3GPP TSG-T (Terminals) Meeting #19
Birmingham, UK
12 - 14 March, 2003

TP-030039

Agenda Item: 5.2.3

Source: T2

Title: Change Requests on MMS

Document for: Approval

Spec	CR	Rev	Rel	Subject	Cat	Vers-Current	Vers-New	T2 doc	Workitem
23.140	100	-	Rel-5	Transferring distribution indicator as part of message retrieval	F	5.5.0	5.6.0	T2-030052	MESS5-MMS
23.140	101	-	Rel-6	Transferring distribution indicator as part of message retrieval	A	6.0.0	6.1.0	T2-030186	MMS6
23.140	102	1	Rel-4	Conditional Usage of the Message-ID in MM1_Retrieve.RES	F	4.8.0	4.9.0	T2-030123	MMS
23.140	103	-	Rel-5	Conditional Usage of the Message-ID in MM1_Retrieve.RES	F	5.5.0	5.6.0	T2-030121	MESS5-MMS
23.140	104	-	Rel-6	Conditional Usage of the Message-ID in MM1_Retrieve.RES	A	6.0.0	6.1.0	T2-030122	MMS6
23.140	105		Rel-6	Recipient Handling on MM4	C	6.0.0	6.1.0	T2-030068	MMS6
23.140	106		Rel-5	Support of the “Bcc:” information element in the MM4 reference point.	F	5.5.0	5.6.0	T2-030077	MESS5-MMS
23.140	107	-	Rel-4	MMS UA behaviour regarding the MMS parameters on the (U)SIM	F	4.8.0	4.9.0	T2-030093	MMS
23.140	108	-	Rel-5	MM1 MMBox View Clarifications	F	5.5.0	5.6.0	T2-030124	MESS5-MMS
23.140	109	-	Rel-6	MM1 MMBox View Clarifications	A	6.0.0	6.1.0	T2-030125	MMS6
23.140	110	-	Rel-4	MM4_Read_reply_report processing refers to an incorrect message	F	4.8.0	4.9.0	T2-030129	MMS
23.140	111	-	Rel-5	MM4_Read_reply_report processing refers to an incorrect message	A	5.5.0	5.6.0	T2-030130	MESS5-MMS
23.140	112	-	Rel-6	MM4_Read_reply_report processing refers to an incorrect message	A	6.0.0	6.1.0	T2-030131	MMS6
23.140	113	-	Rel-5	Addition of missing field in table K6	F	5.5.0	5.6.0	T2-030132	MESS5-MMS
23.140	114	-	Rel-6	Addition of missing field in table K6	A	6.0.0	6.1.0	T2-030133	MMS6
23.140	115		Rel-5	Correcting definition of MM7 Version	F	5.5.0	5.6.0	T2-030193	MESS5-MMS
23.140	116		Rel-6	Correcting definition of MM7 Version	A	6.0.0	6.1.0	T2-030194	MMS6

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030052

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **100** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	Transferring distribution indicator as part of message retrieval
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	03/01/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	According to the current specification the DistributionIndicator field that originates from a MM7 submission, that suggests that the content media of the MM not be redistributed, is passed to the UA only as part of the MM1_notification.REQ. However, there is no requirement for the MMS UA to retain the information that is received during the notification. Therefore, the information that the VASP requested that the media content not be redistributed will be lost unless it is included in the MM information that is retrieved by the UA. This CR proposes to add the DistributionIndicator to the MM1_retrieve.RES. This is also suggested by the LS from OMA-MMDC (T2-030016)
Summary of change:	⌘	Addition of the DistributionIndicator to the MM1_retrieve.RES
Consequences if not approved:	⌘	Inconsistency with OMA MM1 specification and inconsistency in purpose of indicator.

Clauses affected:	⌘	Section 8.1.5 Annex K – Table K2

Other specs affected: ⌘	Y	N		⌘
	☐	☐	Other core specifications	
	☐	☐	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.

8.1.5 Retrieval of Multimedia Message

This part of MMS service covers the retrieval of an MM. For retrieval purposes an MM shall always be retrieved by the recipient MMS User Agent from the recipient MMS Relay/Server. Involved abstract messages are outlined in Table 7 from type and direction points of view.

Table 1: Abstract messages for retrieval of MM in MMS

Abstract messages	Type	Direction
MM1_retrieve.REQ	Request	MMS UA -> MMS Relay/Server
MM1_retrieve.RES	Response	MMS Relay/Server -> MMS UA
MM1_acknowledgement.REQ	Request	MMS UA -> MMS Relay/Server

8.1.5.1 Normal Operation

The recipient MMS User Agent shall issue an MM1_retrieve.REQ to the recipient MMS Relay/Server to initiate the retrieval process. The MMS Relay/Server shall respond with an MM1_retrieve.RES, which contains MMs control information and the MM content.

After receiving the MM1_retrieve.RES, the recipient MMS User Agent shall send an MM1_acknowledgement.REQ to the corresponding MMS Relay/Server, if requested by the MMS Relay/Server. The MM1_acknowledgement.REQ shall unambiguously refer to the corresponding MM1_retrieve.RES.

8.1.5.2 Abnormal Operation

If the recipient MMS Relay/Server can not process the MM1_retrieve.REQ, for example due to invalid content location or expiration of the message, the recipient MMS Relay/Server shall respond with either an MM1_retrieve.RES or a lower protocol layer error message encapsulating a status which indicates the reason to the MMS User Agent the multimedia message was not delivered.

If the MMS Relay/Server does not provide the MM1_retrieve.RES or the lower protocol layer error message the MMS User Agent should be able to recover.

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.

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.

8.1.5.4 Information Elements

Table 2: 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 3: 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	Mandatory	The message ID of the MM.
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.
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.

Table 4: 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

Table K.2: Mapping MM7_submit.REQ -> MM1_notification.REQ, MM1_Retrieve.RES

Information elements in MM7_submit.REQ	Information elements in MM1_notification.REQ	Information elements in MM1_retrieve.RES
Message class	Message class	Message class
Time of Expiry	Time of expiry	-
Subject	Subject	Subject
Priority	Priority	Priority
Sender address	Sender address	Sender address
Reply-Charging	Reply-Charging	Reply-Charging
Reply-Deadline	Reply-Deadline	Reply-Deadline
Reply-Charging-Size	Reply-Charging-Size	Reply-Charging-Size
Transaction ID	-	-
Message type	-	-
MM7 version	-	-
VASP ID	-	-
VAS ID	-	-
Recipient address	-	Recipient address
Service code	-	-
Linked ID	-	-
Date and time	-	Date and time
Earliest delivery time	-	-
Delivery report	-	-
Read reply	-	Read reply
Adaptations	-	-
Content type	-	Content type
Content	-	Content
Message Distribution Indicator	Message Distribution Indicator	Message Distribution Indicator-
Charged Party	-	-
-	Message size	-
-	Message Reference	-
-	Stored	-
-	Delivery report	Delivery report
-	Reply-Charging-ID	-
-	Element-Descriptor	-
-	-	Message ID
-	-	MM State
-	-	MM Flags
-	-	Status
-	-	Status Text
-	-	Previously-sent-by
-	-	Previously-sent-date-and-time

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030186

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **101** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Transferring distribution indicator as part of message retrieval
Source:	⌘	T2
Work item code:	⌘	MMS6 ***Date:*** ⌘ 24/01/2003
Category:	⌘	**A** ***Release:*** ⌘ REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	According to the current specification the DistributionIndicator field that originates from a MM7 submission, that suggests that the content media of the MM not be redistributed, is passed to the UA only as part of the MM1_notification.REQ. However, there is no requirement for the MMS UA to retain the information that is received during the notification. Therefore, the information that the VASP requested that the media content not be redistributed will be lost unless it is included in the MM information that is retrieved by the UA. This CR proposes to add the DistributionIndicator to the MM1_retrieve.RES. This is also suggested by the LS from OMA-MMDC (T2-030016)
Summary of change:	⌘	Addition of the DistributionIndicator to the MM1_retrieve.RES
Consequences if not approved:	⌘	Inconsistency with OMA MM1 specification and inconsistency in purpose of indicator.

Clauses affected:	⌘	Section 8.1.5 Annex K – Table K2

Other specs affected: ⌘	Y	N		⌘
	☐	☐	Other core specifications	
	☐	☐	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.

8.1.5 Retrieval of Multimedia Message

This part of MMS service covers the retrieval of an MM. For retrieval purposes an MM shall always be retrieved by the recipient MMS User Agent from the recipient MMS Relay/Server. Involved abstract messages are outlined in Table 7 from type and direction points of view.

Table 1: Abstract messages for retrieval of MM in MMS

Abstract messages	Type	Direction
MM1_retrieve.REQ	Request	MMS UA -> MMS Relay/Server
MM1_retrieve.RES	Response	MMS Relay/Server -> MMS UA
MM1_acknowledgement.REQ	Request	MMS UA -> MMS Relay/Server

8.1.5.1 Normal Operation

The recipient MMS User Agent shall issue an MM1_retrieve.REQ to the recipient MMS Relay/Server to initiate the retrieval process. The MMS Relay/Server shall respond with an MM1_retrieve.RES, which contains MMs control information and the MM content.

After receiving the MM1_retrieve.RES, the recipient MMS User Agent shall send an MM1_acknowledgement.REQ to the corresponding MMS Relay/Server, if requested by the MMS Relay/Server. The MM1_acknowledgement.REQ shall unambiguously refer to the corresponding MM1_retrieve.RES.

8.1.5.2 Abnormal Operation

If the recipient MMS Relay/Server can not process the MM1_retrieve.REQ, for example due to invalid content location or expiration of the message, the recipient MMS Relay/Server shall respond with either an MM1_retrieve.RES or a lower protocol layer error message encapsulating a status which indicates the reason to the MMS User Agent the multimedia message was not delivered.

If the MMS Relay/Server does not provide the MM1_retrieve.RES or the lower protocol layer error message the MMS User Agent should be able to recover.

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.

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.

8.1.5.4 Information Elements

Table 2: 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 3: 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	Mandatory	The message ID of the MM.
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.
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.

Table 4: 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

Table K.2: Mapping MM7_submit.REQ -> MM1_notification.REQ, MM1_Retrieve.RES

Information elements in MM7_submit.REQ	Information elements in MM1_notification.REQ	Information elements in MM1_retrieve.RES
Message class	Message class	Message class
Time of Expiry	Time of expiry	-
Subject	Subject	Subject
Priority	Priority	Priority
Sender address	Sender address	Sender address
Reply-Charging	Reply-Charging	Reply-Charging
Reply-Deadline	Reply-Deadline	Reply-Deadline
Reply-Charging-Size	Reply-Charging-Size	Reply-Charging-Size
Transaction ID	-	-
Message type	-	-
MM7 version	-	-
VASP ID	-	-
VAS ID	-	-
Recipient address	-	Recipient address
Service code	-	-
Linked ID	-	-
Date and time	-	Date and time
Earliest delivery time	-	-
Delivery report	-	-
Read reply	-	Read reply
Adaptations	-	-
Content type	-	Content type
Content	-	Content
Message Distribution Indicator	Message Distribution Indicator	Message Distribution Indicator-
Charged Party	-	-
-	Message size	-
-	Message Reference	-
-	Stored	-
-	Delivery report	Delivery report
-	Reply-Charging-ID	-
-	Element-Descriptor	-
-	-	Message ID
-	-	MM State
-	-	MM Flags
-	-	Status
-	-	Status Text
-	-	Previously-sent-by
-	-	Previously-sent-date-and-time

3GPP TSG-T2 #20
San Francisco, CA, USA
20 - 24 January 2003

T2-030123

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **102** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Optional Usage of the Message-ID in MM1_Retrieve.RES
Source:	⌘	T2
Work item code:	⌘	MMS
Date:	⌘	13/01/2003
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	An irregularity between 3GPP MMS Rel-4 and WAP MMS 1.0 with respect to the usage of the Message-ID upon retrieval of an MM has been identified by OMA-MAG-MMDC: document T2-030015 is pointing out some use cases where the mandatory usage of a Message-ID in the MM1_Retrieve.RES abstract message makes no sense.
Summary of change:	⌘	This CR is addressing the irregularity pointed out by OMA-MAG-MMDC by proposing a change to the presence of the Message-ID in the MM1_Retrieve.RES from **mandatory** to **optional** for 3GPP MMS Rel-4.
Consequences if not approved:	⌘	The MMS Relay/Server would have to generate and assign a Message-ID to every MM1_Retrieve.RES abstract message even if it does not contain an MM.

Clauses affected:	⌘	Chapter 8.1.3.4 (Table 9)

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			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.

…

8.1.3 Retrieval of Multimedia Message

This part of MMS service covers the retrieval of an MM. For retrieval purposes an MM shall always be retrieved by the recipient MMS User Agent from the recipient MMS Relay/Server. Involved abstract messages are outlined in Table 7 from type and direction points of view.

Table 7: Abstract messages for retrieval of MM in MMS

Abstract messages	Type	Direction
MM1_retrieve.REQ	Request	MMS UA -> MMS Relay/Server
MM1_retrieve.RES	Response	MMS Relay/Server -> MMS UA
MM1_acknowledgement.REQ	Request	MMS UA -> MMS Relay/Server

8.1.3.1 Normal Operation

The recipient MMS User Agent shall issue an MM1_retrieve.REQ to the recipient MMS Relay/Server to initiate the retrieval process. The MMS Relay/Server shall respond with an MM1_retrieve.RES, which contains MMs control information and the MM content.

After receiving the MM1_retrieve.RES, the recipient MMS User Agent shall send an MM1_acknowledgement.REQ to the corresponding MMS Relay/Server, if requested by the MMS Relay/Server. The MM1_acknowledgement.REQ shall unambiguously refer to the corresponding MM1_retrieve.RES.

8.1.3.2 Abnormal Operation

If the recipient MMS Relay/Server can not process the MM1_retrieve.REQ, for example due to invalid content location or expiration of the message, the recipient MMS Relay/Server shall respond with either an MM1_retrieve.RES or a lower protocol layer error message encapsulating a status which indicates the reason to the MMS User Agent the multimedia message was not delivered.

If the MMS Relay/Server does not provide the MM1_retrieve.RES or the lower protocol layer error message the MMS User Agent should be able to recover.

8.1.3.3 Features

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

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.

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.

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.

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.

8.1.3.4 Information Elements

Table 8: 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 9: Information elements in the MM1_retrieve.RES

Information element	Presence	Description
Message ID	~~Mandatory~~Optional	The message ID of the MM.
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.
Delivery report	Optional	A request for delivery report.
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.
Status	Optional	The status of the MM retrieve 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.
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.
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.

