ETSI TS 129 199-5 V9.0.0 (2010-01)
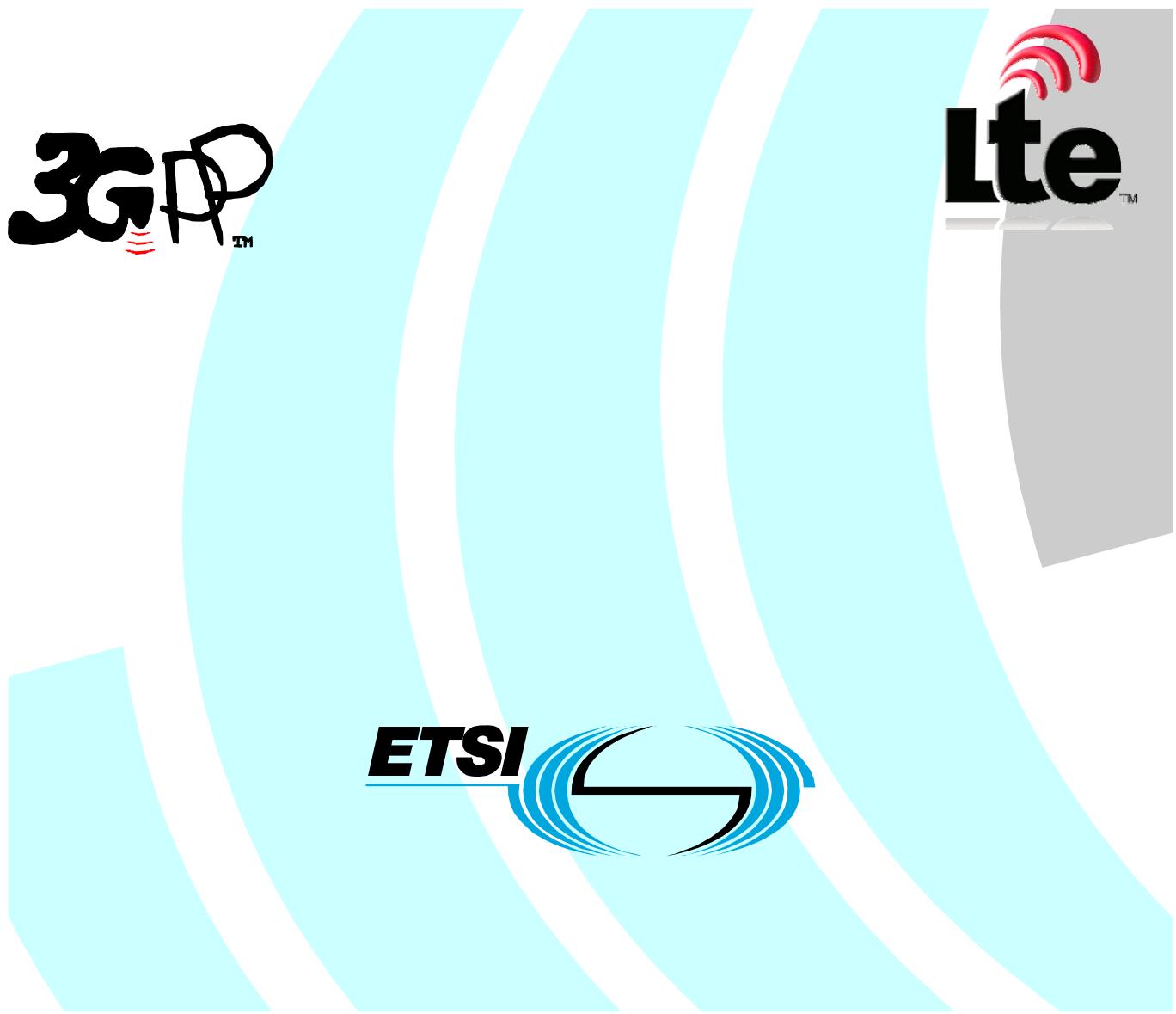
Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Open Service Access (OSA);
Parlay X web services;
Part 5: Multimedia messaging
(3GPP TS 29.199-05 version 9.0.0 Release 9)**

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Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

3GPP acknowledges the contribution of the Parlay X Web Services specifications from The Parlay Group. The Parlay Group is pleased to see 3GPP acknowledge and publish the present document, and the Parlay Group looks forward to working with the 3GPP community to improve future versions of the present document.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x   the first digit:

1   presented to TSG for information;

2   presented to TSG for approval;

3   or greater indicates TSG approved document under change control.

y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z   the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part 5 of a multi-part deliverable covering the 3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Open Service Access (OSA); Parlay X Web Services, as identified below:

Part 1:   "Common"
Part 2:   "Third party call"
Part 3:   "Call Notification"
Part 4:   "Short Messaging"
Part 5:   "Multimedia Messaging"
Part 6:   "Payment"
Part 7:   "Account management"
Part 8:   "Terminal Status"
Part 9:   "Terminal location"
Part 10:   "Call handling"
Part 11:   "Audio call"
Part 12:   "Multimedia conference"
Part 13:   "Address list management"
Part 14:   "Presence"
Part 15:   "Message Broadcast"
Part 16:   "Geocoding"
Part 17:   "Application driven Quality of Service (QoS)"
Part 18:   "Device Capabilities and Configuration"
Part 19:   "Multimedia streaming control"
Part 20:   "Multimedia multicast session management"
Part 21:   "Content management"
Part 22:   "Policy"

1 Scope

The present document is Part 5 of the Stage 3 Parlay X Web Services specification for Open Service Access (OSA).

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the OSA APIs. The concepts and the functional architecture for the OSA are contained in 3GPP TS 23.198 [3]. The requirements for OSA are contained in 3GPP TS 22.127 [2].

The present document specifies the Multimedia Messaging Web Service aspects of the interface. All aspects of the Multimedia Messaging Web Service are defined here, these being:

- Name spaces.
- Sequence diagrams.
- Data definitions.
- Interface specification plus detailed method descriptions.
- Fault definitions.
- Service policies.
- WSDL Description of the interfaces.

The present document has been defined jointly between 3GPP TSG CT WG5, ETSI TISPAN and The Parlay Group.

Maintenance of up to 3GPP Rel-8 and new OSA Stage 1, 2 and 3 work beyond Rel-9 was moved to OMA in June 2008.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

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

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 22.127: "Service Requirement for the Open Services Access (OSA); Stage 1".

