
Source: SA1
Title: CRs 22.140 on Multimedia Messaging (Rel-6)
Document for: Approval
Agenda Item: 7.1.3

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-24	SP-040290	22.140	044	-	Rel-6	B	Support of MMS operator specific services	6.5.0	6.6.0	S1-040540
SP-24	SP-040290	22.140	045	-	Rel-6	F	Clarification on MMS client interaction with UICC	6.5.0	6.6.0	S1-040541
SP-24	SP-040290	22.140	046		Rel-6	F	Update to scope and removal of VHE based requirement.	6.5.0	6.6.0	S1-040542

CR-Form-v7	
CHANGE REQUEST	
⌘ 22.140 CR 044 ⌘ rev - ⌘	Current version: 6.5.0 ⌘

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

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

Title:	⌘ Support of MMS operator specific services		
Source:	⌘ SA1 (T-Mobile)		
Work item code:	⌘ MMS-6	Date:	⌘ 10/05/2004
Category:	⌘ B	Release:	⌘ Rel-6
	<i>Use <u>one</u> of the following categories:</i> 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 .		<i>Use <u>one</u> of the following releases:</i> 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:	⌘ TSG T have approved a WID for the introduction of MMS network capabilities to allow introduction of operator specific services dealing with private addressing (e.g. VPN).
Summary of change:	⌘ Definition and service requirements for capabilities to support MMS operator specific services have been introduced.
Consequences if not approved:	⌘ The MMS work item on support of advanced MMS services can not be finalised.

Clauses affected:	⌘ 3.1; new section 12										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	⌘ 23.140, 32.270	
Y	N										
X											
	X										
	X										
Other comments:	⌘ SA has agreed to complete this work within the timeframe of Release6.										

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 Definitions and abbreviations

3.1 Definitions

Recipient : the recipient is the entity to which a MM has been sent.

Sender: the sender is the entity that sent a MM.

User: the user is the MM sender or the MM recipient.

message element: a message element is a part of a MM consisting of only one media type.

multimedia message: a multimedia message is a message composed of one or more message elements.

multimedia message service: A multimedia message service allows transfer of multimedia messages between users without the requirement for the multimedia messages to be transferred in real-time.

media types: a media type refers to one form of presenting information to a user, e.g. voice or fax.

media formats: within one media type different media formats are applicable for the media presentation, e.g. a picture can be GIF or JPEG format.

network: for the purposes of supporting multimedia messaging, the term network shall be considered to include the mobile operator's network and any functionality which may exist outside the mobile operator's network (i.e. fixed, internet and multimedia technologies etc.), and the support provided by that functionality for multimedia messaging.

Operator Specific Service: [network-based and operator administered function being able to perform additional, operator defined, MMS services based on MMS capabilities for address translation and charging.](#)

Value Added Service Provider: see Reference [2].

Short code: A string of alphanumeric characters which addresses a specific service of a Value Added Service Provider.

New Section

12 Support of Operator Specific Services

[The MMS may support operator specific services. Thereby network operators shall be able to provide additional MMS services dealing with enhanced addressing and charging.](#)

[If supported, the interaction between the MMS and Operator Specific Service shall happen immediately after multimedia message submission time or immediately before multimedia message delivery time, or both.](#)

[Multimedia Messages sent or delivered from/to users shall be subject to operator specific services handling if:](#)

- [the user is provisioned with operator specific services in the MMS user profile. The user may be provisioned independently for operator specific services applicable for submission and delivery of multimedia messages. Provisioning of Operator Specific Services for MMS is under control of the HPLMN operator.](#)
- [the MMS determines based on a pre-analysis of the recipient's address\(es\) found in a submitted multimedia message that an Operator Specific Service needs to be invoked. The definition of the addresses invoking MMS Operator Specific Services is under control of the HPLMN operator.](#)

[If the Operator Specific Services needs to be invoked, the MMS shall temporarily suspend the normal process of that multimedia message and shall provide the Operator Specific Services with at least the following information:](#)

- [messaging event \(submission, delivery\)](#)

- multimedia message data:
- sender identification
- recipient addresses

As a response to the above request from the MMS, the Operator Specific Services may request the MMS to perform one of the following actions:

- leave the multimedia message unmodified and proceed with its processing;
- reject the message.
- modify one or more of the following multimedia message data:
 - sender identification
 - recipient addresses

Operator Specific Services shall be allowed to influence charging of the message by providing additional information to the MMS. The MMS shall transparently forward this information to the billing systems together with the MMS charging relevant data.

