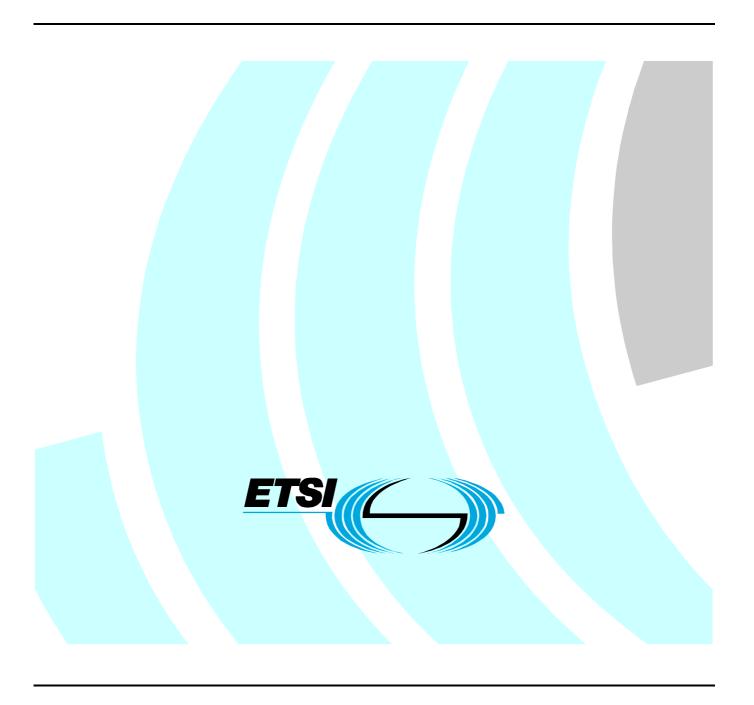Final draft **ETSI ES 202 314-2** V1.1.1 (2004-02)

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

The present document is part 2 of a multi-part deliverable covering the Fixed network Multimedia Messaging Service (F-MMS); PSTN/ISDN, as identified below:

TS 102 314-1:   Overview;

ES 202 314-2:   Service description;

TS 102 314-3:   Network architecture and interconnection;

ES 202 314-4:   Multimedia Message communication between a fixed network Multimedia Messaging Terminal Equipment and a Multimedia Messaging Service Centre;

ES 202 314-5:   Digital Subscriber Signalling System No. One (DSS1) protocol, Signalling System No. 7 (SS7) - ISDN User Part (ISUP), and interworking between DSS1 and ISUP;

TR 102 314-6:   Control strings (service code) for MMS functions and MMS supplementary services.

Introduction

The Short Message Service (SMS) has paved the way for a new approach to personal communication. Following the success in mobile telecommunication networks, SMS has also become in fixed line telecommunication networks a well-known feature. Based on ETSI standards, SMS offers the possibility of exchanging Short Messages within and between fixed line and mobile telecommunication networks.

The Multimedia Messaging Service (MMS) in the mobile networks was created to provide a sophisticated kind of messaging which combines the advantages of both SMS and email messaging. The Multimedia Messaging Service (MMS) allows users to send and receive messages exploiting the whole array of media types available today e.g. text, images, audio, video and even streaming contents, while also making it possible to support new content types as they become popular.
Similar to the Short Message Service (SMS), the Multimedia Messaging Service (MMS) is a non-real-time delivery system providing a store-and-forward mechanism. A good overview about the Multimedia Messaging Service can be found in [1].
A multimedia message (MM) 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 synchronized manner that creates a multimedia presentation. The non-real-time multimedia messaging service shall be capable of supporting current and future multimedia messaging based services, and exploit the advances being made in the world multimedia community.

The MMS is a service that shall make it possible to offer seamless MMS over different networks (PSTN, ISDN, PLMN).

In the following of the present document it is assumed that both the sending and receiving Terminal Equipment (TE) have appropriate capabilities to send, receive, store, display and delete multimedia messages.

1   Scope

The present document defines the service description of the Fixed network Multimedia Messaging Service (F-MMS) for fixed networks.

The present document does not cover F-MMS via a Next Generation Networks (NGN).

The Fixed network Multimedia Messaging Service for PSTN/ISDN follows the philosophy of adopting the existing Multimedia Messaging Service of the mobile networks as widely as possible, to:

- simplify the interworking with the existing mobile net MMS;

- offer the same user experience for both fixed and mobile net users;

- reduce the fixed network MMS implementation efforts.

The present document provides the set of requirements additional to those for MMS in mobile networks for the provision of non real-time multimedia messaging service in the fixed network, seen primarily from the subscriber's and service providers' points of view, but does not deal with the details of the human interface itself.

