

Work Item Submission Form

Please find below the Rel-6 tasks from T2 which are not complete.

Work Area / Item:		All tasks are related to the three MMS work items: <ul style="list-style-type: none"> - MMS Enhancements - Support of private addressing schemes in MMS - Multiple Relay/Server architecture 			
Affects:	UE/MS: X	CN: X	UTRAN:	Compatibility Issues:	Yes: No:
Expected Completion Date:		December 2004			
Services impacted:		MMS, IMS Messaging			
Specifications affected:		3GPP TS 23.140, TS 29.140			
Tasks within work which are not complete:		<p>Completion planned for TSG-T#26 (December 2004)</p> <ul style="list-style-type: none"> - Deletion of Deferred MM on MM1 (attached for information: T2-040361 draft CR 23.140 Rel-6) - Replacing Multimedia Message in Recipient Terminal on MM1/MM7 (attached for information: T2-040353 draft CR 23.140 Rel-6) - Private addressing schemes for MMS: (presented for information at this meeting: 3GPP TS 29.140 v1.0.0 on MM10 interface based on Diameter protocol - Stage 3) – Relates to WI “Private Addressing” <p>Completion envisaged by T#26 feasibility uncertain because of lack of input</p> <ul style="list-style-type: none"> - Support for IMS Messaging deferred mode - Multiple Relay/Server architecture <p>Completion no longer planned because of lack of input</p> <ul style="list-style-type: none"> - Support for security and privacy enhancements 			
Consequences if not included in Release 6:		<ul style="list-style-type: none"> - Deletion of deferred MM and replacing MM in recipient terminal not possible for VASPs though needed in the market place - Private addressing not implementable (no stage 3) though functionality (stage 2) complete - no realisation of IMS messaging deferred mode nor support for multiple Relay/Server architecture 			
Accepted by TSG#		for late inclusion in Release 6:			

CHANGE REQUEST

⌘ **23.140 CR CRNum** ⌘ rev - ⌘ Current version: **6.6.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Replacing and Cancelling Multimedia Message in Recipient Terminal		
Source:	⌘ Nokia, Ericsson		
Work item code:	⌘ MMS6	Date:	⌘ 27/08/2004
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change: ⌘ The current MM7 Cancel function act solely at the MMS R/S level. So, a VAS/VASP Cancellation post notification will not delete an MM already downloaded to the terminal.

Replacing Content is limited in the MMS Relay/Server now, making it useless in most of the cases. VASP is expected to provide time-sensitive contents (e.g. status of stock market, weather situation/forecast, traffic situation/forecast, status of a game) to the user. The old/expired information may not remain informative to many users. Moreover, the old/expired message is expected to unnecessarily occupy memory space in a terminal. So, it would be useful for both the users and terminal to extend the feature of replaing content to the recipient, so that MMS User Agent have a means to delete any unwanted old/expired message.

Summary of change: ⌘ Define new PDUs that will allow the Cancel to impact the MM downloaded by the terminal. Two parallel solutions are proposed in the CR for extending the cancel function to MMS User Agent over MM1 – one using new information element in the existing notification PDU, while the other uses newly proposed PDU. The alternatives are under investigation now in T2, and one solution would be removed in due time.

It is proposed to extend the scope of the replacing content to the recipient MMS User Agent, so that MMS User Agent can replace old/expired message by a new message. It is optional, as old/expired message might be already removed by a user. Moreover, some users might be interested about old information (e.g. to know the pattern of change in share price of a company, to know when/who scored a goal in a football match). There could be a terminal setting, which could be used by a user to forbid any automatic replacement of an old message.

Consequences if not approved: ⌘ Current MM7 Cancel and Replace functions maintained.
 The scope of the Cancel & Replacing content remain so narrow that in most of the cases the feature remain inapplicable.

Clauses affected: ⌘ 5.1.1, 7.1, 8.1 8.1.4.3, 8.1.4.4, 8.1.5.3, 8.1.5.4, 8.7, 8.7.9, Annex C, Annex K

	Y	N		
Other specs affected:	X		Other core specifications	⌘ OMA MMS Specs, 32.270
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5 Functional Description of Involved MMS Elements

5.1 MMS User Agent

5.1.1 MMS User Agent operations

The MMS User Agent shall provide the following application layer functionalities:-

- the retrieval of MMs (initiate MM delivery to the MMS User Agent);
- terminal capability negotiation.

The MMS User Agent may provide additional application layer functionalities such as:-

- the MM composition ;
- the presentation of the MM Size (as defined in clause 4.4) prior to MM submission;
- the MM submission;
- the MM presentation;
- the presentation of notifications to the user;
- the signing of an MM on an end-user to end-user basis;
- the decryption and encryption of an MM on an end-user to end-user basis;
- all aspects of storing MMs on the terminal;
- handling of MMS-related information on the (U)SIM;
- management and presentation of MMBox content;
- the handling of external devices;
- the user profile management;
- [replacing a previously retrieved MM with a newly retrieved MM;](#)
- [cancelling a previously retrieved MM.](#)

This optional list of additional functionalities of the MMS User Agent is not exhaustive.

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7 MMS Service Behaviour Description

7.1 MMS services offered

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7.1.3 Retrieval of a Multimedia Message in the recipient MMSE

The recipient MMS User Agent shall be able to request retrieval of an MM from the recipient MMS Relay/Server based on the Message Reference received in a notification. If MMBoxes are supported, the MMS User Agent shall be able to request retrieval of an MM from the user's MMBox, based on a Message Reference received from a previous MMBox operation.

Within a retrieval request the recipient MMS User Agent may indicate a size restriction of the returned MM (i.e., maximum size) that the MMS Relay/Server is to use in processing the retrieval request.

Upon retrieval request the recipient MMS Relay/Server

- shall deliver the MM to the recipient MMS User Agent
- may perform data adaptation based on user profile and/or MMS User Agent capabilities
- shall not provide the MM originator address to the MM recipient if the originator MMS User Agent requested its address to be hidden from the MM recipient
- shall provide the MM originator address to the MM recipient if the originator MMS User Agent did not request its address to be hidden from the MM recipient and if the MM originator address is available at the recipient MMS Relay/Server
- may provide an alias or clarifying text (e.g. “anonymous address” or “unknown address”) in the originator address field instead of providing the originator address to the recipient MMS User Agent, if the originator has requested address hiding or the original message does not contain the originator address
- shall give an indication to the recipient MMS User Agent that a delivery report is requested if such a delivery report has been requested by the originator MMS User Agent
- shall give an indication to the recipient MMS User Agent that a read-reply report is requested if such a read reply report has been requested by the originator MMS User Agent
- shall indicate the MIME content type of the MM to the recipient MMS User Agent
- shall provide other available message qualifications unaltered to the recipient MMS User Agent
- shall provide the time stamp of the MM unaltered to the recipient MMS User Agent
- shall store messages in the network until the recipient MMS User Agent becomes reachable (e.g. user moves back into coverage, switches MMS User Agent on) or until the MM expires
- should provide the recipient MMS User Agent with a list of addresses of forwarding MMS User Agents for the MM if the MM was forwarded and the address information is available to the recipient MMS Relay/Server
- should not deliver the MM (or any adaptation of the MM) to the recipient MMS User Agent unless the size restriction set by the MMS User Agent is met.
- may forward an indication coming from a VASP to the recipient MMS User Agent that the MM replaces the content of a specific previous MM.

Upon retrieving a new MM coming from a VASP, the recipient MMS User Agent should try to replace a previously retrieved MM as indicated in the newly retrieved MM. MMS User Agent may provide means (e.g. terminal setting) to a user to forbid such replacement.

In a response to an MM’s delivery the recipient MMS User Agent may be able to

- request a delivery report not to be generated by the MMS Relay/Server.

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7.1.x Cancellling of a Multimedia Message

This part of the MMS service describes the mechanism by which an MMS Relay/Server may request an MMS User Agent, that an MM which the MMS User Agent has already retrieved be cancelled. The MMS Relay/Server request shall be invoked by a similar request from a VASP.

The support for cancelling an MM from the recipient MMS User Agent is optional for both MMS User Agent and MMS Relay/Server.

When requesting an MM to be cancelled the MMS Relay/Server shall provide the identification of the MM to be cancelled.

Upon reception of a request from the MMS Relay/Server to cancel an MM, the MMS User Agent shall provide status information on the MM cancel request in the response.

