Telstra Mobile MM7 MMS Access Manager

Interface Specification

Table of Contents

References

[1]   3GPP TS 23.140 V6.8.0 MMS Functional description stage 2

[2]   IETF; RFC 2616: HTTP/1.1 (URL: http://www.ietf.org/rfc/rfc2616.txt)

1. Introduction

1.1 Purpose

The purpose of this document is to provide specific details of how to interface to Telstra for submission and reception of MMS Messages.

MMS Access Manager will allow users to send and receive MMS messages in bulk using the MM7 protocol.

Telstra will provide a 'pipe' type access allowing submission and reception of messages to any Telstra customer, or interconnected network (where Telstra and the other carrier have agreed and implemented the necessary technology).

From a client perspective you will need to provide network infrastructure to connect to Telstra as well as an application to support the MM7 protocol.
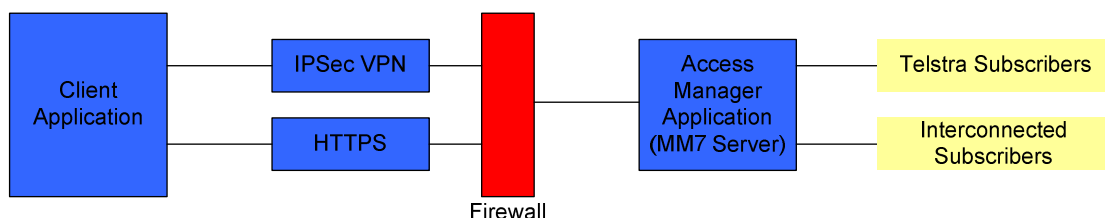
1.2 What is MMS

MMS is specified by 3GPP, and allows for submission and reception of multiple content types (e.g. video, audio, images, text) to and from a mobile device. MMS is a store and forward medium that takes advantage of a carrier's MMSC to store a MMS message for retrieval via a handset, as well as accept messages from handsets for on forwarding to another device.

Telstra MMS is a store and forward messaging service that allows mobile subscribers to exchange messages with integrated text, audio & images. MMS allows for a variety of message content types, including moving or still images, sound and text to be originated or terminated using a compatible MMS mobile handset.

MMS message are uploaded (via HTTPs-Post) or downloaded (via HTTPs-GET) from/to the handset using HTTP/WSP or a

WAP connection. The handset is required to be correctly configured for GPRS or 1xRTT for MMS to correctly function

Message delivery is accomplished by sending an SMS message to the device (known as a WAP-Push) that will inform the device that it needs to collect a message from a specified URL (which is the MMSC). The handset will then initiate a data session to collect the message and display it on the handset.

Part of the role of the MMSC is to convert the message being delivered to the handset upon retrieval so that only valid and supported content types are delivered to the handset.

1.3 Supported file formats

In order to reliably deliver a message to the majority of handsets it is recommended that you use the following file formats. In each case the correct MIME type for the format is given in parentheses. The correct MIME type must be used in order to ensure the message is accepted by Telstra.

Images

- JPEG, JPG (image/jpeg): good support
- GIF: GIF87a, GI89a, animated GIF89a (image/gif): good support
- PNG (image/png): good support
- WBMP (Wireless Bitmap) (image/wbmp): this is B&W image format from the old days of WAP: good support.
- BMP (Windows Bitmap) (image/bmp): dependent on handset support

Audio

- MP3 (audio/mpeg): partial support; some handsets may limit the use of the file due to DRM concerns by the manufacturer
- MID, MIDI (audio/mid or audio/midi): good support
- WAV (audio/wav): good support
- AMR (audio/amr): partial support, GSM handsets only; CDMA handsets will require the B-party MMSC to transcode to EVC format or store on Web site for PC-based retrieval

- IMY, EMY (audio/imelody) : partial support
- EVC: not currently supported
- AAC: not currently supported
- Video
- MPEG, MPG, MP4 (video/mpeg4): support may vary by handset
- 3GP (video/3gpp): good support

Text

- TXT, TEXT: UTF-8, US-ASCII (not UTF-16) (text/plain): good support.
- X-IMELODY (text/x-imelody) - partial to good
- X-EMELODY (text/e-melody) - partial to good

Note that Telstra's infrastructure will endeavour to transcode files to a format supported by the end device.

Addressing capabilities

In order to use the product, the source address must be a legitimate MSISDN (e.g. 61499999999) or a valid alpha sender (see below) , the destination address may be an MSISDN or email address.

Alpha senders

An alpha sender must:

- only contain a combination of upper and lower case letters and digits
- start with a letter
- be between 1 and 10 characters in length

Data requirements summary

The following table lists key data required for MM7 connectivity and whose responsibility it is to provide them.

Data	Provided by	Notes
VASP ID	Telstra	Login credentials
VAS ID	Telstra	Login credentials
reply MSISDN	Telstra	Used as a source address for messages as well as a reply path
URL for replies	Customer	Used for reply path, note that the URL must be listening on TCP port 443 for customers using HTTPS and port 80 for customers using HTTP over a secured network layer.
URL for Delivery Reports	Customer	Used for reply path, note that the URL must be listening on TCP port 443 for customers using HTTPS and port 80 for customers using HTTP over a secured network layer.
Source IP address(es) for MM7 submits	Customer	Used to open firewall connectivity as required
Target URL for MM7 submissions to Telstra	Telstra	HTTPS customers: https://mm7.mms.telstra.com/ HTTP customers (over a secured network layer): http://mm7.mms.telstra.com/ The standard ports are used (443 for HTTPS, 80 for HTTP).
If connecting via IPSEC:		
Shared key	Telstra	Shared key to establish VPN connection
Client remote Peer	Customer	
Client access lists	Customer	
Telstra Access Lists	Telstra	Dependent on existing VPN connection settings
Telstra remote Peer	Telstra	Dependent on existing VPN connection settings
If connecting via Frame Relay (existing SMS AM customers with Frame Relay only)		
Client remote Peer	Customer	Needs to be the same as for existing SMS AM connection
Client access lists	Customer	
Telstra Access Lists	Telstra	
Telstra remote Peer	Telstra	

2. Network connectivity

Several options are available for connection to Telstra. Note that Telstra has a requirement that any information transferred across a public network is encrypted, and as such the reception of a message to or from Telstra must traverse either a private network, be routed inside a VPN for delivery to/from Telstra or use SSL to encrypt at the transport layer (HTTPS).

The options are discussed below:

2.1 HTTPS connectivity

Connectivity to the service can be achieved via HTTPS. HTTPS can be used for both message submissions to the Telstra MMS network as well as Mobile Originated and Delivery Report message routing from the Telstra MMS network back to the external application.

Telstra will have its own server side SSL certificate on the production servers.

Telstra expects the external application to also have a server side SSL certificate to ensure that SSL encryption takes place. Telstra will ignore the credentials in the SSL certificate as these are not used for authentication purposed (this allows self-signed certificates to be used).

In order to connect via HTTPS the following URLs should be used:

Production:
https://mm7.mms.telstra.com/

2.2 Internet VAN

For a description of what a Virtual Private Network (VPN) is, terminology and typical deployment options please refer to:

http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/vpn.htm

You can apply for Extranet VPN for new MMS Access Manager Connections or expand ACL for existing SMS Access Manager Connections

Certificate details

Telstra uses the following protocols for VPN encryption and authentication:

Domain Name	Notes
Authentication	ESP/MD5/HMAC-128
Encryption	3DES-168
IKE Proposal	IKE-3DES-MD5

All certificate keys are 168bits

Consider the following steps and system requirements. You will need to ensure that:

- your intranet has a connection to the Internet;
- you have a static, Internet routable IP address for each machine within the LAN wishing to access the MMS Network or you apply network address translation for any private addressing;
- you have altered your firewall (if any) to allow access to all the ports used by the VAN tunnel;
- you have an IPSEC capable router and it is configured accordingly;
- you have not installed any application-level proxy servers between your LAN and the Internet. Ensure that you record the following:
  - (a) the static, Internet routable IP address for each machine within the LAN which will be accessing the Internet VPN;
  - (b) the IPSEC router's static, Internet routable IP address;
  - (c) the LAN's static Net mask.

