**3GPP TSG-T (Terminals) Meeting #26**
**Athens, Greece**
**8 - 10 December 2004**

***TP-040226***

**Agenda Item:** 5.2.3

**Source:** T2

**Title:** Change Requests on MMS

**Document for:** Approval

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| Spec | CR | Rev | Phase | Subject | Cat | Version-Current | Version-New | Doc-2nd-Level | Workitem |
|---|---|---|---|---|---|---|---|---|---|
| 23.140 | 175 | - | Rel-6 | Adding collision prevention mechanism to application addressing | C | 6.7.0 | 6.8.0 | T2-040455 | MMS6 |
| 23.140 | 176 | - | Rel-6 | Precision for the recipient entities' behaviour upon reception of an abstract message containing a destination application identifier | F | 6.7.0 | 6.8.0 | T2-040411 | MMS6 |
| 23.140 | 177 | - | Rel-6 | Replacing and Cancelling Multimedia Message in Recipient Terminal | B | 6.7.0 | 6.8.0 | T2-040447 | MMS6 |
| 23.140 | 178 | - | Rel-6 | Information about Content to Recipient Terminal | B | 6.7.0 | 6.8.0 | T2-040450 | MMS6 |
| 23.140 | 179 | - | Rel-6 | Truncating the “subject” element of an MM1_notification.REQ for adopting to carrier layer limitations and decreasing the response delay | F | 6.7.0 | 6.8.0 | T2-040463 | MMS6 |
| 23.140 | 180 | - | Rel-6 | Clarifying that the terminal hosting Application(s) identifies its capabilities in a binary way | C | 6.7.0 | 6.8.0 | T2-040460 | MMS6 |
| 23.140 | 181 | - | Rel-6 | Deletion of deferred MMs from the MMS Relay/Server | B | 6.7.0 | 6.8.0 | T2-040457 | MMS6 |
| 23.140 | 182 | - | Rel-6 | Resolving DNS to an IP address using procedures of RFC2821 | B | 6.7.0 | 6.8.0 | T2-040449 | MMS6 |
| 23.140 | 183 | - | Rel-6 | MM4 _forward.REQ counter definition | F | 6.7.0 | 6.8.0 | T2-040459 | MMS6 |
| 23.140 | 184 | - | Rel-6 | Adding Recipient handset capabilities in the MM7_delivery_report.REQ and MM7_deliver.REQ transactions | B | 6.7.0 | 6.8.0 | T2-040445 | MMS6 |
| 23.140 | 185 | - | Rel-6 | Additional Error situation in MM7_Deliver.RES | B | 6.7.0 | 6.8.0 | T2-040426 | MMS6 |
| 23.140 | 186 | - | Rel-6 | Allow more than one DeliveryCondition at a time. | C | 6.7.0 | 6.8.0 | T2-040446 | MMS6 |
| 23.140 | 187 | - | Rel-6 | Clarification of schema versioning | F | 6.7.0 | 6.8.0 | T2-040441 | MMS6 |
| 23.140 | 188 | - | Rel-6 | Error Status Codes related to Application Addressing over MM7 | B | 6.7.0 | 6.8.0 | T2-040442 | MMS6 |
| 23.140 | 189 | - | Rel-6 | Rapporteur’s check of 23.140: New reference to MM10 stage 3 TS; consistent mentionning of MM8, MM9 and MM10 in chapter 8; removal of MEXE as potential MMS implementation; removal of unused references | F | 6.7.0 | 6.8.0 | T2-040391 | MMS6 |
| 23.140 | 190 | - | Rel-6 | Addition of roaming detection and MMS capability detection as part of functionalities of the MMS Relay/Server | F | 6.7.0 | 6.8.0 | T2-040419 | MMS6 |
| 23.140 | 191 | - | Rel-6 | Correct a typo, in Information Element Applic-ID (MM7_Deliver.REQ) | D | 6.7.0 | 6.8.0 | T2-040383 | MMS6 |
| 23.140 | 192 | - | Rel-6 | Editorial Modifications in section 7.2.3 Address Formats on MM7 | D | 6.7.0 | 6.8.0 | T2-040462 | MMS6 |
| 23.140 | 193 | - | Rel-6 | Stage 3 MM7 Schema, addition of application, contentclass, drmcontent, vasp id, extended cancel/replace, deliverycondition and | B | 6.7.0 | 6.8.0 | T2-040443 | MMS6 |

| Spec | CR | Rev | Phase | Subject | Cat | Version-Current | Version-New | Doc-2nd-Level | Workitem |
|---|---|---|---|---|---|---|---|---|---|
| | | | | uacapabilities elements | | | | | |
| 23.140 | 194 | - | Rel-6 | Collective changes to improve the MM4 interface | C | 6.7.0 | 6.8.0 | T2-040470 | MMS6 |
| 23.140 | 195 | - | Rel-6 | Adding the Information Elements VAS-ID and VASP-ID in MM7_DeliveryReport and MM7_ReadReplyReport. | B | 6.7.0 | 6.8.0 | T2-040444 | MMS6 |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040455*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **175** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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 [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Adding collision prevention mechanism to application addressing |
| ***Source:*** | ⌘ | T2 (Infineon) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 10/11/2004 |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | In T2-040440, T2 received an LS from 3GPP2 TSG-X which informed T2 that 3GPP2 considers the adoption of the application addressing mechanism in the 3GPP2 MMS system.<br><br>TSG-X expressed a concern, however, about the global uniqueness of application identifier values. T2 acknowledges this concern and agrees to revise 23.140 such as to ensure the values' global uniqueness. |
| ***Summary of change:*** | ⌘ | Definition of a mandatory syntax for application identifier values such that they are:<br>• either MIME types that are registered with IANA, or<br>• a text string which basically includes the application developer's URL<br>in order to guarantee global uniqueness. |
| ***Consequences if not approved:*** | ⌘ | Interoperability problems may arise if application developpers assign application identifier values which are not unique. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | |

| | | Y | N | | | |
|---|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | X | | Other core specifications | ⌘ | OMA MMS specifications |
| | | | X | Test specifications | | |

| | | |
|---|---|---|
| | X | O&M Specifications |

***Other comments:*** ⌘

## How to create CRs using this form:

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

• • •

## 7.1.18 Support for transporting Application Data

• • •

### 7.1.18.1 Application Identifiers

The application identifier of the destination application shall be present in an abstract message, while the identifier of a "reply-path" and some additional application/implementation specific control information may be present in an abstract message.

The additional application/implementation specific control information shall be used for all future needs that are not supported by the application identifier of the destination application and the identifier of the originating application, such as specifying a particular logical channel in the application addressing method (e.g., "discussion thread #05") or distinguishing between multiple instances of the same application (e.g., "chess application #02").

The format of the application identifiers' values shall be text string.

In order to guarantee their global uniqueness, application identifiers shall either be specified as MIME types that are registered with IANA (www.iana.org) or shall be composed such that it includes the application developer's URL [72].

NOTE 1: IANA registers both standards-tree and vendor-tree MIME types; thus the use of MIME types guarantees global uniqueness while providing for both standard names and vendor-specific names.

NOTE 2: Including the application developer's URL as part of the application identifier's value guarantees global uniqueness. Details of the syntax are given in clause 8.4.4.8 for MM4, in Annex L for MM7 and in WAP/OMA implementation [82] for MM1 reference points.

~~NOTE: The syntax of the application identifiers' values is outside the scope of this specification, i.e. an industry group other than 3GPP may define these and shall guarantee their global uniqueness.~~

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# 8.4 Technical realisation of MMS on reference point MM4

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## 8.4.4 Message format on MM4

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### 8.4.4.8 Header Field Value Range

MMS information elements that are mapped to standard STD 11 "header fields", i.e. which do not have an "X-Mms-" prefix, should be used according to [5].

The rest of the header definitions used in this clause, including the mechanisms and pre-defined tokens, are described in an augmented Backus-Naur Form (BNF) defined in [48], similar to that used by RFC 2822 [5]. Implementers will need to be familiar with the notation in order to understand these definitions.

For the residual MMS information elements the following applies:

• • •

**X-Mms-Applic-ID**

```
Applic-ID = "X-Mms-Applic-ID" ":" application-id | quoted-string
```

**X-Mms-Reply-Applic-ID**

```
Reply-Applic-ID = "X-Mms-Reply-Applic-ID" ":" application-id | quoted-string
```

**X-Mms-Aux-Applic-Info**

```
Aux-Applic-Info = "X-Mms-Aux-Applic-Info" ":" application-id | quoted-string
application-id = manufacture_domain [1*(package-name)] class-name
manufacture_domain = 1*applicationID-symbol "."
package-name = 1*applicationID-symbol "."
class-name = 1*applicationID-symbol
applicationID-symbol = ALPHA | DIGIT |"."|"_"
```

...

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040411*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **176** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Precision for the recipient entities' behaviour upon reception of an abstract message containing a destination application identifier |
| ***Source:*** | ⌘ | T2 (Orange) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 29/10/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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.

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*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Some parts of section 7.1.18.2.2 of the current specification are too vague and may lead to misinterpretation and different implementations |
| ***Summary of change:*** | ⌘ | This CR precises:<br>• Upon which transactions recipient entities shall check if the destination application resides on them.<br>• The reporting behaviour in case the destination application does not reside on the recipient entities. |
| ***Consequences if not approved:*** | ⌘ | Possible misinterpretation of the specification that can lead to different implementations |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 7.1.18.2.2 |

| | Y | N | | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** ⌘ | X | | Other core specifications | ⌘ | OMA MMS specifications |
| | | | Test specifications | | |
| | | | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | |

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## 7.1.18 Support for transporting Application Data

### 7.1.18.2 Applications sending and receiving abstract messages

#### 7.1.18.2.2 Receiving abstract messages

If an MMS Relay/Server finds from the recipient MMS User Agent's capability indication that the recipient MMS User Agent does not support the transport of application data, the MMS Relay/Server

- should delete the content of the MM before notifying the MMS User Agent or before retrieval. In such a case the recipient MMS Relay/Server shall apply the normal reporting behaviour towards receiving as well as sending entities;
- may decide about the deletion of content based on user setting in the user's profile and/or configuration by network operator and/or MMS service provider.

If the MMS Relay/Server finds from the recipient MMS User Agent's capability indication that the recipient MMS User Agent supports transport of application data, the MMS Relay/Server

- shall not perform any type of content adaptation to a multimedia message (MM) that may be contained in the payload of an abstract message that contains a destination application identifer;
- shall pass on the destination application identifier, the "reply-path" identifier (if present) and the additional application/implementation specific control information (if present) unaltered.

Upon reception of an abstract message containing a destination application identifier (it can either be the MM1_notification.REQ, MM1_retrieve.RES or MM7_deliver.REQ transactions), the receiving MMS User Agent or MMS VAS Application shall first check if the destination application resides on it.

If the destination application resides on a receiving MMS VAS Application, the MMS VAS Application shall immediately route the received MMS information on to the destination application that is referred to by the destination application identifier (based on the negotiated details upon application registration process).

If the destination application resides on a receiving MMS User Agent, the MMS User Agent shall immediately route the received MMS information on to the destination application that is referred to from the destination application identifier (based on the negotiated details upon application registration process) without presentation to the user.

NOTE: The further handling and processing of the information by the destination application is outside the scope of this specification.

If the destination application does not reside on the receiving MMS User Agent or MMS VAS Application, the MMS User Agent or MMS VAS Application shall discard the corresponding abstract message. In such a case the recipient MMS Relay/Server and recipient MMS User Agent or VAS application shall apply the normal reporting behaviour towards sending entities;

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040447*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **177** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Replacing and Cancelling Multimedia Message in Recipient Terminal |
| ***Source:*** | ⌘ | T2 (Nokia) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 10/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***Release:*** | ⌘ | *Rel-6* |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
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*R98 (Release 1998)*
*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | The current MM7 Cancel function act solely at the MMS Relay/Server level. So, a VAS/VASP Cancellation post notification will not delete an MM already downloaded to the terminal.<br><br>Replacing Content is limited in the MMS Relay/Server now, making it useless in most of the cases. VASP is expected to provide time-sensitive contents (e.g. status of stock market, weather situation/forecast, traffic situation/forecust, status of a game) to the user. The old/expired information may not remain informative to many users. Moreover, the old/expired message is expected to unnecessarily occupy memory space in a terminal. So, it would be useful for both the users and terminal to extend the feature of replaing content to the recipient, so that MMS User Agent have a means to delete any unwanted old/expired message. |
| ***Summary of change:*** | ⌘ | Define new PDUs over MM7 and MM1 that will allow the Cancel to impact the MM downloaded by the terminal.<br><br>It is proposed to extend the scope of the replacing content to the recipient MMS User Agent, so that MMS User Agent can replace old/expired message by a new message. It is optional, as old/expired message might be already removed by a user. Moreover, some users might be interested about old information (e.g. to know the pattern of change in share price of a company, to know when/who scored a goal in a football match). There could be a terminal setting, which could be used by a user to forbid any automatic replacement of an old message. |
| ***Consequences if not approved:*** | ⌘ | Current MM7 Cancel and Replace functions maintained.<br><br>The scope of the Cancel & Replacing content remains so narrow that in most of |

| | |
|---|---|
| | the cases the feature remain inapplicable. |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | 5.1.1, 7.1, 8.1, 8.7, Annex C, Annex K, Annex L | | | |
| ***Other specs affected:*** | ⌘ | **Y** / **N** | Other core specifications | ⌘ | OMA MMS Specs, 32.270 |
| | | **X** / | Other core specifications | | |
| | | / **X** | Test specifications | | |
| | | / **X** | O&M Specifications | | |
| ***Other comments:*** | ⌘ | | | | |

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

# 5 Functional Description of Involved MMS Elements

## 5.1 MMS User Agent

### 5.1.1 MMS User Agent operations

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

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

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

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

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

**.....**

# 7 MMS Service Behaviour Description

## 7.1 MMS services offered

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### 7.1.3 Retrieval of a Multimedia Message in the recipient MMSE

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

request retrieval of an MM from the user's MMBox, based on a Message Reference received from a previous MMBox operation.

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

Upon retrieval request the recipient MMS Relay/Server

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

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

Content information provided by the originator of an MM may be used by the recipient MMS Relay/S erver for various purposes. For instance, if the content class [85] is supported by the recipient and the content does not contain any DRM-protected content, the MMS Relay/S erver may identify that adaptation is not required without need for further analysis of the message.

While the recipient MMS Relay/Server is adapting data, the adaptation rule based on DRM-protected content shall prevail the adaptation guideline provided by the originator.

The recipient MMS Relay/Server shall be able to ignore a request from an originator that the content of the MM will not be subjected to content adaptation, e.g. based on MMS service provider / network operator configuration.

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

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

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## 7.1.x Cancelling of a Multimedia Message

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

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

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

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

MMS User Agent may provide means (e.g. terminal setting) to a user to forbid such cancellation, requested by the MMS Relay/Server.

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

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## 8.1 Technical realisation of MMS on reference point MM1

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### 8.1.4 Multimedia Message Notification

.....

#### 8.1.4.3 Features

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

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

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

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

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

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

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

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

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

**MM element descriptor:** The recipient MMS Relay/Server may provide one or more description(s) of message elements in the MM1_notification.REQ. A description shall contain a reference to the message element, e.g. a URI, an index number etc.. A description of a message element may be further qualified by adding one or more of such parameters as:

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

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

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

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

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

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

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

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS User Agent shall provide this MM1_notification.REQ to the specified destination application.

**Reply-Applic-ID:** If present, this information element may be used by the originating application to indicate a “reply path” to the destination application residing on the receiving MMS User Agent or MMS VAS Application. It contains the application identifier which shall be used by the recipient MMS User Agent when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

**Replace identification:** If requested by a VASP in MM7_extended_replace.REQ, the MMS Relay/Server shall provide identification of a previous MM, which is replaced by the MM associated with the notification.

### 8.1.4.4 Information Elements

**Table 1: Information elements in the MM1_notification.REQ.**

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

**Table 2: Information elements in the MM1_notification.RES.**

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

## 8.1.5 Retrieval of Multimedia Message

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### 8.1.5.3 Features

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS User Agent shall provide this MM1_retrieve.RES to the specified destination application.

**Reply-Applic-ID:** If present, this information indicates a “reply path”. It contains the application identifier which shall be used by the recipient MMS User Agent when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

**Replace identification:** If requested by a VASP in MM7_extended_replace.REQ, the MMS Relay/Server shall provide identification of a previous MM, which is replaced by the MM in the MM1_retrieve.RES.

### 8.1.5.4 Information Elements

**Table 3: Information elements in the MM1_retrieve.REQ**

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

**Table 4: Information elements in the MM1_retrieve.RES**

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

| | | |
|---|---|---|
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Replace-ID | Conditional | Identifier of the previous MM that is replaced by the current MM, if requested by a VASP. |
| Content | Conditional | The content of the multimedia message if specified by the originator MMS User Agent of the MM. |
| NOTE: From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail. | | |

**Table 5: Information elements in the MM1_acknowledgement.REQ**

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

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## 8.1.x Cancelling a Multimedia Message

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

For cancelling purposes an MM cancel request shall always be requested by an MMS Relay/Server to an MMS User Agent. Request from a VASP to cancel an MM (in terms of MM7_extended_cancel.REQ) invokes the cancel request in the MMS Relay/Server. Involved abstract messages are outlined in Table x from type and direction points of view.

**Table x: Abstract messages for cancelling an MM**

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

### 8.1.x.1 Normal operation

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

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

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

### 8.1.x.2 Abnormal Operation

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

If the MMS User Agent does not provide the MM1_cancel.RES, the MMS Relay/Server should be able to recover. In this case, the MMS Relay/Server may retransmit the MM1_cancel.REQ to the MMS User Agent.

### 8.1.x.3 Features

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

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

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

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

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

### 8.1.x.4 Information Elements

**Table x: Information elements in the MM1_cancel.REQ.**

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

**Table 6: Information elements in the MM1_cancel.RES.**

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

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## 8.7 Technical realisation of MMS on reference point MM7

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### 8.7.X Extended Cancel and Extended Replace of MM

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

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

**Table x: Abstract messages for controlling Distribution MM**

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

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

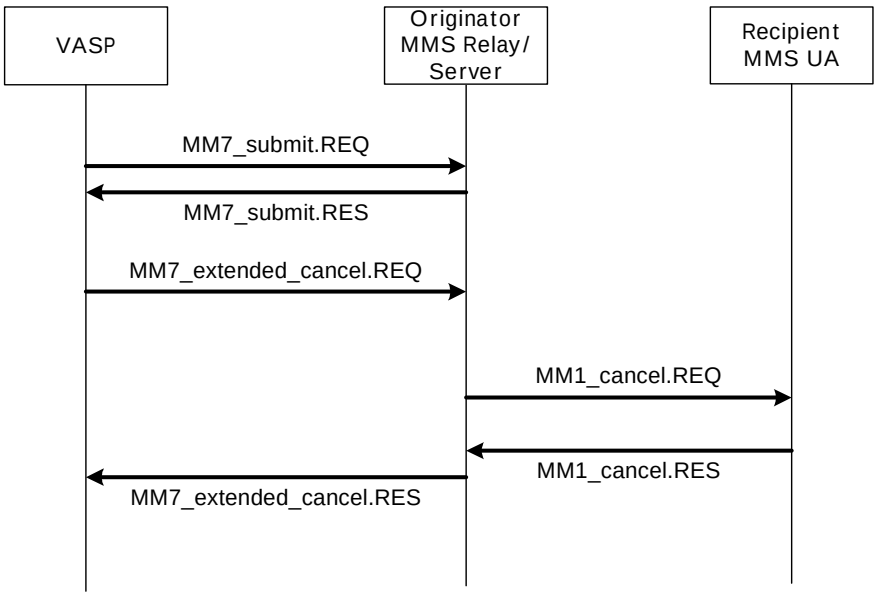


**Figure x: Data flow of VASP cancelling a submitted message down to the MMS User Agent**

## 8.7.x.1 Normal Operation

If the VASP has decided to cancel the delivery of a MM that it has already submitted, and wants to extend the cancellation to be effective also on an MM already downloaded by the terminal, then the VASP should indicate this by sending the MM7_extended_cancel.REQ message to the MMS Relay/Server. The MMS Relay/Server should check the status of the message indicated by the Cancel ID and:

1) locally cancel delivery, at the MMS Relay/Server level, to all destinations for which the MMS Relay/Server has not sent out a notification;

2) locally cancel the MM at the MMS Relay/Server level and indicate appropriate error code in MM1_retrieve.RES as “Request Status” and “Request Status”, to all destinations for which the MMS Relay/Server has sent out a notification but the MM has not yet been retrieved, and

3) extend that cancellation down to the MMS User Agent using MM1_cancel.REQ, to all destinations for which the MM has already been retrieved. The MMS Relay/Server should use the destination list from the original MM7_submit.REQ in MM1_cancel.REQ.

The MMS Relay/Server should respond to the request with a MM7_extended_cancel.RES indicating that the request was processed.

If the VASP has new content that it wishes to submit in place of the content that was originally submitted, and wants to extend the replacement to be effective also on an MM already downloaded by the MMS User Agent, it should submit the new replacement content using the MM7_extended_replace.REQ message. The MMS Relay/Server should:

1) check the status of the message indicated by the Replace ID and replace the message content for all destinations that have not retrieved or forwarded the message as yet; and

2) extend that replacement down to the MMS User Agent, to all destinations that have not retrieved or forwarded the message; via sending an additional notification to the MMS User Agent. The MMS Relay/Server should redistribute the new content to the destination list from the original MM7_submit.REQ. Optional information elements that appear in the MM7_extended_replace.REQ message shall replace the corresponding information elements of the original submission (the VASP should not replace any information elements that were already provided in the previously sent notification), information elements that do not appear in the MM7_extended_replace.REQ message shall retain the original submission values.

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

### 8.7.x.2 Abnormal Operation

The MMS Relay/Server should reject a request to cancel or replace a message if it is unable to authorise the VAS to cancel or replace MMs, or find the ID of the previous message (i.e. Cancel ID and Replace ID respectively) indicated in the request.

### 8.7.x.3 Features

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

**Addressing:** The replacement and cancellation shall be addressed to the same recipients as the original MM being replaced and cancelled respectively.

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

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

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

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

**Time stamping:** When replacing a previously sent MM, the VASP may time stamp the MM.

**Time constraints:** When replacing a previously sent MM, the VASP may also request the earliest desired time of delivery and time of expiry of the MM to be changed.

**Delivery reporting:** When replacing a previously sent MM, the VASP may request a delivery report for the updated (replacing) MM.

**Read reporting:** When replacing a previously sent message, the VASP may request a read-reply report when the user has viewed the updated (replacing) MM.

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

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

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

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

**Replace ID:** When replacing a previously sent MM, the VASP shall supply the identifier of the previous MM to be replaced.

**Cancel ID:** When cancelling a previously sent MM, the VASP shall supply the identifier of the previous MM to be cancelled.

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

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

### 8.7.x.4 Information Elements

**Table x1: Information elements in the MM7_extended_cancel.REQ .**

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

**Table x2: Information elements in the MM7_extended_cancel.RES .**

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

**Table x3: Information elements in the MM7_extended_replace.REQ .**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_extended_replace .REQ/ MM7_extended_replace.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_extended replace request. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the VASP |
| VASP ID | Optional | Identifier of the VASP for this MMS Relay/Server. |
| VAS ID | Optional | Identifier of the originating application. |
| Service code | Optional | Information supplied by the VASP which may be included in charging information. The syntax and semantics of the content of this information are out of the scope of this specification. |
| Replace_ID | Mandatory | This identifies the previously sent VAS/VASP MM that need to be replaced by this MM. |
| Date and time | Optional | The time and date of the submission of the MM (time stamp). |
| Earliest delivery time | Optional | The earliest desired time of delivery of the MM to the recipient (time stamp). |
| Time of Expiry | Optional | The desired time of expiry for the MM (time stamp). |
| Delivery report | Optional | A request for delivery report. |
| Read reply | Optional | A request for confirmation via a read report to be delivered as described in section 8.1 |
| Adaptations | Optional | Indicates if VASP allows adaptation of the content (default True) (NOTE 1) |
| Content type | Conditional | The content type of the MM's content. If the Content IE appears, then the Content type IE must appear. |
| Content | Optional | The content of the multimedia message |
| NOTE 1: In case of misalignment between the value assigned to Adaptations and DRM-protection rules, the latter shall prevail. | | |

**Table x4: Information elements in the MM7_extended_replace.RES.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_extended_replace.REQ/ MM7_extended_replace.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_extended_replace.RES. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the MMS Relay/Server |
| Message ID | Conditional | The MMS Relay/Server generated identification of the updated (replacing) MM (applicable only if the replaced Mm is retrieved or forwarded). |
| Request Status | Mandatory | Status of the completion of the request. |

. . . . . .

## 8.7.9.x MM7_extended_cancel.REQ mapping

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

## 8.7.9.x MM7_extended_cancel.RES mapping

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

The following shows an interchange of a MM7_extended_cancel.REQ and MM7_extended_cancel.RES to illustrate a SOAP message that does not include a multimedia content part.

