

GOANTIFRAUD USER GUIDE

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1. INTRODUCTION

1.1. The purpose of this user guide

This user guide was designed in order to help you learn how to work with GoAntiFraud service.

To start working with the service it is necessary to visit GoAntiFraud website -

<http://goantifraud.com/>

1.2. Brief description

GoAntiFraud service allows to simulate human behaviour in GSM network with the highest efficiency with the help of GoIP equipment.

This user guide explains service details, purposes and principles of its work.

Following the instructions of this user guide, it becomes possible to connect equipment to the GoAntiFraud service, customize its further work, manage settings of the service, consider and implement its extensive functionality to achieve the goals.

2. GETTING STARTED

2.1. Necessary equipment

In order to work with the GoAntiFraud service, enough to have a GoIP GSM Gateway manufactured by Hybertone or DBL Technology with the firmware version GS-4.01-56 or above. Although, possibilities of service become much larger using GoIP SIM-bank manufactured by Hybertone with firmware version SMB-1.01-22 or above.



Figure “Ports GSM Gateway GoIP-8”



Figure “GoIP SIM-bank for 32 SIM-cards”



Figure “GoIP SIM bank for 128 SIM cards”

2.2. Internet connection requirements

Internet connection of at least 250 kb/s and not more than 5% loss is a must in order to perform good quality operation of 8 ports.

3. OPERATION DESCRIPTION

3.1. Preparing to work:

3.1.1. User Registration

For registration and using the GoAntiFraud service one should enter the website address <http://goantifraud.com/>:

After clicking on the button “*Try it now! 7 days free trial*” on the top of the webpage, you will see registration form you can register in, pick optimal package or try trial version up to 7 days.

REGISTRATION

Register your free GoAntiFraud trial:

* Login

* Email

* Password

* Password again

Phone

Skype

Europe and Asia

Promo code

Goip

I agree to the [license agreement](#)

Choice package:

Trial / 7 days (32 channel)

Cost: 0\$

Additional modules:

Traffic Optimization ?
32 channels - \$100/month

Autonomous Operation of SIM-cards ?
32 channels - \$70/month

Call Recording ?
\$50/month

CREATE MY ACCOUNT

Figure “User Registration Form”

Set login in the field “**Login**”.

Enter your e-mail address into the field “**Email**”.

In the next field enter the password. Confirm the password in the field “**Password again**”.

You may enter your phone number in the next field called “**Phone**” but it’s not obligatory.

In the “*Skype*” field you can set your *Skype ID* for better and faster communication with our technical support.

In the field named “*Europe and Asia*”, “*South America*” necessary to pick nearest server to your equipment to decrease network latency between your equipment and our server.

“*GoIP*” or “*TOPEX*” field important to pick your equipment series you want to work with.

In the “*Promo Code*” field you have to enter the promo code if you have one.

After reading the “*License Agreement*”, it is necessary to put a tick in the relevant box.

In the “*Additional modules*” pick additional modules you want to see on your account.

The image shows a registration form for GoAntiFraud. On the left, there are input fields for a username (filled with 'test'), email (filled with 'tester@gmail.com'), two password fields (both filled with dots), a phone number field, a service name field (filled with 'gafservice'), a region dropdown (set to 'Europe and Asia'), a promo code field, and a Goip dropdown (set to 'Goip'). There is a checkbox for 'I agree to the license agreement' which is checked. On the right, under 'Choice package:', a dropdown menu is set to 'Starter (32 channels)'. Below this, a green bar displays 'Cost: 280\$'. Under 'Additional modules:', there are three items: 'Traffic Optimization' (unchecked), 'Autonomous Operation of SIM-cards' (checked), and 'Call Recording' (checked). Each module shows its cost per month and a quantity selector (set to 1). At the bottom center is a green button labeled 'CREATE MY ACCOUNT'.


Figure “Filled registration form to work with GoAntiFraud service”

After you click on the “**CREATE MY ACCOUNT**” button, you will turn up on the main page of the GoAntiFraud service.

You do not need to make a confirmation of registration in our service. On the specified e-mail address will receive a letter from the technical support service, indicating successful registration. You can use our service at once as you registered.

3.1.2. Add Location

Location is a place where your equipment physically is (GSM gateways). While adding the Location we simultaneously set some parameters of SIM cards activity.

In the upper left window of GoAntiFraud interface click  button

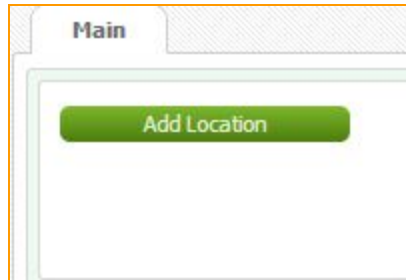


Figure “Add Location window”

or open the context menu with the help of the right mouse button click and then choose “*Add Location*”.

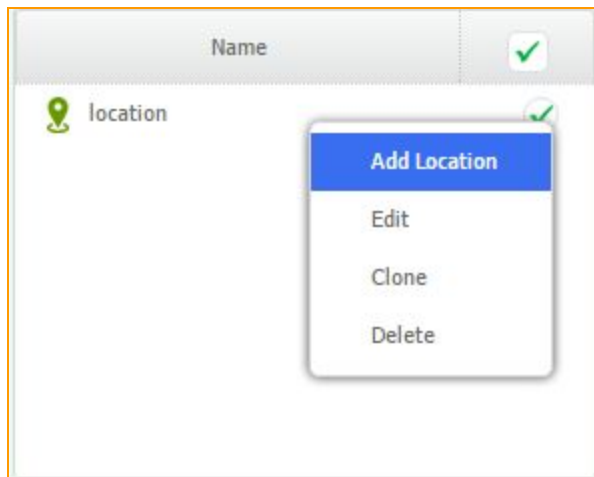


Figure “Add Location from context menu”


Input the location name in the appeared Location Form Window.

The screenshot shows a window titled "EDIT LOCATION" with a close button in the top right corner. The window contains the following fields and controls:

- Name:** A text input field.
- Load interval:** A dropdown menu, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
- General limits:** A section containing:
 - Calls Limit:** A numeric input field, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
 - Duration Limit:** A dropdown menu, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
- Session limits:** A section containing:
 - Unload Interval:** A dropdown menu, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
 - Calls limit:** A numeric input field, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
 - Duration Limit:** A dropdown menu, a plus/minus sign, a numeric input field containing "0", and a percentage sign.
- Use local Asterisk:** A checkbox.
- Buttons:** "Save" and "Cancel" buttons at the bottom right.

Figure “Edit Location Window”

For your convenience, each item is accompanied by tips. To use a prompt, you must hover over

the symbol  of the field’s name.

EDIT LOCATION ? ×

Name:

Load interval: ? Time interval between loading of simcards into GSM network.

General limits

Calls Limit: ? +/- %

Duration Limit: ? +/- %

Session limits

Unload Interval: +/- %

Calls limit: ? +/- %

Duration Limit: ? +/- %

Use local Asterisk:

Figure “The Tool tip”

To bring even more action SIM-card to the human’s behavior in the form of adding locations added feature % deviation from the set value.

+/- %

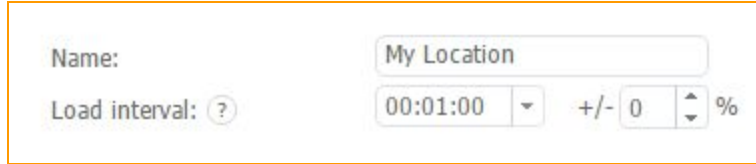
+/- %

+/- %

Figure “Percentage deviation of the value”

In the ***Name*** field you have to set name to your location.

In the ***Load interval*** field set load interval. That is the interval of cards' loading into the gateways on the given location.

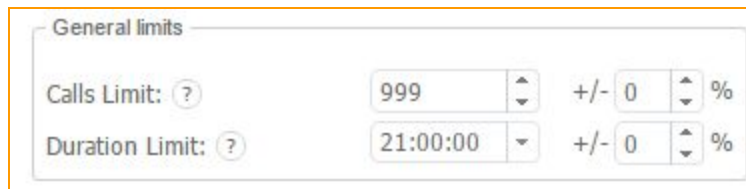


The screenshot shows a configuration form with two rows. The first row is labeled 'Name:' and has a text input field containing 'My Location'. The second row is labeled 'Load interval: ?' and has a dropdown menu showing '00:01:00', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign.

Figure “Name”

Let's set 1 minute value. It means each next card will register in the network after 1 minute of last registration. This feature helps to avoid simultaneous registration of a large number of your SIM-cards on the same base station.

General Limits field:

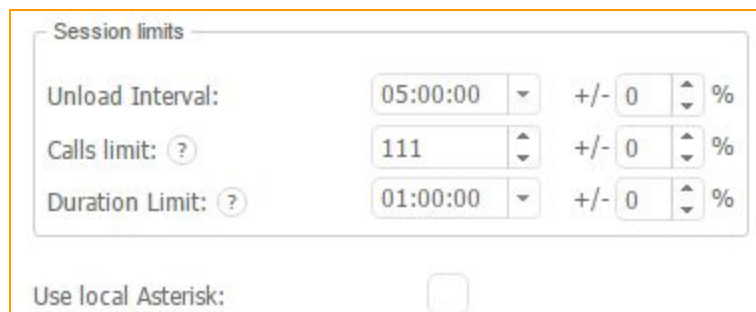


The screenshot shows a configuration form titled 'General limits'. It contains two rows. The first row is labeled 'Calls Limit: ?' and has a numeric input field with '999', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign. The second row is labeled 'Duration Limit: ?' and has a dropdown menu showing '21:00:00', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign.

Figure “General limits”

Below, in the ***Calls Limit*** box, set calls limit and duration limit in the ***Duration Limit*** for one card between SIM card's counter resets on this location.

Session Limits field:



The screenshot shows a configuration form titled 'Session limits'. It contains three rows. The first row is labeled 'Unload Interval:' and has a dropdown menu showing '05:00:00', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign. The second row is labeled 'Calls limit: ?' and has a numeric input field with '111', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign. The third row is labeled 'Duration Limit: ?' and has a dropdown menu showing '01:00:00', followed by a '+/-' sign, a numeric input field with '0', and a '%' sign. Below these rows is a checkbox labeled 'Use local Asterisk:' which is currently unchecked.

Figure “Session limits”

In this field you can specify the parameters of the SIM-cards for individual sessions, in order to share common limits Locations for a few sessions. In this field, you specify the parameters of the card during one session. In the **"Unload interval"**, set the time interval of one session session. For example: 5 hours. If for some reason, the card is not able to reach these limits on, it will still be automatically unloaded from the location after 5 hours. Having, for example, a general limit of calls 999, it is applied to each card, which is being loaded at a given location. Having set the limit in the session in the **"Calls limit"** value 111, SIM-card will load in the location make it 111 calls and replace it. After working in a different location SIM-card will be able to return to the first and make 111 calls up to a total limit of 999 calls. Similarly, with a **"Duration limit"**. If the card is to exceed the limit during the call, it will be completed. If you will use SBO you have to mark **"Use local Asterisk"** field.

Press button 

The new location appeared in the Location field.

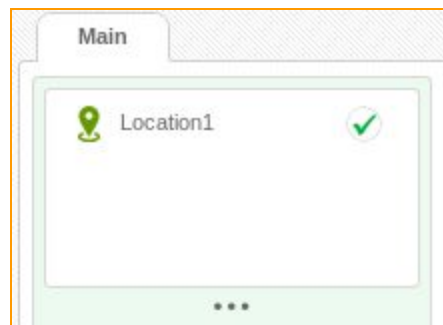


Figure "Location 1"

3.1.3. Connect gateway

After adding the Location connect a gateway to the service.

Below the Locations window there is a field of GSM gateways.


Press  button to connect the GSM gateway to the service or open the context menu by the right mouse button click and choose **"Add Gateway"**



Figure “Adding gateway in the Gateway window”

At the beginning of GSM gateway connection there will be a window showing the variants of connection. It is possible to select one connection from three variants.

On the first step the information about firmware current version is available. Assure your gateway firmware is supported by our service. There is a link for downloading a stable version below, in case your GSM-gateway firmware is not appropriate.

GATEWAY FORM

Goip


We strongly recommend you to reset configurations to the manufacturer's ones by pressing reset button on your GoIP equipment or via web-interface - Tools -> Reset Config.
Please ensure that you use correct version (listed below) of the firmware. You can do this in menu "Tools"->"Online upgrade"->"Current version".

If Your software version is below of listed, You need to update it:

1. Copy link
GoIP1: SIP and H.323 <http://www.hybervoice.com/update/GHSFVT-1.1-22.pkg>
GoIP4/8 SIP <http://www.hybervoice.com/update/GS-4.01-76.pkg>
GoIP16 SIP <http://www.hybervoice.com/update/GST-1.01-45.pkg>
GOIP32 SIP <http://www.hybervoice.com/update/GST1610-1.01-27.pkg>
2. Insert the link in "Tools --> Online" of your GoIP web interface
3. Start update

Continue

Figure “Information about recommended version of firmwares”

Make sure that the newest firmware is used and press  button.

On the second step you will see the settings provided by GoAntiFraud service.

The screenshot shows a web form titled "GATEWAY FORM" with a close button (x) in the top right corner. The form is organized into three main sections:

- Goip** (Section Header):
 - Device access configuration** (Section Header, with a help icon ?):
 - Remote Server IP: 94.228.216.165
 - Remote Server Port: 1920
 - Remote Server ID: [REDACTED]
 - Remote Server Key: admin
 - Login: [Text Input Field]
 - Password: [Text Input Field]
 - Get Info** (Green Button)
 - Goip settings** (Section Header):
 - Server IP: Public VPN
 - Sim Server Protocol: TCP UDP
 - Proxy:
 - Hardsim:
 - General settings** (Section Header):
 - Name: [Text Input Field]
 - Location: [Dropdown Menu]
 - Maximum card count (%): [Spin Box with value 100]
- Save** (Green Button) and **Cancel** (Green Button) at the bottom right.

Figure “Adding new gateway form”

In the first section you can see data you have to fill in your gateway. Go to the web interface of your gateway. First, you have to make a reset configuration. To do this go to the **Tools** and click on **Reset config** button.