[3]   3GPP TS 23.198: "Open Service Access (OSA); Stage 2".

[4]   3GPP TS 22.101: "Service aspects; Service principles".

[5]   W3C Recommendation (2 May 2001): "XML Schema Part 2: Datatypes".

NOTE: Available at http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/.

[6]   3GPP TS 29.199-1: "Open Service Access (OSA); Parlay X Web Services; Part 1: Common".

[7]   W3C Note (11 December 2001): "SOAP Messages with Attachments".

NOTE: Available at http://www.w3.org/TR/SOAP-attachments.

[8]   3GPP TS 23.140 "Multimedia Messaging Service (MMS); Functional description; Stage 2".

[9]   RFC2822: "Internet Message Format".

NOTE: Available at http://www.ietf.org/rfc/rfc2822.txt

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 29.199-1 [6] apply.

Additionally the following definition is needed:

Whitespace: see definition for CFWS as defined in RFC2822 [9].

3.2   Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TS 29.199-1 [6] and the following apply:

EMS	Enhanced Messaging Service
IM	Instant Messaging
MMS	Multimedia Messaging Service
MMS-C	Multimedia Messaging Service - Centre
SMS	Short Message Service

4   Detailed service description

Currently, in order to programmatically receive and send Multimedia Messages, it is necessary to write applications using specific protocols to access MMS functions provided by network elements (e.g. MMS-C). This approach requires ap This clause describes Parlay X Web Service for sending and receiving Multimedia messages. The overall scope of this Web Service is to provide application developers primitives to handle Multimedia messages in a simple way. In fact, using Multimedia Messaging Web Service, application developers can invoke Multimedia Messaging functions without specific Telco knowledge.

This version of Multimedia Messaging Web Services provides generic messaging features that can support different messaging service types such as SMS, MMS, IM, E-mail etc.

Multimedia Messaging provides operations (see clause 8.1, SendMessage API) for sending a Multimedia message to the network and a polling mechanism for monitoring the delivery status of a sent Multimedia message. It also provides an asynchronous notification mechanism for delivery status (see clause 8.3, MessageNotification API). In addition, a mechanism is provided to start and stop the notification of delivery receipts (see clause 8.4, MessageNotificationManager API).

Multimedia Messaging also allows an application to receive Multimedia messages. Both a polling (see clause 8.2, ReceiveMessage API) and an asynchronous notification mechanism (see clause 8.3, Message Notification API) are available.

Figure 4.1 shows an example scenario using sendMessage and getMessageDeliveryStatus to send data to subscribers and to determine if the data has been received by the subscriber. The application invokes a Web Service to retrieve a stock quote (1) and (2) and sends the current quote - sendMessage - using the Parlay X Interface (3) of the Multimedia Messaging Web Service. After invocation, the Multimedia Message Web Service sends the message to an MMS-C using the MM7 interface (4) for onward transmission (5) to the subscriber over the Mobile network.

Later, when the next quote is ready, the application checks to see - getMessageDeliveryStatus - if the previous quote has been successfully delivered to the subscriber. If not, it may for instance perform an action (not shown) to provide a credit for the previous message transmission. This way, the subscriber is only charged for a stock quote if it is delivered on time.
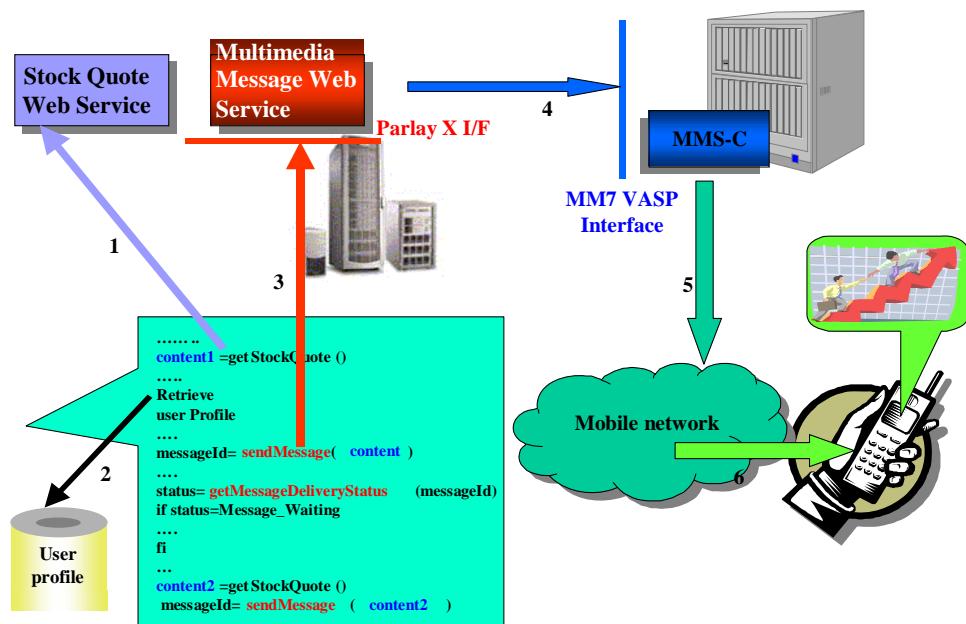
Figure 4.1: Multimedia Messaging Scenario

Alternatively this service could have been built using WAP push features in the network.