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

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-3"
env:mustUnderstand="1">
                vas0000–can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <extendedCancelReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-
5-MM7-1-3">
            <MM7Version>5.6.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>Reminder</VASID>
            </SenderIdentification>
            <CancelID>mms000222222</CancelID>
        </extendedCancelReq>
    </env:Body>
</env:Envelope>

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

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

```
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-3"
env:mustUnderstand="1">
                vas0000-can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <extendedCancelRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-
5-MM7-1-3">
            <MM7Version>5.6.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
            </Status>
        </extendedCancelRsp>
    </env:Body>
</env:Envelope>
```

## 8.7.9.x MM7_extended_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, e.g. 5.2.0 |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| Service code | SOAP Body | ServiceCode | Information supplied for billing purposes – exact format is implementation dependent |
| Replace_ID | SOAP Body | ReplaceID | This identifies the previously sent VAS/VASP MM that need to be replaced by this MM |
| Date and time | SOAP Body | TimeStamp | |
| Earliest delivery time | SOAP Body | EarliestDeliveryTime | Date format – absolute or relative |
| Time of Expiry | SOAP Body | ExpiryDate | |
| Delivery Report | SOAP Body | DeliveryReport | Boolean – true or false |
| Read reply | SOAP Body | ReadReply | Boolean – true or false |
| Adaptations | SOAP Body | AllowAdaptations | Attribute of *Content* element<br>Boolean – true or false |
| Content type | MIME part Header | Content-Type | |
| Content | SOAP Body | Content | href:cid attribute links to attachment |

### 8.7.9.x MM7_extended_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, e.g. 5.2.0 |
| Message ID | SOAP Body | MessageID | |
| Request status | SOAP Body | StatusCode | See section 8.7.8.3 |

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# Annex C (informative): Charging Data Records

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

This list may include:

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

- Linked ID
- VASP ID
- VAS ID
- Reply-Charging
- Content type
- Reply-Charging-ID
- Charged Party, Charged Party ID
- MCC + MNC
- MSCF CDR information
- Sender address provided by MSCF
- Recipient address(es) provided by MSCF
- MSCF service Key
- MSCF host and realm information
- Applic-ID
- Reply-Applic-ID
- Aux-Applic-Info
- Replace ID
- Cancel ID

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

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

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

……

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

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

The abstract messages mapped between MM1 and MM7 are:

- MM1_Submit.REQ to the MM7_Deliver.REQ
- MM7_Submit.REQ to the MM1_Notification.REQ and the MM1_Retrieve.RES
- MM1_Read_Reply_Recipient.REQ to the MM7_Read_Reply_Report.REQ
- MM1_Forward.REQ to the MM7_Deliver.REQ

- MM7_extended_cancel.REQ to the MM1_cancel.REQ
- MM7_extended_replace.REQ to the MM1_notification.REQ, and MM1_Retrieve.RES

The abstract messages mapped between MM4 and MM7 are:

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

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

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

**Table K.x: Mapping MM7_extended_replace.REQ -> MM1_notification.REQ, MM1_Retrieve.RES**

| Information_elements in MM7_extended_replace.REQ | Information elements in MM1_notification.REQ | Information elements in MM1_retrieve.RES |
|---|---|---|
| - | Message Type | - |
| - | Transaction ID | - |
| - | MMS Version | - |
| Transaction ID | - | - |
| Message type | - | - |
| MM7 version | - | - |
| VASP ID | - | - |
| VAS ID | - | - |
| Replace ID | Replace-ID | Replace-ID |
| Service code | - | - |
| Date and time | - | Date and time |
| Earliest delivery time | - | - |
| Delivery report | -Delivery report | -Delivery report |
| Read reply | - | Read reply |
| Adaptations | - | - |
| Content type | - | Content type |
| Content | - | Content |
| - | Message Distribution Indicator | Message Distribution Indicator |
| - | Applic-ID | Applic-ID |
| - | Reply-Applic-ID | Reply-Applic-ID |
| - | Aux-Applic-Info | Aux-Applic-Info |
| - | Message size | - |
| Time of expiry- | Time of expiry | |
| - | Message Reference | - |
| - | Subject | Subject |
| - | Priority | Priority |
| - | Sender address | Sender address |
| - | Stored | - |
| - | Reply-Charging | Reply-Charging |
| - | Reply-Deadline | Reply-Deadline |
| - | Reply-Charging-Size | Reply-Charging-Size |
| - | Reply-Charging-ID | Reply-Charging-ID- |
| - | Element-Descriptor | - |
| - | MM recommended retrieval mode | - |
| - | Text explaining MM recommended retrieval mode | - |
| - | - | Recipient address |
| - | Message class- | Message class |
| - | - | Message ID |
| - | - | MM State |
| - | - | MM Flags |
| - | - | Request Status |
| - | - | Request Status Text |
| - | - | Previously-sent-by |
| - | - | Previously-sent-date-and-time |
| - | - | Message Type |
| - | - | Transaction ID |
| - | - | MMS Version |

**Table K.x: Mapping MM7_extended_cancel.REQ -> MM1_cancel.REQ**

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

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040450*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **178** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Information about Content to Recipient Terminal |
| ***Source:*** | ⌘ | T2 (Nokia) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 21/10/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*** | ⌘ | Recipient MMS Client needs to make a detail analysis (going deep in to different contents) for each MM to find some information about contents (e.g. content class, if it has DRM-protected content). These information might be useful for MMS Client to process a received message (e.g. invoking DRM client for encoding/decoding/storing a DRM-protected content, preparing presentation for an MM having SMIL, storing content of a message belonging to a specific content class in a specific place). As recipient MMS R/S may have these information available, it would be efficient to have means to make these information available in terms of top-level header while retrieving an MMS, so that the information is easily and quickly accessible by a MMS Client. |
| ***Summary of change:*** | ⌘ | It is proposed to have information about content class and presence of DRM-protected contents as optional headers in the retrieval message. |
| ***Consequences if not approved:*** | ⌘ | Recipient MMS Client has to go through a complex and lengthy process for all the MMs to only find information about content class and if the MM has DRM-protected content. |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | | | | |
| ***Other specs affected:*** | ⌘ | **Y** | **N** | | |
| | | **X** | | Other core specifications | ⌘ OMA MMS Specs |
| | | | **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.

# 7 MMS Service Behaviour Description

## 7.1 MMS services offered

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### 7.1.3 Retrieval of a Multimedia Message in the recipient MMSE

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

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

Upon retrieval request the recipient MMS Relay/Server

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

Content information provided by the originator of an MM may be used by the recipient MMS Relay/S erver for various purposes. For instance, if the content class [85] is supported by the recipient and the content does not contain any DRM-protected content, the MMS Relay/S-erver may identify that adaptation is not required without need for further analysis of the message. Content information may also be used by the recipient MMS User Agent for quick and easy handling of

the content of a MM (e.g. invoking DRM-related activities like encoding and decoding, storing content, preparing MM for presentation).

While the recipient MMS Relay/Server is adapting data, the adaptation rule based on DRM-protected content shall prevail the adaptation guideline provided by the originator.

The recipient MMS Relay/Server shall be able to ignore a request from an originator that the content of the MM will not be subjected to content adaptation, e.g. based on MMS service provider / network operator configuration.

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

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

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

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## 8.1 Technical realisation of MMS on reference point MM1

.....

### 8.1.4 Multimedia Message Notification

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#### 8.1.4.3 Features

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

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

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

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

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

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

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

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

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

**MM element descriptor:** The recipient MMS Relay/Server may provide one or more description(s) of message elements in the MM1_notification.REQ. A description shall contain a reference to the message element, e.g. a URI, an index number etc.. A description of a message element may be further qualified by adding one or more of such parameters as:

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

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

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

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

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

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

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

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS User Agent shall provide this MM1_notification.REQ to the specified destination application.

**Reply-Applic-ID:** If present, this information element may be used by the originating application to indicate a “reply path” to the destination application residing on the receiving MMS User Agent or MMS VAS Application. It contains the application identifier which shall be used by the recipient MMS User Agent when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

**Content Information:** The MMS Relay/Server may provide information about the nature of the content in the message. The content information could be in terms of indications that:

- classifies content of the MM based on e.g. media types/formats, size, presentation formats [85]
- the MM contains DRM-protected content

### 8.1.4.4 Information Elements

**Table 1: Information elements in the MM1_notification.REQ.**

| Information element | Presence | Description |
|---|---|---|
| Message Type | Mandatory | Identifies this message as MM1_notification.REQ |
| Transaction ID | Mandatory | The identification of the MM1_notification.REQ/MM1_notification.RES pair. |
| MMS Version | Mandatory | Identifies the version of the interface supported by the MMS Relay/Server. |
| Message class | Mandatory | The class of the MM (e.g., personal, advertisement, information service; default = personal) |
| Message size | Mandatory | The approximate size of the MM |
| Time of expiry | Mandatory | The time of expiry for the MM (time stamp). |
| Message Reference | Mandatory | a reference, e.g., URI, for the MM |
| Subject | Optional | The title of the whole MM. |
| Priority | Optional | The priority (importance) of the message. |
| Sender address | Conditional | The address of the MMS User Agent that most recently handled the MM, i.e. that either submitted or forwarded the MM. If the originator MMS User Agent has requested her address to be hidden from the recipient her address shall not be provided to the recipient. |
| Stored | Optional | Indicates that the MM was automatically stored into the MMBox. |
| Delivery report | Optional | Request for delivery report |
| Reply-Charging | Optional | Information that a reply to this particular original MM is free of charge. |
| Reply-Deadline | Optional | In case of reply-charging the latest time of submission of a reply granted to the recipient (time stamp). |
| Reply-Charging-Size | Optional | In case of reply-charging the maximum size of a reply-MM granted to the recipient. |
| Reply-Charging-ID | Optional | The identification of the original MM replied to if this notification indicates a reply-MM. |
| Element-Descriptor | Optional | The reference for an element of the MM, which may contain further information about the referenced element of the MM, e.g. the name, the size and/or the type and format of the message element |
| MM recommended retrieval mode | Optional | Indication that manual retrieval mode is recommended for this MM |
| Text explaining MM recommended retrieval mode | Optional | Description that explicits why the manual retrieval mode is recommended for the MM. |
| Message Distribution Indicator | Optional | If set to “false” the VASP has indicated that content of the MM is not intended for redistribution.<br>If set to “true” the VASP has indicated that content of the MM can be redistributed (NOTE). |
| Applic-ID | Optional | Identification of the destination application. |
| Reply-Applic-ID | Optional | Identification of an application to which reply-MMs and read-reply reports are addressed. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Content Class | Optional | Classifies the content of the MM to the smallest content class to which the MM belongs [85]. |
| DRM Content | Optional | Indicates if the MM contains DRM-protected content |
| NOTE: From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail. | | |

**Table 2: Information elements in the MM1_notification.RES.**

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

## 8.1.5 Retrieval of Multimedia Message

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### 8.1.5.3 Features

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS User Agent shall provide this MM1_retrieve.RES to the specified destination application.

**Reply-Applic-ID:** If present, this information indicates a “reply path”. It contains the application identifier which shall be used by the recipient MMS User Agent when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

**Content Information:** The MMS Relay/Server may provide information about the nature of the content in the message. The content information could be in terms of indications that:

- classifies content of the MM based on e.g. media types/formats, size, presentation formats [85]
- the MM contains DRM-protected content

### 8.1.5.4 Information Elements

**Table 3: Information elements in the MM1_retrieve.REQ**

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

**Table 4: Information elements in the MM1_retrieve.RES**

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

| | | |
|---|---|---|
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Content Class | Optional | Classifies the content of the MM to the smallest content class to which the MM belongs [85]. |
| DRM Content | Optional | Indicates if the MM contains DRM-protected content |
| Content | Conditional | The content of the multimedia message if specified by the originator MMS User Agent of the MM. |
| NOTE: From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail. | | |

**Table 5: Information elements in the MM1_acknowledgement.REQ**

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

……

# 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. It provides mapping of MM1 with respect to MM4/STD11.

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.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: |
| Applic-ID | X-Mms-Applic-ID |
| Reply-Applic-ID | X-Mms-Reply-Applic-ID |
| Aux-Applic-Info | X-Mms-Aux-Applic-Info |
| Priority | X-Mms-Priority: |
| Sender address | From: |
| Stored | - |
| Delivery report | X-Mms-Delivery-Report: |
| - | X-Mms-Originator-R/S-Delivery-Report |
| Reply-Charging | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Reply-Charging-ID | - |
| Element-Descriptor | - |
| Message Distribution Indicator | - |
| - | To:, Cc:, Bcc: (NOTE 1, NOTE 2) |
| - | Content-Type: |
| - | Date: |
| - | X-Mms-Sender-Visibility: |
| - | X-Mms-Read-Reply: |
| - | X-Mms-3GPP-MMS-Version |
| - | X-Mms-Message-Type |
| - | X-Mms-Transaction-Id |
| - | X-Mms-Acq-Request |
| - | X-Mms-Forward-Counter |
| - | X-Mms-Previously-sent-by |
| - | X-Mms-Previously-sent-date-and-time |
| Content Class | X-Mms-Content-Class: |
| DRM Content | X-Mms-Drm-Content: |

| | |
|---|---|
| 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.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: |
| - | X-Mms-Originator-R/S-Delivery-Report |
| Priority | X-Mms-Priority: |
| Read reply | X-Mms-Read-Reply: |
| Subject | Subject: |
| Applic-ID | X-Mms-Applic-ID |
| Reply-Applic-ID | X-Mms-Reply-Applic-ID |
| Aux-Applic-Info | X-Mms-Aux-Applic-Info |
| 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>* |
| Message Distribution Indicator | - |
| - | X-Mms-3GPP-MMS-Version |
| - | X-Mms-Message-Type |
| - | X-Mms-Transaction-Id |
| - | X-Mms-Expiry |
| - | X-Mms-Sender-Visibility: |
| - | X-Mms-Read-Reply: |
| - | X-Mms-Acq-Request |
| - | X-Mms-Forward-Counter |
| Content Class | X-Mms-Content-Class: |
| DRM Content | X-Mms-Drm-Content: |

…….

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

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

The abstract messages mapped between MM1 and MM7 are:

- MM1_Submit.REQ to the MM7_Deliver.REQ
- MM7_Submit.REQ to the MM1_Notification.REQ and the MM1_Retrieve.RES
- MM1_Read_Reply_Recipient.REQ to the MM7_Read_Reply_Report.REQ
- MM1_Forward.REQ to the MM7_Deliver.REQ

The abstract messages mapped between MM4 and MM7 are:

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

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

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

**Table K.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 Type | - |
| - | Transaction ID | - |
| - | MMS Version | - |
| 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-Charging-ID |
| 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 |
| Content Class | -Content Class | -Content Class |
| DRM Content | -DRM Content | - DRM Content |
| Adaptations | - | - |
| Content type | - | Content type |
| Content | - | Content |
| Message Distribution Indicator | Message Distribution Indicator | Message Distribution Indicator |
| Charged Party | - | - |
| Charged Party ID | - | - |
| - | Message size | - |
| - | Message Reference | - |
| - | Stored | - |
| - | Delivery report | Delivery report |
| - | Reply-Charging-ID | - |
| - | Element-Descriptor | - |
| - | - | Message ID |
| - | - | MM State |
| - | - | MM Flags |
| - | - | Request Status |
| - | - | Request Status Text |
| - | - | Previously-sent-by |
| - | - | Previously-sent-date-and-time |
| - | - | Message Type |
| - | - | Transaction ID |
| - | - | MMS Version |
| Applic-ID | Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info | Aux-Applic-Info |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040463*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **179** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Truncating the "subject" element of an MM1_notification.REQ for adopting to carrier layer limitations and decreasing the response delay |
| ***Source:*** | ⌘ | T2 (China Mobile, Huawei Technologies; Infineon) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 10/11/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | The MMS Relay/Server uses WAP PUSH technology to send the M-Notification.ind to the MMS User Agent ,Push Notification is carried by underlying layer such as short messaging or GPRS protocol.<br><br>Sometimes the content of the "Subject" element is too long and will cause transport delaying or the length of one push message exceed the limit of the carrier layer protocol, such as 140 bytes in one short message. |
| ***Summary of change:*** | ⌘ | The MMS Relay/Server is allowed to truncate the subject of an MM1 notification in order to decrease delaying response and enhance success rate ,or match the limit of underlying carrier layer. |
| ***Consequences if not approved:*** | ⌘ | MMS notification would not match the limit of underlying carrier layers; success rate for notifications will be as low as today in some systems. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | |

| ***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.

• • •

## 4.4 Message Size Measurement

The Message size is defined as the sum of the Subject information element size and the size of all the MM element(s), including the Presentation object (e.g. SMIL). Other information elements of a MM shall be excluded from the message size calculation.

### 4.4.1 Size of Subject information element

The size of the Subject information element (prior to truncation – if any) shall be calculated as the length of the subject field in octets excluding the "Subject: " token.

### 4.4.2 Size of an MM element

The size of an MM element shall be calculated as the total number of octets of the media object, i.e. raw data without any boundaries or additional headers which are due to MIME-based encodings of the MM.

In case of an MM element being a multipart/mixed or multipart/related MIME message, the total number of octets contained in the body of that MIME message (i.e. that MM element) shall be counted including only the boundaries and additional headers which are part of the MIME message (i.e. that MM element).

NOTE 1: It is understood that due to the different encoding used in the MM4 reference point for the Subject field, there can be a slight discrepancy in the message size calculated over the MM1 and MM4 reference points.

NOTE 2: The message size of a submitted MM might differ from the message size of a retrieved MM if content adaptation is performed prior to its retrieval.

• • •

## 5.2 MMS Relay/Server

The MMS Relay/Server is responsible for storage and notification, reports, and general handling of messages. The MMS Relay/Server may also provide convergence functionality between External Servers and MMS User Agents and thus enable the integration of different server types across different networks. An Example can be found in Annex A.

It is possible to separate the MMS Relay/Server element into MMS Relay and MMS Server elements, but an allocation of the MMS Relay/Server functionalities to such elements is not defined in this release.

The MMS Relay/Server shall provide the following functionalities:

- receiving and sending MM;
- conversion of messages arriving at the recipient MMS Relay/Server from legacy messaging systems to MM format (e.g. facsimile to MM) if interworking with legacy messaging systems (MM3) is supported;
- conversion of MMs leaving the originator MMS Relay/Server to legacy messaging systems to the appropriate message format (e.g. MM to internet email) if interworking with legacy messaging systems (MM3) is supported;
- message content retrieval;
- MM notification to the MMS User Agent;
- generating delivery reports;
- routing forward MMs and read-reply reports;
- address translation;
- temporary storage of messages;

- ensuring that messages are not lost until successfully delivered to another MMSE element;
- DRM functionalities according to section 7.1.15.

The MMS Relay/Server should provide additional functionalities such as:

- generating charging data records (CDR);
- negotiation of terminal capabilities;
- transport of application data.

The MMS Relay/Server may provide additional functionalities such as:

- MM forwarding;
- address hiding;
- persistent storage of messages;
- controlling the reply-charging feature of MMS;.
- relaying Message Distribution Indicator.

The MMS Relay/Server can provide additional functionalities which are not further specified in this release such as:-

- enabling/disabling MMS function;
- personalising MMS based on user profile information;
- MM deletion based on user profile or filtering information;
- truncating the subject in a notification, e.g., in order to optimize for underlying bearer limitations;
- media type conversion;
- media format conversion;
- screening of MM;
- checking terminal availability;
- managing the message properties on servers (e.g. voicemail or email server) integrated in the MMSE (consistency) (only applicable if interworking with legacy messaging systems (MM3) is supported).

This list of additional optional functionalities of the MMS Relay/Server is not exhaustive.

• • •

## 7.1.2 Reception of a Multimedia Message in the recipient MMSE

Upon reception of an MM the recipient MMS Relay/Server

- may verify the MM recipient's user profile(s);
- shall store the MM at least until
  - the associated time of expiry is reached,
  - the MM is delivered,
  - the recipient MMS User Agent requests the MM to be routed forward or
  - the MM is rejected;
- may store the MM into an MMBox.

The term "associated time of expiry " refers to either the desired time of expiry set by the originator MMS User Agent or an MMS Relay/Server time of expiry setting.

- shall generate a notification to the recipient MMS User Agent.

Incoming messages from legacy systems may be expected to be converted to MMs.

#### 7.1.2.1 Multimedia Message Notification

With the MM notification the recipient MMS User Agent shall receive a message reference that can be used for retrieving the MM from the recipient MMS Relay/Server. The message reference that is conveyed in a notification shall at least be valid throughout the message expiry period, till the successful retrieval of the MM or until the MM was rejected.

With the MM notification the recipient MMS User Agent may receive additional information on the MM.

If the originator MMS User Agent has requested address hiding the recipient MMS Relay/Server shall not include the originator address into the MM notification.

The MMS Relay/Server may include an indication in the MM notification recommending manual retrieval mode. This recommendation may be based on user settings in the User Profile.

The MMS Relay/Server may truncate the subject field in the notification, e.g., in order to adapt the size of the MM notification to limitations from the underlying bearer.

In a response to the notification the MMS User Agent shall be able to

- reject the MM or
- retrieve the MM, either immediately or at a later time, either manually or automatically, as possibly determined by the operator configuration and user profile.

The retrieval mode employed by the recipient MMS User Agent for a particular MM may be based either on the user settings in the terminal or on the recommendation carried in the MM notification. The recipient MMS User Agent may follow this recommendation to retrieve the MM, through manual retrieval.

• • •

### 8.1.4.4 Information Elements

**Table 1: Information elements in the MM1_notification.REQ.**

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

**Table 2: Information elements in the MM1_notification.RES.**

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

• • •

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8-12 November 2004**

*T2-040460*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **180** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Clarifying that the terminal hosting Application(s) identifies its capabilities in a binary way |
| ***Source:*** | ⌘ | T2 (Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 10/11/2004 |
| ***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)* |
| *Rel-6* | *(Release 6)* |
| *Rel-7* | *(Release 7)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | During ApplicationID related discussions it was made clear that the recipient's terminal identifies his willingness to support Applications via a flag, in the terminal capabilities.<br>There are, though, readers who do not find the text describing this explicit enough. |
| ***Summary of change:*** | ⌘ | Clarify that the ApplicationID capable terminals identify themselves via a binary flag, in the terminal capability. |
| ***Consequences if not approved:*** | ⌘ | Stage 3 being developed at OMA MMSG will not meet the 3GPP 23.140 requirements. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 7.1.3.1, 7.1.18.2.2 |

| | | Y | N | | | |
|---|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | X | | Other core specifications | ⌘ | OMA MMSG: ENC, CTR & CONF 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.

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

### 7.1.3.1 Terminal Capability Negotiation

An MMS User Agent shall support Terminal Capability Negotiation. An MMS Relay/Server shall support Terminal Capability Negotiation.

Within a request for delivery of an MM the recipient MMS User Agent shall be able to indicate its capabilities towards the recipient MMS Relay/Server.

The recipient MMS User Agent may indicate its capabilities towards the recipient MMS Relay/Server by transmitting:

- a set of information describing the terminal's capabilities, including a binary flag indicating whether or not the terminal supports Application data
- a link (e.g. URI) to a database where the MMS Relay/Server can fetch a set of information describing the terminal's capabilities, and/or
- a differential set of information indicating changes to a previously indicated set of terminal capability information.

The detailed definition of the specific mechanism for terminal capability negotiation shall be defined by the MM1 implementation (WAP etc.). The mechanism for terminal capability negotiation shall ensure that the MMS Relay/Server is provided with the information describing the MMS User Agent's capabilities within every request for delivery of an MM.

E.g. in the WAP implementation of MMS, in case an underlying WSP session is established between the MMS User Agent and an intermediate WAP Gateway, the MMS User Agent indicates its capabilities towards the WAP Gateway only after the initial set-up of the underlying WSP session or spontaneously following a change in terminal capabilities. The WAP Gateway, however, caches the terminal capability information and passes these on to the MMS Relay/Server within every request for delivery of an MM. Intermediate proxies on the MM1 reference point may also be involved in terminal capability negotiation and/or content adaptation.

Upon reception of such a delivery request the recipient MMS Relay/Server should use the information about the capabilities of the recipient MMS User Agent in preparation of MMs to be delivered to the recipient MMS User Agent. The MMS Relay/Server should adjust an MM to be delivered that contains media types and media formats that are not supported by the recipient MMS User Agent. This adjustment might involve the deletion or adaptation of those unsupported media types and media formats.

The MMS User Agent's capability information should include

- the maximum supported size of an MM,
- the maximum supported resolution of an image,
- a list of supported media types and media formats (e.g. MIME types),
- a list of supported character sets,
- a list of preferred languages,
- the maximum supported colour depth,
- an indication whether or not the recipient MMS User Agent supports streaming for the retrieval of MM contents as specified in clause 7.1.7 ,
- an indication if the recipient MMS User Agent supports transporting application data.

The MMS User Agent's capability information shall include:

- an indication of which Digital Rights Management methods are supported by the recipient MMS User Agent for protecting MM elements as specified in clause 7.1.15.

This information may include additional information related to the MMS implementation (WAP etc.).

#### 7.1.18.2.2 Receiving abstract messages

If an MMS Relay/Server finds from the recipient MMS User Agent's capability indication (see clause 7.1.3.1) that the recipient MMS User Agent does not support the transport of application data the MMS Relay/Server

- should delete the content of the MM before notifying the MMS User Agent or before retrieval. In such a case the recipient MMS Relay/Server shall apply the normal reporting behaviour towards receiving as well as sending entities;
- may decide about the deletion of content based on user setting in the user's profile and/or configuration by network operator and/or MMS service provider.

If the MMS Relay/Server finds from the recipient MMS User Agent's capability indication (see clause 7.1.3.1) that the recipient MMS User Agent supports transport of application data, the MMS Relay/Server

- shall not perform any type of content adaptation to a multimedia message (MM) that may be contained in the payload of an abstract message that contains a destination application identifer;
- shall pass on the destination application identifier, the "reply-path" identifier (if present) and the additional application/implementation specific control information (if present) unaltered.

Upon reception of an abstract message containing a destination application identifier, the receiving MMS User Agent or MMS VAS Application shall first check if the destination application resides on it.

If the destination application resides on a receiving MMS VAS Application, the MMS VAS Application shall immediately route the received MMS information on to the destination application that is referred to by the destination application identifier (based on the negotiated details upon application registration process).

If the destination application resides on a receiving MMS User Agent, the MMS User Agent shall immediately route the received MMS information on to the destination application that is referred to from the destination application identifier (based on the negotiated details upon application registration process) without presentation to the user.

NOTE: The further handling and processing of the information by the destination application is outside the scope of this specification.

If the destination application does not reside on the receiving MMS User Agent or MMS VAS Application, the MMS User Agent or MMS VAS Application shall discard the corresponding abstract message.

