describes the relationship between the WAP MMS PDU M-Notification.ind and the corresponding 3GPP MMS abstract message MM1_notification.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Notification.ind		MM1_notification.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Message-Class	Mandatory	Message class	Mandatory
X-Mms-Priority	Optional	Priority	Optional
X-Mms-Message-Size	Mandatory	Message size	Mandatory
X-Mms-Stored	Optional	Stored	Optional
X-Mms-Expiry	Mandatory	Time of expiry	Mandatory
X-Mms-Content-Location	Mandatory	Message Reference	Mandatory
Subject	Optional	Subject	Optional
From	Optional	Sender address	Conditional
X-Mms-Delivery-Report	Optional	Delivery report	Optional
X-Mms-Reply-Charging	Optional	Reply-Charging	Optional
X-Mms-Reply-Charging-Deadline	Optional	Reply-Deadline	Optional
X-Mms-Reply-Charging-ID	Optional	Reply-Charging-ID	Optional

X-Mms-Reply-Charging-Size	Optional	Reply-Charging-Size	Optional
X-Mms-Distribution-Indicator	Optional	Message Distribution Indicator	Optional
X-Mms-Element-Descriptor	Optional	Element-Descriptor	Optional
X-Mms-Recommended-Retrieval-Mode	Optional	MM recommended retrieval mode	Optional
X-Mms-Recommended-Retrieval-Mode-Text	Optional	Text explaining MM recommended retrieval mode	Optional
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional
X-Mms-Content-Class	Optional	Content Class	Optional
X-Mms-DRM-Content	Optional	DRM Content	Optional
X-Mms-Replace-ID	Optional	Replace-ID	Optional

Table 58: Mapping of M-Notification.ind Header Fields to MM1_notification.REQ Information Elements

d) Mapping between Header Fields of the WAP MMS PDU M-NotifyResp.ind and the 3GPP MMS Abstract Message MM1_notification.RES (deferred retrieval)

The following table describes the relationship between the WAP MMS PDU M-NotifyResp.ind and the corresponding 3GPP MMS abstract message MM1_notification.RES in case of deferred retrieval.

WAP MMS PDU		3GPP MMS Abstract Message	
M-NotifyResp.ind		MM1_notification.RES	
Header Field Names	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Status	Mandatory	MM Status	Optional
X-Mms-Report-Allowed	Optional	Report allowed	Optional

Table 59: Mapping of M-NotifyResp.ind Header Fields to MM1_notification.RES Information Elements

e) Mapping between Header Fields of the WAP MMS PDU WSP/HTTP-GET and the 3GPP MMS Abstract Message MM1_retrieve.REQ

The following table describes the relationship between the WAP MMS PDU WSP/HTTP GET and the corresponding 3GPP MMS abstract message MM1_retrieve.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
WSP/HTTP GET		MM1_retrieve.REQ	
Header Field Name	Presence	Information Element	Presence
URI from X-Mms-Content-Location (NOTE: this is actually not a header field, see section 6.3)	Mandatory	Message Reference	Mandatory

Table 60: Mapping of WSP/HTTP GET Header Fields to MM1_retrieve.REQ Information Elements

f) Mapping between Header Fields of the WAP MMS PDU M-Retrieve.conf and the 3GPP MMS Abstract Message MM1_retrieve.RES

The following table describes the relationship between the WAP MMS PDU M-Retrieve.conf and the corresponding 3GPP MMS abstract message MM1_retrieve.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Retrieve.conf		MM1_retrieve.RES	
Header Field Names	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Conditional	Transaction ID	Conditional
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
Message-ID	Conditional ⁴	Message ID	Conditional
From	Optional	Sender address	Conditional
X-Mms-Distribution-Indicator	Optional	Message Distribution Indicator	Optional
Content-Type	Mandatory	Content type	Mandatory
To	Optional	Recipient address	Optional
Cc	Optional		
X-Mms-Message-Class	Optional	Message class	Optional
Date	Mandatory	Date and time	Mandatory
X-Mms-Delivery-Report	Optional	Delivery report	Conditional
X-Mms-Priority	Optional	Priority	Conditional

⁴ This header field SHALL be present when the M-Retrieve.conf PDU includes the requested MM.