The F-MMS can be provided via ISDN and PSTN accesses.

Charging principles are outside the scope of the present document.

PIN (Personal Identification Number) security matters are outside the scope of the present document.

The present document includes information applicable to network providers, service providers and manufacturers and contains the core requirements for the MMS, which are sufficient to provide a complete service and also optional service features.

Thus the F-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 fixed network requirements.

Interactions with supplementary services not mentioned in clause 7 and the respective annexes are outside the scope of the present document.

Furthermore, conformance to the present document is met by conforming to the protocol standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for the present document.

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 and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1]   ETSI TS 122 140: "Universal Mobile Telecommunications System (UMTS); Service aspects; Stage 1; Multimedia Messaging Service (3GPP TS 22.140 Release 4)".

[2]   ETSI ES 201 986: "Services and Protocols for Advanced Networks (SPAN); Short Message Service (SMS) for PSTN/ISDN; Service description".

[3]   ETSI ES 201 912: "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication between a fixed network Short Message Terminal Equipment and a Short Message Service Centre".

[4]   ETSI ES 202 314-4: "Access and Terminals (AT); Fixed network Multimedia Messaging Services (F-MMS); PSTN/ISDN; Multimedia Message Communication between a fixed network Multimedia Message Terminal Equipment and a Multimedia Message Service Centre".

[5]   ETSI ETS 300 345: "Integrated Services Digital Network (ISDN); Interworking between public ISDNs and private ISDNs for the provision of telecommunication services; General aspects".

[6]   ETSI TS 123 140: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Multimedia Messaging Service (MMS); Functional description; Stage 2 (3GPP TS 23.140 Release 4)".

[7]   ETSI EN 300 650: "Integrated Services Digital Network (ISDN); Message Waiting Indication (MWI) supplementary service; Service description".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply:

destination MM-TE: terminal with MM functionalities on the receiving user's side which allows to receive an MM notification and is able to retrieve an MM from the MM-SC serving the receiving user

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

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

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

Multimedia Message (MM): multimedia message is a message composed of one or more message elements

Multimedia Messaging Service Centre (MM-SC): function unit, which is responsible for the relaying and store-and-forwarding of a multimedia message between two multimedia messaging terminal equipment

    NOTE: The MM-SC can functionally be separated from or integrated in the network.

Multimedia Messaging Service Environment (MM-SE): whole set of function units (e.g. MM-SC, gateway, database) which are necessary to perform the transmission of a multimedia message from an originating MM-TE to a destination MM-TE

Multimedia Messaging Terminal Equipment (MM-TE): terminal equipment which has appropriate capabilities to send, receive, store, display and delete multimedia messages

network: term network shall be considered to include the fixed network and any functionality which may exist outside the fixed network (i.e. mobile network, internet and multimedia technologies etc.)

originating MM-TE: terminal with MM functionalities on the sending user's side which allows to submit an MM to an MM-SC

receiving user: user who receives an MM notification on his/her destination MM-TE and can retrieve his/her MM from the MM-SC serving the receiving user

sending user: user who submits an MM from his/her originating MM-TE to an MM-SC

3.2   Abbreviations

For the purposes of the present document, the following abbreviations apply:

3PTY	Three ParTY
ACR	Anonymous Call Rejection
AMMR	Anonymous MM Rejection
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
COLP	COnnected Line identification Presentation
COLR	COnnected Line identification Restriction
CONF	CONFerence call, add-on
CUG	Closed User Group
CW	Call Waiting
DDI	Direct Dialling In
F-MMS	Fixed network Multimedia Messaging Service
GIF	Graphics Interchange Format
GSM	Global System for Mobile communications
HOLD	Call HOLD
IMMBL	Incoming MM Black List
IMMWL	Incoming MM White List
ISDN	Integrated Services Digital Network
JPEG	Joint Photographic Experts Group
LH	Line Hunting
MCID	Malicious Call IDentification
MM	Multimedia Message
MMC	Meet-Me Conference
MMD	MM Diversion
MMDL	Multimedia Message Distribution List
MMMID	Malicious MM Identification
MMS	Multimedia Messaging Service
MM-SC	Multimedia Messaging Service Centre
MM-SE	Multimedia Messaging Service Environment
MM-TE	Multimedia Messaging Terminal Equipment
MPEG	Motion Picture Expert Group
MSN	Multiple Subscriber Number
MWI	Message Waiting Indication
NBS	Network Based Solution
NGN	Next Generation Network
OCB-F	Outgoing Call Barring-Fixed
OCB-UC	Outgoing Call Barring-User Controlled
OMMBL	Outgoing MM Black List
OMMWL	Outgoing MM White List
PIN	Personal Identification Number
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
SCF	Selective Call Forwarding
SM	Short Message
SMS	Short Message Service

SUB	SUB addressing
TE	Terminal Equipment
TP	Terminal Portability
UBS	User Based Solution
UDI	Unrestricted Digital Information
UDUB	User Determined User Busy
UMTS	Universal Mobile Telecommunications System
UUS	User-to-User Signalling

4 Description

4.1 General

The Multimedia Messaging Service (MMS) enables a sending user to send a Multimedia Message (MM) to a receiving user via a Multimedia Messaging Service Centre (MM-SC).