**3GPP TSG-T2 #26**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040457*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **181** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Deletion of deferred MMs from the MMS Relay/Server |
| ***Source:*** | ⌘ | T2 (T Mobile, Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 10/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*** | ⌘ | There are instances where it would be benefitial for the user to request the MMS Relay/Server to delete the MM instead of retrieving it. It then allows the MMS Relay/Server to free storage space, without having to wait for MM expiration. |
| ***Summary of change:*** | ⌘ | Define a new PDU that will request the MMS Relay/Server to delete an MM. |
| ***Consequences if not approved:*** | ⌘ | MMS Relay/Server storage space freed at MM expiration, even though it is known that the MM will not be retrieved until then. |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | 7.1.2.1, 7.1.5, 7.1.x (new), 8, 8.1.x (new) | | | |
| ***Other specs affected:*** | ⌘ | **Y** / **N** | Other core specifications | ⌘ | OMA MMS 1.3 |
| | | **X** / | Other core specifications | | |
| | | / **X** | Test specifications | | |
| | | / **X** | O&M Specifications | | |
| ***Other comments:*** | ⌘ | | | | |

**How to create CRs using this form:**
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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

### 7.1.2.1 Multimedia Message Notification

With the MM notification the recipient MMS User Agent shall receive a message reference that can be used for retrieving the MM from the recipient MMS Relay/Server. The message reference that is conveyed in a notification shall at least be valid throughout the message expiry period, till the successful retrieval of the MM or until the MM was rejected.

With the MM notification the recipient MMS User Agent may receive additional information on the MM.

If the originator MMS User Agent has requested address hiding the recipient MMS Relay/Server shall not include the originator address into the MM notification.

The MMS Relay/Server may include an indication in the MM notification recommending manual retrieval mode. This recommendation may be based on user settings in the User Profile.

In a response to the notification the MMS User Agent shall be able to

- reject the MM or
- retrieve the MM, either immediately or at a later time (i.e. defer the MM retrieval), either manually or automatically, as possibly determined by the operator configuration and user profile.

The retrieval mode employed by the recipient MMS User Agent for a particular MM may be based either on the user settings in the terminal or on the recommendation carried in the MM notification. The recipient MMS User Agent may follow this recommendation to retrieve the MM, through manual retrieval.

For any MM for which the retrieval has been deferred, the MMS User Agent may request deletion on the MMS Relay/Server instead of MM retrieval.

## 7.1.5 Delivery Report

The MMS Relay/Server shall support the delivery reporting service. Delivery reports shall only be generated for MMs.

The originator MMS User Agent or VASP may be able to request a delivery report for a specific MM.

Within an MM notification or upon MM retrieval the recipient MMS User Agent may receive an indication that a delivery report is requested for the MM.

Within either a response to a notification or a response to an MM's delivery, the recipient MMS User Agent may request a delivery report not to be generated by the MMS Relay/Server. When a VASP has requested the delivery report (via MM7) the MMS Relay/Server shall send the delivery report regardless of the MMS User Agent's request.

The originator MMS Relay/Server shall generate a delivery report if a delivery report has been requested by the originator MMS User Agent or VASP

- upon routing forward the MM, in case the peer entity is not known by the MMS Relay/Server;
- upon routing forward the MM, in case that originator is VASP.

The originator MMS Relay/Server may generate a delivery report if a delivery report has been requested by the originator MMS User Agent

- upon failure of routing forward the MM.

The recipient MMS Relay/Server shall generate a delivery report if a delivery report has been requested by the originator MMS User Agent and if the recipient MMS User Agent did not request a delivery report not to be generated or in any case that a VASP has requested a delivery report

- upon receipt of a response to a notification, in case the MM is rejected by the recipient MMS User Agent;
- upon receipt of a forwarding request, in case the MM is forwarded by the recipient MMS User Agent to other MM recipient(s), without prior retrieval;
- upon receipt of a response to an MM's delivery, in case the MM is retrieved by the MM recipient;
- upon receipt of a request for deletion of an MM (i.e., an MM for that retrieval has been deferred).
- upon expiry of the MM, in case the MM is not rejected and not retrieved by the MM recipient before the expiry.

The originator MMS User Agent or VASP, i.e. the MMS User Agent or VASP receiving the delivery report, may match the delivery report to the sent MM by retaining the message identification of the sent MM and comparing it to the received delivery report, which shall contain the message identification of the original MM. In case of multiple MM recipients, it is necessary for the originator MMS User Agent or VASP to retain the MM recipient addresses as well, to match the delivery report to the sent MM.

If a delivery report has been requested by the originator MMS User Agent and if the recipient MMS User Agent did not request a delivery report not to be generated, or in any case that the request for the delivery report comes from a VASP, the recipient MMS Relay/Server

- shall generate the delivery report;
- shall deliver the delivery report to the originator MMS Relay/Server;
- shall store delivery reports in the network until the originator MMS Relay/Server becomes reachable or until the delivery report expires.

In addition to the above, and as depicted in Annex M, if an agreement exists between the MMS Relay/Servers, the originator MMS Relay/Server may request a delivery report regardless of whether the originator MMS User Agent requested the delivery report. Then, if the originator MMS Relay/Server requests a delivery report, the recipient MMS Relay/Server shall generate a delivery report for each MM received for that specific originator MMS Relay/Server.

In the event where both the originator MMS User Agent and the originator MMS Relay/Server request a delivery report, and the recipient refuses to have a report generated:

- if the originator MMS Relay/Server requested a delivery report; the recipient MMS Relay/Server shall produce and provide it to the originator MMS Relay/Server (which shall not forward to the requesting originator MMS User Agent);
- if the originator MMS Relay/Server did not request a delivery report; the recipient MMS Relay/Server shall not produce a delivery report.

Within the delivery report the recipient MMS Relay/Server

- shall provide the MM originator address to the originator MMS Relay/Server;
- shall provide the MM recipient address to the originator MMS Relay/Server;
- shall provide the identification of the original MM for which the delivery report has been generated to the originator MMS Relay/Server;
- shall provide status information how the MM was handled/delivered (e.g. expired, rejected, delivered, forwarded or indeterminate) to the originator MMS Relay/Server;
- may provide further qualification about the status information how the MM was handled/delivered to the originator MMS Relay/Server for displaying the same to the originator;
- shall provide a time stamp when the MM was handled to the originator MMS Relay/Server.

For each MM recipient of the original MM for which the delivery report has been generated and becomes available at the originator MMS Relay/Server, the originator MMS Relay/Server

- shall deliver the delivery report to the originator MMS User Agent (i.e. the recipient MMS User Agent of the delivery report) or VASP, when requested by the originator MMS User Agent and not refused by the recipient.

Within the delivery report the originator MMS Relay/Server

- shall provide the MM recipient’s address to the originator MMS User Agent (the recipient MMS User Agent of the delivery report) or VASP;
- shall provide the identification of the original MM for which the delivery report has been generated to the originator MMS User Agent (the recipient MMS User Agent of the delivery report) or VASP;
- shall store delivery reports until the originator MMS User Agent becomes reachable (e.g. user moves back into coverage, switches MMS User Agent on) or until the delivery report expires;
- should store delivery reports until the VASP becomes reachable (e.g. in case of transport failure towards the VASP) or until the delivery report expires.

## 7.1.x Deletion of Multimedia Messages on an MMS Relay/Server

This part of the MMS service describes the mechanism by which an MMS User Agent may request the recipient MMS Relay/Server, to delete one or more of its MMs for which retrieval has been deferred.

NOTE: An MM may no longer be available on the recipient MMS Relay/Server after MM retrieval, MM forwarding, or other MMS User Agent actions.

The support for deletion of a deferred MM on an MMS Relay/Server is optional for the MMS User Agent and for the MMS Relay/Server.

If supported the MMS User Agent shall request deletion of a deferred MM based on the Message Reference(s) received in the corresponding notification(s).

Upon reception of a request from the MMS User Agent, the MMS Relay/Server:

- Shall ensure that the deletion request comes from the MMS User Agent associated with the MMs
- Should free resources associated with these MMs' Message Identification;
- Shall provide status information (per MM, or group of MMs) on the MM deletion request to the MMS User Agent.

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

**... snip ...**

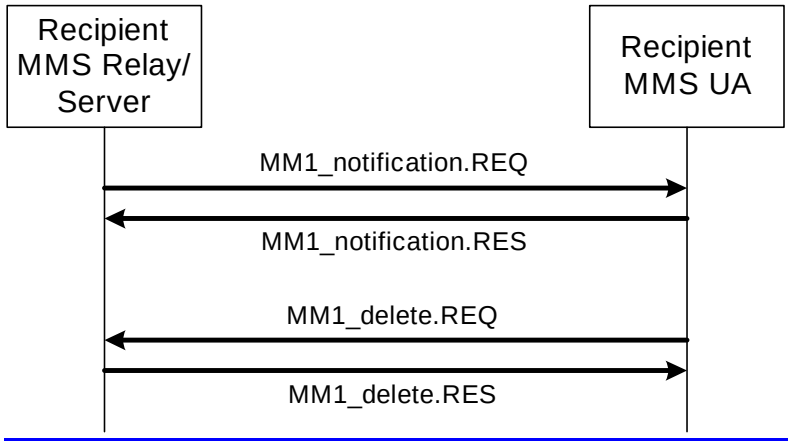


**Figure xx Example Abstract Message Flow, for deletion of deferred MMs**

## 8.1.x Deletion of Multimedia Messages on an MMS Relay/Server

This part of MMS service covers the deletion of MM(s). It can be used by the MMS User Agent to request the recipient MMS Relay/Server, to delete one or more of its deferred MMs. The deletion request shall always be submitted from the originator MMS User Agent to the corresponding MMS Relay/Server. Involved abstract messages are outlined in the table below from type and direction points of view.

**Table xx Abstract messages for deletion of deferred MMs on MMS Relay/Server**

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

### 8.1.x.y Normal operation

The originator MMS User Agent shall request deletion of deferred MMs using the MM1_delete.REQ.

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

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

### 8.1.x.y Abnormal Operation

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

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

### 8.1.x.y Features

**Message Reference:** The recipient MMS Relay/Server shall always provide a reference, e.g., URI, for the deferred MM(s) in the MM1_Delete.REQ.

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

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

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

The reason code given in the status information element of the MM1_Delete.RES may be supported with an explanatory text further qualifying the status. If this text is available in the Request status text information element the MMS User Agent may bring it to the user's attention. The choice of the language used in the Request status text information element is at the discretion of the MMS service provider.

## 8.1.4.x Information Elements

**Table x: Information elements in the MM1_Delete.REQ.**

| Information element | Presence | Description |
|---|---|---|
| Message Type | Mandatory | Identifies this message as MM1_Delete.REQ |
| Transaction ID | Mandatory | The identification of the MM1_Delete.RES pair. |
| MMS Version | Mandatory | Identifies the version of the interface supported by the MMS Relay/Server. |
| Message Reference | Mandatory | The message reference (e.g., URI) of the deferred MM(s) to be deleted; this element occurs at least once, but may occur multiple times. Once for each deferred MM to be deleted. |

**Table X: Information elements in the MM1_Delete.RES.**

| Information element | Presence | Description |
|---|---|---|
| Message Type | Mandatory | Identifies this message as MM1_Delete.RES. |
| Transaction ID | Mandatory | The identification of the MM1_Delete.REQ/MM1_Delete.RES pair. |
| MMS Version | Mandatory | Identifies the version of the interface supported by the MMS User Agent. |
| Request Status | Mandatory | The status of the MM1_Delete.REQ; this element occurs at least once, but may occur multiple times. Each one referring to the immediately preceeding Message Reference. |
| Request Status Text | Optional | Description which qualifies the status of the MM1_Delete.REQ; this element occurs at least once, but may occur multiple times. Each one corresponding to the immediately preceeding Request status. |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8-12 November 2004**

*T2-040449*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **182** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Resolving DNS to an IP address using procedures of RFC2821 |
| ***Source:*** | ⌘ | T2 (Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 09/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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 G (normative) leaves room for interpretation concerning how to achieve the DNS to IP address resolution. |
| ***Summary of change:*** | ⌘ | In Annex G, add a reference to RFC2821, for DNS to IP address resolution. |
| ***Consequences if not approved:*** | ⌘ | urrent unclarity remains. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | Annex G. |

| | Y | N | | |
|---|---|---|---|---|
| ***Other specs affected:*** ⌘ | | X | Other core specifications | ⌘ |
| | | X | Test specifications | |
| | | X | O&M Specifications | |

***Other comments:*** ⌘

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# Annex G (normative):
# DNS-ENUM recipient MSISDN address resolution.

For those recipients MSISDN addresses that appear in an MM and belong to an external MMSE, the originator MMS Relay/Server shall translate (resolve) them to a routable RFC 2822 [5] address that shall be used in the “RCPT TO” SMTP subsequent commands.

DNS-ENUM recipient MSISDN address resolution procedure:

1. The originator MMS Relay/Server shall ensure that the recipient address (MSISDN) complies with the E.164 address format and includes the ‘+’ character. In the case of national or local addressing scheme (e.g. only operator code followed by a number), the MMS Relay/Server shall convert the national or local number to an E.164 address format.

   EXAMPLE 1: +30-697-123-4567

   EXAMPLE 2: In case of number conversion 6971234567 is converted to +306971234567

2. The originator MMS Relay/Server shall remove all non-digit characters with the exception of the leading '+'.

   EXAMPLE: +306971234567

3. The originator MMS Relay/Server shall remove all characters with the exception of digits.

   EXAMPLE: 306971234567

4. The originator MMS Relay/Server shall put dots (".") between each digit.

   EXAMPLE: 3.0.6.9.7.1.2.3.4.5.6.7

5. The originator MMS Relay/Server shall reverse the order of the digits.

   EXAMPLE: 7.6.5.4.3.2.1.7.9.6.0.3

6. The resulting subdomain (result of step 5) shall be converted to a FQDN by appending an appropriate string. The specific string depends on the administrative control of the ENUM implementation.

   EXAMPLES: 7.6.5.4.3.2.1.7.9.6.0.3.e164.arpa (public top level domain),
   7.6.5.4.3.2.1.7.9.6.0.3.e164.gsm (private top level domain),
   7.6.5.4.3.2.1.7.9.6.0.3.e164.gprs (private top level domain), etc.

7. The resulting FQDN together with the string (E.164 number) in the form as specified in step 2 above, shall be used as the input to the NAPTR algorithm [60] by the originator MMS Relay/Server.

8. The output may result in one of the following cases:

   a. E.164 number not in the numbering plan. The originating MMS Relay/Server shall invoke an appropriate address resolution exception handling procedure (e.g. send a message to the originating MMS User Agent reporting the error condition).

   b. E.164 number in the numbering plan, but no URIs exist for that number. The originating MMS Relay/Server shall invoke an appropriate address resolution exception handling procedure (e.g. send a message to the originating MMS User Agent reporting the error

condition, perform the necessary conversion and route forward the message to the recipient via MM3, etc.).

c. E.164 number in the numbering plan, but no MMS URIs (MMS URIs are of the form “mms:mailbox” and they are defined in the MMS Resource Record section) exist for that number. The originating MMS Relay/Server shall invoke an appropriate address resolution exception handling procedure (e.g. send a message to the originating MMS User Agent reporting the error condition, perform the necessary conversion and route forward the message to the recipient via MM3 using the appropriate URI based on the Service field, etc.).

d. DNS ENUM service unavailable. The originating MMS Relay/Server shall invoke an appropriate address resolution exception handling procedure (e.g. send a message to the originating MMS User Agent reporting the error condition, store the message in the queue and retry at a later time, etc.).

e. E.164 number in the numbering plan and MMS URIs exist for that number.

EXAMPLE: The following is an example of NAPTR Resource Records associated with the FQDN derived from the recipient MSISDN address (+306971234567)

IN NAPTR 100 10 "u" "sip+E2U" "!^.*$!sip:Mary.Smith@sip.cosmote.gr!" .

IN NAPTR 100 11 "u" "mms+E2U" "!^.*$!mms:+306971234567/TYPE=PLMN@mms.cosmote.gr!" .

IN NAPTR 101 10 "u" "mailto+E2U" "!^.*$!mailto:Mary.Smith@mycosmos.gr!" .

IN NAPTR 102 10 "u" "mailto+E2U" "!^.*$!mailto:MaryS@otenet.gr!" .

The +306971234567 is converted to the following URIs:

sip:Mary.Smith@sip.cosmote.gr

mms:+306971234567/TYPE=PLMN@mms.cosmote.gr

mailto:Mary.Smith@mycosmos.gr

mailto:MaryS@otenet.gr

9. In case that the ENUM-DNS returns more than one MMS URI, the originator MMS Relay/Server shall sort the MMS URIs according to the Order and Preference fields as it is described in [60] and [61].

10. The originator MMS Relay/Server shall resolve the domain part of the “mailbox” of the highest precedence MMS URI to an IP address using standard DNS according to [22] section 5 “Address Resolution and Mail Handling”. Specifically, MX records shall be checked for and, if present, shall be used.

EXAMPLE: The highest precedence MMS URI is mms:+306971234567/TYPE=PLMN@mms.cosmote.gr

The domain part of the “mailbox” is mms.cosmote.gr and is resolved (e.g. DNS) to 10.10.0.1

11. The resulting IP address together with the recipient RFC 2822 address (“mailbox”) shall be used by the originator MMS Relay/Server for routing forward the MM using the protocol described in clause 6.8 to the recipient MMS Relay/Server.

**MMS Resource Record (RR)**

The key fields in the NAPTR RR are the Domain, TTL, Class, Type, Order, Preference, Flags, Service, Regexp and Replacement and they are described in [60] and [61]. In particular, for this release the following fields are further specified as follows:

Service = "mms+E2U"

Regexp = "!^.*$!mms:mailbox!" where “mailbox” token and its associated formatting rules are specified in [5].

The MMS URI is of the form “mms:mailbox”

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040459*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **183** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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 _forward.REQ counter definition |
| ***Source:*** | ⌘ | T2 (China Mobile, Huawei) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 9/11/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | TS 23.140 V6.7.0 section 8.4.1.1 describes the Normal Operation for MMS Forwarding but it does not specify the definition of the MM forwarding count and so there may be 2 possible interpretations as follows<br>1. The number of times the particular MM was forwarded between different Relay/Servers<br>2. The number of times the particular MM was forwarded by the MM1_forward.REQ<br>The intended definition should be as 2 above |
| ***Summary of change:*** | ⌘ | Clarification of the definition of the Forward Counter element in MM4_forward.REQ |
| ***Consequences if not approved:*** | ⌘ | Incompatible implementations may result through misinterpretation |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.4.1.3; 8.4.1.4 Table 35 |

| | | 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.

### 8.4.1.3 Features

**Addressing:** The recipient(s) of a routed forward MM shall be indicated in the addressing-relevant information field(s) of the MM4_forward.REQ. If the addresses of several MM recipients of the MM are associated with a single MMS Relay/Server then more than one MM recipient may be indicated in the addressing-relevant information field(s) of the MM4_forward.REQ. Addresses of all MM recipients of the MM (including those that are not associated with the MMS Relay/Server the MM is forwarded to) shall be conveyed in the MM4_forward.REQ for the MM recipient's informational purposes.

The MM originator of a routed forward MM shall be indicated in addressing-relevant information field(s) of the MM4_forward.REQ. If the originator MMS User Agent requested to hide its identity from the MM recipient then the information about this request shall also be conveyed in the MM4_forward.REQ.

**Time stamping:** The MM4_forward.REQ shall carry the date and time-of the most recent handling of the MM by an MMS User Agent (i.e. either submission or forwarding of the MM). In the case of forwarding the MM4_forward.REQ may carry the date and time of the submission of the MM.

**Time constraints:** If the originator MMS User Agent requested a time of expiry for the MM then this information shall be conveyed in the MM4_forward.REQ.

**Message class, priority and subject:** If the MM is qualified further by message class, priority, subject and/or additional qualifiers then this information shall be conveyed in the MM4_forward.REQ.

**Reporting:** If either the originator MMS User Agent, or the originator MMS Relay/Server requested a delivery report for the MM then the information about this request shall be conveyed in the MM4_forward.REQ. If, in addition, the originator MMS User Agent requested a read-reply report then the information about this request shall be conveyed in the MM4_forward.REQ.

**Identification:** The originator MMS Relay/Server shall always provide a unique message identification for an MM, which it routed forward to a peer MMS Relay/Server in the MM4_forward.REQ.

**Content Type:** The type of the multimedia content shall always be identified in the MM4_forward.REQ.

**Acknowledgement Request:** The originator MMS Relay/Server may request a MM4_forward.RES from the recipient MMS Relay/Server acknowledging the successful reception of the MM.

**Request Status:** The recipient MMS Relay/Server shall indicate the status of the MM4_forward.REQ in the associated MM4_forward.RES if requested.

**Request Recipients:** A list of recipients to whom the request status applies.

**Message Type:** The type of message used on reference point MM4 indicating MM4_forward.REQ and MM4_forward.RES as such.

**Transaction Identification:** If the originator MMS Relay/Server requests an MM4_forward.RES from the recipient MMS Relay/Server it shall provide a transaction identification within an MM4_forward.REQ. The MM4_forward.RES shall unambiguously refer to the corresponding MM4_forward.REQ using the same transaction identification.

**Forward_Counter:** A Counter indicating the number of times the particular MM was forwarded by a forwarding MMS User Agent.

**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 marked, if present.

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

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

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

**Content Information:** The originator may provide information about the nature of the content in the message. The content information could be in terms of indications that:

- classifies content of the MM based on e.g. media types/formats, size, presentation formats [85]
- the MM contains DRM-protected content

In case of conflict with the adaptation restriction provided by the originator, DRM-protection rules in content adaptation shall prevail over the adaptation restriction.

**Applic-ID:** This information element specifies the identification of the application that the routed forward MM is intended for. Its value shall equal the Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Reply-Applic-ID:** If present, this information element indicates a “reply path” to this MM, i.e. the identifier of the application to which a destination application shall address reply-MMs if any. The Reply-Applic-ID value shall equal the Reply-Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1). The Aux-Applic-Info value shall equal the Aux-Applic-Info value of the MM which is being routed forward with this MM4_forward.REQ. **Applic-ID:** This information element specifies the identification of the application that the routed forward MM is intended for. Its value shall equal the Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Reply-Applic-ID:** If present, this information element indicates a “reply path” to this MM, i.e. the identifier of the application to which a destination application shall address reply-MMs if any. The Reply-Applic-ID value shall equal the Reply-Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.17.1). The Aux-Applic-Info value shall equal the Aux-Applic-Info value of the MM which is being routed forward with this MM4_forward.REQ.

### 8.4.1.4 Information Elements

**Table 1: Information elements in the MM4_forward.REQ.**

| Information element | Presence | Description |
|---|---|---|
| 3GPP MMS Version | Mandatory | The MMS version of the originator MMS Relay/Server as defined by the present document. |
| Message Type | Mandatory | The type of message used on reference point MM4: "MM4_forward.REQ". |
| Transaction ID | Mandatory | The identification of the MM4_forward.REQ/ MM4_forward.RES pair. |
| Message ID | Mandatory | The identification of the MM. |
| Recipient(s) address | Mandatory | The address(es) of the MM recipient(s). Multiple addresses are possible. |
| Sender address | Mandatory | 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. |
| Message class | Conditional | The class of the MM (e.g., personal, advertisement, information service) if specified by the originator MMS User Agent |
| 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). |
| Time of Expiry | Conditional | The desired time of expiry for the MM if specified by the originator MMS User Agent (time stamp). |
| Delivery report | Conditional | A request for delivery report if the originator MMS User Agent has requested a delivery report for the MM. |
| Originator R/S delivery report | Conditional | A request for delivery report that, when set to "Yes", means the originator MMS Relay/Server has requested a delivery report for the MM.<br>Interpret as "No" in the absence of this Information element. |
| Priority | Conditional | The priority (importance) of the message if specified by the originator MMS User Agent. |
| Sender visibility | Conditional | A request to show or hide the sender's identity when the message is delivered to the MM recipient if the originator MMS User Agent has requested her address to be hidden from the recipient. |
| Read reply | Conditional | A request for read reply report if the originator MMS User Agent has requested a read-reply report for the MM.. |
| Subject | Conditional | The title of the whole MM if specified by the originator MMS User Agent. |
| Acknowledgement Request | Optional | Request for MM4_forward.RES |
| Forward_counter | Conditional | A counter indicating the number of times the particular MM was forwarded~~,~~ by a forwarding MMS User Agent. |
| 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 stamps). |
| Applic-ID | Optional | Identification of the destination application. |
| Reply-Applic-ID | Optional | Identification of a "reply-path" to this MM. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Content Class | Optional | Classifies the content of the MM to the smallest content class to which the message belongs [85] |
| DRM Content | Optional | Indicates if the MM contains DRM-protected content |
| Adaptations | Optional | Indicates if the originator allows adaptation of the content (default True) |
| Content | Conditional | The unaltered content of the multimedia message if specified |

| | | |
|---|---|---|
| | | by the originator MMS User Agent. |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040445*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **184** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Adding Recipient handset capabilities in the MM7_delivery_report.REQ and MM7_deliver.REQ transactions |
| ***Source:*** | ⌘ | T2 (Orange; Nokia) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 09/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | VAS/VASPs could benefit from getting the terminal capabilities from the MMS Relay/Server. VAS/VASPs could use these capabilities to correctly adapt the MM to the right characteristics of the recipient handset(s) before submitting it. Delivery report and message delivery may be good ways to carry these capabilities information from the MMS Relay/Server to the VAS/VASPs. |
| ***Summary of change:*** | ⌘ | - Add a new information element in the MM7_delivery_report.REQ and MM7_deliver.REQ transaction to carry recipient handset capability back from MMS Relay/Server to the VAS/VASP.<br>- Update the mapping table |
| ***Consequences if not approved:*** | ⌘ | It may not be possible for the VAS/VASP to get the recipient handset capabilities. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7.4; 8.7.2; 8.7.9.9; |

| ***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.

## 8.7.2 Delivery Request

This section addresses cases where a message that is passed by the MMS Relay/Server to a VASP for processing. For example, this may include cases where the message originated from the MMS User-Agent.