12.1 Service Interaction

This subclause specifies interactions between Operator Specific Services and other services in the MMS.

12.1.1 VASP Services

Operator Specific Services take precedence over VASP services. If short code addressing to Value Added Services is supported by the MMS, the result from an Operator Specific Service shall be subject to short code address translation.

Multimedia Messages submitted from a VASP may be subject to operator specific services.

End

CHANGE REQUEST

22.140 CR 045 # rev - # Current version: 6.5.0

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

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

Title:	# Clarification on MMS client interaction with UICC		
Source:	# SA1 (SA1 Messaging SWG)		
Work item code:	# MMS-R6	Date:	# 11/05/2004
Category:	# F	Release:	# Rel-6
	Use <u>one</u> 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 <u>one</u> 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:	# It is unclear to T3 how the interaction between the MMS client in the ME and the UICC has to occur.
Summary of change:	# It is clarified that the MMS Client in the ME can manage (e.g. send, receive and present) MMS messages stored on the UICC.
Consequences if not approved:	# The requirement will stay unclear about the status of the interaction in the case of displaying a multimedia message stored on the UICC. This could lead to several different implementations, and a potential risk of incompatibilities between products.

Clauses affected:	# 5.7								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Test specifications # <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> O&M Specifications #	Y	N	#	X	#	X	#	X
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#	X								
#	X								
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Other comments:	#								

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5.7 MMS client interaction with UICC

It shall be possible for an MMS client in the ME to interact with a UICC to manage (e.g. send ~~and~~ receive and present) MMS messages stored on the UICC, in accordance with the requirements in this specification. ~~The interaction with the UICC shall allow MMS management (e.g. delivery, submission) and the presentation of multimedia messages stored on the UICC to the user.~~

It shall be possible to indicate to the UE that an MM needs to receive special treatment. When a MM has been marked with this indication, means shall be provided to protect the MM from accidental deletion e.g. by asking for additional confirmation to the user. The use of this indication shall be under the control of the HPLMN.

TSG-SA WG1 #24
Shenzhen, China, 10 - 14 May 2004

S1-040542
Agenda Item: 10.3

CR-Form-v7	
CHANGE REQUEST	
⌘	22.140 CR 046
⌘ rev	-
⌘ Current version:	6.5.0 ⌘

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

Title:	⌘ Update to scope and removal of VHE based requirement.		
Source:	⌘ SA1 (Lucent Technologies)		
Work item code:	⌘ MMS6-SR	Date:	⌘ 10/05/2004
Category:	⌘ F	Release:	⌘ Rel-6
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ The reassignment of 22.121 from TS to TR impacts the content of 22.140. The need to 'comply' with 22.121 is no longer valid, The scope of the document is not a succinct as it should be with vague discussion of out of scope issues.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Correction by removal of an unworkable requirement. 2. Correction to scope by removal of superfluous text 3. General editorial corrections and typos corrected
Consequences if not approved:	⌘ Unacceptable requirements based on the contents of a TR will inadvertently be approved.

Clauses affected:	⌘ Introduction, 1, 2, 3, 4, 5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
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Other comments:	⌘										

*****START OF CHANGES*****

Introduction

SMS has been very successful in the GSM second generation system, as all mobiles have supported the application level and it is possible to send to any GSM handset without the need to check for individual support. This easy to use service for non realtime text transmission between GSM users shall be succeeded to in third generation mobile systems by a non real-time Multimedia Message Service, MMS. The MMS will allow users to send and receive messages exploiting the whole array of media types available today e.g. text, images, audio, video while also making it possible to support new content types as they become popular.