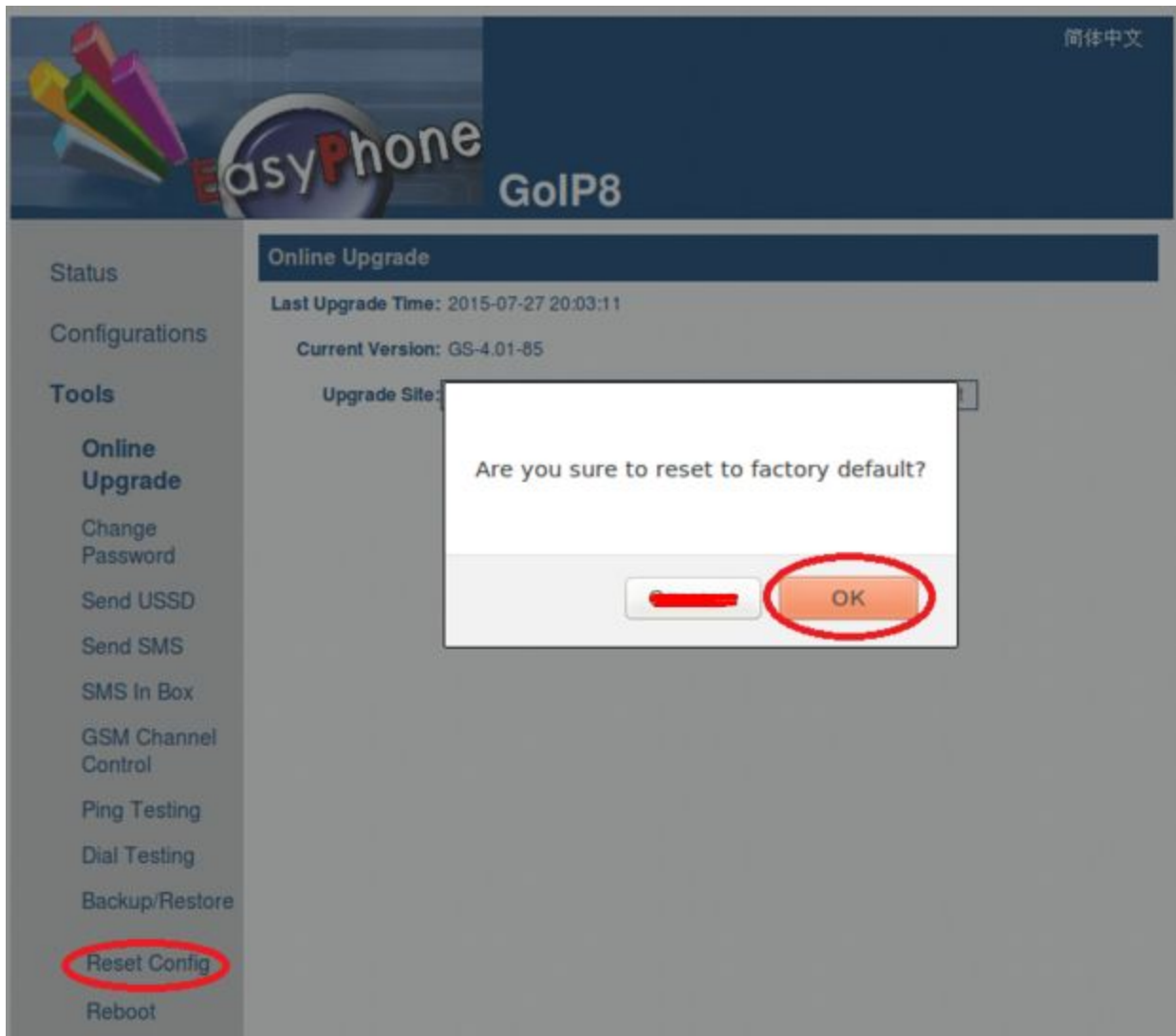


Рисунок “Web-interface of the GoIP (a)”

Go to the **Configurations**, **Preferences**, click on the **Remote control** and put a mark on it.
Now fill all fields and press “*Save changes*” button.

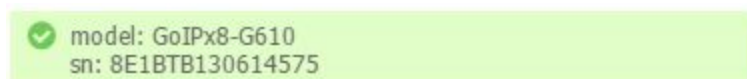


Figure “Web-interface of the GoIP gateway (b)”

Go back to GoAntiFraud manager.

In fields “**Login**” и “**Password**” fill data to access to GoIP and click on the “**Get info**” button.

After that system will show info about your gateway.



Go to the “**Goip settings**” section. If you have VPN server, put a mark in front of it. In any other cases mark “**Public**”.

In the **“Sim server protocol”** you can choose protocol of SIM server’s work

In the **“Proxy”** field you can see activation of the proxy server.

In the **“Hardsim”** field you have to mark this field if you want to use your gateways without SIM banks.



The screenshot shows a configuration panel titled "Goip settings". It contains four rows of settings:

- Server IP: Public VPN
- Sim Server Protocol: TCP UDP
- Proxy:
- Hardsim:

Рисунок “Choosing type of connection”


In the **“General setting”** field you have to set name for your gateway, location and maximum amount of cards in%.



The screenshot shows a configuration panel titled "General settings". It contains three rows of settings:

- Name:
- Location: ▼
- Maximum card count (%): ▲ ▼

Figure “Give name and location to the gateway”

Press  button, the Gateway is ready for use. Now it appears in the GSM gateways window of GoAntiFraud service interface.

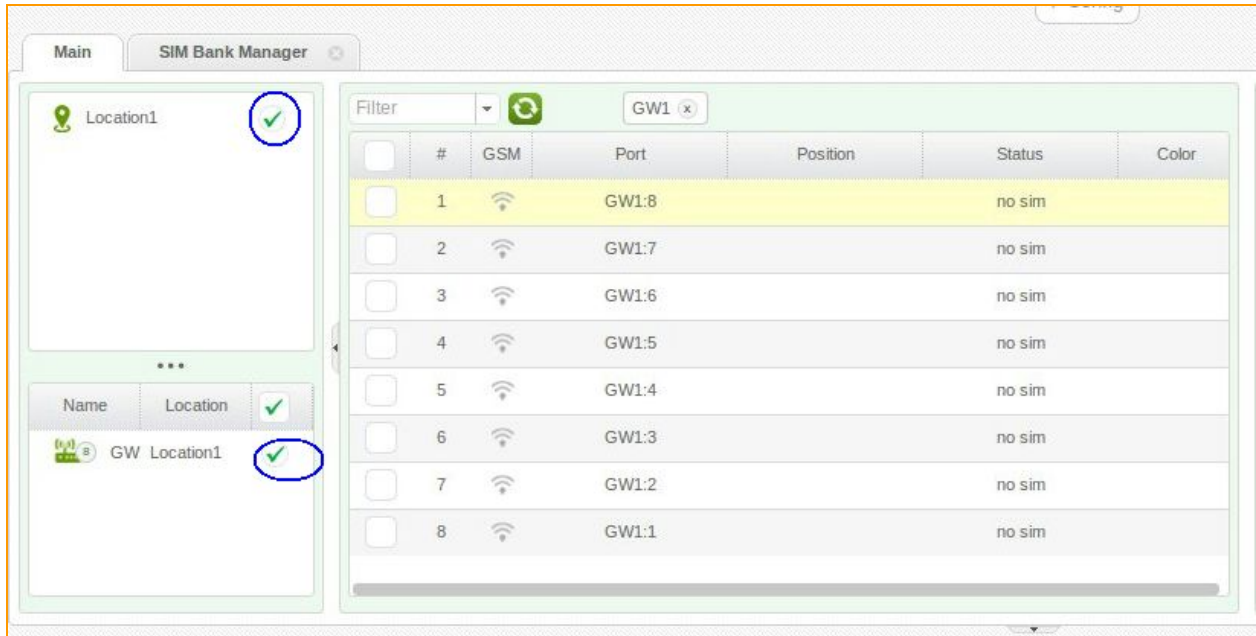


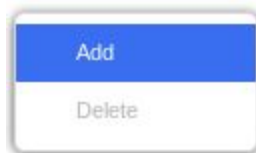
Figure “The gateway displayed in the interface”

After the gateway is connected, its channels are displayed in the channel window.

3.1.4. Connect a SIM bank

To connect the SIM bank to the GoAntiFraud server, proceed to “Config” - “Sim Bank

Manager”. New window will appear, press  or open contextual menu by



right click of the mouse and choose

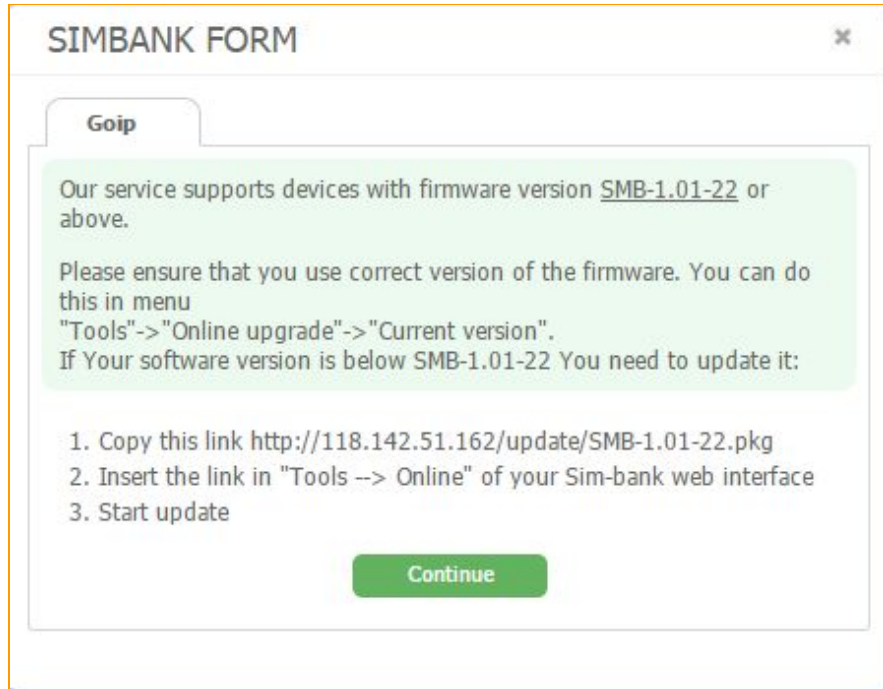


Figure "Firmware recommendations for SIM banks"

The process of s SIM bank connection to the server is similar to the GSM gateway connection that was described in the paragraph above.



Figure "Web-interface of SIM bank (a)"

Go to the **Configurations**, **Preferences**, click on the **Remote control** and put a mark on it.
Now fill all fields and press **“Save changes”** button.

The screenshot displays the 'EasyPhone SIM Bank' web interface. On the left is a navigation menu with 'Configurations' circled in red. The main content area is divided into two sections: 'Preference' and 'Network Configuration'. In the 'Preference' section, 'Remote Control' is selected with a radio button, and its sub-fields are highlighted with a red box: 'Remote Server' (94.228.215.200), 'Remote Server Port' (1920), 'Remote Server ID' (Tutorial_2M0Abank_2315), and 'Remote Server Key' (*****). The 'Network Configuration' section includes settings for LAN Port (DHCP), PC Port (Static IP), IP Address (192.168.8.1), Subnet Mask (255.255.255.0), and DHCP Server (Disable).

Preference	
Language(语言)	简体中文
Time Zone	GMT+8
Time Server	pool.ntp.org
Auto-provision	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Auto Reboot	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
DDNS	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Remote Control	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Remote Server	94.228.215.200
Remote Server Port	1920
Remote Server ID	Tutorial_2M0Abank_2315
Remote Server Key	*****

Network Configuration	
LAN Port	DHCP
802.1q VLAN	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
PPTP VPN	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
PC Port	Static IP
IP Address	192.168.8.1
Subnet Mask	255.255.255.0
DHCP Server	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Figure “Web-interface of SIM bank (b)”

Figure “Adding new SIM bank”

Go back to the GoAntiFraud manager.

Fill “**Login**” and “**Password**” fields and push on the “**Get Info**” button.

After that system will show info about your gateway.

Go to the “**Goip settings**” section. If you have VPN server, put a mark in front of it. In any other cases mark “**Public**”.

In the “**Sim server protocol**” you can choose protocol of SIM server’s work

Give a name to it and press  so SIM-bank is ready for work.

Now in the **“SIM bank Manager”** tab the connected equipment is displayed with its id number, name, IP address, and position.

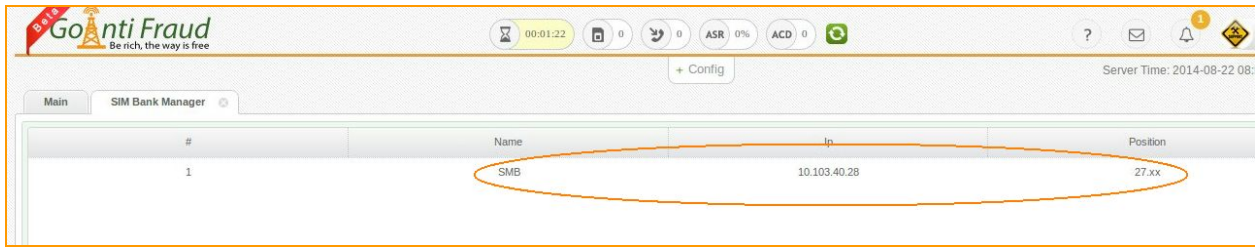


Figure “SIM bank displayed in GoAntiFraud interface”

After the SIM bank connection, all of its SIM cards will be displayed in the right window of the main interface.

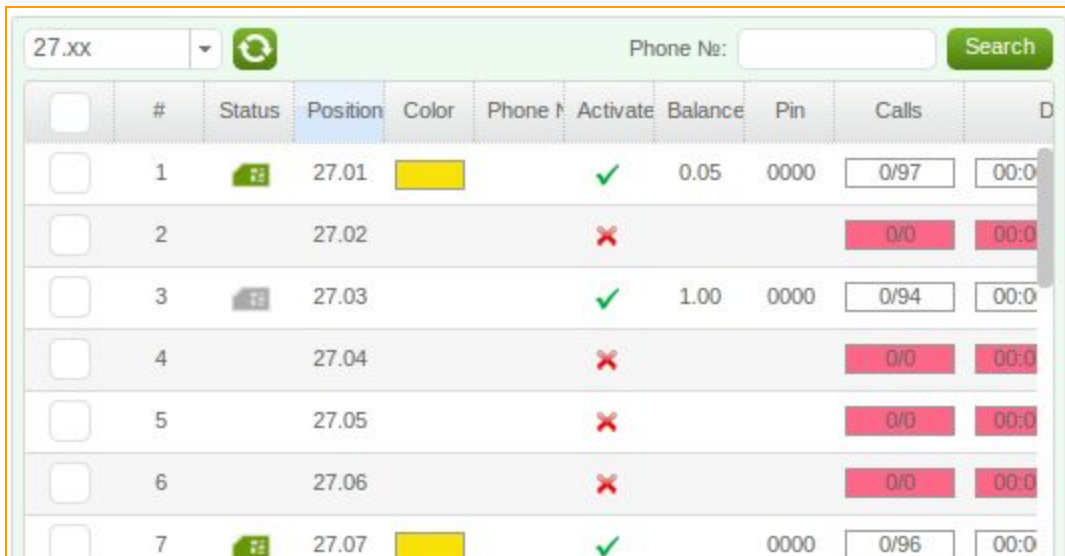


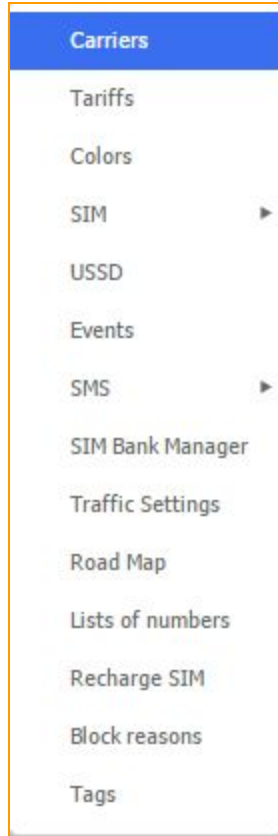
Figure “SIM cards window”

Detailed information regarding sim cards is represented below.