The involved abstract messages are outlined in the table below from type and direction points of view.

**Table 1: Abstract messages for demanding a service from a VASP**

| Abstract messages | Type | Direction |
|---|---|---|
| MM7_deliver.REQ | Request | MMS Relay/Server -> VASP |
| MM7_deliver.RES | Response | VASP -> MMS Relay/Server |

### 8.7.2.1 Normal Operation

The MMS Relay/Server will deliver messages to the VASP by supplying the MM as the payload of the MM7_deliver.REQ. The message originates, for example, from a MMS User Agent, an external application, or from outside the MMSE. This delivery may include an identification of the request that may be used by the VASP to correlate a response to the message. The VASP should reply with a MM7_deliver.RES message indicating that the message has been successfully received and will be processed.

The following figure illustrates the data flow of a use case where a MMS User Agent requesting a service from a VAS that requires a response.

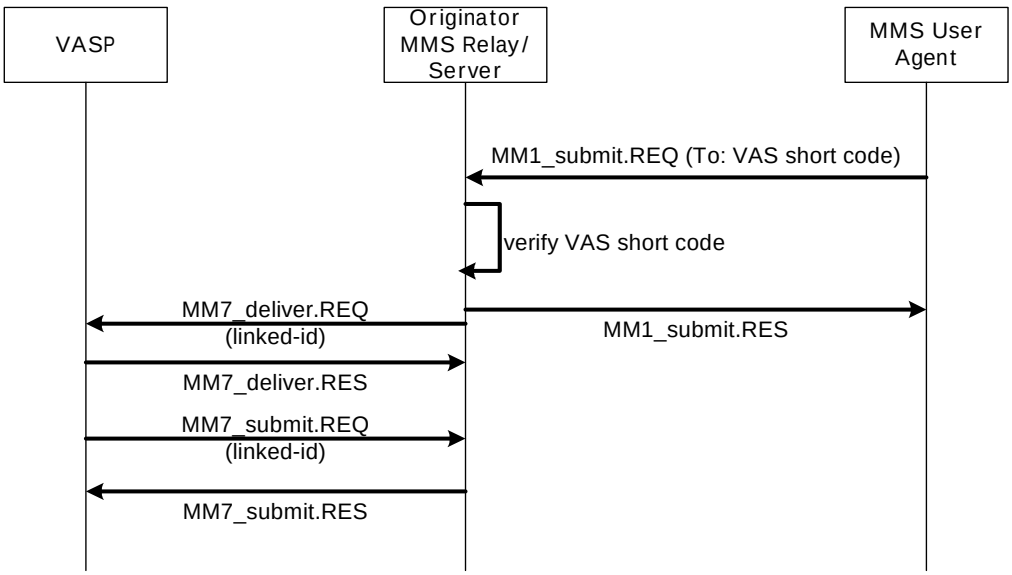


**Figure 9: Use of MM7_deliver and subsequent response**

Support for MM7_deliver.REQ and MM7_deliver.RES is mandatory for a MMS Relay/Server that supports MM7

### 8.7.2.2 Abnormal Operation

If the VASP cannot identify the requested content then it should indicate the failure in the MM7_deliver.RES status fields.

### 8.7.2.3 Features

**Authentication:** The MMS Relay/Server may supply its own identifier as part of the request.

**Addressing:** All relevant address information for the delivery of the message to the VASP – including the addressing information from the original message and from the MMS Relay/Server should be included in the relevant information elements of MM7_deliver.REQ. In the addressing information, it may be indicated whether a certain recipient address is meant for informational purposes only or to be used for routing. In the addressing information, it may be indicated whether the sender address has been encrypted or obfuscated.

**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 marked, if present.

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

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_deliver.REQ and MM7_deliver.RES as such.

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

**Message priority and subject:** The MMS Relay/Server may qualify the MM further by adding a priority and/or subject to the MM7_deliver.REQ. This information will originate from the end-user's original request.

**Linked message identification:** The MMS Relay/Server will supply an identifier for the request that may be used by the VASP.

NOTE: Use case examples:

1) The Linked ID can be used by the Relay/Server to logically relate a VASP reply (MM7_Submit.REQ) to an original user's request (MM1_Submit.REQ, and MM7_Deliver.REQ), in which case the Linked ID corresponds to the Message ID returned in the original MM1_Submit.RES.

2) The LinkedID can as well be used by the VASP to keep track of a sequence of MM7_Submit.REQ (e.g. MMs to multiple users) triggered by a single MM7_Deliver.REQ (e.g. which was triggered by a user's MM1_submit.REQ).

**Service code:** The VASP may mark the response to the message with a service code that will be transferred to the charging information for use by the billing system to properly bill the user for the service being supplied.

**Service Provider Identification:** The MMS Relay/Server may provide the SPI (Service Provider Identification) for the sender. In case a message is delivered to a VASP based on the recipient address, the MMS Relay/Server may provide the SPI for the recipient. The SPI information can originate from e.g. a user profile or a MAP query.

**Time stamping:** The MM may include the date and time-of the most recent handling of the MM by an MMS User Agent (i.e. either submission or forwarding of the MM). In the case of forwarding the MM7_deliver.REQ may carry the date and time of the submission of the MM.

**Reply-Charging:** In case of reply-charging when the reply-MM is submitted within the MM7_deliver.REQ MMS Relay/Server should indicate that the message is free-of-charge reply.

**Content type:** The MIME type of the multimedia content shall always be identified in the MM7_deliver.REQ.

**Content:** The originator of the MM may supply content that is delivered to the VASP in the MM7_deliver.REQ.

**Request status:** The MMS Relay/Server shall indicate the status of the request in the associated response. The reason code given in the status information element of the response may be supported with an explanatory text further qualifying the status.

**MMS User Agent capabilities:** The MMS Relay/Server may supply information about the capabilities of the MMS User Agent that originated the MM. This information may be used by the VAS or VASP when creating subsequent MM7_submit.REQ messages to that particular recipient MMS User Agent. This information should be provided by the

MMS Relay/Server either from information received from the MMS User Agent or other MMS Relay/Server-based proprietary means.

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS VAS Application shall provide this MM7_retrieve.REQ to the specified destination application.

**Reply-Applic-ID:** If present, this information element indicates a "reply path". It contains the application identifier which shall be used by the recipient MMS VAS Application when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

### 8.7.2.4 Information Elements

**Table 2: Information elements in the MM7_deliver.REQ .**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_deliver.REQ/ MM7_deliver.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_deliver request. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the MMS Relay/Server |
| MMS Relay/Server ID | Optional | Identifier of the MMS Relay/Server |
| VASP ID | Optional | Identifier of the VASP for this MMS Relay/Server. |
| VAS ID | Optional | Identifier of the originating application. |
| Linked ID | Optional | Identifier that may be used by the VASP in a subsequent MM7_submit.REQ |
| Sender address | Mandatory | The address of the MM originator. It is possible to mark that the sender address has been encrypted or obfuscated by the MMS Relay/Server. |
| Recipient address | Optional | The address(es) of the intended recipients of the subsequent processing by the VASP or the original recipient address(es). It is possible to mark an address to be used only for informational purposes. |
| 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 stamps). |
| Sender SPI | Optional | The SPI of the MM originator. |
| Recipient SPI | Optional | The SPI of the intended MM recipient, in case the MM was delivered to VASP based on the recipient address. |
| Date and time | Optional | The time and date of the submission of the MM (time stamp). |
| Reply-Charging-ID | Optional | In case of reply-charging when the reply-MM is submitted within the MM7_deliver.REQ this is the identification of the original MM that is replied to. |
| Priority | Optional | The priority (importance) of the message. |
| Subject | Optional | The title of the whole MM. |
| Content type | Mandatory | The content type of the MM's content. |
| MMS User Agent capabilities | Optional | Information about the capabilities of the MMS User Agent that originated the MM. In this context, the associated timestamp shall not be populated. |
| Applic-ID | Optional | Identification of the destination application. |
| Reply-Applic-ID | Optional | Identification of an application to which reply-MMs and read-reply reports are addressed. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Content | Optional | The content of the multimedia message |

**Table 3: Information elements in the MM7_deliver.RES .**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_deliver.REQ/ MM7_deliver.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_deliver response. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the VASP |
| Service code | Optional | Information supplied by the VASP which may be included in charging information. The syntax and semantics of the content of this information are out of the scope of this specification. |
| Request Status | Mandatory | Status of the completion of the request. |
| Request Status text | Optional | Text description of the status for display purposes, should qualify the Request Status |

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## 8.7.4 Delivery reporting to VASP

This part of MMS service covers the generation of a delivery report from the MMS Relay/Server to the VASP. The involved abstract messages are outlined in the table below from type and direction points of view.

**Table 4: Abstract messages for delivery reports to VASP**

| Abstract Message | Type | Direction |
|---|---|---|
| MM7_delivery_report.REQ | Request | MMS Relay/Server -> VASP |
| MM7_delivery_report.RES | Response | VASP -> MMS Relay/Server |

### 8.7.4.1 Normal Operation

The MMS Relay/Server shall create the MM7_delivery_report.REQ and send it to the VASP when the appropriate information is available.

Support for MM7_delivery_report.REQ and MM7_delivery_report.RES is mandatory for a MMS Relay/Server that supports MM7.

### 8.7.4.2 Abnormal Operation

In case the VASP cannot identify the MMS Relay/Server or the Message ID is not recognized, then the VASP shall respond with a MM7_delivery_report.RES including a status which indicates the reason the delivery report was not accepted.

### 8.7.4.3 Features

**Addressing:** Both the address of the VAS (which is the original MM originator) and the address of the recipient of the original MM shall be provided in the addressing-relevant information fields of MM7_delivery_report.REQ.

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_delivery_report.REQ and MM7_delivery_report.RES as such.

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

**Time stamping:** The MM7_delivery_report.REQ shall carry the time and date of handling of the MM (e.g. retrieval, expiry, rejection)**.**

**Message identification:** In the MM7_delivery_report.REQ the MMS Relay/Server shall always provide the original message identification of the MM that the delivery report corresponds to as generated in response to the associated MM7_submit.REQ.

**MM Status:** The MM7_delivery_report.REQ shall carry the status of the MM delivery, e.g. retrieved, rejected, expired or indeterminate. The MM Status Extension may be used to provide more granularity. The status code may be supported with an explanatory text to further qualify the status of the MM delivery (e.g. recipient does not support MMS, recipient address unresolved, MM is too big, if/what content adaptation took place, address where the MM was forwarded). If there is no match between delivery condition and user status, delivery condition not met shall be returned.

**Request Status:** The VASP shall indicate the status of the MM7_delivery_report.REQ in the associated MM7_delivery_report.RES. The reason code given in the status information element of the response may be supported with an explanatory text further qualifying the status.

**MMS User Agent Capabilities:** The MMS Relay/Server may provide information about the MMS User Agent 's capabilities of the recipient of the original MM. This information should be provided by the MMS Relay/Server either from information received from the MMS User Agent or other MMS Relay/Server-based proprietary means.

NOTE: This information is time stamped. As time goes on, it may not accurately reflect the current MMS User Agent capabilities.

**Applic-ID:** This information element indicates the identification of the application that the delivery report is intended for. If a Reply-Applic-ID was indicated in the corresponding original MM, the recipient MMS Relay/Server shall set its value to that Reply-Applic-ID value. Otherwise, the recipient MMS Relay/Server shall set its value to the Applic-ID value that was indicated in the corresponding original MM.

**Reply-Applic-ID:** If present, this information element indicates a “reply path”, i.e. the identification of an application to which reply-MMs are addressed. The recipient MMS Relay/Server shall insert it into the MM7_delivery_report.REQ if the values of Applic-ID and Reply-Applic-ID in the corresponding original MM differ, in which case its value shall equal the Applic-ID value that was indicated in the corresponding original MM.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1). The recipient MMS Relay/Server shall insert it if Aux-Applic-Info was indicated in the corresponding original MM, in which case its value shall equal that Aux-Applic-Info value.

### 8.7.4.4 Information Elements

**Table 5: Information elements in the MM7_delivery_report.REQ.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_delivery_report.REQ/ MM7_delivery_report.RES pair. |
| Message Type | Mandatory | The type of message used on reference point MM7 “ MM7_delivery_report.REQ”. |
| MM7 Version | Mandatory | The version of MM7 supported by the MMS Relay/Server |
| MMS Relay/Server ID | Optional | Identifier of the MMS Relay/Server |
| Message ID | Mandatory | The identification of the original MM. |
| Recipient address | Mandatory | The address of the recipient of the original MM. |
| Sender address | Mandatory | The address of the VAS that submitted the original MM. |
| Date and time | Mandatory | Date and time the MM was handled (retrieved, expired, rejected, etc.) (time stamp) |
| MM Status | Mandatory | Status of the MM, e.g. retrieved, expired, rejected |
| MM Status Extension | Optional | Extension of the MM Status, to provide more granularity. |
| MM Status text | Optional | Text description of the status for display purposes, should qualify the MM Status |
| MMS User Agent Capabilities | Optional | Information about the MMS User Agent's capabilities of the recipient of the original MM. As part of this information, a timestamp should be conveyed indicating the time when the recipient MMS User Agent provided its capabilities. |

| | | |
|---|---|---|
| Applic-ID | Optional | The identification of the originating application of the original MM. |
| Reply-Applic-ID | Optional | Identification of an application to which the originating application of the original MM shall address reply-MMs if any. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |

**Table 6: Information elements in the MM7_delivery_report.RES.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_delivery_report.REQ/ MM7_delivery_report.RES pair. |
| Message Type | Mandatory | The type of message used on reference point MM7: “MM7_delivery_report.RES”. |
| MM7 Version | Mandatory | The version of MM7 supported by the VASP |
| Request Status | Mandatory | The status of the associated MM7_delivery_report.REQ. |
| Request Status text | Optional | Text description of the status for display purposes, should qualify the Request Status |

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## 8.7.9 Mapping of Information Elements to SOAP Elements

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### 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, e.g. 5.2.0 |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| 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 | |
| MMS User Agent capabilities | SOAP body | UACapabilities | |
| Applic-ID | SOAP Body | ApplicID | |
| Reply-Applic-ID | SOAP Body | ReplyApplicID | |
| Aux-Applic-Info | SOAP Body | AuxApplicInfo | |
| Content | SOAP Body | Content | href:cid attribute links to attachment |

### 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, 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 | Date | |
| MM Status | SOAP Body | MMStatus | Enumeration – possible values: Expired, Retrieved, Rejected, Indeterminate, Forwarded, Delivery Condition Not Met |
| Status text | SOAP Body | StatusText | |
| MMS User Agent Capabilities | SOAP Body | UACapabilities | |
| Applic-ID | SOAP Body | ApplicID | |
| Reply-Applic-ID | SOAP Body | ReplyApplicID | |
| Aux-Applic-Info | SOAP Body | AuxApplicInfo | |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040426*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **185** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Additional Error situation in MM7_Deliver.RES |
| ***Source:*** | ⌘ | T2 (T-Mobile) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 08/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | To allow the VASP to reject Messages from the UA, which are not covered by the contract between the user and the VASP, with an appropriate Error code, a new scenario is added to the "Abnormal Operation" chapter for the MM7 Delivery Request chapter. |
| ***Summary of change:*** | ⌘ | Additional text in chapter 8.7.2.2 which describes the mentioned scenario. |
| ***Consequences if not approved:*** | ⌘ | Main error scenario is not covered. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | Section 8.7.2.2 |

| | 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.

# Delivery Request

This section addresses cases where a message that is passed by the MMS Relay/Server to a VASP for processing. For example, this may include cases where the message originated from the MMS User-Agent.

The involved abstract messages are outlined in Table 50 from type and direction points of view.

**Table 1: Abstract messages for demanding a service from a VASP**

| Abstract messages | Type | Direction |
|---|---|---|
| MM7_deliver.REQ | Request | MMS Relay/Server -> VASP |
| MM7_deliver.RES | Response | VASP -> MMS Relay/Server |

## 8.7.2.1 Normal Operation

The MMS Relay/Server will deliver messages to the VASP by supplying the MM as the payload of the MM7_deliver.REQ. The message originates, for example, from a MMS User Agent, an external application, or from outside the MMSE. This delivery may include an identification of the request that may be used by the VASP to correlate a response to the message. The VASP should reply with a MM7_deliver.RES message indicating that the message has been successfully received and will be processed.

The following figure illustrates the data flow of a use case where a MMS User Agent requesting a service from a VAS that requires a response.

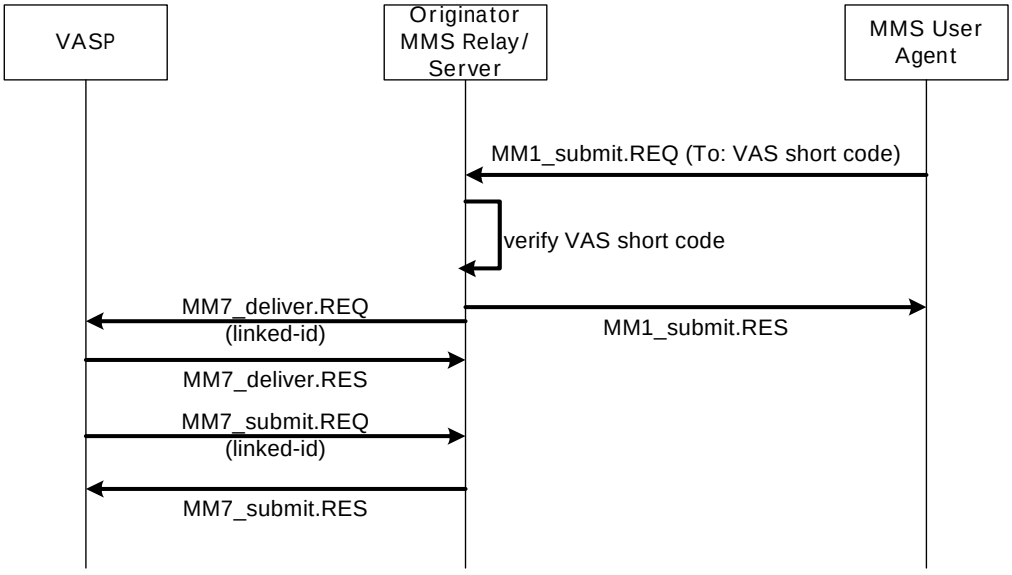


**Figure 9: Use of MM7_deliver and subsequent response**

Support for MM7_deliver.REQ and MM7_deliver.RES is mandatory for a MMS Relay/Server that supports MM7

## 8.7.2.2 Abnormal Operation

If the VASP cannot identify the requested content then it should indicate the failure in the MM7_deliver.RES status fields.

If the delivered content does not fulfil the conditions the VASP expected e.g. service not booked by the user, the VASP should indicate this failure in the MM7_deliver.RES status field.

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8-12 November 2004**

*T2-040446*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **186** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Allow more than one DeliveryCondition at a time. |
| ***Source:*** | ⌘ | T2 (Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 09/11/2004 |
| ***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)* |
| *Rel-6* | *(Release 6)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Remove VAS/VASP constraints that imposes a single Delivery Condition. |
| ***Summary of change:*** | ⌘ | Allows the VAS/VASP to specify more than a single Delivery Condition. |
| ***Consequences if not approved:*** | ⌘ | The VAS/VASP is constrained to provide to the MMS R/S a single Delivery Condition, which is very limitative. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7.1.4, 8.7.8.x (new), Table K.2 |

| | 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:**
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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.

responding may either use its own XML schema version, or the sender's XML schema version.

## 8.7.1 Submitting a VAS MM

This section addresses the operations necessary for a VASP to provide the service by sending a multimedia message to one or more subscribers or to a distribution list. The involved abstract messages are outlined in the table below from type and direction points of view.

**Table 1: Abstract messages for submitting VAS message**

| Abstract messages | Type | Direction |
|---|---|---|
| MM7_submit.REQ | Request | VASP -> MMS Relay/Server |
| MM7_submit.RES | Response | MMS Relay/Server -> VASP |

### 8.7.1.1 Normal Operation

The VASP submits a message to the MMS Relay/Server by sending the MM7_submit.REQ supplying the multimedia message (MM) as the payload of the message. The message may be directed to one or more subscribers or to a distribution list. If the MMS Relay/Server accepts the submission, the MMS Relay/Server must send a MM7_submit.RES with a "success" status. This in no way indicates that the MM was actually delivered to the destinations but states that the request has been accepted.

Support for MM7_submit.REQ and MM7_submit.RES is mandatory for all MMS Relay/Servers that support MM7.

### 8.7.1.2 Abnormal Operation

The MMS Relay/Server should reject the MM7_submit.REQ if the VAS cannot be authorized or if the parameters of the request exceed the service level for the service being employed, or if the Relay/Server does not support third party charging. Similarly, if none of the destinations can be resolved then the response status should indicate an error. If one or several (but not all) addresses can be resolved, the MMS Relay/Server should deliver the message to those addresses and respond to the VAS using the MM7_submit.RES with a partial success to the VASP. Partial success does not indicate that the MM was actually delivered to the destinations but states that the request has been at least partially accepted.

### 8.7.1.3 Features

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

**Addressing:** The VASP may direct the MM to a one or more subscribers or to a distribution list. In the addressing information, it may be indicated whether a recipient address is meant for informational purposes only or to be used for routing. In the addressing information, it may be indicated whether a recipient address has been encrypted or obfuscated. The originator of a submitted MM may be indicated in addressing-relevant information field(s) of the MM7_submit.REQ

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_submit.REQ and MM7_submit.RES as such.

**Transaction Identification:** The VASP shall provide an unambiguous transaction identification within an MM7_submit.REQ. The MM7_submit.RES shall unambiguously refer to the corresponding MM7_submit.REQ using the same transaction identification.

**Linked message identification:** The VASP will supply a message identifier when submitting a message, that defines a correspondence to a previous message that was delivered by the MMS Relay/Server to the VASP.

NOTE: Use case examples:

1) The Linked ID can be used by the Relay/Server to logically relate a VASP reply (MM7_Submit.REQ) to an original user's request (MM1_Submit.REQ, and MM7_Deliver.REQ), in which case the Linked ID corresponds to the Message ID returned in the original MM1_Submit.RES.

2) The LinkedID can as well be used by the VASP to keep track of a sequence of MM7_Submit.REQ (e.g. MMs to multiple users) triggered by a single MM7_Deliver.REQ (e.g. which was triggered by a user's MM1_submit.REQ).

**Message class, priority, and subject:** The VASP may qualify the MM further by adding a message class, a priority and/or subject to the MM7_submit.REQ.

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

**Time stamping:** The VASP may time stamp the MM.

**Time constraints:** The VASP may request an earliest desired time of delivery of the MM. The VASP may request a time of expiry for the MM

**Reply-Charging:** The originator VASP may indicate that it wants to pay for a reply-MM and convey the reply-charging limitations (e.g. the latest time of submission and/or the maximum size of a reply-MM) in the MM7_submit.REQ.

**Delivery reporting:** The VASP may request a delivery report for the MM

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

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

NOTE: From REL-6 onwards, in case of misalignment, DRM-protection rules shall prevail on the Content Adaptation Restriction feature.

**Content Information:** The VASP may provide information about the nature of the content in the message. The content information could be in terms of indications that:

- classifies content of the MM based on e.g. media types/formats, size, presentation formats [85]
- the MM contains DRM-protected content

In case of conflict with the adaptation restriction provided by the VASP, DRM-protection rules in content adaptation shall prevail over the adaptation restriction.

**Content type:** The MIME type of the multimedia content shall always be identified in the MM7_submit.REQ.

**Content:** The VASP may add content in the MM7_submit.REQ.

**Message identification:** The MMS Relay/Server shall always provide a message identification for an MM, which it has accepted for submission in the MM7_submit.RES.

**Request status:** The MMS Relay/Server shall indicate the status of the MM7_submit.REQ in the associated MM7_submit.RES. The reason code given in the status information element of the MM7_submit.RES may be supported with an explanatory text further qualifying the status.

**Charged-Party:** The VASP may indicate in the MM7_submit.REQ which party is expected to be charged for an MM submitted by the VASP, e.g. the sending, receiving, both parties or neither.

**Charged party ID:** The address of the third party which is expected to pay for the MM.

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

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

**Delivery Condition:** The VASP may indicate a condition which needs to be met to allow delivery. If the condition is not met the MM shall be discarded by the MMS Relay/Server.

**Applic-ID:** The presence of this information element indicates that this abstract message shall be provided to an application residing on an MMS User Agent. It contains the identification of the destination application.