8 MMS Application Protocol Framework and Technical Realisation of MMS Service Features

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8.1 Technical realisation of MMS on reference point MM1

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8.1.4 Multimedia Message Notification

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8.1.4.3 Features

Addressing: The MM originator address may be provided to the recipient MMS User Agent in the MM1_notification.REQ. The MM originator address shall not be provided to the recipient MMS User Agent if the MM originator has requested her address to be hidden from the MM recipient. In the case of forwarding, the address of the latest forwarding MMS User Agent shall be provided.

Time constraints: The recipient MMS User Agent shall be provided a time of expiry of the MM. In case of reply-charging the deadline for the latest time of submission of a reply-MM should be conveyed within the MM1_notification.REQ.

Reply-Charging: In case of reply-charging the MMS Relay/Server may indicate in the MM1_notification.REQ that a reply to the notified original MM is free of charge and the reply-charging limitations.

Message class, message size, priority and subject: The MM shall be qualified further by adding a message class and an approximate size to the MM in the MM1_notification.REQ. The MM may be qualified further by adding a priority and/or subject to the MM. Additional qualifiers may be added.

Reporting: If the originator MMS User Agent has requested to have a delivery report, the recipient MMS Relay/Server may convey this information to the recipient MMS User Agent in the MM1_notification.REQ. The recipient MMS User Agent may indicate in the MM1_notification.RES that it would not wish a delivery report to be created.

Identification: In case of reply-charging when a reply-MM is notified within the MM1_notification.REQ the MMS Relay/Server should convey the identification of the original MM replied to within the same MM1_notification.REQ.

Persistent storage: When the MMBox is configured such that incoming MMs are stored automatically, the MM1_notification.REQ shall contain the Stored information element.

Message Reference: The recipient MMS Relay/Server shall always provide a reference, e.g., URI, for the MM in the MM1_notification.REQ. When incoming MMs are stored automatically, the Message Reference will refer to the newly stored MM within the MMBox.

MM Status: The recipient MMS User Agent may indicate in the MM1_notification.RES how it intends the MM to be handled, e.g. the immediate rejection of the MM.

MM element descriptor: The recipient MMS Relay/Server may provide one or more description(s) of message elements in the MM1_notification.REQ. A description shall contain a reference to the message element, e.g. a URI, an

index number etc.. A description of a message element may be further qualified by adding one or more of such parameters as:

- name of the message element
- type and format of the message element
- approximate size of the message element

Message Distribution Indication: The VASP may indicate whether the content of the MM is intended for redistribution.

NOTE: From REL-6 onwards, in case of misalignment, DRM-protection rules shall prevail over the Message Distribution Indication feature.

Transaction Identification: The originator MMS Relay/Server shall provide an unambiguous transaction identification within a request. The response shall unambiguously refer to the corresponding request using the same transaction identification.

Version: The MMS protocol shall provide unique means to identify the current version of the particular protocol environment.

Message Type: The type of the message used on the reference point MM1 indicating MM1_notification.REQ and MM1_notification.RES as such.

MM recommended retrieval mode: the MMS Relay/Server may include an indication about the recommended manual retrieval mode of the MM. This indication code may be supported with an explanatory text (e.g. indication about charging related information if recipient has to pay for the retrieval or roaming condition) further expliciting why the manual retrieval mode is recommended for the MM.

[Replace identification: If requested by a VASP in MM7_replace.REQ, the MMS Relay/Server provides identification of a previous message, which is replaced by the MM associated with the notification.](#)

8.1.4.4 Information Elements

Table 1: Information elements in the MM1_notification.REQ.

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_notification.REQ
Transaction ID	Mandatory	The identification of the MM1_notification.REQ/MM1_notification.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS Relay/Server.
Message class	Mandatory	The class of the MM (e.g., personal, advertisement, information service; default = personal)
Message size	Mandatory	The approximate size of the MM
Time of expiry	Mandatory	The time of expiry for the MM (time stamp).
Message Reference	Mandatory	a reference, e.g., URI, for the MM
Subject	Optional	The title of the whole MM.
Priority	Optional	The priority (importance) of the message.
Sender address	Conditional	The address of the MMS User Agent that most recently handled the MM, i.e. that either submitted or forwarded the MM. If the originator MMS User Agent has requested her address to be hidden from the recipient her address shall not be provided to the recipient.
Stored	Optional	Indicates that the MM was automatically stored into the MMBox.
Delivery report	Optional	Request for delivery report
Reply-Charging	Optional	Information that a reply to this particular original MM is free of charge.
Reply-Deadline	Optional	In case of reply-charging the latest time of submission of a reply granted to the recipient (time stamp).
Reply-Charging-Size	Optional	In case of reply-charging the maximum size of a reply-MM granted to the recipient.
Reply-Charging-ID	Optional	The identification of the original MM replied to if this notification indicates a reply-MM.
Element-Descriptor	Optional	The reference for an element of the MM, which may contain further information about the referenced element of the MM, e.g. the name, the size and/or the type and format of the message element
MM recommended retrieval mode	Optional	Indication that manual retrieval mode is recommended for this MM
Text explaining MM recommended retrieval mode	Optional	Description that explicits why the manual retrieval mode is recommended for the MM.
Message Distribution Indicator	Optional	If set to "false" the VASP has indicated that content of the MM is not intended for redistribution. If set to "true" the VASP has indicated that content of the MM can be redistributed (NOTE).
Cancel-ID¹²	Optional	Identifier of the previous message that is cancelled, as requested by a VASP.
Replace-ID	Optional	Identifier of the previous message that is replaced by the current message, if requested by a VASP
NOTE:	From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail.	

¹ Replace-ID and Cancel ID are mutually exclusive

² It is currently undecided if it is better to cover the Cancel ID request to the terminal via either the PDU MM1_Notification.REQ (Cancel ID) or a the PDU MM1_Cancel.Req.

Table 2: Information elements in the MM1_notification.RES.

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_notification.RES.
Transaction ID	Mandatory	The identification of the MM1_notification.REQ/MM1_notification.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS User Agent.
MM Status	Optional	The status of the MM's retrieval
Report allowed	Optional	Request to allow or disallow the sending of a delivery report to the MM originator

8.1.5 Retrieval of Multimedia Message

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8.1.5.3 Features

Message Reference: The recipient MMS User Agent shall provide a reference, e.g., URI, for the MM in the MM1_retrieve.REQ.

This reference was previously delivered to the MMS User Agent from MM1_notification.REQ, MM1_submit.RES, MM1_forward.RES, MM1_mmbox_view.RES, MM1_mmbox_upload.RES, or MM1_mmbox_store.RES. In the latter cases, the Message Reference will address an MM that resides in the MMBox.

Addressing: The MM originator address may be provided to the recipient MMS User Agent in the addressing-relevant information field of MM1_retrieve.RES. The MM originator address shall not be provided to the recipient MMS User Agent if the MM originator has requested her address to be hidden from the MM recipient. In the case of forwarding, the address of the latest forwarding MMS User agent shall be provided and the address(es) of the previous forwarding MMS User Agent(s) and the address of the originator MMS User Agent may be provided. One or several address(es) of the MM recipient(s) may be provided to the recipient MMS User Agent in the addressing-relevant information field(s) of the MM1_retrieve.RES.

Time stamping: The MM1_retrieve.RES shall carry the time and date of the most recent handling of the MM by an MMS User Agent (i.e. either submission or the most recent forwarding of the MM). In the case of forwarding, the MM1_retrieve.RES may in addition carry the time and date of the submission of the MM.

Time constraints: In case of reply-charging the deadline for the latest time of submission of a reply-MM shall be conveyed within the MM1_retrieve.RES.

Message class, priority and subject: Information about class, priority, subject of the MM shall be included in the MM1_retrieve.RES according to their presence and value received at the MMS Relay/Server. Information about additional end-to-end qualifiers of the MM should be included in the MM1_retrieve.RES according to their presence and value received at the MMS Relay/Server.

Reporting: If the originator MMS User Agent has requested to have a read-reply report, the recipient MMS Relay/Server shall convey this information in the MM1_retrieve.RES. If the originator MMS User Agent has requested to have a delivery report, the recipient MMS Relay/Server may convey this information to the recipient MMS User Agent in the MM1_retrieve.RES.