Figure 4.2 shows an example scenario using sendMessage and getMessageDeliveryStatus to send a link to subscribers and to determine if the data has been received by the subscriber. The application invokes a Web Service to generate a stock quote graph (1) and (2) and sends the current quote as a WAP push link - sendMessage - using the Parlay X Interface (3) of the Multimedia Messaging Web Service. After invocation, the Multimedia Message Web Service sends the message to an SMS (4) for onward transmission (5) to the subscriber over the Mobile network. The subscriber can then open the link and access his content.
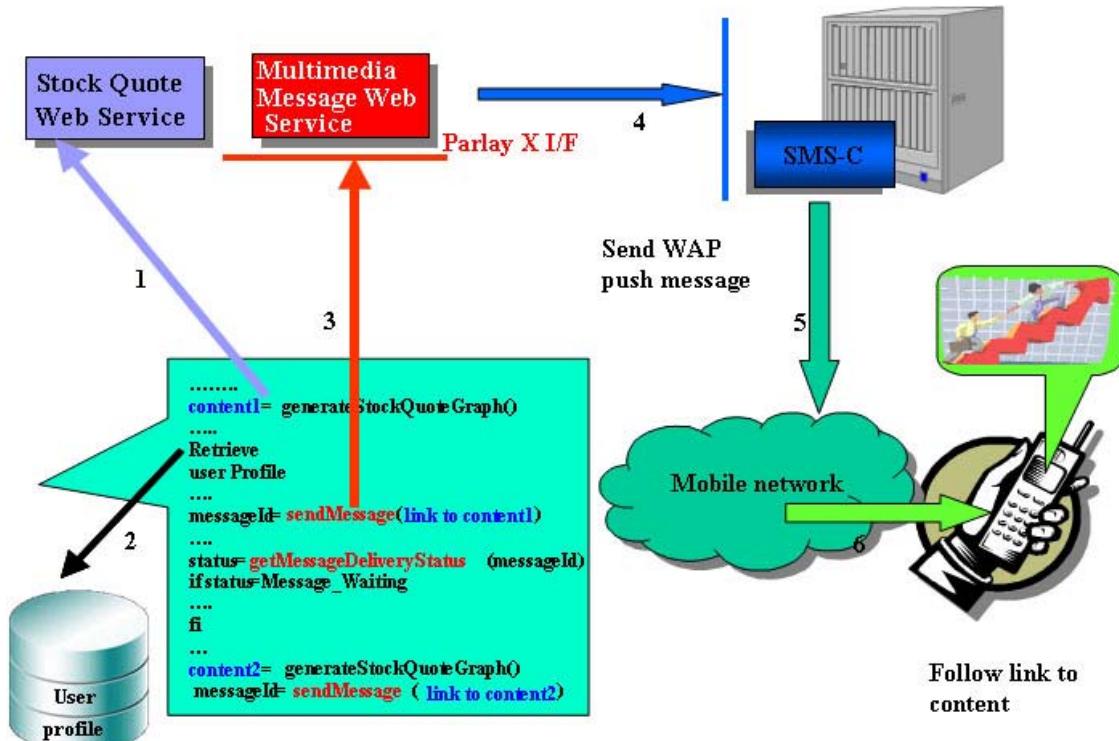
Figure 4.2: WAP push scenario

5 Namespaces

The SendMessage interface uses the namespace:

    http://www.csapi.org/wsdl/parlayx/multimedia_messaging/send/v4_0

The ReceiveMessage interface uses the namespace:

    http://www.csapi.org/wsdl/parlayx/multimedia_messaging/receive/v4_0

The MessageNotification interface uses the namespace:

    http://www.csapi.org/wsdl/parlayx/multimedia_messaging/notification/v4_0

The MessageNotificationManager interface uses the namespace:

    http://www.csapi.org/wsdl/parlayx/multimedia_messaging/notification_manager/v4_0

The data types are defined in the namespace:

    http://www.csapi.org/schema/parlayx/multimedia_messaging/v4_0

The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [5]. The use of the name 'xsd' is not semantically significant.

6 Sequence diagrams

6.1 Send picture

With the advent of picture capable mobile phones, the exchange of photos to mobile phones is becoming more common place. This sequence diagram shows an application where a person can send a picture from an online photo album to a mobile phone.
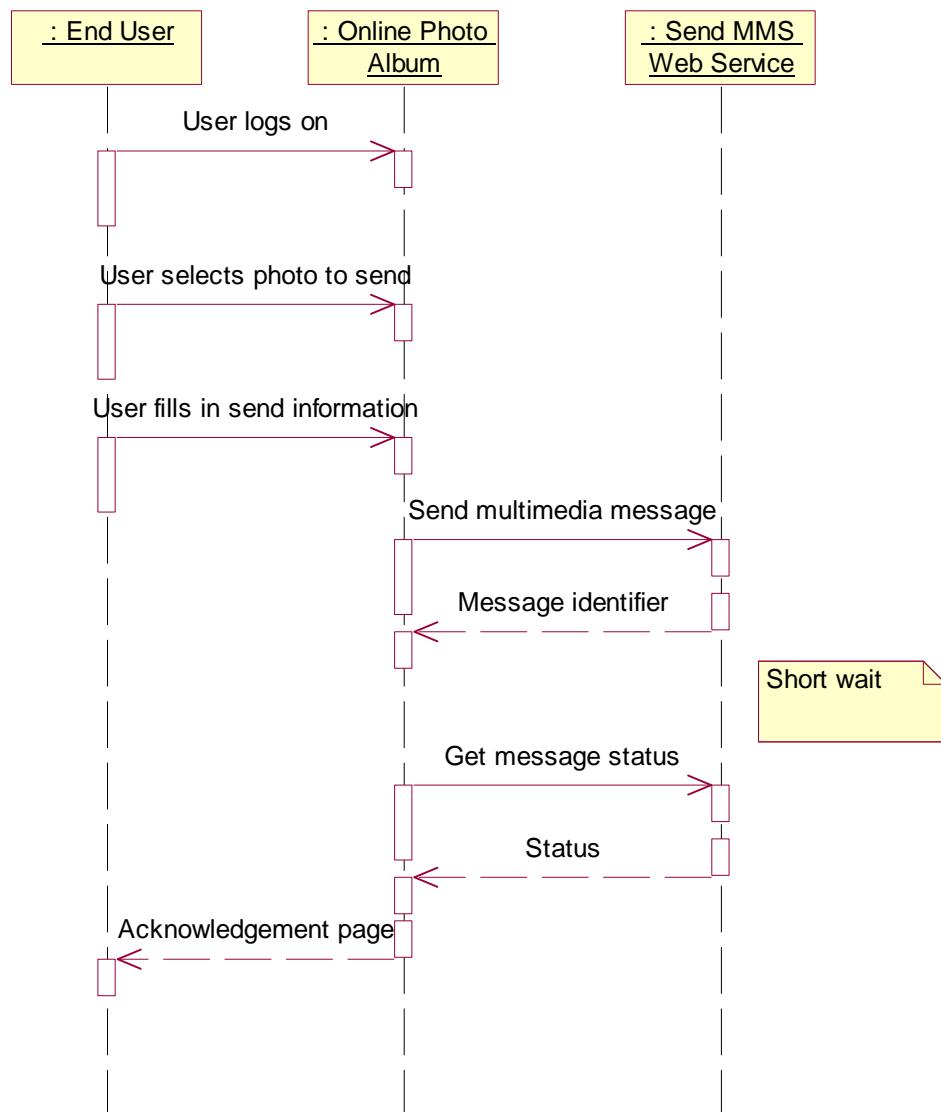
6.2 Send WAP push message