X-Mms-Read-Report	Optional	Read reply	Conditional
Subject	Optional	Subject	Conditional
X-Mms-MM-State	Optional	MM State	Conditional
X-Mms-MM-Flags	Optional	MM Flags	Optional
X-Mms-Retrieve-Status	Optional	Request Status	Optional
X-Mms-Retrieve-Text	Optional	Request Status Text	Optional
X-Mms-Reply-Charging	Optional	Reply-Charging	Optional
X-Mms-Reply-Charging-ID	Optional	Reply-Charging-ID	Optional
X-Mms-Reply-Charging-Deadline	Optional	Reply-Deadline	Optional
X-Mms-Reply-Charging-Size	Optional	Reply-Charging-Size	Optional
X-Mms-Previously-Sent-By	Optional	Previously-sent-by	Optional
X-Mms-Previously-Sent-Date	Optional	Previously-sent-date-and-time	Optional
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional
X-Mms-Content-Class	Optional	Content Class	Optional
X-Mms-DRM-Content	Optional	DRM Content	Optional
(Message Body)		Content	Conditional
X-Mms-Replace-ID	Optional	Replace-ID	Optional

Table 61: Mapping of M-Retrieve.conf Header Fields to MM1_retrieve.RES Information Elements

g) Mapping between Header Fields of the WAP MMS PDU M-NotifyResp.ind and the 3GPP MMS Abstract Message MM1_acknowledge.REQ (immediate retrieval)

The following table describes the relationship between the WAP MMS PDU M-NotifyResp.ind and the corresponding 3GPP MMS abstract message MM1_acknowledge.REQ in case of immediate retrieval.

WAP MMS PDU		3GPP MMS Abstract Message	
M-NotifyResp.ind		MM1_acknowledgement.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory

X-Mms-Transaction-ID	Mandatory	Transaction ID	Conditional
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Status	Mandatory	-	-
X-Mms-Report-Allowed	Optional	Report allowed	Optional

Table 62: Mapping of M-NotifyResp.ind Header Fields to MM1_acknowledgement.REQ Information Elements

h) Mapping between Header Fields of the WAP MMS PDU M-Acknowledge.ind and the 3GPP MMS Abstract Message MM1_acknowledge.REQ (deferred retrieval)

The following table describes the relationship between the WAP MMS PDU M-Acknowledge.ind and the corresponding 3GPP MMS abstract message MM1_acknowledge.REQ in case of deferred retrieval.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Acknowledge.ind		MM1_acknowledgement.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Optional	Transaction ID	Conditional
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Report-Allowed	Optional	Report allowed	Optional

Table 63: Mapping of M-Acknowledge.ind Header Fields to MM1_acknowledgement.REQ Information Elements

i) Mapping between Header Fields of the WAP MMS PDU M-Delivery.ind and the 3GPP MMS Abstract Message MM1_delivery_report.REQ

The following table describes the relationship between the WAP MMS PDU M-Delivery.ind and the corresponding 3GPP MMS abstract message MM1_delivery_report.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Delivery.ind		MM1_delivery_report.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
Message-ID	Mandatory	Message ID	Mandatory
To	Mandatory	Recipient address	Mandatory
Date	Mandatory	Date and Time	Mandatory
X-Mms-Status	Mandatory	MM Status	Mandatory

X-Mms-Status-Text	Optional	MM Status text	Optional
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional

Table 64: Mapping of M-Delivery.ind Header Fields to MM1_delivery_report.REQ Information Elements

j) Mapping between Header Fields of the WAP MMS PDU M-Read-Rec.ind and the 3GPP MMS Abstract Message MM1_read_reply_recipient.REQ