If a request for a delivery report is included in the MM1_retrieve.RES the recipient MMS User Agent shall convey the information whether it accepts or denies the sending of a delivery report to the MM originator in MM1_acknowledgement.REQ.

If a delivery report is not requested, it is up to the recipient MMS User Agent to include this information in MM1_acknowledgement.REQ or not.

Reply-Charging: In case of reply-charging the MMS Relay/Server should indicate in the MM1_retrieve.RES that a reply to this particular original MM is free of charge and the reply-charging limitations.

Identification: The MMS Relay/Server shall provide a message identification for a message, which it has accepted for delivery in the MM1_retrieve.RES. In case of reply-charging the MMS Relay/Server shall provide the message ID of the original MM which is replied to in the MM1_retrieve.RES.

Persistent storage: In the MM1_retrieve.RES, the MMS Relay/Server shall convey the MM State and/or MM Flags information elements if they have been previously set for the persistently stored MM.

Content Type: The type of the MM's content shall always be identified in the MM1_retrieve.RES.

Content: The content of the multimedia message if added by the originator MMS User Agent of the MM may be conveyed in the MM1_retrieve.RES.

Request Status: In case of normal operation the recipient MMS Relay/Server may indicate in the MM1_retrieve.RES that the retrieval of the MM was processed correctly. In case of abnormal operation the recipient MMS Relay/Server shall indicate in the MM1_retrieve.RES the reason why the multimedia message could not be retrieved. The corresponding reason codes should cover application level errors (e.g. "the media format could not be converted", "insufficient credit for retrieval"). Lower layer errors may be handled by corresponding protocols.

The reason code given in the status information element of the MM1_retrieve.RES may be supported with an explanatory text further qualifying the status. If this text is available in the Request status text information element the MMS User Agent should bring it to the user's attention. The choice of the language used in the Request status text information element is at the discretion of the MMS service provider.

Previously-sent-by: The address(es) of the MMS User Agent(s) that submitted or forwarded the MM prior to the last forwarding MMS User Agent. In the multiple forwarding case the order of the provided addresses shall be indicated and the address of the originator MMS User Agent shall be indicated, if present.

NOTE: The address of the last forwarding MMS User Agent is carried in other addressing elements.

Message Distribution Indication: The VASP may indicate whether the content of the MM is intended for redistribution.

NOTE: From REL-6 onwards, in case of misalignment, DRM-protection rules shall prevail over the Message Distribution Indication feature.

Transaction Identification: The originator MMS User Agent shall provide unambiguous transaction identification within a request. The response shall unambiguously refer to the corresponding request using the same transaction identification.

Version: The MMS protocol shall provide unique means to identify the current version of the particular protocol environment.

Message Type: The type of the message used on the reference point MM1 indicating MM1_retrieve.RES and MM1_acknowledgement.REQ as such.

[Replace identification: If requested by a VASP in MM7_replace.REQ, the MMS Relay/Server provides identification of a previous message, which is replaced by the MM in the MM1_retrieve.RES.](#)

8.1.5.4 Information Elements

Table 3: Information elements in the MM1_retrieve.REQ

Information element	Presence	Description
Message Reference	Mandatory	Location of the content of the MM to be retrieved.

Table 4: Information elements in the MM1_retrieve.RES

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_retrieve.RES.
Transaction ID	Conditional	If the MMS Relay/Server requests an acknowledgement from the recipient MMS User Agent then the Transaction ID shall be present. It then identifies the MM1_retrieve.RES/MM1_acknowledgement.REQ messages.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS Relay/Server.
Message ID	Conditional	The message ID of the MM. Condition: this information element shall be present when the MM1_retrieve.RES contains the requested MM content.
Sender address	Conditional	The address of the MMS User Agent that most recently handled the MM, i.e. that either submitted or forwarded the MM. If the originator MMS User Agent has requested her address to be hidden from the recipient her address shall not be provided to the recipient.
Content type	Mandatory	The content type of the MM's content.
Recipient address	Optional	The address of the MM recipient. Multiple addresses are possible.
Message class	Optional	The class of the message (e.g., personal, advertisement, information service)
Date and time	Mandatory	The time and date of the most recent handling (i.e. either submission or forwarding) of the MM by an MMS User Agent (time stamp).
Delivery report	Conditional	A request for delivery report if a delivery report has been requested by the originator MMS User Agent.
Priority	Conditional	The priority (importance) of the message if specified by the originator MMS User Agent..
Read reply	Conditional	A request for read-reply report if the originator MMS User Agent of the MM has requested a read-reply report.
Subject	Conditional	The title of the whole multimedia message if specified by the originator MMS User Agent of the MM.
MM State	Conditional	The MM State. May be absent for incoming MMs; shall be present for persistently stored MMs
MM Flags	Optional	Present only for persistently stored MMs. One or more keyword flags, which shall be present if they have been previously set for the MM.
Request Status	Optional	The status of the MM retrieve request.
Request Status Text	Optional	Description which qualifies the status of the MM retrieve request.
Reply-Charging	Optional	Information that a reply to this particular original MM is free of charge.
Reply-Charging-ID	Optional	In case of reply-charging this is the identification of the original MM replied to.
Reply-Deadline	Optional	In case of reply-charging the latest time of submission of a reply granted to the recipient (time stamp).
Reply-Charging-Size	Optional	In case of reply-charging the maximum size of a reply-MM granted to the recipient.
Previously-sent-by	Optional	In case of forwarding this information element contains one or more address(es) of MMS User Agent(s) that handled (i.e. forwarded or submitted) the MM prior to the MMS User Agent whose address is contained in the Sender address information element. The order of the addresses provided shall be marked. The address of the originator MMS User Agent shall be marked, if present.
Previously-sent-date-and-time	Optional	The date(s) and time(s) associated with submission and forwarding event(s) prior to the last handling of the MM by an MMS User Agent (time stamp).
Message Distribution Indicator	Optional	If set to "false" the VASP has indicated that content of the MM is not intended for redistribution. If set to "true" the VASP has indicated that content of the MM can be redistributed. (NOTE)
Replace-ID	Conditional	Identifier of the previous message that is replaced by the current message, if requested by a VASP.

		Replace-ID and Cancel-ID are mutually exclusive It is currently undecided if it is better to convert the Cancellation request to the terminal via either the PDU MM1_Notification.REQ(Cancel ID) or a the PDU MM1_CancelReq.
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.
NOTE: From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail.		

Table 5: Information elements in the MM1_acknowledgement.REQ

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_acknowledgment.REQ.
Transaction ID	Conditional	If an acknowledgement is requested by the MMS Relay/Server then the Transaction ID shall be present. It then identifies the MM1_retrieve.RES/MM1_acknowledgement.REQ messages.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS User Agent.
Report allowed	Optional	Request to allow or disallow the sending of a delivery report to the MM originator

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8.1.x Cancelling a Multimedia Message

This part of the MMS service describes the mechanism by which an MMS Relay/Server may request an MMS User Agent, that an MM which the MMS User Agent has already retrieved be cancelled.

For cancelling purposes an MM cancel request shall always be requested by an MMS Relay/Server to an MMS User Agent. Request from a VASP to cancel an MM invokes the cancel request in the MMS Relay/Server. Involved abstract messages are outlined in Table x from type and direction points of view.

Table x: Abstract messages for cancelling an MM

<u>Abstract messages</u>	<u>Type</u>	<u>Direction</u>
<u>MM1_cancel.REQ</u>	<u>Request</u>	<u>MMS Relay/Server -> MMS UA</u>
<u>MM1_cancel.RES</u>	<u>Response</u>	<u>MMS UA -> MMS Relay/Server</u>

8.1.x.1 Normal operation

The MMS Relay/Server shall issue an MM1_cancel.REQ to the MMS User Agent, which contains the identification of the message to be cancelled. The MMS User Agent shall respond with an MM1_cancel.RES, which provides the status of the request.

The MM1_cancel.RES shall unambiguously refer to the corresponding MM1_cancel.REQ.

Support for MM1_cancel.REQ and MM1_cancel.RES is optional for both MMS User Agent and MMS Relay/Server.

8.1.x.2 Abnormal Operation

In this case the MMS User Agent shall respond with an MM1_cancel.RES encapsulating a status which indicates the reason the request for cancelling was not accepted, e.g. the MM is not available, denied by a user.

If the MMS User Agent does not provide the MM1_cancel.RES the MMS Relay/Server should be able to recover.

