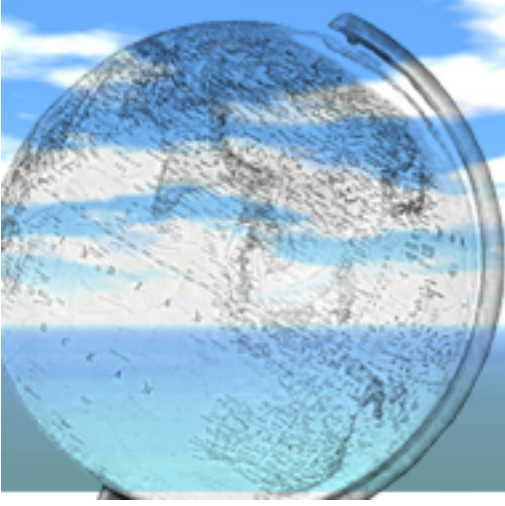




SAEAUT SMS Service

User's Manual



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0

1 Introduction

1.1 About

Software product **SAEAUT SMS Service** enables **sending and receiving of individual and group SMS using personal computer**.

Its main purpose is providing of SMS services for other client applications in LAN or internet. It can be used as complete one user's SMS solution as well. It can be placed on either on server or on a desktop computer. A GSM modem, GSM telephone or an internet connection to the chosen SMS web gateway is necessary for its functionality (the last possibility is not provided in all product versions).

Product contains:

1. Runtime application without user interface implemented as the OS Windows Service
2. The configuration application with user interface having two purposes:
 - The setting up of the runtime application functionality and features
 - The client application to edit and browse of the sent and received SMS

Although the main purpose of the product is creating of special client applications using SMS services, we offer also (as individual products not delivered within the product SAEAUT SMS Service) two standard client applications:

- **SAEAUT SMS Client** – this application enables sending of the group and individual SMS in LAN and browsing of sent and received SMS for a just authenticated user. It must be installed on every computer in LAN using SMS services provided by runtime application of the SAEAUT SMS Service.
- **SAEAUT SMS Web client** – the web application for sending of SMS from web browser environment. It is installed on the only one computer (it can be the same where SAEAUT SMS Service resides). The access to the application is from computers connected to internet (after authentication) over web browser through defined URL.

Customer applications using SMS functionality can be implemented by two ways:

- As external application connected to the SAEAUT SMS Service through shared database
- As VBA (Visual Basic for Applications) application implemented directly in the MDB database file delivered with SAEAUT SMS Service.

Such application examples (descriptions and source codes) can be downloaded from www.saeautom.sk/download.

Guide how to use SMS server can be found here: [Configuration](#),
[Controlling SMS Server](#)



1.2 Main features

1. Communication

- Communication via GSM modem.
- Connection to GSM modem via: serial communication interface (RS-232); IrDA, Bluetooth, USB (virtual serial port).
- Communication parameters: serial port used, transfer speed, etc. can be configured directly using the application.
- Application is optimized for GSM modems by FALCOM - [SAMBA 55](#), [TANGO 55](#) and by Wawecom - [Fastrack M1306B](#) (System is open for using GSM modems by other vendors.)

2. GSM parameters

- Connection to GSM network is interposed by a mobile network operator's SIM card. Application is optimized for services of operators as follows: ORANGE, T-MOBILE, O2. (System is open for use in networks of other operators.)
- PIN code for used SIM card can be set in the application.
- SMS center phone number (service center) can be set in the application.

3. Creating SMS message

- Maximum length of single SMS message is max. 160 characters.
- SMS message can be created by using simple client applications.

4. Sending SMS message

- SMS message can be sent to one or several phone numbers at once.
- Application can send two types of SMS messages:
 - *Group SMS messages* - SMS is sent to a predefined phone number(s) that are assign to the group.
 - *Custom SMS messages* - SMS created by client applications.

5. Receiving SMS message

- Application allows to receive two types of SMS messages:
 1. *Delivery report* about sent SMS message.
 2. *SMS sent by other user.*

6. Address book

- Allows to create phone numbers address book in the format: Name and phone number.

7. Cooperation with external applications

- Application user can create or use own application that can cooperate with SAEAUT SMS Service. These applications will communicate with each other through database interface.

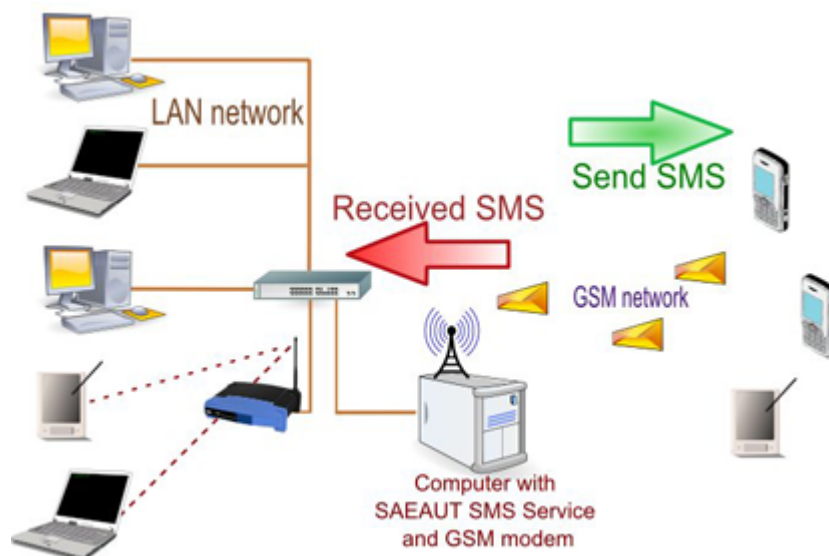
8. User accounts

- A configurator has a possibility to create, remove or edit user accounts. Users can login to their accounts.

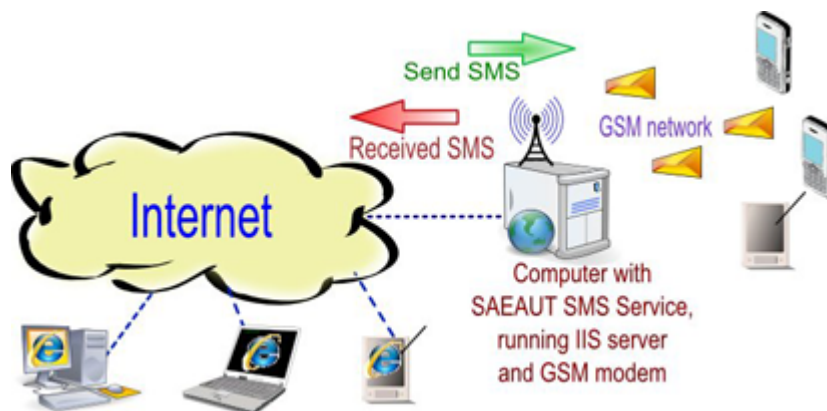
1.3 Main scenarios

Main scenarios of use:

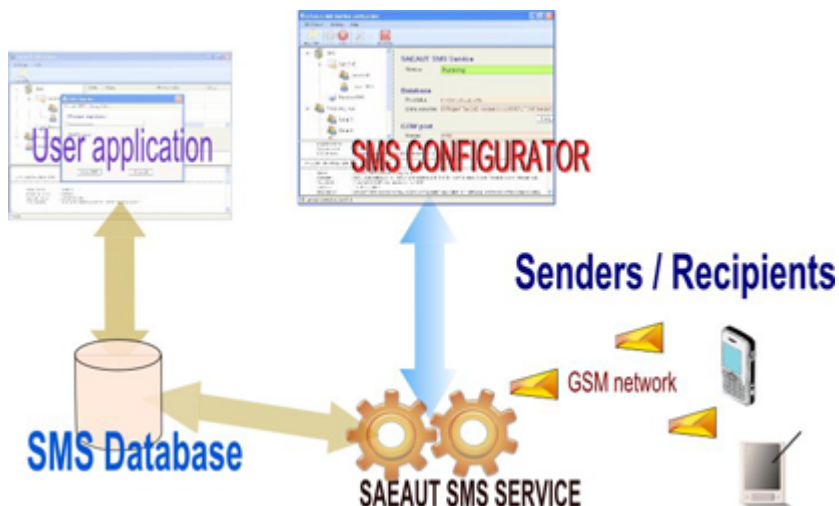
1. Sending and receiving SMS in local network.



2. Sending and displaying received SMS through Internet using a web browser.



3. Using for cooperation with other client application.



1.4 System requirements

- **Computer/CPU**
 - Pentium II or compatible
- **RAM:**
 - 128 MB (256 MB recommended)
- **Communication interface**
 - Serial port
- **Operating system:**
 - Windows 98, Windows 2000, Windows XP, Windows Vista, Windows 7
- **Prerequisites**
 - .NET Framework 2.0
 - In case of client web application a web server is required (IIS server best)

- **Free hard disk space**
 - 10 MB for full install

2 About SMS technology

SMS technology was created GSM pioneers in Europe and later accepted as ETSI standard. SMS technology was created to offer infrastructure for delivering short messages with the maximum length of 140 bytes (160 characters) in telecommunication networks. SMS message is created with the help of PDU standard and then over GSM networks. SMS message is transmitted as binary string that contains all required data for transferring message over GSM network.

GSM technology

GSM (Global System for Mobile communication) is the most popular standard for mobile phones in the world. GSM phones are being used by over 1 billion people from over than 200 different countries.

Widespreading of GSM standard makes international calling a conventional routine, thanks to "roaming agreements" among mobile network operators. GSM differs from its ancestors in digital quality of signal and communication channels, that means we speak about second generation (2G) of mobile phone systems. GSM is an open standard that is being developed by 3GPP.

GSM is backward compatible with original GSM phones. At the same time continues GSM standard by developing of packet data transmission, accepted to standard in 1997 under the common short name GPRS. Higher data transfer speed was introduced in 1999 as EDGE and UMTS (in this case we speak about 3G).

SMS message

Short text message (Short Message Service) describes a service available on most phones that allows sending short text messages between mobile phones. Its success made them spread also to landline phones.

SMS is one of the basic GSM services. SMS can be delivered also during a parallel call or forwarding, it is not possible to forward SMS unlike normal calls.

There are 2 basic types of SMS:

SMS-PP (Short Message Service Point to Point)

In single SMS message it is possible to use maximum of 160 characters, i.e. 140 octets. Some phone allow to send longer messages, however, the phone sends them like several 160-characters messages and the recipient's phone connects them again to a single SMS. This same applies when sending a message to more recipients but effectively they are sent as single message to each of the recipients.

SMS-CB (Short Message Service Cell Broadcast)

Maximum length is 93 characters.

This type uses so called Cell Broadcast channels. They are used for weather forecasts, local news, traffic situations or for localization services. The message is being sent to all

phone in given area that have CB service turned on and particular channel is set.

(Source: <http://sk.wikipedia.org/>)

3 Working with SAEAUT SMS Service

3.1 Configuration of SMS Service

The SAEAUT SMS Service application is configurable via SMS Configurator application. The configuration consists of several steps as follows:

1. Configuring GSM modem settings

When the user connects a GSM modem to the computer, the application has to be configured for this modem. The description of configuration parameters can be found at the tab [Settings](#).

Default settings of most GSM modems:

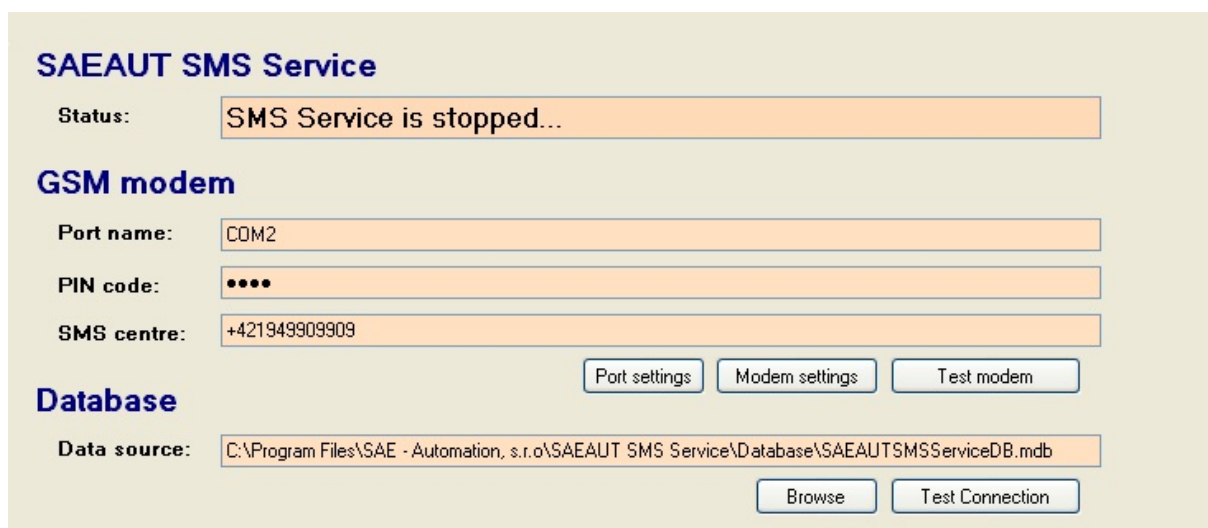
- Baud rate = 9600
- Data bits = 8
- Parity = no parity
- Stop bits = 1

• SMS center phone numbers in Slovak Republic:

Orange	+421905303303
T-Mobile	+421903333000
O2	+421949909909

2. Configuring application settings

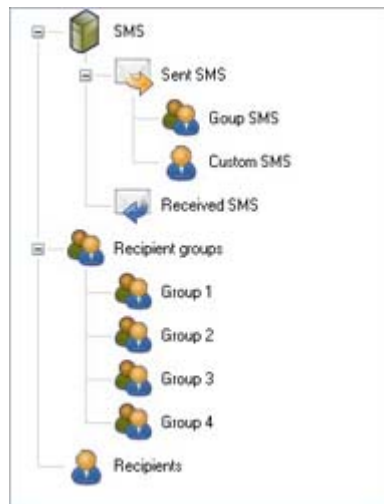
Before the user starts SAEAUT SMS Service it is useful to enable or disable log files - [Options](#). The application settings summary is on the right of the application window if the user clicks on the item SMS.