The following table describes the relationship between the WAP MMS PDU M-Read-Rec.ind and the corresponding 3GPP MMS abstract message MM1_read_reply_recipient.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Read-Rec.ind		MM1_read_reply_recipient.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
To	Mandatory	Recipient address	Mandatory
From	Mandatory	Originator address	Mandatory
Message-ID	Mandatory	Message-ID	Mandatory
Date	Optional	Date and Time	Optional
X-Mms-Read-Status	Mandatory	Read Status	Mandatory
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional

Table 65: Mapping of M-Read-Rec.ind Header Fields to MM1_read_reply_recipient.REQ Information Elements

k) Mapping between Header Fields of the WAP MMS PDU M-Read-Orig.ind and the 3GPP MMS Abstract Message MM1_read_reply_originator.REQ

The following table describes the relationship between the WAP MMS PDU M-Read-Orig.ind and the corresponding 3GPP MMS abstract message MM1_read_reply_originator.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Read-Orig.ind		MM1_read_reply_originator.REQ	
Header Field Name	Presence	Information Element	Presence

X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
To	Mandatory	Recipient address	Mandatory
	Mandatory	Originator address	Mandatory
Message-ID	Mandatory	Message-ID	Mandatory
Date	Mandatory	Date and Time	Mandatory
X-Mms-Read-Status	Mandatory	Read Status	Mandatory
X-Mms-Applic-ID	Optional	Applic-ID	Optional
X-Mms-Reply-Applic-ID	Optional	Reply-Applic-ID	Optional
X-Mms-Aux-Applic-Info	Optional	Aux-Applic-Info	Optional

Table 66: Mapping of M-Read-Orig.ind Header Fields to MM1_read_reply_originator.REQ Information Elements

l) Mapping between Header Fields of the WAP MMS PDU M-Forward.req and the 3GPP MMS Abstract Message MM1_forward.REQ

The following table describes the relationship between the WAP MMS PDU M-Forward.req and the corresponding 3GPP MMS abstract message MM1_forward.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Forward.req		MM1_forward.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
To	Optional ¹	Recipient address	Mandatory
Cc	Optional ¹		
Bcc	Optional ¹		

¹ At least one of the To, Cc, or Bcc fields MUST appear

From	Mandatory	Forwarding address	Optional
Date	Optional	Date and time	Optional
X-Mms-Expiry	Optional	Time of Expiry	Optional
X-Mms-Delivery-Time	Optional	Earliest delivery time	Optional
X-Mms-Report-Allowed	Optional	-	-
X-Mms-Delivery-Report	Optional	Delivery report	Optional
X-Mms-Read-Report	Optional	Read reply	Optional
X-Mms-Store	Optional	Store	Optional
X-Mms-MM-State	Optional	MM State	Optional
X-Mms-MM-Flags	Optional	MM Flags	Optional
X-Mms-Content-Location	Mandatory	Message Reference	Mandatory
X-Mms-Reply-Charging	Optional	Reply-Charging	Optional
X-Mms-Reply-Charging-Deadline	Optional	Reply-Deadline	Optional
X-Mms-Reply-Charging-Size	Optional	Reply-Charging-Size	Optional

Table 67: Mapping of M-Forward.req Header Fields to MM1_forward.REQ Information Elements

m) Mapping between Header Fields of the WAP MMS PDU M-Forward.conf and the 3GPP MMS Abstract Message MM1_forward.RES

The following table describes the relationship between the WAP MMS PDU M-Forward.conf and the corresponding 3GPP MMS abstract message MM1_forward.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Forward.conf		MM1_forward.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Response-Status	Mandatory	Request Status	Mandatory
X-Mms-Response-Text	Optional	Request Status Text	Optional
Message-ID	Optional	Message-ID	Mandatory