The F-MMS described in the present document applies to PSTN, ISDN accesses. In case of ISDN the MMS shall be possible on a number basis. The Multimedia Messaging Service Centre enables the interworking of MM between different networks (see figure 1).

An MM can be initiated upon a request of the sending user or by the service provider itself, and shall be sent to the addressed receiving user by the MM-SE. An MM is always conveyed via an MM-SC. The MM-SC receives the MM from an originating MM-TE (sending user) and stores the MM for a certain amount of time. The MM-SC informs the destination MM-TE about an existing MM by sending an MM notification using the fixed network Short Message Service (SMS); see [2] and [3]. After receiving of an MM notification the MM may be retrieved from the MM-SC. This can be done by the MM-TE automatically or initiated by the receiving user.

Having received one or more MM, the receiving user can subsequently read, store or delete the messages on its terminal. The means by which the receiving user manages these features are outside the scope of the present document.

The preparation of an MM as well as the kind of data transmission between the sending or receiving users and the MM-SC are outside the scope of the present document.

The annexes describe the interactions with PSTN and ISDN supplementary services.
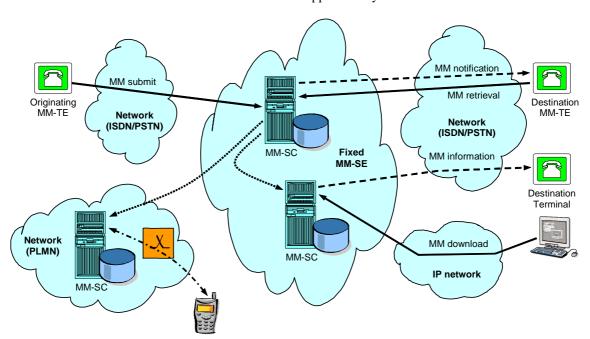

Figure 1: Multimedia messages between different networks

4.2   Legacy support

The destination fixed network terminals to which MMs are addressed, would preferably be MMS-capable terminals. In the present document, these kind of terminals are referred to as MM-TE.

However, MMs may also be addressed to non MMS-capable terminals. These kind of terminals are referred to as "legacy terminals". The group of legacy terminals can be further divided into two subgroups, i.e. legacy terminals supporting SMS and legacy terminals not supporting SMS.

4.2.1   Legacy terminals supporting SMS

Users of legacy terminals supporting SMS are notified by the MM-SE using an informative message transmitted via SMS (e.g. a plain text short message like "You have received a new multimedia message. You can access this message within <X> days using the temporary password <ABCDE12345> on the website <http://www.provider.domain/location>.").

The receiving user may use this information to retrieve the respective MM e.g. via a PC connected to the internet.

4.2.2   Legacy terminals not supporting SMS

Users of legacy terminals not supporting SMS may be notified by the MM-SE using a computer voice announcement (e.g. via the Text-To-Speech functionality of a voice mailbox system), which notifies the receiving user in analogy to the plain text notification described in clause 4.2.1. In case that the addressed legacy terminal supports MWI, according to [7], this plain text notification may also be conveyed via MWI.

The receiving user may use the received information to retrieve the respective MM e.g. via a PC connected to the internet.

4.3   Basic features

In addition to the basic features defined in [6] clause 6, the following specific requirements are applicable to F-MMS.

4.3.1   Address hiding

As described in [6], the sending user may request to hide the sender's address from the recipient on a per MM basis. In this case the sending user's number shall not be presented to the destination/receiving user; the MM-SC is responsible to handle this feature.

In addition to [6] the following applies:

- In case of ISDN access the originating MM-TE will provide its E.164 number within the basic call information when establishing a connection to the MM-SC to guarantee that any information from the MM-SC back to the user can be received on the appropriate MM-TE. In case of PSTN access the E.164 number is provided by the network.

- The restriction of the originating MM-TE number may be associated with the CLIR supplementary service (e.g. CLIR permanent) of the relevant sending user's number.

For further information, see annexes A and B.

4.4   Additional features for F-MMS

The features listed below are not exhaustive and further features are out of the scope of the present document or not yet defined for the time being.