8.1.x.3 Features

Transaction Identification: The MMS Relay/Server shall provide an unambiguous transaction identification within a request. The response shall unambiguously refer to the corresponding request using the same transaction identification.

Version: The MMS protocol shall provide unique means to identify the current version of the particular protocol environment.

Message Type: The type of the message used on the reference point MM1 indicating MM1_cancel.REQ and MM1_cancel.RES as such.

Cancel ID: The MMS Relay/Server shall provide the identification of the original MM to be cancelled in the cancel request.

Request Status: The MMS User Agent shall provide the status of the request to the MMS Relay/Server in the MM1_cancel.RES.

8.1.x.4 Information Elements

Table x: Information elements in the MM1_cancel.REQ.

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_cancel.REQ.
Transaction ID	Mandatory	The identification of the MM1_cancel.REQ/MM1_cancel.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the forwarding MMS Relay/Server.
Cancel ID	Mandatory	Identifies the MM to be cancelled.

Table 6: Information elements in the MM1_cancel.RES.

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_cancel.RES.
Transaction ID	Mandatory	The identification of the MM1_cancel.REQ/MM1_cancel.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS User Agent.
Request Status	Mandatory	The status of the MM cancel request.

.....

8.7 Technical realisation of MMS on reference point MM7

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8.7.X Extended Cancel and Extended Replace of MM

This section details the requests that should be supported in MM7 to allow a VASP to control or change the distribution of a MM, down to the MMS User Agent. These operations will allow the VASP to cancel a submitted MM or replace a submitted MM with a new MM.

The involved abstract messages are outlined in Table x from type and direction points of view.

Table x: Abstract messages for controlling Distribution MM

<u>Abstract messages</u>	<u>Type</u>	<u>Direction</u>
<u>MM7_extended_cancel.REQ</u>	<u>Request</u>	<u>VASP -> MMS Relay/Server</u>
<u>MM7_extended_cancel.RES</u>	<u>Response</u>	<u>MMS Relay/Server -> VASP</u>
<u>MM7_extended_replace.REQ</u>	<u>Request</u>	<u>VASP -> MMS Relay/Server</u>
<u>MM7_extended_replace.RES</u>	<u>Response</u>	<u>MMS Relay/Server -> VASP</u>

The following figure illustrates the interaction between the different MMS entities in cancelling a VASP message.

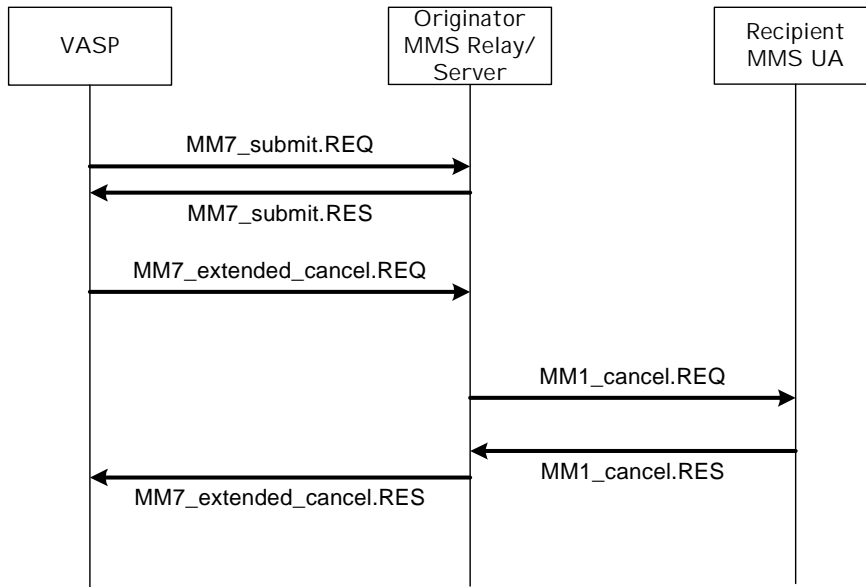


Figure x: Data flow of VASP cancelling a submitted message down to the MMS User Agent

8.7.x.1 Normal Operation

If the VASP has decided to cancel the delivery of a MM that it has already submitted, and wants to extend the cancellation to be effective also on an MM already downloaded by the terminal, then the VASP should indicate this by sending the MM7_extended_cancel.REQ message to the MMS Relay/Server. The MMS Relay/Server should check the status of the message indicated by the Cancel ID and: 1) locally cancel delivery, at the MMS Relay/Server level, to all destinations for which the MMS Relay/Server has not sent out a notification; 2) extend that cancellation down to the MMS User Agent, to all destinations for which the MMS Relay/Server has sent out a notification but the MM has not yet been retrieved, and 3) extend that cancellation down to the MMS User Agent, to all destinations for which the MM has already been retrieved. The MMS Relay/Server should respond to the request with a MM7_extended_cancel.RES indicating that the request was processed.

If the VASP has new content that it wishes to submit in place of the content that was originally submitted, and wants to extend the replacement to be effective also on an MM already downloaded by the MMS User Agent it should submit the new replacement content using the MM7_extended_replace.REQ message. The MMS Relay/Server should: 1) check the status of the message indicated by the Message ID and replace the message content for all destinations that have not retrieved or forwarded the message as yet; and 2) extend that replacement down to the MMS User Agent, to all destinations that have not retrieved or forwarded the message; via sending an additional notification to the MMS User Agent. The MMS Relay/Server should redistribute the new content to the destination list from the original MM7_submit.REQ. Optional information elements that appear in the MM7_extended_replace.REQ message shall replace the corresponding information elements of the original submission (the VASP shall not replace any information

elements that were already provided in the previously sent notification), information elements that do not appear in the MM7_extended_replace.REQ message shall retain the original submission values.

Support for MM7_extended_cancel.REQ, MM7_extended_cancel.RES, MM7_extended_replace.REQ, and MM7_extended_replace.RES is optional for all MMS Relay/Server that support MM7.

8.7.x.2 Abnormal Operation

The MMS Relay/Server should reject a request to cancel or replace a message if it is unable to authorise the VAS to cancel or replace MMs, or find the Message ID indicated in the request, or cannot determine that the indicated message was originally submitted by the VASP.

8.7.x.3 Features

Authorisation: The VASP must supply its own identifier or the VAS identifier as part of the request.

Addressing: When replacing a previously sent message the replacement shall be addressed to the same recipients as the original being replaced.

Version: The MM7 protocol shall provide unique means to identify the version supported by both the MMS Relay/Server and VASP.

Message type: The type of message used on reference point MM7 indicating MM7_extended_cancel.REQ, MM7_extended_cancel.RES, MM7_extended_replace.REQ, and MM7_extended_replace.RES as such.

Transaction identification: The VASP shall provide an unambiguous transaction identification within a request. The response shall unambiguously refer to the corresponding request using the same transaction identification.

Service code: The VASP may mark the content of the message with a service code that may be transferred by the MMS Relay/Server in the form of charging information for use by the billing system to properly bill the user for the service being supplied.

Time stamping: The VASP may time stamp the MM.

Time constraints: The VASP may also request the earliest desired time of delivery of the MM to be changed.

Read reporting: The VASP may request a read-reply report when the user has viewed the MM.

Content adaptation restriction: The VASP may request that the content of the MM will not be subjected to content adaptation.

NOTE: In case of misalignment, DRM-protection rules shall prevail on the Content Adaptation Restriction feature.

Content type: The MIME type of the multimedia content shall always be identified in the MM7_extended_replace.REQ if content is replaced.

Content: The content of the multimedia message if provided by the VASP may be conveyed in the MM7_extended_replace.REQ.

Replace ID: When replacing a previously sent message, the VASP shall supply the identifier of the previous message.

Cancel ID: When cancelling a previously sent message, the VASP shall supply the identifier of the previous message.

Message identification: When replacing an MM that was retrieved or forwarded, the updated (replacing) message have different identification from the original (replaced) message. In this case, the MMS Relay/Server shall provide the new identification for the updated (replacing) MM in the MM7_extended_replace.RES. When replacing a MM that was neither retrieved nor forwarded, the updated message retains the identification of the original (replaced) message.

Request status: The MMS Relay/Server shall indicate the status of the request in the associated response.

8.7.x.4 Information Elements

Table x1: Information elements in the MM7_extended_cancel.REQ.