2.3 Frame relay

Frame Relay connections are only available for existing SMS Access Manager Customers with an active Frame Relay service.

Consider the following steps and system requirements. You will need to ensure that:

- Your frame relay service is active;

- You have a static, Internet routable IP address for each machine within the LAN wishing to access the MMS Network or you apply Noting for any private addressing.

2.4 Firewall configuration

To use the MMS Access Manager Service you must ensure your firewalls allow access to mm7.mms.telstra.com on the port being used for submission (443 for HTTPS and 80 for HTTP).

Additionally you need to ensure that inbound access from the address in the list below is enabled to your nominated receiving URL to support reception of messages and reports. For example if you are listening for messages from Telstra on https://yourcompany.com/blah.cgi, you must ensure that port 443 is open for the reply path messages.

The list of IP's include:

203.52.36.178
203.52.67.178
203.47.116.145
203.47.116.81

3. Connection to production server

The details of production network are:

For a HTTPS connection:

Machine	Production MMSC
Server Internet Address	mm7.mms.telstra.com
URI	/
Protocol	HTTPS over TCP
Port	443

For a HTTP connection (over a secured network layer)

Machine	Production MMSC
Server Internet Address	mm7.mms.telstra.com
URI	/
Protocol	HTTP over TCP
Port	80

Quick test call of both sending and receiving

It is possible for a VAS to send a message back to itself. This is done by simply sending with both the sender and recipient addresses being set to the number associated with the VAS.

A message sent in this way will enter the MMS Access Manager network and be routed back allowing the VAS to test both sending and receiving of messages.

4. MMS protocols

There are several specific protocols supported by the 3GPP specifications for message submission and reception. For 3rd party VASP access the protocol supported by Telstra is MM7.

The MM7 protocol is an open standard protocol designed by 3GPP to provide a flexible data-communications interface for the transfer of MMS messages. It has been specifically designed to enable external applications to communicate with an MMS Centre. Telstra's MMSC supports MM7 version 5.3.0, although higher versions should function

correctly; however, the functionality is not guaranteed. For a more comprehensive discussion of the MM7 protocol please refer to the specification at: http://www.3gpp.org/

Document	MM7 Protocol Specification 3GPP TS 23.140.
Document Version	6.8.0

The following table details the MM7 operations supported by MMS Access Manager. Please note there may be instances where the usage of unsupported features will be permitted. Please consult your Telstra Mobile representative for further information. Features not listed here are not supported.

4.1 Feature set

Item	Functional Unit/ Description	Supported	
		YES	NO
Authentication	Basic Application Oriented Authentication.	✓	
	Basic Application Terminated Authentication.		✘
Message Size	The MM7 message size in Telstra is restricted to 400kB [Note 1] [Note 2].	✓	
Charging Information	Tariff classes can be used.		✘
Multiple recipients	The Telstra network only supports up to 20 recipients per message.	✓	
Barring	External Applications can be barred.	✓	
Partial Success Response	Multiple recipients are currently not supported by MMS Access Manager. Therefore the "Partial Success" response is not supported.	✓	
Delivery Reports	Delivery reports can be requested for any message submitted, but cannot be guaranteed for messages delivered outside the Telstra network. Delivery reports will not be delivered if an alpha sender has been used.	✓	
Read Receipts	Due to the lack of handset support for read receipts this feature is currently not available.		✘
Future Delivery	Future delivery is not supported on the Telstra network.		✘
Message Expiry Timer	Enables messages to be expired at a set time. Telstra may restrict what values are allowed and may overwrite them if they are determined to be outside of the allowed range.	✓	
DRM Locking	DRM settings for messages submitted to Telstra will be preserved and delivered to the handset. No guarantee can be placed on the handsets interpretation of DRM.	✓	
Reply Charging	Not supported.		✘

Note 1: Content delivered to Telstra MMS capable handsets may be content adapted to a smaller size.
Note 2: Message size is defined in Appendix C.

4.2 PDU types

PDU Type	Description
MM7_submit.REQ	An MM7 message is sent by an originating application to the MMSC.
MM7_submit.RES	The response to the MM7_submit.REQ sent by the MMSC to the originating application. The response indicates the success status of the MM7_submit.REQ request.
MM7_deliver.REQ	An MM7 message is sent by the MMSC to a terminating application.
MM7_submit.RES	The response to the MM7_deliver.REQ sent by the terminating application to the MMSC. The response indicates the success status of the MM7_deliver.REQ request.
MM7_delivery_report.REQ	A delivery report sent by the MMSC to a terminating application.
MM7_delivery_report.RES	The response to the MM7_delivery_report.REQ sent by the terminating application to the MMSC. The response indicates the success status of the MM7_delivery_report.REQ request.
MM7_RS_error.RES	An error response to an application orientated message sent by the MMSC to an originating application.
MM7_VASP_error.RES	An error response to an application terminated message sent by a terminating application to the MMSC.

4.3 Transactions – mandatory and optional parameters

The transaction types supported by Telstra are outlined below, with specific regard to how Telstra will interpret key fields of the submission.

For detailed examples of transactions refer to the 3GPP specification 23.140 freely available from the 3GPP website (www.3gpp.org).

MM7_submit.REQ

This command is used to submit messages from the client software to a handset (via MMS Access Manager)

Item	Type	Description
URL	Mandatory	The URL that you are required to post the message to: For HTTPS: https://mm7.mms.telstra.com/ For HTTP: http://mm7.mms.telstra.com/
VASP ID	Mandatory	<unique – provided by Telstra upon MMS Access Manager activation> [A typical value would be 'CMPABR'] where CMPABR is an abbreviation for the company.
VAS ID	Mandatory	<unique – provided by Telstra upon MMS Access Manager activation > [Used as a password]
Maximum destinations/MM7 Submit		20 Recipients per MM7 submit are supported.
Source Address	Mandatory	The MSISDN or alpha source address. For MSISDNs it is also the number that a handset can respond to and that any delivery reports will go back to. For MSISDN source addresses the address is enclosed in <Number> tags in the international format (e.g. 61499999999). For alpha source addresses the address is enclosed in <RFC2822Address> tags.
Destination Addresses	Mandatory	These can be MSISDNs or Email addresses. For MSISDNs <Number> tags must be used for Email addresses <RFC2822Address> tags must be used. [Typical values would be '61499999999', +44123456789, user@domain.com]
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_submit.REQ with the MM7_submit.RES [A typical value may be '232341234']
Message Type	Mandatory	MM7_submit.REQ
MM7 version	Mandatory	The interface version that is supported [A typical value may be '6.8.0']
Content Type	Mandatory	Indicates the type of content being submitted [A typical value may be 'multipart/related']
Linked ID	Not Supported	Not used in the Telstra network

Item	Type	Description
Earliest DeliveryTime	Not Supported	This will be ignored by Telstra due to the creation of 'false' peaks which can impact Telstra's WAP network
Reply charging	Not Supported	
Reply charging size	Not Supported	
Charged Party	Not Supported	All MMS Access Manager charging is associated with the VASP's billing MSISDN
Charged Party ID	Not Supported	
Message Subject	Optional	
Message content	Optional	
Service Code	Optional	The Service code will be ignored for the purposes of charging when submitted via MMS Access Manager
Message Class	Optional	Identifies the type of message (personal, advert etc) – this will be passed through to the handset unaltered by MMS Access Manager [A Typical Value would be 'Informational']
Submission Date/Time	Optional	This is simply a timestamp of submission
Time of expiry	Optional	This is a time after which the message is not going to be delivered – this attribute will be preserved by Telstra
Delivery Report	Optional	Indicates a request for a Delivery report. This can only be supported for handsets attached to the Telstra network (not including i-Mode) when sending from MSISDN source addresses. [Value will be true or false]
Read reply	Not Supported	Indicates a request for a Read report. This option is not supported. [Value must be set to false]
Priority	Optional	This will be preserved by MMS Access Manager and forwarded to the end system

Addressing details

Within an MM7_submit.REQ recipients must be specified in the following manner:

1. All recipients are placed within the <Recipients> tag

2. Currently only one recipient per message is supported. Within the <Recipients> tag there may only be one pair of <To> <Cc> or <Bcc> tags.