4.4.1   MM Diversion (MMD)

MMD allows the diversion of all MMs addressed to the served user towards another destination.

MMD is an optional MM-SC function which can be activated, deactivated, modified and interrogated by the MMS user. The necessary control information can be conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet). The minimum information sent to the MM-SC is the request for MMD and the diverted-to-number/address which is applicable to all following MM.

The medium of the diverted-to-number/address may differ from the MMS, e.g. email or fax.

The result of an interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

4.4.2   MM Copy (MMC)

MMC allows to send a copy of all MMs addressed to the served user towards another destination.

MMC is an optional MM-SC function which can be activated, deactivated, modified and interrogated by the MMS user. The necessary control information can be conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet). The minimum information sent to the MM-SC is the request for MMC and the copied-to-number/address which is applicable to all following MM.

The medium of the copied-to-number/address may differ from the MMS, e.g. email or fax.

The result of an interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

4.4.3   Anonymous MM Rejection (AMMR)

AMMR allows the rejection of all anonymous MMs addressed to the served user. In this context, an MM containing the E.164 number of the originator shall not be considered as an anonymous MM. Whether an MM containing any other type of originating information than an E.164 number (e.g. email address, etc.) has to be considered as an anonymous MM or not, is a service provider issue.

AMMR is an MM-SC function which can be activated, deactivated and interrogated by the MMS user. The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet). The minimum information sent to the MM-SC is the request for AMMR. After activating the AMMR service any anonymous incoming MM will be discarded by the MM-SC.

The result of an interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

4.4.4   Malicious MM IDentification (MMMID)

The MMMID is an optional MM-SC function which can be provided by the MM-SC to the MMS user after prior arrangement with the service provider. This function allows the served user (in this case the receiving user) that a malicious MM can be identified. Usually, a received MM Notification or MM contains an identification of the sending user which enables the receiver of a malicious MM to take appropriate measures. However, an identification of the sending user may not be contained in a received malicious MM. In this case, it should also be possible to identify the sending user. If the sending user requests that the presentation of his/her identification shall be restricted to the receiving user and if the receiving user has requested the MMMID service, then a special MMS-ID is sent from the MM-SC to the receiving user instead of the sending user's number. The user can provide this special MMS-ID to an appropriate authority, so that the appropriate authority can request the sending user's number from the MM service provider.

NOTE: A feature like AMMR does not substitute MMMID, because with AMMR anonymous MMs are rejected, but not all anonymous MMs are necessarily malicious (it may happen that a receiving user, who does not want to receive malicious messages, accepts to receive anonymous MMS).

4.4.5   Outgoing MM White List/Black List (OMMWL/OMMBL)

The OMMWL/OMMBL are optional MM-SC functions which can be installed, removed, modified (i.e. adding or deleting numbers in a list, etc.) and interrogated by the MMS user. The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet).

A PIN may optionally be necessary to control the OMMWL/OMMBL feature.

After installing and activating an OMMWL/OMMBL, outgoing MM from the MMS user can only be sent to certain destinations (white list) or can not be sent to certain destinations (black list).

In case of an activated OMMWL/OMMBL the MM-SC has to check each outgoing MM from the MMS user whether the indicated destination is allowed or not. If it is allowed then the MM is processed and sent towards the receiving user. If it is not allowed to send an MM to the wanted destination, the MM will be discarded by the MM-SC and the MM-SC informs the sending user about the rejection.

The result of an interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

NOTE 1:   An outgoing MM white list is a list of numbers or addresses, defined and controlled by the user and stored within the MM-SC, to which an MM may be exclusively submitted.

NOTE 2:   An outgoing MM black list is a list of numbers or addresses, defined and controlled by the user and stored within the MM-SC, to which it is not possible to submit an MM.

4.4.6   Incoming MM White List/Black List (IMMWL/IMMBL)

The IMMWL/IMMBL are optional MM-SC functions which can be installed, removed, modified (i.e. adding or deleting numbers in a list, etc.) and interrogated by the MMS user. The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet).

A PIN may optionally be necessary to control the IMMWL/IMMBL feature.

After installing and activating an IMMWL/IMMBL, incoming MM to the MMS user can only be received from certain origins (white list) or can not be received from certain origins (black list).

In case of an activated IMMWL/IMMBL the MM-SC has to check each incoming MM to the MMS user whether an MM from the indicated sending user is allowed or not. If it is allowed then the MM is forwarded towards the receiving user. If it is not wanted to receive an MM from the origin, the MM will be discarded by the MM-SC.

The result of an interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

NOTE 1:   An incoming MM white list is a list of numbers or addresses, defined and controlled by the user and stored within the MM-SC, from which an MM may be received.