<u>Information element</u>	<u>Presence</u>	<u>Description</u>
<u>Transaction ID</u>	<u>Mandatory</u>	<u>The identification of the MM7_extended_cancel.REQ/MM7_cancel.RES pair.</u>
<u>Message type</u>	<u>Mandatory</u>	<u>Identifies this message as a MM7_cancelTerminal request.</u>
<u>MM7 version</u>	<u>Mandatory</u>	<u>Identifies the version of the interface supported by the VASP</u>
<u>VASP ID</u>	<u>Optional</u>	<u>Identifier of the VASP for this MMS Relay/Server.</u>
<u>VAS ID</u>	<u>Optional</u>	<u>Identifier of the originating application.</u>
<u>Sender address</u>	<u>Optional</u>	<u>The address of the MM originator.</u>
<u>Cancel ID</u>	<u>Mandatory</u>	<u>Identifier of the message to cancel.</u>
<u>Recipient Address</u>	<u>Optional</u>	<u>xxx</u>

Table x2: Information elements in the MM7_extended_cancel.RES.

<u>Information element</u>	<u>Presence</u>	<u>Description</u>
<u>Transaction ID</u>	<u>Mandatory</u>	<u>The identification of the MM7_extended_cancel.REQ/MM7_extended_cancel.RES pair.</u>
<u>Message type</u>	<u>Mandatory</u>	<u>Identifies this message as a MM7_cancel response.</u>
<u>MM7 version</u>	<u>Mandatory</u>	<u>Identifies the version of the interface supported by the MMS Relay/Server</u>
<u>Request Status</u>	<u>Mandatory</u>	<u>Status of the completion of the request.</u>

Table x3: Information elements in the MM7_extended_replace.REQ.

<u>Information element</u>	<u>Presence</u>	<u>Description</u>
<u>Transaction ID</u>	<u>Mandatory</u>	<u>The identification of the MM7_replace Terminal.REQ/MM7_replace Terminal.RES pair.</u>
<u>Message type</u>	<u>Mandatory</u>	<u>Identifies this message as a MM7_replace Terminal request.</u>
<u>MM7 version</u>	<u>Mandatory</u>	<u>Identifies the version of the interface supported by the VASP</u>
<u>VASP ID</u>	<u>Optional</u>	<u>Identifier of the VASP for this MMS Relay/Server.</u>
<u>VAS ID</u>	<u>Optional</u>	<u>Identifier of the originating application.</u>
<u>Recipient Address</u>	<u>Optional</u>	<u>Xxx</u>
<u>Service code</u>	<u>Optional</u>	<u>Information supplied by the VASP which may be included in charging information. The syntax and semantics of the content of this information are out of the scope of this specification.</u>
<u>Replace ID</u>	<u>Mandatory</u>	<u>This identifies the previously sent VAS/VASP MM that need to be replaced by this MM.</u>
<u>Date and time</u>	<u>Optional</u>	<u>The time and date of the submission of the MM (time stamp).</u>
<u>Earliest delivery time</u>	<u>Optional</u>	<u>The earliest desired time of delivery of the MM to the recipient (time stamp).</u>
<u>Delivery report</u>		
<u>Read reply</u>	<u>Optional</u>	<u>A request for confirmation via a read report to be delivered as described in section 8.1</u>
<u>Adaptations</u>	<u>Optional</u>	<u>Indicates if VASP allows adaptation of the content (default True)</u>
<u>Content type</u>	<u>Conditional</u>	<u>The content type of the MM's content. If the Content IE appears, then the Content type IE must appear. (NOTE 1)</u>
<u>Content</u>	<u>Optional</u>	<u>The content of the multimedia message</u>
<u>Message Distribution Indicator</u>	<u>Optional</u>	<u>If set to "false" the VASP has indicated that content of the MM is not intended for redistribution. If set to "true" the VASP has indicated that content of the MM can be redistributed. (NOTE 2)</u>
<u>NOTE 1: In case of misalignment between the value assigned to Adaptations and DRM-protection rules, the latter shall prevail.</u>		
<u>NOTE 2: In case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail.</u>		

Table x4: Information elements in the MM7 extended replace.RES.

Information element	Presence	Description
Transaction ID	Mandatory	The identification of the MM7 extended replace.REQ/ MM7 extended replace.RES pair.
Message type	Mandatory	Identifies this message as a MM7 extended replace.RES.
MM7 version	Mandatory	Identifies the version of the interface supported by the MMS Relay/Server
Message ID	Conditional	The MMS Relay/Server generated identification of the updated (replacing) message (applicable only if the replaced message is retrieved or forwarded).
Request Status	Mandatory	Status of the completion of the request.

.....

8.7.9.x MM7 extended cancel.REQ mapping

Information Element	Location	Element-name	Comments
Transaction ID	SOAP Header	TransactionID	
Message-Type	SOAP Body	MessageType	Defined as Root element of SOAP Body
MM7 Version	SOAP Body	MM7Version	Value is the number of the specification in which the schema has changed most recently, e.g. 5.2.0
VASP ID	SOAP Body	VASPID	
VAS ID	SOAP Body	VASID	
Sender Address	SOAP Body	SenderAddress	
Cancel ID	SOAP Body	Cancel ID	

8.7.9.x MM7 extended cancel.RES mapping

Information Element	Location	ElementName	Comments
Transaction ID	SOAP Header	TransactionID	
Message-Type	SOAP Body	MessageType	Defined as Root element of SOAP Body
MM7 Version	SOAP Body	MM7Version	Value is the number of the specification in which the schema has changed most recently, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.3
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.3

The following shows an interchange of a MM7 extended cancel.REQ and MM7 extended cancel.RES to illustrate a SOAP message that does not include a multimedia content part. ***All need to be made coherent with above***

```
POST /mms-rs/mm7 HTTP/1.1
Host: mms.omms.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: ""

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Header>
```

```

    <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-3"
env:mustUnderstand="1">
      vas0000-car
    </mm7:TransactionID>
  </env:Header>
  <env:Body>
    <CancelReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
3">
      <MM7Version>5.6.0</MM7Version>
      <SenderIdentification>
        <VASPID>TNN</VASPID>
        <VASID>Reminder</VASID>
      </SenderIdentification>
      <MessageID>mms00022222</MessageID>
    </CancelReq>
  </env:Body>
</env:Envelope>

HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Header>
    <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-3"
env:mustUnderstand="1">
      vas0000-car
    </mm7:TransactionID>
  </env:Header>
  <env:Body>
    <CancelRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
3">
      <MM7Version>5.6.0</MM7Version>
      <Status>
        <StatusCode>1000</StatusCode>
        <StatusText>Success</StatusText>
      </Status>
    </CancelRsp>
  </env:Body>
</env:Envelope>

```

8.7.9.x MM7 extended replace.REQ mapping

<u>Information Element</u>	<u>Location</u>	<u>ElementName</u>	<u>Comments</u>
Transaction ID	SOAP Header	TransactionID	
Message-Type	SOAP Body	MessageType	Defined as Root element of SOAP Body
MM7 Version	SOAP Body	MM7Version	Value is the number of the specification in which the schema has changed most recently, e.g. 5.2.0
VASP ID	SOAP Body	VASPID	
VAS ID	SOAP Body	VASID	
Sender address	SOAP Body	SenderAddress	
Message ID	SOAP Body	MessageID	
Service code	SOAP Body	ServiceCode	Information supplied for billing purposes – exact format is implementation dependent
Replaced ID	SOAP Body	MMReplaced ID	This identifies the previously sent VAS/VASP MM that need to be replaced by this MM
Date and time	SOAP Body	TimeStamp	
Earliest delivery time	SOAP Body	EarliestDeliveryTime	Date format – absolute or relative
Read reply	SOAP Body	ReadReply	Boolean – true or false
Adaptations	SOAP Body	allowAdaptations	Attribute of Content element Boolean – true or false
Content type	MIME part Header	Content-Type	
Content	SOAP Body	Content	href:cid attribute links to attachment
Message Distribution Indicator	SOAP Body	DistributionIndicator	Boolean – true or false

8.7.9.x MM7 extended replace.RES mapping

<u>Information Element</u>	<u>Location</u>	<u>ElementName</u>	<u>Comments</u>
Transaction ID	SOAP Header	Transaction-ID	
Message-Type	SOAP Body	Message-Type	Defined as Root element of SOAP Body
MM7 Version	SOAP Body	MM7-Version	Value is the number of the specification in which the schema has changed most recently, e.g. 5.2.0
Message ID	SOAP Body	MessageID	
Request status	SOAP Body	StatusCode	See section 8.7.8.3

.....

