Source: **TSG SA1**

Title: **CRs to Multimedia Messaging Service (22.140)**

Document for: **Approval**

Agenda Item: **6.1.3**

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Cat	Subject	Version-Current	Version-New
SP-000208	S1-000424	22.140	002		R99	F	R99 alignment to stage 2	3.0.0	3.1.0

TSG-SA Working Group 1 meeting #9
Taastrup, Denmark 17th to 21st July 2000

Document **S1-000424**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

3GPP TSG T WG2 Meeting T2#9
Utrecht, Netherlands, 15-19 Mai 2000

Document **T2000320**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

| **22.140** | CR | **002** | | Current Version: | **3.0.0** |

GSM (AA.BB) or 3G (AA.BBB) specification number ?   *? CR number as allocated by MCC support team*

For submission to: **TSG SA#8**   for approval **X**   strategic ☐ *(for SMG*
List expected approval meeting # here   For information ☐   non-strategic ☐ *use only)*
          ?

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

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Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio ☐   Core Network **X**
(at least one should be marked with an X)

| **Source:** | T2 | | **Date:** | 16/05/00 |

| **Subject:** | R99 alignment to stage 2 |

| **Work item:** | MMS |

Category: F Correction   **X**   **Release:**   Phase 2   ☐
          A Corresponds to a correction in an earlier release   ☐   Release 96   ☐
(only one category   B Addition of feature   ☐   Release 97   ☐
Shall be marked   C Functional modification of feature   ☐   Release 98   ☐
With an X)   D Editorial modification   ☐   Release 99   **X**
          Release 00   ☐

| **Reason for change:** | Alignment with MMS Stage 2, 23.140 V3.0.1 |

| **Clauses affected:** | 1; 4; 5.1; 5.2; 5.3; 9 |

Other specs   Other 3G core specifications   ☐ ? List of CRs:
Affected: Other GSM core specifications   ☐ ? List of CRs:
          MS test specifications   ☐ ? List of CRs:
          BSS test specifications   ☐ ? List of CRs:
          O&M specifications   ☐ ? List of CRs:

| **Other comments:** | In S1-00-347 a CR to 22.140 Version 3.0.0 is submitted to introduce a streaming requirement for R'00. It is required to approve S1-00-347 to generate a R'00 stage1 based on 22.140 V.3.0.0 to maintain all requirements initially specified for R'99. |

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.

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.

- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1]   3G TS 22.101 (V3.6.0 onwards): "Service Principles"

[2]   3G TS 22.121 (V3.0.0 onwards): "The Virtual home Environment"

[3]   3G TS 21.133 (V3.0.0 onwards): "3G Security; Security Threats and Requirements"

[4]   3G TS 22.975 (V3.0.0 onwards): "Advanced Addressing"

Definitions and abbreviations

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.

service capabilities features : see Reference [2]

Abbreviations

For the purposes of this document the following abbreviations apply:

MM	Multimedia Message
MMS	Multimedia Message Service
SMS	Short Message Service

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 3G and 2G networks, 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 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.~~

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 via the use of service capability features.

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).

? User status-sensitive MM Management

The MMS shall be able to support the capability for the terminal and network to take account of the availability, changes of the state of availability of the user (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.

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

? 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.

? 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 recall

The MMS shall be able to support the request to delete a MM once submitted (e.g. recalling a message).

? 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).

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.

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

? 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.

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

Note: 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 subject to the capabilities of the network (e.g. the sender of the MM may request to prioritise the importance of the multimedia messages).

? 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" without delivery to the recipient's terminal)

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

? Validity Period

The MMS shall be able to support a request to define validity periods for message delivery (e.g. if a message can not be delivered within a certain time it will be deleted).

Multimedia message delivery and submission

? Submission mechanism

The MMS shall support multimedia messages or messages elements to be submitted to the recipient's terminal.

? 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 terminal.

? Pull Mechanism

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

~~For Release 99, streaming will be considered only in the case of the pull mechanism~~
~~Editor's Note: 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).

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 about successful or failed MM delivery to the recipient terminal.

- acknowledge the sender about successful or failed MM deletion.

- acknowledge the sender, upon request, about the status of a submitted MM (i.e. delivered / not delivered).

Addressing

The MMS shall support different addressing formats to identify the sender and recipient as specified in 22.975 [4] where applicable. It shall be possible to submit one message to multiple recipients.

Profile

The MMS shall be able to support the ability to create, update, store, transfer, interrogate, manage and retrieve a user's multimedia messaging profiles.

The multimedia messaging profiles shall allow a user to configure and personalise his multimedia messaging environment with the multimedia messaging profiles (e.g. which media types and notifications that shall be delivered to the recipient , such as voice only or text only).

The multimedia messaging profiles shall form part of the user's virtual home environment.

Security

The user shall be able to use and access MM in a secure manner. It shall be possible for the contents of MMs to be read only by the intended recipient(s). A recipient shall be informed of the reliability of the identity of the sender in

case the sender has authorised his identity to be transmitted.

The integrity of MMs during transit shall be assured to extent of the network capabilities.

The MMS shall be intrinsically resistant to attempts of malicious or fraudulent use.

The "Security Threats and Requirements" specified in 22.133 [3] shall not be compromised.

Charging

The MMS shall be able to support various charging mechanisms. The following charging characteristics may be considered:-

- message types, length, storage time in the network, etc

- delivering time, upload / download method,

- MM-sender / -recipient

- number of messages sent

- number of messages received.

- roaming conditions

- location conditions

External Interface

The support of Eexternal interfaces for controlling and delivering MM between the terminal and an external device e.g. portable computer should be supportedis left for future releases.

Interworking

The standard shall permit interworking with other or existing messaging technologies, messaging services, intelligent network services and supplementary services, either located within or outside a mobile network.