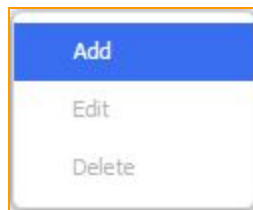
3.1.5. Add carrier

One of the most important settings is carriers adding. Each carrier has its own particular code which helps a user to identify the carrier.

In order to add a carrier it is necessary to proceed to the **“Config”** menu and select **“Carriers”**.




Click the right mouse button on the opened window in order to open a contextual menu and select the **“Add”** button.

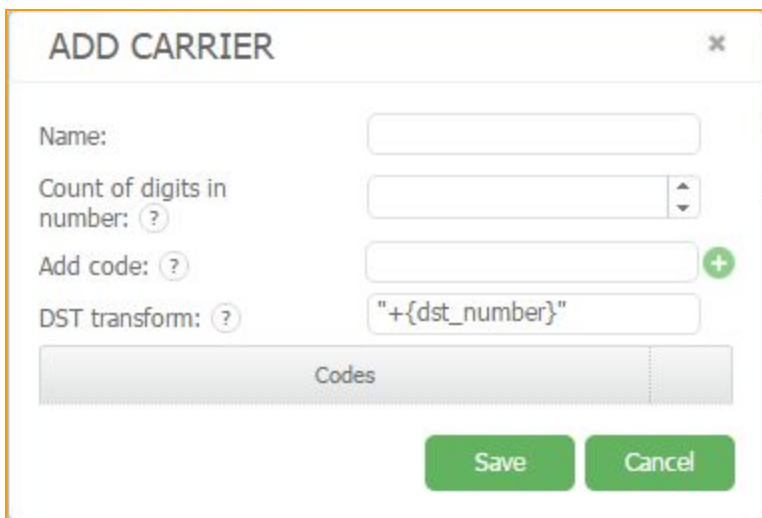


“Add carrier” window is appeared.

Enter the name of a mobile network carrier, in the **“Name”** field. It is also necessary to add particular carrier`s code in international format. After that, you must specify the “Count of digits in number”, because the operators in different countries may have different number of digits. Then in the "Add code" need to enter the code on the mobile phone operator who will call the

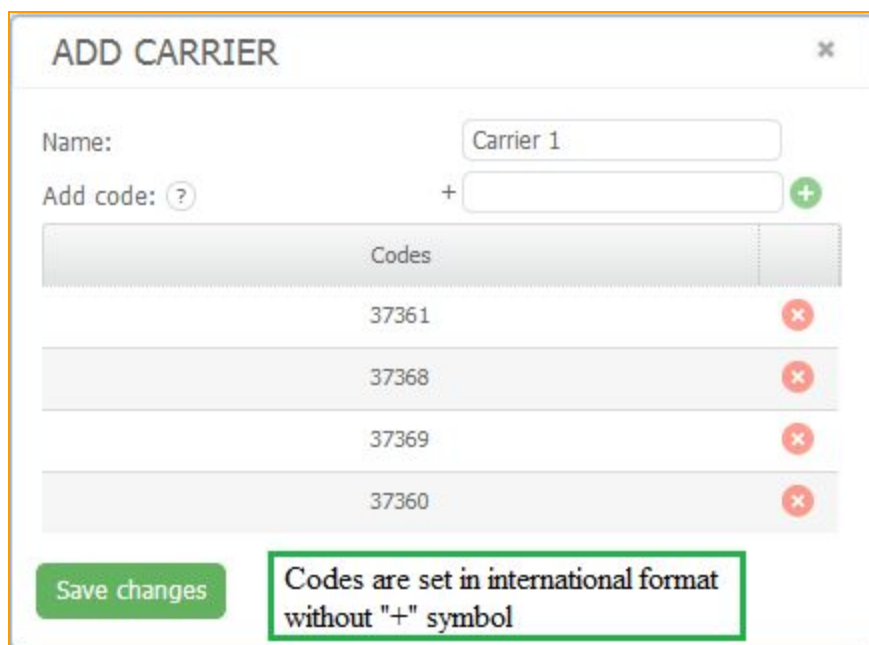
sim card and click on the icon . It is not necessary to type the “+” symbol, because it is set automatically.





In the DST transform field you could change your number. {dst_number} - is number, which comes on the GoIP. You could add or remove some digits. For example, if you want to add “00” to your number, field would be look like this: “00” + substr({dst_number}).



Codes


Figure “The carrier name typing”




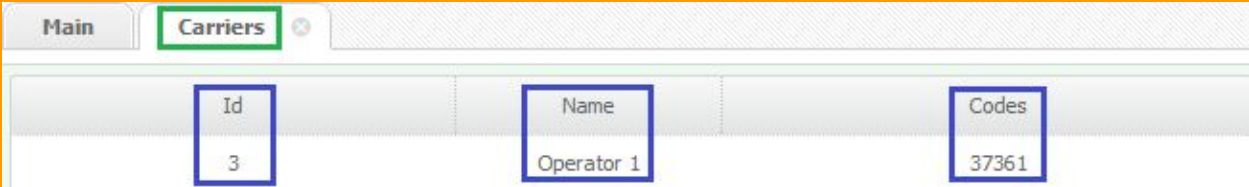
Codes	
37361	
37368	
37369	
37360	

Codes are set in international format without "+" symbol

Figure “Setting code(s) of carrier”

It is necessary to enter the code of carrier in the “Add Code” field. Press  button in order to add the code into the list.

Press the  button and the parameters are ready for work. Notice that each carrier is marked by its particular ID number in the “*Carriers*” window. It is possible to edit already existed carriers or delete unnecessary ones.

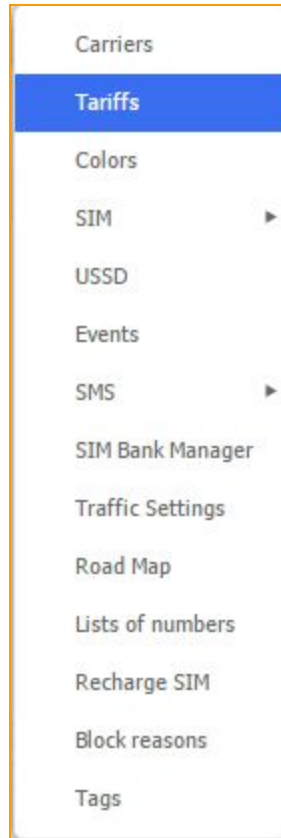


Id	Name	Codes
3	Operator 1	37361

Figure “Carrier’s information”

3.1.6. Add Tariff and Tariff limits

To create Tariff, Tariff Options and Tariff limits, go to the “*Config*” menu and choose “*Tariffs*”.



There are three large windows: "Tariffs", "Options" and "Limits".

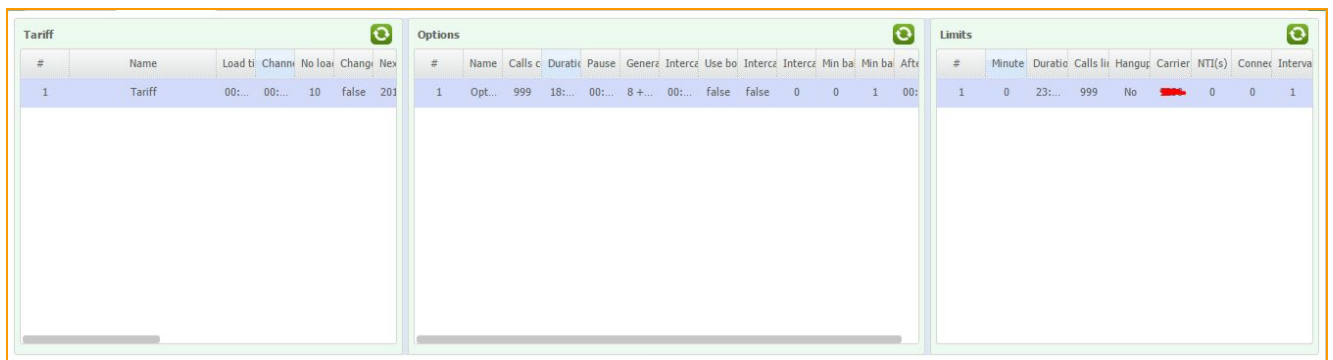



Figure “ “Tariffs”, “Options” and “Limits” windows”

3.1.6.1. Tariff creating

Tariff is a set of rules for the card to follow while working in GSM network, and Tariff limit is used to configure limits for the rules which set in the **Tariff** form for the certain Carrier.

Press  button in the “**Tariff**” window and create parameters of work for the SIM card in the opened window.

TARIFF EDITOR ✕

General

Name:

Loading timeout:

Channel offline timeout:

No load block:

Not duplicate location:

Next counters reset:

Reset interval (in hours):

Road Map:

Voip timeout:

GSM timeout:

Clients:

Lists of numbers:

Recharge pool:

Track failed calls

Short calls (sec):

Short calls to relocation:

Short calls limit:

Zero calls to relocation:

Zero calls limit:

Failed calls before unload:

Failed calls before block:

Failed intercalls to relocation:

Failed intercalls before block:

Failed intercalls before close:

Short calls before close:

Zero calls before close:

Failed calls before close:

Schedule options

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sun																								
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								

Figure (a) “ “Tariff” creating window”

First, we have to set “**General**” parameters.

General	
Name:	Tariff
Loading timeout: ?	00:10:00
Channel offline timeout: ?	00:10:00
No load block: ?	10
Not duplicate location: ?	<input type="checkbox"/>
Next counters reset: ?	2016-01-30 00:00
Reset interval (in hours): ?	24
Road Map:	
Voip timeout:	00:10:00
GSM timeout:	00:02:00
Clients:	carrier
Lists of numbers:	
Recharge pool:	

Figure “ “General” parameters of the tariff”

First assign the “*Name*” of the Tariff.

In the “*Loading Timeout*” field you have to set maximum time rate SIM card can waste for loading in the channel.

In the “*Channel offline Timeout*” field you have to set maximum time rate SIM card can be in the channel if it goes offline.

In the “*No load block*” field you have to set maximum login attempts in the GSM network.

If you have more than 1 location card won’t load in the same location if you mark “*Not duplicate location*”. Be careful if you have only 1 location with this feature.

In the “*Next counters reset*” set next date of counts resetting.

In the “*Reset interval (hours)*” you have to pick interval between resetting.

In the “*Road map*” you have to pick your own SIM card’s moving scenario.

“*VOIP Timeout*” - If card loses VOIP it will unload in this interval.

“*GSM Timeout*” - If card loses GSM it will unload in this interval.

In the “*Clients*” field you have to pick your clients (originators).

“*Lists of numbers*” - you have to pick “Black” or “White” list if you have one .

“Recharge pool” - you have to pick recharge pool.

Let's go to the **“Track failed calls”** field

Field Name	Value
Short calls (sec): ?	25
Short calls to relocation: ?	3
Short calls limit: ?	7
Zero calls to relocation: ?	7
Zero calls limit: ?	7
Failed calls before unload: ?	7
Failed calls before block: ?	7
Failed intercalls to relocation: ?	7
Failed intercalls before block: ?	7

Figure ”“Tariff editing” window: Track failed calls”

In **“Short calls (sec)”** you can set in seconds the maximum duration of calls that service perceives as short ones. The index -1 will deactivate this field.

In **“Short calls to relocation”** one can set the quantity of short calls in a row after which the card will unload from the given location and will try to load in another one due to tariff.

“Short calls limits” is to set the limits for short calls, quantity of which is allowed for a card before counters reset. The limit reach will block Sim-card.

In **“Zero calls to relocation”** you can set the quantity of zero calls in a row after which the card will unload from the given location and will try to load in another one due to tariff.

In **“Zero calls limits”** you can set the limit of calls that due to some reason failed. The limit reach will stop Sim-card work. The index -1 will deactivate this field.

“Failed calls before unload” is a field to establish the quantity of failed calls after which Sim-card will unload from location and will try to load in again.

In **“Failed calls before block”** you can set the quantity of failed calls after reach of which Sim-card will be blocked and sent to SIM block report.

“Failed intercalls to relocation” is to set the quantity of generated calls after which the card will unload from the given location and will try to load in another one due to tariff.


“*Failed intercalls before block*” is to set the quantity of failed generated calls, the reach of which will block and send Sim-card in SIM blick report.

You can see “Schedule options” below to set daily activity of the cards.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sun																								
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								

Figure “Schedule options”

This field you can fill after tariff option creating.

Let’s save our tariff by clicking on the  button.

3.1.6.2. Creating tariff options

You have to create options for each tariff, which we add to the “*Schedule options*” field.

Settings in the “*Options*” field are important to create different mode for SIM activity (day, night, etc.) :

OPTIONS
✕

Name:

Calls limit: (?) +/- %

Duration limit: (?) +/- %

Pause: (?) +/- %

Generated calls %: (?) +/- %

Generated calls duration: +/- %

Generated calls in advance:

Consider generated calls in limits:

Min balance: (?)

Min balance to channel close: (?)

After-loading Pause: +/- %

Unload interval: (?) +/- %

Bonus:

1 Default bonus

Figure “Tariff options editing window”

Set “**Name**” of the option.


Setting maximum call limit, which SIM-card could make until reset counters in the “**Calls limit**” field.

After that, “**Duration limit**” (maximum count of minutes, which SIM-card could make until reset counters).



At the right you can see . Using this parameter, you could set scatter % from those parameters.

For example, setting limit of “**Calls limit**” “10”, and % scatter 20%, SIM-card with this tariff will make from 8 to 12 calls per day.

Field “**Pause**” means minimal pause between calls of SIM-card. Also you could set scatter to this field.  .

Field “**Generated calls %**” you have to set ration of generated calls to all call count.

Field “**Generated calls duration**” set duration of generated calls for each SIM card.. It will be duration of generated calls. If you set scatter, generated calls will have different duration for the maximum human behaviour simulation..

Field “**Use only bonus**” shows you amount of bonus in your cards. If it activated, card won't make calls with bonus minutes balance equals 0.

Field “**After loading pause**” you could set interval, cards will be waiting after loading in the GSM network.

Field “**Unload interval**” means time interval between unloading one SIM of current tariff.

Click  button to save this option.

For example let's create 2 options Weekend и Work.

Tariff							Options											
#	Name	Load ti	Chann	No loa	Changi	Nex	#	Name	Calls c	Duratic	Pause	Genera	Interca	Use bo	Interca	Interca	Min bal	Min l
2	test	00:...	00:...	10	false	201	1	Weekend	20 ...	23:...	00:...	10 ...	00:...	false	false	0	-1	0
							2	Work	500...	23:...	00:...	10 ...	00:...	false	false	0	5	0

Figure “Tariff options example”

After you created options let’s check in the tariff settings.