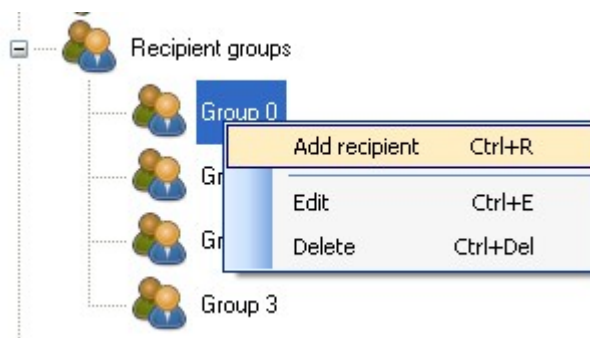
The screenshot shows the SAEAUT SMS Service configuration window. It has a title bar 'SAEAUT SMS Service'. Below the title bar, there is a 'Status:' label and a text box containing 'SMS Service is stopped...'. Below this, there is a section titled 'GSM modem' with three labels: 'Port name:' (text box with 'COM2'), 'PIN code:' (text box with '****'), and 'SMS centre:' (text box with '+421949909909'). To the right of these text boxes are three buttons: 'Port settings', 'Modem settings', and 'Test modem'. Below the 'GSM modem' section is a section titled 'Database' with a label 'Data source:' and a text box containing 'C:\Program Files\SAE - Automation, s.r.o\SAEAUT SMS Service\Database\SAEAUTSMSServiceDB.mdb'. To the right of this text box are two buttons: 'Browse' and 'Test Connection'.

3. Assigning recipient to particular recipient group

Application SMS Configurator includes function for sending SMS message to chosen recipient group. The recipient can be selected by the [Recipients](#) item. The list of recipient groups is located in the left panel.



When user wants add recipient to the selected group , right-click on group and choose **Add recipient**.



In the menu you can see the list of all recipients that can be added to selected group of recipients. After clicking on the recipient, the selected recipient will be added to the group of recipients.



To remove a recipient from a selected group, proceed accordingly. Right-click on the recipient to remove and select **Delete**



This way the user can create own **Recipient group - Recipient** configuration. After selecting [Start SMS Service](#) item from the menu, the SAEAUT SMS Service is launched.

3.2 Recipients

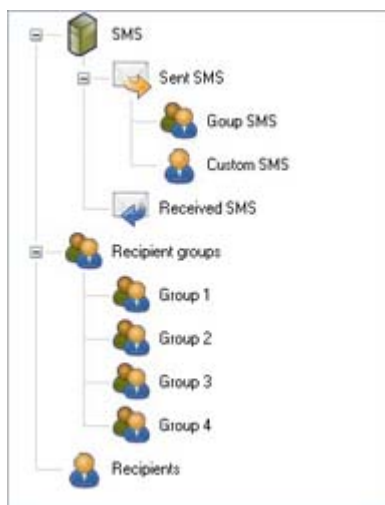
SAEAUT SMS Service allows the user to create recipients and recipient groups that can receive SMS messages. These groups and users can be configured through SMS Configurator and they are stored in the database table [Recipients](#).

Through SMS Configurator you can:

- create new recipients
[Create recipient](#)
- modify recipients
[Edit recipient data](#)
- remove recipients
[Delete recipient](#)

3.2.1 Create recipient

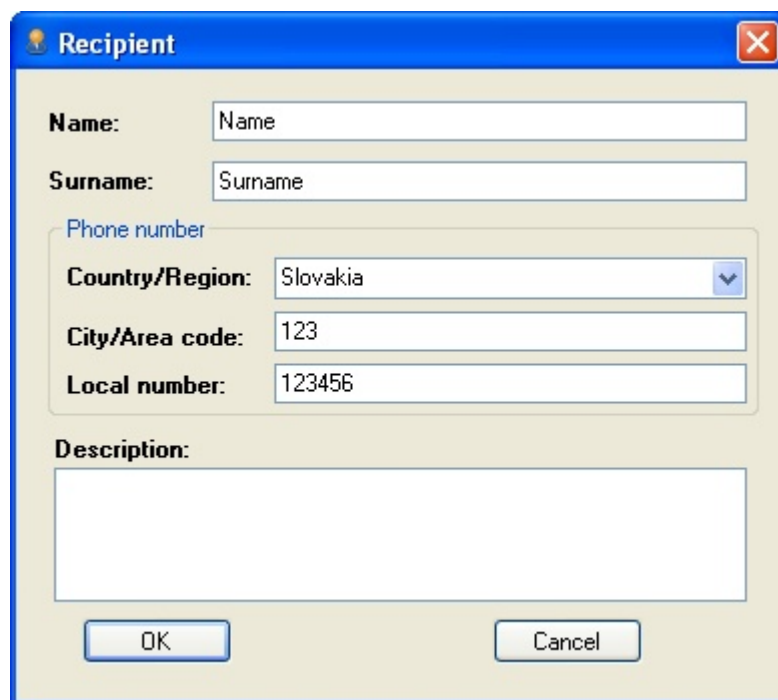
Through SMS Configurator you can create recipients and recipient groups to send SMS message. These users and groups are displayed on the left of the application window.



You can add new recipients when you click on the item **Recipients**.



Then a dialog window pops up to add new recipient.

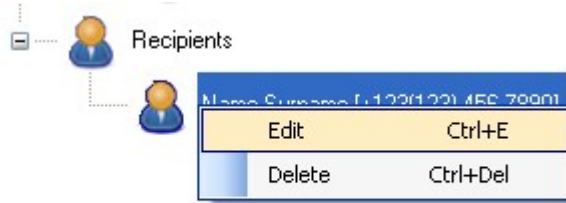


A transparent list of users is displayed on the right of the application window.

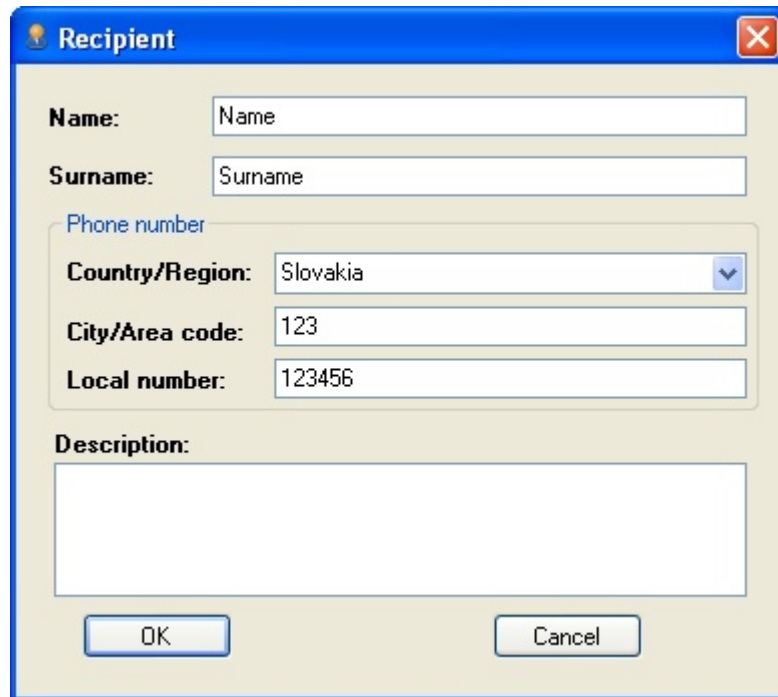
ID	Name	Surname	Phone number	Description
3	Name	Surname	+421(123)456789	

3.2.2 Edit recipient data

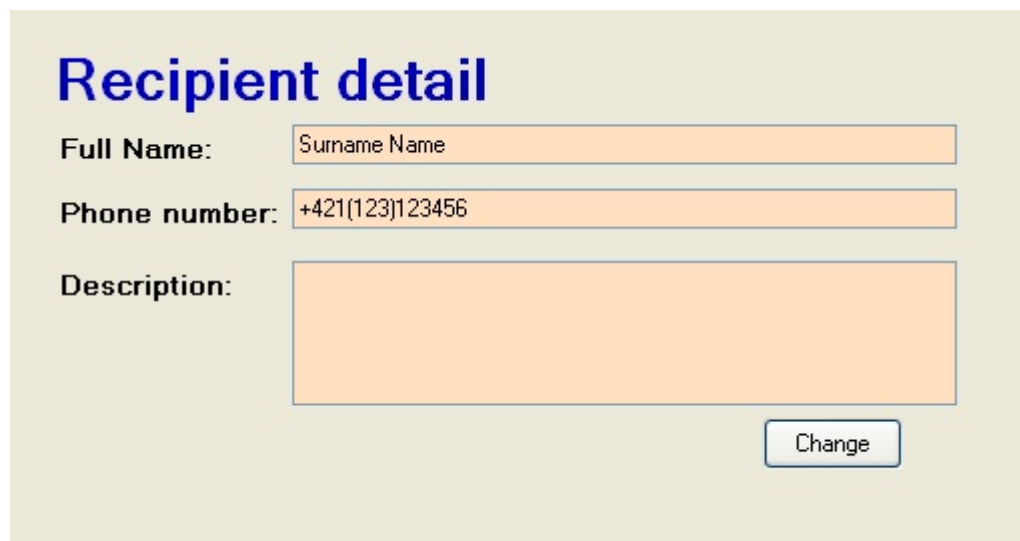
To edit users through SMS Configurator just right-click on the specified user and a menu appears:



Choose Edit to edit user details (or double-click on the user name).

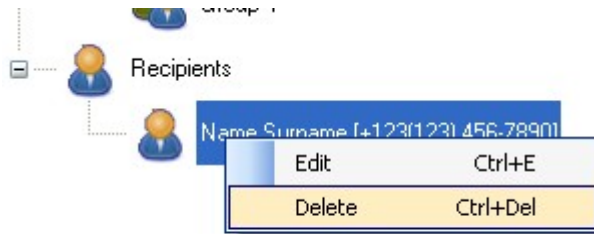


You can check the modified details on the right of the application window.



3.2.3 Delete recipient

To remove users through SMS Configurator right-click on the specified user and choose Delete from the menu. It allows to remove selected recipients. After right-click on selected user a menu will show up:



3.3 Recipient groups

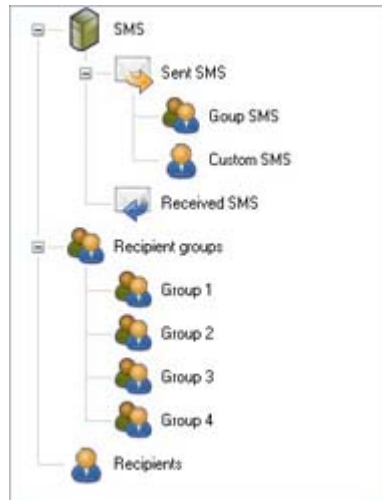
SAEAUT SMS Service allows to create recipient groups to send SMS messages. These groups can be set within SMS Configurator and they are stored in the database table [Recipient groups](#).

SMS Configurator enables to:

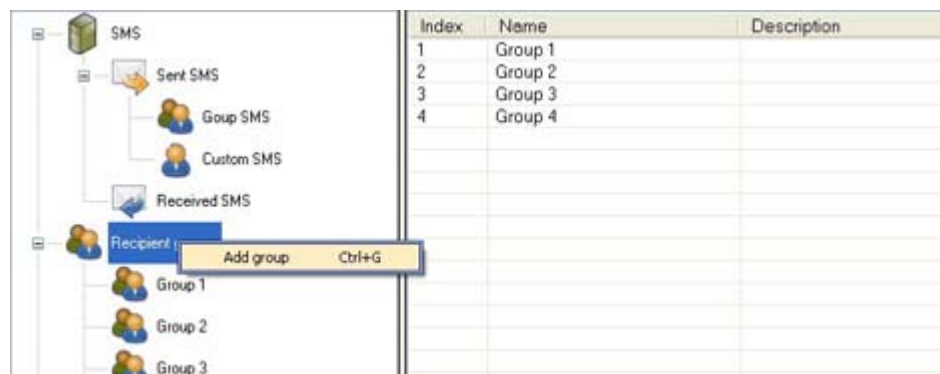
- create recipient groups
[Create recipient group](#)
- modify user groups
[Edit recipient group](#)
- remove user groups
[Delete recipient group](#)
- add recipients to groups
[Add recipient to group](#)
- remove recipients from groups
[Remove recipient from group](#)

3.3.1 Create recipient group

SMS Configurator allows to create recipient groups. They are displayed on the left of the application window.



After clicking **Recipient group** you can create a new group.

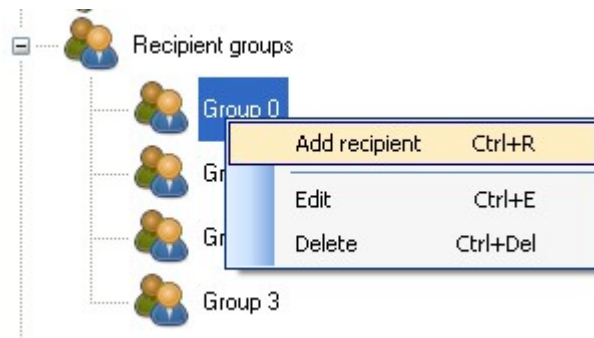


You can see a transparent list of user groups on the right of the application window.

[illegible]

3.3.2 Add recipient to group

SMS Configurator allows to add already created recipients into groups.

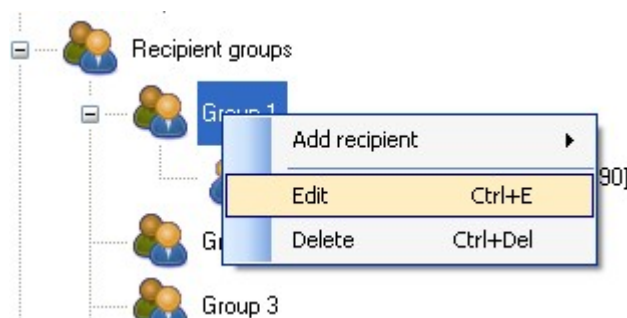


After clicking a particular recipient group the list of recipients in that group is displayed on the right of the application window.