Table 10: Information elements in the MM1_acknowledgement.REQ

Information element	Presence	Description
Report allowed	Optional	Request to allow or disallow the sending of a delivery report to the MM originator

• • •

3GPP TSG-T2 #20
San Francisco, CA, USA
20 - 24 January 2003

T2-030121

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **103** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Conditional Usage of the Message-ID in MM1_Retrieve.RES
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	13/01/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	An irregularity between 3GPP MMS Rel-5 and WAP MMS 1.1 with respect to the usage of the Message-ID upon retrieval of an MM has been identified by OMA-MAG-MMDC: document T2-030015 is pointing out some use cases where the mandatory usage of a Message-ID in the MM1_Retrieve.RES abstract message makes no sense.
Summary of change:	⌘	This CR is addressing the irregularity pointed out by OMA-MAG-MMDC by proposing a change to the presence of the Message-ID in the MM1_Retrieve.RES from **mandatory** to **conditional** for 3GPP MMS Rel-5.
Consequences if not approved:	⌘	The MMS Relay/Server would have to generate and assign a Message-ID to every MM1_Retrieve.RES abstract message even if it does not contain an MM.

Clauses affected:	⌘	Chapter 8.1.5.4 (Table 9)

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			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.

…

8.1.5 Retrieval of Multimedia Message

This part of MMS service covers the retrieval of an MM. For retrieval purposes an MM shall always be retrieved by the recipient MMS User Agent from the recipient MMS Relay/Server. Involved abstract messages are outlined in Table 7 from type and direction points of view.

Table 1: Abstract messages for retrieval of MM in MMS

Abstract messages	Type	Direction
MM1_retrieve.REQ	Request	MMS UA -> MMS Relay/Server
MM1_retrieve.RES	Response	MMS Relay/Server -> MMS UA
MM1_acknowledgement.REQ	Request	MMS UA -> MMS Relay/Server

8.1.5.1 Normal Operation

The recipient MMS User Agent shall issue an MM1_retrieve.REQ to the recipient MMS Relay/Server to initiate the retrieval process. The MMS Relay/Server shall respond with an MM1_retrieve.RES, which contains MMs control information and the MM content.

After receiving the MM1_retrieve.RES, the recipient MMS User Agent shall send an MM1_acknowledgement.REQ to the corresponding MMS Relay/Server, if requested by the MMS Relay/Server. The MM1_acknowledgement.REQ shall unambiguously refer to the corresponding MM1_retrieve.RES.

8.1.5.2 Abnormal Operation

If the recipient MMS Relay/Server can not process the MM1_retrieve.REQ, for example due to invalid content location or expiration of the message, the recipient MMS Relay/Server shall respond with either an MM1_retrieve.RES or a lower protocol layer error message encapsulating a status which indicates the reason to the MMS User Agent the multimedia message was not delivered.

If the MMS Relay/Server does not provide the MM1_retrieve.RES or the lower protocol layer error message the MMS User Agent should be able to recover.

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.

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.

8.1.5.4 Information Elements

Table 2: 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 3: 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	~~Mandatory~~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).
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.

Table 4: 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

• • •

3GPP TSG-T2 #20
San Francisco, CA, USA
20 - 24 January 2003

T2-030122

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **104** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Conditional Usage of the Message-ID in MM1_Retrieve.RES
Source:	⌘	T2
Work item code:	⌘	MMS6
Date:	⌘	13/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	An irregularity between 3GPP MMS Rel-5 and WAP MMS 1.1 with respect to the usage of the Message-ID upon retrieval of an MM has been identified by OMA-MAG-MMDC: document T2-030015 is pointing out some use cases where the mandatory usage of a Message-ID in the MM1_Retrieve.RES abstract message makes no sense.
Summary of change:	⌘	This CR is addressing the irregularity pointed out by OMA-MAG-MMDC by proposing a change to the presence of the Message-ID in the MM1_Retrieve.RES from **mandatory** to **conditional** for 3GPP MMS Rel-5.
Consequences if not approved:	⌘	The MMS Relay/Server would have to generate and assign a Message-ID to every MM1_Retrieve.RES abstract message even if it does not contain an MM.

Clauses affected:	⌘	Chapter 8.1.5.4 (Table 9)

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			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.

…

8.1.5 Retrieval of Multimedia Message

This part of MMS service covers the retrieval of an MM. For retrieval purposes an MM shall always be retrieved by the recipient MMS User Agent from the recipient MMS Relay/Server. Involved abstract messages are outlined in Table 7 from type and direction points of view.

Table 1: Abstract messages for retrieval of MM in MMS

Abstract messages	Type	Direction
MM1_retrieve.REQ	Request	MMS UA -> MMS Relay/Server
MM1_retrieve.RES	Response	MMS Relay/Server -> MMS UA
MM1_acknowledgement.REQ	Request	MMS UA -> MMS Relay/Server

8.1.5.1 Normal Operation

The recipient MMS User Agent shall issue an MM1_retrieve.REQ to the recipient MMS Relay/Server to initiate the retrieval process. The MMS Relay/Server shall respond with an MM1_retrieve.RES, which contains MMs control information and the MM content.

After receiving the MM1_retrieve.RES, the recipient MMS User Agent shall send an MM1_acknowledgement.REQ to the corresponding MMS Relay/Server, if requested by the MMS Relay/Server. The MM1_acknowledgement.REQ shall unambiguously refer to the corresponding MM1_retrieve.RES.

8.1.5.2 Abnormal Operation

If the recipient MMS Relay/Server can not process the MM1_retrieve.REQ, for example due to invalid content location or expiration of the message, the recipient MMS Relay/Server shall respond with either an MM1_retrieve.RES or a lower protocol layer error message encapsulating a status which indicates the reason to the MMS User Agent the multimedia message was not delivered.

If the MMS Relay/Server does not provide the MM1_retrieve.RES or the lower protocol layer error message the MMS User Agent should be able to recover.

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.

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.

8.1.5.4 Information Elements

Table 2: 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 3: 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	~~Mandatory~~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).
Content	Conditional	The content of the multimedia message if specified by the originator MMS User Agent of the MM.

Table 4: 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

• • •

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030068

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **105** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Recipient Handling on MM4
Source:	⌘	T2
Work item code:	⌘	MMS6
Date:	⌘	14/01/2003
Category:	⌘	**C**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	MM4 does not specify how to handle multiple recipients for both sending/receiving recipients at the SMTP level (RCPT TO) and may create interoperability problems.
Summary of change:	⌘	When interwoking between two MMS Relay/Server occurs and there is an exchange of messages with multiple recipients at the SMTP level, both systems will behave similarly. In this case all MMS Relay/Servers will accept all recipients and return the MM4 Forward Response, only if requested by the originating MMSE.
Consequences if not approved:	⌘	Some MMS Relay/Servers may reject the "RCPT TO" at the SMTP layer and this will cause interoperability problems and the possibility of no MM4 Forward Response in the case of a single recipient. Wasted bandwidth if MMS Relay/Server is required to send a single recipient only when exchanging message with foreign MMSE's at the SMTP level.

Clauses affected:	⌘	8.4.1.1, 8.4.5		
Other specs affected:	⌘	☒ Other core specifications ☒ 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/3G_Specs/CRs.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.

8.4.1.1 Normal operation

After successful discovery of its peer entity the originator MMS Relay/Server shall route an MM forward to the recipient MMS Relay/Server using the MM4_forward.REQ, which contains MMS control information and the MM content. The recipient MMS Relay/Server shall respond with a MM4_forward.RES, which provides the status of the request if an MM4_forward.RES was requested. If multiple recipients are addressed in the MM4_Forward.REQ the recipient MMS Relay/Server may respond with any of the following to the originator MMS Relay/Server: a single MM4_Forward.RES message, multiple MM4_Forward.RES messages, or any combination of single or multiple MM4_Forward.RES messages. E.g. this will allow for multiple status indications or a single collective status indication in the MM4_Forward.RES in case of partial addressing failures.

Support for MM4_forward.REQ and MM4_forward.RES is mandatory for the MMS Relay/Server.

8.4.5 Message Transfer Protocol on MM4

Interworking between different MMSEs shall be based on SMTP according to STD 10 [22] as depicted in figure 5.

The originator MMS Relay/Server should use an SMTP connection to transfer MMs/abstract messages. The originator MMS Relay/Server should use the sender's address as indicated in the corresponding MM/abstract message in the SMTP "MAIL FROM:" command (subject to the sender's visibility) and should use the recipient's address(es) as indicated in the corresponding MM/abstract message in the SMTP "RCPT TO:" command. If there is one or multiple recipients being transferred by the originator MMS Relay/Server using the SMTP “RCPT TO” command the recipient MMS Relay/Server should accept all recipients with a “250 OK” as indicated in [22]. This will ensure that if the originator MMS Relay/Server requested an acknowledgement the recipient MMS Relay/Server shall send the response. The originator MMS Relay/Server should use SMTP "DATA" command to transfer the message.

Private agreements may utilise additional connection and security (e.g. IPSec) methods. Such methods are out of the scope of standardisation for this release.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030077

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **106** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	Support of the "Bcc:" information element in the MM4 reference point.
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	20/01/2003
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The "Bcc:" information element is supported by all versions of the Stage 3 (OMA) MM1 specifications. However, the "Bcc:" information element is not supported by the MM4 REL-5. Since this misalignment between MM1 and MM4 on support of "Bcc:" is a potential threat to interoperability, the present CR aims at implementing the necessary correction to the 23.140 REL-5.
Summary of change:	⌘	The "Bcc:" header is added to the list of allowed MM4 recipient headers. Moreover, some normative guidance on its usage is also added to prevent potential IOP problems.
Consequences if not approved:	⌘	The end user may not get the expected behaviour when using an UA that supports the "Bcc:" over the MM1.

Clauses affected:	⌘	8.4.4.2, 8.4.4.10, 8.4.5.1, Annex I

Other specs affected: ⌘	Y	N		⌘
	☐	☐	Other core specifications	
	☐	☐	Test specifications	
	☐	☐	O&M Specifications	

Other comments:	⌘	At T2#19, support of "Bcc:" over the MM4 was added to 23.140 REL-6.

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.

8.4.4.2 MM4_Forward.REQ Header Mappings

The MM4 Forward request header mappings are detailed below.

Table 1: MM4_Forward.REQ Information Elements to STD 11 Header Mappings

Information element	STD 11 Headers
3GPP MMS Version	X-Mms-3GPP-MMS-Version:
Message Type	X-Mms-Message-Type:
Transaction ID	X-Mms-Transaction-ID:
Message ID	X-Mms-Message-ID:
Recipient(s) address	To:, Cc~~C~~:, Bcc:
Sender address	From:
Content type	Content-Type:
Message class	X-Mms-Message-Class:
Date and time	Date:
Time of Expiry	X-Mms-Expiry:
Delivery report	X-Mms-Delivery-Report:
Priority	X-Mms-Priority:
Sender visibility	X-Mms-Sender-Visibility:
Read reply	X-Mms-Read-Reply:
Subject	Subject:
Acknowledgement Request	X-Mms-Ack-Request:
Forward counter	X-Mms-Forward-Counter:
Previously-sent-by	X-Mms-Previously-sent-by:
Previously-sent-date and-time	X-Mms-Previously-sent-date-and-time:
Content	*<message body>*
-	Sender:
-	X-Mms-Originator-System:
-	Message-ID:

The table above indicates the mappings from MM4_Forward.REQ information elements to the corresponding STD 11 [5] headers.

The MM4 information element Message ID is not directly mapped to a corresponding STD 11 "Message-ID:" header. Each STD 11 message must have a unique message id, which is carried in the "Message-ID:" header.

Content-type maps directly since both are defined as being MIME content types as specified in RFC 2046 [6].

The STD 11 "From:" header is determined by the mail user agent, or, in this case, the MMS User Agent. This corresponds to the MM4 information element Sender address, as set by the MMS User Agent or MMS Relay/Server.

STD 11 messages are required to have a "Sender:" header that indicates the originator address (as determined by the SMTP "MAIL From" command).

The STD 11 “X-Mms-Originator-System:” header shall be used to indicate the address that the recipient MMS Relay/Server shall use as the recipient address with MM4_Forward.RES.

In case there are only blind carbon-copy recipient(s) (“Bcc:”), the behaviour shall be as recommended by RFC2821 [22], Appendix B, i.e. the originating MMS Relay/Server shall only insert an empty “Bcc:” header and no “To:” or “Cc:” headers. The recipient(s) shall then only be indicated in the SMTP command layer (RCPT TO:).

In case there are both “To:”, “Cc:” and “Bcc:” recipients, the “Bcc:” headers shall be removed by the originating MMS Relay/Server and the “Bcc:” recipients shall only be indicated in the SMTP command level (RCPT TO:). This is in accordance with the functionality recommended by RFC2821 [22], Appendix B.

…

8.4.4.10 Request Status Codes Clarification

The table below dictates how the originator MMS Relay/Server should interpret the possible values of the X-Mms-Request-Status-Code header field.

Table 2: Clarification of the Request Status Codes

X-Mms-Request-Status-Code	Meaning
Ok	The corresponding request and some or all of its contents were accepted without errors.
Error-unspecified	An unspecified error occurred during the processing or reception of the corresponding request.
Error-service-denied	The corresponding request was rejected due to failure of authentication or authorisation of the originating MMS Relay/Server.
Error-message-format-corrupt	An inconsistency with the message format was detected when the corresponding request was parsed.
Error-sending-address-unresolved	There were no MMS address (From:, To:, Cc:, Bcc:) in its proper format or none of the addresses belong to the recipient MMS Relay/Server.
Error-message-not-found	This status code is obsolete
Error-network-problem	The recipient MMS Relay/Server was not able to accept the corresponding request due to capacity overload.
Error-content-not-accepted	The MM content was not accepted due to size, media type, copyrights or some other reason.
Error-unsupported-message	The recipient MMS Relay/Server does not support the corresponding request abstract message.

…

8.4.5.1 Address Encoding

In the case where E.164 addressing is used and the address resolution returns an RFC 2822 recipient address (ENUM based resolution), this address shall become the ‘forward-path’ argument to the ‘RCPT TO:’ SMTP command as it is described in [22]. The ‘Reverse-Path’ argument to the ‘MAIL FROM:’ SMTP command shall be determined by the originator MMS Relay/Server as it is described in [22].

In the case where E.164 addressing is used and the address resolution returns only the domain of the recipient MMSE, the addresses shall be encoded in the following way:

SMTP protocol level:

```
SMTP-address = "<" MMS-address "@" domain ">"

MMS-address = "+" E.164 "/TYPE=PLMN"

E.164 = 1*DIGIT

domain = dom-fragment *( "." dom-fragment )

dom-fragment = ( ALPHA | DIGIT ) *( ALPHA | DIGIT | "-" )
```

Example:

If the originator's address was an E.164 address, the address fields used in RCPT shall be converted to the following format by the sender's MMS Relay/Server:

+E.164/TYPE=PLMN@recipient-mmse

where recipient-mmse is a FQDN of the recipient's MMS Relay/Server, e.g.

+358401234567/TYPE=PLMN@mmse.sonera.net

SMTP commands:

SMTP commands should be then used in the following way:

```
MAIL FROM: SMTP-address
RCPT TO: SMTP-address
DATA
X-MMS-3GPP-MMS-version: 4.2.0
X-MMS-Message-Type: MM4_forward.REQ
X-MMS-Transaction-ID: "ABCDEFGHIJ0123456789"
X-MMS-Message-ID: "originator-mmse/originator-username/123456789"
Date: Wed, 16 May 2001 10:35:00 +0800
From: MMS-address
To: MMS-address
Subject: Greetings from Greece
Content-Type: text/plain

Hi, …
.
```

NOTE 1: In the example above the "X-MMS-3GPP-MMS-version" header may not refer to the current version of the present document.