3GPP shall not standardise new services themselves, but instead uses the standardised set of service capabilities features on which the new services will be built.

Multimedia technology ~~isa~~ rapidly developing ~~allowing~~ new capabilities, such as multimedia messages, games, presentations and services that are now considered to be a part of every-day life. Multimedia consists of one or more media elements (such as text, voice, image and video), and it is the combination of these media elements in an ordered synchronised manner that creates a multimedia presentation.

A non-realtime multimedia message as observed by the user is a combination of one or more different media elements in a multimedia presentation, that can be transferred between users without the requirement for the need to be transferred in realtime. The non-real-time multimedia messaging service shall be capable of supporting current and future multimedia messaging services, and exploit the advances being made in the world multimedia community, with additional mobile requirements.

1 Scope

This Technical Specification defines the stage one description of the non real-time Multimedia Messaging Service, MMS. Stage one is the set of requirements which shall be supported for the provision of non real-time multimedia messaging service, seen primarily from the subscriber's and service providers' points of view.

This TS includes information applicable to network operators, service providers, terminal and network manufacturers.

This TS contains the core requirements for the Multimedia Messaging Service, which are sufficient to provide a complete service.

~~Additional functionalities not documented in this TS may implement requirements which are considered outside the scope of this TS. Such additional functionality may be on a network wide basis, nation wide basis or particular to a group of users. Such additional functionality shall not compromise conformance to the core requirements of the service.~~

This TS defines the requirements for MMS to be understood as a framework to enable non real-time transmissions for different types of media including such functionality as:

- multiple media elements per single message
- individual handling of message elements
- different delivery methods for each message element
- negotiate different terminal and network MM capabilities
- notification and acknowledgement of MM related events (e.g. delivery, deletion, ...)
- handling of undeliverable MM
- personalised MMS configuration
- flexible charging

The above list is not exhaustive.

Thus the MMS enables a unified application which integrates the composition, storage, access, and delivery of different kinds of media, e.g. text, voice, image or video in combination with additional mobile requirements.

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 22.101: "Service Principles".
- [2] 3GPP ~~TS~~-[TR](#) 22.121: "The Virtual home Environment".
- [3] 3GPP TS 21.133: "3G Security; Security Threats and Requirements".
- [4] ITU-T E.164 (1997): "The International Public Telecommunications Numbering Plan".

- [5] IETF; STD 0011 (RFC 2822): "Internet Message Format", URL: <http://www.ietf.org/rfc/rfc2822.txt>.
- [6] 3GPP TS 21.905: "Vocabulary".
- [7] 3GPP TS 31.102 "Characteristics of the USIM Application".
- [8] 3GPP TS 51.011 (Rel-4): "Specification of the Subscriber Identity Module – Mobile Equipment (SIM-ME) interface".
- [9] 3GPP TS 22.242 "Digital Rights Management (DRM); Stage 1".
- [10] 3GPP TS 22.240 "Stage 1 Service Requirement for the 3GPP Generic User Profile (GUP)".

3 Definitions and abbreviations

3.1 Definitions

Recipient : the recipient is the entity to which a MM has been sent.

Sender: the sender is the entity that sent a MM.

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media formats: within one media type different media formats are applicable for the media presentation, e.g. a picture can be GIF or JPEG format.

network: for the purposes of supporting multimedia messaging, the term network shall be considered to include the mobile operator's network and any functionality which may exist outside the mobile operator's network (i.e. fixed, internet and multimedia technologies etc.), and the support provided by that functionality for multimedia messaging.

Value Added Service Provider: [provides services other than basic telecommunications service for which additional charges may be incurred](#). ~~see Reference [2]~~.

Short code: A string of alphanumeric characters which addresses a specific service of a Value Added Service Provider.

3.2 Abbreviations

For the purposes of this document the following abbreviations apply:

MM	Multimedia Message
MMS	Multimedia Message Service
SMS	Short Message Service
VASP	Value Added Services Provider

4 High level Requirements

The following list gives the high level requirements of the MMS. These are requirements which are independent of the user's perception of the service:

- **Forward compatible multimedia messaging**

Multimedia messaging mechanisms shall provide the capability to support current and evolving multimedia messaging by re-using existing standards as far as possible and proposing extensions (as necessary) to existing standards (i.e. the multimedia messaging service shall support the evolution of multimedia messaging technologies).