3. Within the pair of <To> <Cc> or <Bcc> tags the recipient must be specified as:

    a. A international format number (without the leading +), within <Number> tags; or

    b. An email address, within <RFC2822Address> tags.

The Sender address must be specified in the following manner:

1. It must be specified within the <SenderAddress> tags within the <SenderIdentification> section

2. A number is to be specified in international format without the leading +

3. An alpha sender is to be specified as is within the <SenderAddress> tags. E.g. <SenderAddress>Telstra</SenderAddress>

Section 0 provides examples of addressing formats.

MM7_submit.RES

This transaction is sent from the MMS Access Manager server back to the client in response to the MM7_submit.REQ

Item	Type	Description
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_submit.REQ with the MM7_submit.RES
Message Type	Mandatory	Indicates the message is a MM7 submit.RES
MM7 version	Mandatory	The interface version that is supported
Message ID	Mandatory	If the message was successfully submitted, this will be a unique field generated by Telstra's MMS infrastructure
Request Status	Mandatory	Status of submission (NOT delivery)
Request Status Text	Optional	Textual description of the request status

MM7_deliver.REQ

This message is sent from the MMS Access Manager product back to the client software (i.e. MO to AT messages)

Item	Type	Description
Source Address	Mandatory	614xxx number that appears as the source address as well as reply address.
Recipients	Optional	The recipients of the message (the application's MSISDN).
VASPID	Optional	The ID of the VASP the message is being sent to
VASID	Optional	The ID of the VAS the message is being sent to
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_deliver.REQ with the MM7_ deliver.RES
Message Type	Mandatory	MM7_ deliver.REQ
MM7 version	Mandatory	The interface version that is supported
Content Type	Mandatory	Indicates the type of content being submitted
Destination Addresses	Mandatory	This is the intended recipient
Previously-sent-by	Not Supported	Not used in the Telstra network
Previously-sent-by-date-and-time	Not Supported	Not used in the Telstra network

Linked ID	Not Supported	Not used in the Telstra network
Date and Time	Optional	Time stamp of submission
Message Subject	Optional	
Message content	Optional	
AuxApplicInfo	Optional	Identifies the subscriber's handset user agent.
Priority	Optional	
MMS Relay/Server ID	Optional	Identifies the MMSC that generated the message

MM7_deliver.RES

This transaction is sent by the customer server in response to a MM7_deliver.REQ

Item	Type	Description
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_deliver.REQ with the MM7_ deliver.RES
Message Type	Mandatory	MM7_ deliver.RES
MM7 version	Mandatory	The interface version that is supported
Request Status	Mandatory	Status of the request
Request Status Text	Optional	Textual description of the request status
Service Code	Optional	Not used by Telstra

MM7_cancel.REQ

Not supported by Telstra.

MM7_cancel.RES

Not supported by Telstra.

MM7_replace.REQ

Not supported by Telstra.

MM7_replace.RES

Not supported by Telstra.

MM7_delivery_report.REQ

Used to send back a Delivery report

Item	Type	Description
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_delivery_report.REQ with the MM7_ delivery_report.RES
Message Type	Mandatory	MM7_ delivery_report.REQ
MM7 version	Mandatory	The interface version that is supported
Message ID	Mandatory	
Recipient(s)	Mandatory	The recipient(s) of the original message, i.e. the handset address(es).
Source Address	Mandatory	The sender of the original message, i.e. the address of the VAS.
MM Status	Mandatory	Status of the request
MM Status Extension	Optional	More information than just MM Status.
MM Status Text	Optional	Textual description of the request status

MM7_delivery_report.RES

Item	Type	Description
Transaction ID	Mandatory	Unique identifier used to correlate the MM7_delivery_report.REQ with the MM7_ delivery_report.RES
Message Type	Mandatory	MM7_ delivery_report.RES
MM7 version	Mandatory	The interface version that is supported
Request Status	Mandatory	Status of the request
Request Status Text	Optional	Textual description of the request status

MM7_read_reply.REQ

Not currently supported by Telstra.

MM7_read_reply.RES

Not currently supported by Telstra.

4.4 Sending messages to Telstra

It must be noted that different handsets support different levels of functionality.

As such the terminating MMSC may perform content adaptation on the end device so that it can be delivered. Additionally if the end subscriber is not MMS capable or has an incorrectly configured device, they may receive a legacy MMS.

If the terminating MMSC belongs to another operator (the recipient is a non-Telstra customer) then Telstra does not have any control over content adaptation or legacy support for that MMSC.

4.5 Receiving messages from Telstra

In order to receive messages from the Telstra network the following is required to be provided

1. URL – The URL must be accessible via the VPN tunnel established with Telstra or via a HTTPS session.

2. MSISDN – A mobile number must be purchased to be used to route messages back to the MM7 application, as without this, messages from outside Telstra cannot be delivered. The Telstra network will be conditioned to route any MMS messages sent to this number to be routed to your VASP account.

If messages cannot be delivered immediately they will enter a retry algorithm for a maximum of 2 weeks at which point they will be deleted – as such it is recommended that your web service is permanently available. Messages will only be retried in the case that a connectivity error or a non-permanent HTTP or MM7 error is returned by the VASP (see section 0 for details of protocol error codes). In the case of a permanent error no retries will occur.

All MM7 traffic from Telstra will be delivered via HTTPS or via HTTP if the customer has nominated to use a

secured network layer (such as a VPN, see section 0 for details). All HTTPS destinations must be listening on port 443 and all HTTP destinations must be listening on port 80. These are the default ports for HTTPS and HTTP respectively.

Example configuration:

Item	Description
URL for responses	https://customer.com/receiver.cgi
URL for Delivery Reports	https://customer.com/reports.cgi

Read receipts

Not currently supported by Telstra.

Delivery reports

Delivery Reports can be requested for any message submitted using MMS Access Manager.

Note however that there is no guarantee for receiving Delivery Reports from any off-net destination and Delivery Reports will never be returned to an alpha sender. Requests for delivery reports will incur a charge even in these cases.

5. Protocol errors

For Generic Error Handling of MM7 messages refer to [1] section 8.7.6.

For HTTP level errors refer to [2] section 6.1.1

StatusCode	StatusText	Meaning
1000	Success	indicates the request completed successfully
1100	Partial success	Indicates only some parts of the request were completed successfully (e.g. some for a multi-recipient message some destinations could not be resolved). **See section 5.2 for details of how to determine unsuccessful recipients.**
2000	Client error	MM7 Client made an invalid request.
2001	Operation restricted	Your Account does not have permission to use this feature.
2002	Address Error	The formatting of one or more of the addresses was not valid (should be MSISDN or email address).
2003	Address Not Found	The address supplied in the request could not be located by Access Manager. This code is returned when an operation is requested on a previously submitted message and Access Manager cannot find the message for the address specified.
2004	Multimedia content refused	The server could not parse the MIME content that was attached to the SOAP message and indicated by the Content element or the content size or media type was unacceptable. Additionally it may be a content type not allowed by Access Manager
2005	Message ID Not found	Returned when an operation is requested on a previously submitted message which cannot be found.
2006	LinkedID not found	This code is returned when a LinkedID was supplied and Access Manager could not find the related message.
2007	Message format corrupt	An element value format is inappropriate or incorrect.
2008	Application ID not found	Your MM7 credentials are not valid.
2009	Reply Application ID not found	This code is returned when a Reply Application ID was supplied and Access Manager could not find the originating application.