X-Mms-Content-Location	Optional	Stored Message Reference	Conditional
X-Mms-Store-Status	Optional	Store Status	Conditional
X-Mms-Store-Status-Text	Optional	Store Status Text	Optional

Table 68: Mapping of M-Forward.conf Header Fields to MM1_forward.RES Information Elements

n) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Store.req and the 3GPP MMS Abstract Message MM1_mmbox_store.REQ

The following table describes the relationship between the WAP MMS PDU M-Mbox-Store.req and the corresponding 3GPP MMS abstract message MM1_mmbox_store.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Store.req		MM1_mmbox_store.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-MM-State	Optional	MM State	Optional
X-Mms-MM-Flags	Optional	MM Flags	Optional
X-Mms-Content-Location	Mandatory	Message Reference	Mandatory

Table 69: Mapping of M-Mbox-Store.req Header Fields to MM1_mmbox_store.REQ Information Elements

o) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Store.conf and the 3GPP MMS Abstract Message MM1_mmbox_store.RES

The following table describes the relationship between the WAP MMS PDU M-Mbox-Store.conf and the corresponding 3GPP MMS abstract message MM1_mmbox_store.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Store.conf		MM1_mmbox_store.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Content-Location	Optional	Stored Message Reference	Mandatory
X-Mms-Store-Status	Mandatory	Store Status	Mandatory

X-Mms-Store-Status-Text	Optional	Store Status Text	Optional
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Table 70: Mapping of M-Mbox-Store.conf Header Fields to MM1_mmbox_store.RES Information Elements

p) Mapping between Header Fields of the WAP MMS PDU M-Mbox-View.req and the 3GPP MMS Abstract Message MM1_mmbox_view.REQ

The following table describes the relationship between the WAP MMS PDU M-Mbox-View.req and the corresponding 3GPP MMS abstract message MM1_mmbox_view.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-View.req		MM1_mmbox_view.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-MM-State	Optional	Select	Optional
X-Mms-MM-Flags	Optional		
X-Mms-Content-Location	Optional	Message Reference list	Optional
X-Mms-Start	Optional	Start	Optional
X-Mms-Limit	Optional	Limit	Optional
X-Mms-Attributes	Optional	Attributes list	Optional
X-Mms-Totals	Optional	Totals	Optional
X-Mms-Quotas	Optional	Quotas	Optional

Table 71: Mapping of M-Mbox-View.req Header Fields to MM1_mmbox_view.REQ Information Elements

q) Mapping between Header Fields of the WAP MMS PDU M-Mbox-View.conf and the 3GPP MMS Abstract Message MM1_mmbox_view.RES

The following table describes the relationship between the WAP MMS PDU M-Mbox-View.conf and the corresponding 3GPP MMS abstract message MM1_mmbox_view.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox_View.conf		MM1_mmbox_view.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory

X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-MM-State	Optional	Select	Optional
X-Mms-MM-Flags	Optional		
X-Mms-Content-Location	Optional	-	-
X-Mms-Start	Optional	Start	Optional
X-Mms-Limit	Optional	Limit	Optional
X-Mms-Attributes	Optional	Attributes list	-Optional
X-Mms-Response-Status	Mandatory	Request Status	Conditional
X-Mms-Response -Text	Optional	Request Status Text	Optional
X-Mms-Mbox-Totals	Optional	Totals	Conditional
X-Mms-Mbox-Quotas	Optional	Quotas	Conditional
X-Mms-Message-Count	Optional	-	-
(Message Body)		MM Listing	Conditional

Table 72: Mapping of M-Mbox-View.conf Header Fields to MM1_mmbox_view.RES Information Elements

r) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Upload.req and the 3GPP MMS Abstract Message MM1_mmbox_upload.REQ