- **Consistent messaging**

Regardless of the message type / format, MMS shall be capable of supporting integration of all types of messaging (e.g. fax, SMS, Multimedia , voicemail, e-mail etc.) in a consistent manner.

- **Universal messaging access**

Within the capabilities of networks and terminals, the user shall be able to experience consistent access to the MMS regardless of the access point.

For example the user should be capable of accessing her multimedia messages through a number of different access points, which should include 3GPP systems, fixed networks, the Internet, etc.

- **Interoperability**

The MMS shall support a minimum set of functionality and message formats to ensure interoperability (e.g. deletion of MM, identified standardised message notification, message media types and message content formats).

The MMS shall provide a minimum set of supported formats to ensure full interoperability between different terminals and networks from the very beginning of service provisioning (e.g. JPEG for pictures, MP3 for audio, MPEG for motion pictures, etc.).

The MMS shall support version management by indicating a version number in the MM for interoperability purpose.

~~The MMS shall comply with the Virtual Home Environment specified in 22.121[2]~~

~~The non real time multimedia messaging service shall be supported using the standardised set of service capabilities features.~~

5 General Requirements

Network operators have many differing requirements, and MMS shall be supported in the network in a manner which allows network operators to consider different configurations depending on their network and commercial requirements. Thus, an identified set of functionalities and formats shall be standardised to ensure interoperability across networks and terminals to support MMS.

However, some network operators may wish to design and configure networks in different ways, and the subsequent requirements are identified to allow flexibility in how the MMS functionality is supported. For example in some networks the network operators may wish to implement the MMS functionality within the core network, whereas other may wish to place the MMS functionality on the periphery of the core network (e.g. a centralised network model instead of a distributed architecture). Further, some network operators may wish to support a limited set of MMS functionality, while others may require extensive and elaborate MMS support according to their business models (e.g. basic MMS instead of advanced MMS). Interoperability shall always be maintained within this flexible architecture.

The following sub-clauses use the term "*The MMS shall be able to support a request for ...*" and similar phrases to allow network operators to consider these different network models and business requirements, to permit flexible architectures and ensure MMS interoperability.

The following sub-clauses use the term "*This requirement shall be supported at the application layer in the terminal (and/or the network), and will not be further elaborated.*" and similar phrases to identify those service requirements that shall be supported by MMS but do not require standardisation.

The criterion for identifying these types of requirements is as follows:

If the requirement corresponds to an interaction and/or command between the terminal and the network applications from the same Service Provider (e.g. between the recipient's terminal resident messaging application and the recipient's network resident application. The same applies for the sender), then this requirement shall be supported by MMS but does not require standardisation.

The following general requirements shall be supported.

5.1 Multimedia message management

- Terminal-sensitive MM management

The MMS shall be able to support the capability for the terminal and network to take account of the capability of the user's terminal (e.g. deliver a MM / notification in a manner compatible with the terminals capability).

- Terminal status-sensitive MM Management

The MMS shall be able to support the capability of the network to take account of the availability, changes of the state of availability of the terminal (e.g. store messages if the recipient is not available).

- MMS Control by the operator

The MMS shall be able to support a request from the operator to enable/disable MM delivery and submission.

- MMS Control by the user

The MMS shall be able to support a request from the user to enable/disable MM delivery and submission.

This requirement shall be supported at the application layer in the terminal, and will not be further elaborated.

- Storage of MMS parameters

The USIM shall be able to store the following types of MMS related data:

- i) a number of sets of issuer configuration information to allow access to MMS services.

At least one of these sets of configuration information should be stored on the USIM by the issuer of the USIM.

The first issuer configuration information set is denoted as the default configuration set.

This configuration information shall only be configurable by the issuer of the USIM.

- ii) a number of sets of user configuration information to allow access to MMS services.