StatusCode	StatusText	Meaning
3000	Server Error	Access Manager failed to fulfil an apparently valid request.
3001	Not Possible	The request could not be carried out because it is not possible. This code is normally used as a result of a cancel or status query on a message that is no longer available for cancel or status query. Access Manager has recognized the message in question, but it cannot fulfil the request because the message is already complete or status is no longer available.
3002	Message rejected	Server could not complete the service requested.
3003	Multiple addresses not supported	Access Manager does not support this operation on multiple recipients. The operation MAY be resubmitted as multiple single recipient operations.
3004	Application Addressing not supported	Recipient MMS User Agent does not support the transport of application data.
4000	General service error	The requested service cannot be fulfilled.
4001	Improper identification	Identification header of the request does not uniquely identify the client (either the VASP or MMS Relay/Server).
4002	Unsupported version	The version indicated by the MM7 Version element is not supported.
4003	Unsupported operation	The server does not support the request indicated by the MessageType element in the header of the message.
4004	Validation error	The SOAP and XML structures could not be parsed, mandatory fields are missing, or the message-format is not compatible to the format specified. Details field may specify the parsing error that caused this status.
4005	Service error	The operation caused a failure within Access Manager and should not be resent.
4006	Service unavailable	This indication may be sent by the server when service is temporarily unavailable, e.g. when server is busy
4007	Service denied	The client does not have permission or funds to perform the requested operation.
4008	Application denied	The application does not have permission or funds to perform the requested operation.

5.1 Permanent versus non-permanent errors

Some protocol errors are permanent errors – indicating the submission should not be retried – and some are non-permanent errors – indicating that a retry algorithm can be used. In the case of MM7 the following are considered non-permanent errors:

Connectivity problems

- A HTTP status code of 408, 500 or 503

- An MM7 status code of 4000 or 4006

- All other errors are permanent.

For messages being sent to Telstra, a permanent error indicates that the submission should not be retried without modification. A non-permanent error means that the message can be retried at a later time. N.B. message retries must comply with the terms of service regarding the maximum allowable rate that submissions can be made to the Access Manager product.

For messages being sent from Telstra any permanent error returned by a VASP will cause the message to not be retried. Messages will be retried for a limited period of time in the case of temporary errors.

5.2 Partial Success Details

If a message with multiple recipients is successfully submitted to some recipients but not others then a partial success response (Status Code 1100) will be returned. Telstra uses the <Details> tag within the <Status> tag of the MM7_submit.RES to indicate for which recipients the submission failed.

The partial success response can not provide details of the specific reason each address failed. This information can only be returned in the case of a single recipient message.

The <Details> tag is formatted in the follow manner:

```
<Details>human_readable_message: address1[,address2[,address3…]]</Details>
```

More formally the <Details> tag should be parsed in the following manner:

1. Ignore all text prior to the first colon.

2. Ignore the space following the first colon

3. The rest of the field are the failed addresses represented as a comma separated list

Below is an example of a partial success response. In this example there are three recipients (61499999999, 6149999, and foo@bar.com) that failed on submission.

```xml
<?xml version='1.0'?>
<env:Envelope
xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
    <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.
140/schema/REL-6-MM7-1-4"
env:mustUnderstand="1">00028245041182468291</mm7:TransactionID
>
    </env:Header>
    <env:Body>
        <SubmitRsp
xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/
schema/REL-6-MM7-1-4">
            <MM7Version>6.8.0</MM7Version>
            <Status>
                <StatusCode>1100</StatusCode>
                <StatusText>Partial success</StatusText>
                <Details>Transactional, message was not sent
to the following recipients:
61499999999,6149999,foo@bar.com</Details>
            </Status>
            <MessageID>T*4*N\*422</MessageID>
        </SubmitRsp>
    </env:Body>
</env:Envelope>
```

6. Charging

On activation, an MSISDN is applied to an account – this will incur all charges applied to the service.

Charges will be applied for all messages submitted to Telstra, and an additional fee will be charged for all delivery report requests regardless of whether or not the reports are delivered.

Charges for messages will depend on the size of the submitted message. The definition of message size is given in Appendix C.

7. MM7 Overview

An MM7 message has the following format:
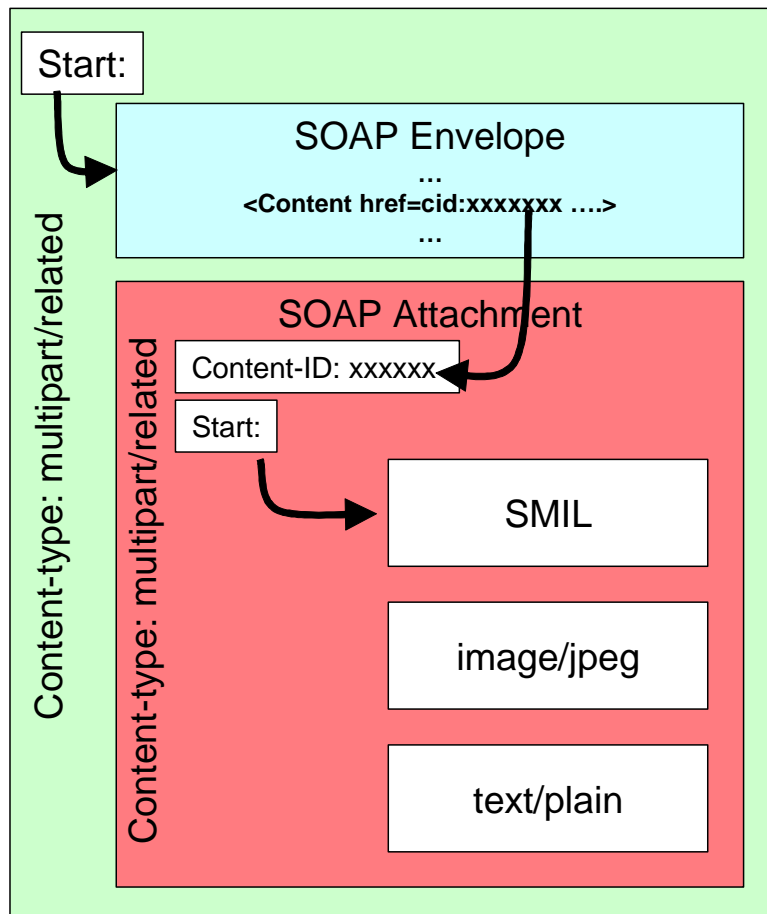
The parts of the message are as follows:

Green: This is an HTTP POST of type multipart/related. It contains the MM7 SOAP components. Its headers indicate the boundary line to separate the SOAP components and the Content-ID of the SOAP Envelope which indicates where to start decoding the MM7 message. It also contains the correct, total content length of the rest of the message.

Blue: This is the SOAP Envelope whose content-id matches the "Start" parameter of the HTTP POST. It contains all the details of the MMS message headers including sender, receiver(s), message-id, date, subject and delivery flags such as priority. It also contains the content-ID of the SOAP Attachment which contains all the MMS parts.

Red: This is the SOAP Attachment. It contains all the MMS parts and specifies the MMS type (multipart/related in this example; multipart/mixed where no SMIL is required). Its headers specify its content type as referred to by the SOAP Envelope, the boundary line to be used to separate the MMS parts and, in the case of a multipart/related message, the ID of the SMIL component which informs the receiving device where that layout information is stored.