NOTE 2:   An incoming MM black list is a list of numbers or addresses, defined and controlled by the user and stored within the MM-SC, from which no MM can be received.

4.4.7   MM Distribution List (MMDL)

The MMDL is an optional MM-SC function which can be installed, removed, modified (i.e. adding or deleting numbers in a list, etc.) and interrogated by the MMS user. The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet).

After installing an MMDL, outgoing MM from the MMS user addressed to a certain MMDL list will be distributed to all destinations of this distribution list.

The MMS user may have the possibility to interrogate his/her distribution lists, the content of a certain list and/or sending an MMDL to a certain receiving user or to another MMDL.

The result of any interrogation is provided from the MM-SC to the MMS user within an SM or an MM.

5 Procedures

5.1 Provision and withdrawal

The MMS shall be provided to the MMS user after prior arrangement with the MMS service provider or, as a service provider option, be generally available. The MMS shall be withdrawn on the MMS user's request or for service provider reasons.

5.2 Normal procedures

5.2.1 Registration and erasure

5.2.1.1 Core requirements

Service registration and erasure are controlled in the MM-SC. For administration reasons the service provider shall have access to the user profiles.

5.2.1.2 Optional requirements

As a service provider option a user registration procedure may be required to obtain access rights. In this case, the MMS is available to the user only after the user registration procedure has been successfully completed.

The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet).

As a service provider option a PIN may be required from the user when requesting the registration or erasure of the MMS. In this case this PIN may also be used for other procedures (e.g. activation, deactivation, invocation).

5.2.2 Activation and deactivation

5.2.2.1 Core requirements

The MMS shall be activated on provision by the service provider.

The MMS shall be deactivated on withdrawal by the service provider.

5.2.2.2 Optional requirements

The service provider may provide the possibility for the user to activate and deactivate the receipt of MM notifications, temporarily. This procedure shall cause no other changes in the user profile.

The necessary control information is conveyed by sending an MM from the MMS user to the MM-SC (to a specific service number, e.g. "8888") or using other kinds of medium (e.g. internet).

As a service provider option a PIN may be required from the user when requesting activating or deactivating the MMS (MM notification).

NOTE: During a deactivation period any MM shall be stored at the MM-SC for a limited time. This time should follow the validity period if the validity period has been specified by the sending user. The maximum number of stored messages or the maximum overall memory space provided, respectively, is a service provider option.

5.2.3   Invocation and operation

5.2.3.1   Outgoing message (MM Submission)

The support for submission of MMs is optional for MM-TEs. The support for submission of MMs is mandatory for MM-SCs. If an MM-TE supports MM submission, the MMS user shall submit the MM from the MM-TE to the MM-SC using the transmission capabilities (e.g. in case of ISDN the number of B-Channels) of the respective access type. The MM-SC shall send back a confirmation (submit response) to the originating MM-TE and shall process the MM.

All necessary information for an outgoing MM (MM submission and MM submission response) is found in [4] and [6].

5.2.3.1.1   Core requirements

This procedure includes all necessary operations to:

1)   submit an MM from the originating MM-TE to the MM-SC;

2)   return a submit result from the MM-SC to the originating MM-TE within the same connection between the MM-TE and MM-SC.

5.2.3.1.2   Optional requirements

None.

5.2.3.2   Incoming notification (MM Notification)

The MM-SC, having successfully stored an MM from any originator, shall send an MM notification to the destination MM-TE using SMS according to [2], [3] and [4]. The MM notification is an indication for the MM-TE about an MM which is stored in the MM-SC ready for retrieval.

All necessary information for an MM Notification is found in [4] and [6].

To support terminals without MMS capabilities the following applies:

•   An MM information from the MM-SC to the destination terminal may be conveyed by a plain short text message (SMS) according to [2], [3] and [4] or as an announcement (text to speech).

•   As an alternative the destination user may also be informed about a new MM by using the MWI supplementary service or a vocal message.

5.2.3.3   Incoming message (MM retrieval)

The receiving user, having been informed by a notification that a MM is stored in the MM-SC may retrieve the MM from the MM-SC within the indicated validity period of the MM using the message reference received in the MM notification.

All necessary information for an MM retrieval is found in [4] and [6].

5.2.3.3.1   Core requirements

This procedure includes all necessary operations to:

1)   retrieve an MM from the MM-SC;

2)   return a retrieval result from the retrieving MM-TE to the MM-SC within the same connection between the MM-TE and MM-SC if requested by the MM-SC.

5.2.3.3.2   Optional requirements

None.

5.2.3.3.3   Terminal capability negotiation

An MM-TE should support Terminal capability negotiation. An MM-SC shall support Terminal Capability Negotiation.