You can see we can edit options we created.

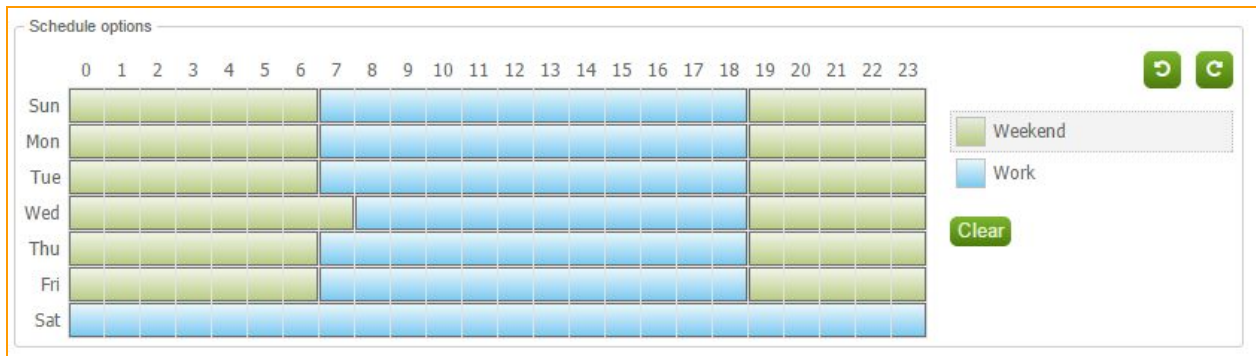


Figure “Schedule options”

In the right side you can see options list.

You have to pick option (in right side) and pick hours this option will be available (in the left).

If you leave empty fields - cards won’t make calls in this time.

3.1.6.3. Tariff limit creating

We have to add limit for our option:

The image shows a dialog box titled "OPTIONS LIMIT" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Minute prime cost: ? [0.1]
- Duration limit: [23:59:59] +/- [0] %
- Calls limit: [999] +/- [0] %
- Hangup calls on exceeding limit:
- Only bonus:
- Unload after bonus exceed:
- Carrier: [1]
- NTI(s): ? [12]
- Connection fee: ? [5]
- Interval after NTI(s): ? [60]

At the bottom right, there are two green buttons: "Save" and "Cancel".

Figure “Create Limit window”

In the Limits section you should set call rules for SIM-cards of this tariff for numbers of the carrier with the specified limit number of calls and duration for the specified Costing minutes.

In the **“Price”** field the 1 minute fee should be inserted.

In the next **“Duration limit”** field choose the needed limit of call duration.

Insert the needed meaning in the **“Calls limit”** field.

In the **“Hangup calls on exceeding limit”** field place mark if you want system cut calls if limit has been exceeded.

Indicate whether the SIM-card will use bonus minutes in the field "Only a bonus." If it is active, the map will not make calls, bonus minutes when the count is 0.


“Unload in the absence of bonuses”, activation of this field will force the system to unload the cards that don’t have bonuses in the account.

Choose the Carrier to which the limits should be applied in the **“Carrier”** field.

In the **“NTI(s)”** field you have to set free time in the beginning of call..

In the **“Connection fee”** you have to set fee for connection.

In the last field ***“Interval after NTI(s)”*** you have to set tarification mode.

Press the  button. The limit for the given Carrier is created and ready for use.

3.1.7. Add color

The colors in the GoAntiFraud interface are used in order to mark channels in GSM Gateways and SIM cards in SIM-banks. The purpose of coloring is actually to show the SIM cards what channels they have to proceed.

To add the color it is necessary to proceed the ***“Config”*** menu and select the ***“Colors”*** button.

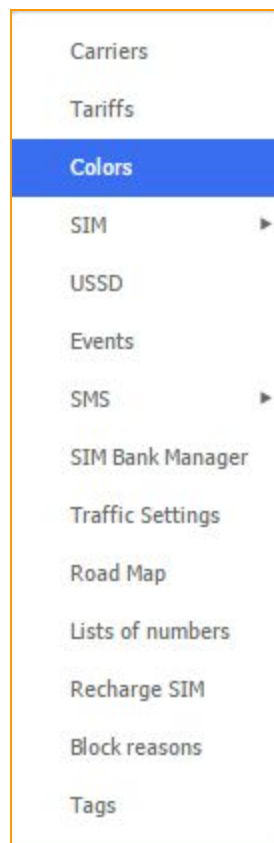
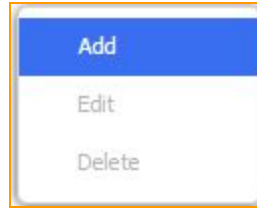


Figure “Color picking window”

Click the right mouse button in the opened window, call out the context menu and select the **“Add”** button



The Color form window appeared.

A window titled 'COLOR FORM' with a close button (x) in the top right corner. It contains two input fields: 'Name:' with an empty text box, and 'Color:' with a dropdown menu showing 'Select color'. Below the fields are two green buttons: 'Save' and 'Cancel'.

Figure “Color form window”

The “**Name**” field should contain the name of the color. In the second field which is called “**Color**” we choose the needed color. You are provided with the palette where it is necessary to choose the needed color and shade.

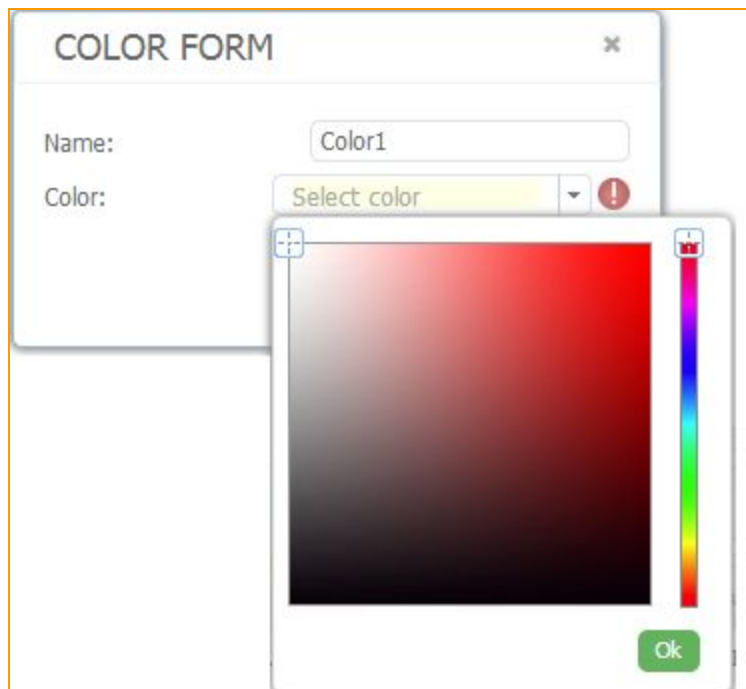


Figure “Setting the Color form”

Click the  button.

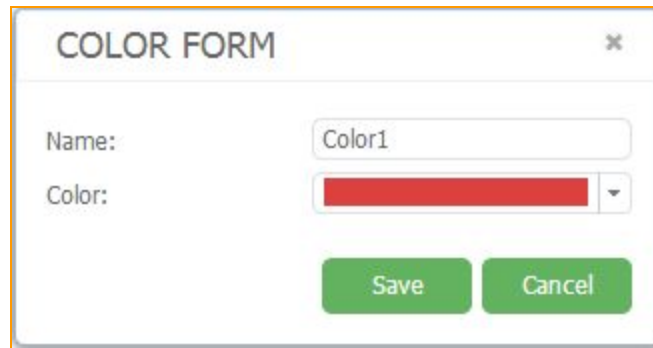
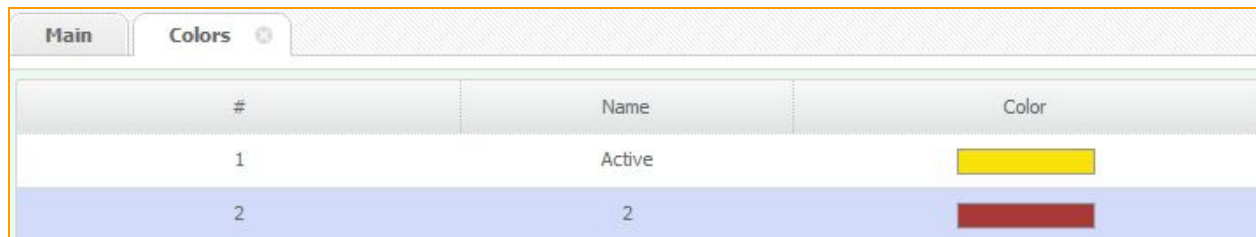


Figure “The color has been selected”

Click the  button.

The created colors and information such as id number, names are displayed in the Colors window.




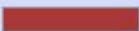
#	Name	Color
1	Active	
2	2	

Figure “The color has been added”

3.1.8. SIM card coloring

In order to apply the color, we need to go back to the main window of the GoAntiFraud interface.

We can paint one of the already existed SIM cards using “**yellow**” color. Click the right mouse button on the SIM card, select “**Change**”->“**Change color**”->“**Yellow**”.

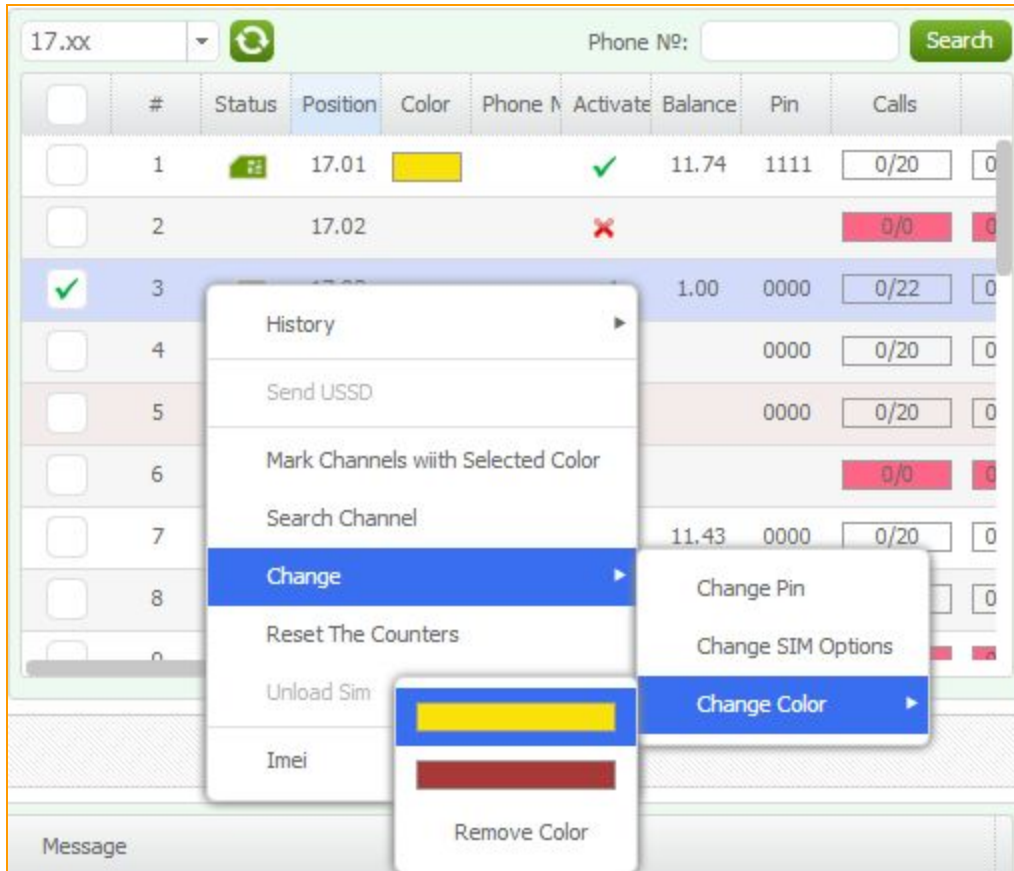


Figure “Sequence of SIM-card coloring”

Now we can notice that SIM-card is colored by yellow.



Figure ”SIM card has been colored”

3.1.9. Gateway channel coloring

The SIM card is not able to operate, until the color is not assigned to one of the Gateway channels.

Thus, let’s color the Gateway channel by **“yellow”**. If the channel be marked by another color, SIM-card will not operate.

In order to mark the channel by some color, it is necessary to click right mouse button on one of the channels and select option **“Change color”**, then **“Yellow”**.

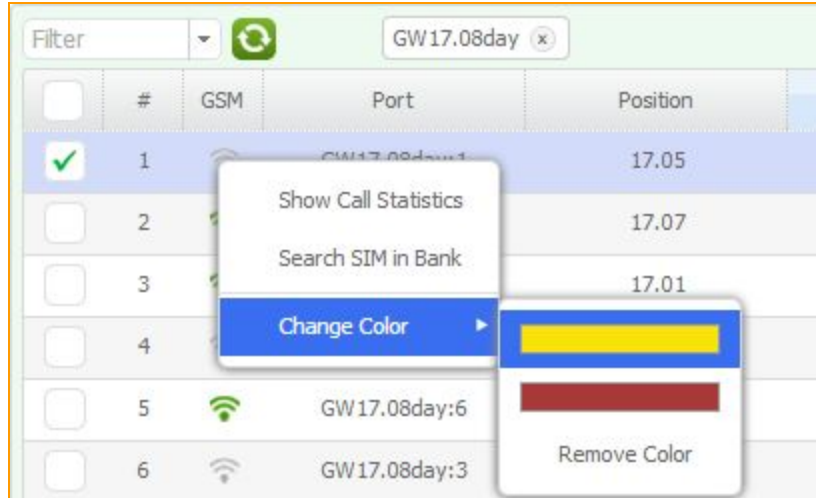


Figure “Sequence of the Gateway channel coloring”

Notice that the channel is marked by “*Yellow*” color, too.



Figure “The channel is marked into“Yellow” color”

3.1.10. Practical demonstration of the SIM card booting into the channel

In the channel window we can see that the SIM card with the position of 27.03 begins to load.

Icon of the SIM card becomes orange from gray. This means that the SIM card begins to load into the channel:



Figure “SIM card begins loading into the channel”

In the channel window, we also see that the SIM card with the position of 27.03 is loaded into the channel:



Figure “Displays the SIM card’s boot process in the gateway channel”

On the main page there is a tab interface "tab log." It is located in the bottom of the interface. This tab displays all activities that occur with the SIM cards and channels. Message about the process of downloading the SIM cards you can see in this tab:

Time	Line	SIM	Message
2014-08-22 09:45:55	gsm21.08night:07	27.03	Sim load started
2014-08-22 09:45:45	gsm21.08night:06	27.03	unloading - user request

Figure “The process of loading a SIM card in the "log tab"”

Once the SIM card is loaded into the channel, it will change to green.