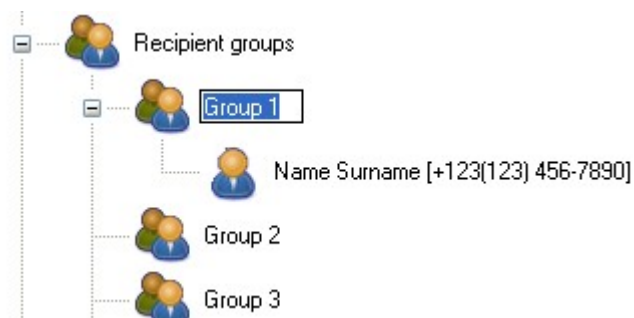
ID	Name	Surname	Phone number	Description
3	Name	Surname	+421(123)456789	

3.3.3 Edit recipient group

To edit a group double-click or right-click on the particular group and choose Edit from the menu:



You can now edit the group name.



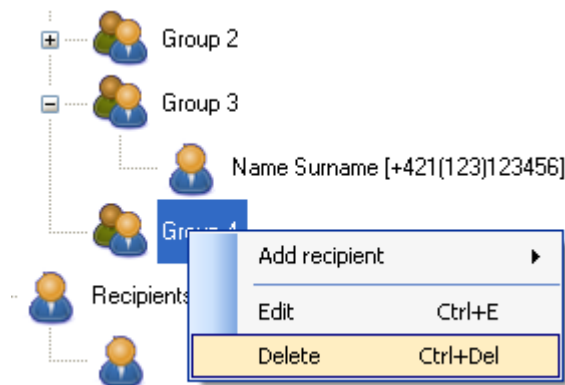
3.3.4 Remove recipient from group

To remove recipients from a particular group just right-click on particular recipient and choose Delete from the menu.



3.3.5 Delete recipient group

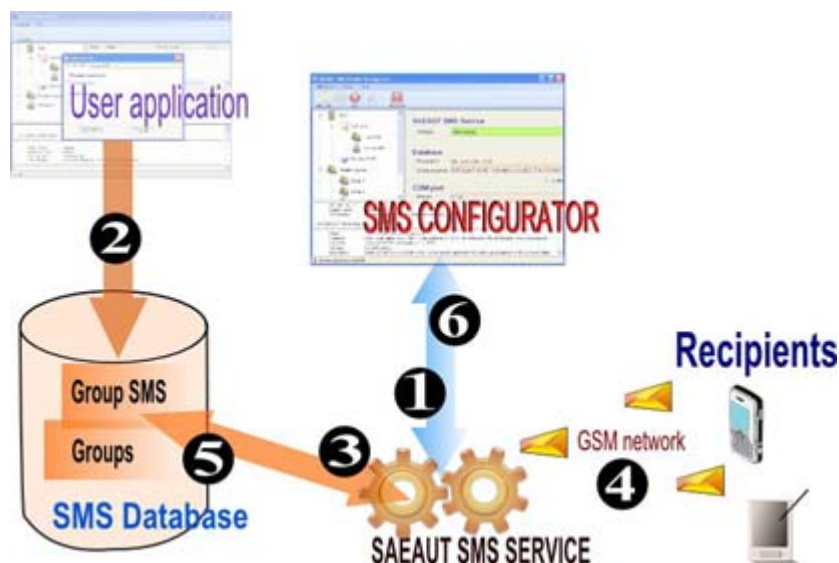
To remove selected group from the list, you click by right button on the group and select the menu item Delete:



3.4 Sending SMS

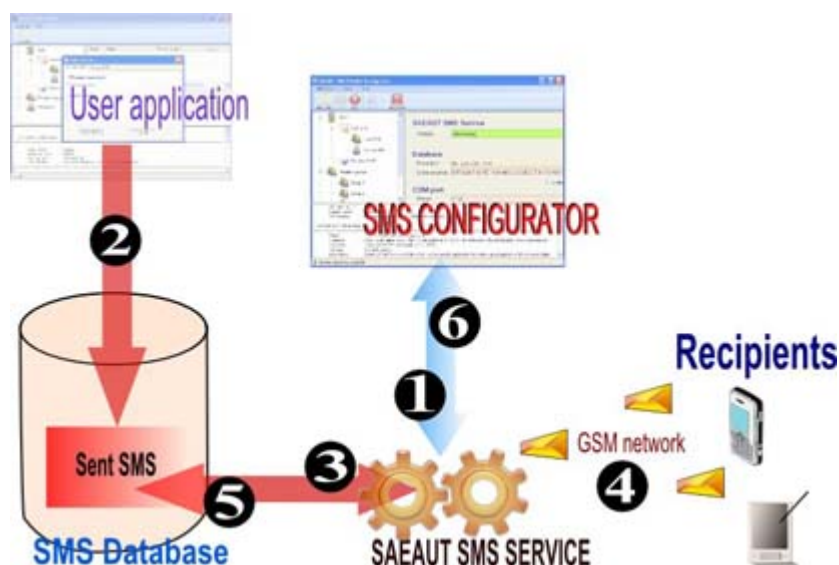
The sending of SMS messages works as shown on the picture below:

1. Sending SMS to specified recipient group



1. The user sets desired configuration of the SMS service through the configuration application:
 - a. path to database
 - b. serial port of connected GSM modem
 - c. SIM card specific settings
2. With the help of client application the user creates new SMS messages and stores it in the database. The SMS must contain:
 - a. recipient group number
 - b. SMS message text
 - c. SMS creation date
3. If SAEAUT SMS Service finds a new SMS to send, it loads all recipients from the given group.
4. When the SMS is ready for processing, it is sent to specified phone number(s).
5. The delivery report/confirmation is stored in the database after the SMS is delivered.
6. The operation results (sending, delivering of SMS) is written in the Event log and shown in the SMS Configurator window.

2. Sending SMS to specified recipient



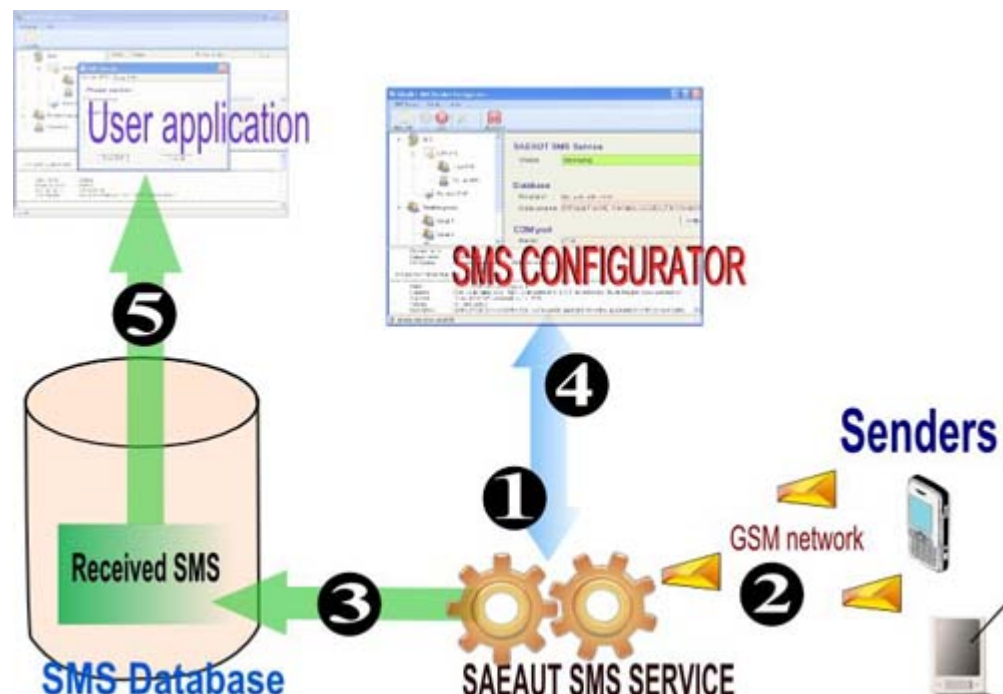
1. The user sets desired configuration of the SMS service through the configuration application:
 - a. path to database
 - b. serial port of connected GSM modem
 - c. SIM card specific settings
2. With the help of client application the user creates new SMS messages and stores it in the database. The SMS must contain:
 - a. recipient group number
 - b. SMS message text
 - c. SMS creation date
3. If SAEAUT SMS Service finds a new SMS to send, it checks if it contains all required data.
4. When the SMS is ready for processing, it is sent to specified phone number(s).
5. The delivery report/confirmation is stored in the database after the SMS is delivered.
6. The operation results (sending, delivering of SMS) is written in the Event log and shown in the SMS Configurator window.

3.5 Receiving SMS

SMS server application processes two types of SMS messages:

1. Delivery report messages
2. SMS messages from users

Receiving SMS message works as shown on the picture below:



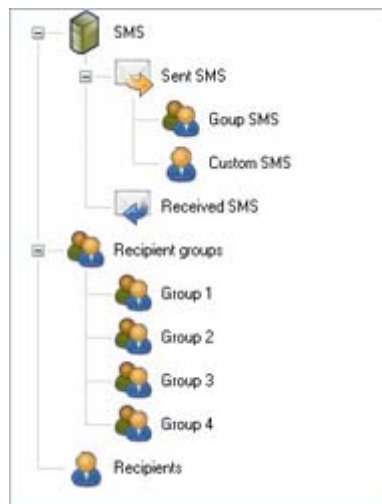
1. The user sets desired configuration of the SMS service through the configuration application:
 - a. path to database

- b. serial port of connected GSM modem
 - c. SIM card specific settings
2. SAEAUT SMS Service loads the SMS message from the GSM modem.
3. Delivered SMS is stored in the database.
4. The delivery report/confirmation is stored in the database after the SMS is delivered.
5. The client application can import the SMS message and process it.

3.6 Show processed SMS

SMS Configurator allows to display sent and received SMS messages (processed by SAEAUT SMS Service).

First choose what to display (on the left of the window).



List of SMS messages for particular selected item is displayed after clicking on the item name.

Order	Name	Phone number	Date	
10	SAE24	0908766967	3.4.2008 0:00:00	
11	SAE24	0908766967	3.4.2008 0:00:00	
12	SAE24	0908766967	4.4.2008 0:00:00	
13	SAE24	0908766967	4.4.2008 0:00:00	
14	SAE24	0908766967	4.4.2008 0:00:00	
15	SAE24	0908766967	4.4.2008 0:00:00	
16	SAE24	0908766967	4.4.2008 0:00:00	
17	SAE24	0908766967	4.4.2008 0:00:00	
18	SAE24	0908766967	4.4.2008 0:00:00	
19	SAE24	0908766967	4.4.2008 0:00:00	
20	SAE24	0908766967	4.4.2008 0:00:00	
21	SAE24	0908766967	4.4.2008 0:00:00	
22	SAE24	0908766967	4.4.2008 0:00:00	

When you should display the full SMS message, you click on selected SMS in the list. Details of the SMS are showed under the list.

From: SAE24
To: 0908766967
Date: 4.4.2008 0:00:00

Method convert number to HEX.

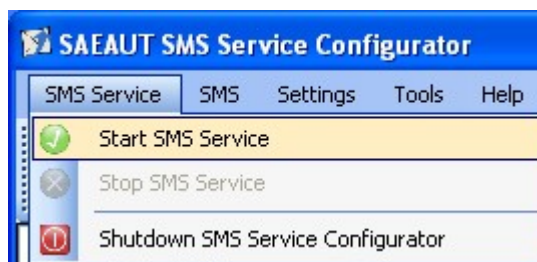
4 SAEAUT SMS Service

4.1 Running SAEAUT SMS Service

SAEAUT SMS Service is a non-visual Windows service application.

It can be launched by various ways:

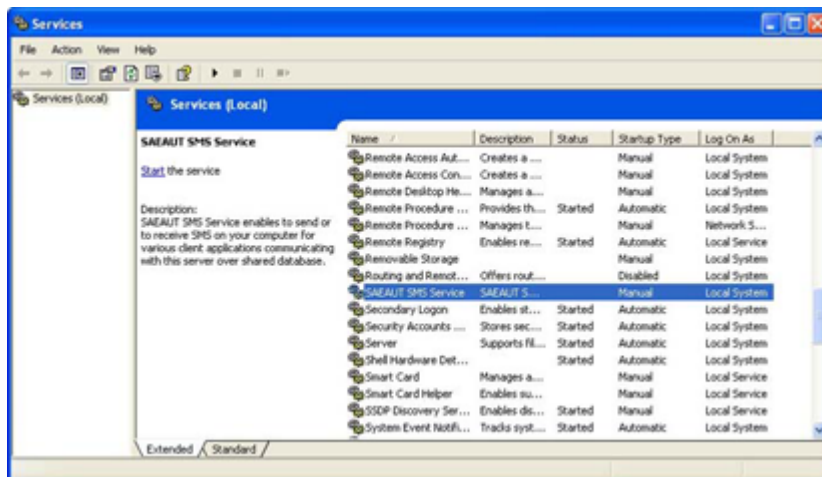
- from SMS Configurator



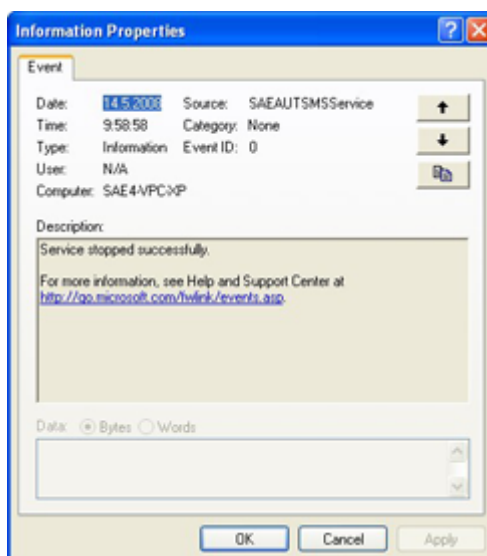
- by tray icon



- from Windows administration panel



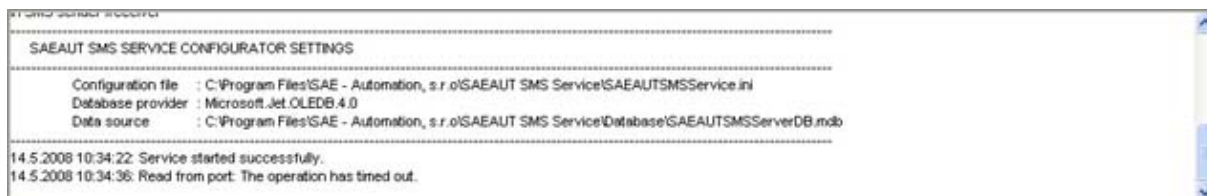
After selecting SAEAUT SMS Service a dialog shows up through that you can start / stop the service.