NOTE 2: In the case where "Bcc:" (blind carbon-copy) recipients are used, what is specified in 8.4.4.2 takes precedence.

…

Annex I (normative): MM1 <-> MM4 header mapping

This annex maps the information elements found on MM1 onto the STD 11 header fields of MM4.

The tables below are provided to give a normative end-to-end description of MMS. There is a table for each MM1 abstract message with all its information elements in the left column, the right column shows how the MM1 information elements are mapped onto the STD 11 headers of MM4.

In many cases there is no mapping between MM1 information elements and MM4 STD 11 header fields, this is according to specifications. These information elements are included in the tables below in order to give a complete picture of how the MM1 information elements are handled.

Table I.1: Mapping MM1_submit.REQ -> MM4_forward.REQ

Information elements in MM1_submit.REQ	STD11 Header fields in Egress MM4_forward.REQ
Message Type	-
MMS Version	-
Transaction ID	-
Recipient address	To:, Cc:, Bcc: (NOTE 1, NOTE 2)
Content type	Content-Type:
Sender address	From:
Message class	X-Mms-Message-Class:
Date and time	Date:
Time of Expiry	X-Mms-Expiry:
Earliest Delivery Time	-
Delivery report	X-Mms-Delivery-Report:
Reply-Charging	-
Reply-Deadline	-
Reply-Charging-Size	-
Priority	X-Mms-Priority:
Sender visibility	X-Mms-Sender-Visibility:
Store	-
MM State	-
MM Flags	-
Read reply	X-Mms-Read-Reply:
Subject	Subject:
Reply-Charging-ID	-
Content	*<message body>*
NOTE 1: A "Bcc:" field is created on MM4 only when the original MM on MM1 contains only blind-carbon-copy recipient(s). In this case the "Bcc:" field is left blank, see clause 8.4.4.2. *NOTE 2: Recipient addresses for blind-carbon-copy recipient(s) on MM1 are mapped onto <RCPT TO:> commands on SMTP level on MM4.*	

Table I.2: Mapping MM1_submit.RES -> MM4_forward.REQ

Information elements in MM1_submit.RES	STD11 Header fields in Egress MM4_forward.REQ
Message Type	-
MMS Version	-
Transaction ID	-
Request Status	-
Request Status Text	-
Message ID	X-Mms-Message-ID:
Store Status	-
Store Status Text	-
Stored Message Reference	-

Table I.3: Mapping MM1_notification.REQ <- MM4_forward.REQ

Information elements in MM1_notification.REQ	STD11 Header fields in Ingress MM4_forward.REQ
Message Type	-
MMS Version	-
Transaction ID	-
Message class	X-Mms-Message-Class:
Message size	-
Time of expiry	X-Mms-Expiry:
Message Reference	-
Subject	Subject:
Priority	X-Mms-Priority:
Sender address	From:
Stored	-
Delivery report	X-Mms-Delivery-Report:
Reply-Charging	-
Reply-Deadline	-
Reply-Charging-Size	-
Reply-Charging-ID	-
Element-Descriptor	-

Table I.4: Information elements in the MM1_notification.RES.

Information elements in MM1_notification.RES	MM4 STD 11 Header fields
Message Type	-
MMS Version	-
Transaction ID	-
MM Status	-
Report allowed	-

Table I.5: Information elements in the MM1_retrieve.REQ

Information elements in MM1_retrieve.REQ	MM4 STD 11 Header fields
Message Reference	-

Table I.6: Mapping MM1_retrieve.RES <- MM4_forward.REQ

Information elements in MM1_retrieve.RES	STD11 Header fields in Ingress MM4_Forward.REQ
Message Type	-
MMS Version	-
Transaction ID	-
Message ID	X-Mms-Message-ID:
Sender address	From:
Content type	Content-type:
Recipient address	To:
Message class	X-Mms-Message-Class:
Date and time	Date:
Delivery report	X-Mms-Delivery-Report:
Priority	X-Mms-Priority:
Read reply	X-Mms-Read-Reply:
Subject	Subject:
Request Status	-
MM State	-
MM Flags	-
Request Status Text	-
Reply-Charging	-
Reply-Charging-ID	-
Reply-Deadline	-
Reply-Charging-Size	-
Previously-Sent-By	X-Mms-Previously-Sent-By
Previously-Sent-Date	X-Mms-Previously-Sent-Date
Content	*<message body>*

Table I.7: Information elements in the MM1_acknowledgement.REQ

Information elements in MM1_acknowledgement.REQ	MM4 STD 11 Header fields
Message Type	-
MMS Version	-
Transaction ID	-
Report allowed	-

Table I.8: Mapping MM1_forward.REQ -> MM4_forward.REQ

Information elements in MM1_forward.REQ	STD11 Header fields in Egress MM4_Forward.REQ
Message Type	-
MMS Version	-
Transaction ID	-
Recipient address	To:, Cc:, Bcc: (NOTE 1, NOTE 2)
Forwarding address	From:
Date and time	Date:
Time of Expiry	X-Mms-Expiry:
Earliest delivery time	-
Store	-
MM State	-
MM Flags	-
Delivery report	X-Mms-Delivery-Report:
Read reply	X-Mms-Read-Reply:
Message Reference	-

NOTE 1: A "Bcc:" field is created on MM4 only when the original MM on MM1 contains only blind-carbon-copy recipient(s). In this case the "Bcc:" field is left blank, see clause 8.4.4.2.

NOTE 2: Recipient addresses for blind-carbon-copy recipient(s) on MM1 are mapped onto <RCPT TO:> commands on SMTP level on MM4.

Table I.9: Information elements in the MM1_forward.RES.

Information elements in MM1_forward.RES	MM4 STD 11 Header fields
Message Type	-
MMS Version	-
Transaction ID	-
Request Status	-
Request Status Text	-
Message ID	-
Store Status	-
Store Status Text	-
Stored Message Reference	-

Table I.10: Mapping MM1_delivery_report.REQ <- MM4_delivery_report.REQ

Information elements in MM1_delivery_report.REQ	STD11 Header fields in Ingress MM4_delivery_report.REQ
Message Type	-
MMS Version	-
Message ID	X-Mms-Message-ID
Recipient address	From:
Date and Time	Date:
MM Status	X-Mms-MM-Status-Code

Table I.11: Mapping MM1_read_reply_recipient.REQ -> MM4_read_reply_report.REQ

Information elements in MM1_read_reply_recipient.REQ	STD11 Header fields in Egress MM4_read_reply_report.REQ
Message Type	-
MMS Version	-
Recipient address	From:
Originator address	To:
Message ID	X-Mms-Message-ID:
Date and Time	Date:
Read Status	X-Mms-Read-Status:

Table I.12: Mapping MM1_ read_reply_originator.REQ <- MM4_ read_reply_report.REQ

Information elements in MM1_read_reply_originator.REQ	Ingress STD11 Header fields in MM4_read_reply_report.REQ
Message Type	-
MMS Version	-
Recipient address	From:
Originator address	To:
Message ID	X-Mms-Message-ID:
Date and Time	Date:
Read Status	X-Mms-Read-Status:

3GPP TSG-T2 #20
San Francisco, US
20-24 January 2003

T2-030093

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **107** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

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

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	MMS UA behaviour regarding the MMS parameters on the (U)SIM
Source:	⌘	T2
Work item code:	⌘	MMS
Date:	⌘	January 20, 2003
Category:	⌘	**F**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	TSG-SA agreed that when a SIM or a USIM with the MMS parameters is inserted in a Rel-4 ME, it is optional for the ME to use these parameters. This CR provides the (U)SIM and ME behaviour, with respect to MMS parameter storage on the (U)SIM.
Summary of change:	⌘	This CR reflects the use of the MMS related information by the MMS User Agent if the parameters are present on the (U)SIM.
Consequences if not approved:	⌘	1) Consistency issues between the MMS specifications, 3GPP TS 23.140 and the (U)SIM specifications, 3GPP TS 31.102 and 3GPP TS 51.011 2) Interoperability issues when a user changes his/her terminal or when network parameters change

Clauses affected:	⌘	2 - 5.1.1 - 7.1.14 – Annex F		
Other specs Affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	3GPP TS 51.011 and 3GPP TS 31.102
Other comments:	⌘			

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 22.140: "Multimedia Messaging Service; Stage 1".

[2] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[3] WAP Forum: "Wireless Application Environment Specification, Version 1.2", WAP-WAESpec-19991104, . URL: http://www.wapforum.org/.

[4] 3GPP TS 23.057: "Mobile Execution Environment (MExE); Functional description; Stage 2".

[5] IETF; STD 0011 (RFC 2822): "Internet Message Format", URL: http://www.ietf.org/rfc/rfc2822.txt.

[6] IETF; RFC 2046: "Multipurpose Internet Mail extension (MIME) Part Two: Media Types", URL: http://www.ietf.org/rfc/rfc2046.txt.

[7] The Unicode Consortium: "The Unicode Standard", Version 2.0, Addison-Wesley Developers Press, 1996.URL: http://www.unicode.org/.

[8] ANSI X3.4, 1986: "Information Systems; Coded Character Set 7 Bit; American National Standard Code for Information Interchange".

[9] ISO/IEC 8859-1:1998: "Information Processing; 8-bit Single-Byte Coded Graphic Character Sets; Part 1: Latin Alphabet No. 1".

[10] IETF; RFC 2279: "UTF-8, A Transformation format of ISO 10646", URL: http://www.ietf.org/rfc/rfc2279.txt.

[11] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[12] 3GPP TS 26.090: "Mandatory Speech Codec speech processing functions; AMR Speech Codec Transcoding Functions".

[13] 3GPP TS 26.093 (V3.1.0): "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Source Controlled Rate Operation".

[14] ISO/IEC 11172-3:1993: "Information technology; Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s; Part 3: Audio" (MP3, MPEG1-Audio, MPEG2-Audio)

[15] MIDI Manufacturers Association Incorporated, Los Angeles, California: “MIDI Sample Dump Standard (SDS)”; URL: http://www.midi.org.

[16] ISO/IEC 14496-2:1999/FDAM4, ISO/IEC JTC1/SC 29/WG11 N3904, Pisa, January, 2001

[17] ITU-T Recommendation T.81 | ISO/IEC 10918-1:1994: "Information technology; Digital compression and coding of continuous-tone still images: Requirements and guidelines".

[18] Compuserve Incorporated, Columbus, Ohio (1990): "Graphics Interchange Format (Version 89a)".

[19] ISO/IEC 14496-2:1999: "Information technology; Coding of audio-visual objects; Part 2: Visual".

[20] ITU-T Recommendation H.263 (1998): "Video coding for low bit rate communication".

[21] ITU-T Recommendation H.263 (1998): "Video coding for low bit rate communication - Annex X, Profiles and Levels Definition"

[22] IETF; STD 0010 (RFC 2821): "Simple Mail Transfer Protocol", URL: http://www.ietf.org/rfc/rfc2821.txt.

[23] WAP Forum (November 1999): "WAP Wireless Session Protocol", WAP-WSP-19991105- , URL: http://www.wapforum.org/.

[24] WAP Forum (November 1999): "WAP Push Access Protocol", WAP-PAP-19991108, URL: http://www.wapforum.org/.

[25] WAP Forum (November 1999): "WAP User Agent Profile Specification", WAP-UAProf-19991110, URL: http://www.wapforum.org/.

[26] W3C Recommendation 22 February 1999 "Resource Description Framework (RDF) Model and Syntax Specification", URL: http://www.w3.org/TR/REC-rdf-syntax.

[27] WAP Forum (November 1999): "WAP Wireless Markup Language Specification, Version 1.2 ", WAP-WML-19991104, URL: http://www.wapforum.org/.

[28] W3C Recommendation 15-June-1998: "Synchronized Multimedia Integration Language (SMIL) 1.0 Specification" - http://www.w3.org/TR/REC-smil/.

[29] WAP Forum (November 1999): "WAP Wireless Transport Layer Security Specification", WAP-WTLS-19991105, URL: http://www.wapforum.org/.

[30] WAP Forum (November 1999): "WAP Identity Module Specification", WAP-WIM-19991105, URL: http://www.wapforum.org/.

[31] ITU-T Recommendation T.37 (06/98): "Procedures for the transfer of facsimile data via store-and-forward on the Internet".

[32] ITU-T Recommendation T.30 (1996): "Procedures for document facsimile transmission in the general switched telephone network".

[33] IETF; RFC 2421 (Sept. 1998): "Voice Profile for Internet Mail – version 2, VPIM" , URL: http://www.ietf.org/rfc/rfc2421.txt.

[34] IETF; STD 0053 (RFC 1939): "POP 3, Post Office Protocol - Version 3" , URL: http://www.ietf.org/rfc/rfc1939.txt.

[35] IETF; RFC 1730 (December 1994): "IMAP4, Internet Message Access Protocol - Version 4" , URL: http://www.ietf.org/rfc/rfc1730.txt..

[36] Adobe Systems: "Tag Image File Format (TIFF), Version 6", URL:, http://www.adobe.com.

[37] 3GPP TR 23.039: "Interface protocols for the connection of Short Message Service Centres (SMSCs) to Short Message Entities (SMEs)".

[38] ISO/IEC TR 13818-5:1997/Amd 1:1999 "Advanced Audio Coding (AAC)"

[39] IETF; Internet draft: "RTP payload format and file storage format for AMR and AMR-WB audio"; URL: http://search.ietf.org/internet-drafts/draft-ietf-avt-rtp-amr-10.txt..

NOTE: Reference [39] is work in progress in IETF/AVT working group and to be replaced by the appropriate RFC number once the Internet draft is approved within the IETF (IESG approval is scheduled to spring/summer 2001).

[40] 3GPP TS 26.233: "End-to-end transparent streaming Service (PSS); General Description".

[41] 3GPP TS 26.234: "End-to-end transparent streaming Service (PSS); Protocols and Codecs".

[42] IETF; Internet Draft: "TCP over 2.5G and 3G Wireless Networks"; URL: http://search.ietf.org/internet-drafts/draft-ietf-pilc-2.5g3g-03.txt

NOTE: Reference [42] has to be replaced by the appropriate RFC number once the Internet draft is approved within the IETF.

[43] WAP Forum: "Wireless profiled TCP", WAP-225-TCP-20010331-a, URL: http://www.wapforum.org

[44] IETF; RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", URL: http://www.ietf.org/rfc/rfc2045.txt

[45] IETF; RFC 2047: "Multipurpose Internet Mail Extensions (MIME) Part Three: Message Header Extensions for Non-ASCII-Text", URL: http://www.ietf.org/rfc/rfc2047.txt.

[46] IETF; RFC 2048: "Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures", URL: http://www.ietf.org/rfc/rfc2048.txt.

[47] IETF; RFC 2049: "Multipurpose Internet Mail Extensions (MIME) Part Five: Conformance Criteria and Examples", URL: http://www.ietf.org/rfc/rfc2049.txt.