For mobile phones capable of receiving WAP push messages, link to content can be sent using this example. The suggested MIME type for the attachment defined by OMA is text/vnd.wap.sl for sending HTTP links or WAP links to a mobile phone. This sequence diagram shows an application where a link is sent to a mobile phone, and the mobile phone fetches the content.
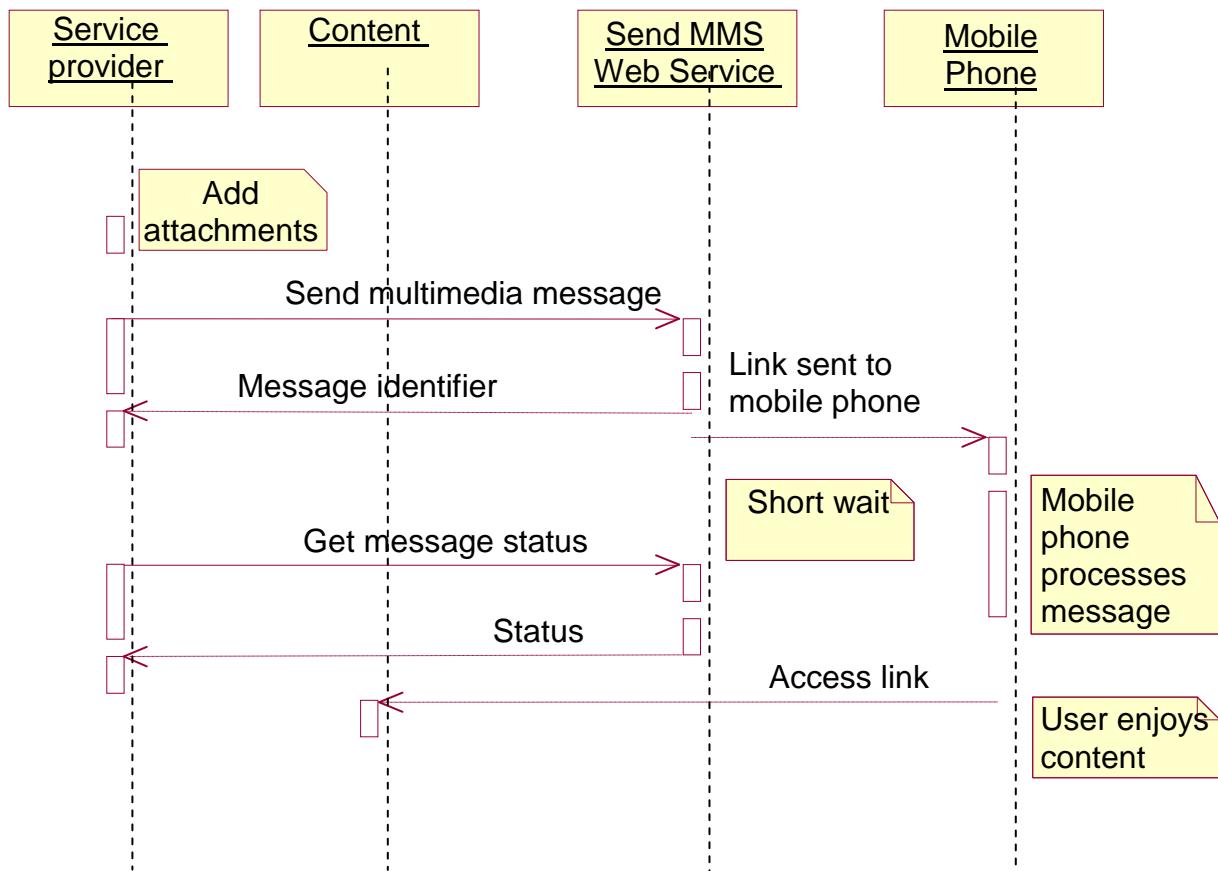
7 XML schema data type definition

7.1 DeliveryStatus enumeration

List of delivery status values.

Enumeration	Description
DeliveredToTerminal	Successful delivery to Terminal.
DeliveryUncertain	Delivery status unknown: e.g. because it was handed off to another network.
DeliveryImpossible	Unsuccessful delivery; the message could not be delivered before it expired.
MessageWaiting	The message is still queued for delivery. This is a temporary state, pending transition to one of the preceding states.
DeliveredToNetwork	Successful delivery to the network enabler responsible for distributing the multimedia message further in the network.
DeliveryNotificationNotSupported	Unable to provide delivery receipt notification. NotifyMessageDeliveryReceipt function will provide 'DeliveryNotificationNotSupported' to indicate that delivery receipt for the specified address in a SendMessageRequest is not supported.

7.2 MessagePriority enumeration

List of delivery priority values.

Enumeration	Description
Default	Default message priority
Low	Low message priority
Normal	Normal message priority
High	High message priority

7.3 DeliveryInformation structure

Delivery status information.

Element name	Element type	Optional	Description
Address	xsd:anyURI	No	Address associated with the delivery status. The address field is coded as a URI.
DeliveryStatus	DeliveryStatus	No	Indicates delivery status for the destination address.
Description	xsd:string	Yes	Used together with delivery status (e.g.DeliveryImpossible) to provide additional information.

7.4 MessageReference structure

Message information.

Element name	Element type	Optional	Description
messageIdentifier	xsd:string	Yes	If present, contains a reference to a message stored in the Parlay X gateway. If the message is pure text, this parameter is not present.
messageService ActivationNumber	xsd:string	No	Number associated with the invoked Message service, i.e. the destination address used by the terminal to send the message.
senderAddress	xsd:anyURI	No	Indicates message sender address.
subject	xsd:string	Yes	If present, indicates the subject of the received message. This parameter will not be used for SMS services.
priority	MessagePriority	No	The priority of the message: default is Normal.
message	xsd:string	Yes	If present, then the **messageIdentifier** is not present and this parameter contains the whole message. The type of the message is always pure ASCII text in this case. The message will not be stored in the Parlay X gateway.
format	MessageFormat	Yes	Indicates message format type. If not present, MMS message format (default) is assumed.
DateTime	xsd:dateTime	Yes	Time when message was received by operator

7.5 MessageURI structure

Message location information.