Annex C (informative): Charging Data Records

This annex describes information of MMs/abstract messages which may be required for inclusion into Charging Data Records (CDR's) for MMS for the purpose of Billing and Traceability in the operators post-processing system. Further details on the CDR content and transport for MMS are described in the 3GPP TS 32.270 [81].

This list may include:

- Message –ID of Multimedia Message
- Recipient address(es)
- Sender address
- Message size
- Time stamp for submission time, earliest delivery time and time of expiry
- Duration of transmission (for streaming purposes)
- Duration of storage (in the MMS Relay/Server)
- Type of message: (e.g. notification, message MM, delivery report, read-reply)
- Bearer type used
- Content information (e.g. audio, picture, video, text,)
- Message class (e.g. advertisement/informational)
- Delivery Report Request
- Read Reply Request
- Charging Indicator (e.g. Pre paid charging, Reply charging, Charged Party)
- MM7 service code
- MM Status (e.g. delivered, rejected, expired, delivery pending).
- Indication of forwarding
- Conversion of type and media
- Priority of the MM
- Linked ID
- VASP ID
- VAS ID
- Reply-Charging
- Content type
- Reply-Charging-ID
- Charged Party, Charged Party ID
- MCC + MNC
- [Replace ID](#)
- [Cancel ID](#)

The following information elements at least will be considered for the future.

-

- Identification if a message has been sent to a pre-defined group

NOTE: Some of the above fields may not be available in the MMS Relay/Server e.g. due to network implementation options. Also some fields may not be directly available from MMS Relay/Server CDRs but defined in the Charging and Billing system.

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Annex K (informative): MM1, MM4 <-> MM7 header mapping

This annex maps the abstract messages from MM1 and MM4 to MM7.

The abstract messages mapped between MM1 and MM7 are:

- MM1_Submit.REQ to the MM7_Deliver.REQ
- MM7_Submit.REQ to the MM1_Notification.REQ and the MM1_Retrieve.RES
- MM1_Read_Reply_Recipient.REQ to the MM7_Read_Reply_Report.REQ
- MM1_Forward.REQ to the MM7_Deliver.REQ
- [MM7_extended_cancel.REQ to the MM1_cancel.REQ](#)
- [MM7_extended_replace.REQ to the MM1_notification.REQ, and MM1_Retrieve.RES](#)

The abstract messages mapped between MM4 and MM7 are:

- MM4_Forward.REQ to the MM7_Deliver.REQ
- MM7_Submit.REQ to the MM4_Forward.REQ
- MM4_Delivery_Report.REQ to the MM7_Delivery_Report.REQ
- MM4_Read_Reply_Report.REQ to the MM7_Read_Reply.REQ

The tables below shows the mapping and are provided to give an end-to-end description of MMS. There is a table for each MM1, MM4 abstract message that maps to a MM7 abstract message. In many cases there is no mapping between MM1, MM4 and MM7 information elements, this is according to specifications. These information elements are included in the tables below in order to give a complete picture of how the information elements are handled.

There are also several abstract messages over MM1, MM4 that have no relevant mapping to MM7 and vice versa. These abstract messages are omitted from this annex.

Table K.x: Mapping MM7 extended replace.REQ -> MM1 notification.REQ, MM1 Retrieve.RES

<u>Information elements in MM7 extended replace.REQ</u>	<u>Information elements in MM1 notification.REQ</u>	<u>Information elements in MM1 retrieve.RES</u>
-	<u>Message Type</u>	-
-	<u>Transaction ID</u>	-
-	<u>MMS Version</u>	-
<u>Transaction ID</u>	-	-
<u>Message type</u>	-	-
<u>MM7 version</u>	-	-
<u>VASP ID</u>	-	-
<u>VAS ID</u>	-	-
<u>Replace ID</u>	<u>Replace-ID</u>	<u>Replace-ID</u>
<u>Service code</u>	-	-
<u>Date and time</u>	-	<u>Date and time</u>
<u>Earliest delivery time</u>	-	-
<u>Delivery report</u>	<u>-Delivery report</u>	<u>-Delivery report</u>
<u>Read reply</u>	-	<u>Read reply</u>
<u>Adaptations</u>	-	-
<u>Content type</u>	-	<u>Content type</u>
<u>Content</u>	-	<u>Content</u>
<u>Message Distribution Indicator</u>	<u>Message Distribution Indicator</u>	<u>Message Distribution Indicator</u>
-	<u>Message size</u>	-
-	<u>Time of expiry</u>	-
-	<u>Message Reference</u>	-
-	<u>Subject</u>	<u>Subject</u>
-	<u>Priority</u>	<u>Priority</u>
-	<u>Sender address</u>	<u>Sender address</u>
-	<u>Stored</u>	-
-	<u>Reply-Charging</u>	<u>Reply-Charging</u>
-	<u>Reply-Deadline</u>	<u>Reply-Deadline</u>
-	<u>Reply-Charging-Size</u>	<u>Reply-Charging-Size</u>
-	<u>Reply-Charging-ID</u>	<u>Reply-Charging-ID</u>
-	<u>Element-Descriptor</u>	-
-	<u>MM recommended retrieval mode</u>	-
-	<u>Text explaining MM recommended retrieval mode</u>	-
-	-	<u>Recipient address</u>
-	-	<u>Message class</u>
-	-	<u>Message ID</u>
-	-	<u>MM State</u>
-	-	<u>MM Flags</u>
-	-	<u>Request Status</u>
-	-	<u>Request Status Text</u>
-	-	<u>Previously-sent-by</u>
-	-	<u>Previously-sent-date-and-time</u>
-	-	<u>Message Type</u>
-	-	<u>Transaction ID</u>
-	-	<u>MMS Version</u>

Table K.x: Mapping MM7 extended cancel.REQ -> MM1 cancel.REQ

Information elements in MM1_cancel.REQ	Information elements in MM7_extended_cancel.REQ
-	Transaction ID
-	Message type
-	MM7 version
-	VASP ID
-	VAS ID
Cancel ID	Cancel ID
-	Recipient Address
Message Type	-
Transaction ID	-
MMS Version	-

CHANGE REQUEST

⌘ **23.140 CR CRNum** ⌘ rev - ⌘ Current version: **6.6.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Deletion of Deferred MM		
Source:	⌘ Ericsson		
Work item code:	⌘ MMS6	Date:	⌘ 26/08/2004
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Post MM deferral, it would be beneficial for the user to request the MMS R/S to delete the MM. This to cover the case where the recipient decides not to download the MM. It then allows the MMS R/S to free storage space, without having to wait for MM expiration.
Summary of change:	⌘ Define new PDUs that will request the MMS R/S to delete an MM.
Consequences if not approved:	⌘ MMS R/S storage space freed at MM expiration, even though it is known that the MM will not be retrieved until then.

Clauses affected:	⌘ New : 7.1, 8.1.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ OMA MMS 1.3
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.x Deletion of a Multimedia Message

This part of the MMS service describes the mechanism by which an MMS User Agent may request the corresponding MMS Relay/Server, to delete an MM.

The support for originating a request that a specific MM be deleted is optional for the MMS User Agent.

Upon reception of a request from the MMS User Agent to delete an MM, the MMS Relay/Server

- may free resources associated with this MM's Message Identification;
- shall provide status information on the MM deletion request to the MMS User Agent;

8 MMS Application Protocol Framework and Technical Realisation of MMS Service Features

This clause defines the application protocol framework and describes the technical realisation of MMS service features in terms of abstract messages. The abstract messages can be categorised into *transactions* consisting of *requests* and *responses*. The labelling of the MMS abstract messages follows these conventions:

- the transactions between the MMS UA and MMS Relay/Server are prefixed with "MM1";
- the transactions between the MMS Relay/Servers are prefixed with "MM4";
- the transactions between Value-Added Service Providers and the MMS Relay/Server are prefixed with "MM7";
- requests are identified with ".REQ" as a suffix;
- responses are identified with the ".RES" suffix.