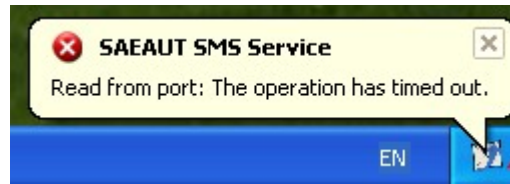
4.2 Show error messages

SAEAUT SMS Service shows error messages in several ways:

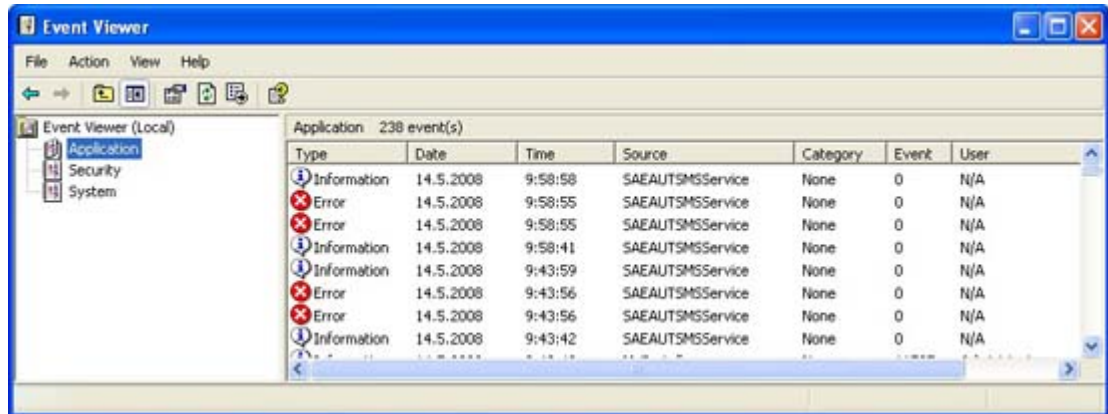
1. In the SMS Configurator log window - [Logging](#)



2. In the Windows taskbar tray icon.



3. In the Windows event log.



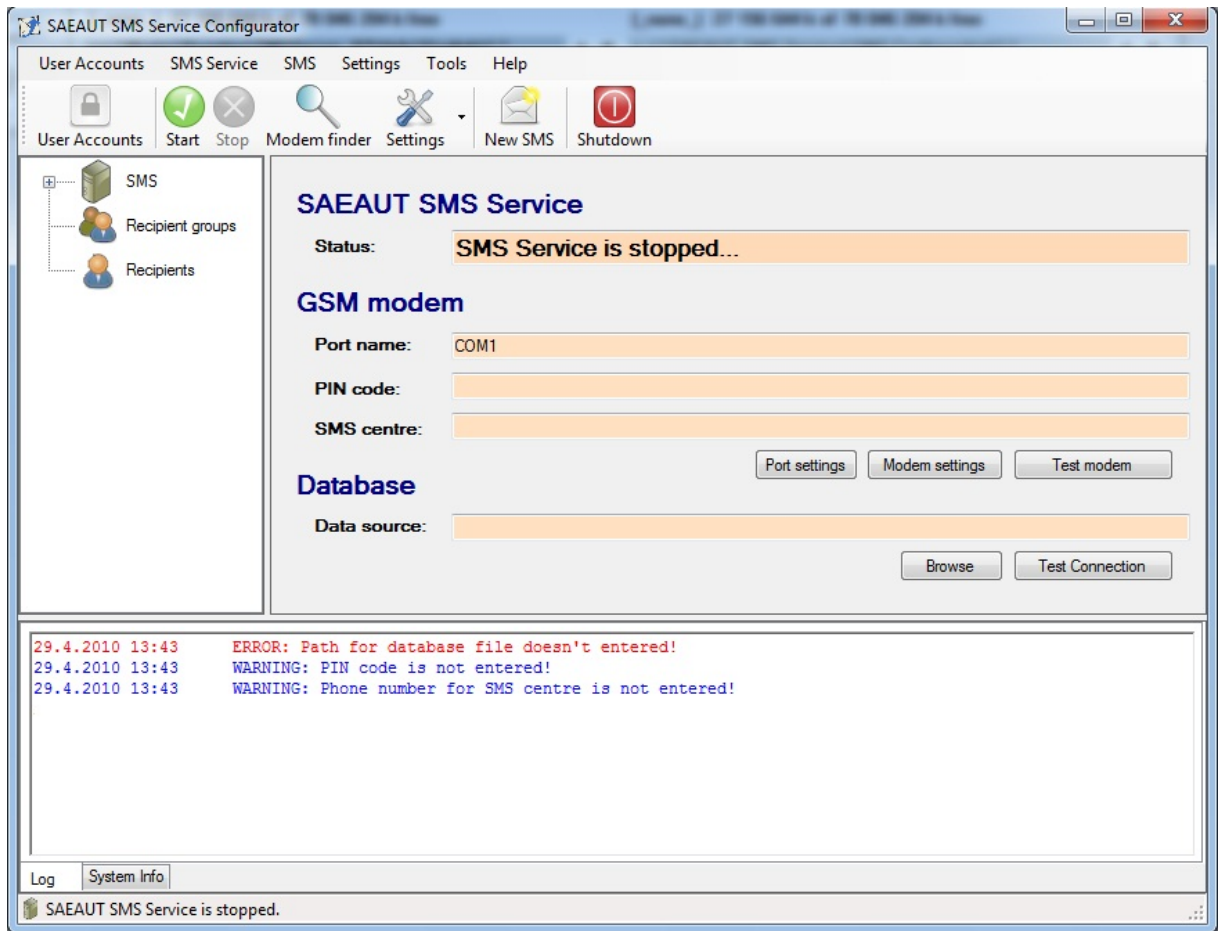
5 SAEAUT SMS Service Configurator

This application is designed as master configuration application for SAEAUT SMS Service.

General properties:

- start / stop command for SMS service which sends / receives SMS messages
- management of recipients
- management of recipient groups
- import / export recipients from / to file

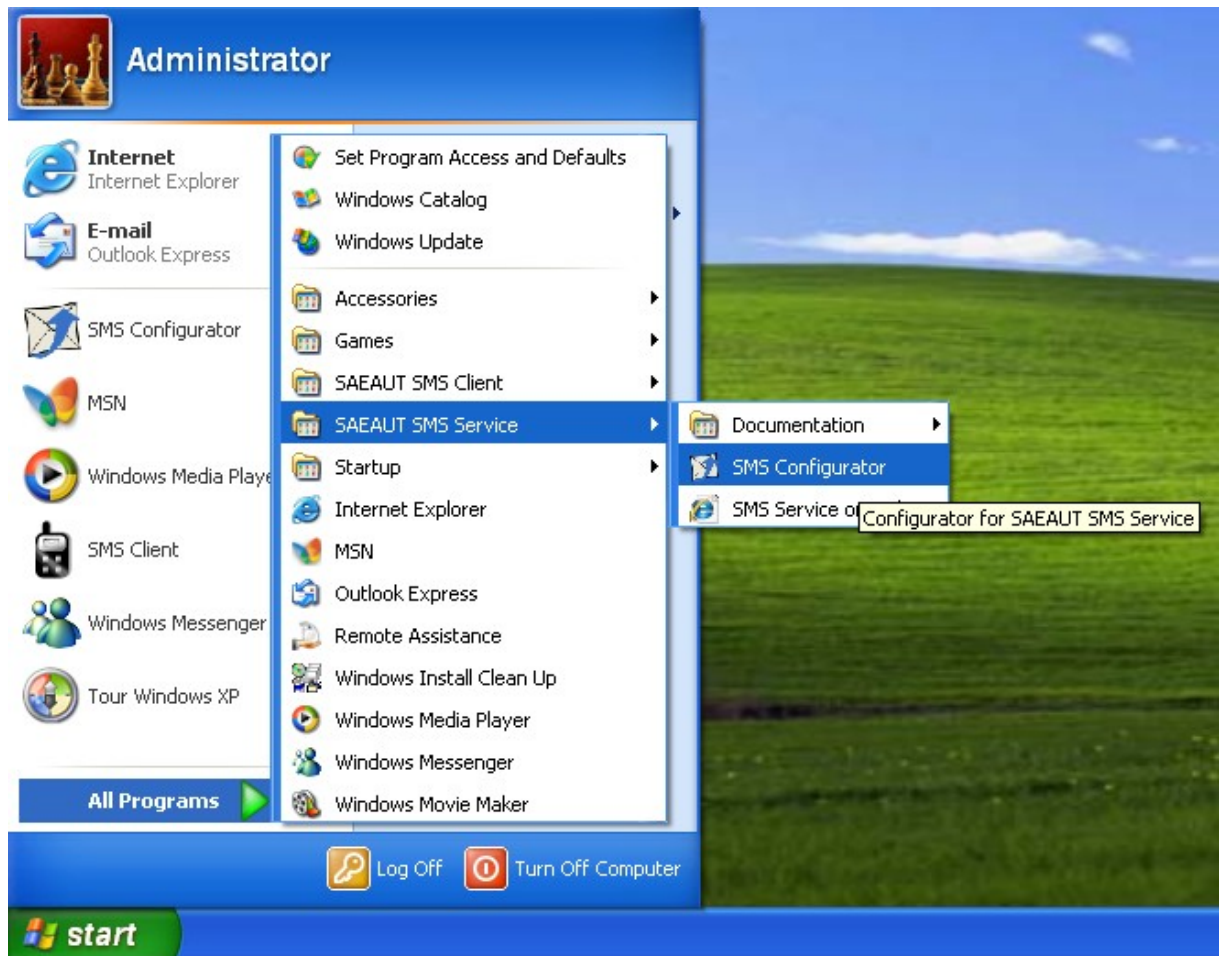
Application design:



5.1 Running SMS Configurator

The application can be launched by two ways:

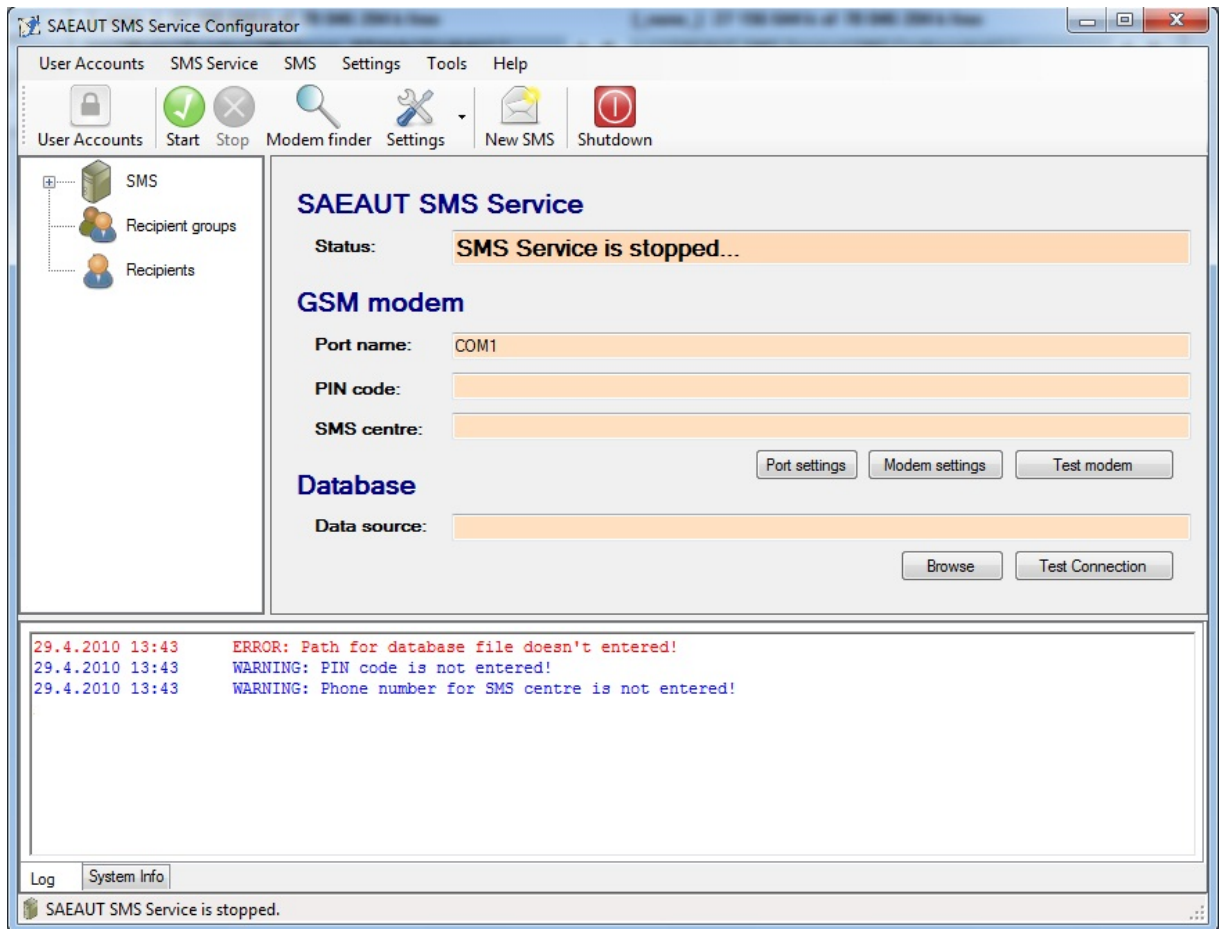
- from within menu Start:



- by clicking on the desktop icon:



Main window of SMS Configurator:



5.2 Controlling SMS Configurator

There are two ways how to control the application after it is configured:

1. Through navigation menu.
2. Through taskbar tray icon.

Controlling via taskbar tray icon

- double click (left mouse button) popups application's interface window
- single click (right mouse button) displays application's menu



Show Configurator
New SMS
Start SMS Service
Stop SMS Service
Shutdown Configurator