Element name	Element type	Optional	Description
bodyText	xsd:string	Yes	Contains the message body if it is encoded as ASCII text.
fileReferences	xsd:anyURI [0..unbounded]	Yes	This is an array of URI references to all the attachments in the Multimedia message. These are URIs to different files, e.g. GIF pictures or pure text files.

7.6 ScheduledDeliveryStatus enumeration

List of scheduled multimedia message delivery status values

Enumeration	Description
Scheduled	The Message has been scheduled, the scheduled time has not started.
NotSent	Message could not be sent before end of scheduled time.
Sent	The Message has been sent within the scheduled time.
Cancelled	Message has been cancelled. Some messages may have been sent.
Partially Sent	Message is sent to some, but not to all the recipients.
StatusUnavailable	Unable to provide delivery information.

7.7 ScheduledDeliveryInformation structure

Scheduled delivery information

Element name	Element type	Optional	Description
DeliveryStatus	ScheduledDeliveryStatus	No	Indicates the delivery result for the destination address.
NumberOf MessagesSent	xsd:int	Yes	If applicable, the number of messages already sent.

7.8 MessageFormat enumeration

List of message format types

Enumeration	Description
MMS	Multimedia messaging service
WapPush	Wap Push messaging service
SMS	Short messaging Service
EMS	Enhanced messaging service, as defined in 3GPP TS 23.040
SmartMessaging™	Smart messaging (defines alogo/ringtone format)
IM	Instant (immediate) messaging service (Can be short IM or large IM. Underlying network can decide message type from message context)
IMPagerMode	Short IM text message, as defined in OMA-TS-SIMPLE_IM-V1_0.
IMLargeMessage	Large IM message with multimedia, as defined in OMA-TS-SIMPLE_IM-V1_0.
IMFileTransfer	Large IM used for File Transfer, as defined in OMA-TS-SIMPLE_IM-V1_0
EMail	E-mail messaging service

8 Web Service interface definition

8.1 Interface: SendMessage

Operations to send messages and check status on sent messages.

8.1.1 Operation: SendMessage

Request to send a Message to a set of destination addresses, returning a **requestIdentifier** to identify the message. The **requestIdentifier** can subsequently be used by the application to poll for the message status, i.e. using **getMessageDeliveryStatus** to see if the message has been delivered or not. The content is sent as one or more attachments as specified in SOAP Messages with Attachments [7].

addresses may include group URIs as defined in the Address List Management specification. If groups are not supported, a PolicyException (POL0006) will be returned to the application.

Optionally the application can also indicate the sender address (**senderAddress**), i.e. the string that is displayed on the user's terminal as the originator of the message, the message **priority**, the message **subject**, the **charging** information and a **receiptRequest**. The **receiptRequest** which is a SimpleReference structure indicates the application endpoint, interface used for notification of delivery receipt and a correlator that uniquely identifies the sending request. By invoking this operation with the optional **receiptRequest** part the application requires to receive the notification of the status of the message delivery.

The optional message part **receiptRequest** is not used (or will be overridden) in case the **startDeliveryReceiptNotification** operation is used when the application requires to receive delivery receipt notifications. This is to avoid overlapping criteria.

If notification mechanism is not supported by a network a fault (SVC0283) will be returned to the application and the message will not be sent to the addresses specified. Notification to the application is done by invoking the **notifyMessageDeliveryReceipt** operation at the endpoint specified in **receiptRequest**.

The correlator provided in the **receiptRequest** must be unique for this Web Service and application at the time the notification is initiated, otherwise a **ServiceException** (SVC0005) will be returned to the application.

Optional parameter **format** is used to indicate the format of a message that is included in the request (at the same time it indicates preferred delivery method for the message). If the parameter is not present, MMS format type is assumed. Enumeration data type **MessageFormat** includes message format types that can be used with these specifications. If a specified message format is not supported, a **ServiceException** (SVC0284) will be returned to the application.

8.1.1.1 Input message: SendMessageRequest

Part name	Part type	Optional	Description
Addresses	xsd:anyURI [1..unbounded]	No	Destination addresses for the Message.
SenderAddress	xsd:string	Yes	Message sender address. This parameter is not allowed for all 3rd party providers. Parlay X server needs to handle this according to a SLA for the specific application and its use can therefore result in a PolicyException.
Subject	xsd:string	Yes	Message subject. If mapped to SMS this parameter will be used as the senderAddress, even if a separate senderAddress is provided.
Priority	MessagePriority	Yes	Priority of the message. If not present, the network will assign a priority based on an operator policy.
Charging	Common:Charging Information	Yes	Charging to apply to this message.
ReceiptRequest	Common:Simple Reference	Yes	It defines the application endpoint, interfaceName and correlator that will be used to notify the application when the message has been delivered to terminal or if delivery is impossible. It is not used (or will be overridden) in case the startDeliveryReceiptNotification operation is used.
Format	MessageFormat	Yes	Includes message format type. If not present, the default is MMS message format type.

NOTE: The input message contains one or more attachments, with appropriate content as defined by SOAP Messages with Attachments [7].

8.1.1.2 Output message: SendMessageResponse

Part name	Part type	Optional	Description
result	xsd:string	No	It is a correlation identifier that is used in a **getMessageDeliveryStatus** message invocation, i.e. to poll for the delivery status of all of the sent Messages.

8.1.1.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

- SVC0004 - No valid addresses.

- SVC0006 - Invalid group.

- SVC0283 - Delivery Receipt Notification not supported

- SVC0284 – Message format type not supported.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0006 - Groups not allowed.

- POL0007 - Nested groups not allowed.

- POL0008 - Charging not supported.

- POL0012 – Too many description entries specified.

- POL0013 – Addresses duplication.

8.1.2 Operation: GetMessageDeliveryStatus

This is a poll method used by the application to retrieve delivery status for each message sent as a result of a previous **sendMessage** message invocation. The **requestIdentifier** parameter identifies this previous message invocation.

This operation can be invoked multiple times by the application even if the status has reached a final value. However, after the status has reached a final value, status information will be available only for a limited period of time as defined by a service policy.

8.1.2.1 Input message: GetMessageDeliveryStatusRequest

Part name	Part type	Optional	Description
RequestIdentifier	xsd:string	No	Identifier related to the delivery status request.