[48] IETF; RFC 2616: “Hypertext Transfer Protocol, HTTP/1.1”, URL: http://www.ietf.org/rfc/rfc2616.txt.

[49] IETF; STD 13 (RFC 1034, 1035): "Domain Names -- concepts and facilities", "Domain names – implementation and specification", URL: http://www.ietf.org/rfc/rfc1034.txt, http://www.ietf.org/rfc/rfc1035.txt.

[50] IETF; STD 14 (RFC 947): "Multi-network broadcasting within the Internet", URL: http://www.ietf.org/rfc/rfc947.txt.

[51] IETF; RFC 2076: "Common Internet Message Headers", URL: http://www.ietf.org/rfc/rfc2076.txt.

[52] IETF; RFC 1893: "Enhanced Mail System Status Codes", URL: http://www.ietf.org/rfc/rfc1893.txt.

[53] IETF; RFC 1327: "Mapping between X.400(1988)/ISO 10021 and RFC 822", URL: http://www.ietf.org/rfc/rfc1327.txt.

[54] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting Packet Based Services and Packet Data Networks (PDN)"

[55] WAP-183-ProvCont, Provisioning Content, URL: http://www.wapforum.org

[56] WAP-209-MMSEncapsulation, MMS Encapsulation Protocol, URL: http://www.wapforum.org

[57] 3GPP TS 31.102 "Characteristics of the USIM Application".

[58] 3GPP TS 51.011: "Specification of the Subscriber Identity Module – Mobile Equipment (SIM-ME) interface".

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).

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

- the MM composition
- 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~~, if the USIM supports MMS~~;
- the handling of external devices;
- the user profile management.

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

6.1.11 Handling of MMS-related information on the (U)SIM

NOTE : This section does not apply when the MMS-UA is implemented within equipment which does not support a (U)SIM.

~~If the USIM according to [57] stores MMS related information, a~~An MMS User Agent ~~may be able to handle that MMS related information on the USIM which comprises~~should use the MMS related information stored in the USIM [57] or SIM [58], if present, according to the definitions in this subclause 6.1.11. This information comprises:

- MMS connectivity information, as defined in Annex F~~,~~. This information is used to connect to the network for the purpose of accessing the MMS Relay/Server.
- MMS user preferences, as defined in Annex F, and
- MMS notifications.

MMS connectivity information, ~~which is stored on the USIM, should be used by an MMS User Agent to connect to the network for the purpose of accessing the MMS Relay/Server.~~

~~The MMS connectivity information~~ on the (U)SIM ~~may~~ includes a number of sets of MMS connectivity parameters. ~~One~~ Some of these sets of MMS connectivity parameters ~~is~~ are preset by the issuer of the (U)SIM with the first set being the default. Such preset MMS connectivity parameters set ~~shall~~ should be selected unless otherwise specified by the user.

The MMS connectivity information on the (U)SIM ~~may~~ includes preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [57] and [58]. If these are stored on the (U)SIM the MMS-capable UE should automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the (U)SIM unless otherwise specified by the user.

~~When conflicting MMS connectivity information is stored on both the USIM and outside the USIM, the MMS connectivity information stored on the USIM should be used by an MMS User Agent to connect to the network.~~

MMS user preferences information, which is stored on the (U)SIM, ~~may~~ should be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

MMS notifications, ~~may~~ should be stored on the (U)SIM together with an associated status by a recipient MMS User Agent.

- When an MMS User Agent has deleted a notification which was stored on the (U)SIM, the associated status shall be set to “Free space”
- When an MMS User Agent stores a notification on the (U)SIM, the associated status shall be set to “Used space”
- When a recipient MMS User Agent has not handled the notification which is stored on the (U)SIM (e.g. the details of the notification were not shown to the user), the associated status ~~should~~ shall be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the (U)SIM (e.g. the details of the notification have been shown to the user), the associated status ~~should~~ shall be set to “notification read”,
- When a recipient MMS User Agent has not retrieved an MM based on the notification which is stored on the (U)SIM, the associated status ~~should~~ shall be set to “MM not retrieved” – unless the recipient MMS User Agent has rejected or forwarded the MM,

- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the (U)SIM, the notification ~~should~~ shall either be deleted or the associated status ~~may~~ shall be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~may~~ shall be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~should~~ shall be set to “MM forwarded”,

Upon an attempt to store a notification on a (U)SIM, an MMS User Agent should ensure that the notification is not lost unless the (U)SIM acknowledges the storage attempt to be successful.

Annex F (normative): Configuration of MMS-capable UEs

An MMS-capable UE may be configured with information about MMS connectivity and user preferences. A configured MMS-capable UE requires minimum user interaction for different MMS-specific purposes, e.g. accessing network infrastructure, composing mobile-originated MMs. ~~The information may should be stored on (U)SIM as part of terminal configuration~~. MMS connectivity information and user preferences are described below.

F.1 MMS Connectivity Information

MMS connectivity information consists of a set of information elements needed to access network infrastructure for the MMS purpose. This includes bearer, protocols, and addresses of related access points.

A list of information elements concerning MMS connectivity information is outlined below. Some of the connectivity information elements can also be used for purposes other than MMS. An MMS-capable UE can be configured with all or a subset of the listed elements depending on the provided service in terms of e.g. bearer, security, implementation protocol. Moreover, an MMS-capable UE can be configured with more than one sets of connectivity information for multiple access mechanisms, e.g. bearer, access type. Further information about the listed information elements for WAP MMS implementation can be found in [55] and [56].

MMS Relay/Server

- address: the address of the associated MMS Relay/Server as defined in [56]

WAP Gateway for WAP implementation of MMS (the terminology of the information elements as defined in chapter 5.6 in [55] is given in parenthesis)

- address: the address of the associated WAP Gateway. The address can be of different types, as indicated by the "type of address" (PXADDR)
- type of address: indicates the type (e.g. IPv4, IPv6) of the "address" of the WAP Gateway (PXADDRTYPE)
- port: indicates the port number specific to the address of the WAP Gateway (PORTNBR)
- service: specifies available service, e.g. connection-less, secured (SERVICE)
- authentication type: indicates the authentication method used by the WAP Gateway (PXAUTH-TYPE)
- authentication id: indicates the authentication identifier used for authentication by the WAP Gateway (PXAUTH-ID)
- authentication pw: indicates the authentication secret used for authentication by the WAP Gateway (PXAUTH-PW)

Interface to core network including access point for the core network (e.g. GGSN) and required bearer (the terminology of the information elements as defined in chapter 5.6 in [55] is given in parenthesis)

- bearer: indicates the type of network (e.g. CSD, GPRS) (BEARER)

- address: the address of the associated access point. The address could be of different types depending on the bearer, as indicated by the "type of address" (NAP-ADDRESS)
- type of address: indicates the type (e.g. MSISDN for CSD, APN for GPRS) of the "address" of the access point (NAP-ADDRTYPE)
- speed: indicates the speed of the connection for circuit switched bearers (LINKSPEED)
- call type: indicates type of call for specific bearer (e.g. analogue for CSD) (CALLTYPE)
- authentication type: indicates the authentication protocol used by the access point (AUTHTYPE)
- authentication id: indicates the authentication id used for authentication by the access point (AUTHNAME)
- authentication pw: indicates the authentication secret used for authentication by the access point (AUTHSECRET)

For the storage of WAP Gateway Information and Interface to Core Network and Bearer Information on the (U)SIM only the binary encoding of information elements as defined in chapter 8 of [55] shall be taken into account, i.e. for each information element (“attribute name” according to [55]) and for each predefined attribute value according to [55] the equivalent tokens shall be used. Non-predefined attribute values shall be represented by ASCII string encoding with NULL character termination in order to indicate the end of the attribute value. The “connectivity document” structure as defined in previous chapters of [55] shall not be used for the storage of WAP Gateway Information and Interface to Core Network and Bearer Information on the (U)SIM.

F.2 User Preferences

User preferences consist of a set of information elements with user-defined values. The set is a subset of information elements required for composing an MM. User preferences include following information elements.

For the WAP implementation of MMS the corresponding header field names and their equivalent binary tokens as defined in [56] are given in parenthesis. For the storage of MMS User Preferences on the (U)SIM only these binary tokens shall be taken into account. The header field encoding according to [23] shall not be used for that purpose.

- Delivery report (Delivery-Report, encoded as 0x06)
- Read reply (Read-Reply, encoded as 0x10)
- Sender visibility (Sender-Visibility, encoded as 0x14)
- Priority (Priority, encoded as 0x0F)
- Time of expiry (Expiry, encoded as 0x08)
- Earliest delivery time (Delivery-Time, encoded as 0x07)

Further information about the information elements, listed here, can be found in section 8.1.3 (Submission of Multimedia Message) of this specification.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030124

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **108** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	MM1 MMBox View Clarifications
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	21/01/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

In the MMBox View Request, there are information elements used to determine which MMs are to be selected for viewing, and which components of those MMs are to be viewed. Two of the selection elements are “Start” and “Limit”, which control how many MMs are presented by the MMS Relay to the handset. Since these elements are not returned in the response, the MMS User Agent must retain sufficient internal state, for each view transaction, so that the “Start” and “Limit” parameters may be used on subsequent View request/response pairs.

If, however, the View response were to include the Start and Limit elements of the corresponding request, then the MMS User Agent would not have to maintain state information for each transaction for each handset. This greatly reduces the processing and memory overhead for resource-constrained mobile handsets.

Therefore, this CR adds the “Start” and “Limit” information elements, supplied on the MMBox View request, to the list of information elements returned on the corresponding MMBox View response.

For similar reasons, the Attributes List (which controls which parts of an MM be retrieved), the Message Reference List, and Select information elements have been included in the MMBox View response. By returning these selection criteria in the view response, the MMS handsets do ***not*** need to maintain transactional state.

In this way, the response to any MMBox View request will contain the entire context of the request, including all the selection parameters, with which a subsequent View can easily be generated by the MMS User Agent if requested by the user.

		Clarifying text was added regarding the grouping of information elements from each MM returned on a MMBox View request.
Summary of change:	⌘	Add the selection parameters from the MMBox View Inbox request to the corresponding MMBox View Inbox response. Clarify the grouping of information elements in the response.
Consequences if not approved:	⌘	MMS Clients will require more memory and processor of the handset, which will increase the cost of producing an MMS handset that supports MMBoxes, which, in turn, will increase the cost of an already expensive MMS handset to subscribers, which, ultimately, will inhibit adoption and usage.

Clauses affected:	⌘	8.1.10.1, 8.1.10.3, 8.1.10.4			
Other specs affected:	⌘	**Y** / **N**		⌘	
			X Other core specifications		
			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.

8.1.10 View the MMBox

This part of the MMS service describes the mechanism by which an MMS User Agent may request a listing of the MMs contained within the subscriber's MMBox. The MMS User Agent shall issue the request to view selected portions of MMs within the subscriber's MMBox, as well as information about the MMBox itself, from the corresponding MMS Relay/Server.

Involved abstract messages are outlined in Table 22 from type and direction points of view.

Table 1: Abstract messages for viewing the MMBox

Abstract messages	Type	Direction
MM1_mmbox_view.REQ	Request	MMS UA -> MMS Relay/Server
MM1_mmbox_view.RES	Response	MMS UA <- MMS Relay/Server

8.1.10.1 Normal Operations

The MMS User Agent will issue an MM1_mmbox_view.REQ message, containing optional request qualifiers, to the MMS Relay/Server. The MMS Relay/Server will respond with an abstract message, MM1_mmbox_view.RES, containing the original selection parameters and the resulting view data as the content of the abstract message. This information shall consist of a listing of the MMBox contents, possibly including information about the MMBox itself.

When the Start and Limit attributes are used, several pairs of MM1 mmbox_view.REQ and MM1_mmbox_view.RES transactions ~~might~~ may be used in order to acquire the complete set of results. The MM1_mmbox_view.RES shall contain the selection parameters that were used to generate the contents of the response, including the Start and Limit attributes, if present.

8.1.10.2 Abnormal Operations

In this case the originator MMS Relay/Server shall respond with a MM1_mmbox_view.RES encapsulating a status which indicates the reason the operation could not be completed, e.g. corrupted abstract message, no subscription, service not available, MMBox not supported, MMBox not enabled, MMBox I/O error.

If the MMS Relay/Server does not provide the MM1_mmbox_view.RES the MMS User Agent should be able to recover.

8.1.10.3 Features

Attributes list: A list of information element names that are used in the MM1_mmbox_view.REQ, which request corresponding information elements from the MMs to be conveyed in the MM1_mmbox_view.RES. The list of known information element names are those currently defined for the MM1_retrieve.RES and MM1_notification.REQ. The Content information element may be specified, with the result that content of each MM selected is also returned in the response. In the absence of the Attributes list information element, the MMS Relay/Server shall, by default and if available, select these information elements from each viewed MM: Message ID, Date and time, Sender address, Subject, Message size, MM State, and MM Flags.

Message Selection: Messages which are to be viewed may be selected by a list of Message References or by a selection based on MM State and/or MM Flags keywords. Either Message Reference List or Select may be supplied in the MM1_mmbox_view.REQ, which selects MMs for inclusion in the content in the MM1_mmbox_view.RES. In the absence of the Message Reference List, if Select is present and if any of the select keywords matches either the MM State or any of the MM flags on an MM in the MMBox, the requested information elements of the MM shall be included in the MM1_mmbox_view.RES (example: "Select: new" or "Select: draft") , along with the Select information element. The absence of both the Message References List and the Select information elements shall yield a listing of all MMs currently stored within the MMBox.

Partial views: MMBox view results may be received in its entirety, or may be indexed to start the view at a given MM offset relative to the selected MMs, and/or may be limited to finite number of MMs to be viewed. The Start information element is a number that may be used in the MM1_mmbox_view.REQ to index the first MM to be viewed, relative to the selected set of MMs, allowing partial views to be requested. If Start is absent, the first selected MM will begin the view results. The Limit information element is a number that may be provided in the MM1_mmbox_view.REQ to

specify a limit for the number of MMs the information elements to which shall be returned in the MM1_mmbox_view.RES. If Limit is absent, all of the remaining MMs shall be returned. If present in the MM1_mmbox_view.REQ, the Start and Limit information elements shall be returned in the corresponding MM1_mmbox_view.RES.

MMBox Information: The Totals information element, if present on the request, indicates that the MMBox totals are requested. In the response, the Totals information element value shall be the total number of messages and/or total size, with the units (e.g.: Messages or Bytes) identified. The Quotas information element, if present on the request, indicates that the MMBox quotas, in terms of messages and/or size, are requested. In the response, the Quotas information element value shall be the quotas as the maximum number of messages allowed and/or the maximum size allowed, with the units (e.g.: Messages or Bytes) identified.

MM Listing: a list of information elements from the MMs returned within the MM1_mmbox_view.RES. The listing shall consist of the following information elements, separately grouped for each MM returned in the list:

- Message reference: a unique reference to an MM
- Information elements corresponding to those requested in the Select information element on the MM1_mmbox_view.REQ;

The grouping of information elements from multiple MMs in the the listing shall be accomplished with a consistent encapsulation (e.g., MIME-encapsulation), such that the information elements of each MM shall be clearly distinguished from those of another MM.