**Reply-Applic-ID:** If present, this information element indicates a “reply path”, i.e. the identifier of the application to which delivery reports, read-reply reports and reply-MMs are addressed if any.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

### 8.7.1.4 Information Elements

**Table 2: Information elements in the MM7_submit.REQ .**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_submit.REQ/ MM7_submit.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_submit request. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the VASP |
| VASP ID | Optional | Identifier of the VASP for this MMS Relay/Server. |
| VAS ID | Optional | Identifier of the originating application. |
| Sender address | Optional | The address of the MM originator. |
| Recipient address | Mandatory | The address of the recipient MM. Multiple addresses are possible or the use of the alias that indicates the use of a distribution list. It is possible to mark an address to be used only for informational purposes. It is possible to mark that a recipient address is provided in encrypted or obfuscated format. E.g. the address was originally provided in encrypted or obfuscated form in an associated MM7_deliver.REQ. |
| Service code | Optional | Information supplied by the VASP which may be included in charging information. The syntax and semantics of the content of this information are out of the scope of this specification. |
| Linked ID | Optional | This identifies a correspondence to a previous valid message delivered to the VASP. |
| Message class | Optional | Class of the MM (e.g. advertisement, information service, accounting) |
| Date and time | Optional | The time and date of the submission of the MM (time stamp). |
| Time of Expiry | Optional | The desired time of expiry for the MM (time stamp). |
| Earliest delivery time | Optional | The earliest desired time of delivery of the MM to the recipient (time stamp). |
| Delivery report | Optional | A request for delivery report. |
| Read reply | Optional | A request for confirmation via a read report to be delivered as described in section 8.1 |
| Reply-Charging | Optional | A request for reply-charging. |
| Reply-Deadline | Optional | In case of reply-charging the latest time of submission of replies granted to the recipient(s) (time stamp). |
| Reply-Charging-Size | Optional | In case of reply-charging the maximum size for reply-MM(s) granted to the recipient(s). |
| Priority | Optional | The priority (importance) of the message. |
| Subject | Optional | The title of the whole multimedia message. |
| Content Class | Optional | Classifies the content of the MM to the smallest content class to which the message belongs [85]. |
| DRM Content | Optional | Indicates if the MM contains DRM-protected content |
| Adaptations | Optional | Indicates if VASP allows adaptation of the content (default True) (NOTE 1) |
| Charged Party | Optional | An indication which party is expected to be charged for an MM submitted by the VASP, e.g. the sending, receiving, both parties third party or neither. |
| Content type | Mandatory | The content type of the MM's content. |
| Content | Optional | The content of the multimedia message |
| Message Distribution Indicator | Optional | If set to "false" the VASP has indicated that content of the MM is not intended for redistribution.<br>If set to "true" the VASP has indicated that content of the MM can be redistributed. (NOTE 2) |
| Charged Party ID | Optional | The address of the third party which is expected to pay for the MM |
| Delivery Condition | Optional | In the event of a single "Delivery Condition", then if ~~If~~ the condition is met the MM shall be delivered to the recipient MMS User Agent, otherwise the MM shall be discarded.<br>In the event of multiple "Delivery Condition", then if all conditions are met the MM shall be delivered to the recipient MMS User Agent, otherwise the MM shall be discarded.<br>Upon receipt of an unknown Delivery Condition, the MMS Relay/Server ignores it and continues processing.<br>See 8.7.8.x for the definition of the Delivery Conditions.~~The initial values are: MMS capable only; HPLMN only; any other~~ |

| | | |
|---|---|---|
| | | ~~values can be added based on bilateral agreements between the MMS Relay/Server operator and the VASP.~~ |
| Applic-ID | Optional | Identification of the destination application. |
| Reply-Applic-ID | Optional | Identification of an application to which reply-MMs, delivery reports and read-reply reports are addressed. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| NOTE 1: From REL-6 onwards, in case of misalignment between the value assigned to Adaptations and DRM-protection rules, the latter shall prevail.<br>NOTE 2: From REL-6 onwards, in case of misalignment between the value assigned to MDI and DRM-protection rules, the latter shall prevail. | | |

**Table 3: Information elements in the MM7_submit.RES .**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_submit.REQ/ MM7_submit.RES pair. |
| Message type | Mandatory | Identifies this message as a MM7_submit response. |
| MM7 version | Mandatory | Identifies the version of the interface supported by the MMS Relay/Server |
| Message ID | Conditional | If status indicates success then this contains the MMS Relay/Server generated identification of the submitted message. This ID may be used in subsequent requests and reports relating to this message. |
| Request Status | Mandatory | Status of the completion of the submission, no indication of delivery status is implied. |
| Request Status text | Optional | Text description of the status for display purposes, should qualify the Request Status. |

## 8.7.8.x Delivery Conditions

The Delivery Condition element shall be used to carry the conditions that are carried by the VASP/VAS to the MMS Relay/Server.

Delivery Conditions are extensible. Unrecognised Delivery Condition and values reserved by this specification for future definitions shall be ignored. The numbers in the range 1000-1999 shall be used for bilateral agreements.

The following Table xx shows the Delivery Conditions that are currently defined.

**Table xx: Delivery Conditions**

| Delivery condition value | Delivery condition value | Comment |
|---|---|---|
| 1 | MMS capable only | VASP/VAS intend the MM to be sent to a recipient's terminal that has MMS capabilities. |
| 2 | HPLMN only | VASP/VAS intend the MM to be sent to a recipient's terminal that is within the PLMN (i.e., not roaming). |
| 3 … 999 | Reserved for future definition by this specification | Reserved for future definition by this specification. Ignore if received by an MMS Relay/Server that can't interpret the value. |
| 1000 … 1999 | Reserved for bilateral agreement usage. | Reserved for bilateral agreement usage and will not be used by this specification in the future. Ignore if received by an MMS Relay/Server that can't interpret the value. |

**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 Type | - |
| - | Transaction ID | - |
| - | MMS Version | - |
| 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-Charging-ID |
| 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 |
| Content Class | - | - |
| DRM Content | - | - |
| Adaptations | - | - |
| Content type | - | Content type |
| Content | - | Content |
| Message Distribution Indicator | Message Distribution Indicator | Message Distribution Indicator |
| Charged Party | - | - |
| Charged Party ID | - | - |
| DeliveryCondition | - | - |
| - | Message size | - |
| - | Message Reference | - |
| - | Stored | - |
| - | Delivery report | Delivery report |
| - | Reply-Charging-ID | - |
| - | Element-Descriptor | - |
| - | - | Message ID |
| - | - | MM State |
| - | - | MM Flags |
| - | - | Request Status |
| - | - | Request Status Text |
| - | - | Previously-sent-by |
| - | - | Previously-sent-date-and-time |
| - | - | Message Type |
| - | - | Transaction ID |
| - | - | MMS Version |
| Applic-ID | Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info | Aux-Applic-Info |

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040441*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **187** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Clarification of schema versioning |
| ***Source:*** | ⌘ | T2 (Nokia, Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 11/11/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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:*

| | |
|---|---|
| *Ph2* | *(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)* |
| *Rel-7* | *(Release 7)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | To describe the meaning of version numbers in ANNEX L together with an example. |
| ***Summary of change:*** | ⌘ | New informative annex describing the process |
| ***Consequences if not approved:*** | ⌘ | It will remain unclear how version numbers are manipulated in ANNEX L. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | Annex X (New) |

| | | 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 X (informative): Schema Version Handling

This annex defines the version numbers present in the MM7 Schema / Stage 3. (Annex L)

The schema target and default namespace versions are independent of the specification version.

MM7 versionType defines a list of specification values. The top element holds the current specification value for which the stage 3 was created against.

In the event of a stage two specification version X.Y.Z (cf. clause "Foreword") change without a stage three change, the schema version present in the target namespace URL or MM7 version type definition remain unchanged.

If a change is made to the schema, a new targetNamespace is used together with a new entry to the versionType enumerated table to indicate the latest specification.

Example 1:

REL-6-MM7-1-2 changes to REL-6-MM7-1-3 and the latest specification version e.g. 6.6.0 is added to the versionType definition.

Schema version present in the target namespace URL shown in bold text:

<xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/**REL-6-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-6-MM7-1-32**"

MM7 VersionType definition

```
<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="6.6.0"/>
        <xs:enumeration value="6.5.0"/>
    </xs:restriction>
</xs:simpleType>
```

Example 2:

if changes done in version 6.Y.Z do impact MM7-1-A, then a version 6.Y+1.0 will be created:

- With adding <xs:enumeration value="X.Y+1.0"/> to the “versionType"

```
<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="6.Y+1.0"/>
        <xs:enumeration value="6.Y.0"/>
    </xs:restriction>
</xs:simpleType>
```

- With changing the NameSpace <xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/**REL-6-MM7-1-A+1**"

- With changing the XMLschema 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-6-MM7-1-A+1**"

if changes made to version 6.Y.Z do not impact MM7-1-A, then a version 6.Y+1.0 will be created:

- Without adding <xs:enumeration value="6.Y.Z"/> to the “versionType"
- Without changing the NameSpace <xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/**REL-6-MM7-1-A**"
- Without changing the XMLschema 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-6-MM7-1-A**"

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040442*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **188** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Error Status Codes related to Application Addressing over MM7 |
| ***Source:*** | ⌘ | T2 (TeliaSonera) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 11/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Today are many end-users uncertain about the end-to-end MMS interoperability. Feedbacks are often missing.<br><br>Details on how an MMS User Agent or an MMS VAS Application would interface with applications are outside the scope of this specification, but some basic error handling is needed for the MM7 reference point.<br><br>This CR proposes to add some new Error Status Codes related to Application Addressing.<br><br>1. Recipient MMS User Agent does not support the transport of application data<br>2. Destination application not found<br>3. Destination application denied<br>4. Originating application not found (If Reply-Applic-ID is present)<br><br>The successful transportation of application data report back to origin applications, is supposed to be sufficient without changes. |
| ***Summary of change:*** | ⌘ | Addition of Error Status Codes for Application Addressing on MM7. |
| ***Consequences if*** | ⌘ | Error handling of Application Addressing will be under developed. |

| | |
|---|---|
| ***not approved:*** | |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7.8.3.1 Request and Error Status Codes | | | |
| ***Other specs affected:*** | ⌘ | **Y** / **N** | | ⌘ | |
| | | **X** / | Other core specifications | ⌘ | OMA MMS specifications |
| | | / **X** | Test specifications | | |
| | | / **X** | O&M Specifications | | |
| ***Other comments:*** | ⌘ | OMA MMS specifications would need to reflect similar error codes on MM1 level | | | |

**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.

[…]

#### 8.7.8.3.1 Request and Error Status Codes

The StatusText element (for application-level situations) shall be used to carry a human readable explanation of the error or success situation, e.g. partial success. In Table 70 below the status text should be used by the VASP or MMS Relay/Server when indicating status information to the originator. In addition to this there will be status codes consisting of a four digit numeric value. The first digit of the status code indicates the class of the code. There are 4 classes:

- 1xxx: Success in the operation,
- 2xxx: Client errors,
- 3xxx: Server errors,
- 4xxx: Service errors.

Status codes are extensible. The VASP and the MMS Relay/Server must understand the class of a status code. Unrecognised codes shall be treated as the x000 code for that class. Codes outside the 4 defined class ranges shall be treated as 3000. For implementation specific codes, the numbers in the range x500-x999 shall be used.

The following Table 67 shows the StatusCodes and StatusTexts that are currently defined.

**Table 1: StatusCode and StatusText**

| StatusCode | StatusText | Meaning |
|---|---|---|
| 1000 | Success | This code indicates that the request was executed completely |
| 1100 | Partial success | This code indicates that the request was executed partially but some parts of the request could not be completed. Lower order digits and the optional Details element may indicate what parts of the request were not completed. |
| 2000 | Client error | Client made an invalid request |
| 2001 | Operation restricted | The request was refused due to lack of permission to execute the command. |
| 2002 | Address Error | The address supplied in the request was not in a recognized format or the MMS Relay/Server ascertained that the address was not valid for the network because it was determined not to be serviced by this MMS Relay/Server. When used in response-result, and multiple recipients were specified in the corresponding push submission, this status code indicates that at least one address is incorrect. |
| 2003 | Address Not Found | The address supplied in the request could not be located by the MMS Relay/Server. This code is returned when an operation is requested on a previously submitted message and the MMS Relay/Server cannot find the message for the address specified. |
| 2004 | Multimedia content refused | The server could not parse the MIME content that was attached to the SOAP message and indicated by the Content element or the content size or media type was unacceptable. |
| 2005 | Message ID Not found | This code is returned when an operation is requested on a previously submitted message and the MMS Relay/Server cannot find the message for the message ID specified or when the VASP receives a report concerning a previously submitted message and the message ID is not recognized. |
| 2006 | LinkedID not found | This code is returned when a LinkedID was supplied and the MMS Relay/Server could not find the related message. |
| 2007 | Message format corrupt | An element value format is inappropriate or incorrect. |
| 2008 | Application ID not found | This code is returned when an operation is requested on a previously submitted message and the MMS Relay/Server cannot find the destination application for the application ID specified or when the VASP receives a report concerning a previously submitted message and the application ID is not recognized. |
| 2009 | Reply Application ID not found | This code is returned when a Reply Application ID was supplied and the MMS Relay/Server could not find the originating application. |
| 3000 | Server Error | The server failed to fulfill an apparently valid request. |
| 3001 | Not Possible | The request could not be carried out because it is not possible. This code is normally used as a result of a cancel or status query on a message that is no longer available for cancel or status query. The MMS Relay/Server has recognized the message in question, but it cannot fulfill the request because the message is already complete or status is no longer available. |
| 3002 | Message rejected | Server could not complete the service requested. |
| 3003 | Multiple addresses not supported | The MMS Relay/Server does not support this operation on multiple recipients. The operation MAY be resubmitted as multiple single recipient operations. |

| | | |
|---|---|---|
| 3004 | Application Addressing not supported | Recipient MMS User Agent does not support the transport of application data. |
| 4000 | General service error | The requested service cannot be fulfilled. |
| 4001 | Improper identification | Identification header of the request does not uniquely identify the client (either the VASP or MMS Relay/Server). |
| 4002 | Unsupported version | The version indicated by the MM7 Version element is not supported. |
| 4003 | Unsupported operation | The server does not support the request indicated by the MessageType element in the header of the message. |
| 4004 | Validation error | The SOAP and XML structures could not be parsed, mandatory fields are missing, or the message-format is not compatible to the format specified. Details field may specify the parsing error that caused this status. |
| 4005 | Service error | The operation caused a server (either MMS Relay/Server or VASP) failure and should not be resent. |
| 4006 | Service unavailable | This indication may be sent by the server when service is temporarily unavailable, e.g. when server is busy |
| 4007 | Service denied | The client does not have permission or funds to perform the requested operation. |
| 4008 | Application denied | The application does not have permission or funds to perform the requested operation. |

[…]

**3GPP TSG-T2#27**
**Cape Town, ZA**
**08-12 November 2004**

*T2-040391*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **189** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Rapporteur's check of 23.140: New reference to MM10 stage 3 TS; consistent mentionning of MM8, MM9 and MM10 in chapter 8; removal of MEXE as potential MMS implementation; removal of unused references and terms |
| ***Source:*** | ⌘ | T2 (Infineon) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 03/09/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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:*** ⌘ During a "rapporteur's checking" of 23.140, the following issues occurred:

- Section 6.3. refers to potential MEXE-based MM1 implementations which is confusing
- Other sections mention "MM1 implementation (WAP etc.)" and/or "WAP implementation" which is not unambiguous.
- A new TS for the MM10 stage 3 (MSCF) has been created but a reference to this TS is yet missing.
- Descriptions of MM8 and MM9 reference points have been improved during REL-6 by adding references to SA5 specifications. However, chapter 8 was omitted at that point in time.
- Reference [72] is not explicitly referred to but used in 8.7.8.1.1
- several specifications listed in the "References" section are not being referred to from any text within 23.140;
- In particular, T2-040342 (CR 23140 REL-6 clarification about WAP-based and IP-based MMS implementation) replaced the content from Annex B with a reference, but specifications which were refered to in Annex B only were not removed from the "References" section.
- some terms from the "Definitions" section are not used within 23.140

***Summary of change:*** ⌘

- Section 6.3 clarified w.r.t. to MM1 implementations; removing potential confusing regarding MEXE.
- Term "MM1 implementation (WAP etc.)" replaced with "MM1 implementation (cf. Annex B)".
- Term "WAP implementation" replaced with "WAP/OMA implementation".

| | | |
|---|---|---|
| | | • A reference to the new TS for the MM10 stage 3 (MSCF) has added.<br>• Chapter 8 was been updated to reflect the REL-6 developments on MM8, MM9 and MM10 reference points.<br>• Reference [72] is now explicitly referred from section 8.7.8.1.1.<br>• Several specifications listed in the “References” section which are no longer referred to in 23.140 (and in particular which were refered to in Annex B only prior to T2-040342) are removed from the “References” section.<br>• Unused terms are removed from the “Definitions” section. |
| ***Consequences if not approved:*** | ⌘ | Inconsistences and misleading statements and references in 23.140 |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 2; 3; 6.3; 7.1.3.1; 7.2.1; 8.4.4.1; 8.7.8.1.1; 8.8<br>New sections 8.9 and 8.10;<br>Annex F; Annex I |

| | | Y | N | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | | X | Other core specifications | ⌘ |
| | | | X | Test specifications | |
| | | | X | O&M Specifications | |
| ***Other comments:*** | ⌘ | | | | |

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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.

. . .

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

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

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

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

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

[12] void

[13] void

[14] void

[15] void

[16] void

[17] void

[18] void

[19] void

[20] void

[21] void

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

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

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

[28] voidW3C Recommendation 15 June 1998: "Synchronized Multimedia Integration Language (SMIL) 1.0 Specification" http://www.w3.org/TR/REC-smil/.

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

[30] voidWAP 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..

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[38] void

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

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

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

[52] void~~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] Open Mobile Alliance; OMA-WAP-ProvCont-v1_1-20021112-C, Provisioning Content Version 1.1, URL: http://www.openmobilealliance.org/

[56] Open Mobile Alliance; OMA-MMS-ENC-v1_2, Multimedia Messaging Service, Encapsulation Protocol, Version 1.2, URL: http://www.openmobilealliance.org/

NOTE: Reference [56] is the REL-5 MM1 stage 3 specification. OMA is committed to develop a REL-6 version. Consequently, reference [56] is to be replaced by the appropriate document identifier once the REL-6 MM1 stage 3 specification is approved within OMA.

[57] IETF; RFC 1870: “SMTP Service Extension for Message Size Declaration”, URL: http://www.ietf.org/rfc/rfc1870.txt

[58] IETF; RFC 1652: “SMTP Service Extension for 8bit-MIME transport”, URL: http://www.ietf.org/rfc/rfc1652.txt

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[60] IETF, RFC 2915: “The Naming Authority Pointer (NAPTR) DNS Resource Record”, URL: http://www.ietf.org/rfc/rfc2915.txt

[61] IETF, RFC 2916: “E.164 number and DNS”, URL: http://www.ietf.org/rfc/rfc2916.txt

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[63] 3GPP TS 22.066: "Support of Mobile Number Portability (MNP); Service description. Stage 1".

[64] 3GPP TS 23.066: "Support of Mobile Number Portability (MNP); Technical realization. Stage 2".

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[70] IETF; RFC 2376: "XML Media Type", URL: http://www.ietf.org/rfc/rfc2376.txt.

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[72] IETF; RFC 2111: "Content-ID and Message-ID Uniform Resource Locators", URL: http://www.ietf.org/rfc/rfc2111.txt.

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[74] 3GPP TS 26.140: "Multimedia Messaging Service; Media formats and codecs".

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[76] “Digital Rights Management”, Open Mobile AllianceTM, OMA-Download-DRM-v1_0, http://www.openmobilealliance.org/

[77] “DRM Rights Expression Language”, Open Mobile AllianceTM, OMA-Download-DRMREL-v1_0, http://www.openmobilealliance.org/

[78] “DRM Content Format”, Open Mobile AllianceTM, OMA-Download-DRMCF-v1_0, http://www.openmobilealliance.org/

[79] ITU-T Recommendation E.212: " The international identification plan for mobile terminals and mobile users".

[80] 3GPP TS 32.240: "Charging Management; Charging Architecture and Principles ".

[81] 3GPP TS 32.270: "Charging Management; Multimedia Messaging Service (MMS) charging".

[82] Open Mobile Alliance; OMA-ERELD-MMS-v1_2-20030923-C, Enabler Release Definition for MMS Version 1.2, URL: http://www.openmobilealliance.org/

NOTE: Reference [82] is the REL-5 MM1 stage 3 specification. OMA is committed to develop a REL-6 version. Consequently, reference [82] is to be replaced by the appropriate document identifier once the REL-6 MM1 stage 3 specification is approved within OMA.

[83] Open Mobile Alliance; OMA-MMS-CONF-v1_2-20040219-C, MMS Conformance Document 1.2, URL: http://www.openmobilealliance.org/

NOTE: Reference [83] is the REL-5 MM1 stage 3 specification. OMA is committed to develop a REL-6 version. Consequently, reference [83] is to be replaced by the appropriate document identifier once the REL-6 MM1 stage 3 specification is approved within OMA.

[xx] 3GPP TS 29.140: "MM10 interface based on Diameter protocol (Stage 3)".

# 3 Definitions and Abbreviations

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## 3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in [1] and [2] and the following apply:

| | |
|---|---|
| CDR | Charging Data Record |
| DCF | DRM Content Format |
| DNS | Domain Name System |
| DRM | Digital Rights Management |
| EMA | Electronic Message Association |
| E-Mail | Electronic Mail |
| ENUM | Electronic Numbering |
| FQDN | Fully Qualified Domain Name |
| GW | Gateway |
| HTTP | Hypertext Transfer Protocol |
| IANA | Internet Assigned Numbering Authority |
| IETF | Internet Engineering Task Force |
| IMAP4 | Internet Message Access Protocol |
| MIME | Multipurpose Internet Mail Extensions |
| MM | Multimedia Message |
| MMS | Multimedia Messaging Service |
| MMSE | Multimedia Messaging Service Environment |
| MMSNA | Multimedia Messaging Service Network Architecture |
| MTA | Mail Transfer Agent |
| PDU | Protocol Data Unit |
| POP3 | Post Office Protocol Version 3 |
| RADIUS | Remote Authentication Dial In User Service |
| ~~RDF~~ | ~~Resource Description Format~~ |
| RFC | Request for Comments |
| RTSP | Real Time Streaming Protocol |
| SDP | Session Description Protocol |
| SMIL | Synchronised Multimedia Integration Language |
| SMTP | Simple Mail Transfer Protocol |
| SOAP | Simple Object Access Protocol |
| SPI | Service Provider Identification |
| UA | User Agent |
| ~~UAProf~~ | ~~User Agent Profile~~ |
| URI | Uniform Resource Identifiers |
| VAS | Value Added Service |
| VASP | Value Added Service Provider |
| VPIM | Voice Profile for Internet Mail |
| W3C | WWW Consortium |
| WAP | Wireless Application Protocol |
| ~~WIM~~ | ~~WAP Identity Module~~ |
| ~~WML~~ | ~~Wireless Markup Language~~ |
| WSP | WAP Session Protocol |
| ~~WTLS~~ | ~~Wireless Transport Layer Security~~ |
| XML | Extensible Markup Language |

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# 6 MMSE Architecture and Interfaces

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## 6.3 MM1: MMS Relay/Server – MMS User Agent

Reference point MM1 is used to submit Multimedia Messages from MMS User Agent to MMS Relay/Server, to let the MMS User Agent pull MMs from the MMS Relay/Server, let the MMS Relay/Server push information about MMs to the MMS User Agent as part of an MM notification, and to exchange delivery reports between MMS Relay/Server and MMS User Agents.

Details for implementation of the MM1 transfer protocol ~~using WAP [3] or applications conforming to MExE [4] (e.g. Java and TCP/IP) are elaborated within the present document. The WAP implementation option is~~ are described in Annex B~~.1. Implementations based on applications using MExE may be defined in detail in future releases.~~ Other implementations ~~(e.g. using other standardised Internet protocols)~~ are not defined in the present document in this release.

• • •

# 7 MMS Service Behaviour Description

## 7.1 MMS services offered

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### 7.1.3 Retrieval of a Multimedia Message in the recipient MMSE

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#### 7.1.3.1 Terminal Capability Negotiation

An MMS User Agent shall support Terminal Capability Negotiation. An MMS Relay/Server shall support Terminal Capability Negotiation.

Within a request for delivery of an MM the recipient MMS User Agent shall be able to indicate its capabilities towards the recipient MMS Relay/Server.

The recipient MMS User Agent may indicate its capabilities towards the recipient MMS Relay/Server by transmitting:

- a set of information describing the terminal's capabilities
- a link (e.g. URI) to a database where the MMS Relay/Server can fetch a set of information describing the terminal's capabilities, and/or
- a differential set of information indicating changes to a previously indicated set of terminal capability information.

The detailed definition of the specific mechanism for terminal capability negotiation shall be defined by the MM1 implementation (cf. Annex B~~WAP etc.~~). The mechanism for terminal capability negotiation shall ensure that the MMS Relay/Server is provided with the information describing the MMS User Agent's capabilities within every request for delivery of an MM.

E.g. in the WAP/OMA implementation of MMS, in case an underlying WSP session is established between the MMS User Agent and an intermediate WAP Gateway, the MMS User Agent indicates its capabilities towards the WAP Gateway only after the initial set-up of the underlying WSP session or spontaneously following a change in terminal capabilities. The WAP Gateway, however, caches the terminal capability information and passes these on to the MMS Relay/Server within every request for delivery of an MM. Intermediate proxies on the MM1 reference point may also be involved in terminal capability negotiation and/or content adaptation.

Upon reception of such a delivery request the recipient MMS Relay/Server should use the information about the capabilities of the recipient MMS User Agent in preparation of MMs to be delivered to the recipient MMS User Agent.

The MMS Relay/Server should adjust an MM to be delivered that contains media types and media formats that are not supported by the recipient MMS User Agent. This adjustment might involve the deletion or adaptation of those unsupported media types and media formats.

The MMS User Agent's capability information should include

- the maximum supported size of an MM,
- the maximum supported resolution of an image,
- a list of supported media types and media formats (e.g. MIME types),
- a list of supported character sets,
- a list of preferred languages,
- the maximum supported colour depth,
- an indication whether or not the recipient MMS User Agent supports streaming for the retrieval of MM contents as specified in clause 7.1.7,
- an indication if the recipient MMS User Agent supports transporting application data.

The MMS User Agent's capability information shall include:

- an indication of which Digital Rights Management methods are supported by the recipient MMS User Agent for protecting MM elements as specified in clause 7.1.15.

This information may include additional information related to the MMS implementation (cf. Annex B~~WAP etc.~~).

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## 7.2 MMSE Addressing responsibilities

**Address parsing:**

MMS Relay/Server should parse the recipient address field provided by the originator MMS User Agent upon MM submission. If an error is found in the address format, an error indication should be sent back to the MMS User Agent in the submit response.

**Locating the recipient:**

For each recipient that appears in an MM, the MMS Relay/Server shall be able to resolve whether the recipient belongs to the same MMSE, another MMSE or is not known to belong to any MMSE or the recipient is VASP. If the recipient belongs to the same MMSE, the MMS Relay/Server shall notify the recipient of the new MM as described in clause 7.1.2. If the recipient appears to belong to another MMSE, the MMS Relay/Server has to locate the external recipient's MMSE domain. If the recipient is not known to belong to any MMSE, the MMS Relay/Server shall perform the necessary conversion and route forward the message to the recipient. If the recipient is VASP, the MMS Relay/Server shall deliver MM to the VASP according to the recipient address in MM.