8.1.2.2 Output message: GetMessageDeliveryStatusResponse

Part name	Part type	Optional	Description
result	DeliveryInformation [0..unbounded]	Yes	It is an array of status of the messages that were previously sent. Each array element represents a sent message: i.e. its destination address and its delivery status.

8.1.2.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0010 – Retention time interval expired

8.1.3 Operation: ScheduleMessage

Request to schedule sending a message to a set of destination addresses, returning a **requestIdentifier** to identify the message. The **requestIdentifier** can subsequently be used by the application to poll for the message status or cancel the scheduled message.

8.1.3.1 Input message: ScheduleMessageRequest

Part name	Part type	Optional	Description
Addresses	xsd:anyURI [1..unbounded]	No	Destination addresses for the message.
SenderAddress	xsd:string	Yes	Message sender address. This parameter is not allowed for all 3rd party providers. Parlay X server needs to handle this according to a SLA for the specific application and its use can therefore result in a PolicyException.
Subject	xsd:string	Yes	Message subject. If mapped to SMS this parameter will be used as the senderAddress, even if a separate senderAddress is provided.
Priority	MessagePriority	Yes	Priority of the message. If not present, the network will assign a priority based on an operator policy.
Charging	common:Charging Information	Yes	Charging to apply to this message.
StartTime	xsd:dateTime	No	Specifies the time to start sending out the scheduled message.
StopTime	xsd:dateTime	No	Specifies the time to stop sending out the message. Any message not sent before StopTime will not be sent.

NOTE: The input message contains one or more attachments, with appropriate content as defined by SOAP Messages with Attachments [7].

8.1.3.2 Output message: ScheduleMessageResponse

Part name	Part type	Optional	Description
result	xsd:string	No	It is a correlation identifier

8.1.3.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

- SVC0004 - No valid addresses.

- SVC0006 - Invalid group.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0006 - Groups not allowed.

- POL0007 - Nested groups not allowed.

- POL0008 - Charging not supported.

- POL0012 – Too many description entries specified.

- POL0013 – Addresses duplication.

8.1.4 Operation: CancelScheduledMessage

The invocation of cancelScheduledMessageRequest cancels the previously scheduled message request identified by requestIdentifier. If the period scheduled for sending the message has started, some of the messages may have been sent.

8.1.4.1 Input message: CancelScheduledMessageRequest

Part name	Part type	Optional	Description
RequestIdentifier	xsd:string	No	It identifies a specific message schedule request

8.1.4.2 Output message : CancelScheduledMessageResponse

Part name	Part type	Optional	Description
None			

8.1.4.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

8.1.5 Operation: GetScheduledMessageStatus

Gets the schedule and status of a scheduled message.

8.1.5.1 Input message: GetScheduledMessageStatusRequest

Part name	Part type	Optional	Description
RequestIdentifier	xsd:string	No	It identifies a specific message schedule request

8.1.5.2 Output message: GetScheduledMessageStatusResponse

Part name	Part type	Optional	Description
result	ScheduledDeliveryInformation	No	Indicates the delivery result for the destination addresses and, if applicable, the number of messages already sent.

8.1.5.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0010 – Retention time interval expired

8.2 Interface: ReceiveMessage

Operations to retrieve messages that have been received.

8.2.1 Operation: GetReceivedMessages

This method enables the application to poll for new messages received that fulfil the criteria identified by **registrationIdentifier**. The priority parameter may be used by the application to retrieve references to higher priority messages, e.g. if Normal is chosen only references to high priority and normal priority messages are returned. If the priority parameter is omitted all message references are returned.

The operation returns a new list of received messages: i.e. only the received messages that the application has not retrieved by previous invocations of this operation. Moreover, each received message will be automatically removed from the server after an agreed time interval, as defined by a service policy.

8.2.1.1 Input message: GetReceivedMessagesRequest

Part name	Part type	Optional	Description
RegistrationIdentifier	xsd:string	No	Identifies the provisioning step that enables the application to receive notification of Message reception according to specified criteria.
Priority	MessagePriority	Yes	The priority of the messages to poll from the Parlay X gateway. All messages of the specified priority and higher will be retrieved. If not specified, all messages shall be returned, i.e. the same as specifying Low.

8.2.1.2 Output message: GetReceivedMessagesResponse

Part name	Part type	Optional	Description
result	MessageReference [0..unbounded]	Yes	It contains an array of messages received according to the specified filter of **registrationIdentifier** and **priority**.

8.2.1.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0010 – Retention time interval expired

8.2.2 Operation: GetMessageURIs

This method will read the different parts of the message, create local files in the Parlay Gateway and return URI references to them. The application can then simply read each file or just have them presented as links to the end-user. The URIs to the files will be active for as long as the message remains on the server: i.e. an agreed time interval as defined by a service policy.

8.2.2.1 Input message: GetMessageURIsRequest

Part name	Part type	Optional	Description
MessageRefIdentifier	xsd:string	No	The identity of the message to retrieve.

8.2.2.2 Output message: GetMessageURIsResponse

Part name	Part type	Optional	Description
result	MessageURI	No	It contains the complete message, i.e. the textual part of the message, if such exists, and a list of file references for the message attachments, if any.

8.2.2.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0010 – Retention time interval expired

8.2.3 Operation: GetMessage

This method will read the whole message. The data is returned as an attachment, as defined in SOAP Messages with Attachments [7], in the return message. Note that the received message is only available on the server for an agreed time interval following receipt, as defined by a service policy.

8.2.3.1 Input message: GetMessageRequest

Part name	Part type	Optional	Description
MessageRefIdentifier	String	No	The identity of the message

8.2.3.2 Output message: GetMessageResponse

Part name	Part type	Optional	Description
None			

8.2.3.3 Referenced faults

ServiceException from [6]:

- SVC0001 - Service error.

- SVC0002 - Invalid input value.

PolicyException from [6]:

- POL0001 - Policy error.

- POL0010 – Retention time interval expired.

8.3 Interface: MessageNotification

MessageNotification is the application side notification interface to which multimedia messages are delivered.

8.3.1 Operation: NotifyMessageReception

The notification is used to send a multimedia message to the application. The notification will occur only if the multimedia message fulfils the criteria specified when starting the multimedia message notification.