Request Status: This will be the status code for any failures of the MM1_mmbox_view.REQ command. The reason code given in the status information element of the MM1_mmbox_view.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.

Transaction Identification: The 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_mmbox_view.REQ and MM1_mmbox_view.RES as such.

8.1.10.4 Information Elements

Table 2: Information elements in the MM1_mmbox_view.REQ

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_mmbox_view.REQ.
Transaction ID	Mandatory	The identification of the MM1_mmbox_view.REQ/MM1_mmbox_view.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS User Agent.
Attributes list	Optional	A list of information elements that are to be returned as a group for each MM to be listed in the MM1_mmbox_view.RES. If absent, the default list shall apply.
Message Reference list	Optional	One or more Message References which are to have their information elements listed.
Select	Optional	A list of MM State or MM Flags keywords, by which MMs within the MMBox can be selected, if the Message Reference list is absent.
Start	Optional	A number, indicating the index of the first MM of those selected to have information elements returned in the response. If this is absent, the first item selected is returned.
Limit	Optional	A number indicating the maximum number of selected MMs to their information elements returned in the response. If this is absent, information elements from all remaining MMs are returned.
Totals	Optional	Indicates that the current total number of messages and/or size contained by the MMBox are requested
Quotas	Optional	Indicates that the current message and/or size quotas are requested

Table 3: Information elements in the MM1_mmbox_view.RES

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_mmbox_view.RES.
Transaction ID	Mandatory	The identification of the MM1_mmbox_view.REQ/MM1_mmbox_view.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS Relay/Server.
MM Listing	Conditional	The requested listing of the selected MMs, which shall be one or more groups of information elements, one for each MM listed. Each clearly separated MM group shall include: a Message Reference, and ~~may~~ will include ~~additional~~ the information elements specified by the Attributes as well. If absent, no MMs were found or selected.
Attributes list	Optional	A list of information elements that were specified in the MM1_mmbox_view.RES. If absent, the default list was applied.
Select	Optional	If present, a list of MM State or MM Flags keywords, which selected the MMs returned in this response.
Start	Optional	If present, the numeric index of the first MM of the selected MMs returned in the response.
Limit	Optional	If present, the maximum number of selected MMs from which some or all information elements have been returned in the response. If this is absent, information elements from all remaining MMs are returned.
Request Status	Conditional	If an error occurs, this is a code indicating the exact cause of the error. For successful responses, the Status may be returned with a corresponding success code.
Request Status Text	Optional	If an error occurs, this may contain explanatory text that corresponds to the Request Status.
Totals	Conditional	The total number of messages and/or bytes for the MMBox, identified with Messages or Bytes, respectively, depending upon the presence of Totals in the request.
Quotas	Conditional	The quotas of the MMBox in messages and/or bytes identified with Messages or Bytes, respectively, depending upon the presence of Quotas in the request.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030125

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **109** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	MM1 MMBox View Clarifications
Source:	⌘	T2
Work item code:	⌘	MMS6
Date:	⌘	22/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

In the MMBox View Request, there are information elements used to determine which MMs are to be selected for viewing, and which components of those MMs are to be viewed. Two of the selection elements are “Start” and “Limit”, which control how many MMs are presented by the MMS Relay to the handset. Since these elements are not returned in the response, the MMS User Agent must retain sufficient internal state, for each view transaction, so that the “Start” and “Limit” parameters may be used on subsequent View request/response pairs.

If, however, the View response were to include the Start and Limit elements of the corresponding request, then the MMS User Agent would not have to maintain state information for each transaction for each handset. This greatly reduces the processing and memory overhead for resource-constrained mobile handsets.

Therefore, this CR adds the “Start” and “Limit” information elements, supplied on the MMBox View request, to the list of information elements returned on the corresponding MMBox View response.

For similar reasons, the Attributes List (which controls which parts of an MM be retrieved), the Message Reference List, and Select information elements have been included in the MMBox View response. By returning these selection criteria in the view response, the MMS handsets do ***not*** need to maintain transactional state.

In this way, the response to any MMBox View request will contain the entire context of the request, including all the selection parameters, with which a subsequent View can easily be generated by the MMS User Agent if requested by the user.

		Clarifying text was added regarding the grouping of information elements from each MM returned on a MMBox View request.
Summary of change:	⌘	Add the selection parameters from the MMBox View Inbox request to the corresponding MMBox View Inbox response. Clarify the grouping of information elements in the response.
Consequences if not approved:	⌘	MMS Clients will require more memory and processor of the handset, which will increase the cost of producing an MMS handset that supports MMBoxes, which, in turn, will increase the cost of an already expensive MMS handset to subscribers, which, ultimately, will inhibit adoption and usage.

Clauses affected:	⌘	8.1.10.1, 8.1.10.3, 8.1.10.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			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.

8.1.10 View the MMBox

This part of the MMS service describes the mechanism by which an MMS User Agent may request a listing of the MMs contained within the subscriber's MMBox. The MMS User Agent shall issue the request to view selected portions of MMs within the subscriber's MMBox, as well as information about the MMBox itself, from the corresponding MMS Relay/Server.

Involved abstract messages are outlined in Table 22 from type and direction points of view.

Table 1: Abstract messages for viewing the MMBox

Abstract messages	Type	Direction
MM1_mmbox_view.REQ	Request	MMS UA -> MMS Relay/Server
MM1_mmbox_view.RES	Response	MMS UA <- MMS Relay/Server

8.1.10.1 Normal Operations

The MMS User Agent will issue an MM1_mmbox_view.REQ message, containing optional request qualifiers, to the MMS Relay/Server. The MMS Relay/Server will respond with an abstract message, MM1_mmbox_view.RES, containing the original selection parameters and the resulting view data as the content of the abstract message. This information shall consist of a listing of the MMBox contents, possibly including information about the MMBox itself.

When the Start and Limit attributes are used, several pairs of MM1 mmbox_view.REQ and MM1_mmbox_view.RES transactions ~~might~~ may be used in order to acquire the complete set of results. The MM1_mmbox_view.RES shall contain the selection parameters that were used to generate the contents of the response, including the Start and Limit attributes, present.

8.1.10.2 Abnormal Operations

In this case the originator MMS Relay/Server shall respond with a MM1_mmbox_view.RES encapsulating a status which indicates the reason the operation could not be completed, e.g. corrupted abstract message, no subscription, service not available, MMBox not supported, MMBox not enabled, MMBox I/O error.

If the MMS Relay/Server does not provide the MM1_mmbox_view.RES the MMS User Agent should be able to recover.

8.1.10.3 Features

Attributes list: A list of information element names that are used in the MM1_mmbox_view.REQ, which request corresponding information elements from the MMs to be conveyed in the MM1_mmbox_view.RES. The list of known information element names are those currently defined for the MM1_retrieve.RES and MM1_notification.REQ. The Content information element may be specified, with the result that content of each MM selected is also returned in the response.

In the absence of the Attributes list information element, the MMS Relay/Server shall, by default and if available, select these information elements from each viewed MM: Message ID, Date and time, Sender address, Subject, Message size, MM State, and MM Flags.

Message Selection: Messages which are to be viewed may be selected by a list of Message References or by a selection based on MM State and/or MM Flags keywords. Either Message Reference List or Select may be supplied in the MM1_mmbox_view.REQ, which selects MMs for inclusion in the content in the MM1_mmbox_view.RES. In the absence of the Message Reference List, if Select is present and if any of the select keywords matches either the MM State or any of the MM flags on an MM in the MMBox, the requested information elements of the MM shall be included in the MM1_mmbox_view.RES (example: "Select: new" or "Select: draft"), along with the Select information element. The absence of both the Message References List and the Select information elements shall yield a listing of all MMs currently stored within the MMBox.

Partial views: MMBox view results may be received in its entirety, or may be indexed to start the view at a given MM offset relative to the selected MMs, and/or may be limited to finite number of MMs to be viewed. The Start information element is a number that may be used in the MM1_mmbox_view.REQ to index the first MM to be viewed, relative to

the selected set of MMs, allowing partial views to be requested. If Start is absent, the first selected MM will begin the view results. The Limit information element is a number that may be provided in the MM1_mmbox_view.REQ to specify a limit for the number of MMs the information elements to which shall be returned in the MM1_mmbox_view.RES. If Limit is absent, all of the remaining MMs shall be returned. If present in the MM1_mmbox_view.REQ, then the Start and Limit information elements are returned in the corresponding MM1_mmbox_view.RES.

MMBox Information: The Totals information element, if present on the request, indicates that the MMBox totals are requested. In the response, the Totals information element value shall be the total number of messages and/or total size, with the units (e.g.: Messages or Bytes) identified. The Quotas information element, if present on the request, indicates that the MMBox quotas, in terms of messages and/or size, are requested. In the response, the Quotas information element value shall be the quotas as the maximum number of messages allowed and/or the maximum size allowed, with the units (e.g.: Messages or Bytes) identified.

MM Listing: a list of information elements from the MMs returned within the MM1_mmbox_view.RES. The listing shall consist of the following information elements, separately grouped for each MM returned in the list:

- Message reference: a unique reference to an MM
- Information elements corresponding to those requested in the Select information element on the MM1_mmbox_view.REQ;

The grouping of information elements from multiple MMs in the the listing shall be accomplished with a consistent encapsulation (e.g., MIME-encapsulation), such that the information elements of each MM shall be clearly distinguished from those of another MM.

Request Status: This will be the status code for any failures of the MM1_mmbox_view.REQ command. The reason code given in the status information element of the MM1_mmbox_view.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.

Transaction Identification: The 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_mmbox_view.REQ and MM1_mmbox_view.RES as such.

8.1.10.4 Information Elements

Table 2: Information elements in the MM1_mmbox_view.REQ

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_mmbox_view.REQ.
Transaction ID	Mandatory	The identification of the MM1_mmbox_view.REQ/MM1_mmbox_view.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS User Agent.
Attributes list	Optional	A list of information elements that are to be returned as a group for each MM to be listed in the MM1_mmbox_view.RES. If absent, the default list shall apply.
Message Reference list	Optional	One or more Message References which are to have their information elements listed.
Select	Optional	A list of MM State or MM Flags keywords, by which MMs within the MMBox can be selected, if the Message Reference list is absent.
Start	Optional	A number, indicating the index of the first MM of those selected to have information elements returned in the response. If this is absent, the first item selected is returned.
Limit	Optional	A number indicating the maximum number of selected MMs to their information elements returned in the response. If this is absent, information elements from all remaining MMs are returned.
Totals	Optional	Indicates that the current total number of messages and/or size contained by the MMBox are requested
Quotas	Optional	Indicates that the current message and/or size quotas are requested

Table 3: Information elements in the MM1_mmbox_view.RES

Information element	Presence	Description
Message Type	Mandatory	Identifies this message as MM1_mmbox_view.RES.
Transaction ID	Mandatory	The identification of the MM1_mmbox_view.REQ/MM1_mmbox_view.RES pair.
MMS Version	Mandatory	Identifies the version of the interface supported by the MMS Relay/Server.
MM Listing	Conditional	The requested listing of the selected MMs, which shall be one or more groups of information elements, one for each MM listed. Each clearly separated MM group shall include: a Message Reference, and will ~~may~~ include the additional information elements specified by the Attributes as well. If absent, no MMs were found or selected.
Attributes list	Optional	A list of information elements that were specified in the MM1_mmbox_view.RES. If absent, the default list was applied.
Select	Optional	If present, a list of MM State or MM Flags keywords, which selected the MMs returned in this response.
Start	Optional	If present, the numeric index of the first MM of the selected MMs returned in the response.
Limit	Optional	If present, the maximum number of selected MMs from which some or all information elements have been returned in the response. If this is absent, information elements from all remaining MMs are returned.

Request Status	Conditional	If an error occurs, this is a code indicating the exact cause of the error. For successful responses, the Status may be returned with a corresponding success code.
Request Status Text	Optional	If an error occurs, this may contain explanatory text that corresponds to the Request Status.
Totals	Conditional	The total number of messages and/or bytes for the MMBox, identified with Messages or Bytes, respectively, depending upon the presence of Totals in the request.
Quotas	Conditional	The quotas of the MMBox in messages and/or bytes identified with Messages or Bytes, respectively, depending upon the presence of Quotas in the request.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030129

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **110** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*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:	⌘	MM4_Read_reply_report processing refers to an incorrect message
Source:	⌘	T2
Work item code:	⌘	MMS
Date:	⌘	23/01/2003
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The processing of the MM4_Read_reply_report wrongly refers to the MM4_Delivery_report message
Summary of change:	⌘	Changes from MM4_Delivery_report message to MM4_Read_reply_report
Consequences if not approved:	⌘	Incorrect implementation

Clauses affected:	⌘	8.4.4.7			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			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.

8.4.4.7 MM4_Read_reply_report.RES Header Mappings

The mappings of the MM4_Read_reply_report.RES information elements to STD 11 headers is detailed in the table below.

Table 1: MM4_Read_reply_report.RES Information Elements to STD 11 Header Mappings

Information element	STD 11 Header
3GPP MMS Version	X-Mms-3GPP-MMS-Version:
Message Type	X-Mms-Message-Type:
Transaction ID	X-Mms-Transaction-ID:
Request Status	X-Mms-Request-Status-Code:
Request Status text	X-Mms-Status-Text:
-	Sender:
-	To:
-	Message-ID:
-	Date:

The STD 11 "Sender:" header value shall be the system address of the MMS Relay/Server that is replying to the ~~MM4_Delivery_report.REQ~~MM4_Read_reply_report.REQ.

The STD 11 "To:" header value of the MM4_Delivery_report.RES abstract message shall be obtained from the corresponding ~~MM4_Delivery_report.REQ~~ MM4_Read-reply_report.REQ Sender: header value.

The STD 11 "Date:" and "Message-ID:" headers, which do not have corresponding information elements, shall be provided appropriate values automatically by the MMS Server/Relay.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030130

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **111** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	MM4_Read_reply_report processing refers to an incorrect message
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	23/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The processing of the MM4_Read_reply_report wrongly refers to the MM4_Delivery_report message
Summary of change:	⌘	Changes from MM4_Delivery_report message to MM4_Read_reply_report
Consequences if not approved:	⌘	Incorrect implementation

Clauses affected:	⌘	8.4.4.7

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			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.

8.4.4.7 MM4_Read_reply_report.RES Header Mappings

The mappings of the MM4_Read_reply_report.RES information elements to STD 11 headers is detailed in the table below.

Table 1: MM4_Read_reply_report.RES Information Elements to STD 11 Header Mappings

Information element	STD 11 Header
3GPP MMS Version	X-Mms-3GPP-MMS-Version:
Message Type	X-Mms-Message-Type:
Transaction ID	X-Mms-Transaction-ID:
Request Status	X-Mms-Request-Status-Code:
Request Status text	X-Mms-Status-Text:
-	Sender:
-	To:
-	Message-ID:
-	Date:

The STD 11 "Sender:" header value shall be the system address of the MMS Relay/Server that is replying to the ~~MM4_Delivery_report.REQ~~MM4_Read_reply_report.REQ.