7.1 MM7 Example

Below is a message example demonstrating the above. The example only includes SMIL & a text part. The image, if added, would appear as yet another attachment at the innermost level. The Content-Length field in the HTTP headers must be replaced by the correct content length. NB: long lines that have wrapped appear with a bullet at the front.

```
POST / HTTP/1.0
Host: 127.0.0.3:8080
SOAPAction: ""
Content-length: nnnnn
Content-type: multipart/related; boundary="---mime-boundary-B076E19F.B217F560---"
           start="<123456789>"
Connection: close

-----mime-boundary-B076E19F.B217F560---
Content-type: text/xml; charset=utf-8
Content-ID: <123456789>

<?xml version='1.0' ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
<env:Header>
  <mm7:TransactionID xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/
23.140/schema/REL-5-MM7-1-0" env:mustUnderstand="1">
           20031028/11/C72C9123@nowsms.no-ip.com
  </mm7:TransactionID>
</env:Header>
<env:Body>
  <mm7:SubmitReq xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-
MM7-1-0">
   <MM7Version>5.3.0</MM7Version>
   <SenderIdentification>
   <VASPID>MY_VASPID</VASPID>
   <VASID>my_vas_id</VASID>
   <SenderAddress>99999999999</SenderAddress>
   </SenderIdentification>
   <Recipients>
   <To><Number>88888888888</Number></To>
   </Recipients>
   <Priority>Normal</Priority>
   <DeliveryReport>True</DeliveryReport>
   <ReadReply>False</ReadReply>
   <Subject>Multimedia Message</Subject>
   <Content href="cid:mms_cid" />
  </mm7:SubmitReq>
</env:Body>
</env:Envelope>

-----mime-boundary-B076E19F.B217F560---
Content-type: multipart/related; start=<2004161650>; type=application/smil;
                                  boundary="---mime-boundary-93D4E3E1.71BD3D22---"
Content-ID: <mms_cid>

-----mime-boundary-93D4E3E1.71BD3D22---
Content-type: text/plain; name="Quick_te.txt"
Content-location: Quick_te.txt

Quick test
-----mime-boundary-93D4E3E1.71BD3D22---
Content-type: application/smil; charset=utf-8; name="pres.smil"
```

```
Content-ID: <2004161650>

<smil xmlns="http://www.w3.org/2000/SMIL20/CR/Language">
  <head>
    <layout>
      <root-layout height="208" width="176" />
      <region id="Text" height="100%" width="100%" left="0%" top="0%"
fit="scroll" />
    </layout>
  </head>
  <body>
    <par dur=3D"20000ms">
      <text src=3D"Quick_te.txt" region=3D"Text" />
    </par>
  </body>
</smil>

-----mime-boundary-93D4E3E1.71BD3D22-----

-----mime-boundary-B076E19F.B217F560-----
```

7.2 Example 2

Simple text example

```
Content-Type:    multipart/related;    type="text/xml";    start="mms-mm7-79";    boundary="boundary-mm7-soap-12990-
1144734231"
SOAPAction: ""


--boundary-mm7-soap-12990-1144734231
Content-Type: text/xml; charset="us-ascii"
Content-ID: <mms-mm7-79>


<?xml version="1.0" ?>
<env:Envelope                                                        xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header>
        <mm7:TransactionID   xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-
1-0" env:mustUnderstand="1" xsi:type="xsd:string">
                00079129901144734231
        </mm7:TransactionID>
</env:Header>
<env:Body>
        <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0">
                <MM7Version>5.3.0</MM7Version>
                <SenderIdentification>
        <VASPID>VASP_ID_PROVIDED_BY_TELSTRA</VASPID>
        <VASID>VAS_ID_PROVIDED_BY_TELSTRA</VASID>
                        <SenderAddress>
                                614AAAAAAAA
                        </SenderAddress>
                </SenderIdentification>
                <Recipients>
                        <To>
```

```
                        <Number>Phone number</Number>
                    </To>
                </Recipients>
                <MessageClass>Informational</MessageClass>
                <DeliveryReport>false</DeliveryReport>
                <ReadReply>false</ReadReply>
                <Priority>Normal</Priority>
                <Subject>text</Subject>
                <Content href="cid:mms-79" allowAdaptations="true" />
        </SubmitReq>
    </env:Body>
</env:Envelope>


--boundary-mm7-soap-12990-1144734231
Content-Type:  multipart/related;  start="<mms.smil>";  type="application/smil";  boundary="boundary-mm7-mime-12990-
1144734231"
Content-ID: <mms-79>


--boundary-mm7-mime-12990-1144734231
Content-Type: application/smil; charset="us-ascii"; name="mms.smil"
Content-ID: <mms.smil>


<smil xmlns="http://www.w3.org/2000/SMIL20/CR/Language">
        <head>
                    <meta name="title" content="text" />
                    <meta name="author" content="whoever" />
                    <layout type="text/smil-basic-layout">
                            <root-layout />
                            <region id="textRegion" height="99%" width="99%" top="1%" left="1%" fit="scroll" />
                    </layout>
        </head>
        <body>
                    <par dur="10s">
                            <text src="text.txt" region="textRegion" begin="0s" end="10s" />
                    </par>
        </body>
</smil>


--boundary-mm7-mime-12990-1144734231
Content-Type: text/plain; name="text.txt"
Content-Location: text.txt
Content-ID: <text.txt>
Content-Transfer-Encoding: base64


dGV4dCBvbmx5ICxqZmxmampmbGtkamZsa3NqZGE=


--boundary-mm7-mime-12990-1144734231--


--boundary-mm7-soap-12990-1144734231--
```

Basic SOAP

```
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
 <soap-env:Header>
  <TransactionID      xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0"      soap-
env:mustUnderstand="1">384970401461342679</TransactionID>
 </soap-env:Header>
 <soap-env:Body>
  <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0">
   <MM7Version>5.3.0</MM7Version>
   <SenderIdentification>
    <VASPID>VASP_ID_PROVIDED_BY_TELSTRA</VASPID>
    <VASID>VAS_ID_PROVIDED_BY_TELSTRA</VASID>
    <SenderAddress>
     Telstra
    </SenderAddress>
   </SenderIdentification>
   <Recipients>
    <To>
     <Number displayOnly="false">614BBBBBBBB</Number>
    </To>
   </Recipients>
   <MessageClass>Informational</MessageClass>
   <TimeStamp>2006-04-09T06:00:03+10:00</TimeStamp>
   <Priority>Normal</Priority>
   <Subject>We intend on spamming you!!!!</Subject>
   <Content href="Cid:SOAPContentID"/>
  </SubmitReq>
 </soap-env:Body>
</soap-env:Envelope>
```

Response:

```
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
 <soap-env:Header>
  <TransactionID      xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0"      soap-
env:mustUnderstand="1">384970401461342679</TransactionID>
 </soap-env:Header>
 <soap-env:Body>
  <SubmitRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0">
   <MM7Version>5.3.0</MM7Version>
   <Status>
    <StatusCode>1000</StatusCode>
    <StatusText>Success</StatusText>
   </Status>
   <MessageID>elsdgxxl371_M.model-mms.msg.telstra.com</MessageID>
  </SubmitRsp>
 </soap-env:Body>
</soap-env:Envelope>
```

7.3 Response messages

Success case

```
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
 <soap-env:Header>
  <TransactionID     xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0"     soap-
env:mustUnderstand="1">384970401461342679</TransactionID>
 </soap-env:Header>
 <soap-env:Body>
  <SubmitRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0">
   <MM7Version>5.3.0</MM7Version>
   <Status>
    <StatusCode>1000</StatusCode>
    <StatusText>Success</StatusText>
   </Status>
   <MessageID>elsdgxxl371_M.model-mms.msg.telstra.com</MessageID>
  </SubmitRsp>
 </soap-env:Body>
</soap-env:Envelope>
```

The key fields in the response transactions are highlighted in bold above.

- TransactionID is what was originally submitted by the VASP and can be used to track the message.

- StatusCode – indicates the success or failure of the message (refer to 3GPP spec for full list of error codes)

- StatusText – Human readable description of the Status Code.

- Message Id – This is a unique ID recorded in the MMSC.

Failure case

```
<?xml version='1.0'?>
 <env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
 <env:Header>
 <mm7:TransactionID     xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-4"
env:mustUnderstand="1">00028245041182468291</mm7:TransactionID>
  </env:Header>
  <env:Body>
   <env:Fault>
    <faultcode>env:Service</faultcode>
    <faultstring>Service error</faultstring>
    <detail>
    <RSErrorRsp xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-4">
     <MM7Version>6.8.0</MM7Version>
     <Status>
      <StatusCode>4007</StatusCode>
      <StatusText>Service denied</StatusText>
      <Details>Application not found</Details>
     </Status>
    </RSErrorRsp>
    </detail>
   </env:Fault>
```

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

This is the case where you are using an invalid VASPID or VASID.