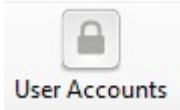
show SMS Configurator window

[New SMS](#)
[Start SMS Service](#)
[Stop SMS Service](#)

shutdown SMS Configurator application

5.3 Navigation

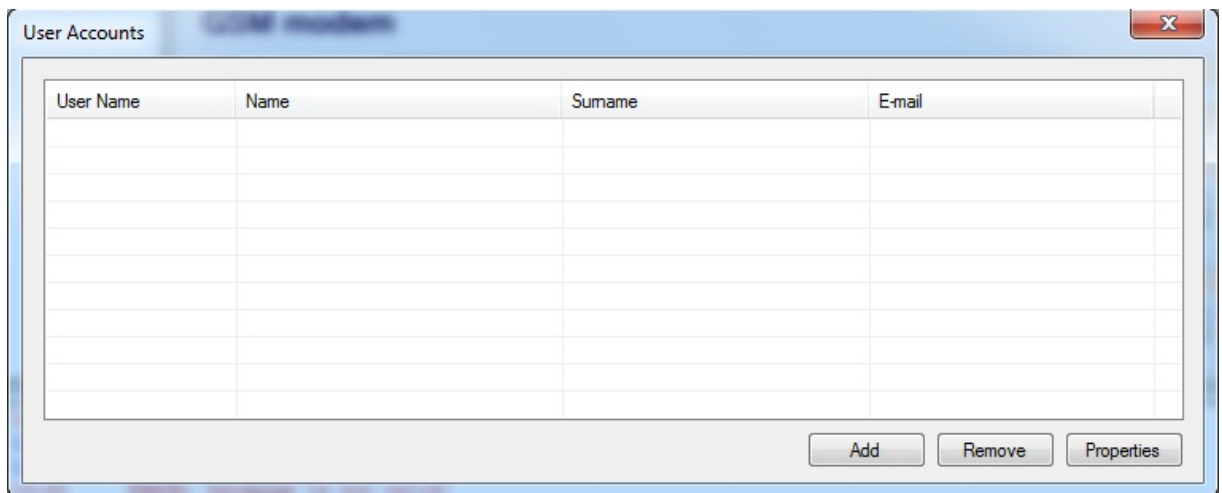
5.3.1 User Accounts

User Accounts dialog is possible to open with click on button  or select from menu



5.3.1.1 Users

User accounts dialog



Create new user account dialog.



User Account

New account

User Name: *

Password: *

Confirm Password: *

The Password and Confirmation Password must match.

User informations

Name:

Surname:

E-mail:

Edit user account dialog.



User Account

Existing account

Old Password: *

New Password: *

Confirm Password: *

The Password and Confirmation Password must match.

User informations

Name:

Surname:

E-mail:

5.3.2 SMS Server

This group of command controls the run of SAEAUT SMS Service. They are accessible through **SMS Server** menu.

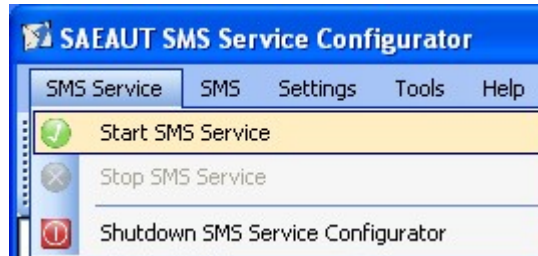


5.3.2.1 Start SMS Service

This command runs SAEAUT SMS Service. It is accessible through **SMS Server - Start**



SMS Service menu or by pressing **Start** button on the toolbar.



After launching SAEAUT SMS Service the initialization of connected GSM modem is performed. After successful modem initialization SAEAUT SMS Service is ready to send and receive SMS messages.

5.3.2.2 Stop SMS Service

This command stops SAEAUT SMS Service. It is accessible through **SMS Server - Stop**



SMS Service menu or by pressing **Stop** button on the toolbar.



While SAEAUT SMS Service is shutting down, first sending/receiving of current SMS message is finished and only then the SAEAUT SMS Service is stopped.

5.3.2.3 Exit SMS Configurator

This command shutdown SAEAUT SMS Service. It is accessible through **SMS Server - Exit**

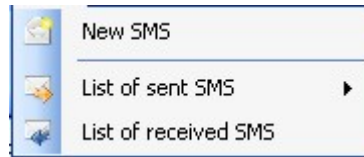


SMS Service Configurator menu or by pressing **Shutdown** button on the toolbar.



5.3.3 SMS

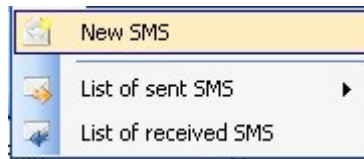
This group of command serves working with SMS messages. They are accessible through **SMS** menu.



5.3.3.1 New SMS

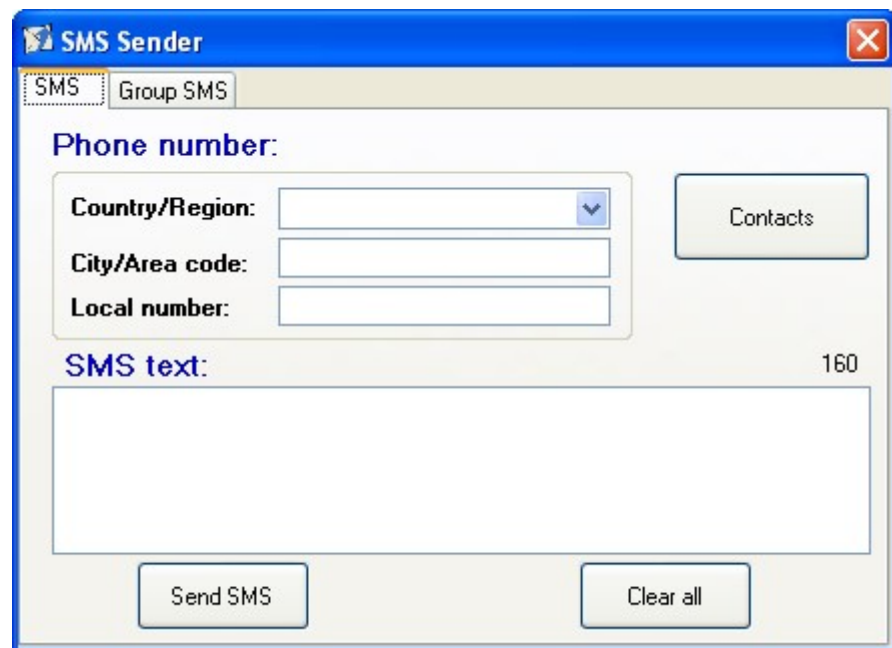
This command sends the SMS. It is accessible through **SMS - New SMS** menu or by

pressing  **New SMS** button on the toolbar.



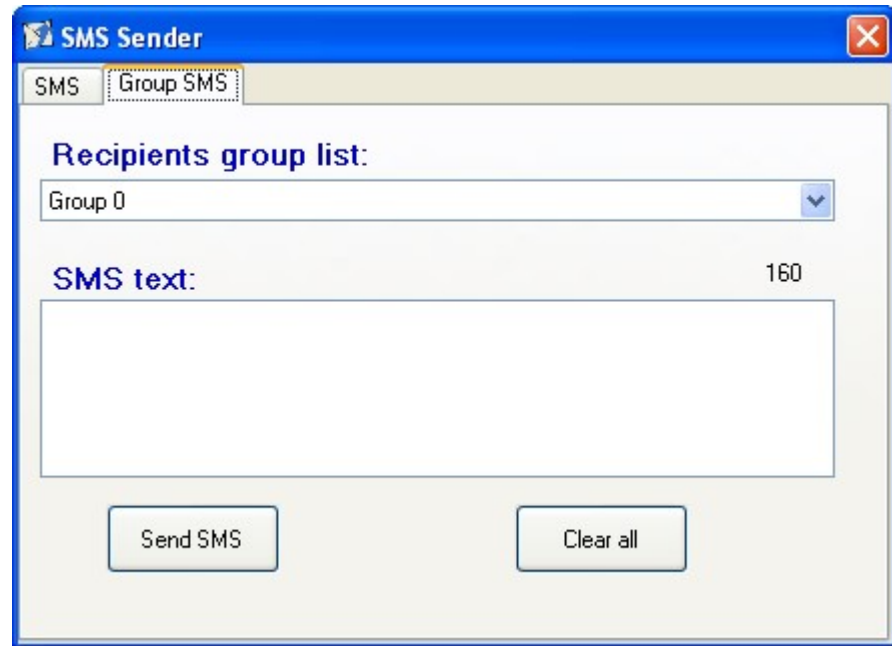
The application allows to create and send two types of SMS messages:

1. Sending SMS to specified phone number



The user enters recipient's phone number and text of SMS message. SAEAUT SMS Service puts such SMS into queue and sends it.

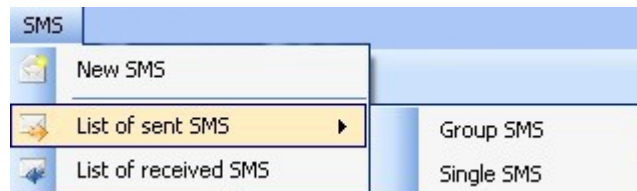
2. Sending SMS to selected group of recipients



The user chooses recipient group and enters the text of SMS message. SAEAUT SMS Service puts such SMS into queue and sends it.

5.3.3.2 List of sent SMS

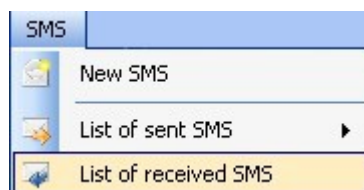
This command allows the displaying of all sent SMS through the application SAEAUT SMS Service. It is accessible through **SMS - List of sent SMS** menu.



It is possible to find out more details in the part [Show processed SMS](#).

5.3.3.3 List of received SMS

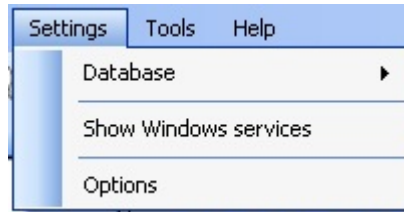
This command allows the displaying of all received SMS through the application SAEAUT SMS Service. It is accessible through **SMS - List of received SMS** menu.



It is possible to find out more details in the part [Show processed SMS](#).

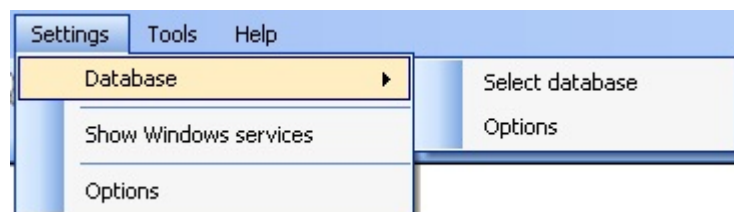
5.3.4 Settings

This group of command contains various application settings. It is accessible through **Settings** menu.

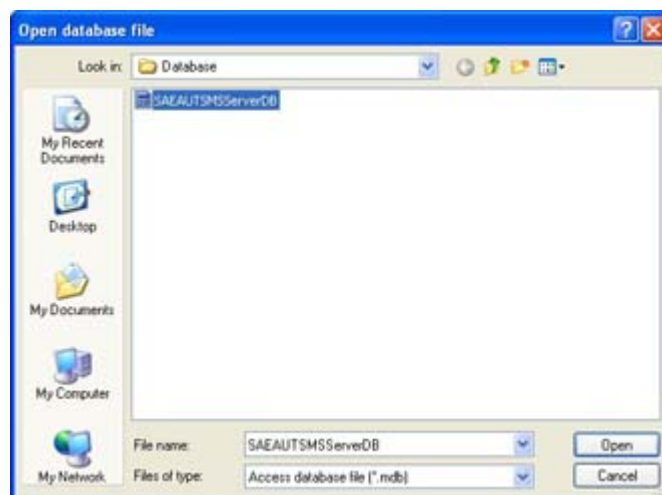


5.3.4.1 Database

To edit paths to database files select **Settings - Database** menu.



With command **Select database** the user can set or modify path to database file.



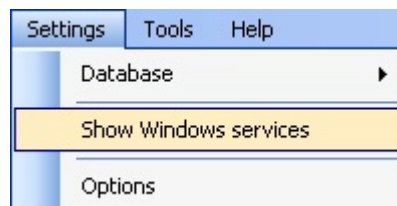
When user select command **Options** then the following dialog is shown.



- **Automatically remove old data** - enable/disable automatically remove old data.
- **Remove sent SMS older than** - remove sent SMS older than XX days .
- **Remove received SMS older than** - remove received SMS older than XX days .

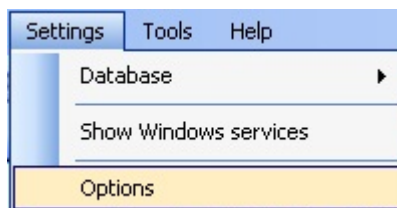
5.3.4.2 Show Windows services

User can display window with Windows services. This command is available through **Settings - Show Windows services** menu.



5.3.4.3 Options

To configure application's behavior select **Settings - Options** menu.



Then a dialog window appears:



Log SMS Server activity

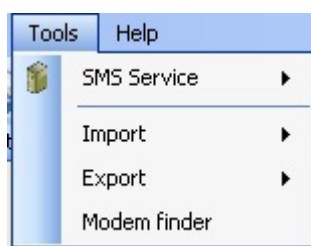
The application allows the user to save selected actions into a log file. The log file can be found in the application's sub-directory **LOG**.

You can turn on/off log settings by (un)checking particular checkbox.

- **Error messages** - enable/disable logging of SMS server error messages.
- **Warning messages** - enable/disable logging of SMS server warning messages.
- **Normal messages** - enable/disable logging of SMS server informational messages.
- **Send SMS** - enable/disable logging of sent SMS messages.
- **Received SMS** - enable/disable logging of received SMS messages.
- **Modem commands** - enable/disable logging of communication with connected GSM modem in the form of AT commands.
- **Max. number of log files** - set how many log files the application can create.
- **Max. log file size** - set the maximum size of a single log file.