The STD 11 "To:" header value of the MM4_Delivery_report.RES abstract message shall be obtained from the corresponding ~~MM4_Delivery_report.REQ~~ MM4_Read-reply_report.REQ Sender: header value.

The STD 11 "Date:" and "Message-ID:" headers, which do not have corresponding information elements, shall be provided appropriate values automatically by the MMS Server/Relay.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030131

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **112** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	MM4_Read_reply_report processing refers to an incorrect message
Source:	⌘	T2
Work item code:	⌘	MMS6 ***Date:*** ⌘ 23/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The processing of the MM4_Read_reply_report wrongly refers to the MM4_Delivery_report message
Summary of change:	⌘	Changes from MM4_Delivery_report message to MM4_Read_reply_report
Consequences if not approved:	⌘	Incorrect implementation

Clauses affected:	⌘	8.4.4.7			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			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.

8.4.4.7 MM4_Read_reply_report.RES Header Mappings

The mappings of the MM4_Read_reply_report.RES information elements to STD 11 headers is detailed in the table below.

Table 1: MM4_Read_reply_report.RES Information Elements to STD 11 Header Mappings

Information element	STD 11 Header
3GPP MMS Version	X-Mms-3GPP-MMS-Version:
Message Type	X-Mms-Message-Type:
Transaction ID	X-Mms-Transaction-ID:
Request Status	X-Mms-Request-Status-Code:
Request Status text	X-Mms-Status-Text:
-	Sender:
-	To:
-	Message-ID:
-	Date:

The STD 11 "Sender:" header value shall be the system address of the MMS Relay/Server that is replying to the ~~MM4_Delivery_report.REQ~~MM4_Read_reply_report.REQ.

The STD 11 "To:" header value of the MM4_Delivery_report.RES abstract message shall be obtained from the corresponding ~~MM4_Delivery_report.REQ~~ MM4_Read-reply_report.REQ Sender: header value.

The STD 11 "Date:" and "Message-ID:" headers, which do not have corresponding information elements, shall be provided appropriate values automatically by the MMS Server/Relay.

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030132

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **113** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	Addition of missing field in table K6
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	23/01/2003
Category:	⌘	F
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Annex K (table K6) is wrong.
Summary of change:	⌘	1) Delete duplicate “Delivery-Report”, 2) add missing “Distribution-Indicator”.
Consequences if not approved:	⌘	TS23.140 is internally inconsistent.

Clauses affected:	⌘	Annex K (table K6)

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			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.

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

Table K.6: Mapping MM7_Submit.REQ -> MM4_Forward.REQ

Information elements in MM4_Forward.REQ	Information elements in MM7_Submit.REQ
3GPP MMS Version	-
Message Type	-
Transaction ID	-
Message ID	-
Recipient(s) address	Recipient address
Sender address	Sender address
Content type	Content type
Message class	Message class
Date and time	Date and time
Time of Expiry	Time of Expiry
Delivery report	Delivery report
Priority	Priority
Sender visibility	-
Read reply	Read reply
Subject	Subject
Acknowledgement Request	-
Forward counter	-
Previously-sent-by	-
Previously-sent-date and-time	-
Content	Content
-	Transaction ID
-	Message type
-	MM7 version
-	VASP ID
-	VAS ID
-	Service code
-	Linked ID
-	Earliest delivery time
-	~~Delivery report~~
-	Reply-Charging
-	Reply-Deadline
-	Reply-Charging-Size
-	Adaptations
-	Distribution-Indicator

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030133

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **114** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Addition of missing field in table K6
Source:	⌘	T2
Work item code:	⌘	MMS6
Date:	⌘	23/01/2003
Category:	⌘	A
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Annex K (table K6) is wrong.
Summary of change:	⌘	1) Delete duplicate “Delivery-Report”, 2) add missing “Distribution-Indicator”.
Consequences if not approved:	⌘	TS23.140 is internally inconsistent.

Clauses affected:	⌘	Annex K (table K6)			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			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.

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

Table K.6: Mapping MM7_Submit.REQ -> MM4_Forward.REQ

Information elements in MM4_Forward.REQ	Information elements in MM7_Submit.REQ
3GPP MMS Version	-
Message Type	-
Transaction ID	-
Message ID	-
Recipient(s) address	Recipient address
Sender address	Sender address
Content type	Content type
Message class	Message class
Date and time	Date and time
Time of Expiry	Time of Expiry
Delivery report	Delivery report
Priority	Priority
Sender visibility	-
Read reply	Read reply
Subject	Subject
Acknowledgement Request	-
Forward counter	-
Previously-sent-by	-
Previously-sent-date and-time	-
Content	Content
-	Transaction ID
-	Message type
-	MM7 version
-	VASP ID
-	VAS ID
-	Service code
-	Linked ID
-	Earliest delivery time
-	~~Delivery report~~
-	Reply-Charging
-	Reply-Deadline
-	Reply-Charging-Size
-	Adaptations
-	Distribution-Indicator

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030193

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **115** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	Correcting definition of MM7 Version
Source:	⌘	T2
Work item code:	⌘	MESS5-MMS
Date:	⌘	28/02/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	According to the current definition of the MM7 Version the MM7 schema should be changed each time the document is updated (so that the version that is defined in the schema corresponds to the document version). This change would limit this constant race to change the version only each time that there is an actual change to the MM7 schema. Details –element in informative example at 8.7.9.4 was not according to the normative XML Schema.
Summary of change:	⌘	Change of definition of MM7 Version field to indicate version of document that schema was changed in. An example extension was added to the example in 8.7.9.4.
Consequences if not approved:	⌘	Either inconsistency between the specification and the schema definition or a great deal of overhead in maintaining the MM7 schema

Clauses affected:	⌘	Section 8.7.9 Annex L (change MM7 Version definition)

Other specs affected:	⌘	Y	N		⌘
		☐	☐	Other core specifications	
		☐	☐	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.

8.7.9 Mapping of Information Elements to SOAP Elements

The following subsections detail the mapping of the information elements of the abstract messages to SOAP elements. The full XML Schema definition of the MM7 reference point appears in Annex L of this document. Specification of the format of SOAP element values appear in the schema.

8.7.9.1 MM7_submit.REQ 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~~is number of this specification~~, e.g. 5.2.0
VASP ID	SOAP Body	VASPID	
VAS ID	SOAP Body	VASID	
Sender Address	SOAP Body	SenderAddress	
Recipient Address	SOAP Body	Recipients	Different address format will be specified as part of element value
Service code	SOAP Body	ServiceCode	Information supplied for billing purposes – exact format is implementation dependent
Linked ID	SOAP Body	LinkedID	Message-ID of linked message
Message class	SOAP Body	MessageClass	Enumeration – possible values: Informational, Advertisement, Auto
Date and time	SOAP Body	TimeStamp	
Time of Expiry	SOAP Body	ExpiryDate	
Earliest delivery time	SOAP Body	EarliestDeliveryTime	
Delivery report	SOAP Body	DeliveryReport	Boolean – true or false
Read reply	SOAP Body	ReadReply	Boolean – true or false
Reply-Charging	SOAP Body	ReplyCharging	No value – presence implies true!
Reply-Deadline	SOAP Body	replyDeadline	Attribute of *ReplyCharging* element Date format – absolute or relative
Reply-Charging-Size	SOAP Body	replyChargingSize	Attribute of *ReplyCharging* element
Priority	SOAP Body	Priority	Enumeration – possible values: High, Normal, Low
Subject	SOAP Body	Subject	
Adaptations	SOAP Body	allowAdaptations	Attribute of *Content* element Boolean – true or false
Charged Party	SOAP Body	ChargedParty	Enumeration – possible values: Sender, Recipient, Both, Neither
Message Distribution Indicator	SOAP Body	DistributionIndicator	Boolean – true or false
Content type	MIME header – Attachment	Content-Type	
Content	SOAP Body	Content	href:cid attribute links to attachment

8.7.9.2 MM7_submit.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~~is number of this specification~~, e.g. 5.2.0
Message ID	SOAP Body	MessageID	
Request Status	SOAP Body	StatusCode	See section 8.7.8.4
Request Status Text	SOAP Body	StatusText & Details	See section 8.7.8.4

Sample message submission

```
POST /mms-rs/mm7 HTTP/1.1
Host: mms.omms.com
Content-Type: multipart/related; boundary="NextPart_000_0028_01C19839.84698430"; type=text/xml;
    start="</tnn-200102/mm7-submit>"
Content-Length: nnnn
SOAPAction: ""

--NextPart_000_0028_01C19839.84698430
Content-Type:text/xml; charset="utf-8"
Content-ID: </tnn-200102/mm7-submit>

<?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-MM7-1-23"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-23">
            <MM7Version>5.36.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>News</VASID>
            </SenderIdentification>
            <Recipients>
                <To>
                    <Number>7255441234</Number>
                    <RFC2822Address displayOnly="true">7255442222@OMMS.com</RFC2822Address>
                </To>
                <Cc>
                    <Number>7255443333</Number>
                </Cc>
                <Bcc>
                    <RFC2822Address>7255444444@OMMS.com</RFC2822Address>
                </Bcc>
            </Recipients>
            <ServiceCode>gold-sp33-im42</ServiceCode>
            <LinkedID>mms00016666</LinkedID>
            <MessageClass>Informational</MessageClass>
            <TimeStamp>2002-01-02T09:30:47-05:00</TimeStamp>
            <EarliestDeliveryTime>2002-01-02T09:30:47-05:00</EarliestDeliveryTime>
            <ExpiryDate>P90D</ExpiryDate>
            <DeliveryReport>true</DeliveryReport>
            <Priority>Normal</Priority>
            <Subject>News for today</Subject>
            <ChargedParty>Sender</ChargedParty>
            <DistributionIndicator>true</DistributionIndicator>
            <Content href="cid:SaturnPics-01020930@news.tnn.com" allowAdaptations="true"/>
```

```
        </SubmitReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0028_01C19839.84698430
Content-Type: multipart/mixed; boundary="StoryParts 74526 8432 2002-77645"
Content-ID:<SaturnPics-01020930@news.tnn.com>

--StoryParts 74526 8432 2002-77645
Content-Type: text/plain; charset="us-ascii"

Science news, new Saturn pictures...

--StoryParts 74526 8432 2002-77645
Content-Type: image/gif;
Content-ID:<saturn.gif>
Content-Transfer-Encoding: base64

R0lGODdhZAAwAOMAAAAAAIGJjGltcDE0OOfWo6Ochbi1n1pmcbGojpKbnP/lpW54fBMTE1RYXEFO
…

--StoryParts 74526 8432 2002-77645--
--NextPart_000_0028_01C19839.84698430--
```

NOTE: The different encoding mechanisms, as defined by RFC2045 [44], can be utilized for content encoding.

The response message is sent by the MMS Relay/Server back to the VASP for the VAS application in a HTTP Response message.

```
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-MM7-1-23"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <SubmitRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-23">
            <MM7Version>5.36.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>Success</StatusText>
            </Status>
            <MessageID>041502073667</MessageID>
        </SubmitRsp>
    </env:Body>
</env:Envelope>
```

8.7.9.3 MM7_deliver.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Linked ID	SOAP Body	LinkedID	Message-ID of linked message
Sender address	SOAP Body	Sender	
Recipient address	SOAP Body	Recipients	If none appear then Sender Address is used
Date and time	SOAP Body	TimeStamp	
Reply-Charging-ID	SOAP Body	ReplyChargingID	Should correspond to an ID that appeared in previous MM7_submit.REQ
Priority	SOAP Body	Priority	Enumeration – possible values: High, Normal, Low
Subject	SOAP Body	Subject	
Content type	MIME header of attachment	Content-Type	
Content	SOAP Body	Content	href:cid attribute links to attachment

8.7.9.4 MM7_deliver.RES

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~~is number of this specification~~, e.g. 5.2.0
Service code	SOAP Body	ServiceCode	
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

Sample Deliver request and response

```
POST /mms/weather.xml HTTP/1.1
Host: www.yahoo.com
Content-Type: multipart/related; boundary="NextPart_000_0125_01C19839.7237929064"; type=text/xml;
    start="</cmvt256/mm7-deliver>"
Content-Length: nnnn
SOAPAction: ""

--NextPart_000_0125_01C19839.7237929064
Content-Type:text/xml; charset="utf-8"
Content-ID: </cmvt256/mm7-submit>
```

```
<?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-MM7-1-23"
env:mustUnderstand="1">
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <!-- Example of MM7_deliverReq -->
        <DeliverReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-23">
            <MM7Version>5.36.0</MM7Version>
            <MMSRelayServerID>240.110.75.34</MMSRelayServerID>
            <LinkedID>wthr8391</LinkedID>
            <Sender>
                <RFC2822Address>97254265781@OMMS.com</RFC2822Address>
            </Sender>
            <TimeStamp>2002-04-15T14:35:21-05:00</TimeStamp>
            <Priority>Normal</Priority>
            <Subject>Weather Forecast</Subject>
            <Content href="cid:forecast-location200102-86453"/>
        </DeliverReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0125_01C19839.7237929064
Content-Type:text/plain;charset="utf-8"
Content-ID:<forecast-location2000102-86453>

Los Angeles, Calif, USA
--NextPart_000_0125_01C19839.7237929064--
```

The deliver response message might look like this (with an application error code):

```
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-MM7-1-23"
env:mustUnderstand="1">
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
       <env:Fault>
            <faultcode>env:Client</faultcode>
            <faultstring>Client error</faultstring>
            <detail>
        <VASPErrorRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-23">
                    <MM7Version>5.36.0</MM7Version>
                    <Status>
                        <StatusCode>4006</StatusCode>
                        <StatusText>Service Unavailable</StatusText>
                        <Details>
                            <app:Reason xmlns:app="http://vendor.example.com/MM7Extension">Location
not covered in service</app:Reason>
                        </Details>
                    </Status>
                </VASPErrorRsp>
            </detail>
        </env:Fault>
    </env:Body>
</env:Envelope>
```

8.7.9.5 MM7_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~~is number of this specification~~, 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	

8.7.9.6 MM7_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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

The following shows an interchange of a MM7_cancel.REQ and MM7_cancel.RES to illustrate a SOAP message that does not include a multimedia content part.

```
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-MM7-1-23"
env:mustUnderstand="1">
                vas0000–can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <CancelReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
23">
            <MM7Version>5.36.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>Reminder</VASID>
            </SenderIdentification>
            <MessageID>mms000222222</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-MM7-1-32"
env:mustUnderstand="1">
                vas0000–can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <CancelRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
32">
            <MM7Version>5.36.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>Success</StatusText>
            </Status>
        </CancelRsp>
    </env:Body>
</env:Envelope>
```

8.7.9.7 MM7_replace.REQ 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~~is number of this specification~~, 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
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

