



InovaMMSC

Product Overview

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1. INTRODUCTION

1.1. Purpose of this document

The goal of this paper is to give an overview of the features and functionalities provided in InovaCom MMSC System. Document is divided into three parts. In first part is given overview of the platform and features, second part explains the System Architecture on the diagram. Third part goes in detail with only most significant functionalities.

1.2. Terms and Definitions

Mobile terminal – device used by end user for voice and data communication. Types: GSM, Smart phone, PDA and other

Gateway – a hardware or software set-up that translates data between two dissimilar protocols or designs

MMS – Multimedia Messaging Service, allows real-time and non-real-time transmission of various kinds of multimedia content like images, audio between mobile terminals

MMSC – Multimedia Messaging Service Center, network solution that enables MMS messaging

SuperMMS – messaging technique that utilizes WAP Push technology to deliver MMS Content through WAP. User doesn't need to have MMS capable mobile device then only WAP integrated browser

GPRS – General Packet Radio Service, GSM data transmission techniques which runs at speeds up to 115 kilobits per second, compared with GSM (CSD) systems' 9.6 kilobits/s

CSD - Circuit Switched Data, traditional GSM technology used for the data transmission. Payment is made in accordance with the duration of the connection. Connection speed is limited to maximum of 9.6 kilobits/s

2. OVERALL DESCRIPTION

2.1. Product Definition

InovaCom Multimedia Messaging Services Center is standard based, scalable service platform that enables user to send, receive remotely store message that contain text, graphics, music and other media types. InovaCom MMSC is build on open standards (OMA Forum, 3GPP) and it runs on mobile networks which have provide GSM – CSD, GPRS, EDGE, 3G technologies for data transmission.

InovaCom MMSC supports mobile-to-mobile, mobile-to-email, mobile-to-application, application-to-mobile mobile messaging. It offers multimedia message store, billing and mobile terminal content adoption techniques (transcoder engine). It is easy extendable platform with feasible support to latest MMS technologies (MM1 – HTTP raw interface, MM7 – HTTP/SOAP interface).