8.3.1.1 Input message: NotifyMessageReceptionRequest

Part name	Part type	Optional	Description
correlator	xsd:string	No	Correlator provided in request to set up this notification
Message	MessageReference	No	This parameter contains all the information associated with the received message.

8.3.1.2 Output message: NotifyMessageReceptionResponse

Part name	Part type	Optional	Description
None			

8.3.1.3 Referenced faults

None.

8.3.2 Operation: NotifyMessageDeliveryReceipt

The **notifyMessageDeliveryReceipt** method must be implemented by a Web Service at the *application side* if it requires notification of message delivery receipt. It will be invoked by the Parlay X server to notify the application when a message sent by an application has been delivered to the terminal of the recipient or if delivery is impossible. The notification will occur if and only if the status of the sent message is "DeliveredToTerminal" or "DeliveryImpossible" and the application has specified interest in notification using one of the following mutually exclusive mechanisms:

- when sending a message by specifying the optional receiptRequest parameter. The correlator returned corresponds to the identifier specified by the application in the **receiptRequest** of the original **sendMessage** request

- by invoking the **startDeliveryReceiptNotification** operation requesting to receive delivery receipt notifications. The correlator returned corresponds to the identifier specified by the application in the **reference** of the original **startDeliveryReceiptNotification** request

When a message is sent to multiple addresses, the notification from the server will send notification for each terminal as and when a message is delivered to a terminal.

The following three different message delivery status will be returned in NotifyMessageDeliveryReceiptResponse:

- 'DeliveryImpossible': unsuccessful delivery; the message could not be delivered before it expired.

- 'DeliveredToTerminal': when message has been successfully delivered to the terminal.

- "DeliveredNotificationNotSupported" - If notification is supported by the network but it does not support delivery receipt for one or more addresses specified in the **sendMessage** message. The service will send this status for those addresses.

8.3.2.1 Input message: NotifyMessageDeliveryReceiptRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	The identifier defining the original SendRequest. This correlator was passed by the application during the SendMessage request
DeliveryStatus	DeliveryInformation	No	It lists the variations on the delivery status of the message to a terminal. Possible values are: • DeliveryImpossible • DeliveredToTerminal • DeliveryNotificationNotSupported

8.3.2.2 Output message: NotifyMessageDeliveryReceiptResponse

Part name	Part type	Optional	Description
None			

8.3.2.3 Referenced faults

None.

8.4 Interface: MessageNotificationManager

The multimedia message notification manager enables applications to set up and tear down notifications for multimedia messages online.

8.4.1 Operation: StartMessageNotification

Start notifications to the application for a given Message Service activation number and criteria.

The Message Service activation number is an Address Data item e.g. Shortcode, as defined in 3GPP TS 29.199-1 [6].

The correlator provided in the reference must be unique for the application Web Service at the time the notification is initiated, otherwise a ServiceException (SVC0005) will be returned to the application..

If specified, criteria will be used to filter messages that are to be delivered to an application. If criteria are not provided, or are an empty string, then all messages for the MessageServiceActivationNumber will be delivered to the application. The MessageServiceActivationNumber and criteria combination must be unique. If a criteria overlaps then SVC0008 will be returned to the application and the notification will not be set up. Note that the use of criteria will allow different notification endpoints to receive notifications for the same MessageServiceActivationNumber. The combination of MessageServiceActivationNumber and criteria must be unique, so that a notification will be delivered to only one notification endpoint. If no match is found, the message will not be delivered to the application.

8.4.1.1 Input message: StartMessageNotificationRequest

Part name	Part type	Optional	Description
Reference	common:SimpleReference	No	Notification endpoint definition
MessageServiceActivationNumber	xsd:anyURI [1…unbounded]	No	The destination address or addresses of the multimedia messag(s)
Criteria	xsd:string	Yes	The text to match against to determine the application to receive the notification. This text is matched against the first word, as defined as the initial characters after discarding any leading Whitespace and ending with a Whitespace or end of the string. The matching shall be case-insensitive. If the subject of the multimedia message is present it shall be used as the string, if not the string is defined as the first plain/text part of the content (see 3GPP TS 23.140 [8]).

8.4.1.2 Output message: StartMessageNotificationResponse

Part Name	Part Type	Optional	Description
none			

8.4.1.3 Referenced Faults

ServiceException from [6]

- SVC0001 – Service error

- SVC0002 – Invalid input value

- SVC0005 – Duplicate correlator

- SVC0008 – Overlapping Criteria

PolicyException from [6]

- POL0001 – Policy error

8.4.2 Operation: StopMessageNotification

The application may end a multimedia message notification using this operation

8.4.2.1 Input message: StopMessageNotificationRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator of request to end

8.4.2.2 Output message: StopMessageNotificationResponse

Part Name	Part Type	Optional	Description
None			

8.4.2.3 Referenced Faults

ServiceException from [6]

- SVC0001 – Service error

- SVC0002 – Invalid input value

PolicyException from [6]

- POL0001 – Policy error

8.4.3 Operation: StartDeliveryReceiptNotification

Start notifications to the application for delivery receipts. The reference will be where to send the delivery receipts. The **notifyMessageDeliveryReceipt** method (see clause 8.3.2) must be implemented by a Web Service at the application side if it requires notification of Multimedia Message delivery receipt. When the **startDeliveryReceiptNotification** operation is supported by the Service Provider, its use overrides the delivery receipting mechanism supported in the SendMessage API (see clause 8.1: **sendMessage** operation).

8.4.3.1 Input message: StartDeliveryReceiptNotificationRequest

Part name	Part type	Optional	Description
Reference	common:SimpleReference	No	Notification endpoint definition
FilterCriteria	xsd:string	No	The FilterCriteria will allow the service to filter flexibly. One example would be for the Service Provider to filter based on first 4 digits in MSISDN. This however is implementation specific and will be left to the Service Provider.

8.4.3.2 Output message: StartDeliveryReceiptNotificationResponse

Part Name	Part Type	Optional	Description
none			

8.4.3.3 Referenced Faults

ServiceException from [6]

- SVC0001 – Service error

- SVC0002 – Invalid input value

- SVC0005 – Duplicate correlator

- SVC0008 – Overlapping Criteria

- SVC0283 – Delivery Receipt Notification not supported

PolicyException from [6]

- POL0001 – Policy error

8.4.4 Operation: StopDeliveryReceiptNotification

The application may end delivery receipt notification using this operation.