8.7.9.8 MM7_replace.RES mapping

Information Element	Location	ElementName	Comments
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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.9 MM7_delivery_report.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Message ID	SOAP Body	MessageID	
Recipient address	SOAP Body	Recipient	
Sender address	SOAP Body	Sender	
Date and time	SOAP Body	TimeStamp	
MM Status	SOAP Body	MMStatus	Enumeration – possible values: Expired, Retrieved, Rejected, Indeterminate, Forwarded
Status text	SOAP Body	StatusText	

8.7.9.10 MM7_delivery_report.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~~is number of this specification~~, e.g. 5.2.0
Request Status	SOAP Body	StatusCode	See section 8.7.8.4
Request Status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.11 MM7_read_reply.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Message ID	SOAP Body	MessageID	
Recipient address	SOAP Body	Recipient	
Sender address	SOAP Body	Sender	
Date and time	SOAP Body	TimeStamp	
Read Status	SOAP Body	MMStatus	Enumeration – possible values: Indeterminate, Read, Deleted without Read
Status text	SOAP Body	StatusText	

8.7.9.12 MM7_read_reply.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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.13 MM7_RS_error.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~~is number of this specification~~, e.g. 5.2.0
Error status	SOAP Body	StatusCode	See section 8.7.8.4
Error status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.14 MM7_VASP_error.RES mapping

Information Element	Location	Element-name	Comments
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~~is number of this specification~~, e.g. 5.2.0
Error status	SOAP Body	StatusCode	See section 8.7.8.4
Error status text	SOAP Body	StatusText & Details	See section 8.7.8.4

Annex L (normative): MM7 XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-32" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-32"
elementFormDefault="qualified" attributeFormDefault="unqualified">

<xs:import namespace="http://schemas.xmlsoap.org/soap/envelope/"
schemaLocation="http://schemas.xmlsoap.org/soap/envelope/"/>

    <xs:element name="TransactionID">
        <xs:annotation>
            <xs:documentation>The transaction ID that shall be included in the SOAP
Header</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:simpleContent>
                <xs:extension base="xs:string">
                    <xs:attribute ref="soap:mustUnderstand"/>
                    <xs:attribute ref="soap:encodingStyle"/>
                    <xs:attribute ref="soap:actor"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
    </xs:element>
    <xs:element name="SubmitReq" type="tns:submitReqType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Sending MM from the VASP to one or more
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="SubmitRsp" type="tns:submitRspType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM submission
request</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverReq" type="tns:deliverReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery of MM from the MMS Relay/Server to the VASP
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverRsp" type="tns:deliverRspType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Response to a message delivered to the VASP from the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelReq" type="tns:cancelReqType">
        <xs:annotation>
```

```
            <xs:documentation>VASP  to MMS: Request to cancel a message submission
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM cancellation request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceReq" type="tns:replaceReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: Request to replace a message which was submitted
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM replace request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportReq" type="tns:deliveryReportReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a delivery report delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyReq" type="tns:readReplyReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a read reply delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="RSErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS to VASP: Error response to a any bad request sent to the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="VASPErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Error response to a any bad request sent to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:complexType name="senderIDType">
        <xs:sequence>
            <xs:element name="VASPID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="VASID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="SenderAddress" type="tns:addressType" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="submitReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
                <xs:sequence>
                    <xs:element name="Recipients" type="tns:recipientsType"/>
                    <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                    <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                    <xs:element name="MessageClass" type="tns:messageClassType"
default="Informational" minOccurs="0"/>
                    <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                    <xs:element name="ReplyCharging" minOccurs="0">
                        <xs:complexType>
```

```
                        <xs:attribute name="replyChargingSize" type="xs:positiveInteger"
use="optional"/>
                        <xs:attribute name="replyDeadline" type="tns:relativeOrAbsoluteDateType"
use="optional"/>
                    </xs:complexType>
                </xs:element>
                <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="ExpiryDate" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="DeliveryReport" type="xs:boolean" minOccurs="0"/>
                <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                <xs:element name="ChargedParty" type="tns:chargedPartyType" minOccurs="0"/>
                <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="submitRspType">
    <xs:complexContent>
        <xs:extension base="tns:genericResponseType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
            </xs:sequence>
        </xs:extension>     </xs:complexContent>
</xs:complexType>
<xs:complexType name="deliverReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="Recipients" type="tns:recipientsType" minOccurs="0"/>
                <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                <xs:element name="ReplyChargingID" type="tns:messageIDType" minOccurs="0"/>
                <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="deliverRspType">
    <xs:complexContent>
        <xs:extension base="tns:genericResponseType">
            <xs:sequence>
                <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="cancelReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericVASPRequestType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="replaceReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericVASPRequestType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
```

```
</xs:complexType>
<xs:complexType name="deliveryReportReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="Recipient" type="tns:addressType"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="Date" type="xs:dateTime"/>
                <xs:element name="MMStatus" type="tns:mmDeliveryStatusType"/>
                <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="readReplyReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="Recipient" type="tns:addressType"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="TimeStamp" type="xs:dateTime"/>
                <xs:element name="MMStatus" type="tns:mmReadStatusType"/>
                <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="genericRSReqType">
    <xs:annotation>
        <xs:documentation>base for all request messages from R/S to VASP</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="MMSRelayServerID" type="tns:entityIDType" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="genericVASPRequestType">
    <xs:annotation>
        <xs:documentation>Base type for all requests from VASP to R/S</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="SenderIdentification" type="tns:senderIDType"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="genericResponseType">
    <xs:annotation>
        <xs:documentation>Any simple response sent </xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="Status" type="tns:responseStatusType"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="responseStatusType">
    <xs:annotation>
        <xs:documentation>Status information conveyed in responses</xs:documentation>
    </xs:annotation>
    <xs:all>
        <xs:element name="StatusCode">
            <xs:simpleType>
                <xs:restriction base="tns:statusCodeType"/>
            </xs:simpleType>
        </xs:element>
        <xs:element name="StatusText" type="tns:statusTextType"/>
        <xs:element name="Details" type="tns:anyDataType" minOccurs="0"/>
    </xs:all>
</xs:complexType>
<xs:simpleType name="mmDeliveryStatusType">
    <xs:annotation>
        <xs:documentation>Statuses for MM7_delivery_report</xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:enumeration value="Expired"/>
        <xs:enumeration value="Retrieved"/>
        <xs:enumeration value="Rejected"/>
```

```
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Forwarded"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="mmReadStatusType">
        <xs:annotation>
            <xs:documentation>Statuses for MM7_read_reply</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Read"/>
            <xs:enumeration value="Deleted"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="messageIDType">
        <xs:annotation>
            <xs:documentation>Message ID</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
    <xs:group name="AddressGroup">
        <xs:choice>
            <xs:element name="RFC2822Address">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="Number">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="ShortCode">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
        </xs:choice>
    </xs:group>
    <xs:complexType name="multiAddressType">
        <xs:sequence maxOccurs="unbounded">
            <xs:group ref="tns:AddressGroup"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="addressType">
        <xs:group ref="tns:AddressGroup"/>
    </xs:complexType>
    <xs:complexType name="serviceCodeType">
        <xs:annotation>
            <xs:documentation>Used to identify the specific service given for billing
purposes</xs:documentation>
        </xs:annotation>
        <xs:simpleContent>
            <xs:extension base="xs:string">
                <xs:anyAttribute namespace="##other" processContents="lax"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:simpleType name="entityIDType">
        <xs:annotation>
            <xs:documentation>String used to identify the VAS, VASP and MMSC</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
```

```
    </xs:simpleType>
    <xs:complexType name="recipientsType">
        <xs:annotation>
            <xs:documentation>At least one of To,CC,Bcc</xs:documentation>
        </xs:annotation>
        <xs:sequence maxOccurs="unbounded">
            <xs:choice>
                <xs:element name="To" type="tns:multiAddressType"/>
                <xs:element name="Cc" type="tns:multiAddressType"/>
                <xs:element name="Bcc" type="tns:multiAddressType"/>
            </xs:choice>
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="messageClassType">
        <xs:annotation>
            <xs:documentation>Message class</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Personal"/>
            <xs:enumeration value="Informational"/>
            <xs:enumeration value="Advertisement"/>
            <xs:enumeration value="Auto"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="priorityType">
        <xs:annotation>
            <xs:documentation>Priority of MM</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Normal"/>
            <xs:enumeration value="High"/>
            <xs:enumeration value="Low"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="relativeOrAbsoluteDateType">
        <xs:annotation>
            <xs:documentation>Date which can be relative or absolute</xs:documentation>
        </xs:annotation>
        <xs:union memberTypes="xs:dateTime xs:duration"/>
    </xs:simpleType>
    <xs:simpleType name="chargedPartyType">
        <xs:annotation>
            <xs:documentation>Allows specification of which party - Sender or Reciever pays for
transmission</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Sender"/>
            <xs:enumeration value="Recipient"/>
            <xs:enumeration value="Both"/>
            <xs:enumeration value="Neither"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="versionType">
        <xs:annotation>
            <xs:documentation>Version number in the format of x.y.z </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="5.36.0"/>
            <xs:enumeration value="5.5.0"/>
            <xs:enumeration value="5.3.0"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="statusCodeType">
        <xs:annotation>
            <xs:documentation>request status resonse codes in RES </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
    <xs:complexType name="contentReferenceType">
        <xs:annotation>
            <xs:documentation>content element including only href</xs:documentation>
        </xs:annotation>
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
        <xs:attribute name="allowAdaptations" type="xs:boolean" use="optional"/>
    </xs:complexType>
    <xs:complexType name="anyDataType">
        <xs:annotation>
            <xs:documentation>Any element and attribute </xs:documentation>
```

```
        </xs:annotation>
        <xs:complexContent>
            <xs:restriction base="xs:anyType">
                <xs:sequence>
                    <xs:any processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                </xs:sequence>
            </xs:restriction>
        </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="statusTextType">
        <xs:annotation>
            <xs:documentation>list of standard human-readable status descriptions</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
</xs:schema>
```

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030194

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **116** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Correcting definition of MM7 Version
Source:	⌘	T2
Work item code:	⌘	MMS6
Date:	⌘	28/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	According to the current definition of the MM7 Version the MM7 schema should be changed each time the document is updated (so that the version that is defined in the schema corresponds to the document version). This change would limit this constant race to change the version only each time that there is an actual change to the MM7 schema. Details –element in informative example at 8.7.9.4 was not according to the normative XML Schema.
Summary of change:	⌘	Change of definition of MM7 Version field to indicate version of document that schema was changed in. An example extension was added to the example in 8.7.9.4.
Consequences if not approved:	⌘	Either inconsistency between the specification and the schema definition or a great deal of overhead in maintaining the MM7 schema

Clauses affected:	⌘	Section 8.7.9 Annex L (change MM7 Version definition)			
Other specs affected:	⌘	**Y** / **N** ☐ / ☐ Other core specifications ☐ / ☐ 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.

8.7.9 Mapping of Information Elements to SOAP Elements

The following subsections detail the mapping of the information elements of the abstract messages to SOAP elements. The full XML Schema definition of the MM7 reference point appears in Annex L of this document. Specification of the format of SOAP element values appear in the schema.

8.7.9.1 MM7_submit.REQ 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~~is number of this specification~~, e.g. 5.2.0
VASP ID	SOAP Body	VASPID	
VAS ID	SOAP Body	VASID	
Sender Address	SOAP Body	SenderAddress	
Recipient Address	SOAP Body	Recipients	Different address format will be specified as part of element value
Service code	SOAP Body	ServiceCode	Information supplied for billing purposes – exact format is implementation dependent
Linked ID	SOAP Body	LinkedID	Message-ID of linked message
Message class	SOAP Body	MessageClass	Enumeration – possible values: Informational, Advertisement, Auto
Date and time	SOAP Body	TimeStamp	
Time of Expiry	SOAP Body	ExpiryDate	
Earliest delivery time	SOAP Body	EarliestDeliveryTime	
Delivery report	SOAP Body	DeliveryReport	Boolean – true or false
Read reply	SOAP Body	ReadReply	Boolean – true or false
Reply-Charging	SOAP Body	ReplyCharging	No value – presence implies true!
Reply-Deadline	SOAP Body	replyDeadline	Attribute of *ReplyCharging* element Date format – absolute or relative
Reply-Charging-Size	SOAP Body	replyChargingSize	Attribute of *ReplyCharging* element
Priority	SOAP Body	Priority	Enumeration – possible values: High, Normal, Low
Subject	SOAP Body	Subject	
Adaptations	SOAP Body	allowAdaptations	Attribute of *Content* element Boolean – true or false
Charged Party	SOAP Body	ChargedParty	Enumeration – possible values: Sender, Recipient, Both, Neither
Message Distribution Indicator	SOAP Body	DistributionIndicator	Boolean – true or false
Content type	MIME header – Attachment	Content-Type	
Content	SOAP Body	Content	href:cid attribute links to attachment

8.7.9.2 MM7_submit.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~~is number of this specification~~, e.g. 5.2.0
Message ID	SOAP Body	MessageID	
Request Status	SOAP Body	StatusCode	See section 8.7.8.4
Request Status Text	SOAP Body	StatusText & Details	See section 8.7.8.4

Sample message submission

```
POST /mms-rs/mm7 HTTP/1.1
Host: mms.omms.com
Content-Type: multipart/related; boundary="NextPart_000_0028_01C19839.84698430"; type=text/xml;
    start="</tnn-200102/mm7-submit>"
Content-Length: nnnn
SOAPAction: ""

--NextPart_000_0028_01C19839.84698430
Content-Type:text/xml; charset="utf-8"
Content-ID: </tnn-200102/mm7-submit>

<?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-MM7-1-32"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-32">
            <MM7Version>5.36.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>News</VASID>
            </SenderIdentification>
            <Recipients>
                <To>
                    <Number>7255441234</Number>
                    <RFC2822Address displayOnly="true">7255442222@OMMS.com</RFC2822Address>
                </To>
                <Cc>
                    <Number>7255443333</Number>
                </Cc>
                <Bcc>
                    <RFC2822Address>7255444444@OMMS.com</RFC2822Address>
                </Bcc>
            </Recipients>
            <ServiceCode>gold-sp33-im42</ServiceCode>
            <LinkedID>mms00016666</LinkedID>
            <MessageClass>Informational</MessageClass>
            <TimeStamp>2002-01-02T09:30:47-05:00</TimeStamp>
            <EarliestDeliveryTime>2002-01-02T09:30:47-05:00</EarliestDeliveryTime>
            <ExpiryDate>P90D</ExpiryDate>
            <DeliveryReport>true</DeliveryReport>
            <Priority>Normal</Priority>
            <Subject>News for today</Subject>
            <ChargedParty>Sender</ChargedParty>
            <DistributionIndicator>true</DistributionIndicator>
            <Content href="cid:SaturnPics-01020930@news.tnn.com" allowAdaptations="true"/>
```

```
        </SubmitReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0028_01C19839.84698430
Content-Type: multipart/mixed; boundary="StoryParts 74526 8432 2002-77645"
Content-ID:<SaturnPics-01020930@news.tnn.com>

--StoryParts 74526 8432 2002-77645
Content-Type: text/plain; charset="us-ascii"

Science news, new Saturn pictures...