<input type="checkbox"/>	2	27.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0	00:
<input checked="" type="checkbox"/>	3	27.03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.00 0000	0/94 00:
<input type="checkbox"/>	4	27.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0	00:

Figure “The SIM card loaded in the channel and is ready to work”

Information that the SIM card was loaded into the channel can be seen in "log tab".

Time	Line	SIM	Message
2014-08-22 09:50:19	gsm21.08night:07	27.03	Registered
2014-08-22 09:50:09	gsm21.08night:07	27.03	Binded

Figure “The result of the SIM card loading in the "log tab"”

Thus, the card has loaded into the channel and is ready to work. However, for the successful work of the SIM cards, other important settings are needed. One of such important settings is the creation of USSD requests.

3.1.11. Creating of USSD requests;

The USSD editor allows you not only to send USSD requests and receive responses from the operator, but also to parse from the posts necessary information - for example balance, availability of bonus minutes and so on. To get into the editor, press the button "**Settings**" and select "**USSD editor**".

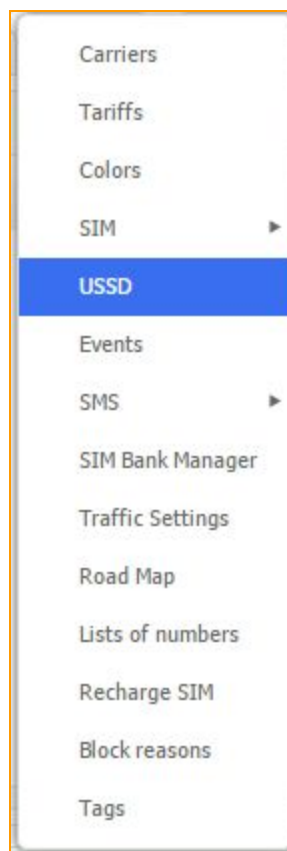


Figure "USSD redactor window"

In the resulting window, click the button [+ Add USSD](#).

Editor Settings window appears

The image shows a web-based USSD editor interface. At the top, there's a title bar 'USSD' with a close button. Below it, the 'Name' field contains 'Balance'. A 'Recharge' checkbox is present but unchecked. A 'Step 1' indicator is on the left. The 'USSD' field contains '*111#'. Below this is a 'Case 1' section with a plus icon. The 'Success' field has a green checkmark. The 'Regexp Editor' section contains a row of buttons: 'Balance', 'Phone', 'Bonus', 'Text', 'Note', 'Priority', 'Or', and a right arrow. Below the editor is a 'Send USSD' section with two dropdown menus: 'Select the tariff' and 'Select Sim', followed by a 'Send USSD' button. Below that are 'Export To Editor' and 'Send Test' buttons. At the bottom, there's a 'Regexp Test' section with a large empty text area and an 'Actions' section at the very bottom.

Figure “USSD editor window”

In the *"Name"* field, specify the name of the query, such as *"Balance Test"*.

In the *"USSD"* field you have to enter USSD code.

"Success" means that received USSD will be counted like successful and next sending will be according to schedule.

Using the USSD editor allows not only to send USSD requests, but also to check the success of its implementation and to read out the necessary data. To do this in our service is provided **"Regular Expression Editor"**.

Go to the tab **"USSD Test"**. A new window opens:

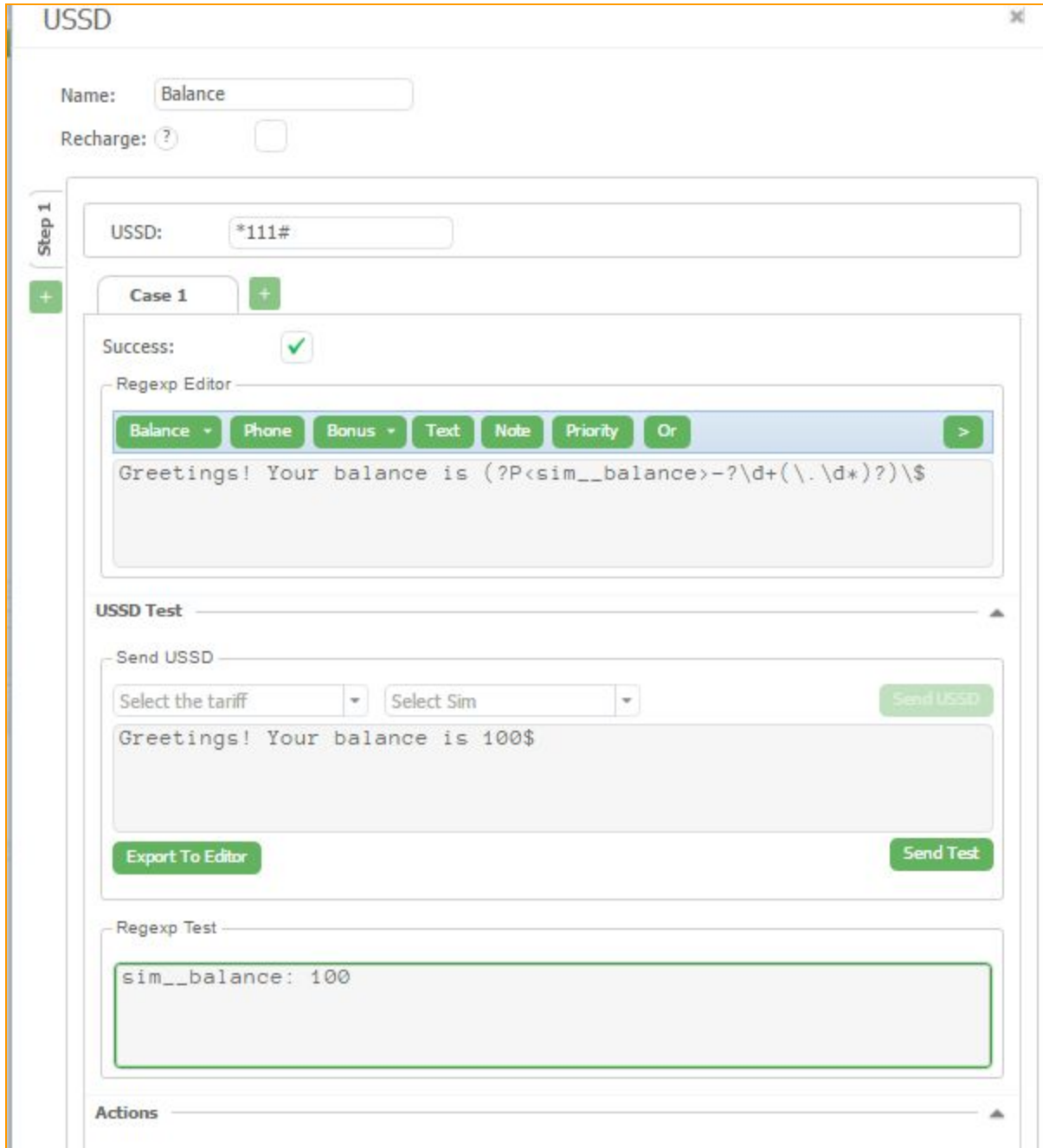


Figure "USSD redactor window (a)"

For the current response to the USSD request, enter the USSD-request in this field, according to the rules of the operator of cellular communication.

Enter USSD-code, select Tariff, card will fulfill the request with and an active SIM-card to send test. After that will be activated the **"Send USSD"** button, click on it and you will get an answer in the upper window. You can copy answer to the Regexp editor using **"Export to the editor"** button. After that, highlight the desired fragments (such as, in this case, redundant and changing text and numeric value balance) and pressing the **"Text"** and **"Balance"** buttons, respectively, we have replaced the necessary pieces for the regular expression, and got a regular expression (construction) shown in the figure above.

We can verify the correctness of a regular expression in the **"Test Regexp"**. There have already copied the real answer, and as a result of pressing the **"Test"** we need to get us to the desired result (in this case - the variable balance). If the field will highlight in red, the result did not fit under your formula, and it is necessary to fix the regular expression.

Save the regular expression by clicking on the **"Save"** button and automatically returns to the tab USSD.

In order to not only consider the balance of USSD response, but also to place a value in the **"Balance"** field of SIM-card you have to click on the **"Actions"** field and we move on to the appropriate tab:

The screenshot shows a window titled "Actions" with a close button (x) in the top right corner. Inside the window, there are several fields and buttons:

- Module:** Three dropdown menus with values "Sim", "Update", and "Balance".
- Value:** A row of four buttons: "Current value", "Variables", "Functions", and "Types".
- Filter:** A dropdown menu with the value "Current Sim".
- Text Field:** A text input field containing the regular expression `{sim_balance}`.
- Add Button:** A green button labeled "Add" in the bottom right corner.

Figure "USSD redactor window (b)"

Here we configured the system to update the field "**Balance**" of SIM-card (which sent USSD) to the current value of a regular variable "**Balance**". Click "**Save**".

Examples of other actions are provided in the table below:

Module			Description of action	Type of received data
SIM	unload		Unloads a card if USSD is successful	It does not take any arguments
	Update	Tariff	Changes tariff to the selected one if USSD is successful	
		Color	Changes color to the selected one if USSD is successful	
		Activated	Opens or closes a card by activation	true \ false
		Balance	Changes balance in the sim panel	float
		Phone	Changes phone in the sim panel	str
		Next load	After the card unloads it will not try to load until a specific date	time
		Note	Changes comments for the given card	str
		Priority	Updates the value of manual priority for the SIM	int
		Block reason	Channel/card blocked/closed by users reason	It does not take any arguments
		sim group	Changes the group of the sim card	

	Send USSD		Sends an earlier created USSD	
	Send SMS		Sends an earlier created SMS	
	Execute event		Sends an earlier created event	
SIM bonus	Update	Duration	Changes the amount of bonus minutes(hours)	time
		Balance	Changes the bonus balance account	float
		Expires	Mandatory field. Describes until which time(date) will a bonus work	time
SIM group	Update	Balance	Changes the bonus in the sim group panel(relevant with corporate packages)	float
Schedule	Update	Next try	Next try to send this USSD no sooner than specified time(date)	time

Figure “Actions in the USSD editor”

You can then close the window USSD editor and return to the *“USSD editor”*, where we can set up a schedule to automatically send USSD request in the right column.

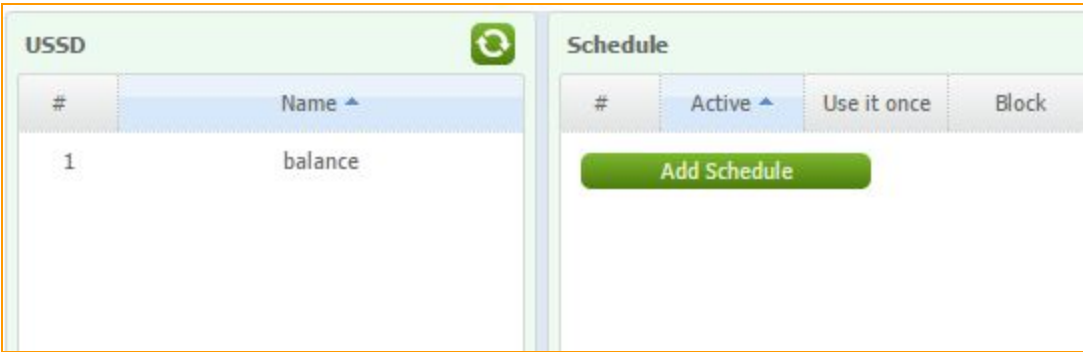


Figure “Adding schedule to USSD request”

Click on the “*Add schedule*” and we see new window:

SCHEDULE ✕

General

Enabled: ?

Tariff:

Tariff option:

Closing channel: ?

Fails tracking

Fails to close: ? 5

Fails to unload: ? 10

Fails to block: ? 20

Fail pause: ? 00:02:00 +/- 0 %

Execute rules

Order: ?

Use it once: ?

On load: ?

Calls: ? +/- 0 %

Duration: ? +/- 0 %

Interval: ? +/- 0 %

Exact time: ?

Skip first interval execution: ?

Min balance: ?

Figure “USSD schedule window ”

“*General*” field:

In the **"Enabled"** field you can enable or disable the USSD. This function is useful when you create a large number of USSD-requests for specific tariffs, but when there is no need to activate them at the moment.

In the **"Tariff"** and **"Tariff option"** you have to choose the tariff, which will be attached with the USSD and the option. The request will be sent from all active SIM-cards, which work on this option. Tariff option is chosen to create a different table for each of the options and as a result, a more accurate tuning parameters of human behavior.

The **"Block"** means a block outgoing calls until USSD will not be executed successfully.

USSD-request is considered successful when the response received from the operator meets the criteria of the user. If USSD has not been sent, or the response is not as expected, USSD-request will be considered as not successful. Why is this? For example, if you only want to use bonus minutes for calls, you create a USSD to order bonus minutes, and until they will order - this card couldn't make a call.

"Fails tracking" field:

If USSD-request failed or you do not get the desired response, specify the number of attempts that can be used to manipulate of the SIM-cards work.

Fails tracking of the USSD-requests occur in three stages.

"Failure to call blocking" - the number of unsuccessful sent USSD, after which outgoing calls are blocked to avoid negative consequences. Therefore, we block outgoing calls, for example, after 5 unsuccessful attempts on the SIM-card.

After that, the card continues to send a USSD with an interval that we set in the **"Fail pause"**, for example at intervals of 20 minutes.

After 5 times the system has not received a valid response to the USSD request, outgoing calls will be blocked, and the SIM-card will continue its trying to send a request to number of attempts in the **"Fails to unload"** field.

For example, after a card sent 10 USSD requests, and all 10 requests are not successful, it will try to log out of the current channel, and will be loaded into the other and continue its trying to send those request.

The SIM card will continue sending USSD requests up to the number of attempts specified in the **"Fails to block"**. For example, after 20 unsuccessful attempts, the card falls into the **"SIM block report"**. The settings in these fields user can change according to his wishes.

Next field **"Scheduled requests"** - schedule for this USSD.

Schedule can be of two types - **"Use it once"** and in fact schedule itself.

If you mark the field **"Use it once"**, as soon as the card will be registered in GSM-network and can send USSD-request, it will send it once for all time. If you add a new SIM-card to this tariff it will execute this USSD only once.

If you want your cards send USSD regularly with some frequency, it is necessary to use other fields. Namely:

"On load" - SIM-card will send USSD requests every time it loads into GSM network. In addition, as long as this is done successfully, the card will not make calls.

"On load order" — is the order of sending USSD-requests. If you have more than one USSD in one tariff, in this field you can set priority, and the smaller the number, the sooner execute USSD.

The following schedule settings to send USSD.

"Calls": you can select sending USSD, e.g., after every 5th call. If we indicate the spread of +/- 50%, respectively USSD will be sent at intervals of 3 to 7 calls.

"Duration" means that SIM-card will be sending a USSD-request each time after a specified number of minutes.

"Interval" - in field specifies the time interval, which will be executed USSD-request, no matter how many calls and minutes of conversation carried out SIM-card.

"Exact time" - execute USSD every day at exact time.

"Skip first interval execution" - if this option is active - system are waiting for expiring of one of the intervals and then schedule will be active. If disable - schedule immediately initiated.