The following table describes the relationship between the WAP MMS PDU M-Mbox-Upload.req and the corresponding 3GPP MMS abstract message MM1_mmbox_upload.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Upload.req		MM1_mmbox_upload.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
PDU Content	Optional	Recipient address	Optional
PDU Content	Optional	Sender address	Optional
PDU Content	Optional	Date and time	Optional
PDU Content	Optional	Subject	Optional
PDU Content	Optional	Time of Expiry	Optional
PDU Content	Optional	Earliest delivery time	Optional
PDU Content	Optional	Priority	Optional

PDU Content	Optional	Message Class	Optional
X-Mms-MM-State	Optional	MM State	Optional
X-Mms-MM-Flags	Optional	MM Flags	Optional
Content-Type	Mandatory	Content type	Mandatory
(Message Body)		Content	Mandatory

Table 73: Mapping of M-Mbox-Upload.req Header Fields to MM1_mmbox_upload.REQ Information Elements

s) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Upload.conf and the 3GPP MMS Abstract Message MM1_mmbox_upload.RES

The following table describes the relationship between the WAP MMS PDU M-Mbox-Upload.conf and the corresponding 3GPP MMS abstract message MM1_mmbox_upload.RES

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Upload.conf		MM1_mmbox_upload.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Content-Location	Optional	Message Reference	Mandatory
X-Mms-Store-Status	Mandatory	Request Status	Mandatory
X-Mms-Store-Status-Text	Optional	Request Status Text	Optional

Table 74: Mapping of M-Mbox-Upload.conf Header Fields to MM1_mmbox_upload.RES Information Elements

t) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Delete.req and the 3GPP MMS Abstract Message MM1_mmbox_delete.REQ

The following table describes the relationship between the WAP MMS PDU M-Mbox-Delete.req and the corresponding 3GPP MMS abstract message MM1_mmbox_delete.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Delete.req		MM1_mmbox_delete.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory

X-Mms-Content-Location	Mandatory	Message Reference	Mandatory
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Table 75: Mapping of M-Mbox-Delete.req Header Fields to MM1_mmbox_delete.REQ Information Elements

u) Mapping between Header Fields of the WAP MMS PDU M-Mbox-Delete.conf and the 3GPP MMS Abstract Message MM1_mmbox_delete.RES

The following table describes the relationship between the WAP MMS PDU M-Mbox-Delete.conf and the corresponding 3GPP MMS abstract message MM1_mmbox_delete.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Mbox-Delete.conf		MM1_mmbox_delete.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Response-Status	Mandatory	Request Status	Mandatory
X-Mms-Response-Text	Optional	Request Status Text	Optional
X-Mms-Content-Location	Optional	Message reference	Conditional

Table 76: Mapping of M-Mbox-Delete.conf Header Fields to MM1_mmbox_delete.RES Information Elements

v) Mapping between Header Fields of the WAP MMS PDU M-Delete.req and the 3GPP MMS Abstract Message MM1_delete.REQ

The following table describes the relationship between the WAP MMS PDU M-Delete.req and the corresponding 3GPP MMS abstract message MM1_delete.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Delete.req		MM1_delete.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Content-Location	Mandatory	Message Reference	Mandatory

Table 77: Mapping of M-Delete.req Header Fields to MM1_delete.REQ Information Elements

w) Mapping between Header Fields of the WAP MMS PDU M-Delete.conf and the 3GPP MMS Abstract Message MM1_delete.RES

The following table describes the relationship between the WAP MMS PDU M-Delete.conf and the corresponding 3GPP MMS abstract message MM1_delete.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Delete.conf		MM1_delete.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Response-Status	Mandatory	Request Status	Mandatory
X-Mms-Response-Text	Optional	Request Status Text	Optional
X-Mms-Content-Location	Optional	Message Reference	Mandatory

Table 78: Mapping of M-Delete.conf Header Fields to MM1_delete.RES Information Elements

x) Mapping between Header Fields of the WAP MMS PDU M-Cancel.req and the 3GPP MMS Abstract Message MM1_cancel.REQ