--StoryParts 74526 8432 2002-77645
Content-Type: image/gif;
Content-ID:<saturn.gif>
Content-Transfer-Encoding: base64

R0lGODdhZAAwAOMAAAAAAIGJjGltcDE0OOfWo6Ochbi1n1pmcbGojpKbnP/lpW54fBMTE1RYXEFO
…

--StoryParts 74526 8432 2002-77645--
--NextPart_000_0028_01C19839.84698430--
```

NOTE: The different encoding mechanisms, as defined by RFC2045 [44], can be utilized for content encoding.

The response message is sent by the MMS Relay/Server back to the VASP for the VAS application in a HTTP Response message.

```
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-MM7-1-32"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <SubmitRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-32">
            <MM7Version>5.36.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>Success</StatusText>
            </Status>
            <MessageID>041502073667</MessageID>
        </SubmitRsp>
    </env:Body>
</env:Envelope>
```

8.7.9.3 MM7_deliver.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Linked ID	SOAP Body	LinkedID	Message-ID of linked message
Sender address	SOAP Body	Sender	
Recipient address	SOAP Body	Recipients	If none appear then Sender Address is used
Date and time	SOAP Body	TimeStamp	
Reply-Charging-ID	SOAP Body	ReplyChargingID	Should correspond to an ID that appeared in previous MM7_submit.REQ
Priority	SOAP Body	Priority	Enumeration – possible values: High, Normal, Low
Subject	SOAP Body	Subject	
Content type	MIME header of attachment	Content-Type	
Content	SOAP Body	Content	href:cid attribute links to attachment

8.7.9.4 MM7_deliver.RES

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~~is number of this specification~~, e.g. 5.2.0
Service code	SOAP Body	ServiceCode	
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

Sample Deliver request and response

```
POST /mms/weather.xml HTTP/1.1
Host: www.yahoo.com
Content-Type: multipart/related; boundary="NextPart_000_0125_01C19839.7237929064"; type=text/xml;
    start="</cmvt256/mm7-deliver>"
Content-Length: nnnn
SOAPAction: ""

--NextPart_000_0125_01C19839.7237929064
Content-Type:text/xml; charset="utf-8"
Content-ID: </cmvt256/mm7-submit>
```

```
<?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-MM7-1-23"
env:mustUnderstand="1">
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <!-- Example of MM7_deliverReq -->
        <DeliverReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-23">
            <MM7Version>5.36.0</MM7Version>
            <MMSRelayServerID>240.110.75.34</MMSRelayServerID>
            <LinkedID>wthr8391</LinkedID>
            <Sender>
                <RFC2822Address>97254265781@OMMS.com</RFC2822Address>
            </Sender>
            <TimeStamp>2002-04-15T14:35:21-05:00</TimeStamp>
            <Priority>Normal</Priority>
            <Subject>Weather Forecast</Subject>
            <Content href="cid:forecast-location200102-86453"/>
        </DeliverReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0125_01C19839.7237929064
Content-Type:text/plain;charset="utf-8"
Content-ID:<forecast-location2000102-86453>

Los Angeles, Calif, USA
--NextPart_000_0125_01C19839.7237929064--
```

The deliver response message might look like this (with an application error code):

```
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-MM7-1-23"
env:mustUnderstand="1">
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
       <env:Fault>
            <faultcode>env:Client</faultcode>
            <faultstring>Client error</faultstring>
            <detail>
        <VASPErrorRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-32">
                    <MM7Version>5.36.0</MM7Version>
                    <Status>
                        <StatusCode>4006</StatusCode>
                        <StatusText>Service Unavailable</StatusText>
                        <Details>
                            <app:Reason xmlns:app="http://vendor.example.com/MM7Extension">Location
not covered in service</app:Reason>
                        </Details>
                    </Status>
                </VASPErrorRsp>
            </detail>
        </env:Fault>
    </env:Body>
</env:Envelope>
```

8.7.9.5 MM7_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~~is number of this specification~~, 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	

8.7.9.6 MM7_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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

The following shows an interchange of a MM7_cancel.REQ and MM7_cancel.RES to illustrate a SOAP message that does not include a multimedia content part.

```
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-MM7-1-32"
env:mustUnderstand="1">
                vas0000–can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <CancelReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
32">
            <MM7Version>5.36.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>Reminder</VASID>
            </SenderIdentification>
            <MessageID>mms000222222</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-MM7-1-32"
env:mustUnderstand="1">
                vas0000–can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <CancelRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
32">
            <MM7Version>5.36.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>Success</StatusText>
            </Status>
        </CancelRsp>
    </env:Body>
</env:Envelope>
```

8.7.9.7 MM7_replace.REQ 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~~is number of this specification~~, 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
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

8.7.9.8 MM7_replace.RES mapping

Information Element	Location	ElementName	Comments
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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.9 MM7_delivery_report.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Message ID	SOAP Body	MessageID	
Recipient address	SOAP Body	Recipient	
Sender address	SOAP Body	Sender	
Date and time	SOAP Body	TimeStamp	
MM Status	SOAP Body	MMStatus	Enumeration – possible values: Expired, Retrieved, Rejected, Indeterminate, Forwarded
Status text	SOAP Body	StatusText	

8.7.9.10 MM7_delivery_report.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~~is number of this specification~~, e.g. 5.2.0
Request Status	SOAP Body	StatusCode	See section 8.7.8.4
Request Status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.11 MM7_read_reply.REQ 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~~is number of this specification~~, e.g. 5.2.0
MMS Relay/Server ID	SOAP Body	MMSRelayServerID	
Message ID	SOAP Body	MessageID	
Recipient address	SOAP Body	Recipient	
Sender address	SOAP Body	Sender	
Date and time	SOAP Body	TimeStamp	
Read Status	SOAP Body	MMStatus	Enumeration – possible values: Indeterminate, Read, Deleted without Read
Status text	SOAP Body	StatusText	

8.7.9.12 MM7_read_reply.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~~is number of this specification~~, e.g. 5.2.0
Request status	SOAP Body	StatusCode	See section 8.7.8.4
Request status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.13 MM7_RS_error.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~~is number of this specification~~, e.g. 5.2.0
Error status	SOAP Body	StatusCode	See section 8.7.8.4
Error status text	SOAP Body	StatusText & Details	See section 8.7.8.4

8.7.9.14 MM7_VASP_error.RES mapping

Information Element	Location	Element-name	Comments
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~~is number of this specification~~, e.g. 5.2.0
Error status	SOAP Body	StatusCode	See section 8.7.8.4
Error status text	SOAP Body	StatusText & Details	See section 8.7.8.4

Annex L (normative): MM7 XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-32" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-32"
elementFormDefault="qualified" attributeFormDefault="unqualified">

<xs:import namespace="http://schemas.xmlsoap.org/soap/envelope/"
schemaLocation="http://schemas.xmlsoap.org/soap/envelope/"/>

    <xs:element name="TransactionID">
        <xs:annotation>
            <xs:documentation>The transaction ID that shall be included in the SOAP
Header</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:simpleContent>
                <xs:extension base="xs:string">
                    <xs:attribute ref="soap:mustUnderstand"/>
                    <xs:attribute ref="soap:encodingStyle"/>
                    <xs:attribute ref="soap:actor"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
    </xs:element>
    <xs:element name="SubmitReq" type="tns:submitReqType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Sending MM from the VASP to one or more
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="SubmitRsp" type="tns:submitRspType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM submission
request</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverReq" type="tns:deliverReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery of MM from the MMS Relay/Server to the VASP
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverRsp" type="tns:deliverRspType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Response to a message delivered to the VASP from the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelReq" type="tns:cancelReqType">
        <xs:annotation>
```

```
            <xs:documentation>VASP  to MMS: Request to cancel a message submission
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM cancellation request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceReq" type="tns:replaceReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: Request to replace a message which was submitted
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM replace request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportReq" type="tns:deliveryReportReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a delivery report delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyReq" type="tns:readReplyReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a read reply delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="RSErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS to VASP: Error response to a any bad request sent to the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="VASPErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Error response to a any bad request sent to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:complexType name="senderIDType">
        <xs:sequence>
            <xs:element name="VASPID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="VASID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="SenderAddress" type="tns:addressType" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="submitReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
                <xs:sequence>
                    <xs:element name="Recipients" type="tns:recipientsType"/>
                    <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                    <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                    <xs:element name="MessageClass" type="tns:messageClassType"
default="Informational" minOccurs="0"/>
                    <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                    <xs:element name="ReplyCharging" minOccurs="0">
                        <xs:complexType>
```

```
                        <xs:attribute name="replyChargingSize" type="xs:positiveInteger"
use="optional"/>
                        <xs:attribute name="replyDeadline" type="tns:relativeOrAbsoluteDateType"
use="optional"/>
                    </xs:complexType>
                </xs:element>
                <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="ExpiryDate" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="DeliveryReport" type="xs:boolean" minOccurs="0"/>
                <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                <xs:element name="ChargedParty" type="tns:chargedPartyType" minOccurs="0"/>
                <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="submitRspType">
    <xs:complexContent>
        <xs:extension base="tns:genericResponseType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
            </xs:sequence>
        </xs:extension>     </xs:complexContent>
</xs:complexType>
<xs:complexType name="deliverReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="Recipients" type="tns:recipientsType" minOccurs="0"/>
                <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                <xs:element name="ReplyChargingID" type="tns:messageIDType" minOccurs="0"/>
                <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="deliverRspType">
    <xs:complexContent>
        <xs:extension base="tns:genericResponseType">
            <xs:sequence>
                <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="cancelReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericVASPRequestType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="replaceReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericVASPRequestType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
```

```
</xs:complexType>
<xs:complexType name="deliveryReportReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="Recipient" type="tns:addressType"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="Date" type="xs:dateTime"/>
                <xs:element name="MMStatus" type="tns:mmDeliveryStatusType"/>
                <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="readReplyReqType">
    <xs:complexContent>
        <xs:extension base="tns:genericRSReqType">
            <xs:sequence>
                <xs:element name="MessageID" type="tns:messageIDType"/>
                <xs:element name="Recipient" type="tns:addressType"/>
                <xs:element name="Sender" type="tns:addressType"/>
                <xs:element name="TimeStamp" type="xs:dateTime"/>
                <xs:element name="MMStatus" type="tns:mmReadStatusType"/>
                <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="genericRSReqType">
    <xs:annotation>
        <xs:documentation>base for all request messages from R/S to VASP</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="MMSRelayServerID" type="tns:entityIDType" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="genericVASPRequestType">
    <xs:annotation>
        <xs:documentation>Base type for all requests from VASP to R/S</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="SenderIdentification" type="tns:senderIDType"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="genericResponseType">
    <xs:annotation>
        <xs:documentation>Any simple response sent </xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="Status" type="tns:responseStatusType"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="responseStatusType">
    <xs:annotation>
        <xs:documentation>Status information conveyed in responses</xs:documentation>
    </xs:annotation>
    <xs:all>
        <xs:element name="StatusCode">
            <xs:simpleType>
                <xs:restriction base="tns:statusCodeType"/>
            </xs:simpleType>
        </xs:element>
        <xs:element name="StatusText" type="tns:statusTextType"/>
        <xs:element name="Details" type="tns:anyDataType" minOccurs="0"/>
    </xs:all>
</xs:complexType>
<xs:simpleType name="mmDeliveryStatusType">
    <xs:annotation>
        <xs:documentation>Statuses for MM7_delivery_report</xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:enumeration value="Expired"/>
        <xs:enumeration value="Retrieved"/>
        <xs:enumeration value="Rejected"/>
```

```
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Forwarded"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="mmReadStatusType">
        <xs:annotation>
            <xs:documentation>Statuses for MM7_read_reply</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Read"/>
            <xs:enumeration value="Deleted"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="messageIDType">
        <xs:annotation>
            <xs:documentation>Message ID</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
    <xs:group name="AddressGroup">
        <xs:choice>
            <xs:element name="RFC2822Address">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="Number">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="ShortCode">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
        </xs:choice>
    </xs:group>
    <xs:complexType name="multiAddressType">
        <xs:sequence maxOccurs="unbounded">
            <xs:group ref="tns:AddressGroup"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="addressType">
        <xs:group ref="tns:AddressGroup"/>
    </xs:complexType>
    <xs:complexType name="serviceCodeType">
        <xs:annotation>
            <xs:documentation>Used to identify the specific service given for billing
purposes</xs:documentation>
        </xs:annotation>
        <xs:simpleContent>
            <xs:extension base="xs:string">
                <xs:anyAttribute namespace="##other" processContents="lax"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:simpleType name="entityIDType">
        <xs:annotation>
            <xs:documentation>String used to identify the VAS, VASP and MMSC</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
```

```
    </xs:simpleType>
    <xs:complexType name="recipientsType">
        <xs:annotation>
            <xs:documentation>At least one of To,CC,Bcc</xs:documentation>
        </xs:annotation>
        <xs:sequence maxOccurs="unbounded">
            <xs:choice>
                <xs:element name="To" type="tns:multiAddressType"/>
                <xs:element name="Cc" type="tns:multiAddressType"/>
                <xs:element name="Bcc" type="tns:multiAddressType"/>
            </xs:choice>
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="messageClassType">
        <xs:annotation>
            <xs:documentation>Message class</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Personal"/>
            <xs:enumeration value="Informational"/>
            <xs:enumeration value="Advertisement"/>
            <xs:enumeration value="Auto"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="priorityType">
        <xs:annotation>
            <xs:documentation>Priority of MM</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Normal"/>
            <xs:enumeration value="High"/>
            <xs:enumeration value="Low"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="relativeOrAbsoluteDateType">
        <xs:annotation>
            <xs:documentation>Date which can be relative or absolute</xs:documentation>
        </xs:annotation>
        <xs:union memberTypes="xs:dateTime xs:duration"/>
    </xs:simpleType>
    <xs:simpleType name="chargedPartyType">
        <xs:annotation>
            <xs:documentation>Allows specification of which party - Sender or Reciever pays for
transmission</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Sender"/>
            <xs:enumeration value="Recipient"/>
            <xs:enumeration value="Both"/>
            <xs:enumeration value="Neither"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="versionType">
        <xs:annotation>
            <xs:documentation>Version number in the format of x.y.z </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="5.36.0"/>
            <xs:enumeration value="5.5.0"/>
            <xs:enumeration value="5.3.0"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="statusCodeType">
        <xs:annotation>
            <xs:documentation>request status resonse codes in RES </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
    <xs:complexType name="contentReferenceType">
        <xs:annotation>
            <xs:documentation>content element including only href</xs:documentation>
        </xs:annotation>
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
        <xs:attribute name="allowAdaptations" type="xs:boolean" use="optional"/>
    </xs:complexType>
    <xs:complexType name="anyDataType">
        <xs:annotation>
            <xs:documentation>Any element and attribute </xs:documentation>
```

```
        </xs:annotation>
        <xs:complexContent>
            <xs:restriction base="xs:anyType">
                <xs:sequence>
                    <xs:any processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                </xs:sequence>
            </xs:restriction>
        </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="statusTextType">
        <xs:annotation>
            <xs:documentation>list of standard human-readable status descriptions</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
</xs:schema>
```