"Min balance" - execute if the balance is less than field value.

If you specify all three parameters, USSD-request will be sending when it is reached the first of the limits, the program will choose the less - that comes most quickly.

If we want to create a schedule of only one parameter, such as the number of calls, we just mark all 0. If you specify 0 in all 3 fields, USSD will be sent.

After clicking "**Save**" the setting of USSD can be considered as completed.

3.1.11.1 Multistage USSD requests

Our service allows the cards to send multistage USSD requests and parse USSD responses to it.

There can be any number of steps within the USSD request.

For example, the USSD request for activating a service package of “Minutes within the network” of the Operator.

Input the first USSD, *100*31#

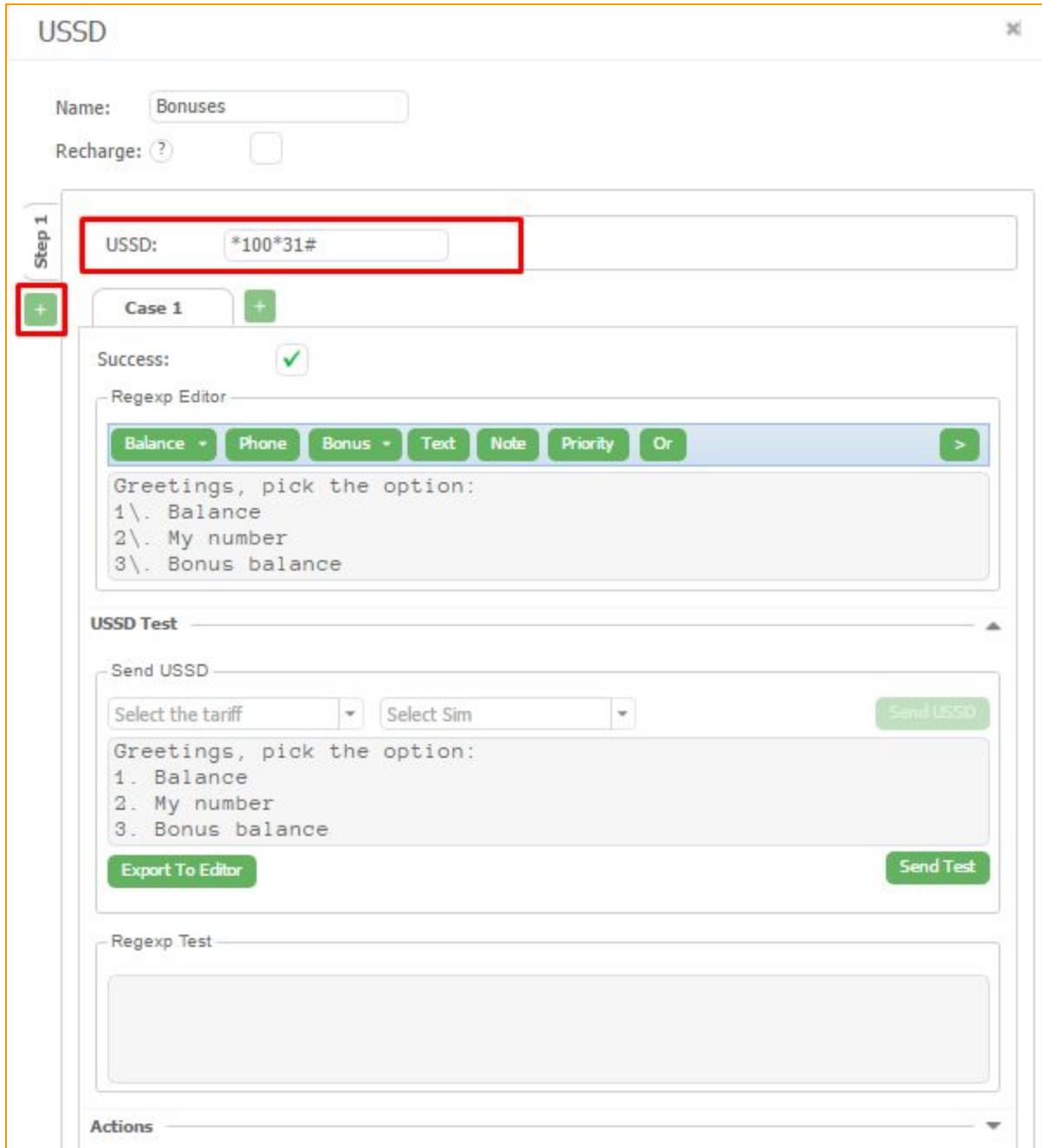



Figure “Multistage USSD request window”

In the “**Regex editor**” window get a response, export to Regex editor. Choose the needed variant from the response, 3 in this case. Click on the  button and do the same actions, but

send USSD to number 3.

The screenshot shows a USSD configuration window titled "USSD". At the top, there is a "Name" field containing "Bonus" and a "Recharge" checkbox which is unchecked. Below this, a "Step 1" indicator is visible on the left. The main configuration area is labeled "Step 2" and contains a "USSD:" field with the value "3". Underneath, there is a "Case 1" section with a plus sign. The "Success:" field has a green checkmark. A "Regexp Editor" section contains a toolbar with buttons for "Balance", "Phone", "Bonus", "Text", "Note", "Priority", and "Or", followed by a right arrow. The text area below the toolbar contains the regex: "Your bonus is (?P<bonus_minutes>\d+) minutes". Below the Regexp Editor is a "USSD Test" section with a "Send USSD" button. Underneath this are two dropdown menus: "Select the tariff" and "Select Sim". Below the dropdowns is a text area containing "Your bonus is 50 minutes". At the bottom of the USSD Test section are two buttons: "Export To Editor" and "Send Test". Below the USSD Test section is a "Regexp Test" section with a text area containing "bonus_minutes: 50". At the very bottom of the interface is an "Actions" section with a dropdown arrow.

Figure “Step 2”

Now we have to create an “*Action*” to our USSD for bonuses.

Go to the “*Actions*” field and make Action to update bonuses

The screenshot shows a configuration window titled "Actions". Inside, there is a section labeled "Action" with a close button (x) in the top right corner. The configuration includes:

- Module:** Three dropdown menus with values "Sim bonus", "Update", and "Duration".
- Value:** A row of four buttons: "Current value" (highlighted), "Variables", "Functions", and "Types". Below this is a text input field containing the expression `interval("00:{bonus_minutes}:00")`.
- Test result:** A text input field containing the value `00:50:00`.
- Filter:** Two dropdown menus with values "Current Sim" and "default bonus".

Figure “Action for our multistage USSD”

At the conclusion 2 staged USSD request is created. The GoAntiFraud service gives the possibility to send multistaged USSD requests and to parse responses to each of the steps. In case if one of the responses differs, it is better to input “.” instead of regular expressions (for each step). Then the system will accept every response.

4. ADDITIONAL FEATURES

4.1. SMS requests

4.1.1. Incoming SMS editing

SMS Editor is used in the GoAntiFraud system for reading the incoming SMS messages parsing the information from them and determining actions with the sim cards depending on the contents of the incoming SMS.

In the main tab of the user environment in the Sim bank window click the right mouse button and open context menu for the card. Choose the “*History*” item and move to “*SMS History*”. Here it is available to see all incoming messages to the card.

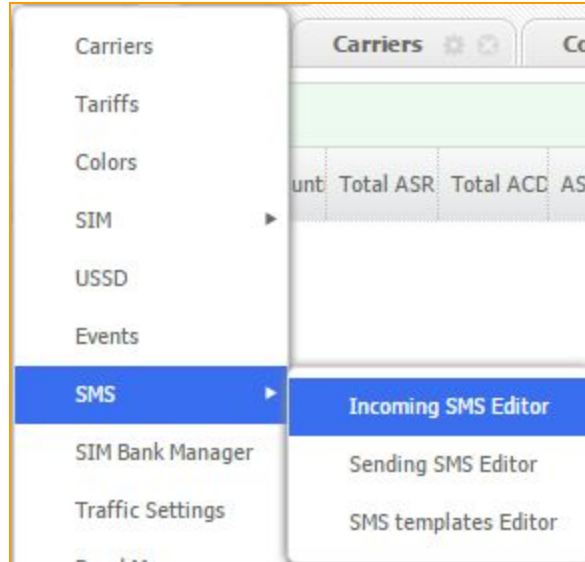


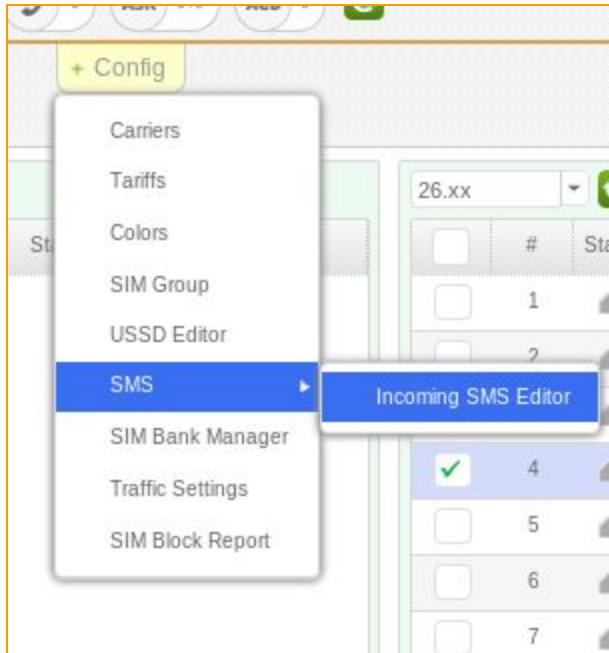
Figure “SMS History”

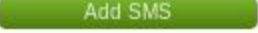
It is seen that incoming messages regularly are sent from the number 255 about the given sim card’s low balance.

SMS HISTORY			
Id	Phone	Message	Time
43510	+37378036667	Abonatul 78036667 a incercat sa va ...	2014-08-10 18:53:03
43508	1111	Numarul dvs. a fost reincarcat cu succ...	2014-08-10 13:57:24
43507	255	Vash Kredit: 0.82 lei. Pojaluista, pere...	2014-08-10 13:05:39
43504	9494	Abonatul: Vash Kredit: 0.82 lei. Pojaluista, perezareadite Vash schet chtoby uslugi Orange postoeanno byli vklucheny. Spasibo!	
43503	Prepay	privet, Optsia Vne seti zakonchilas', P...	2014-08-09 20:26:51
43500	Prepay	Vy aktivirovali Optsiiu Vne seti. Ispofz...	2014-08-09 19:38:39
43499	Prepay	S predlojeniem 6000 lei Vy poluchili: 1...	2014-08-09 19:17:07
43498	Prepay	Dobro pojalovat' v Orange! U Vas tarif...	2014-08-09 19:16:06
43496	1111	Numarul dvs. a fost reincarcat cu succ...	2014-08-09 15:06:52

Figure “SMS message in the SMS history”

Take a copy of this message, or just a part of it, and go to the ***“Incoming SMS Editor”***



Create a new SMS rule by clicking the  button.

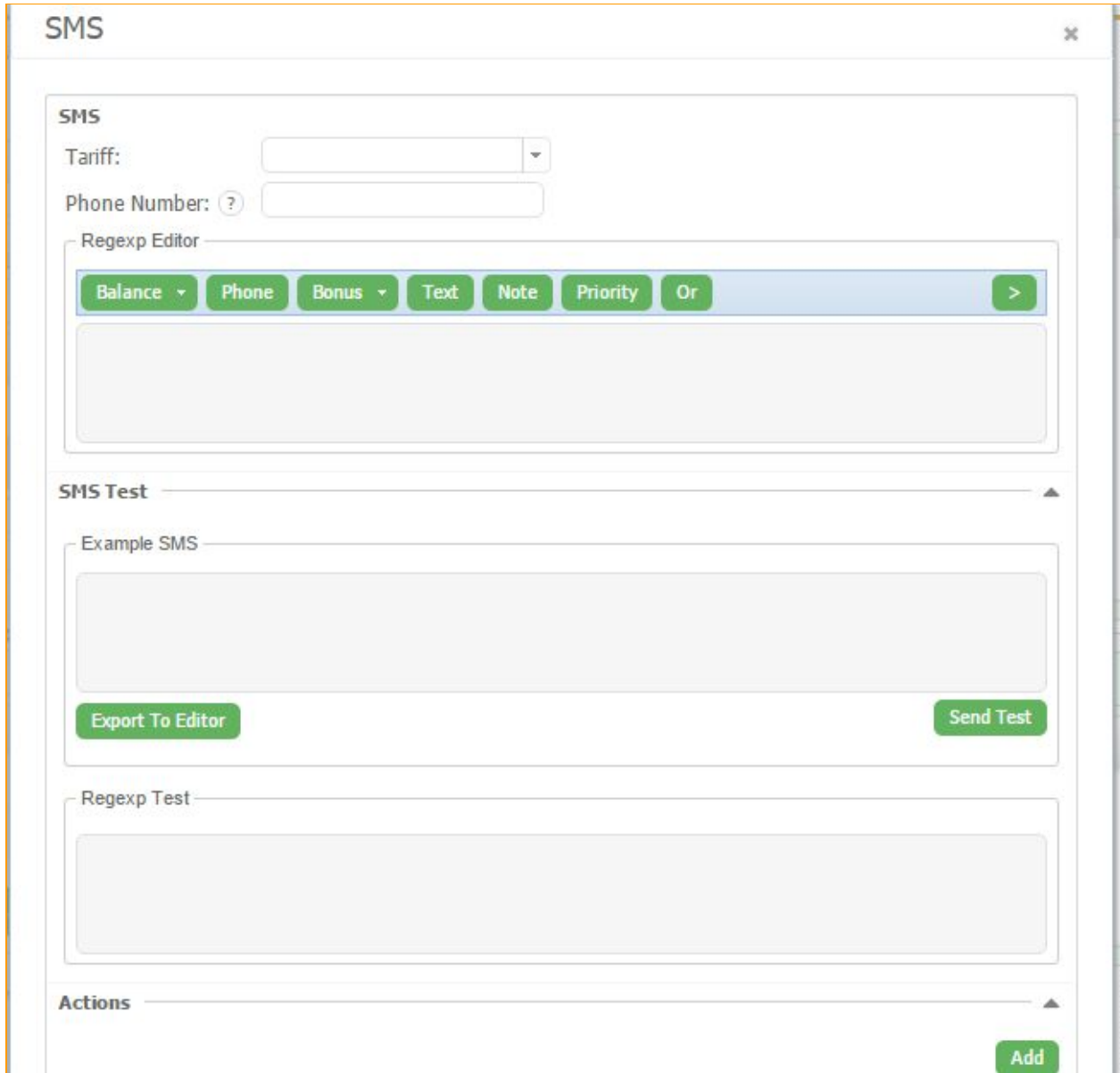


Figure “SMS Editor window”

This given SIM card regularly gets the messages about balance information.

Usually such messages come when the balance is low.

Send this SMS sample to the “Regexp Editor” window by clicking the  button.