5.3.5 Tools

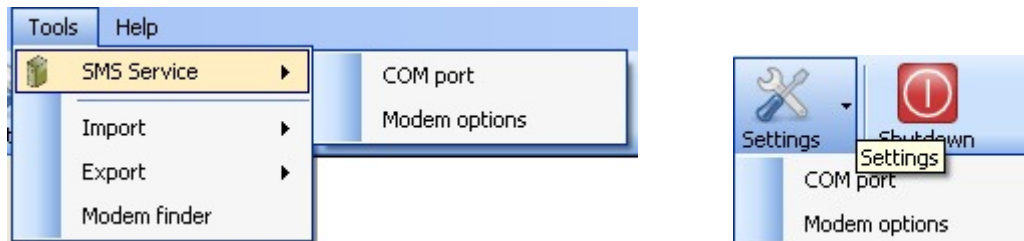
This group of command contains various utilities and tools. It is accessible through **Tools** menu.



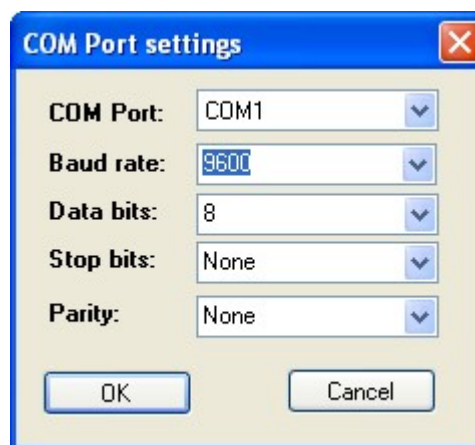
5.3.5.1 SMS Service

This command displays a dialog window with GSM modem configuration parameters.

It is accessible through **Tools - SMS Service** menu or by pressing button on the toolbar.

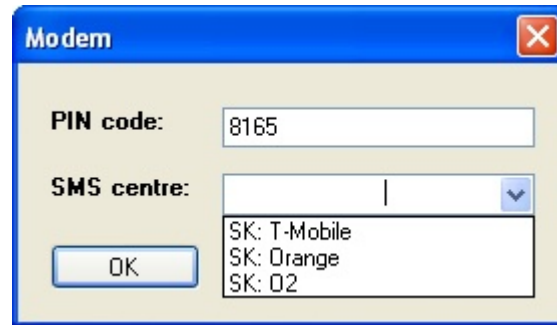


After selecting item **COM port** a dialog window appears:



- **COM port:**
 - COM port to be used by GSM modem
- **Baud rate (speed):**
 - transfer rate in bytes
- **Data bits:**
 - number of bits
- **Stop bits:**
 - amount of stop bits
- **Parity:**
 - way how parity is counted

After selecting item **Modem options** a dialog window appears:



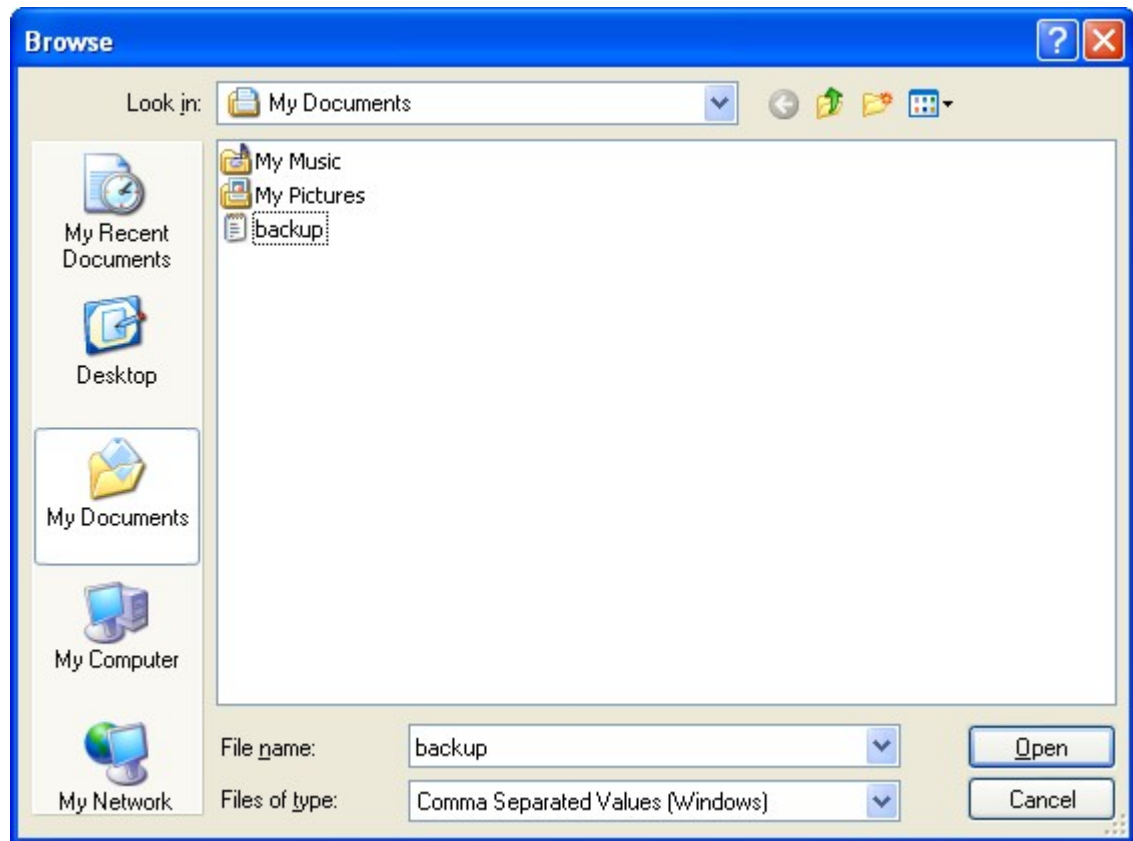
- *PIN code:*
 - SIM card PIN code used in GSM modem
- *SMS centre:*
 - telephone number of mobile network operator's SMS center

5.3.5.2 Import

User can import all recipients from an own file to the configuration of SAEAUT SMS Configurator . This command is available through the **Tools - Import** menu.

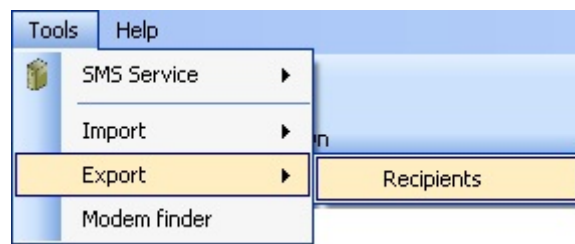


When user select this command so the dialog for saving of file is displayed.

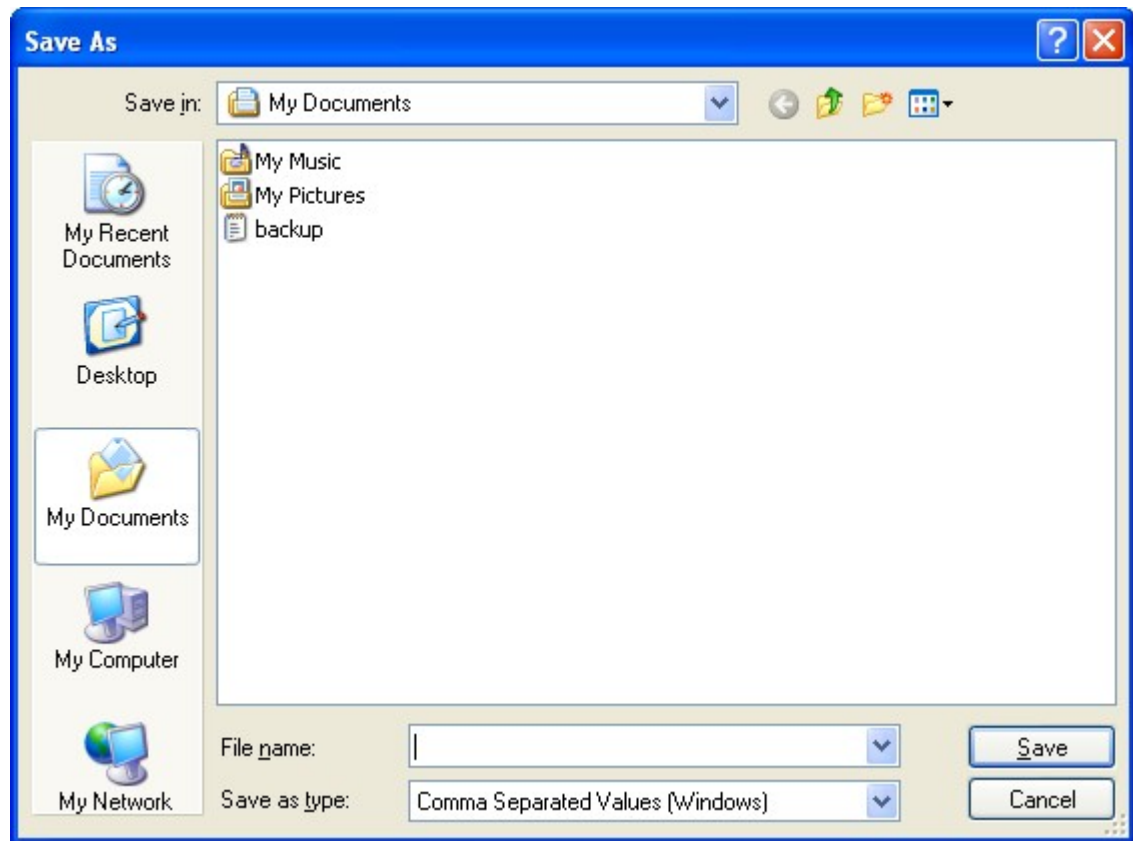


5.3.5.3 Export

User can export all recipients from the SAEAUT SMS Configurator to an own file. This command is available throught the **Tools - Export** menu.



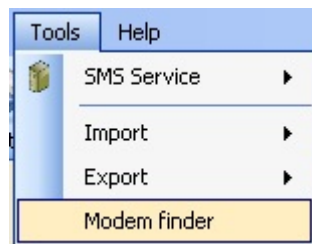
When user select this command so the dialog for saving of file is displayed.



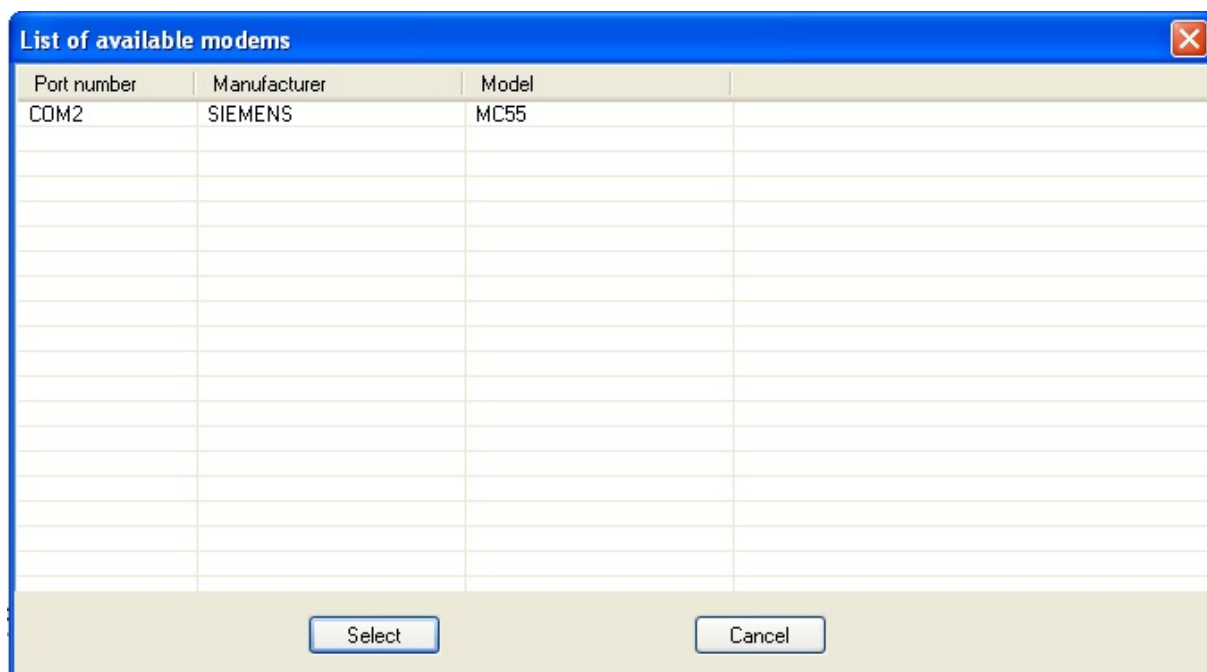
5.3.5.4 Modem Finder

This command searches connected modems. It is accessible through **Tools - Modem finder**

menu or by pressing  button on the toolbar.

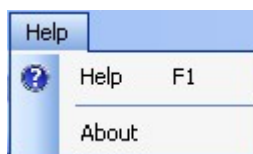


When user select command **Modem finder** then the following dialog is shown.



5.3.6 Help

To display help or details about application select **Help** menu.