Error handling and status reporting

MM7 interface defines three levels of status reporting:

- **Communication Level Errors** based on the underlying interface (HTTP) – in cases of wrong URL, security error, HTTP server failure, etc. These are implemented based on regular error HTTP responses.

- **Request Processing Level Errors** bad PDU's e.g. MM7 request not supported, wrong version number, invalid XML etc

- **Success or Partial Success** successfully transferred MM7 is handled by the server or parts of the request are successfully handled by the server.

7.4 MM7_deliver example

Following are examples of MM7_deliver.REQ and MM7_deliver.RES PDUs. These are the PDUs used in the delivery of mobile originated messages to a VAS.

MM7_deliver.REQ

The following PDU is an example of what will be sent to a VAS.

```
POST /.mm7 HTTP/1.0
Host: 1.1.1.1
Connection: close
Content-Type: multipart/related; boundary="NextPart_414.2116"; type="text/xml"
SOAPAction: ""
Content-Length: 23706

--NextPart_414.2116
Content-Type: text/xml
Content-ID: msg

<?xml version='1.0'?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Header>
    <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-
4" env:mustUnderstand="1">507</mm7:TransactionID>
  </env:Header>
  <env:Body>
    <DeliverReq
xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-4">
      <MM7Version>6.8.0</MM7Version>
<MMSRelayServerID>TARAL</MMSRelayServerID>
<VASPID>VASP1</VASPID>
<VASID>vas1</VASID>
<Sender>
        <RFC2822Address>+614AAAAAAAA/TYPE=PLMN@mm7-
model.mms.telstra.com</RFC2822Address>
</Sender>
<Recipients>
        <To>
            <RFC2822Address>614BBBBBBBB/TYPE=PLMN@mm7-
model.mms.telstra.com</RFC2822Address>
        </To>
</Recipients>
<TimeStamp>2007-07-27T18:11:20+10:00</TimeStamp>
<Priority>Normal</Priority>
<Subject>Test Message</Subject>
<AuxApplicInfo>Nokia6120c/2.0    Series60/3.1    Profile/MIDP-2.0    Configuration/CLDC-1.1
UP.Link/6.5.1.3.0</AuxApplicInfo>
    </DeliverReq>
  </env:Body>
</env:Envelope>
```

```
--NextPart_414.2116
Content-Type:                    multipart/related;Type="application/smil";Start="<SMIL.TXT>";
        boundary="----=_Part_160_3526297.1160016449832"

<mime content here>
------=_Part_160_3526297.1160016449832--

--NextPart_414.2116--
```

MM7_deliver.RES

The following PDU is an example of the required response to a MM7_deliver.REQ.

```
HTTP/1.0 200 OK
Content-Type: text/plain
Connection: close
Content-Length: 667

<?xml version='1.0'?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
<env:Header>
<mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-
4" env:mustUnderstand="1"> vas00001-sub </mm7:TransactionID>
</env:Header>
<env:Body>
<DeliverRsp   xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-
MM7-1-4">
<MM7Version>6.8.0</MM7Version>
<Status>
<StatusCode>1000</StatusCode>
<StatusText>Success</StatusText>
<Details>Transactional</Details>
</Status>
</DeliverRsp>
</env:Body>
</env:Envelope>
```

7.5 MM7_delivery_report example

Following are examples of MM7_delivery_report.REQ and MM7_delivery_report.RES PDUs. These are the PDUs sent to the VAS if a delivery report has been requested for a message and if the VAS has sent to a Telstra subscriber from a non-alpha source.

MM7_delivery_report.REQ

The following PDU is an example of what will be sent to a VAS.

```
POST / HTTP/1.0
Host: 1.1.1.1
Connection: close
Content-type: text/xml
Content-Length: 940

<?xml version='1.0'?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Header>
    <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-
4" env:mustUnderstand="1">832309d</mm7:TransactionID>
  </env:Header>
  <env:Body>
    <DeliveryReportReq
xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-4">
      <MM7Version>6.8.0</MM7Version><MMSRelayServerID>TARAL</MMSRelayServerID>
<MessageID>T*4*T\*4\*47861603</MessageID>
<Recipient>
        <RFC2822Address>+614BBBBBBBB/TYPE=PLMN@mm7.mms.telstra.com</RFC2822Ad
dress>
</Recipient>
<Sender>
        <RFC2822Address>+614AAAAAAAA/TYPE=PLMN@mm7.mms.telstra.com</RFC2822Ad
dress>
</Sender>
<Date>2007-10-30T12:20:36+11:00</Date>
<MMStatus>Retrieved</MMStatus>
<StatusText>The message was retrieved by the recipient</StatusText>
    </DeliveryReportReq>
  </env:Body>
</env:Envelope>
```

MM7_delivery_report.RES

The following PDU is an example of the required response to a MM7_delivery_report.RES.

```
HTTP/1.1 200 OK
Connection: close
Date: Tue, 30 Oct 2007 01:20:36 GMT
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Content-Type: text/html

<?xml version='1.0'?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"> <env:Header>
<mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-
4" env:mustUnderstand="1">832309d</mm7:TransactionID>
 </env:Header>
 <env:Body>
<DeliveryReportRsp
xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-6-MM7-1-
4"><MM7Version>6.8.0</MM7Version>
<Status><StatusCode>1000</StatusCode>
<StatusText>Message OK</StatusText>
</Status>
</DeliveryReportRsp>
 </env:Body>
</env:Envelope>
```

8. Toolkits

8.1 MM7

Telstra does not provide support for any 3rd party MM7 toolkits however the following vendors may provide toolkits on request:

Airwide Solutions (http://www.airwidesolutions.com)

Comverse (http://developer.comverse.com)

8.2 SMIL Player/composer

Ambulant produce a freeware SMIL player that allows you to play SMIL presentations:

(http://www.cwi.nl/projects/Ambulant/Download100.html)

LimSee2 is a freeware SMIL Authoring tool for creating SMIL (http://wam.inrialpes.fr/software/limsee2/index.php?goto=Home)

8.3 Base64 Encoder.

There are many base64 encoders/decoders available via the internet for a simple command line version for testing try:

http://www.fourmilab.ch/webtools/base64/

to encode:

base64.exe –e sourcefile   destfile

to decode:

base64.exe –e sourcefile   destfile

9. Appendix A – Frequently asked questions

9.1 What type of devices can MMS Access Manager send to?

MMS Access Manager can deliver to any MMS capable device.

This includes MMS capable standard GSM/3G devices.

It is also dependent on the handset being correctly configured as well as having GPRS/1x access.

9.2 Where do messages go if the subscriber is not MMS capable?

If the subscriber is a Telstra customer and has a non-MMS capable phone, they will be informed via SMS that a MMS has been sent to them which can be viewed via the web (this is referred to as the legacy experience).

For non-Telstra subscribers the behaviour in this case is dependent on the individual carrier and is not controlled by Telstra.

9.3 Will Telstra alter the content of messages submitted?

Part of the functionality of an MMSC is to vary content – if required – to suit the end device; this will include dropping content if the device is not capable (e.g. drop video for a non-video capable handset), reducing the size or quality of content to suit the end device, or changing the coding format (e.g. converting a GIF to a JPG).

9.4 Does Telstra support DRM?

If messages are submitted with DRM, Telstra will not alter this and deliver it to the end device.

For non-Telstra subscribers the behaviour in this case is dependent on the individual carrier and is not controlled by Telstra.

9.5 What should I do if the message is being rejected with invalid address?

Ensure the MSISDN being used is in correct international format.

Ensure you have been authorised to use the Sender Address in the submission. This includes alphas.

9.6 What should I do if the destination handset is not receiving the message?

Ensure that the destination is MMS capable and the device is turned on – also confirm that the customer is not barred from either MMS or GPRS.

Send the customer a message via a handset and see that they get it.

Try sending your MM7 transaction to another subscriber with a different model of handset and see if the problem continues.

9.7 What version of MM7 should I be using?

Version 6.8.0 or version 5.3.0. For messages sent from Telstra and for Delivery Reports version 6.8.0 will be used.