### 7.2.1 Address Formats on MM1

The MMS addressing model on MM1 contains three addresses: the address of the MMS Relay/Server, the address of the recipient and the address of the originator. The address of the MMS Relay/Server shall be the URI of the MMS Relay/Server given by the MMS service provider. Thus, the URI needs to be configurable in the MMS User Agent.

The originator's a address could be either a user's address or a user's terminal address. The recipient's address can be a user's address, a user's terminal address, or a short code. For this release the user's terminal addresses (e.g. terminal IP addresses) are not supported. The MMS User Agent's responsibility is to format these addresses before it submits the message to the originator MMS Relay/Server.

The user's address can be either an E.164 (MSISDN) or RFC2822 address.

The MMS User Agent and MMS Relay/Server shall support both E.164 (MSISDN) and RFC2822 addressing formats. The reference point MM1 should support a way to indicate the used address type to enable future extension. The encoding of the addressing is up to the corresponding MM1 implementation (cf. Annex B).

E.g. the originator MMS User Agent may specify each of the address fields in one of the following formats:

1) RFC 2822 address (FQDN or unqualified)

2) PLMN address: [ “+” | “*” | “#” ] [*digit* | “*” | “#” ] … ["/TYPE= PLMN"]

3) Other "/TYPE= "

The "/TYPE= " field specifies the address type. When PLMN format is used the type is optional. The "/TYPE= " convention provides flexibility for future enhancements.

When the “/TYPE=” qualifier is absent, the MMS Relay/Server should resolve potential ambiguities by applying the following logic to the address in the following order:

1. if it contains the “@” character, the address should be interpreted as an FQDN RFC2822 address
2. if it is completely numeric, except possibly including “+”, “*”, or “#”, it should be interpreted as "/TYPE= PLMN", e.g. an E.164 address, a local telephone number, or a numeric short code,
3. otherwise, it should be interpreted as an unqualified RFC2822 address (alphanumeric short code)

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## 8.4 Technical realisation of MMS on reference point MM4

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### 8.4.4 Message format on MM4

All elements of an MM shall be included within a single SMTP "mail" message which shall be organised as MIME message with the appropriate 'Content-Type' [44] header field value (e.g. multipart/related, multipart/mixed, image/jpeg, text/plain). All MM elements shall be of standard MIME content types. In addition to the MM elements this SMTP "mail" message should reflect all MMS information elements according to the definitions in clauses 6 and 8.4.

All other MMS-related messages, such as delivery reports, read-reply reports, transfer acknowledgements shall each be transferred as a single SMTP "mail" message which shall be organised as MIME type text/plain. This SMTP "mail" message should reflect all MMS information elements as defined above.

#### 8.4.4.1 Message header fields

MMS information elements should be reflected as "header fields" according to STD 11 [5] in the SMTP "mail" message. See RFC 1327 [53] for a detailed description of the X.400 header to STD 11 headers mappings. Some of the mappings are context dependent.

For those information elements that cannot be mapped to standard STD 11 "header fields" the "X-" extensions mechanism shall be used with an "X-MMS-" prefix.

The mapping of information elements to commonly used (RFC 1327) [53] or standard STD 11 "header fields" is shown in following tables.

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## 8.7 Technical realisation of MMS on reference point MM7

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### 8.7.8 Implementation of the MM7 Abstract Messages

The interface between a VASP and the MMS Relay/Server, over the MM7 reference point, shall be realised using SOAP 1.1 [68] as the formatting language. The VASP and the MMS Relay/Server shall be able to play dual roles of sender and receiver of SOAP messages. HTTP [48] shall be used as the transport protocol of the SOAP messages. The SOAP message shall bind to the HTTP request/response model by providing SOAP request parameters in the body of the HTTP POST request and the SOAP response in the body of the corresponding HTTP response.

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#### 8.7.8.1.1 Binding to HTTP

MM7 request messages shall be transferred in an HTTP POST request. MM7 responses shall be transferred in an HTTP Response message. The media type “text/xml” [70] shall be used for messages containing only the SOAP envelope.

MM7 requests that carry a SOAP attachment shall have a “multipart/related” [71] Content-Type. The SOAP envelope shall be the first part of the MIME message and shall be indicated by the Start parameter of the multipart/related Content-Type. If a SOAP attachment is included it shall be encoded as a MIME part and shall be the second part of the HTTP Post message. The MIME part should have the appropriate content type(s) to identify the payload. Figures 11 and 12 provide few examples of the message structure.This MIME part shall have two MIME headers - Content-Type and Content-ID [72] fields. The Content-ID shall be referenced by the MM7 request <Content> element using the format specified in [69].

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## 8.8 Technical realisation of MMS on reference point MM8

This reference point is further specified in TS 32.240 [80] and TS 32.270 [81].~~outside the scope of this release of the present document.~~

## 8.9 Technical realisation of MMS on reference point MM9

This reference point is further specified in TS 32.240 [80] and TS 32.270 [81].

## 8.10 Technical realisation of MMS on reference point MM10

This reference point is further specified in TS 29.140 [xx].

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# 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. 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. Two possible ways to provision an MMS-capable UE with MMS connectivity information, which are not mutually exclusive, are:

- via the (U)SIM, cf. clause 7.1.14, and
- via over the air provisioning according to [55].

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/OMA MMS implementation (cf. Annex B) 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/OMA 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/OMA implementation of MMS (cf. Annex B) 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.

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

This annex maps the information elements found on MM1 onto the STD 11 [5] header fields of MM4.

The tables below are provided to give a normative end-to-end description of MMS. It provides mapping of MM1 with respect to MM4/STD11.

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.

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**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040419*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **190** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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 roaming detection and MMS capability detection as part of functionalities of the MMS Relay/Server |
| ***Source:*** | ⌘ | T2 (Orange) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 01/11/2004 |
| ***Category:*** | ⌘ | **F** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Two new functionalities were standardised in Release 6: "MM recommended retrieval mode" (MM1 notification) and "MM7 delivery condition" (MM7 submit). These both functionalities allow different behaviour according to the roaming status of the recipient user (MM recommended retrieval mode and MM7 delivery condition) and/or MMS capability status of the recipient handset (MM7 delivery condition). This implies that the MMS Relay/Server may have the capability to know these two status. |
| ***Summary of change:*** | ⌘ | The following functionalities were added, as part of optional MMS Relay/Server functionalities:<br>- detecting whether the recipient user is roaming or not;<br>- detecting whether the recipient handset is MMS capable or not. |
| ***Consequences if not approved:*** | ⌘ | Inconsistencies between different sections of 23.140 specification. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 5.2 |

| ***Other specs affected:*** | ⌘ | Y | N | | ⌘ |
|---|---|---|---|---|---|
| | | | X | 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

## 5.2 MMS Relay/Server

The MMS Relay/Server is responsible for storage and notification, reports, and general handling of messages. The MMS Relay/Server may also provide convergence functionality between External Servers and MMS User Agents and thus enable the integration of different server types across different networks. An Example can be found in Annex A.

It is possible to separate the MMS Relay/Server element into MMS Relay and MMS Server elements, but an allocation of the MMS Relay/Server functionalities to such elements is not defined in this release.

The MMS Relay/Server shall provide the following functionalities:

- receiving and sending MM;
- conversion of messages arriving at the recipient MMS Relay/Server from legacy messaging systems to MM format (e.g. facsimile to MM) if interworking with legacy messaging systems (MM3) is supported;
- conversion of MMs leaving the originator MMS Relay/Server to legacy messaging systems to the appropriate message format (e.g. MM to internet email) if interworking with legacy messaging systems (MM3) is supported;
- message content retrieval;
- MM notification to the MMS User Agent;
- generating delivery reports;
- routing forward MMs and read-reply reports;
- address translation;
- temporary storage of messages;
- ensuring that messages are not lost until successfully delivered to another MMSE element;
- DRM functionalities according to section 7.1.15.

The MMS Relay/Server should provide additional functionalities such as:

- generating charging data records (CDR);
- negotiation of terminal capabilities;
- transport of application data.

The MMS Relay/Server may provide additional functionalities such as:

- MM forwarding;
- address hiding;
- persistent storage of messages;
- controlling the reply-charging feature of MMS;.
- relaying Message Distribution Indicator.

The MMS Relay/Server can provide additional functionalities which are not further specified in this release such as:-

- enabling/disabling MMS function;
- personalising MMS based on user profile information;
- MM deletion based on user profile or filtering information;
- media type conversion;
- media format conversion;
- screening of MM;
- checking terminal availability;

- managing the message properties on servers (e.g. voicemail or email server) integrated in the MMSE (consistency) (only applicable if interworking with legacy messaging systems (MM3) is supported)~~.~~;
- detecting whether the recipient user is roaming or not;
- detecting whether the recipient handset is MMS capable or not.

This list of additional optional functionalities of the MMS Relay/Server is not exhaustive.

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8-12 November 2004**

*T2-040383*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **191** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Correct a typo, in Information Element Applic-ID (MM7_Deliver.REQ) |
| ***Source:*** | ⌘ | T2 (Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 20/10/2004 |
| ***Category:*** | ⌘ | **D** |
| ***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:*** | ⌘ | Description of the Applic-ID of the MM7_Deliver.REQ wrongly refers to a non existing PDU: MM7_Retrieve.REQ. |
| ***Summary of change:*** | ⌘ | Refer to MM7_Deliver.REQ. |
| ***Consequences if not approved:*** | ⌘ | Inconsistency. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7.2.3 |

| | | 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.

### 8.7.2.3 Features

**Authentication:** The MMS Relay/Server may supply its own identifier as part of the request.

**Addressing:** All relevant address information for the delivery of the message to the VASP – including the addressing information from the original message and from the MMS Relay/Server should be included in the relevant information elements of MM7_deliver.REQ. In the addressing information, it may be indicated whether a certain recipient address is meant for informational purposes only or to be used for routing. In the addressing information, it may be indicated whether the sender address has been encrypted or obfuscated.

**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 marked, if present.

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

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_deliver.REQ and MM7_deliver.RES as such.

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

**Message priority and subject:** The MMS Relay/Server may qualify the MM further by adding a priority and/or subject to the MM7_deliver.REQ. This information will originate from the end-user's original request.

**Linked message identification:** The MMS Relay/Server will supply an identifier for the request that may be used by the VASP.

NOTE: Use case examples:

1) The Linked ID can be used by the Relay/Server to logically relate a VASP reply (MM7_Submit.REQ) to an original user's request (MM1_Submit.REQ, and MM7_Deliver.REQ), in which case the Linked ID corresponds to the Message ID returned in the original MM1_Submit.RES.

2) The LinkedID can as well be used by the VASP to keep track of a sequence of MM7_Submit.REQ (e.g. MMs to multiple users) triggered by a single MM7_Deliver.REQ (e.g. which was triggered by a user's MM1_submit.REQ).

**Service code:** The VASP may mark the response to the message with a service code that will be transferred to the charging information for use by the billing system to properly bill the user for the service being supplied.

**Service Provider Identification:** The MMS Relay/Server may provide the SPI (Service Provider Identification) for the sender. In case a message is delivered to a VASP based on the recipient address, the MMS Relay/Server may provide the SPI for the recipient. The SPI information can originate from e.g. a user profile or a MAP query.

**Time stamping:** The MM may include the date and time-of the most recent handling of the MM by an MMS User Agent (i.e. either submission or forwarding of the MM). In the case of forwarding the MM7_deliver.REQ may carry the date and time of the submission of the MM.

**Reply-Charging:** In case of reply-charging when the reply-MM is submitted within the MM7_deliver.REQ MMS Relay/Server should indicate that the message is free-of-charge reply.

**Content type:** The MIME type of the multimedia content shall always be identified in the MM7_deliver.REQ.

**Content:** The originator of the MM may supply content that is delivered to the VASP in the MM7_deliver.REQ.

**Request status:** The MMS Relay/Server shall indicate the status of the request in the associated response. The reason code given in the status information element of the response may be supported with an explanatory text further qualifying the status.

**Applic-ID:** This information element contains the identification of the destination application. Upon reception, the recipient MMS VAS Application shall provide this MM7_~~retrieve~~Deliver.REQ to the specified destination application.

**Reply-Applic-ID:** If present, this information element indicates a “reply path”. It contains the application identifier which shall be used by the recipient MMS VAS Application when a reply-MM or a read-reply report is created.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1).

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8 - 12 November 2004**

*T2-040462*

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **192** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Editorial Modifications in section 7.2.3 Address Formats on MM7 |
| ***Source:*** | ⌘ | T2 (T-Mobile) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 09/11/2004 |
| ***Category:*** | ⌘ | **D** |
| ***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:*
*Ph2 (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)*
*Rel-7 (Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Wrong order of paragraphs in section 7.2.3 |
| ***Summary of change:*** | ⌘ | Move of one paragraph to the right place. Adaptation of surrounding text. Correction of section references |
| ***Consequences if not approved:*** | ⌘ | Section 7.2.3 remains unintelligible. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 7.2.3 |

| | 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:**
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Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

## 7.2.3 Address Formats on MM7

The MMS addressing model on MM7 contains two addresses: The address of the originator MMS User Agent or VAS/VASP and the address(es) of the recipient MMS User Agent(s) or VAS/VASP.

The reference point MM7 shall support E.164 (MSISDN) addresses and e-mail addresses (RFC2822). In addition Short Codes should be supported.

In the case of a multimedia message terminated at the VAS/VASP, the recipient(s)' address(es) may be the VAS/VASP address or the intended recipient(s)' address and the originator's address shall be user's address (e.g. MSISDN address) or a user's terminal address. For this release the user's terminal addresses (e.g. terminal IP addresses) are not supported.

~~The VASP will identify itself using one (or more) of three possible identifiers – the VASP identification number, the VAS identification number, or an address MM1 compliant to MM1 address format. The MMS Relay/Server shall translate the identification of the VASP to an appropriate address format for transfer across other reference points, e.g. address as defined in section 7.2.2 for messages sent on MM1.~~

The MMS Relay/Server shall ~~also~~ translate recipient addresses that originate from the MM1 interface into the appropriate URL of the VASP, for example when an MM7_deliver.REQ results from an MM1_submit.REQ from the MMS User Agent. The format of the MM1 address is defined in section 7.2.1~~2~~ of this specification.

In the case of a multimedia message originated from the VAS/VASP, the originator's address may be the VAS/VASP address and the recipient(s)' address(es) shall be either a user's address or a user's terminal address. For this release the user's terminal addresses (e.g. terminal IP addresses) are not supported.

The VASP's responsibility is to format ~~these~~ recipient addresses before it submits the message to the MMS Relay/Server. The recipient user's address shall be E.164 (MSISDN) address or e-mail address (RFC2822). Additionally, it shall be possible to control which recipient(s) address(es) are utilized for actual routing and which are conveyed as informational only to be displayed to the recipient MMS User Agent.

The VASP will identify itself using one (or more) of three possible identifiers – the VASP identification number, the VAS identification number, or an address MM1 compliant to MM1 address format. The MMS Relay/Server shall translate the identification of the VASP to an appropriate address format for transfer across other reference points, e.g. address as defined in section 7.2.1 for messages sent on MM1.

The reference point MM7 defines also other addressing like information elements: VASP ID, VAS ID and MMS Relay/Server ID. These fields are used only to identify VASP, VAS and MMS Relay/Server and are not used for addressing purpose.

NOTE: The users' addresses referred to above may be replaced by appropriate coded addresses in order not to harm the users' privacy.

**3GPP TSG-T2 #27**

*T2-040443*
e-agreed

**Cape Town, South Africa**
**8 - 12 November 2004**

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23140** **CR** **193** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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 **X**

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Stage 3 MM7 Schema, addition of application, contentclass, drmcontent, vasp id, extended cancel/replace, deliverycondition and uacapabilities elements. |
| ***Source:*** | ⌘ | T2 (Nokia) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 01/12/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*

| | |
|---|---|
| *Ph2* | *(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)* |
| *Rel-7* | *(Release 7)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | To incorporate stage 2 elements defined in 23.140 version 6.6.0 into stage 3, and to further incorporate conditionally approved changes at T2#27. |
| ***Summary of change:*** | ⌘ | DRMContent and ContentClass added to submitReqType and replaceReqType complexType definitions.<br>VASPID and VASID added to deliveryReqType.<br>Application specific elements [ApplicID, ReplyApplicID, AuxApplicInfo] added to submitReqType, deliverReqType, cancelReqType, replaceReqType, deliveryReportReqType, readReplyReqType. New contentClassType enumeration table created.<br>-From T2#27<br><br>VAS-ID and VASP-ID added to MM7_DeliveryReport.REQ and MM7_ReadReplyReport.REQ, UACapabilities added to deliverReqType and deliveryReportReqType, delivery condition element revised to allow more than one delivery condition and new Extended Cancel/Replace methods added. Finally the Schema headers and VersionType table udated to reflect the new MM7 version. |
| ***Consequences if not approved:*** | ⌘ | |
| ***Clauses affected:*** | ⌘ | Annex L, MM7 Schema. |

| | | Y | N | | | |
|---|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | | X | Other core specifications | ⌘ | |
| | | | X | Test specifications | | |
| | | | X | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | Approved changes from CR T2-040422 where conditionally accepted at T2#27 further Stage 2 elements defined during T2#27 are incorporated from CR T2-040444 (VAS-ID and VASP-ID added to MM7_DeliveryReport.REQ and MM7_ReadReplyReport.REQ), UACapabilities added from CR T2-040445, more than one delivery condition from CR T2-040446 and Extended Cancel/Replace from CR T2-040447. View Track changes by Author to see changes. |

**How to create CRs using this form:**

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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 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-6-MM7-
1-43" 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-6-MM7-1-43"
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="extendedCancelReq" type="tns:extendedcancelReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: Extended Request to cancel a message submission
</xs:documentation>
        </xs:annotation>
```

```
    </xs:element>
    <xs:element name="extendedCancelRsp" type="tns:extendedcancelRspType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after extended MM cancellation
request </xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="extendedReplaceReq" type="tns:extendedreplaceReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: extended Request to replace a message which was
submitted </xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="extendedReplaceRsp" type="tns:extendedreplaceRspType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after extended MM cancellation
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="ChargedPartyID" type="tns:chargedPartyIDType" minOccurs="0"/>
                    <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="DeliveryCondition" type="tns:deliveryConditionType"
type="xs:string" minOccurs="0"/>
                    <xs:element name="ApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="AuxApplicInfo" type="xs:string" minOccurs="0"/>
                    <xs:element name="ContentClass" type="tns:contentClassType" minOccurs="0"/>
                    <xs:element name="DRMContent" 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="VASPID" type="tns:entityIDType" minOccurs="0"/>
                    <xs:element name="VASID" type="tns:entityIDType" minOccurs="0"/>
                    <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="Previouslysentby" type="tns:previouslySentByType"
minOccurs="0"/>
                    <xs:element name="Previouslysentdateandtime" type="tns:previouslySentByDateTime"
minOccurs="0"/>
                    <xs:element name="SenderSPI" type="tns:serviceProviderIDType" minOccurs="0"/>
                    <xs:element name="RecipientSPI" type="tns:serviceProviderIDType" 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="ApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="AuxApplicInfo" type="xs:string" minOccurs="0"/>
                    <xs:element name="UACapabilities" type="tns:capabilitiesType" 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:element name="ApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="AuxApplicInfo" type="xs:string" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="extendedcancelReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
                <xs:sequence>
                    <xs:element name="CancelID" type="tns:messageIDType"/>
```

```
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="extendedcancelRspType">
    <xs:annotation>
        <xs:documentation>Extended Cancel Response</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="Status" type="tns:extendedcancelresponseStatusType"/>
    </xs:sequence>
</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="ContentClass" type="tns:contentClassType" minOccurs="0"/>
                <xs:element name="DRMContent" type="xs:boolean" minOccurs="0"/>
                <xs:element name="ApplicID" type="xs:string" minOccurs="0"/>
                <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                <xs:element name="AuxApplicInfo" 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="extendedreplaceReqType">
            <xs:sequence>
                <xs:element name="MM7Version" type="tns:versionType"/>
                <xs:element name="VASPID" type="tns:entityIDType" minOccurs="0"/>
                <xs:element name="VASID" type="tns:entityIDType" minOccurs="0"/>
                <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                <xs:element name="ReplaceID" type="tns:messageIDType" minOccurs="0"/>
                <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="ExpiryDate" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                <xs:element name="DeliveryReport" type="xs:boolean" minOccurs="0"/>
                <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
            </xs:sequence>
</xs:complexType>
<xs:complexType name="extendedreplaceRspType">
    <xs:annotation>
        <xs:documentation>Extended Replace Response</xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="MM7Version" type="tns:versionType"/>
        <xs:element name="MessageID" type="tns:messageIDType"/>
        <xs:element name="Status" type="tns:extendedcancelresponseStatusType"/>
    </xs:sequence>
</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="MMStatusExtension" type="tns:MMStatusExtensionType"
minOccurs="0"/>
                <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
                <xs:element name="ApplicID" type="xs:string" minOccurs="0"/>
                <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                <xs:element name="AuxApplicInfo" type="xs:string" minOccurs="0"/>
                <xs:element name="UACapabilities" type="tns:capabilitiesType" 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:element name="ApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="ReplyApplicID" type="xs:string" minOccurs="0"/>
                    <xs:element name="AuxApplicInfo" 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:complexType name="extendedcancelresponseStatusType">
        <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: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:enumeration value="Unrecognised"/>
            <xs:enumeration value="Deferred"/>
            <xs:enumeration value="DeliveryConditionNotMet"/>
        </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:attributeGroup ref="tns:addressSecurity"/>
                        </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:attributeGroup ref="tns:addressSecurity"/>
                        </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:attributeGroup ref="tns:addressSecurity"/>
                        </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:attributeGroup name="addressSecurity">
        <xs:attribute name="addressCoding" type="tns:addressCodingType" use="optional"/>
        <xs:attribute name="id" type="xs:ID" use="optional"/>
    </xs:attributeGroup>
    <xs:simpleType name="addressCodingType">
        <xs:annotation>
            <xs:documentation>obfuscated or encrypted address type</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="encrypted"/>
            <xs:enumeration value="obfuscated"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="previouslySentByType">
        <xs:sequence>
            <xs:element name="UserAgent" type="tns:userAgentInfoType" minOccurs="0"
maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="previouslySentByDateTime">
        <xs:sequence>
```

```
            <xs:element name="DateTime" type="tns:userAgentDateTimeType" minOccurs="0"
maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="userAgentInfoType">
        <xs:complexContent>
            <xs:extension base="tns:addressType">
                <xs:attribute name="sequence" type="xs:positiveInteger" use="optional"/>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="userAgentDateTimeType">
        <xs:simpleContent>
            <xs:extension base="tns:relativeOrAbsoluteDateType">
                <xs:attribute name="sequence" type="xs:positiveInteger" use="optional"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:simpleType name="serviceProviderIDType">
        <xs:annotation>
            <xs:documentation>Service Provider Identification</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
    <xs:simpleType name="chargedPartyIDType">
        <xs:annotation>
            <xs:documentation>The address of the third party which is expected to pay for the
MM</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
    <xs:simpleType name="MMStatusExtensionType">
        <xs:restriction base="xs:string">
            <xs:enumeration value="RejectionByMMSRecipient"/>
            <xs:enumeration value="RejectionByOtherRS"/>
        </xs:restriction>
    </xs:simpleType>
    <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:complexType name="deliveryConditionType">
        <xs:annotation>
            <xs:documentation>DeliveryConditions provided in MM7SubmitReq, that all need to be
respected for the MM to be delivered </xs:documentation>
        </xs:annotation>
        <xs:sequence>
            <xs:element name="DC" type="xs:positiveInteger" minOccurs="0" maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
    <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:enumeration value="ThirdParty"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="contentClassType">
        <xs:annotation>
            <xs:documentation>Content Class Type used in MM7_Submit and MM7_Replace
</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="text"/>
            <xs:enumeration value="image-basic"/>
            <xs:enumeration value="image-rich"/>
            <xs:enumeration value="video-basic"/>
            <xs:enumeration value="video-rich"/>
            <xs:enumeration value="megapixel"/>
            <xs:enumeration value="content-basic"/>
            <xs:enumeration value="content-rich"/>
        </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="6.8.0"/>
            <xs:enumeration value="6.6.0"/>
            <xs:enumeration value="6.5.0"/>
            <xs:enumeration value="6.4.0"/>
            <xs:enumeration value="6.3.0"/>
            <xs:enumeration value="5.10.0"/>
            <xs:enumeration value="5.8.0"/>
            <xs:enumeration value="5.6.0"/>
            <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" default="true" use="optional"/>
    </xs:complexType>
    <xs:complexType name="capabilitiesType">
        <xs:annotation>
            <xs:documentation>Base attributes for transfering user agent capabilities from R/S to
VASP, UAProf is e.g UserAgent Name, or URL to the UAProfile RDF. The TimeStamp is used to convey the
last known update by the MMS R/S to the UACapabilities</xs:documentation>
```

```
        </xs:annotation>
        <xs:attribute name="UAProf" type="xs:string" use="optional"/>
        <xs:attribute name="TimeStamp" type="tns:relativeOrAbsoluteDateType" 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 #27**

*T2-040470*
e-agreed

**Cape Town, South Africa**
**8 - 12 November 2004**

*CR-Form-v7.1*

# CHANGE REQUEST

⌘ **23.140** **CR** **194** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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 **X**

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Collective Changes to improve the MM4 interface |
| ***Source:*** | ⌘ | T2 (China Mobile, Huawei, T-Mobile, Orange) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 03/12/2004 |
| ***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:*
*Ph2* *(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)*
*Rel-7* *(Release 7)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | The current MM4 specification leaves some issues open. These issues are:<br>▪ General issues releted to the usage of SMTP as the transfer protocol of MM4<br>▪ Handling of multiple recipients on MM4 and on transport level<br>▪ addressing model |
| ***Summary of change:*** | ⌘ | The issues above are resolved |
| ***Consequences if not approved:*** | ⌘ | Difficulty to connect and interact between different manufacturers and Network Operators |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | 3.2, 8.4.1, 8.4.4. and 8.4.5 | | | |
| ***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.