Within a request for delivery of an MM the destination MM-TE should be able to indicate its capabilities towards the MM-SC (e.g. the maximum supported size of an MM, the maximum supported resolution of an image, list of supported character sets, etc.).

All necessary information for Terminal Capability Negotiation is found in [4] and [6].

5.2.3.4   MM delivery report

If the sending user has optionally requested an MM delivery report and the receiving user permits an MM delivery report, the MM-SC shall send an MM delivery report to the originating MM-TE after the destination MM-TE has retrieved the MM.

The MM delivery report from the MM-SC to the originating MM-TE shall be conveyed by a Short Message (SM) according to [2], [3] and [4].

The delivery report is an indication for the sending MM user that the receiving MM user has retrieved the MM.

All necessary information for an MM Delivery Report is found in [4] and [6].

NOTE: The transaction MM Delivery Report is not applicable to legacy terminals as this transaction is related to MMs which has been sent out previously by an MM-TE.

5.2.3.5   MM read report

If the sending user has optionally requested an MM read report and the receiving user permits an MM read report, the MM-SC shall send an MM read report to the originating MM-TE after having received a read reply information from the destination MM-TE.

The MM read report from the MM-SC to the originating MM-TE shall be conveyed by a Short Message (SM) according to [2], [3] and [4].

The read report is an indication for the sending MM user that the receiving MM user has read the MM.

All necessary information for an MM Read Report is found in [4] and [6].

NOTE: The transaction MM Read Report is not applicable to legacy terminals as this transaction is related to MMs which has been sent out previously by an MM-TE.

5.2.4   Interrogation

5.2.4.1   Core requirements

None.

5.2.4.2   Optional requirements

As a service provider option it can be possible to give the MMS user knowledge of some or all the data in its service profile and to define the limit of interrogation and modification procedures. In this case the service profile of a registered MM-TE may be interrogated and partially modified by the MMS user (e.g. by sending control procedures or via the internet). The requested information should be sent back within one or more MM or SM to the MMS user.

The MMS user may have the possibility to interrogate the status of the MMS. In response to interrogation the MMS user shall be given either an indication that the MMS is currently activated or not.

No PIN is required for the interrogation request.

5.3   Exceptional procedures

5.3.1   Registration and erasure

None.

5.3.2   Activation and deactivation

None.

5.3.3   Invocation and operation

5.3.3.1   Core requirements

5.3.3.1.1   Outgoing message (MM submission)

The service provider (MM-SC) shall reject an MM submission request from an MM-TE (sending user) with an appropriate failure indication for any of the following reasons:

- the originating subscriber is not authorized to use the selected service centre;

- the MM-SC is not able to authenticate the originator.

5.3.3.1.2   Incoming message (MM retrieval)

Stored MM at the user's terminal shall be deleted under user control.

NOTE 1: In case of automatic retrieval, the terminal should not start the retrieval procedure in case that the expected message size exceeds the available memory of the terminal.

NOTE 2: In case of manual retrieval, the terminal should warn the user when he/she tries to start the retrieval procedure in case that the expected message size exceeds the available memory of the terminal.

5.3.4   Interrogation

None.

6   Interworking requirements

6.1   Interworking with other MMS service providers

MMS service providers shall co-operate in the provision of this service. This implies that interworking with other MMS service providers (e.g. PSTN/ISDN, GSM, UMTS) are required.

6.2   Interworking with private networks

Public and private PSTN/ISDNs shall co-operate in the provision of this service. This implies that:

- the originating and/or the receiving user can be a user in a private PSTN/ISDN; and

- the MM-SC can be a user in a private PSTN/ISDN.

Interworking with private networks shall include the requirements given in ETS 300 345 [5]. Interworking shall take place in a co-operative manner.

7   Interactions with supplementary services

Interactions between the MMS and supplementary services need to be considered on a per access type basis. Further information is contained in the annexes to the present document.

Annex A (normative):
Interaction with ISDN supplementary services

The provider of the MMS is the organization that has authority over the MM-SC, and it is not necessarily the same as the provider of the ISDN.

The service requirements given in the main body of the present document shall apply, with the additions given in this annex.

NOTE 1: The meaning of "No impact" is: neither service shall affect the operation of the other service.

NOTE 2: The meaning of "Not applicable" is: it is not possible to have the two services in operation at the same time.

NOTE 3: The meaning of "-" is: not relevant in this case.

A.1   Advice Of Charge services (AOC-S, AOC-D, AOC-E)

No impact.

A.2   Call Waiting (CW)

No impact.