9.8 What should I do if I'm having problems with the Target URL?

Unless you are using a secured network layer (VPN) the correct access method is HTTPS. Ensure that you are posting your MM7 to https://mm7.mms.telstra.com/ on port 443.

For customers using HTTP over a secured network layer the URL is http://mm7.mms.telstra.com/ on port 80.

9.9 Can messages be delivered to/from iMode subscribers?

Yes, messages can be delivered to, and from, iMode subscribers. iMode recipients, however, do not support alpha senders or delivery reports.

9.10 My SMIL messages are garbled after the first section when they arrive on the handset. What should I do?

Make sure you have the correct MM7 boundary (i.e. make sure it is consistent throughout the entire MM7 packet).

9.11 Can I send messages overseas?

MMS Access Manager can be used to send messages to a limited set of countries. For specific country details please visit http://www.telstra.com.au/mobile/products/messaging/internationalmms.htm

However, if you are using an alpha sender to send messages, you will not be able to send messages internationally.

9.12 Are Delivery reports supported

Delivery reports are supported when sending messages to Telstra subscribers from a MSISDN source address. They are not supported when sending messages from non-MSISDN (e.g. alpha) sources.

N.B. additional charges will be incurred whenever a Delivery Report is requested whether or not the Delivery Report is ever submitted to the VASP.

9.13 Are alpha senders allowed?

Alpha senders are only supported when sending messages to Telstra destinations. They are not supported when sending messages to other carriers.

When sending from an alpha sender it is not possible for the recipient to respond to the message and Delivery Reports are not supported.

An alpha sender must:

- only contain a combination of upper and lower case letters and digits
- start with a letter
- be between 1 and 10 characters in length

9.14 How is message size determined?

Message size is determined as per the definition in "11. Appendix C – Message size definition".

9.15 Are binary data encoding methods other than BASE64 supported?

No. When submitting to MMS Access Manager all binary data must be encoded using BASE64.

9.16 Is the message size on the handset an

accurate measure of the MMS Access Manager message size?

No. For MMS Access Manager message size is defined as per "Appendix C – Message Size Definition". This is calculated differently from the way handsets calculate message size and will generally be 30-40% larger than the handset size (though the actual difference will depend on the specific message).

10. Appendix B - Example MM7 creation

The following is a step by step procedure to create and send an MM7 transaction in its rawest format.

In order to create and send MM7 you will need several key components

- VASP ID [Provided by Telstra]

- VAS ID [Provided by Telstra]

- Source Address [Provided by Telstra]

- Destination address

- Content

Once you have all of these things use the following step by step procedure to create a sample MMS Message.

10.1 Step1 – Constructing valid MM7.

The following is a template for creating your own MM7 transaction.

Note that the from Sender and Recipient addresses should be a mobile number in 614XXYYYZZZ format.

This is the start of your MM7 transaction.

```
Content-Type:    multipart/related;    type="text/xml";    start="mms-mm7-79";    boundary="boundary-mm7-soap-12990-
1144734231"
SOAPAction: ""


--boundary-mm7-soap-12990-1144734231
Content-Type: text/xml; charset="us-ascii"
Content-ID: <mms-mm7-79>


<?xml version="1.0" ?>
<env:Envelope                                            xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header>
        <mm7:TransactionID  xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-
1-0" env:mustUnderstand="1" xsi:type="xsd:string">
                    00079129901144734231
        </mm7:TransactionID>
</env:Header>
<env:Body>
        <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-2">
                <MM7Version>5.3.0</MM7Version>
                <SenderIdentification>
    <VASPID>InsertYourVASPID</VASPID>
    <VASID>InsertYourVASID</VASID>
                        <SenderAddress>
```

```
                                    InsertYourFromAddress
                        </SenderAddress>
                </SenderIdentification>
                <Recipients>
                        <To>
                                <Number>InsertYourDestinationAddress</Number>
                        </To>
                </Recipients>
                <MessageClass>Informational</MessageClass>
                <DeliveryReport>false</DeliveryReport>
                <ReadReply>false</ReadReply>
                <Priority>Normal</Priority>
                <Subject>text</Subject>
                <Content href="cid:mms-79" allowAdaptations="true" />
        </SubmitReq>
</env:Body>
</env:Envelope>


--boundary-mm7-soap-12990-1144734231
Content-Type: multipart/related; start="<mms.smil>"; type="application/smil"; boundary="boundary-mm7-mime-12990-
1144734231"
Content-ID: <mms-79>
```

10.2 Step 2: Insert your SMIL

Depending on your type of content, your SMIL will vary. You can also use a SMIL editor to create this component.

For this example we will presume your content consists of 5 slides

- slide 1 is Text   [show for 1 seconds]

- slide 2 is an image   [show for 2 seconds]

- slide 3 is audio   [show for 3 seconds]

- slide 4 is another image   [show for 2 seconds]

- slide 5 is more text   [show for 1 seconds]

The following SMIL will create the template for this.

```
--boundary-mm7-mime-12990-1144734231
Content-Type: application/smil; charset="us-ascii"; name="mms.smil"
Content-ID: <mms.smil>

<smil xmlns="http://www.w3.org/2000/SMIL20/CR/Language">
        <head>
                <meta name="title" content="text" />
                <meta name="author" content="whoever" />
                <layout type="text/smil-basic-layout">
                        <root-layout />
                        <region id="imageRegion" height="100%" width="100%" top="0%" left="0%" fit="meet" />
                        <region id="textRegion" height="99%" width="99%" top="1%" left="1%" fit="scroll" />
                </layout>
        </head>
        <body>

                <par dur="1s">
                        <text src="Page1_text.txt" region="textRegion" begin="0s" end="3s" />
                </par>
```

```
                  <par dur="2s">
                          <text src="Page2_Image.jpg" region="imageRegion" begin="0s" end="3s" />
                  </par>
                  <par dur="3s">
                          <text src="Page3_Audio.wav" region="imageRegion" begin="0s" end="3s" />
                  </par>
                  <par dur="2s">
                          <text src="Page4_Image.jpg" region="imageRegion" begin="0s" end="3s" />
                  </par>
                  <par dur="1s">
                          <text src="Page4_text.txt" region="textRegion" begin="0s" end="3s" />
                  </par>
          </body>
</smil>
```

10.3 Step 3: Adding content

Now that we have the template we need to add the base64 encoded content.

Using a base64 encoder (like the one referenced in section 0) we will convert our 4 content types into base64.

```
Base64 –e Page1.txt Page1_Base64.txt
Base64 –e homer.jpg Page2_Base64.jpg
Base64 –e audio.wav Page3_Base64.wav
Base64 –e bart.jpg  Page4_Base64.jpg
Base64 –e Page5.txt Page5_Base64.txt
```

We start with 5 files (Page1.txt, Homer.jpg, bart.jpg, audio.wav and page5.txt) and end up with 5 separate files all base64 encoded.