**First Modified Section**

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in [1] and [2] and the following apply:

| | |
|---|---|
| CDR | Charging Data Record |
| DCF | DRM Content Format |
| DNS | Domain Name System |
| DRM | Digital Rights Management |
| EMA | Electronic Message Association |
| E-Mail | Electronic Mail |
| ENUM | Electronic Numbering |
| FQDN | Fully Qualified Domain Name |
| GW | Gateway |
| HTTP | Hypertext Transfer Protocol |
| IANA | Internet Assigned Numbering Authority |
| IETF | Internet Engineering Task Force |
| IMAP4 | Internet Message Access Protocol |
| MIME | Multipurpose Internet Mail Extensions |
| MM | Multimedia Message |
| MMS | Multimedia Messaging Service |
| MMSE | Multimedia Messaging Service Environment |
| MMSNA | Multimedia Messaging Service Network Architecture |
| MSCF | Messaging Service Control Function |
| MTA | Mail Transfer Agent |
| PDU | Protocol Data Unit |
| POP3 | Post Office Protocol Version 3 |
| RADIUS | Remote Authentication Dial In User Service |
| RDF | Resource Description Format |
| RFC | Request for Comments |
| RTSP | Real Time Streaming Protocol |
| SDP | Session Description Protocol |
| SMIL | Synchronised Multimedia Integration Language |
| SMTP | Simple Mail Transfer Protocol |
| SOAP | Simple Object Access Protocol |
| SPI | Service Provider Identification |
| TLD | Top Level Domain |
| UA | User Agent |
| UAProf | User Agent Profile |
| URI | Uniform Resource Identifiers |
| VAS | Value Added Service |
| VASP | Value Added Service Provider |
| VPIM | Voice Profile for Internet Mail |
| W3C | WWW Consortium |
| WAP | Wireless Application Protocol |
| WIM | WAP Identity Module |
| WML | Wireless Markup Language |
| WSP | WAP Session Protocol |
| WTLS | Wireless Transport Layer Security |
| XML | Extensible Markup Language |

**Next Modified Section**

## 8.4.1 Routing Forward of a Multimedia Message

This part of MMS service covers the routing forward of an MM from an originator MMS Relay/Server to a recipient MMS Relay/Server of different MMSEs. Involved abstract messages are outlined in the table below from type and direction points of view.

**Table 1: Abstract messages for forwarding of MM in MMS**

| Abstract messages | Type | Direction |
|---|---|---|
| MM4_forward.REQ | Request | Originator MMS Relay/Server -> recipient MMS Relay/Server |
| MM4_forward.RES | Response | Recipient MMS Relay/Server -> originator MMS Relay/Server |

### 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 a single or multiple MM4_forward.REQs each containing multiple or single MM recipients, 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.

NOTE: Before and including version 6.5.0 of the present document had insufficient mechanisms to convey errors that occurred on multiple recipients to the originator's MMS Relay/Server.

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

### 8.4.1.2 Abnormal Operation

In this case the recipient MMS Relay/Server shall respond with a MM4_forward.RES, which includes a status that indicates the reason the multimedia message was not accepted, e.g. no subscription, bad address, network not reachable, etc., if an MM4_forward.RES was requested. The MMS Relay/Server should ensure that MM4_Forward.RES messages sent back in response to a MM4_Forward.REQ cover all recipients.

### 8.4.1.3 Features

**Addressing:** The recipient(s) of a routed forward MM shall be indicated in the addressing-relevant information field(s) of the MM4_forward.REQ. If the addresses of several MM recipients of the MM are associated with a single MMS Relay/Server then more than one MM recipient may be indicated in the addressing-relevant information field(s) of the MM4_forward.REQ. Addresses of all MM recipients of the MM (including those that are not associated with the MMS Relay/Server the MM is forwarded to) shall be conveyed in the MM4_forward.REQ for the MM recipient's informational purposes.

The MM originator of a routed forward MM shall be indicated in addressing-relevant information field(s) of the MM4_forward.REQ. If the originator MMS User Agent requested to hide its identity from the MM recipient then the information about this request shall also be conveyed in the MM4_forward.REQ.

**Time stamping:** The MM4_forward.REQ shall carry the date and time-of the most recent handling of the MM by an MMS User Agent (i.e. either submission or forwarding of the MM). In the case of forwarding the MM4_forward.REQ may carry the date and time of the submission of the MM.

**Time constraints:** If the originator MMS User Agent requested a time of expiry for the MM then this information shall be conveyed in the MM4_forward.REQ.

**Message class, priority and subject:** If the MM is qualified further by message class, priority, subject and/or additional qualifiers then this information shall be conveyed in the MM4_forward.REQ.

**Reporting:** If either the originator MMS User Agent, or the originator MMS Relay/Server requested a delivery report for the MM then the information about this request shall be conveyed in the MM4_forward.REQ. If, in addition, the originator MMS User Agent requested a read-reply report then the information about this request shall be conveyed in the MM4_forward.REQ.

**Identification:** The originator MMS Relay/Server shall always provide a unique message identification for an MM, which it routed forward to a peer MMS Relay/Server in the MM4_forward.REQ.

**Content Type:** The type of the multimedia content shall always be identified in the MM4_forward.REQ.

**Acknowledgement Request:** The originator MMS Relay/Server may request a MM4_forward.RES from the recipient MMS Relay/Server acknowledging the successful reception of the MM.

**Request Status:** The recipient MMS Relay/Server shall indicate the status of the MM4_forward.REQ in the associated MM4_forward.RES if requested.

**Request Recipients:** A list of recipients to whom the request status applies.

**Message Type:** The type of message used on reference point MM4 indicating MM4_forward.REQ and MM4_forward.RES as such.

**Transaction Identification:** If the originator MMS Relay/Server requests an MM4_forward.RES from the recipient MMS Relay/Server it shall provide a transaction identification within an MM4_forward.REQ. The MM4_forward.RES shall unambiguously refer to the corresponding MM4_forward.REQ using the same transaction identification.

**Forward_Counter:** A Counter indicating the number of times the particular MM was forwarded.

**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 marked, if present.

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

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

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

**Content Information:** The originator may provide information about the nature of the content in the message. The content information could be in terms of indications that:

- classifies content of the MM based on e.g. media types/formats, size, presentation formats [85]
- the MM contains DRM-protected content

In case of conflict with the adaptation restriction provided by the originator, DRM-protection rules in content adaptation shall prevail over the adaptation restriction.

**Applic-ID:** This information element specifies the identification of the application that the routed forward MM is intended for. Its value shall equal the Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Reply-Applic-ID:** If present, this information element indicates a “reply path” to this MM, i.e. the identifier of the application to which a destination application shall address reply-MMs if any. The Reply-Applic-ID value shall equal the Reply-Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1). The Aux-Applic-Info value shall equal the Aux-Applic-Info value of the MM which is being routed forward with this MM4_forward.REQ. **Applic-ID:** This information element specifies the identification of the application that the routed forward MM is intended for. Its value shall equal the Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Reply-Applic-ID:** If present, this information element indicates a “reply path” to this MM, i.e. the identifier of the application to which a destination application shall address reply-MMs if any. The Reply-Applic-ID value shall equal the Reply-Applic-ID value of the MM which is being routed forward with this MM4_forward.REQ.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.17.1). The Aux-Applic-Info value shall equal the Aux-Applic-Info value of the MM which is being routed forward with this MM4_forward.REQ.

**Originator-Sytem-Address:** This information element contains the Address of the origination MMS Relay/Server. This address shall be used by the recipient MMS Relay/Server to return the MM4_forward.RES if requested by the originating MMS Relay/Server. This information shall be present if the Acknowledgement Request information element is present in the MM4_forward.REQ.

### 8.4.1.4 Information Elements

**Table 2: Information elements in the MM4_forward.REQ.**

| Information element | Presence | Description |
|---|---|---|
| 3GPP MMS Version | Mandatory | The MMS version of the originator MMS Relay/Server as defined by the present document. |
| Message Type | Mandatory | The type of message used on reference point MM4: "MM4_forward.REQ". |
| Transaction ID | Mandatory | The identification of the MM4_forward.REQ/ MM4_forward.RES pair. |
| Message ID | Mandatory | The identification of the MM. |
| Recipient(s) address | Mandatory | The address(es) of the MM recipient(s). Multiple addresses are possible. |
| Sender address | Mandatory | 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. |
| Message class | Conditional | The class of the MM (e.g., personal, advertisement, information service) if specified by the originator MMS User Agent |
| 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). |
| Time of Expiry | Conditional | The desired time of expiry for the MM if specified by the originator MMS User Agent (time stamp). |
| Delivery report | Conditional | A request for delivery report if the originator MMS User Agent has requested a delivery report for the MM. |
| Originator R/S delivery report | Conditional | A request for delivery report that, when set to "Yes", means the originator MMS Relay/Server has requested a delivery report for the MM.<br>Interpret as "No" in the absence of this Information element. |
| Priority | Conditional | The priority (importance) of the message if specified by the originator MMS User Agent. |
| Sender visibility | Conditional | A request to show or hide the sender's identity when the message is delivered to the MM recipient if the originator MMS User Agent has requested her address to be hidden from the recipient. |
| Read reply | Conditional | A request for read reply report if the originator MMS User Agent has requested a read-reply report for the MM.. |
| Subject | Conditional | The title of the whole MM if specified by the originator MMS User Agent. |
| Acknowledgement Request | Optional | Request for MM4_forward.RES |
| Forward_counter | Conditional | A counter indicating the number of times the particular MM was forwarded. |
| 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 stamps). |
| Applic-ID | Optional | Identification of the destination application. |
| Reply-Applic-ID | Optional | Identification of a "reply-path" to this MM. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |
| Content Class | Optional | Classifies the content of the MM to the smallest content class to which the message belongs [85] |
| DRM Content | Optional | Indicates if the MM contains DRM-protected content |
| Adaptations | Optional | Indicates if the originator allows adaptation of the content (default True) |
| Originator-Sytem-Address | Conditional | This information element indicates the Address of the |

| | | |
|---|---|---|
| | | origination MMS Relay/Server. This information shall be present if the Acknowledgement Request information element is present in the MM4_forward.REQ. |
| Content | Conditional | The unaltered content of the multimedia message if specified by the originator MMS User Agent. |

**Table 3: Information elements in the MM4_forward.RES.**

| Information element | Presence | Description |
|---|---|---|
| 3GPP MMS Version | Mandatory | The MMS version of the recipient MMS Relay/Server as defined by the present document. |
| Message Type | Mandatory | The type of message used on reference point MM4: “MM4_forward.RES”. |
| Transaction ID | Mandatory | The identification of the MM4_forward.REQ/ MM4_forward.RES pair. |
| Message ID | Mandatory | The Message ID of the MM which has been forwarded within the corresponding MM4_forward.REQ |
| Request Recipients | Conditional | List of recipients to whom the Request Status value applies. If this element is absent the Request Status value is applicable to all recipients of the corresponding MM4_forward.REQ |
| Request Status | Mandatory | The status of the request to route forward the MM. |
| Request Status text | Optional | Status text corresponding to the Request Status |

**Next Modified Section**

## 8.4.4 Message format on MM4

All elements of an MM shall be included within a single SMTP "mail" message which shall be organised as MIME message with the appropriate 'Content-Type' [44] header field value (e.g. multipart/related, multipart/mixed, image/jpeg, text/plain). All MM elements shall be of standard MIME content types. In addition to the MM elements this SMTP "mail" message should reflect all MMS information elements according to the definitions in clauses 6 and 8.4.

All other MMS-related messages, such as delivery reports, read-reply reports, transfer acknowledgements shall each be transferred as a single SMTP "mail" message which shall be organised as MIME type text/plain. This SMTP "mail" message should reflect all MMS information elements as defined above.

### 8.4.4.1 Message header fields

MMS information elements should be reflected as "header fields" according to STD 11 in the SMTP "mail" message. See RFC 1327 [53] for a detailed description of the X.400 header to STD 11 headers mappings. Some of the mappings are context dependent.

For those information elements that cannot be mapped to standard STD 11 "header fields" the "X-" extensions mechanism shall be used with an "X-MMS-" prefix.

The mapping of information elements to commonly used (RFC 1327) [53] or standard STD 11 "header fields" is shown in following tables.

### 8.4.4.2 MM4_Forward.REQ Header Mappings

The MM4 Forward request header mappings are detailed below.

**Table 4: 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: , 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: |
| Originator R/S delivery report | X-Mms-Originator-R/S-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: |
| Applic-ID | X-Mms-Applic-ID |
| Reply-Applic-ID | X-Mms-Reply-Applic-ID |
| Aux-Applic-Info | X-Mms-Aux-Applic-Info |
| Content Class | X-Mms-Content-Class: |
| DRM Content | X-Mms-Drm-Content: |
| Adaptations | X-Mms-Adaptation-Allowed: |
| Originator-Sytem-Address | X-Mms-Originator-System |
| 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 system 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.

~~The SMTP RCPT TO: shall convey the MM to the recipient, one recipient at a time.~~

~~For example, if an MMS originator sends an MM to 3 recipients (e.g., To: userA, Cc: userB; Bcc: userC), all served by the same MMS Relay/Server, differing from the originator's MMS Relay/Server; the originator MMS Relay/Server shall send:~~

~~an SMTP MM4_Forward.REQ, with RCPT To: = userA,~~

~~a different SMTP MM4_Forward.REQ, with RCPT To: = userB,~~

~~and another SMTP MM4_Forward.REQ, with RCPT To: = userC.~~

### 8.4.4.3 MM4_Forward.RES Header Mappings

The MM4 Forward response information element mappings are detailed in the table below.

The transmission of the Forward Response from the recipient MMS Relay/Server requires a properly addressed STD 11 message. While the addressing of the MM4_Forward.REQ is clearly that of the intended recipients and originator, the MM4_Forward.RES addressing is related to neither the recipients nor the originator of the original MM. Instead, the MM4_Forward.RES addressing is based on the MMS Relay/Server ~~special~~ system~~s~~ as provided in the MM4_Forward.REQ via the X-Mms-Originator-System header. ~~MMS Service Provider should configure appropriate system addresses which will be used as both the recipient and originator of these administrative messages. It is suggested that the administrative addressing be based on the pattern:~~

~~*system-user@mms-relay-host.mmse-domain.*~~

The STD 11 "To:" header value shall be according to the STD 11 "X-Mms-Originator-System:" header value provided in MM4_Forward.REQ.

**Table 5: MM4_Forward.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: |
| Message ID | X-Mms-Message-ID: |
| Request Status | X-Mms-Request-Status-Code: |
| Request Status text | X-Mms-Status-Text: |
| Request Recipients | X-Mms-Request-Recipients |
| - | Sender: |
| - | To: |
| - | Message-ID: |
| - | Date: |

The STD 11 "Sender: " and "To:" headers contain system addresses as described above, and do not map to MM4_Forward.RES information elements. The STD 11 message requires a "Date:" header, but there currently is no corresponding MM4_Forward.RES information element.

### 8.4.4.4 MM4_Delivery_report.REQ Header Mappings

The mappings of the MM4_Delivery_report.REQ information elements to STD 11 headers is detailed in the table below.

**Table 6: MM4_Delivery_report.REQ 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: |
| Message ID | X-Mms-Message-ID: |
| Recipient address | From: |
| Sender address | To: |
| Date and time | Date: |
| Acknowledgement Request | X-Mms-Ack-Request: |
| Forward to Originator UA | X-Mms-Forward-To-Originator-UA |
| MM Status | X-Mms-MM-Status-Code: |
| MM Status Extension | X-Mms-MM-Status-Extension |
| MM Status Text | X-Mms-Status-text: |
| Applic-ID | X-Mms-Applic-ID |
| Reply-Applic-ID | X-Mms-Reply-Applic-ID |
| Aux-Applic-Info | X-Mms-Aux-Applic-Info |
| - | Sender: |
| - | Message-ID: |

The meaning of Recipient address is that of the original MM, from whose MMS User Agent this Delivery-report is being generated. The meaning of Sender address is that of the original MM, to whom the Delivery-report is being sent.

The value of the STD 11 "Sender:" header is the~~a~~ system ~~administration~~ address, to which the corresponding response will be sent.

The STD 11 "Sender:" header value is automatically set to the system address of the MMS Relay/Server.

The STD 11 "Message-ID:" value is automatically generated by the MMS Relay/Server, in conformance to STD 11 [5].

The other header mappings from information elements are similar to those already described above.

**Next Modified Section**

## 8.4.4.8 Header Field Value Range

MMS information elements that are mapped to standard STD 11 "header fields", i.e. which do not have an "X-Mms-" prefix, should be used according to [5].

The rest of the header definitions used in this clause, including the mechanisms and pre-defined tokens, are described in an augmented Backus-Naur Form (BNF) defined in [48], similar to that used by RFC 2822 [5]. Implementers will need to be familiar with the notation in order to understand these definitions.

For the residual MMS information elements the following applies:

**X-Mms-3GPP-MMS-Version:**

```
3GPP-MMS-Version = "X-Mms-3GPP-MMS-Version" ":"  1*DIGIT "." 1*DIGIT "."
1*DIGIT
```

Note that the numbers MUST be treated as separate integers and that each may be incremented higher than a single digit. Thus, 2.1.4 is a lower version than 2.1.13, which in turn is lower than 2.3.0 Leading zeros shall be ignored by recipient MMS Relay/Server and shall NOT be sent. The version is according to the version of the present document (see also clause "Foreword").

**X-Mms-Message-Type:**

```
Message-type = "X-Mms-Message-Type" ":" ( "MM4_forward.REQ" |
"MM4_forward.RES" | "MM4_delivery_report.REQ" | "MM4_delivery_report.RES" |
"MM4_read_reply_report.REQ" | "MM4_read_reply_report.RES" )
```

**X-Mms-Transaction-Id:**

```
Transaction-id =  "X-Mms-Transaction-ID" ":" quoted-string
```

**X-Mms-Message-Id:**

```
Message-id =  "X-Mms-Message-ID" ":" quoted-string
```

**X-Mms-Message-Class:**

```
Message-class = "X-Mms-Message-Class" ":" ( Class-identifier | quoted-string
)

Class-identifier = "Personal" | "Advertisement" | "Informational" | "Auto"
```

**X-Mms-Expiry:**

```
Expiry-value = "X-Mms-Expiry" ":" ( HTTP-date | delta-seconds )
```

**X-Mms-Delivery-Report:**

```
Delivery-report =  "X-Mms-Delivery-Report" ":" ( "Yes" | "No" )
```

**X-Mms-Originator-R/S-Delivery-Report:**

```
Originator-R/S-Delivery-Report =  "X-Mms-Originator-R/S-Delivery-Report" ":"
( "Yes" | "No" )
```

**X-Mms-Priority:**

```
Priority = "X-Mms-Priority" ":" ( "Low" | "Normal" | "High" )
```

**X-Mms-Sender-Visibility:**

```
Sender-visibility = "X-Mms-Sender-Visibility" ":" ( "Hide" | "Show" )
```

**X-Mms-Read-Reply:**

```
Read-reply = "X-Mms-Read-Reply" ":" ( "Yes" | "No" )
```

**X-Mms-Ack-Request:**

```
Ack-Request = "X-Mms-Ack-Request" ":" ( "Yes" | "No" )
```

**X-Mms-Forward-To-Originator-UA:**

```
Forward-To-Originator-UA = "X-Mms-Forward-To-Originator-UA" ":" ( "Yes" |
"No" )
```

**X-Mms-Request-Status-Code:**

```
Request-status-Code =  "X-Mms-Request-Status-Code" ":" ( "Ok" | "Error-
unspecified" | "Error-service-denied" | "Error-message-format-corrupt" |
"Error-sending-address-unresolved" | "Error-message-not-found" | "Error-
network-problem" |   "Error-content-not-accepted" | "Error-unsupported-
message" )
```

The meaning of the X-Mms-Request-Status-Code header field is further described in section 8.4.4.10 of this specification.

**X-Mms-MM-Status-Code:**

```
MM-Status-Code = "X-Mms-MM-Status-Code" ":" ( "Expired" | "Retrieved" |
"Rejected" | "Deferred" | "Indeterminate" | "Forwarded" | "Unrecognised" )
```

**X-Mms-MM-Status-Extension:**

```
MM-Status-Extension =  "X-Mms-MM-Status-Extension" ":" ( "Rejection-By-MMS-
Recipient" | "Rejection-by-Other-RS" )
```

The meaning of the X- Mms-Status-Extension header field is further described in section 8.4.4.11 of this specification.

**X-Mms-Read-Status:**

```
Read-Status = “X-Mms-Read-Status” “:” ( “Read” | “Deleted without being read” )
```

**X-Mms-Forward-Counter**

```
Forward-Counter = "X-Mms-Forward-Counter" ":" 1*DIGIT
```

**X-Mms-Previously-sent-by**

```
Previously-sent-by = “X-Mms-Previously-sent-by” “:” 1*DIGIT “,” mailbox
```

The address should be machine-usable, as defined by "mailbox" in RFC 2822 [5].

NOTE: The number indicates the chronological order of the submission and forwarding event(s). The number “0” is associated with the submission of the MM. A higher number indicates an event at a later point in time.

**X-Mms-Previously-sent-date-and-time**

```
Previously-sent-date-and-time = “X-Mms-Previously-sent-date-and-time” “:”
1*DIGIT “,” HTTP-date
```

The date should be machine-usable, as defined by "HTTP-date" in RFC 2616 [48].

NOTE: The number indicates the chronological order of the submission and forwarding events. The number “0” is associated with the submission of the MM. The number indicates the correspondence to the MMS User Agent’s address in the “X-Mms-Previously-sent-by” header field with the same number.

**X-Mms-Applic-ID**

```
Applic-ID = "X-Mms-Applic-ID" ":" quoted-string
```

**X-Mms-Reply-Applic-ID**

```
Reply-Applic-ID = "X-Mms-Reply-Applic-ID" ":" quoted-string
```

**X-Mms-Aux-Applic-Info**

```
Aux-Applic-Info = "X-Mms-Aux-Applic-Info" ":" quoted-string
```

**X-Mms-Content-Class:**

```
Content-class = "X-Mms-Content-Class" ":" ("text" | "image-basic" | "image-
rich" | "video-basic" | "video-rich" | "megapixel" | "content-basic" |
"content-rich")
```

**X-Mms-Drm-Content:**

```
Drm-content =  "X-Mms-Drm-Content" ":" ( "Yes" | "No" )
```

**X-Mms-Adaptation-Allowed:**

```
Adaptations =  "X-Mms-Adaptation-Allowed" ":" ( "Yes" | "No" )
```

**X-Mms-Request-Recipients:**

X-Mms-Request-Recipients = X-Mms-Request-Recipients ":" MMS-address *("," MMS-address)

Note: The X-Mms-Request-Recipients header contains a comma separated list of the recipient(s) MMS-addresses to whom the status code in the X-Mms-MM-Status-Code header applies. The encoding of MMS-address is defined in section 8.4.5.1.

**Next Modified Section**

## 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.

### 8.4.5.1 Addressing

~~The originator MMS Relay/Server should use an SMTP connection to transfer MMs/abstract messages.~~ The originator MMS Relay/Server ~~should~~ shall derive the sender address to be used in the SMTP "MAIL FROM:" command from ~~use~~ the ~~sender's~~ originator address as indicated in the corresponding MM/abstract message ~~in the SMTP "MAIL FROM:" command (subject to the sender's visibility)~~ and shall~~ould~~ derive the recipient(s) address(es) to be used in the SMTP "RCPT TO:" command from ~~use~~ the recipient(~~'~~s) address(es) as indicated in the corresponding MM/abstract message ~~in the SMTP "RCPT TO:" command~~.

Table xx provides a summary of the addresses used on both message level and message transport level for all abstract messages supported on the MM4 interface.

**Table xx: MM4 Addressing on Message and Message Transport Level**

| Message Type | Message Level Addressing | | | | Transport Level Addressing | |
|---|---|---|---|---|---|---|
| | From header | Sender header | To, Cc, Bcc header | X-Mms-Originator-System header | MAIL FROM command | RCPT TO command |
| MM4_forward.REQ | Originator MMS-address | Originator SMTP-address | Recipient(s) MMS-address(es) | Originator MMS Relay/Server SMTP address | Originator SMTP-address | Recipient SMTP-address(es) |
| MM4_forward.RES | - | Recipient MMS Relay/Server system-address | Originator MMS Relay/Server system-address | - | Recipient MMS Relay/Server system-address | Originator MMS Relay/Server system-address |
| MM4_delivery_report.REQ | Recipient MMS-address | Recipient MMS Relay/Server system-address | Originator MMS-address | - | Recipient MMS Relay/Server system-address | Originator SMTP-address if the origination user agent has requested the delivery report.<br><br>Originator system-address if the originating MMS Relay/Server has requested the delivery report. |
| MM4_delivery_report.RES | - | Originator MMS Relay/Server system-address | Recipient MMS Relay/Server system-address | - | Originator MMS Relay/Server system-address | Recipient MMS Relay/Server system-address |
| MM4_read_reply_report.REQ | Recipient MMS-address | Recipient MMS Relay/Server system-address | Originator MMS-address | - | Recipient MMS Relay/Server system-address | Originator SMTP address |
| MM4_read_reply_report.RES | - | Originator MMS Relay/Server system-address | Recipient MMS Relay/Server system-address | - | Originator MMS Relay/Server system-address | Recipient MMS Relay/Server system-address |

~~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.~~

### ~~8.4.5.1 Address Encoding~~

If the originator or recipient address on message level contains the originator or recipient MMS Relay/Server system address, then these addresses shall be used on transport level unmodified. MMS Service Provider should configure appropriate system addresses which will be used as both the recipient and originator of these administrative messages.