Each abstract message carries with it certain information elements, which may vary according to the specific message. All messages shall carry, as information elements, a protocol version and message type, in order that the MMSE components may be able to properly identify and manage the message contents.

Specific information regarding the message encapsulation, including order, possible values, and encoding are beyond the scope of this clause. These details will be defined within each MMSE protocol environment.

The mapping of abstract messages to specific protocols is not necessarily a one-to-one relationship. Depending on the MMS Implementation (WAP etc.), one or more abstract messages may be mapped to a single lower layer PDU, and a single abstract message may be mapped to multiple lower layer PDUs, if the information carried in the PDU(s) serve the purpose of required information in the subjected abstract message(s).

In MM1 responses that provide a status information, the status information returned has no correspondence to the Status information returned in MM4 responses; they are independent of each other.

The MM1 response status, which are limited by design to as small a set of values as possible, may correlate to status and errors occurring within the communications protocols underlying the implementation of the MM4 abstract messages. Similarly, the MM4 status may correlate to those occurring within the communications protocols underlying the implementation of the MM1 abstract messages. The definition of these correlations is out of scope of the present document, and should be provided by the MMS implementations.

The MMS application protocol shall provide means to uniquely identify the version number and message type in each abstract message defined here. The order, possible values and encoding of the information elements for each abstract message are beyond the scope of this clause, and shall be dictated by the protocol environment.

The following figure shows an example abstract message flow when a multimedia message is sent from an originator MMS User Agent to a recipient MMS User Agent. The scope of this figure is limited to abstract messages on reference points MM1 and MM4 only.

Delivery reports are sent by the recipient MMS Relay/Server. Read-reply reports are sent by the recipient MMS User Agent.

Below are Figures 6 and 7. Figure 6 shows a typical transaction for an MMS User Agent submitting an MM addressed to an MMS User Agent serviced by another MMS Relay/Server. Figure 7 shows the abstract messages that may involve the MMBox. These figures are only examples, and do not show all possible transactions between a MMS User Agent and the MMS Relay/Server.

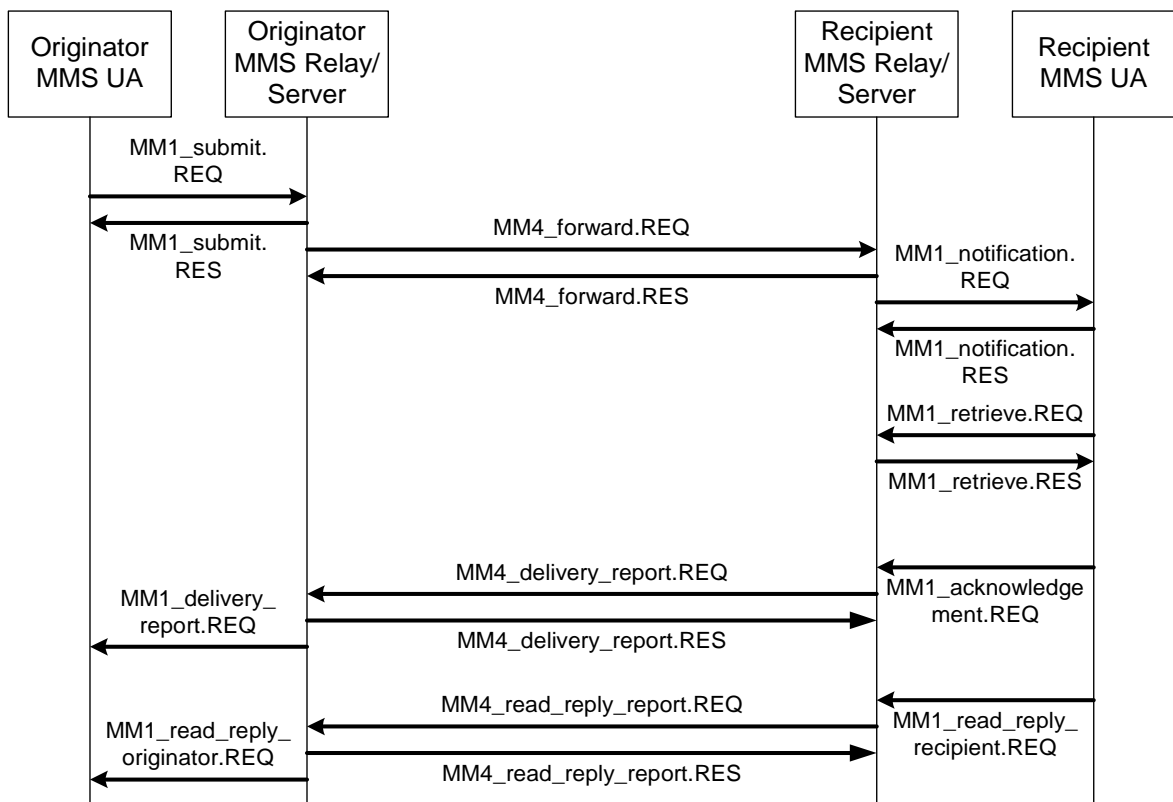
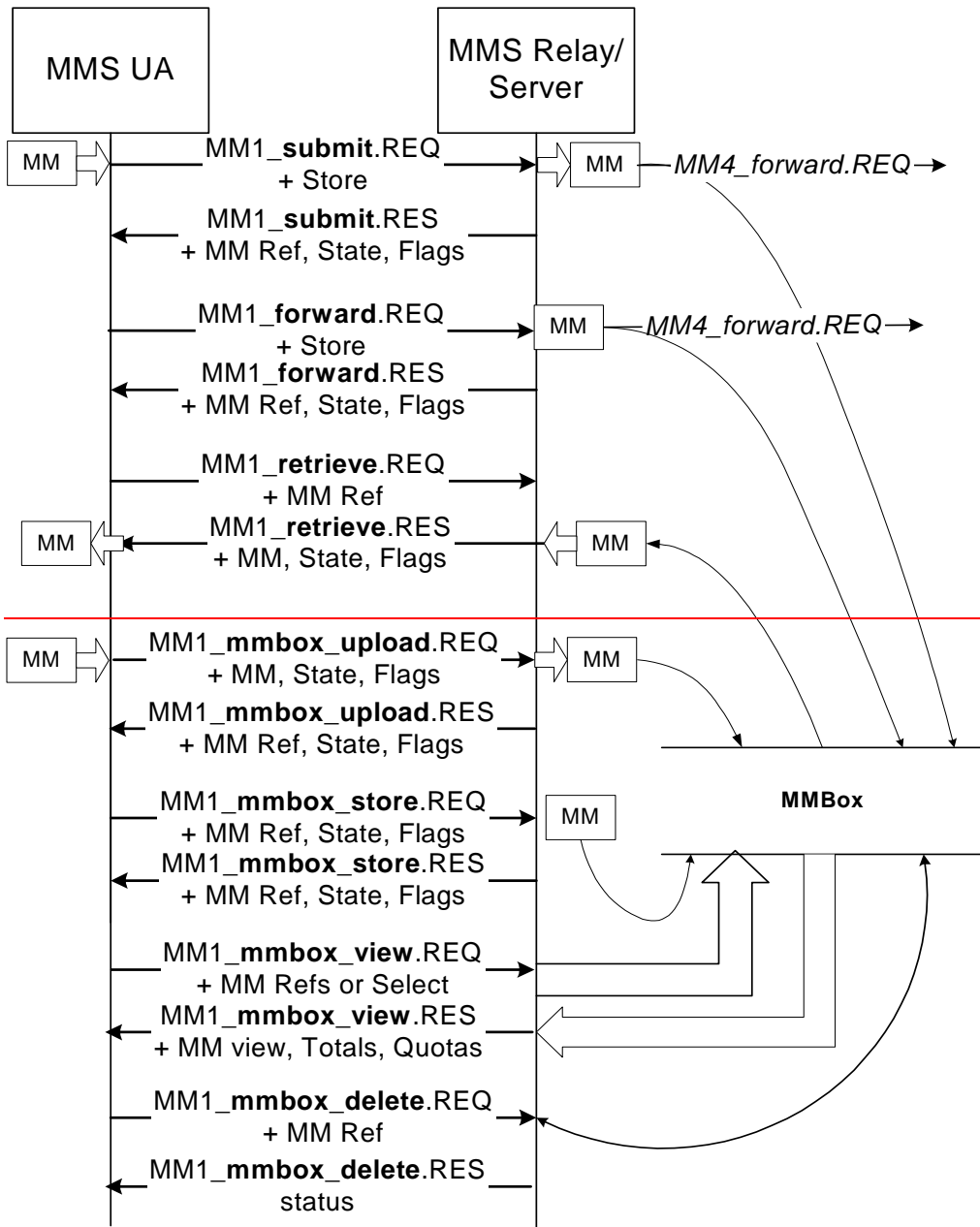