5.4 Logging

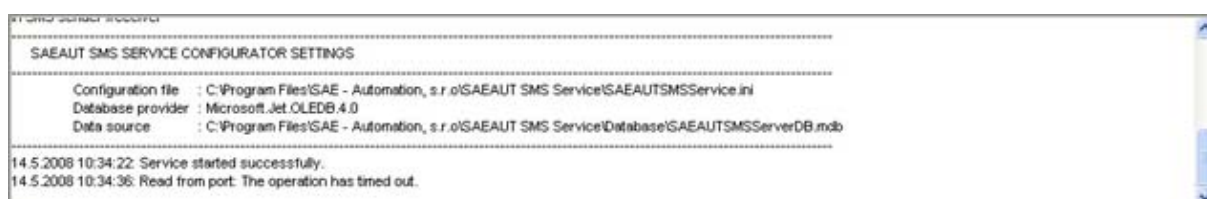
SMS Configurator allows to log SAEAUT SMS Service activities. The log functions include:

1. Creating new log file

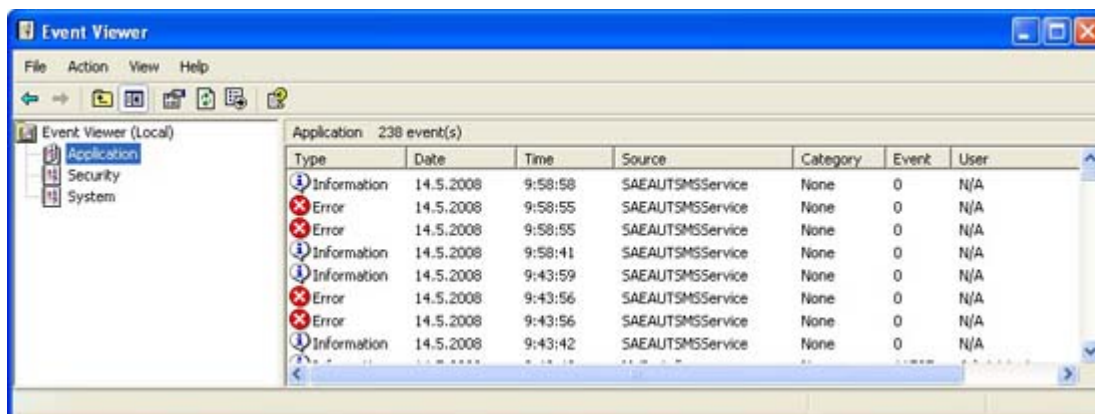
Through [Options](#) the user can enable or disable SAEAUT SMS Service logging and events to log.

2. Showing log events

In the bottom of SMS Configurator window you can see SAEAUT SMS Service activity and events.



3. Writing into Windows event log



More details about selected event can be viewed after clicking on the item name.



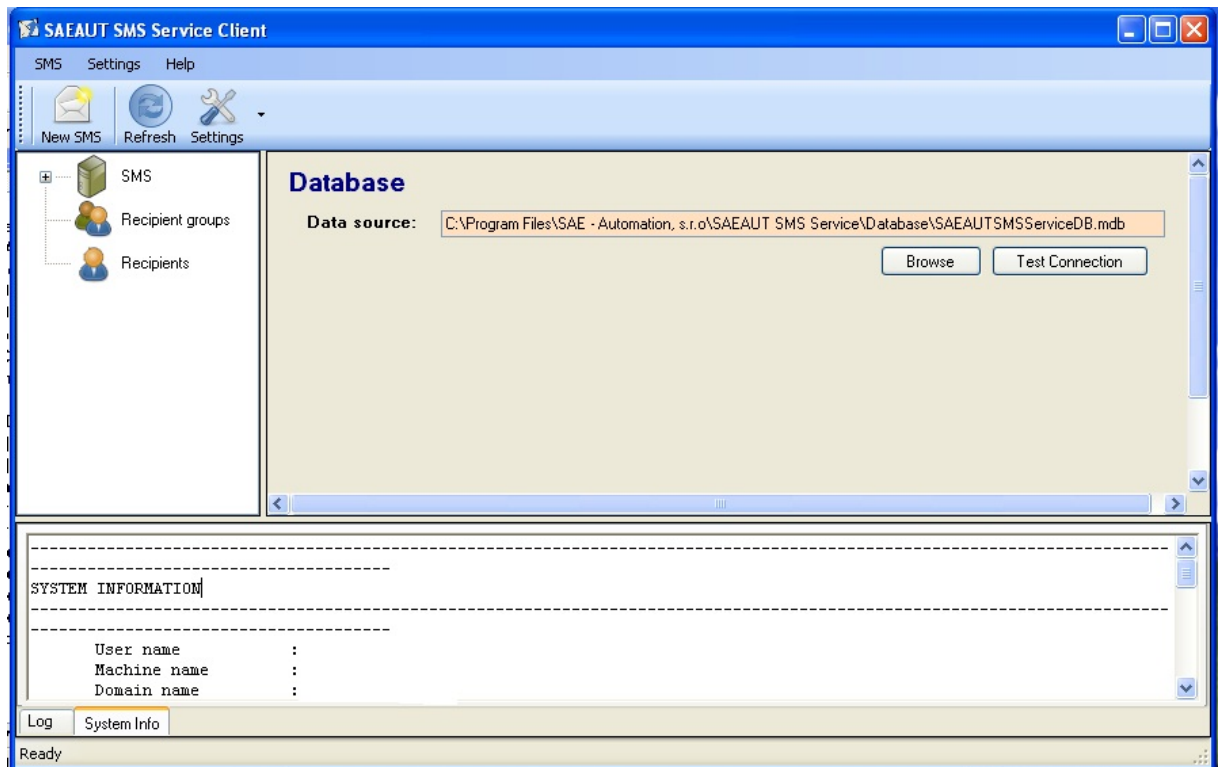
6 SAEAUT SMS Client

This application is design as client application for sending SMS messages.

General properties:

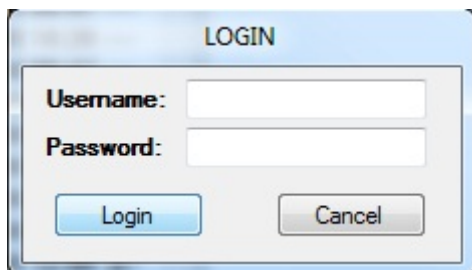
- sending SMS messages
- display all sent / received SMS messages

Application design:

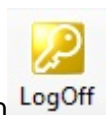


6.1 Login

If you want work with SMS Client , you have to login.



6.2 LogOff



If you want logoff, click on button

6.3 Select of working database

Application SMS Client is designed for all users who are occur in the computer network with one available computer for all. On this computer is instaled the application SAEAUT SMS Service. The application SMS Client uses shared database together with SAEAUT SMS Service application.

It is needed to set the path for database before first running.

How to set the path for database is in part [Database](#).

6.4 User interface

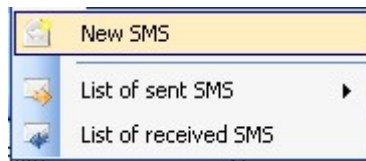
6.4.1 SMS

Enter topic text here.

6.4.1.1 New SMS

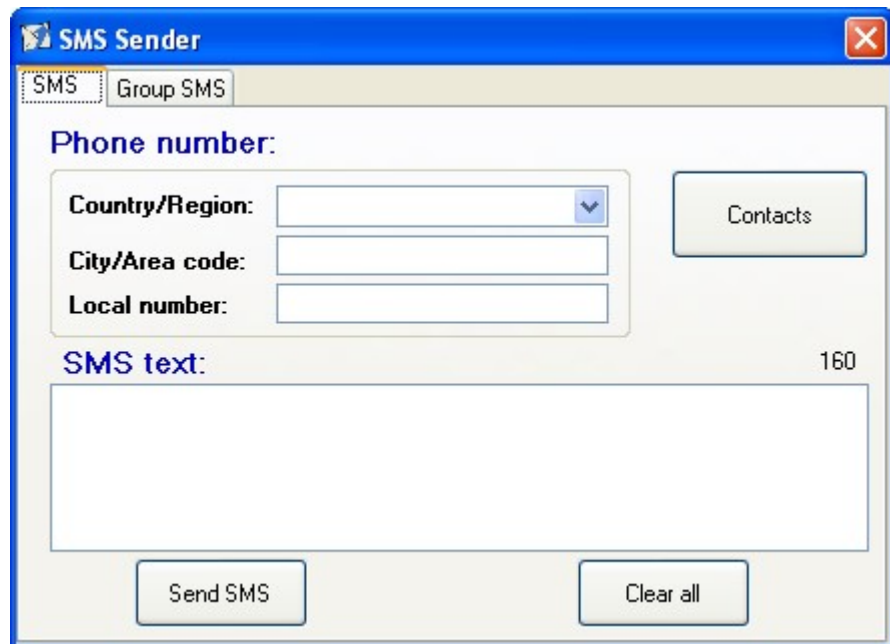
This command sends the SMS. It is accessible through **SMS - New SMS** menu or by

pressing  button on the toolbar.



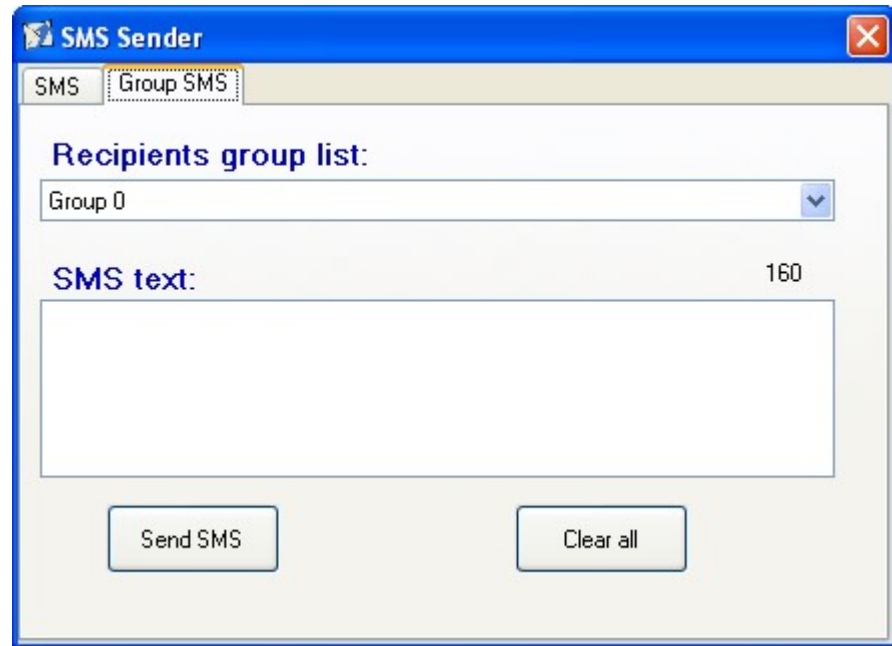
The application allows to create and send two types of SMS messages:

1. Sending SMS to specified phone number



The user enters recipient's phone number and text of SMS message. SAEAUT SMS Service puts such SMS into queue and sends it.

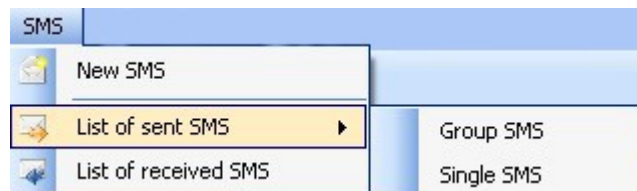
2. Sending SMS to selected group of recipients



The user chooses recipient group and enters the text of SMS message. SAEAUT SMS Service puts such SMS into queue and sends it.

6.4.1.2 List of sent SMS

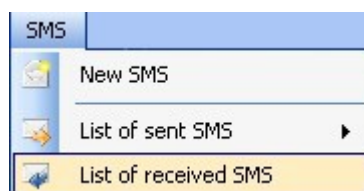
This command allows the displaying of all sent SMS through the application SAEAUT SMS Service. It is accessible through **SMS - List of sent SMS** menu.



It is possible to find out more details in the part [Show processed SMS](#).

6.4.1.3 List of received SMS

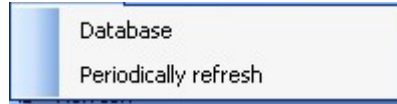
This command allows the displaying of all received SMS through the application SAEAUT SMS Service. It is accessible through **SMS - List of received SMS** menu.



It is possible to find out more details in the part [Show processed SMS](#).

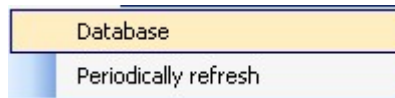
6.4.2 Settings

This group of command contains various application settings. It is accessible through **Settings** menu.

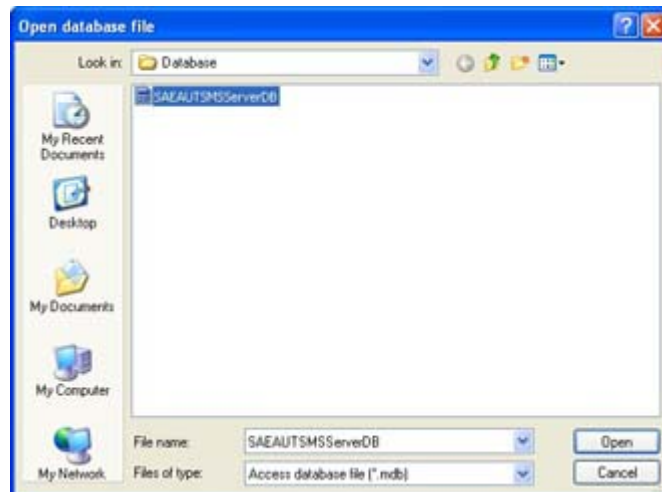


6.4.2.1 Database

To edit paths to database files select **Settings - Database** menu.



The user can set or modify path to database file.




6.4.2.2 Periodicaly refresh

Application SMS Client is client which cooperates with application SAEAUT SMS Service. Communication between these application is provide through shared database.

This function ensures that user of client application has actual data always. This function is available in two variants:

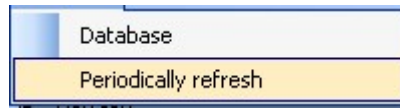
- manual refresh



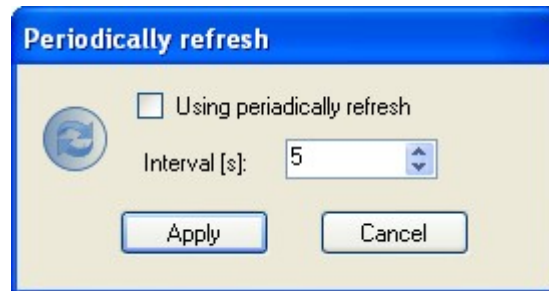
This command is available via button . When user clicks on this button then SMS Client application makes referesh / update data.

- automatic refresh

This command is available via menu item **Settings - Periodically refresh**.

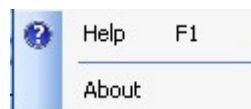


Periodically refresh is possible to set via following dialog. The dialog is display when user clicks on this item.



6.4.3 Help

To display help or details about application select **Help** menu.