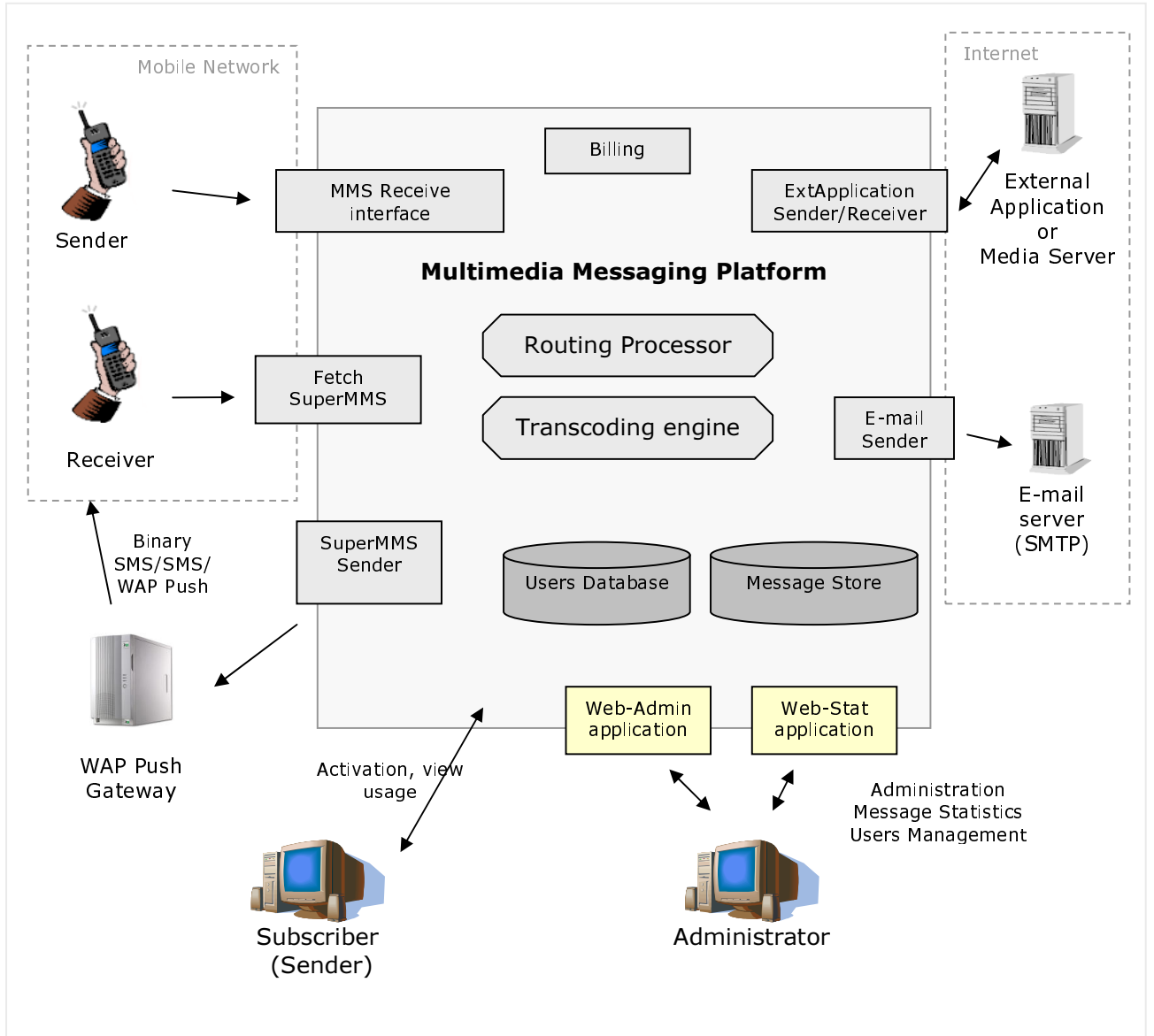
2.2. Feature Summary

- MMS receiving interface fully compliant with 3GPP, OMA Forum standards
- Advanced, template based transcoding engine that provides SMIL-to-WML, SMIL-to-Email, SMIL-to-HTML, SMIL-to-text content transcoding. Transcoding is adopted to the mobile terminal where content is displayed
- Standard image transcoding of JPG, GIF, WBMP done in native language done for high performance activity
- Easy customizable routing mechanism
- Subscribers (users) database and billing connection (charging is on the sender side)
- Sending SuperMMS messages through WAP-Push interface (which is based on HTTP protocol or SDK provided by SMS Provider)
- Integrated WAP Gateway functionality
- Interoperability with external applications which can receive and send MMS messages
- Web based administration
- Web based statistics
- Scalable design

2.3. Platform Technology

- TCP/IP, WAP, WML, XML, SMIL, SMS, WAP Push, SMTP
- Java, JRE, JDBC
- Operating environment: Linux, Unix, Windows, Solaris

3. SYSTEM ARCHITECTURE



4. MAIN FUNCTIONALITES

4.1. Message Routing and Billing

MMS server can have any number of receiving and any number of sending interfaces. Each message after it is received from some receiving interface is saved to the message store and according to the message header variables (from, to, interface type, external application) it is forwarded to one of the sending interfaces. All this functions are done inside *Routing Processor* which can be administered by web admin application.

Following screenshot shows 'edit rule' page where is defined that everything what has character @ in 'to' header variable should be send to email interface. When message is sent, sender's credit balance is decreased for 0.1 points.



ADMIN

Current user : Karlo Magdic
[exit](#)

<p>MMS Relay Server</p> <p>Status</p> <p>Wap Settings</p> <p>E-mail Settings</p> <p>Routing Rules and Billing</p> <p>External Applications</p> <p>Mobile users</p> <p>Message Store</p> <p>Message Statistics</p> <p>Preview Messages</p> <p>Other</p> <p>Locomoby Settings</p> <p>Mobile Terminals Configuration Guide</p> <p>Admin Application</p> <p>Admin Users</p> <p>Exit</p>	<p>Routing Rules and Billing</p> <p>Return</p> <p>Add new/Edit Rule:</p> <p>Rule title/description : <input type="text" value="If for *@*, send e-mail"/></p> <p>If</p> <p>Message received over interface: <input type="text" value="mms-wap"/></p> <p>From external application*: <input type="text"/></p> <p>Sender address (Message From): <input type="text"/></p> <p>Recipient address (Message To): <input type="text" value="*@*"/></p> <p>Then apply following</p> <p>Replace recipient address (Message To): <input type="text"/></p> <p>Send to inteface: <input type="text" value="email"/></p> <p>For external application*: <input type="text"/></p> <p>With price : <input type="text" value="0.1"/></p> <p><input type="button" value="Save"/></p> <p>* - should be used only if the interface is application</p>
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4.2. Transcoding engine

Transcoding mechanism provides translating content from MMS to WAP or e-mail or HTML, it can be easily extended with some new transcoding objective.

When sending SuperMMS MMS content, receiver is notified with the WAP-Push message. User retrieves the MMS content browsing the specified WAP page, and page content is automatically generated and using WAP transcoder. As transcoder knows the type and model of mobile terminal, it adjusts image size and type to the terminal screen, in purpose to have whole image visible.

Following screenshot shows admin page where WAP-Push and WAP transcoder settings are provided.

Current user : Karlo Magdic [exit](#)

WAP Settings

WAP PUSH SETTINGS

Subscriber ID:

Subscriber password:

WAP Push message text:

WAP TRANSCODER SETTINGS

WAP page template (WML):

```
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN" "http://www.wapforum.org/DTD/wml_1.1.xml">
<wml>
<card id="HTML" title="{=subject}">
<p>Od: {=from}</p>
<p>Datum: {=date}</p>
{=body}
</card>
</wml>
```

Adjust image size to terminal screen:

Adjust image type to terminal screen:

[Send SMS Message](#)

[Send SuperMMS Message](#)

E-mail and HTML transcoding have much similarity with WAP transcoding, where also templates are used.

4.3. Interoperability with External Applications

One of the main purposes of the MMS Gateway is to provide connection to applications which therefore can receive/send MMS content from/to mobile subscribers. HTTP protocol has proven as best trans-technology protocol for exchange the data, so it was also used here. Below the text is shown one example of external application.



ADMIN

Current user : Karlo Magdic
[exit](#)

MMS Relay Server	External Applications
Status	Return
Wap Settings	Add new/Edit external application:
E-mail Settings	Name of applicatoin/client: <input type="text" value="Karlo Test"/>
Routing Rules and Billing	Contact person - name : <input type="text" value="Karlo Magdic"/>
External Applications	Contact person - e-mail: <input type="text" value="karlo.magdic@inovacom.hr"/>
Mobile users	Username: <input type="text" value="Karlo Magdic"/>
Message Store	Password: <input type="password" value="•••••"/>
Message Statistics	Short id: <input type="text" value="444"/>
Preview Messages	Sending message to mobile users: <input type="text" value="Not Allowed"/>
Other	Receiving message from mobile users: <input type="text" value="Allowed"/>
Locomoby Settings	Application URL: <input type="text" value="http://testserver.com/inovamms/receive"/>
Mobile Terminals Configuration Guide	<input type="button" value="Save"/>
Admin Application	
Admin Users	
Exit	