If more than one set of configuration information is present, it shall be possible for the user to select which set is used. If the user has not selected any of the configuration information sets, then the default set in the active USIM is used.

- iii) MMS notifications

- iv) MMS user preferences

A terminal using a USIM [7] or a SIM [8] with these MMS parameters, shall by default use them and the related preferred bearer, to access to the MMS services.

Note[NOTE 1](#): Terminal support of SIM and USIM in general is specified in [3GPP TS 22.101](#)[1].

- Personalise multimedia messaging

The MMS shall be able to support a request by the user to manage the Service Preferences of his User Service Profile related to this MMS [2](e.g. customise his MM environment within the capabilities of the terminal, network and MM application. This could be unconditional or conditional e.g. depending on roaming conditions or operator restrictions).

- **MM creation**

The MMS shall be able to support the request to create a MM by the user or an application.

This requirement shall be supported at the application layer in the terminal, and will not be further elaborated.

- **MM Time Stamping**

The MMS shall be able to support the request to include a reliable time value in an MM, a notification and an acknowledgement as appropriate.

- **Multiple Media**

Multimedia messages may be composed of either a single medium (e.g. voice) or multi-media (e.g. Voice and video). The MMS shall be able to support a request for media synchronisation / sequencing.

- **Media Type Conversion**

The MMS shall be able to support a request to convert between media types (e.g. Fax to image). The MMS shall be able to support an indication from a VASP that VASP originated content of an MM should not be converted or changed by the MMS service provider before it is delivered to the recipient.

This requirement shall be supported at the application layer in the network, and will not be further elaborated.

- **Media Format Conversion**

The MMS shall be able to support a request by the user or the application to convert between MM media formats (e.g. JPEG to GIF).

This requirement shall be supported at the application layer in the terminal and/or in the network, and will not be further elaborated.

- **Message forwarding**

The MMS shall be able to support a request to forward multimedia messages or multimedia message elements without having to first download the MM to the terminal. The MMS shall provide a mechanism to prevent an MM forwarding loop (e.g. MMs are setup to be automatically forwarded from User A to B, then from B to C and from C back to A. Users A, B, and C are unaware that they have setup this undesirable situation).

- **Storage of Multi-Media Messages**

The MMS shall be able to support a request for multimedia messages or message elements to be stored until delivered to the recipient's terminal, until they expire, or until they are deleted by the user (unless configured differently). The MMS shall be able to support a request to store and manage all MMs in a network based repository rather than on the mobile terminal.

When the USIM supports MMs storage, it shall be possible for the MMS client to store and retrieve MMs or elements of MMs in the USIM.

NOTE 2: There is no requirement for the MMS to be responsible for the processing/presentation of the MM message, after it has been delivered to the terminal.

- **Prioritisation of Messages**

The MMS shall be able to support a request for MM prioritisation. The prioritisation is passed to the recipient(s) of the message as an indication of the importance the sender places on the message. MM prioritisation is not acted upon by the network.

- **Message qualification**

The MMS shall be able to support a request for MM qualification (e.g. subject) for the purpose of advanced user experience and awareness.

- **Screening of Messages**

The MMS shall be able to support a request for MM screening subject to the capabilities of the network (e.g. automatically delete "junk mail", anonymous messages without delivery to the recipient's terminal).

This requirement shall be supported at the application layer in the terminal an/or in the network, and will not be further elaborated.

- **Validity Period**

The MMS shall be able to support a request by the originator of a message to define validity periods (earliest and latest desired time) for message delivery (e.g. if a message can not be delivered within a certain time it will be automatically deleted). The MMS service provider shall be able to set the MAXIMUM allowable validity period for any message.

- **Multimedia Message Processing by a VASP**

The MMS shall be able to support a request for messages to be processed by a VASP. An example of such processing may be where an MM is sent to a VASP before delivery to the recipient so that the VASP can add multimedia element(s) to the original message.

- **Replacing MM**

The MMS shall be able to support a request by a VASP to replace a previously sent MM from the VASP with a second newer MM.