7 Cooperation with external applications

7.1 Database file

7.1.1 Tables

7.1.1.1 RecipientList

This table contains list of users who can be assigned to group and who receive SMS messages.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	usName	Text	given name of the user
3	usSurname	Text	surname of the user
4	usPhoneNumber	Text	phone number of the user
5	usDescription	Text	description of the user

7.1.1.2 RecipientGroups

This table contains list of recipient groups that are displayed in a tree view.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	groupName	Text	recipient group name (this name is later displayed in the tree view)
3	groupDescription	Text	recipient group description

7.1.1.3 RecipientGroupRelations

This table serves as the bridge between group and recipient, it contains the definitions what users receive a SMS at what group.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	groupID	Number	recipient group's ID
3	recipientID	Number	recipient's ID

7.1.1.4 GroupSMSList

This is a process table for client applications that generate SMS message for selected recipient group. SMS inserted into this table are then processed by the SMS server.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	egTimeStamp	Date and time	time when the SMS stored in a database
3	egSMSText	Text	text of SMS message that consists of two inputs separated by semicolon: group index;text message
4	groupID	Number	recipient group ID

7.1.1.5 GroupSMSStates

This table serves to the purpose of SMS server. It contains data about processed (sent) SMS messages. It also contains delivery reports.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	recordID	Number	recipient group's ID
3	usPhoneNumber	Text	user's phone number who received the SMS message
4	smsState	Number	SMS status: 0 - OK, 1 - Error (Unassigned user), 2 - Unknown error
5	smsTimestamp	Date and time	send timestamp
6	smsMsgRef	Number	reference number of sent SMS
7	smsDeliveryTimestamp	Date and time	time of SMS delivery
8	smsDeliveryStatus	Number	delivery report of sent SMS
9	smsDelivery	Yes / No	delivery status of sent SMS: 0 - Error, 1 - SMS delivered successfully. actually is not used!

7.1.1.6 SingleSMSList

This table server to client applications that allow to send SMS messages to user defined numbers.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	usSenderPhone	Text	recipient's phone number who should receive the SMS
3	usSMSText	Text	text of the SMS message (max. 160 characters)
4	usComputerName	Text	computer name from which the SMS was sent
5	usTimeStamp	Date and time	time when the SMS was stored to database

7.1.1.7 SingleSMSStates

This is a process table for SMS server. It contains data about processed/sent SMS messages that have been created by a client application. It also contains delivery reports.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	recordID	Number	group's ID
3	usComputerName	Text	computer name that created the SMS
4	smsState	Number	SMS status: 0 - OK, 1 - Error (Unassigned user), 2 - Unknown error
5	smsTimestamp	Date and time	time of sent SMS
6	smsMsgRef	Number	reference number of sent SMS
7	smsDeliveryTimestamp	Date and time	time when SMS was delivery
8	smsDeliveryStatus	Number	SMS delivery report
9	smsDelivery	Yes / No	SMS delivery status: 0 - Error; 1 - SMS delivered successfully actually is not used!

7.1.1.8 ReceivedSMSList

This table contains processed SMS message by SMS server.

Index	Column name	Data type	Description
1	ID	Automatic (number)	identifier of record in the table
2	recSenderPhoneNumber	Text	phone number of the sender
3	recSendTimeStamp	Date and time	time when SMS was received
4	recSMSText	Text	text of SMS message

7.2 Making own client application

How to create own application for sending **group SMS messages**:

1. The user creates own applicaiton in some programming language (e.g.. C++, C#, ASP, ...)
2. The application should read recipients list from database table [RecipientList](#).
3. Sending SMS message:
 - Client application verifies if the user assigned all required input data.
 - These data are then stored into database in [GroupSMSList](#) table as follows:
 - Column **egTimeStamp** will contain local time
 - Column **egSMSText** will contain text of SMS message in the format:

number of the group;text of SMS message

- the number of recipient group equals to the record ID of given group
 - text of SMS message is the text that equals to the input for SMS text
4. The client application creates a new record this way that equal new event SMS, SMS server then sends this SMS to all defined users ([Sending SMS](#)).

How to create own application for sending **user-defined SMS messages**:

1. The user creates own applicaiton in some programming language (e.g.. C++, C#, ASP, ...)
2. Sending SMS message:
 - Client application verifies if the user assigned all required input data.
 - These data are then stored into database in [SingleSMSList](#) table as follows:
 - Column [usSenderPhone](#) will contain the recipient's phone number
 - Column [usSMSText](#) will contain the text of SMS message (max. 160 characters)
 - Column [usComputerName](#) will contain the computer name that created the SMS (it is possible to use this entry later for delivering SMS delivery report)
 - Column [usTimeStamp](#) will contain timestamp of delivery.
3. The client application creates a new record this way that equal new event SMS, SMS server then sends this SMS to all defined users ([Sending SMS](#)).

8 Tested GSM modems

8.1 FALCOM SAMBA 55

Is a plug'n'play device in extremely small size, which provides a powerful state-of the art technology and makes it almost perfect for a quick and easy way to plug in GSM or GPRS functionality into your systems. The embedded USB interface allows direct connections to a USB serial port of desktop or notebook computers.

The SAMBA can send and receive data by GSM and GPRS. It features GPRS multislot class 10 and supports the GPRS coding schemes CS-1, CS-2, CS-3 and CS-4. It supports voice, SMS, FAX as well as offers a choice of seven ring tones/melodies. The SAMBA modem can be easily controlled by using AT commands for all kind of operation.



General	<ul style="list-style-type: none">• Tri Band GSM/GPRS modem• SAMBA55: 900/1800/1900 MHz• SAMBA56: 850/1800/1900 MHz• class 4 (2 W) for EGSM900• class 1 (1 W) for DCS1800 / PCS1900• small size and low power consumption• voice, SMS, Fax and data transmission without extra hardware• internal 3 V SIM interface• easy remote control by AT commands for dedicated applications• fully type approved according to GSM phase 2+ specification• fully shielded and ready-to-use
Electrical characteristics	<ul style="list-style-type: none">• power supply: +5 V DC (through USB port)
Physical characteristics	<ul style="list-style-type: none">• dimensions: (L x W x H) 88.7 x 37.6 x 12.6 mm• weight: 79 g• normal range temperature: -20 °C to +55 °C• restricted operation: -25 °C to -20 °C and +55 °C to +70 °C
Basic features	<ul style="list-style-type: none">• telephony (TCH/FS) and emergency calls• full rate, enhanced full rate, half rate and adaptive multi rate• dual tone multi frequency function (DTMF)• SMS (GSM and GPRS mode): text and PDU, point to point MT and MO, SMS cell broadcast• WAP compliant and compliant with SMG 31
GSM features	<ul style="list-style-type: none">• transparent and non transparent up to 9600 bps• group 3: class 1, class 2, alternate speech and fax, MNP 2
GSM services	<ul style="list-style-type: none">• call forwarding, call barring, multiparty, call waiting and call hold, calling line identity, advice of charge, USSD, closed user group
GPRS features	<ul style="list-style-type: none">• data downlink transfer: max. 85.6 kbps• data uplink transfer: max. 42.8 kbps• coding schemes CS-1 to CS-4, GPRS class 10 class B
Other features	<ul style="list-style-type: none">• SM, FD, LD, MC, RC, ON, ME + SIM phone book management• fixed dialling number, SIM toolkit class 2• SIM, network and service provider locks• real time clock• alarm management• UCS 2 character set management
Interfaces	<ul style="list-style-type: none">• internal SIM interface: 3 V only• USB serial link• headset jack• firmware upgrade: over USB interface and SIM card
Hardware requirements	<ul style="list-style-type: none">• a valid SIM card• free compatible USB port• appr. 6 Mb of free hard disk space

8.2 FALCOM TANGO 55

Are designed for use on any GSM network in the world. TANGO55/i and TANGO56/i are Tri Band GSM/GPRS engines that work on three frequencies GSM 900 MHz, DCS 1800 MHz and PCS 1900 MHz or 850 MHz, DCS 1800 MHz, PCS 1900 MHz, respectively. These full type approved integrated modems constitute a self contained, fully integrated implementation of the GSM/GPRS. TANGO55/i and TANGO56/i feature GPRS class B, class 10 (making download at speeds up to 85 kbps) and support the GPRS coding schemes CS-1, CS-2, CS-3 and CS-4. TANGO55/i and TANGO56/i modems incorporate all you need to create high-performance GSM/GPRS solutions; baseband processor, power supply ASIC, complete radio frequency circuit including a power amplifier, internal and external SIM interfaces and an antenna interface as well. The TANGO55/56 are mobile stations for transmission of voice, data calls and FAX as well as short messages (SMS - Short Message Service) in GSM network. To control the GSM module there is an advanced set of AT commands according to GSM ETSI (European Telecommunications Standards Institute) 07.07 and 07.05 implemented.

TANGO55/56 i-option

The TANGO55i/56i modems provide a specific software and hardware (internal TCP/IP stack software with hardware extension) which has been internally implemented for using the embedded TCP/IP stack software. The integration of TCP/IP stack with hardware extension (a TCP/IP module added) into the equipment converts it to a stand-alone client that can be connected to the internet via GPRS network. The modems can also send and receive data by GSM (set into Command-Mode) and GPRS network using TCP/IP stack. They support SMS, DATA and FAX calls.



General	<ul style="list-style-type: none"> • Tri Band GSM/GPRS modem • 55/55i: 900/1800/1900 MHz • 56/56i: 850/1800/1900 MHz • complete FTA/CE and e1 approval • compliant to GSM Phase 2/2+
GPRS features	<ul style="list-style-type: none"> • GPRS multi-slot class 10 • GPRS mobile station class B • data downlink: max. 85.6 kbps • data uplink: max. 42.8 kbps • coding schemes: CS-1, CS-2, CS-3, CS-4 • protocols: PAP, CHAP, PBCCH
Audio features	<ul style="list-style-type: none"> • speech code modes: half rate, full rate, enhanced full rate, adaptive multi rate, echo cancellation, noise reduction
Electrical characteristics	<ul style="list-style-type: none"> • power supply: DC 10.8-31.2 V • power consumption (mA/12 V): 13 mA in sleep mode • casing: fully shielded
Physical characteristics	<ul style="list-style-type: none"> • dimensions: (L x W x H) 115 x 52 x 26 mm • weight: approx. 83 g • normal: -20 to +55 [^](o)C • restricted: -25 °C/-20 °C to +55 °C/+70°C • constant temperature control
Phone functions	<ul style="list-style-type: none"> • phonebook management: SM, FD, LD, MC, RC, ON, ME • 7 different ringing tones • timer function • real time clock
Interfaces	<ul style="list-style-type: none"> • D-Sub 9pin female): serial interface RS233 for AT commands • RJ45 8pin (shielded): analog audio • external antenna interface SMB or FME • SIM card reader: small SIM cards
"i" option	<ul style="list-style-type: none"> • TCP/IP software stack

8.3 Wavecom Fastrack M1306B

Deploy Wavecom modem and receive real-time alert to your mobile phone and avoid costly downtime. Wavecom Fastrack GSM external modem is compatible with Globe, Smart, and Sun Cellular post- and pre-paid SIM packs.

Wavecom Fastrack GSM external modems are suitable for outdoor. It is rugged enough to stand up to extreme temperatures and shock, they can be installed virtually anywhere, in almost any environment. That means subscribers can use the operator's existing GSM infrastructure to keep track of dozens or even hundreds of remotely located machines. For example the Wavecom modems enable them to monitor stocks in candy bar and soda pop dispensers remotely. Or automatically download readings from utility meters at regular intervals or in real time.



Product Features

- Dual Band GSM/GPRS modem (EGSM900/1800 MHz or EGSM900/1900 MHz)
- Fully Type Approved
- Fully compliant with ETSI GSM Phase 2+ specifications (Normal MS)
- Output power
 - Class 4 (2W @ 900 MHz)
 - Class 1 (1W @ 1800/1900 MHz)
- Input voltage: 5V-32V
- Input current:
 - 5mA in idle mode, 140mA in communication GSM900 @ 12V
 - 5mA in idle mode, 100mA in communication GSM 1800/1900 @ 12V
- Temperature range:
 - 20°C to +55°C operating
 - 25°C to +70°C storage
- Overall dimensions: 98 x 54 x 25mm
- Weight: 130g

Voice Features

- Telephony
- Emergency calls
- Full Rate, Enhanced Full Rate and Half Rate (FR/EFR/HR)
- Dual Tone Multi Frequency function (DTMF)

Data/Fax Features

- Data circuit asynchronous, transparent and non-transparent up to 14,400 bits/s
- Automatic fax group 3 (Class 1 and Class 2)
- MNP2, V.42bis

GPRS Packet Data Features

- GPRS Class 2
 - Coding Schemes: CS1 to CS4
 - Compliant with SMG31bis

SMS Features GSM or GPRS Mode

- Text and PDU
- Point to point (MT/MO)
- Cell broadcast

Supplementary Services

- Call forwarding
- Call barring
- Multiparty
- Call waiting and call hold
- Calling line identity
- Advice of charge
- USSD
- Closed user group
- Explicit call transfer

Other Features

- ME+SIM phone book management
- Fixed dialing number
- SIM toolkit Class 2
- SIM, network, and service provider locks
- Real time clock
- Alarm management
- Software upgrade through Xmodem protocol
- UCS2 character set management

9 Known issues

While working with SMS server application you may encounter some problems. Some general comments and solutions are provided below.

1. Incorrect functionality while using USB - RS232 converter

Nowadays, more and more devices with in-built GSM modem provide only USB interface for communication with other device. Depending on the modem, it is required to install particular drivers. After installation of such device a new serial port appears in the device list that is just a virtual port.

After installation of such device it is recommended to **reboot the computer** because of driver initialization.

2. Incorrect functionality while using mobile phone data cable

A mobile phone is a device with in-built GSM modem. If the user wants to use a mobile phone with this application, it may happen that the application will not work correctly. The cause may be the data cable that is designed for data transfer just between the phone and a computer.

If such situation occurs, try to change the data cable or try to use other communication interface (e.g. IrDA, Bluetooth, etc.)

3. The application was sending SMS earlier but now it doesn't work

This problem may occur when a prepaid SIM card is used and the user ran out of limit.

In this case check your SIM card credit balance by inserting the SIM card into a mobile phone and then evaluating the remaining balance by mobile phone's services. If the credit balance is sufficient, try to send a test SMS directly from your mobile phone. If the sending of SMS fails, please contact your mobile network operator.