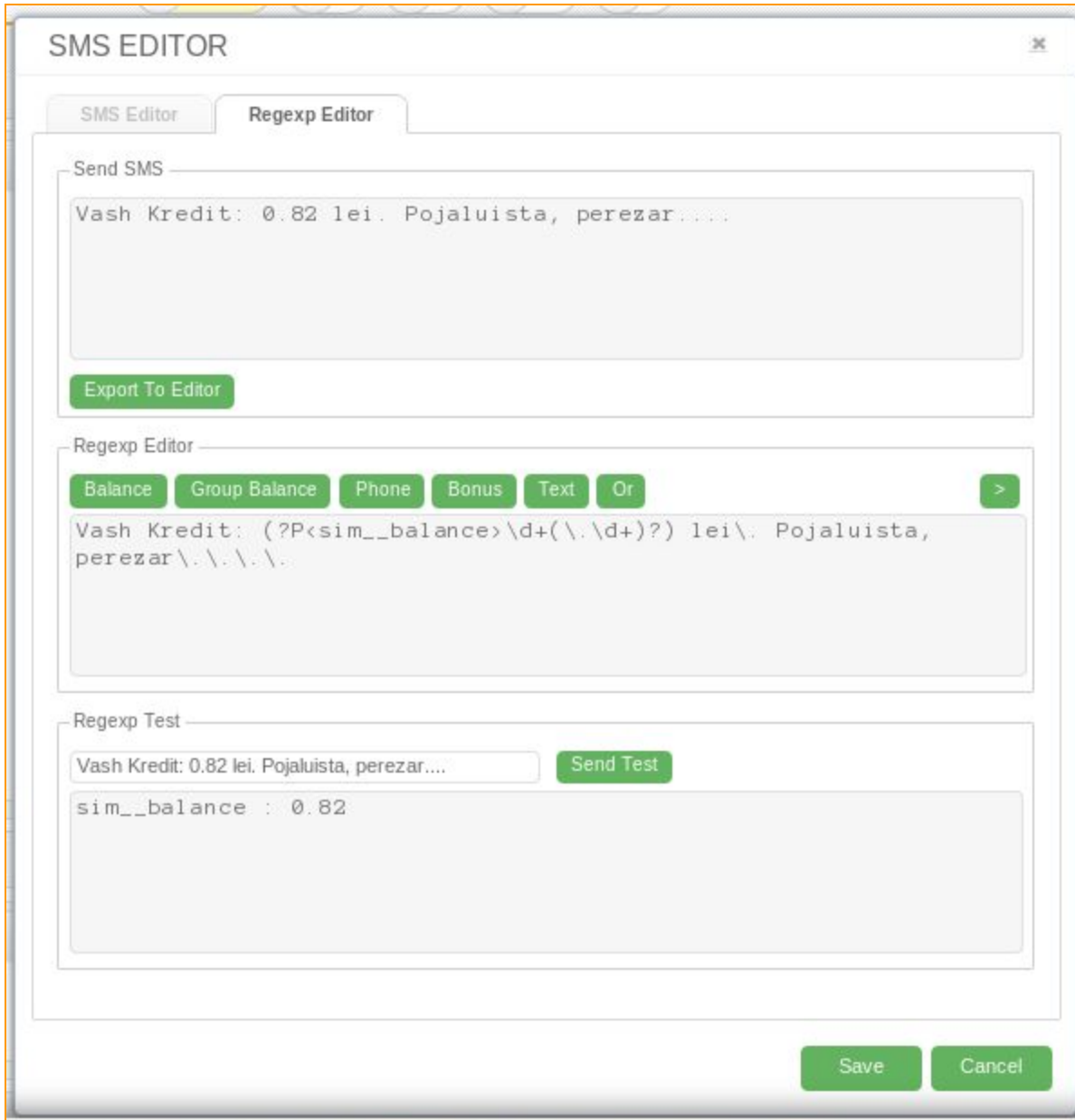


Figure "SMS regexp"

Mark out the digit meaning of balance in the SMS text and click button, for the system to parse such messages in further and change the parameters of work for the card in accordance to the scenario created by the user.

Test the construction by the help of SMS editor. Save. Additionally it is possible to add additional fields, for example, ***"Force unload"*** or change the Tariff for it, named for example, ***"Refill me"***.

Now in accordance with the created SMS rule when a message with the similar text comes to any of the cards with the tariff “orange -> mc”, it will be parsed and the card will change its Tariff to the one which is not allowed to work but only to mark the cards waiting for the refill.

4.1.2. Sending SMS editor

GoAntiFraud service connects equipment of the client to SMS server that helps to configure SMS dispatch from the cards in work, which is a sign of human behavior of SIM-cards in GSM network.

Choose *SMS - Sending SMS editor* in “Config”.

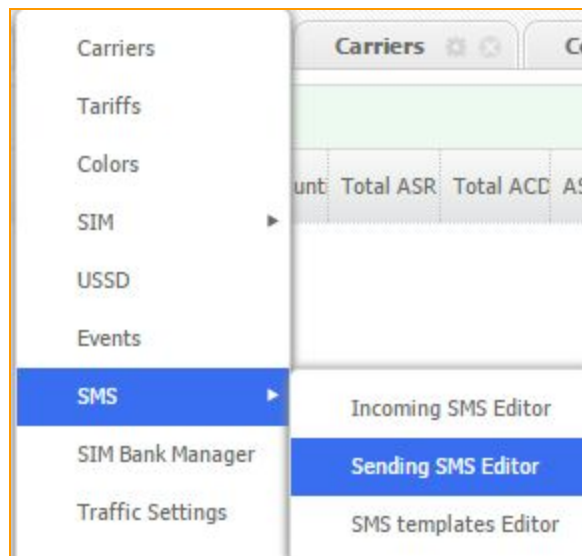


Figure “Sending SMS editor”

In a new opened window by RMB choose “Add SMS” in “Sending SMS editor”. Set necessary rules for SIM-card work.

Figure “Sending SMS editor window”

In the field “**Tariff**” select the tariff which will be applied by the given rules of SMS sending rules.

In the line “**Fail before block**” you have to specify the number of failed attempts that a card is allowed to make before it will be forbidden to make calls. In the next passage “**Ban**” you specify the number of failed attempts to send SMS, the reach of this limit will forbid cards to make outbound calls.

“**Fails before reload**” is a field where you put the number of failed attempts to send SMS, the reach of this limit will automatically unload the card from the working channel of GSM gateway and will send it in **SIM Block report**.

“**General limits**” window

“**Pause after fail**” is here to set a pause to the next attempt after failed dispatch.

“**Send SMS interval**” is a temporary interval between successful attempts to send the outgoing SMS.

“**Used minutes before SMS sending**” is a field to set general quantity of minutes for the generated and terminated calls between SMS dispatch.

In “**Calls count**” you have to specify the numerical limit of calls count before the next attempt of SMS dispatch.

“**Language**” panel you have to select the language made up in “SMS templates”.

In the next field it is important to indicate the phone number that will receive the aforesaid SMS. If you leave it empty, SMS will be sent to a random number from SIM group that SIM-card is part of.

In “**Text**” you need to state the text of a message. The empty field will be considered as a command for an automatic selection of a message from previously made up templates.

4.1.3. SMS template editor

Select “**Config**”, then proceed to **SMS - SMS templates editor**.

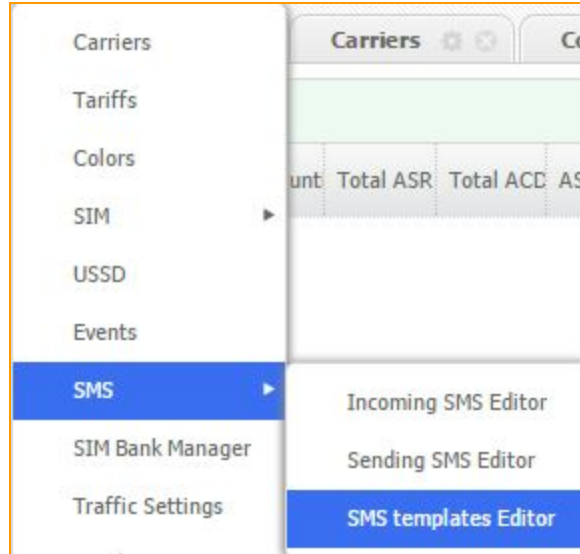


Figure “SMS templates editor”

In a new window you have to make a language that shall be applied to the text of the messages.

Click RMB in left column and choose add button . In the following window you can name your language.



Figure “Language creation tab”

Save the name.

In the right column you can see Message text tab.

Open the tab to create template of text message by clicking RMB and Add button .

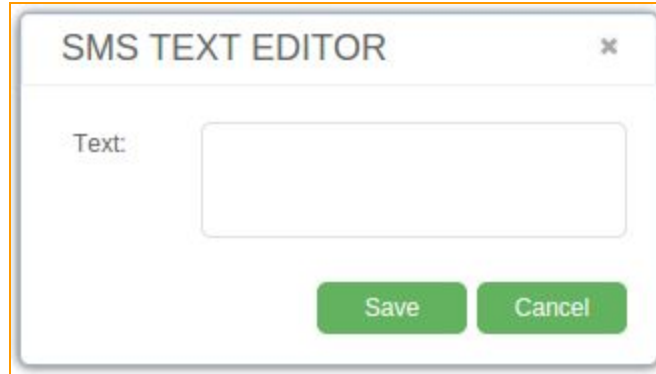


Figure “SMS text editor”

Type the text of the message in the proper field and save it by appropriate button.
We recommend to create several templates of text messages for one language.

#	Message text
1	let me talk to you later, i am in a meeting please
2	Hello, bro, how are you doing?
3	Maybe let's go to the cinema today? Call me
4	I go to the bed, sweet dreams.

Figure “Outcoming SMS templates tab for a English language”

4.2. Reports panel

4.2.1. Call history

Call history report provides a journal about the work of equipment and has an informative report on transmitted calls.

The screenshot shows a window titled "CALL HISTORY" with a close button (X) in the top right corner. Below the title is a "Filter" section containing several input fields:

- "Lastapp:" with a dropdown menu.
- "From:" with a date picker icon and a dropdown menu.
- "To:" with a date picker icon and a dropdown menu.
- "Duration (s):" with "From:" and "To:" sub-fields, each with a numeric input and a vertical spinner.
- "Tariff:" with a dropdown menu.
- "Originator:" with a dropdown menu.
- "Originator IP:" with a dropdown menu.

 Below the filter section is a "Fields" section with two radio buttons: "To File" (which is selected) and "To Grid". To the right of these radio buttons are two green buttons: "Reset Filter" and "Render".

Figure “Call history window”

To get information about SIM-card calls one has to set filters in “Lastapp” and apply time period for report. “Tariff” of SIM-cards, “Originator” who sends calls and his IP address, as set below.

In the bottom of the panel select the desired format of information and click “Render”



In order to control the quality of traffic you can survey not just the statistics of SIM-cards calls, but listen to the record of media stream in an integrated player. It is worth to say that GoAntiFraud expands the settings of GoIP in web-interface as well, like “Volume” panel that was made by manufacturer but inaccessible in a menu before. With concern to the record of media stream now, you can adjust the volume on the gates for its channel.

CALL HISTORY

Filter

Lastapp: [] Tariff: []

From: [] Originator: []

To: [] Originator IP: []

Duration (s): From: [] To: []

Fields

To File

To Grid

Total: 104069

Duration: 2480088


Reset Filter Render

00:00:00 / 00:00:00

#	Bitsec	Calldate	Dst	Duration	Lastapp	Origination Ip	Carrier	Tariff	Src
1	6	2014-12-01 1...	998916714085	6	Dial	185.15.186.31			79258310258
2	6	2014-12-01 1...	998915522146	6	Dial	185.15.186.31			79253015553
3	6	2014-12-01 1...	998905173489	6	Dial	185.15.186.31			79116486359
4	6	2014-12-01 1...	998907145213	6	Dial	185.15.186.31			79194921973
5	6	2014-12-01 1...	998905130557	6	Dial	185.15.186.31			79138586554
6	6	2014-12-01 1...	998914508737	6	Dial	185.15.186.31			79824009938

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Figure “Call history results window”

To change rendering parameters of required data, click **“Reset Filter”**  and enter new ones.

4.2.2. Fast Stat

Server Time: 2015-02-16 14:17

Days: 1 Hour: 0 Minutes: 0 Show

#	Name	Hourly Statistics	ACD	ASR	Calls	Minutes	Ssuccess	Maximum card co	Channels
1	U21_red	☺	1.32	40.8	49	26.47	20	100 %	0:0:0:8
2	U22_red	☺	3.42	35	509	609	178	100 %	0:0:0:8

Figure “Fast stat window”

In this report you can see the work statistics of your equipment for a certain period, and statistics of each gateway by hour. In case of need, you can decrease the load on the gateway by such

parameter as “maximum card count” (often used on gateways with few slots to decrease the load in rush hour).

In the “**Channels**” field 1:2:3:4:8 (for example) means:

1-answered

2-in call

3-in use

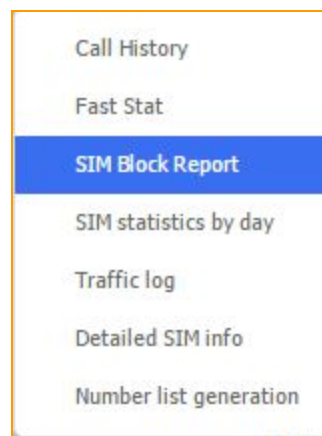
4-loaded

8-total.

4.2.3. SIM Block Report

SIM Block Report is the tab of the service, where blocked SIM cards are shown, blocked by the GoAntiFraud service because of different reasons. That could be call duration limit reached, or calls limit exceeded, or unsuccessful USSD response.

To follow the SIM Block Report go to Config menu and choose “**SIM Block Report**” item.



In the opened window you can see the cards been blocked by the service or by the carrier

#	IMSI	IMEI	Phone	Carrier	Tariff	Positio	Balanc	Color	Total c	Total d	Activat	Balanc	User bl	No Loa	USSD	Zero ca	Short c	Failed	Failed	Pin	ICC	Last Lo	Last Lo	Load C	No
1	220...	359...		Tele...	Tel...	2.010		Red	0	00:...	Red	Green	Green	Green	Red	Green	Green	Green	Green	Green	893...	201...	201...	6	0
2	220...	359...		Tele...	Tel...	2.014		Red	0	00:...	Red	Green	Green	Green	Red	Green	Green	Green	Green	Green	893...	201...	201...	4	0

Figure “SIM Block Report window”

The cards blocked because of the following reasons are sent to SIM Block Report:

- **Balance block** - no money on the card and service checked it by USSD. You can fix it by recharging it.
- **No load** - card exceeded the number of attempts to load into GSM network.
- **User block** - card has been blocked by user.
- **USSD** - card exceeded limit of failed USSD.
- **Count zero** - exceeded limit of zero calls.
- **Count short** - exceeded limit of short calls.
- **Count failed** - exceeded limit of failed calls.
- **Failed recharged** - exceeded limit of failed recharge USSD.