- **Cancellation of MM**

The MMS shall be able to support a request by a VASP to delete a MM that had previously been sent from the VASP but not yet delivered to the terminal.

- **Hyperlinks in MM**

It shall be possible to embed a hyperlink in a MM.

The following guidelines on editing, presenting and following of hyperlinks should be followed:

- There should be no restriction to the position in the MM where a hyperlink can be added.
- It should be possible to clearly recognise the presence of a hyperlink.

NOTE₃: It is preferable to display the title of a hyperlink rather than the complete address. (URI)

- Presence of a hyperlink in an MM should not impact the presentation of the MM (i.e. due to immediate following or storage of the link)
- The recipient of an MM should be able to follow a hyperlink.

The hyperlink should not be followed automatically by default (explicit user interaction should be required)

- **Digital Rights Management**

The MMS shall be able to support controlling the distribution of controlled content as defined in 3GPP TS 22.242 [9]. MMS Content Providers shall be able to invoke DRM to prevent unauthorized copying and forwarding of controlled content through the MMS.

5.2 Multimedia message delivery and submission

- **Submission mechanism**

The MMS shall support multimedia messages or messages elements to be submitted from the sender's UE.

- **Push Mechanism**

The MMS shall be able to support a request for multimedia messages or messages elements to be automatically delivered to the recipient's UE.

- **Pull Mechanism**

The MMS shall be able to support a request for multimedia messages or messages elements to be delivered to the recipient's UE on request by the recipient.

NoteNOTE 1: Push and pull delivery mechanisms could be identical; the criteria which decide on the type of mechanism (push / pull) are either described in the User Services Profile or out of the scope of this specification.

- **Concurrency**

The MMS shall be able to support MM delivery to and from the user's terminal not be restricted during other active services (subject to the capabilities of the terminal and the network).

- **Streaming**

The MMS shall be able to support streaming for MM delivery from the MMS system to the terminal.

Support for streaming for MM upload from the terminal to the MMS system will be considered for future releases.

- **Preferred Bearer**

It shall be possible to define a list of precedence for bearers in the configuration information sets for delivery and submission of MM (e.g. GPRS, CSD). By default, the terminal shall be able to support automatic bearer selection (i.e. without user intervention) based on the order of precedence defined in the configuration information sets on the USIM[7] or SIM [8]. The user shall be able to enable or disable automatic bearer selection. When disabled, manual bearer selection shall be available from the list of bearers.

- **Conditional delivery mechanism**

It shall be possible for the user to define in the User Profile a set of conditions that determine which delivery mechanism should be used for the delivery of a MM.

Such conditions should include:

- Roaming status of the recipient (e.g. inside or outside the home network)
- Identity of the MM originator
- Time of day (of the recipient's home network)
- Upper limit to the MM size

The notification message indicating an MMS awaiting delivery shall relay the information of the user's preferred delivery mechanism, if such information is made available by the user profile in the network, to the UE. If a mismatch is identified between the delivery mechanism configured in the UE and the delivery mechanism indicated in the notification message, it shall be possible for the user to select either the delivery mechanism configured in the UE or the delivery mechanism indicated in the notification message.

Furthermore, the terminal may also display a warning prior to the download of a message depending on some terminal parameters such as:

- Available storage capacity
- Remaining battery life
- Available bearers

For example, the user may elect to have all MMs downloaded automatically when in the home network, be able to manually select whether to download a MM or not when roaming.

It shall be possible for the network operator to program a default set of rules for the delivery mechanism in the User profile. Such rules can be overridden by the user.

NoteNOTE 2: The way the user profile is accessed and modified is not subject of standardisation.

- MM intended for applications other than the default MMS client on the UE

The MMS shall support MMs that are not intended for presentation but used to originate and deliver information to applications residing on the UE other than the default MMS client.

Note NOTE 3: The intended application can present the MM contents.

When an application sends a MM not intended for presentation, it shall be possible to uniquely identify that originating application and the target application on the recipient UE as well as the instance of the application if more than one instance can be active. The originating application may reside on a UE or within the network.

The message payload shall not be modified by the MMS.