Figure 6: Example Abstract Message Flow



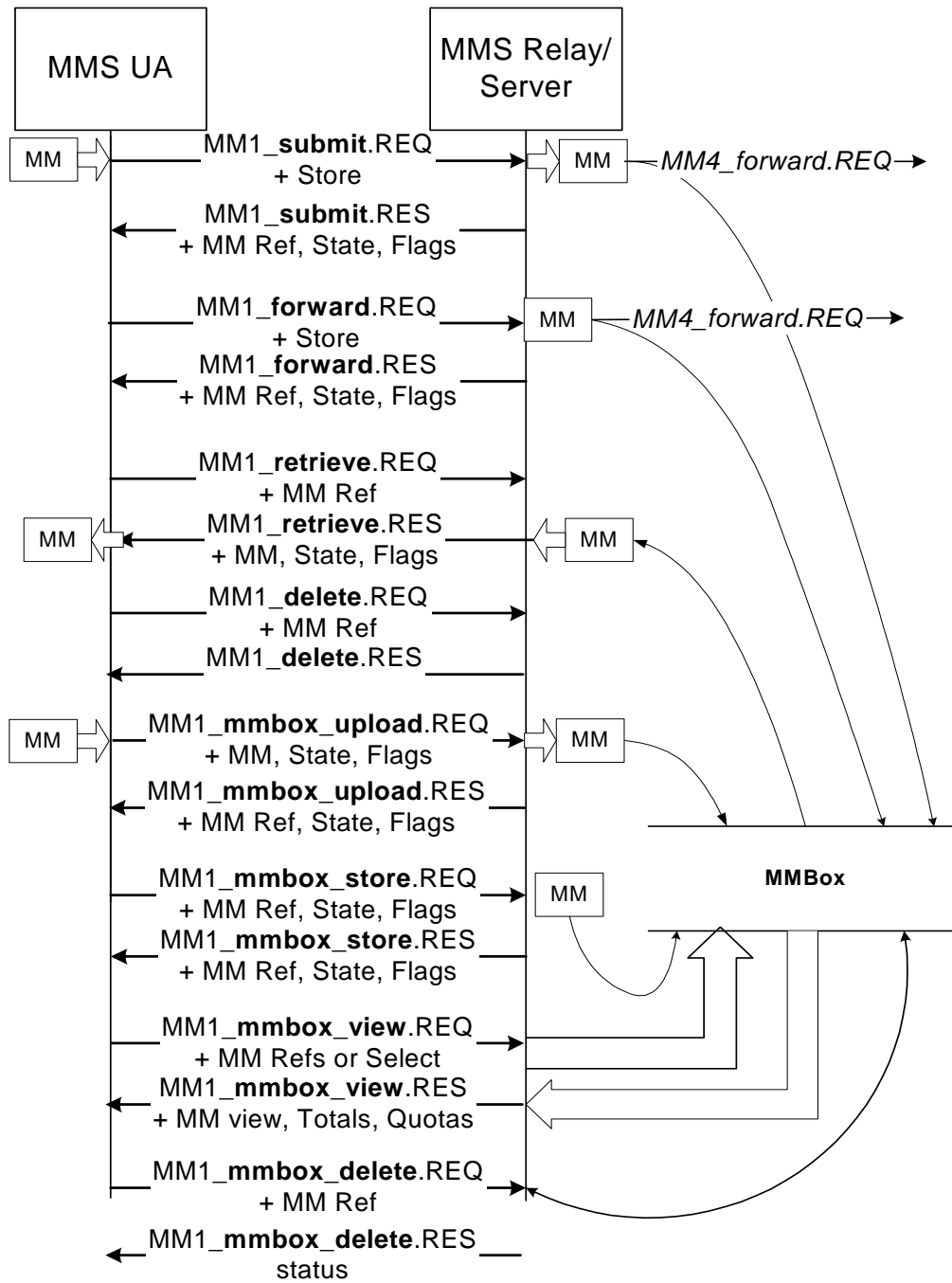


Figure 7: Example Abstract Message Flows with Persistent Storage

8.1.x Deletion of Multimedia Message

This part of MMS service covers the deletion of an MM. An MMS User Agent may request the MMS Relay/Server to delete an MM, post retrieval deferral. Involved abstract messages are outlined in Table x from type and direction points of view.

Table 1: Abstract messages for deletion of MM in MMS

<u>Abstract messages</u>	<u>Type</u>	<u>Direction</u>
<u>MM1_delete.REQ</u>	<u>Request</u>	<u>MMS UA -> MMS Relay/Server</u>
<u>MM1_delete.RES</u>	<u>Response</u>	<u>MMS Relay/Server -> MMS UA</u>

8.1.x.1 Normal operation

Post receipt of a notification and deferral of the retrieval, a recipient MMS User Agent may submit a deletion request to the originator MMS Relay/Server using the MM1_delete.REQ.

The MMS Relay/Server shall respond with an MM1_delete.RES, which provides the status of the request. The MM1_delete.RES shall unambiguously refer to the corresponding MM1_delete.REQ.

Support for MM1_delete.REQ is optional for the MMS UA, support for MM1_delete.RES is optional for the MMS Relay/Server.

8.1.x.2 Abnormal Operation

In this case the originator MMS Relay/Server shall respond with a MM1_delete.RES encapsulating a status which indicates the reason the multimedia message was not accepted, e.g. corrupt message structure, MM not available.

If the MMS Relay/Server does not provide the MM1_delete.RES the MMS User Agent should be able to recover.

8.1.x.3 Features

Message Reference: The recipient MMS User Agent shall always provide a reference to the recipient MMS Relay/Server, e.g., URI, for the MM in the MM1_Delete.REQ.

Version: The MMS protocol shall provide unique means to identify the current version of the particular protocol environment.

Message Type: The type of the message used on the reference point MM1 indicating MM1_Delete.REQ and MM1_Delete.RES as such.

Request Status: In case of normal operation the recipient MMS Relay/Server may indicate in the MM1_Delete.RES that the deletion of the MM was processed correctly. In case of abnormal operation the recipient MMS Relay/Server shall indicate in the MM1_Delete.RES the reason why the multimedia message could not be deleted. The corresponding reason codes should cover application level errors (e.g. "Message was not found Lower layer errors may be handled by corresponding protocols).

The reason code given in the status information element of the MM1_delete.RES may be supported with an explanatory text further qualifying the status. If this text is available in the Request status text information element the MMS User Agent should bring it to the user's attention. The choice of the language used in the Request status text information element is at the discretion of the MMS service provider.

8.1.x.4 Information Elements

Table x: Information elements in the MM1_Delete.REQ.

<u>Information element</u>	<u>Presence</u>	<u>Description</u>
<u>Message Type</u>	<u>Mandatory</u>	<u>Identifies this message as MM1_Delete.REQ</u>
<u>Transaction ID</u>	<u>Mandatory</u>	<u>The identification of the MM1_Delete.RES pair.</u>
<u>MMS Version</u>	<u>Mandatory</u>	<u>Identifies the version of the interface supported by the MMS Relay/Server.</u>
<u>Message Reference</u>	<u>Mandatory</u>	<u>A reference (e.g., URI, for the MM)</u>

Table X: Information elements in the MM1_Delete.RES.

<u>Information element</u>	<u>Presence</u>	<u>Description</u>
<u>Message Type</u>	<u>Mandatory</u>	<u>Identifies this message as MM1_Delete.RES.</u>
<u>Transaction ID</u>	<u>Mandatory</u>	<u>The identification of the MM1_Delete.REQ/MM1_Delete.RES pair.</u>
<u>MMS Version</u>	<u>Mandatory</u>	<u>Identifies the version of the interface supported by the MMS User Agent.</u>
<u>Request Status</u>	<u>Mandatory</u>	<u>The status of the MM Delete request</u>
<u>Request Status Text</u>	<u>Optional</u>	<u>Description which qualifies the status of the MM Delete request.</u>