Now open all these files and paste their contents into the MM7 transaction:

```
--boundary-mm7-mime-12990-1144734231
Content-Type: text/plain; name="Page1_Base64.txt"
Content-Location: Page1_Base64.txt
Content-ID: <Page1_Base64.txt>
Content-Transfer-Encoding: base64

<insert contents of file Page1_Base64.txt>

--boundary-mm7-mime-12990-1144734231
Content-Type: image/jpg; name="Page2_Base64.jpg"
Content-Location: Page2_Base64.jpg
Content-ID: <Page2_Base64.jpg>
Content-Transfer-Encoding: base64

<insert contents of file Page2_Base64.jpg>

--boundary-mm7-mime-12990-1144734231
Content-Type: audio/wav; name="Page3_Base64.wav"
Content-Location: Page3_Base64.wav
Content-ID: <Page3_Base64.wav>
Content-Transfer-Encoding: base64

<insert contents of file Page3_Base64.wav>

--boundary-mm7-mime-12990-1144734231
Content-Type: image/jpg; name="Page4_Base64.jpg"
```

```
Content-Location: Page4_Base64.jpg
Content-ID: <Page4_Base64.jpg>
Content-Transfer-Encoding: base64


<insert contents of file Page4_Base64.jpg>


--boundary-mm7-mime-12990-1144734231
Content-Type: text/plain; name="Page5_Base64.txt"
Content-Location: Page5_Base64.txt
Content-ID: <Page5_Base64.txt>
Content-Transfer-Encoding: base64


<insert contents of file Page5_Base64.txt>
```

10.4 End the MM7 with closing SMIL boundary

Now that all the attachments are in place, put in a final closing tab.

```
--boundary-mm7-mime-12990-1144734231--

--boundary-mm7-soap-12990-1144734231—-
```

10.5 Putting it all together

The final product should now look like one big chunk of MM7:

```
Content-Type:   multipart/related;   type="text/xml";   start="mms-mm7-79";   boundary="boundary-mm7-soap-12990-
1144734231"
SOAPAction: ""

--boundary-mm7-soap-12990-1144734231
Content-Type: text/xml; charset="us-ascii"
Content-ID: <mms-mm7-79>

<?xml version="1.0" ?>
<env:Envelope                                          xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header>
        <mm7:TransactionID   xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-
1-2" env:mustUnderstand="1" xsi:type="xsd:string">
                00079129901144734231
        </mm7:TransactionID>
</env:Header>
<env:Body>
        <SubmitReq xmlns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-2">
                <MM7Version>5.3.0</MM7Version>
                <SenderIdentification>
        <VASPID>InsertYourVASPID</VASPID>
        <VASID>InsertYourVASID</VASID>
                        <SenderAddress>
                                InsertYourFromAddress
                        </SenderAddress>
```

```
                  </SenderIdentification>
                  <Recipients>
                          <To>
                                  <Number>InsertYourDestinationAddress</Number>
                          </To>
                  </Recipients>
                  <MessageClass>Informational</MessageClass>
                  <DeliveryReport>false</DeliveryReport>
                  <ReadReply>false</ReadReply>
                  <Priority>Normal</Priority>
                  <Subject>text</Subject>
                  <Content href="cid:mms-79" allowAdaptations="true" />
        </SubmitReq>
</env:Body>
</env:Envelope>


--boundary-mm7-soap-12990-1144734231
Content-Type:  multipart/related;  start="<mms.smil>";  type="application/smil";  boundary="boundary-mm7-mime-12990-
1144734231"
Content-ID: <mms-79>


--boundary-mm7-mime-12990-1144734231
Content-Type: application/smil; charset="us-ascii"; name="mms.smil"
Content-ID: <mms.smil>


<smil xmlns="http://www.w3.org/2000/SMIL20/CR/Language">
        <head>
                  <meta name="title" content="text" />
                  <meta name="author" content="whoever" />
                  <layout type="text/smil-basic-layout">
                          <root-layout />
                          <region id="imageRegion" height="100%" width="100%" top="0%" left="0%" fit="meet" />
                          <region id="textRegion" height="99%" width="99%" top="1%" left="1%" fit="scroll" />
                  </layout>
        </head>
        <body>
                  <par dur="1s">
                          <text src="Page1_text.txt" region="textRegion" begin="0s" end="1s" />
                  </par>
                  <par dur="2s">
                          <text src="Page2_Image.jpg" region="imageRegion" begin="0s" end="2s" />
                  </par>
                  <par dur="3s">
                          <text src="Page3_Audio.mp3" region="imageRegion" begin="0s" end="3s" />
                  </par>
                  <par dur="2s">
                          <text src="Page4_Image.jpg" region="imageRegion" begin="0s" end="2s" />
                  </par>
                  <par dur="1s">
                          <text src="Page4_text.txt" region="textRegion" begin="0s" end="1s" />
                  </par>
        </body>
</smil>


--boundary-mm7-mime-12990-1144734231
Content-Type: text/plain; name="Page1_Base64.txt"
Content-Location: Page1_Base64.txt
Content-ID: <Page1_Base64.txt>
Content-Transfer-Encoding: base64


<insert contents of file Page1_Base64.txt>
```

--boundary-mm7-mime-12990-1144734231
Content-Type: image/jpg; name="Page2_Base64.jpg"
Content-Location: Page2_Base64.jpg
Content-ID: <Page2_Base64.jpg>
Content-Transfer-Encoding: base64

<insert contents of file Page2_Base64.jpg>

--boundary-mm7-mime-12990-1144734231
Content-Type: audio/mp3; name="Page3_Base64.mp3"
Content-Location: Page3_Base64.mp3
Content-ID: <Page3_Base64.mp3>
Content-Transfer-Encoding: base64

<insert contents of file Page3_Base64.wav>

--boundary-mm7-mime-12990-1144734231
Content-Type: image/jpg; name="Page4_Base64.jpg"
Content-Location: Page4_Base64.jpg
Content-ID: <Page4_Base64.jpg>
Content-Transfer-Encoding: base64

<insert contents of file Page4_Base64.jpg>

--boundary-mm7-mime-12990-1144734231
Content-Type: text/plain; name="Page5_Base64.txt"
Content-Location: Page5_Base64.txt
Content-ID: <Page5_Base64.txt>
Content-Transfer-Encoding: base64

<insert contents of file Page5_Base64.txt>

--boundary-mm7-mime-12990-1144734231--

--boundary-mm7-soap-12990-1144734231—--

11. Appendix C – Message size definition

For messages submitted by a VAS the message size is defined as the sum of the subject information element size and the sizes of all the multimedia element(s) and text element(s) including any presentation object (i.e. the SMIL).

The size of each multimedia, text or presentation element is taken to be the size of the encoded content as it is submitted to the MMSC. This includes all MIME boundaries and headers. For multimedia elements this also includes any overhead incurred by the encoding scheme used (i.e.. BASE64).

12. Appendix D – Acronyms and definitions

The following words, acronyms and abbreviations are referred to in this document.

Item	Description
3GPP	3rd Generate Partnership Program. 3GPP formalises the MMS protocol standards.
	3GPP also may refer to the 3GPP video format (see 3GP)
3GP	A file format which is used to deliver audio and video formats to mobile devices.
CDMA	Code Division Multiple Access. This is one of Telstra's mobile networks.
DRM	Digital Rights Management – used to provide copyright protection for content (e.g. MMS's)
GPRS	General Packet Radio System – this is the carriage required for delivery of MMS Messages to/from a handset via MMS in a GSM network. If a subscriber does not have GPRS setup or enabled, MMS will not work.
GSM	Global System for Mobiles
HTTP	Hypertext transport protocol – the protocol which MMS messages are transported on in the MM1 and MM7 reference points
HTTPS	HTTP with security – this is an encrypted for of HTTP that uses SSL to secure data between the client and server.
IPSEC	Internet Protocol Security
iMode	A Protocol to allow transmission of WAP type services over a packet network, the iMode standard supports a type of MMS called i-MMS.
Legacy	The 'Legacy' experience is used in reference to customers who cannot receive an MMS (due to non capable handset, barring or incorrect activation). In this case we forward a text message to the customer with a URL and password and allow the customer to view it online.
MM7	MM7 is the reference point from 3GPP spec's for customers submitting messages to a telecommunications service provider
MMS	Protocol to enable transmitting video, images, text and audio messages over wireless networks.
MMSC	Multimedia Messaging Service Centre – this is the infrastructure in the telecommunications service provider to send and receive messages to and from subscriber handsets
MSISDN	Mobile Station International ISDN Number (i.e. a mobile number)
PDU	Protocol Data Unit
SOAP	Simple Object Access Protocol

VASP	Value Added Service Provider – this is the name used to describe a customer submitting messages via MM7 (i.e. Access Manager Customers).
VPN	Virtual Private Network. This is a secure tunnel to connect to private networks (Telstra and the Customer) over a public network (Internet).
WAP	Wireless Application Protocol – A standard protocol used to enable mobile devices to access the internet.
WSP	Wireless Session Protocol – Built atop WAP to allow session oriented connections.
1xRTT	Single Carrier (1x) Radio Transmission Technology – the CDMA equivalent of GPRS.