NOTE: CW should be deactivated to avoid any disturbances initiated by the CW tone during the transmission of MM Notification, MM Delivery Report, etc. in case of using SMS UBS.

A.3   Call HOLD (HOLD)

No impact.

A.4   Explicit Call Transfer (ECT)

Not applicable.

A.5   Calling Line Identification Presentation (CLIP)

No impact.

NOTE: CLIP is necessary for reception of MM Notification, MM Delivery Report, etc. via SMS UBS.

A.6 Calling Line Identification Restriction (CLIR)

The following table shows the presentation of the MMS sending user's address on the receiving user's side in relation to the CLIR supplementary service and the MMS sender visibility request.

Table A.1: Result of ISDN CLIR on receiving user presentation

Subscriber number restricted (CLIR)	MMS sender visibility request	Result at the recipient
Presentation allowed by the subscriber	Show	Show
Presentation allowed by the subscriber	Hide	Hide
Presentation allowed by the subscriber	Not present	Show
Presentation restricted by the subscriber	Show	Show
Presentation restricted by the subscriber	Hide	Hide
Presentation restricted by the subscriber	Not present	Hide
Presentation restricted by the network	Show	Show
Presentation restricted by the network	Hide	Hide
Presentation restricted by the network	Not present	Hide
Unavailable	Show	Show
Unavailable	Hide	Hide
Unavailable	Not present	Hide

A.7 COnnected Line identification Presentation (COLP)

No impact.

A.8 COnnected Line identification Restriction (COLR)

No impact.

A.9 Closed User Group (CUG)

No impact, i.e. outgoing and/or incoming call restrictions to external subscribers are relevant for MM transactions.

A.10 Completion of Calls to Busy Subscriber (CCBS)

No impact.

A.11 Completion of Calls on No Reply (CCNR)

No impact.

A.12 CONFerence call, add-on (CONF)

Not applicable.

A.13   Call Forwarding Unconditional (CFU)

No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded.

NOTE: The MM-SC may also disable CFU for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

A.14   Call Forwarding Busy (CFB)

Network Determined User Busy (NDUB):
No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded.

User Determined User Busy (UDUB):
Not applicable.

NOTE: The MM-SC may also disable CFB for MM transmission of Notification, MM Delivery Report, etc. using SMS UBS.

A.15   Call Forwarding No Reply (CFNR)

No impact.

NOTE: The MM-SC may also disable CFNR for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

A.16   Call Deflection (CD)

Not applicable.

A.17   Selective Call Forwarding (SCF)

No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded if the conditions apply.

NOTE: The MM-SC may also disable SCF for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

A.18   Malicious Call IDentification (MCID)

No impact.

A.19   Three ParTY (3PTY)

Not applicable.

A.20   User-to-User Signalling (UUS)

No impact.

A.21   Outgoing Call Barring-Fixed (OCB-F)

No impact.

> NOTE: Any call from this subscriber line to the MM-SC (MM submission, MM retrieval, etc.) may be blocked by the OCB-F service.

A.22   Outgoing Call Barring-User Controlled (OCB-UC)

No impact.

> NOTE: Any call from this subscriber line to the MM-SC (MM submission, MM retrieval, etc.) may be blocked by the OCB-UC service.

A.23   Message Waiting Indication (MWI)

No impact.

A.24   Meet-Me Conference (MMC)

Not applicable.

A.25   Direct Dialling In (DDI)

No impact.

A.26   Multiple Subscriber Number (MSN)

No impact.

A.27   SUBaddressing (SUB)

No impact.

A.28   Terminal Portability (TP)

Not applicable when using an UDI (Unrestricted Digital Information) connection for e.g. MM submission or MM retrieval.

No impact when using e.g. MM notification via SMS UBS.

A.29   Line Hunting (LH)

Not applicable in case of calls bearing MM notifications using SMS UBS.

A.30   Anonymous Call Rejection (ACR)

No impact in case of calls bearing MM notifications using SMS UBS.

NOTE: It is assumed that an MM-SC does not restrict the presentation of its calling party number.

Annex B (normative):
Interaction with PSTN supplementary services

The provider of the MMS is the organization that has authority over the MM-SC, and it is not necessarily the same as the provider of the PSTN.

The service requirements given in the main body of the present document shall apply, with the additions given in this annex.

NOTE 1: The meaning of "No impact" is: neither service shall affect the operation of the other service.

NOTE 2: The meaning of "Not applicable" is: it is not possible to have the two services in operation at the same time.

NOTE 3: The meaning of "-" is: not relevant in this case.

B.1   Calling Line Identification Presentation (CLIP)

No impact.

NOTE: CLIP is necessary for MM Notification via SMS UBS.