The following table describes the relationship between the WAP MMS PDU M-Cancel.req and the corresponding 3GPP MMS abstract message MM1_cancel.REQ.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Cancel.req		MM1_cancel.REQ	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Cancel-ID	Mandatory	Cancel ID	Mandatory

Table 79: Mapping of M-Cancel.req Header Fields to MM1_cancel.REQ Information Elements

y) Mapping between Header Fields of the WAP MMS PDU M-Cancel.conf and the 3GPP MMS Abstract Message MM1_cancel.RES

The following table describes the relationship between the WAP MMS PDU M-Cancel.conf and the corresponding 3GPP MMS abstract message MM1_cancel.RES.

WAP MMS PDU		3GPP MMS Abstract Message	
M-Cancel.conf		MM1_cancel.RES	
Header Field Name	Presence	Information Element	Presence
X-Mms-Message-Type	Mandatory	Message Type	Mandatory
X-Mms-Transaction-ID	Mandatory	Transaction ID	Mandatory
X-Mms-MMS-Version	Mandatory	MMS Version	Mandatory
X-Mms-Cancel-Status	Optional	Request Status	Optional

Table 80: Mapping of M-Cancel.conf Header Fields to MM1_cancel.RES Information Elements

Appendix D. String Representation of MMS PDU Header Field Values

This appendix is informative.

This appendix contains string representations for some of the header field values in the PDUs described in this specification. String representation must not be used over MMS_M when binary encoding is available, the string representation in the table below is provided only to give an end to end description of MMS in conjunction with Appendix C and [TS23140] for 3GPP and [XS0016200] for 3GPP2.

The string representations are expressed using the tokens defined in [RFC2616]. In some cases direct references are made to [RFC2822] and the tokens defined there.

MMS _M Header Field Name	Encoding of header field values over MMS _M	String Representation in [TS23140] for 3GPP and [XS0016200] for 3GPP2
X-Mms-Applic-ID	text-string	*TEXT
X-Mms-Aux-Applic-Info	text-string	*TEXT
Content-type	according to [WAPWSP]	content-type
Date	long-integer	[RFC2822]date-time
X-Mms-Delivery-report	<Octet 128>	“Yes”
	<Octet 129>	“No”
X-Mms-Expiry	long-integer	HTTP-date delta-seconds
From	address-token encoded-string	[RFC2822]mailbox
X-Mms-Message-class	<Octet 128>	“Personal”
	<Octet 129>	“Advertisement”
	<Octet 130>	“Informational”
	<Octet 131>	“Auto”
Message-ID	text-string	quoted-string
X-Mms-Previously-Sent-By	integer encoded-string	(1*DIGIT “,” [RFC2822]address)
X-Mms-Previously-Sent-Date	integer long-integer	(1*DIGIT “,” [RFC2822]date-time)
X-Mms-Priority	<Octet 128>	“Low”
	<Octet 129>	“Normal”
	<Octet 130>	“High”
X-Mms-Read-Report	<Octet 128>	“Yes”
	<Octet 129>	“No”
X-Mms-Reply-Applic-ID	text-string	*TEXT
X-Mms-Read-Status	<Octet 128>	“Read”
	<Octet 129>	“Deleted without being read”
X-Mms-Sender-visibility	<Octet 128>	“Yes”
	<Octet 129>	“No”
X-Mms-Status	<Octet 128>	“Expired”
	<Octet 129>	“Retrieved”
	<Octet 130>	“Rejected”
	<Octet 131>	“Deferred”
	<Octet 132>	“Unrecognised”
	<Octet 133>	“Indeterminate”
<Octet 134>	“Forwarded”	

Subject	text-string	*TEXT
To	encoded-string	[RFC2822]address
Cc	encoded-string	[RFC2822]address
Bcc	encoded-string	[RFC2822]address

Table 81: String Representation of MMS PDU Header Field values