8.4.4.1 Input message: StopDeliveryReceiptNotificationRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator of request to end

8.4.4.2 Output message: StopDeliveryReceiptNotificationResponse

Part Name	Part Type	Optional	Description
None			

8.4.4.3 Referenced Faults

ServiceException from [6]

- SVC0001 – Service error

- SVC0002 – Invalid input value

PolicyException from [6]

- POL0001 – Policy error

9 Fault definitions

9.1 ServiceException

9.1.1 Void

The fault code (SVC0230) is reserved and shall not be used.

9.1.2 SVC0283: Delivery Receipt Notification not supported

Name	Description
Message Id	SVC0283
Text	Delivery Receipt Notification not supported
Variables	

10 Service policies

Table: Service policies for this service

Name	Type	Description
GroupSupport	xsd:Boolean	Groups may be included with addresses
NestedGroupSupport	xsd:Boolean	Are nested groups supported in group definitions
ChargingSupported	xsd:Boolean	Charging supported for send message operation
StatusRetentionTime	common:TimeMetric	A time interval that begins after the status of a message delivery request has reached a final value. During this interval, the delivery status information remains available for retrieval by the application.
MessageRetentionTime	common:TimeMetric	A time interval that begins after the receipt of a message. During this interval, the message remains available for retrieval by the application.
MaximumDescriptions	xsd:int	Maximum number of Descriptions that can be charged simultaneously.
MessagingAddressesDuplicationSupport	xsd:boolean	Is duplication addresses supported for send operations.

NOTE: For service policy - 'MessagingAddressesDuplicationSupport', if aliases or group addresses are used:

1. Parlay X Gateway with Identity Management Framework support can verify that indeed there is a duplicate.

2. If network capability supports aliases or group addresses and the Parlay X Gateway without Identity Management Framework supporting, then the policy exception of addresses duplication may not have effect fully.

3. If network capability does not support aliases or group addresses and the Parlay X Gateway without Identity Management Framework supporting, the Parlay-X Gateway should reject the aliases and group addresses.

Annex A (normative): WSDL for Multimedia Messaging

The document/literal WSDL representation of this interface specification is compliant to 3GPP TS 29.199-1 [6] and is contained in text files:

- parlayx_mm_notification_interface_4_0.wsdl

- parlayx_mm_notification_service_4_0.wsdl

- parlayx_mm_notification_manager_interface_4_0.wsdl

- parlayx_mm_notification_manager_service_4_0.wsdl

- parlayx_mm_receive_interface_4_0.wsdl

- parlayx_mm_receive_service_4_0.wsdl

- parlayx_mm_send_interface_4_0.wsdl

- parlayx_mm_send_service_4_0.wsdl

- parlayx_mm_types_4_0.xsd

which accompany the present document.

The WSDL files have been verified using the following files:

- 5_wsdl2Java_axis-1_4.bat

- 5_wsdl2Java_axis2-1_4_1.bat

which accompany the present document.

Annex B (informative):
Description of Parlay X Web Services Part 5: Multimedia messaging for 3GPP2 cdma2000 networks

This annex is intended to define the OSA Parlay X Web Services Stage 3 interface definitions and it provides the complete OSA specifications. It is an extension of OSA Parlay X Web Services specifications capabilities to enable operation in cdma2000 systems environment. They are in alignment with 3GPP2 Stage 1 requirements and Stage 2 architecture defined in:

[1]   3GPP2 X.S0011-D: 'cdma2000 Wireless IP Network Standard ", Version 1.1

[2]   3GPP2 S.R0037-0: "IP Network Architecture Model for cdma2000 Spread Spectrum Systems", Version 3.0

[3]   3GPP2 X.S0013-A: "All-IP Core Network Multimedia Domain"

These requirements are expressed as additions to and/or exclusions from the 3GPP specification.
The information given here is to be used by developers in 3GPP2 cdma2000 network architecture to interpret the 3GPP OSA specifications.

B.1 General Exceptions

The terms 3GPP and UMTS are not applicable for the cdma2000 family of standards. Nevertheless these terms are used (3GPP TR 21.905) mostly in the broader sense of "3G Wireless System". If not stated otherwise there are no additions or exclusions required.

CAMEL mappings are not applicable for cdma2000 systems.

B.2 Specific Exceptions

B.2.1 Clause 1: Scope

There are no additions or exclusions.

B.2.2 Clause 2: References

There are no additions or exclusions.

B.2.3 Clause 3: Definitions and abbreviations

There are no additions or exclusions.

B.2.4 Clause 4: Detailed service description

There are no additions or exclusions.

B.2.5 Clause 5: Namespaces

There are no additions or exclusions.

B.2.6 Clause 6: Sequence diagrams

There are no additions or exclusions.

B.2.7 Clause 7: XML Schema data type definition

There are no additions or exclusions.

B.2.8 Clause 8: Web Service interface definition

There are no additions or exclusions.

B.2.9 Clause 9: Fault definitions

There are no additions or exclusions.

B.2.10 Clause 10: Service policies

There are no additions or exclusions.

B.2.11 Annex A (normative): WSDL for Multimedia Messaging

There are no additions or exclusions.

Annex C (informative):
Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
Dec 2006	CT_34	CP-060601	0009	--	Add support for Scheduled Multimedia Messages	B	6.6.0	7.0.0
Mar 2007	CT_35	CP-070045	0011	--	Add OSA Parlay Web Services support for 3GPP2 networks	A	7.0.0	7.1.0
Mar 2007	--	--	--	--	Editorial: Aligned 5 Namespaces	--	7.1.0	7.1.1
Jun 2007	CT_36	CP-070346	0013	--	Correction to align notification mechanisms for Delivery Receipting in Multimedia Messaging	F	7.1.1	7.2.0
Dec 2008	CT_42	CP-080894	0014		Extend information on delivery failure notifications - MMS	F	7.2.0	8.0.0
Dec 2008	CT_42	CP-080895	0015		Remove limitation of number of notification subscriptions - MMS	F	7.2.0	8.0.0
Sep 2009	CT_45	CP-090593	0016		Completion of Parlay X Part 5 - Multimedia messaging for Release 8	F	8.0.0	8.1.10
Dec 2009					History table correction		8.1.0	8.1.1
2009-12	-	-	-	-	Update to Rel-9 version (MCC)		8.1.1	9.0.0

History

Document history		
V9.0.0	January 2010	Publication