If the recipient address on message level conforms to the E.164 numbering plan, then the MMS Relay/Server shall apply E.164 address resolution to derive the addresses used on message transport level.

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, then the MMS Relay/Server shall derive the 'forward-path' argument to the 'RCPT TO:' SMTP command according to the MM4 address model.~~addresses shall be encoded in the following way~~

If the sender address on message level conforms to the E.164 numbering plan, then the MMS Relay/Server shall derive the 'reverse-path' argument to the 'MAIL FROM:' SMTP command according to the MM4 address model.~~:~~

**~~SMTP protocol level~~MM4 Address Model:**

The MM4 Address Model defines the encoding rules of user addresses used on the MM4 interfaces. The following addresses are defined:

- SMTP-address; the MMS user's address on message transport level (SMTP) ~~(e.g., OriginatorSystem@mms-relay-host.mmse-domain, or RecipientSystem@mms-relay-host.mmse-domain)~~
- MMS-address; the MMS user's address on message level ~~(e.g., +ToE164/TYPE=PLMN, +CcE164/TYPE=PLMN, or +BccE164/TYPE=PLMN)~~
- system-address, the address of user(s) being originator or recipient of administrative messages. This a~~A~~ddress is used on both message and message transport level. ~~(e.g., OriginatorSystem@mms-relay-host.mmse-domain, or RecipientSystem@mms-relay-host.mmse-domain)~~

The following schema defines the encoding of these addresses.

```
system-address = system-user "@" host-subdomain MMSE-domain

SMTP-address = "<" ( MMS-address "@" MMSE-domain ) ">" | mailbox
                                  ; "mailbox" according to the definition
                                  ; of STD 10 [22]

MMS-address = ( "+" E.164 "/TYPE=PLMN" ) | mailbox ; "mailbox" according
                                                   ; to the definition of
                                                   ; STD 11 [5]

E.164 = 1*DIGIT

system-user = local-part ; according to the definition of STD 110 [522],
                         ; string identifying the system user being
                         ; originator or recipient of administrative
                         ; messages

host-subdomain = *( dom-fragment "." ) ; subdomain of the MMS
                                       ; Relay/Server host

MMSE-domain = dom-fragment *( "." dom-fragment ) ; domain of the MMSE

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

**Example:**

If the recipient's address is an E.164 number, the recipient address fields used in the MM4_Forward.REQ shall be composed as follows:

RCPT TO:<+E.164/TYPE=PLMN@MMSE-domain>

To: +E.164/TYPE=PLMN

**MM4 MMSE Domain Name:**

For the addressing of the MMSE on the MM4 interface an unique domain name should be used. To allow inter PLMN DNS translation the MM4 MMSE domain name should be composed as follows:

mms.mnc<MNC>.mcc<MCC>.gprs, where

- <MNC> identifies the network operator. The MNC shall consist of 3 digits. For two digit MNC a "0" digit shall be inserted at the left side [79].
- <MCC> identifies the country of the network operator. The MCC shall consist of 3 digits [79].

In addition to the standardised MM4 MMSE Domain Name network operators may utilise additional public MM4 domain names for the MMSE, e.g. to allow interworking with networks not utilising the E.212 [79] network identification.

If the MMS Relay/Server supports interworking with MMSE(s) identified by the Domain Name specified above ("gprs" TLD) and MMSE(s) identified by public MM4 domain names (generic or ccTLD) in parallel, it shall ensure consistency of the originator's and recipient's domains for messages transferred via the MM4 interface in the following way.

If the recipient MMSE is identified by the MM4 MMSE domain name specified above, the originating MMS Relay/ Server shall identify the originator (SMTP-address) and itself (system-address) utilising the MM4 domain name complying to the definition above.

If the recipient MMSE is identified by a public MM4 domain name, the originating MMS Relay/-Server shall identify the originator (SMTP-address) and itself (system-address-utilising the public MM4 domain name.

In addition the MMSE implementation shall take public addressing requirements into account, e.g. for the MMS interworking with external (legacy) messaging systems via the MM3 interface.

**MM4 MMS Host Relay/Server Address:**

For the addressing of administrative messages on the MM4 interface the hosting MMS Relay/Server needs to be addressed directly. A system-address shall be allocated per MMS Relay/Server by means of a system user address. (system-user@host-subdomain.mmse-domain).

### 8.4.5.2 Message Transfer

The originator MMS Relay/Server shall use an SMTP connection to transfer MMs/abstract messages.

There are two options to forward MMs with multiple recipients served by the same MMSE via the MM4 interface.

**Option 1:**

The originating MMS Relay/Server may transfer MMs destined for multiple recipient users served by the same MMSE utilising one MM4_forward.REQ per recipient. Only one SMTP "RCPT TO" command shall be used per message transfer transaction.

For example, if an MMS originator sends an MM to 3 recipients (e.g., To: userA, Cc: userB; Bcc: userC), all served by the same MMS Relay/Server, differing from the originator's MMS Relay/Server; the originator MMS Relay/Server shall send:

an SMTP MM4_Forward.REQ, with RCPT To: = userA,

a different SMTP MM4_Forward.REQ, with RCPT To: = userB,

and another SMTP MM4_Forward.REQ, with RCPT To: = userC.

**Option 2:**

The originating MMS Relay/Server may transfer MMs destined for multiple recipient users served by the same MMSE utilising one MM4_forward.REQ conveying the message to all relevant recipients. Multiple SMTP "RCPT TO" commands shall be used per message transfer transaction.

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.

### 8.4.5.3 Other Definitions

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

~~**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@mms.mnc091.mcc244.gprs~~

~~**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.~~

**3GPP TSG-T2 #27**
**Cape Town, South Africa**
**8-12 November 2004**

*T2-040444*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **195** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:*** | ⌘ | Adding the Information Elements VAS-ID and VASP-ID in MM7_DeliveryReport and MM7_ReadReplyReport. |
| ***Source:*** | ⌘ | T2 (Ericsson) |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 01/11/2004 |
| ***Category:*** | ⌘ | **B** |
| ***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:*** | ⌘ | 1) for routing. So that when the MMS R/S gets the DeliverReport or ReadReplyReport he can route to the appropriate VASP (who will route to the VAS) in an unambiguous way.<br><br>Use case: as today: Either: 1a) MMS R/S has to keep track of the transaction (e.g., keep it open from the time it gets the MM7Deliver to the time it gets the MM7DeliverReport) another way would be to MMSid to be unique, and traceable, per VAS & VASP. Or 1b) VAS/VASP ID are unique and identify the VAS/VASP. With VASID and VASPID: MMS R/S is provided where to route, without having to look for the previous MM7Deliver traces, or restriction on MMSid uniqueness<br><br>2) consistency with the MM7Deliver |
| ***Summary of change:*** | ⌘ | Add VAS-ID and VASP-ID in MM7_DeliveryReport.REQ and MM7_ReadReplyReport.REQ. |
| ***Consequences if not approved:*** | ⌘ | Routing of MM7_DeliveryReport.REQ and MM7_ReadReplyReport.REQ. tp the proper VAS & VASP is a bit akward. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7, Annex K. |

| ***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.

## 8.7.4 Delivery reporting to VASP

This part of MMS service covers the generation of a delivery report from the MMS Relay/Server to the VASP. The involved abstract messages are outlined in the table below from type and direction points of view.

**Table 1: Abstract messages for delivery reports to VASP**

| Abstract Message | Type | Direction |
|---|---|---|
| MM7_delivery_report.REQ | Request | MMS Relay/Server -> VASP |
| MM7_delivery_report.RES | Response | VASP -> MMS Relay/Server |

### 8.7.4.1 Normal Operation

The MMS Relay/Server shall create the MM7_delivery_report.REQ and send it to the VASP when the appropriate information is available.

Support for MM7_delivery_report.REQ and MM7_delivery_report.RES is mandatory for a MMS Relay/Server that supports MM7.

### 8.7.4.2 Abnormal Operation

In case the VASP cannot identify the MMS Relay/Server or the Message ID is not recognized, then the VASP shall respond with a MM7_delivery_report.RES including a status which indicates the reason the delivery report was not accepted.

### 8.7.4.3 Features

**Addressing:** Both the address of the VAS (which is the original MM originator) and the address of the recipient of the original MM shall be provided in the addressing-relevant information fields of MM7_delivery_report.REQ.

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_delivery_report.REQ and MM7_delivery_report.RES as such.

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

**Time stamping:** The MM7_delivery_report.REQ shall carry the time and date of handling of the MM (e.g. retrieval, expiry, rejection)**.**

**Message identification:** In the MM7_delivery_report.REQ the MMS Relay/Server shall always provide the original message identification of the MM that the delivery report corresponds to as generated in response to the associated MM7_submit.REQ.

**MM Status:** The MM7_delivery_report.REQ shall carry the status of the MM delivery, e.g. retrieved, rejected, expired or indeterminate. The MM Status Extension may be used to provide more granularity. The status code may be supported with an explanatory text to further qualify the status of the MM delivery (e.g. recipient does not support MMS, recipient address unresolved, MM is too big, if/what content adaptation took place, address where the MM was forwarded). If there is no match between delivery condition and user status, delivery condition not met shall be returned.

**Request Status:** The VASP shall indicate the status of the MM7_delivery_report.REQ in the associated MM7_delivery_report.RES. The reason code given in the status information element of the response may be supported with an explanatory text further qualifying the status.

**Applic-ID:** This information element indicates the identification of the application that the delivery report is intended for. If a Reply-Applic-ID was indicated in the corresponding original MM, the recipient MMS Relay/Server shall set its value to that Reply-Applic-ID value. Otherwise, the recipient MMS Relay/Server shall set its value to the Applic-ID value that was indicated in the corresponding original MM.

**Reply-Applic-ID:** If present, this information element indicates a "reply path", i.e. the identification of an application to which reply-MMs are addressed. The recipient MMS Relay/Server shall insert it into the MM7_delivery_report.REQ if the values of Applic-ID and Reply-Applic-ID in the corresponding original MM differ, in which case its value shall equal the Applic-ID value that was indicated in the corresponding original MM.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1). The recipient MMS Relay/Server shall insert it if Aux-Applic-Info was indicated in the corresponding original MM, in which case its value shall equal that Aux-Applic-Info value.

### 8.7.4.4 Information Elements

**Table 2: Information elements in the MM7_delivery_report.REQ.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_delivery_report.REQ/ MM7_delivery_report.RES pair. |
| Message Type | Mandatory | The type of message used on reference point MM7 " MM7_delivery_report.REQ". |
| MM7 Version | Mandatory | The version of MM7 supported by the MMS Relay/Server |
| MMS Relay/Server ID | Optional | Identifier of the MMS Relay/Server |
| Message ID | Mandatory | The identification of the original MM. |
| VASP ID | Optional | Identifier of the VASP for this MMS Relay/Server. |
| VAS ID | Optional | Identifier of the originating application. |
| Recipient address | Mandatory | The address of the recipient of the original MM. |
| Sender address | Mandatory | The address of the VAS that submitted the original MM. |
| Date and time | Mandatory | Date and time the MM was handled (retrieved, expired, rejected, etc.) (time stamp) |
| MM Status | Mandatory | Status of the MM, e.g. retrieved, expired, rejected |
| MM Status Extension | Optional | Extension of the MM Status, to provide more granularity. |
| MM Status text | Optional | Text description of the status for display purposes, should qualify the MM Status |
| Applic-ID | Optional | The identification of the originating application of the original MM. |
| Reply-Applic-ID | Optional | Identification of an application to which the originating application of the original MM shall address reply-MMs if any. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |

**Table 3: Information elements in the MM7_delivery_report.RES.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_delivery_report.REQ/ MM7_delivery_report.RES pair. |
| Message Type | Mandatory | The type of message used on reference point MM7: "MM7_delivery_report.RES". |
| MM7 Version | Mandatory | The version of MM7 supported by the VASP |
| Request Status | Mandatory | The status of the associated MM7_delivery_report.REQ. |
| Request Status text | Optional | Text description of the status for display purposes, should qualify the Request Status |

## 8.7.5 Read-Reply Report for VASP

This part of MMS service covers the delivery of a read-reply report from the MMS Relay/Server to the VASP. The involved abstract messages are outlined in the table below from type and direction points of view.

**Table 4: Abstract messages for sending and receiving read-reply reports in MM7**

| Abstract messages | Type | Direction |
|---|---|---|
| MM7_read_reply.REQ | Request | MMS Relay/Server -> VASP |
| MM7_read_reply.RES | Response | VASP -> MMS Relay/Server |

### 8.7.5.1 Normal Operation

If the VASP requested a read-reply report then the recipient MMS User Agent may create and send a read-reply to the MMS Relay/Server. The MMS Relay/Server must identify that this read-reply report is associated with a MM originating from the MM7 reference point and must create the MM7_read_reply.REQ and send it to the VASP. The VASP shall return a MM7_read_reply.RES that reflects the successful reception of the read-reply report.

Support for MM7_read_reply_report.REQ and MM7_read_reply_report.RES is optional for a MMS Relay/Server that supports MM7.

### 8.7.5.2 Abnormal Operation

In case the VASP cannot identify the MMS Relay/Server or the Message ID is not recognized, then the VASP shall respond with a MM7_read_reply.RES including a status which indicates the reason the read reply report was not accepted.

### 8.7.5.3 Features

**Addressing:** Both, the address of the VASP (which is the MM originator), and the address of the originator (which is the MM recipient) of a read-reply report shall be provided in the addressing-relevant information fields of MM7_read_reply_report.REQ.

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

**Message Type:** The type of message used on reference point MM7 indicating MM7_read_reply.REQ and MM7_read_reply.RES as such.

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

**Message identification:** In the MM7_read_reply_report.REQ the MMS Relay/Server shall always provide the original message identification of the MM that the read-reply report corresponds to as generated for the MM7_submit.RES.

**Time Stamping:** The MM7_read_reply_report.REQ shall carry the time-stamp associated with the read-reply report**.**

**Read Status:** The MM7_read_reply_report.REQ shall carry the status of the MM retrieval, e.g. read or deleted without being read.

**Request Status:** The VASP shall indicate the status of the MM7_read_reply.REQ in the associated MM7_read_reply.RES. The reason code given in the status information element of the response may be supported with an explanatory text further qualifying the status.

**Applic-ID:** In case of application addressing, this information element indicates the identification of the application that the read-reply report is intended for. The recipient MMS Relay/Server shall set its value to the Applic-ID value indicated in the corresponding MM1_read_reply.REQ or MM4_read_reply_recipient.REQ.

**Reply-Applic-ID:** If present, this information element indicates a “reply path”, i.e. the identifier of the application to which reply-MMs to this read-reply report are addressed if any. The recipient MMS Relay/Server shall set its value to the Reply-Applic-ID value indicated in the corresponding MM1_read_reply.REQ or MM4_read_reply_recipient.REQ.

**Aux-Applic-Info:** If present, this information element indicates additional application/implementation specific control information (cf. 7.1.18.1). The recipient MMS Relay/Server shall set its value to the Aux-Applic-Info value indicated in the corresponding MM1_read_reply.REQ or MM4_read_reply_recipient.REQ.

### 8.7.5.4 Information Elements

**Table 5: Information elements in the MM7_read_reply_report.REQ.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_read_reply_report.REQ/ MM7_read_reply_report.RES pair. |
| Message Type | Mandatory | Identifies this message as a MM7_read_reply_report request. |
| MM7 Version | Mandatory | The version of MM7 supported by the MMS Relay/Server. |
| MMS Relay/Server ID | Optional | Identifier of the MMS Relay/Server |
| Recipient address | Mandatory | The address of the MM recipient of the original MM, i.e. the originator of the read-reply report. |
| VASP ID | Optional | Identifier of the VASP for this MMS Relay/Server. |
| VAS ID | Optional | Identifier of the originating application. |
| Sender address | Mandatory | The address of the VASP (originator of the original MM) i.e. the recipient of the read-reply report. |
| Message ID | Mandatory | The message ID of the original MM. |
| Date and time | Mandatory | Date and time the MM was handled (read, deleted without being read, etc.) (time stamp) |
| Read Status | Mandatory | Status of the MM, e.g. Read, Deleted without being read |
| Read Status text | Optional | Text description of the status for display purposes, should qualify the Read Status |
| Applic-ID | Optional | The identification of the originating application of the original MM. |
| Reply-Applic-ID | Optional | Identification of an application to which the originating application of the original MM shall address reply-MMs if any. |
| Aux-Applic-Info | Optional | Auxiliary application addressing information. |

**Table 6: Information elements in the MM7_read_reply_report.RES.**

| Information element | Presence | Description |
|---|---|---|
| Transaction ID | Mandatory | The identification of the MM7_read_reply_report.REQ/ MM7_read_reply_report.RES pair. |
| Message Type | Mandatory | Identifies this message as a MM7_read_reply_report response. |
| MM7 Version | Mandatory | The version of MM7 supported by the VASP. |
| Request Status | Mandatory | The status of the associated MM7_read_reply_report.REQ. |
| Request Status text | Optional | Text description of the status for display purposes, should qualify the Request Status. |

### 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, e.g. 5.2.0 |
| MMS Relay/Server ID | SOAP Body | MMSRelayServerID | |
| Message ID | SOAP Body | MessageID | |
| Recipient address | SOAP Body | Recipient | |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| Sender address | SOAP Body | Sender | |
| Date and time | SOAP Body | Date | |
| MM Status | SOAP Body | MMStatus | Enumeration – possible values: Expired, Retrieved, Rejected, Indeterminate, Forwarded, Delivery Condition Not Met |
| Status text | SOAP Body | StatusText | |
| Applic-ID | SOAP Body | ApplicID | |
| Reply-Applic-ID | SOAP Body | ReplyApplicID | |
| Aux-Applic-Info | SOAP Body | AuxApplicInfo | |

### 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, e.g. 5.2.0 |
| Request Status | SOAP Body | StatusCode | See section 8.7.8.3 |
| Request Status text | SOAP Body | StatusText & Details | See section 8.7.8.3 |

### 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, 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 | |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| Date and time | SOAP Body | TimeStamp | |
| Read Status | SOAP Body | MMStatus | Enumeration – possible values: Indeterminate, Read, Deleted without Read |
| Status text | SOAP Body | StatusText | |
| Applic-ID | SOAP Body | ApplicID | |
| Reply-Applic-ID | SOAP Body | ReplyApplicID | |
| Aux-Applic-Info | SOAP Body | AuxApplicInfo | |

### 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, e.g. 5.2.0 |
| Request status | SOAP Body | StatusCode | See section 8.7.8.3 |
| Request status text | SOAP Body | StatusText & Details | See section 8.7.8.3 |

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

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

The abstract messages mapped between MM1 and MM7 are:

- MM1_Submit.REQ to the MM7_Deliver.REQ
- MM7_Submit.REQ to the MM1_Notification.REQ and the MM1_Retrieve.RES
- MM1_Read_Reply_Recipient.REQ to the MM7_Read_Reply_Report.REQ
- MM1_Forward.REQ to the MM7_Deliver.REQ

The abstract messages mapped between MM4 and MM7 are:

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

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

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

**Table K.1: Mapping MM1_submit.REQ -> MM7_deliver.REQ**

| Information elements in MM1_submit.REQ | Information elements in MM7_deliver.REQ |
|---|---|
| Message Type | - |
| Transaction ID | - |
| MMSVersion | - |
| Recipient address, - | Recipient address, - (NOTE 1) |
| Content type | Content type |
| Sender address | Sender address, - (NOTE 2) |
| Message class | - |
| Date and time | Date and time |
| Time of Expiry | - |
| Earliest delivery time | - |
| Delivery report | - |
| Reply-Charging | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Priority | Priority |
| Sender visibility | - |
| Store | - |
| MM State | - |
| MM Flags | - |
| Read reply | - |
| Subject | Subject |
| Reply-Charging-ID | Reply-Charging-ID |
| Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info |
| Content Class | - |
| DRM Content | - |
| Adaptations | - |
| Content | Content |
| - | Transaction ID |
| - | Message type |
| - | MM7 version |
| - | MMS Relay/Server ID |
| - | Linked ID |
| - | Sender SPI |
| - | Recipient SPI |
| NOTE 1: The recipient address over MM1 may or may not be mapped to recipient address over MM7. The recipient address over MM7 may also be independent of the recipient address over MM1.<br>NOTE 2: If the Sender Visibility flag is set over MM1, the Sender address from MM1 is not mapped onto MM7. | |

**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 Type | - |
| - | Transaction ID | - |
| - | MMS Version | - |
| 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-Charging-ID |
| 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 |
| Content Class | - | - |
| DRM Content | - | - |
| Adaptations | - | - |
| Content type | - | Content type |
| Content | - | Content |
| Message Distribution Indicator | Message Distribution Indicator | Message Distribution Indicator |
| Charged Party | - | - |
| Charged Party ID | - | - |
| - | Message size | - |
| - | Message Reference | - |
| - | Stored | - |
| - | Delivery report | Delivery report |
| - | Reply-Charging-ID | - |
| - | Element-Descriptor | - |
| - | - | Message ID |
| - | - | MM State |
| - | - | MM Flags |
| - | - | Request Status |
| - | - | Request Status Text |
| - | - | Previously-sent-by |
| - | - | Previously-sent-date-and-time |
| - | - | Message Type |
| - | - | Transaction ID |
| - | - | MMS Version |
| Applic-ID | Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info | Aux-Applic-Info |

**Table K.3: Mapping MM1_read_reply_recipient.REQ -> MM7_read_reply_report.REQ**

| Information elements in MM1_read_reply_recipient.REQ | Information elements in MM7_read_reply_report.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Recipient address | Recipient address |
| Originator address | Sender address |
| - | VASP ID |
| - | VAS ID |
| Message-ID | Message-ID |
| Date and Time | Date and Time |
| Read Status | Read Status |
| - | Transaction ID |
| - | Message Type |
| - | MM7 Version |
| - | MMS Relay/Server ID |
| - | Status text |
| Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info |

**Table K.4: Mapping MM1_Forward.REQ -> MM7_Deliver.REQ**

| Information elements in MM1_Forward.REQ | Information elements in MM7_Deliver.REQ |
|---|---|
| Message Type | - |
| Transaction ID | - |
| MMS Version | - |
| Recipient address | Recipient address |
| Forwarding address | Sender address |
| Date and time | Date and time |
| Time of Expiry | - |
| Earliest delivery time | - |
| Store | - |
| MM State | - |
| MM Flags | - |
| Delivery report | - |
| Read reply | - |
| Reply-Charging | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Message Reference | <Content>, Content Type, Subject, Priority (NOTE) |
| - | Transaction ID |
| - | Message type |
| - | MM7 version |
| - | VASP ID |
| - | VAS ID |
| - | MMS Relay/Server ID |
| - | Linked ID |
| | Reply Charging ID |
| - | Sender SPI |
| - | Recipient SPI |
| - | Applic-ID |
| - | Reply-Applic-ID |
| - | Aux-Applic-Info |
| NOTE: The message reference is used to map fields and content from the original MM. The mapping of these fields is identical to the MM1_Submit.REQ/MM7_Deliver.REQ mapping in table K.1. | |

**Table K.5: Mapping MM4_Forward.REQ -> MM7_Deliver.REQ**

| Information elements in MM4_Forward.REQ | Information elements in MM7_Deliver.REQ |
|---|---|
| 3GPP MMS Version | - |
| Message Type | - |
| Transaction ID | - |
| Message ID, - | Linked ID, - (NOTE 1) |
| Recipient(s) address | Recipient address |
| Sender address | Sender address (NOTE 2) |
| Content type | Content type |
| Message class | - |
| Date and time | Date and time |
| Time of Expiry | - |
| Delivery report | - |
| Priority | Priority |
| Sender visibility | - |
| Read reply | - |
| Subject | Subject |
| Acknowledgement Request | - |
| Forward counter | - |
| Previously-sent-by | Previously-sent-by |
| Previously-sent-date and-time | Previously-sent-date-and-time |
| Content Class | - |
| DRM Content | - |
| Adaptations | - |
| Content | Content |
| - | Transaction ID |
| - | Message type |
| - | MM7 version |
| - | VASP ID |
| - | VAS ID |
| - | MMS Relay/Server ID |
| - | Recipient address |
| - | Reply-Charging-ID |
| - | Sender SPI |
| - | Recipient SPI |
| Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info |
| NOTE 1: The Message ID over MM1 may or may not be mapped to the Linked ID over MM7. The Linked ID over MM7 may also be independent of the Message ID over MM1.<br>NOTE 2: If the Sender Visibility flag is set over MM4, the Sender address from MM4 is not mapped onto MM7. | |

**Table K.6: void**

**Table K.7: MM4_delivery_report.REQ -> MM7_delivery_report.REQ**

| Information elements in MM4_delivery_report.REQ | Information elements in MM7_delivery_report.REQ |
|---|---|
| 3GPP MMS Version | - |
| Message Type | - |
| Transaction ID | - |
| Message ID | Message ID |
| Recipient address | Sender address |
| - | VASP ID |
| - | VAS ID |
| Sender address | Recipient address |
| Date and time | Date and time |
| Acknowledgement Request | - |
| MM Status | MM Status |
| MM Status Extension | MM Status Extension |
| MM Status Text | Status text |
| - | Transaction ID |
| - | Message Type |
| - | MM7 Version |
| - | MMS Relay/Server ID |
| Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info |

**Table K.8: MM4_Read_reply_report.REQ -> MM7_read_reply_report.REQ**

| Information elements in MM4_Read_reply_report.REQ | Information elements in MM7_read_reply.REQ |
|---|---|
| 3GPP MMS Version | - |
| Message Type | - |
| Transaction ID | - |
| Recipient address | Recipient address |
| Sender address | Sender address |
| - | VASP ID |
| - | VAS ID |
| Message-ID | Message-ID |
| Date and time | Date and time |
| Acknowledgement Request | - |
| Read Status | Read Status |
| Status text | Status text |
| - | Transaction ID |
| - | Message Type |
| - | MM7 Version |
| - | MMS Relay/Server ID |
| Applic-ID | Applic-ID |
| Reply-Applic-ID | Reply-Applic-ID |
| Aux-Applic-Info | Aux-Applic-Info |