If the MM is originated by the subscriber's home environment, it shall be possible to protect the MM from accidental deletion by the user.

5.2.1 MM delivery to and submission from a VASP

- **VASP submission mechanism**

The MMS shall support multimedia messages or messages elements to be submitted from a VASP.

- **VASP delivery mechanism**

The MMS shall be able to support multimedia messages or messages elements to be delivered to a VASP.

- **VASP mass distribution**

The MMS shall be able to support a request from a VASP for mass distribution of MMs to recipients.

- **Additional VASP data**

The MMS shall be able to convey additional data associated with an MM from a VASP to the MMS service provider and vice versa.

Note: A possible use case for this could be the option to sent additional charging information from the VASP to the MMS service provider. However the data itself is not specified for this release.

5.3 Notification and Acknowledgement

The MMS shall be able to support a request to send generic notification and acknowledgement capability to inform the user in an appropriate manner of MMS events. Examples may include:

- notify the recipient about received messages (including a description of the message, e.g. content, size, type).
- notify the recipient about actions taken by the MMS, (e.g. due to profile settings like automatic MM forwarding, deletion, etc.).
- acknowledge the sender about successful or failed MM or storage of a MM.
- acknowledge the sender about successful or failed MM submission.
- acknowledge the sender, including a VASP, about successful or failed MM delivery to the recipient terminal (subject to the recipient permitting such an acknowledgement).
- acknowledge the sender, including a VASP, about the MM being read/handled at the recipient terminal (subject to the recipient permitting such an acknowledgement).
- acknowledge the sender, including a VASP, about successful or failed MM deletion.
- acknowledge the sender, including a VASP, upon request, about the status of a submitted MM (i.e. delivered / not delivered).
- acknowledge a VASP, upon request, about the status of a mass distributed MM. A mass MM status report might be an aggregated report on the status of individual messages for all recipients on the distribution list of a specific mass distributed MM.

- acknowledge a VASP, upon request, about the status of previously submitted MMs, after a VASP had sent the MMs being queried.

5.4 Addressing

The MMS shall support different addressing formats to identify the sender and recipient. It shall be possible to submit one message to multiple recipients.

The MMS shall support the capability for both MSISDN [4] and e-mail addressing schemes [5] to be used, and the user may use either form of addressing to send a message.

The MMS shall be able to support the request to hide the sender's address from the recipient.

The MMS shall support a distribution list for mass distribution of MMs from a VASP. The MMS shall support the ability for a VASP to have the distribution list ~~been~~ modified by the MMS service provider for this release.

The MMS may support short code addresses to address Value Added Services. If supported, and routing of messages to a MMS VASP service based on a short code address is enabled, the MMS shall be able to translate the short code address to a routable address to be used in the transport layer, e.g. a URI.

5.5 Management and Control of a Network Based Repository

Network based repository is optional. If supported, MMS shall be able to support following functionalities:-

- The MMS shall allow an MMS service provider to configure MMS in such a way that one, several or all incoming MMs of a particular user be stored persistently in a network based repository
- The MMS shall allow an MMS service provider to configure MMS in such a way that one, several or all submitted MMs of a particular user be stored persistently in a network based repository
- The MMS shall be able to support a request from a sender to persistently store a sent MM in a network based repository at the time of sending
- The MMS shall be able to support a request from a user to persistently store a MM for which he received a notification in a network based repository
- The MMS shall be able to support a request from a user to upload one or more MMs into a network based repository for persistent storage
- The MMS shall be able to support a request from a user to retrieve one or more MMs that are stored in a network based repository
- The MMS shall be able to support a request from a user to delete one or more MMs that are stored in a network based repository
- The MMS shall be able to support a request from a user to forward one or more MMs that are stored in a network based repository to another destination without being delivered first to that user.
- The MMS shall be able to support a request from a user to view the list of MMs and MM related attributes, such as sender, recipient, subject and date/time, in a network based repository

5.6 Error Messages

It shall be possible for the operator to configure the content of the error message delivered to the MMS client.

*****END OF CHANGES*****