B.2   Calling Line Identification Restriction (CLIR)

The following table shows the presentation of the MMS sending user's address on the receiving user's side in relation to the CLIR supplementary service and the MMS sender visibility request.

Table B.1: Result of PSTN CLIR on receiving user presentation

Subscriber number restricted (CLIR)	MMS sender visibility request	Result at the recipient
Presentation allowed by the subscriber	Show	Show
Presentation allowed by the subscriber	Hide	Hide
Presentation allowed by the subscriber	Not present	Show
Presentation restricted by the subscriber	Show	Show
Presentation restricted by the subscriber	Hide	Hide
Presentation restricted by the subscriber	Not present	Hide
Presentation restricted by the network	Show	Show
Presentation restricted by the network	Hide	Hide
Presentation restricted by the network	Not present	Hide
Unavailable	Show	Show
Unavailable	Hide	Hide
Unavailable	Not present	Hide

Annex C (informative):
Interaction with PSTN supplementary services

The provider of the MMS is the organization that has authority over the MM-SC, and it is not necessarily the same as the provider of the PSTN.

The service requirements given in the main body of the present document shall apply, with the additions given in this annex.

NOTE 1: The meaning of "No impact" is: neither service shall affect the operation of the other service.

NOTE 2: The meaning of "Not applicable" is: it is not possible to have the two services in operation at the same time.

NOTE 3: The meaning of "-" is: not relevant in this case.

C.1   Advice Of Charge services (AOC-S, AOC-D, AOC-E)

No impact.

NOTE: If available, the AOC-D services should be deactivated to avoid interference during all MM transactions.

C.2   Call Waiting (CW)

No impact.

NOTE: CW should be deactivated permanently or call by call to avoid any disturbances initiated by the CW tone during all MM transactions, if the network access allows activation and deactivation.

C.5   Calling Name Identification Presentation (CNIP)

No impact.

C.5   Calling Name Identification Restriction (CNIR)

No impact.

C.3   Call HOLD (HOLD)

No impact.

C.4   Completion of Calls to Busy Subscriber (CCBS)

No impact.

C.5   Completion of Calls on No Reply (CCNR)

No impact.

C.6   Call Forwarding Unconditional (CFU)

No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded.

> NOTE: The MM-SC may also disable CFU for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

C.7   Call Forwarding Busy (CFB)

No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded.

> NOTE: The MM-SC may also disable CFB for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

C.8   Call Forwarding No Reply (CFNR)

Not applicable.

> NOTE 1:   Under exceptional circumstances (e.g. damaged or unplugged MM-TE and additionally certain timing settings) it could happen that an MM Notification, MM Delivery Report, etc. is forwarded like a normal call.

> NOTE 2:   The MM-SC may also disable CFNR for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

C.9   Selective Call Forwarding (SCF)

No impact, i.e. calls bearing MM Notification, MM Delivery Report, etc. (via SMS UBS) or voice will be forwarded if the conditions apply.

> NOTE: The MM-SC may also disable SCF for transmission of MM Notification, MM Delivery Report, etc. using SMS UBS.

C.10   Malicious Call IDentification (MCID)

No impact.

C.11   Three ParTY (3PTY)

Not applicable.

C.12   Outgoing Call Barring-Fixed (OCB-F)

No impact.

> NOTE: Any call from this subscriber line to the MM-SC (MM submission, MM retrieval, etc.) may be blocked by the OCB-F service.

C.13   Outgoing Call Barring-User Controlled (OCB-UC)

No impact.

NOTE: Any call from this subscriber line to the MM-SC (MM submission, MM retrieval, etc.) may be blocked by the OCB-UC service.

C.14   Message Waiting Indication (MWI)

No impact.

C.15   Multiple Subscriber Number (MSN)

No impact.

C.16   SUBaddressing (SUB)

No impact.

C.17   Anonymous Call Rejection (ACR)

No impact in case of calls bearing MM notifications using SMS UBS.

NOTE: It is assumed that an MM-SC does not restrict the presentation of its calling party number.

Annex D (informative):
Bibliography

ETSI TS 102 314-1: "Access and Terminals (AT); Fixed network Multimedia Messaging Services (F-MMS); PSTN/ISDN; Overview".

ETSI TS 103 912: "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication between a fixed network Short Message Terminal Equipment and a Short Message Service Centre (Corrections to ES 201 912 V1.1.1)".

ETSI ES 202 060-3: "Short Message Service (SMS) for fixed networks; Network Based Solution (NBS); Part 3: Integrated Services Digital Network (ISDN) access protocol".

History

Document history			
V1.1.1	February 2004	Membership Approval Procedure	MV 20040423: 2004-02-24 to 2004-04-23