If your card went into the SIM block report because of minimum balance, and you have recharged your card, you can get it out and update the balance by using the "Increase balance" button. After that the system would get a card and update its balance. How it works: In tariff options we indicated minimum balance to the block equal 10. Our balance drops to a value of 0 (for example) and the card went into the SIM block report due to balance. Go to the SIM block report and check the card. Press on the right mouse button and find the "Increase the balance."

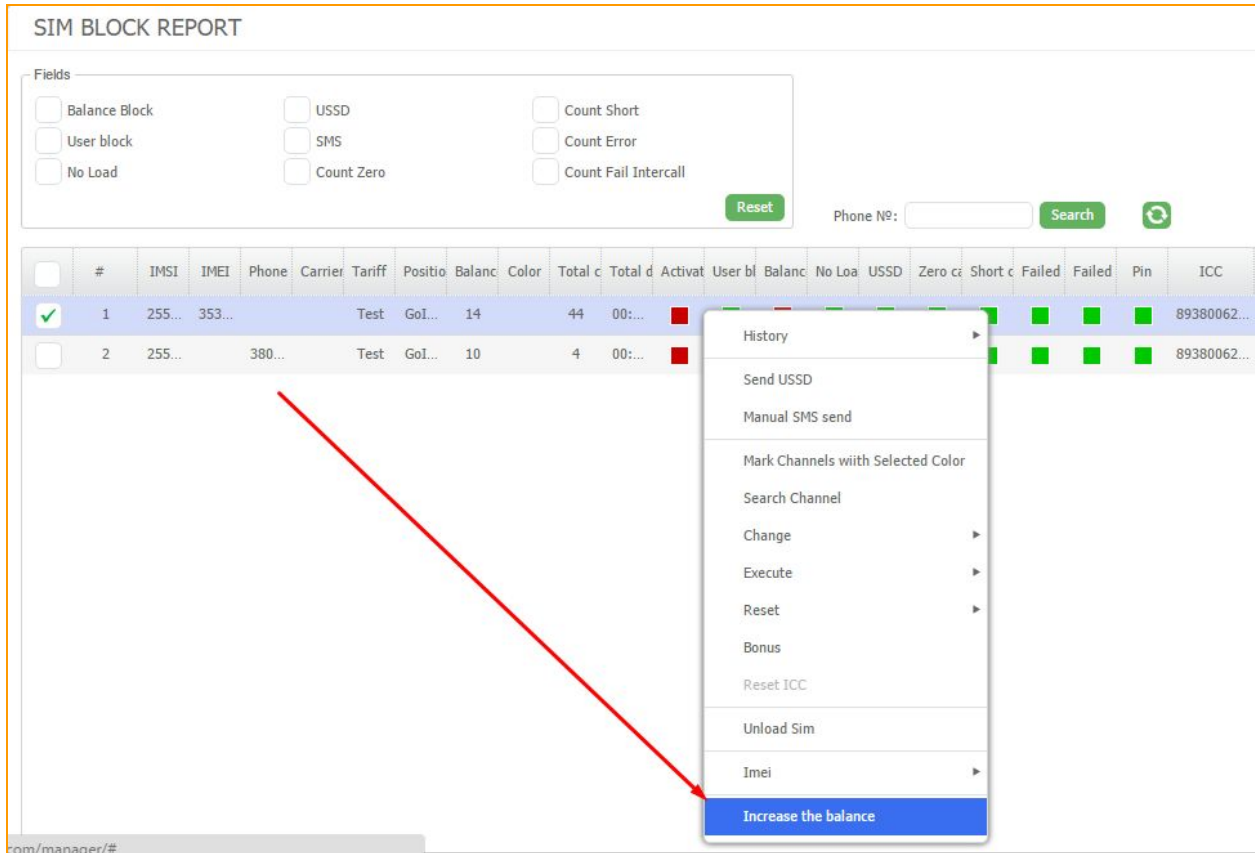


Figure "Increase the balance" in the SIM block report

You will see a field where we can increase the balance to the actual value, if you have recharged up your card. For example we have a value of 100. Thus, the current balance is 100. Enter this value in the field and press "Save". After that refresh your page and see that the card has disappeared from the SIM block report and updated its balance to a value of 100. The card can work as usual.

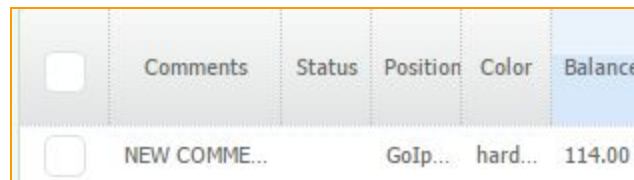


Figure "Updated balance"

4.2.4. SIM statistics by day

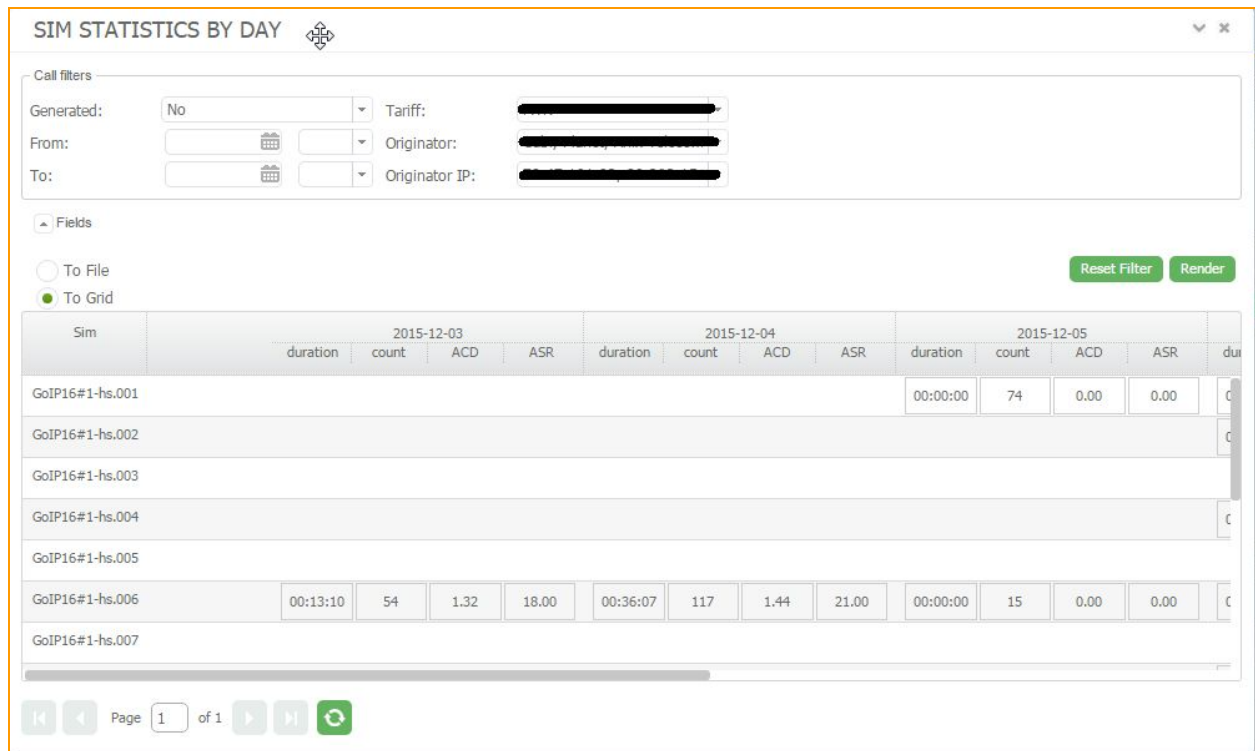


Figure “SIM statistics by day”

To check statistic by days ASR and ACD, you have to go to the **“Reports”** and press on the **“SIM statistics by day”**. In this window you can filter statistic by these parameters:

-Type of call: Traffic or generated.

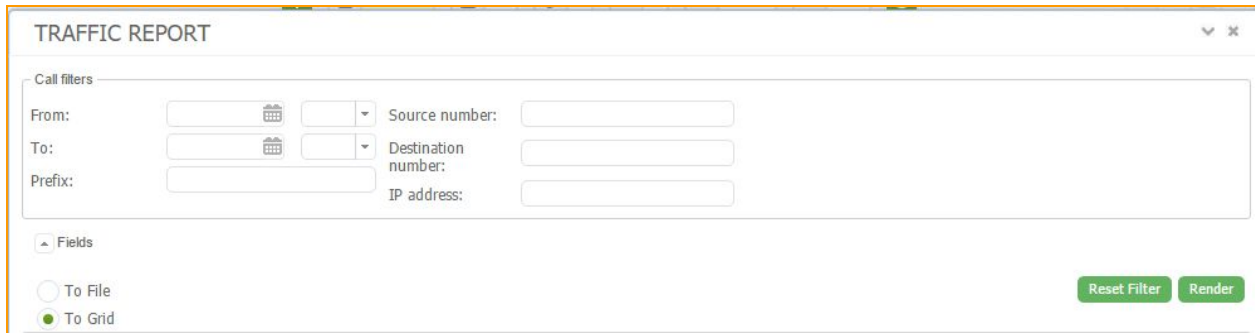
-Period of statistic

- Tariff

-Originator

-Originator’s IP

4.2.5 Traffic log

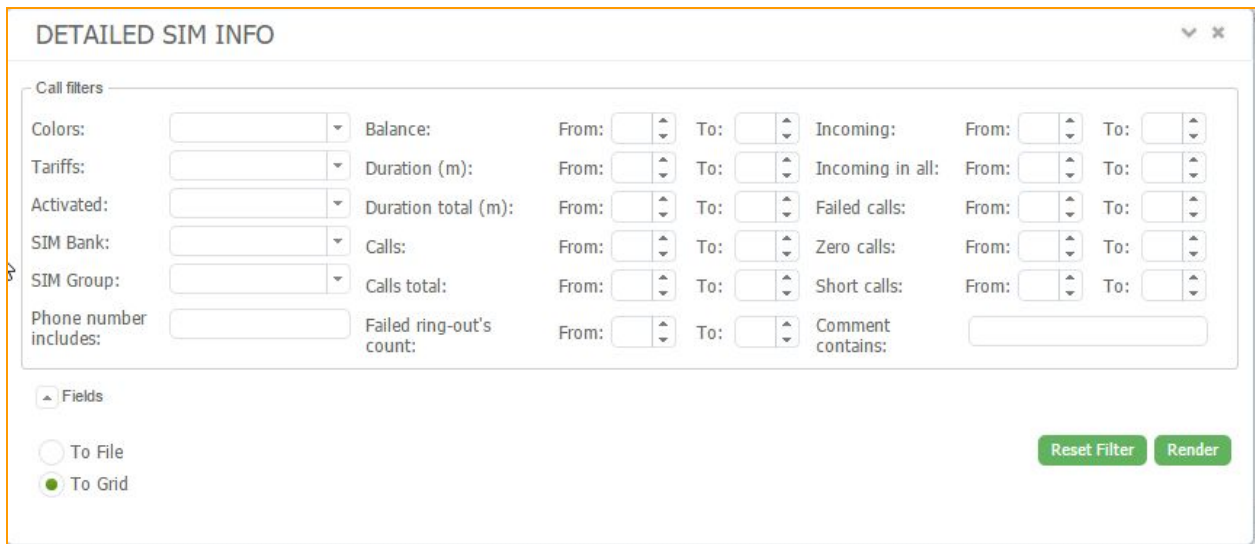


The screenshot shows a window titled "TRAFFIC REPORT" with a close button in the top right. Below the title is a "Call filters" section containing several input fields: "From:" and "To:" (each with a calendar icon and a dropdown arrow), "Prefix:" (a text input), "Source number:" (a text input), "Destination number:" (a text input), and "IP address:" (a text input). Below the filters is a "Fields" section with two radio buttons: "To File" (unselected) and "To Grid" (selected). At the bottom right of the window are two green buttons: "Reset Filter" and "Render".

Figure “Traffic log”

To check traffic log, caller source, number, originator’s IP and technical prefix you have to click “Reports” and pick Traffic log. You can sort information about numbers, IP, prefixes.

4.2.6 Detailed SIM info



The screenshot shows a window titled "DETAILED SIM INFO" with a close button in the top right. Below the title is a "Call filters" section with a grid of filters: "Colors:" (dropdown), "Balance:" (text input), "From:" (range selector), "To:" (range selector), "Incoming:" (range selector), "From:" (range selector), "To:" (range selector); "Tariffs:" (dropdown), "Duration (m):" (text input), "From:" (range selector), "To:" (range selector), "Incoming in all:" (range selector), "From:" (range selector), "To:" (range selector); "Activated:" (dropdown), "Duration total (m):" (text input), "From:" (range selector), "To:" (range selector), "Failed calls:" (range selector), "From:" (range selector), "To:" (range selector); "SIM Bank:" (dropdown), "Calls:" (text input), "From:" (range selector), "To:" (range selector), "Zero calls:" (range selector), "From:" (range selector), "To:" (range selector); "SIM Group:" (dropdown), "Calls total:" (text input), "From:" (range selector), "To:" (range selector), "Short calls:" (range selector), "From:" (range selector), "To:" (range selector); "Phone number includes:" (text input), "Failed ring-out's count:" (text input), "From:" (range selector), "To:" (range selector), "Comment contains:" (text input). Below the filters is a "Fields" section with two radio buttons: "To File" (unselected) and "To Grid" (selected). At the bottom right of the window are two green buttons: "Reset Filter" and "Render".

Figure “Detailed SIM info”

To check detailed info about SIM, namely position in SIM bank, balance, number, you have to click “Reports” and pick “Detailed SIM info”. In the showing window you can pick Color, Tariff, gateway, SIM group, balance, duration of call, calls and failed calls.

4.2.7 Number list generation

The screenshot shows a window titled "NUMBER LIST GENERATION" with a close button (x) in the top right corner. Below the title bar, there is a "Phone number:" label followed by a dropdown menu currently set to "Dst".

The "Call filters" section contains several input fields:

- "Generated:" with a dropdown menu.
- "From:" with a date picker icon and a dropdown menu.
- "To:" with a date picker icon and a dropdown menu.
- "Paid duration:" with "From:" and "To:" labels, each followed by a numeric spinner.
- "Tariff:" with a dropdown menu.
- "Location:" with a dropdown menu.
- "Originator:" with a dropdown menu.
- "Originator IP:" with a dropdown menu.

The "Number filters" section contains several input fields for duration and count:

- "Total duration for number:" with "From:" and "To:" labels, each followed by a numeric spinner.
- "Maximal duration for number:" with "From:" and "To:" labels, each followed by a numeric spinner.
- "Count of calls for number:" with "From:" and "To:" labels, each followed by a numeric spinner.
- "Minimal duration for number:" with "From:" and "To:" labels, each followed by a numeric spinner.
- "Average duration for number:" with "From:" and "To:" labels, each followed by a numeric spinner.

Below the filters, there is a "Fields" section with a dropdown arrow and two radio button options:

- To File
- To Grid

At the bottom right of the window, there are two green buttons: "Reset Filter" and "Render".

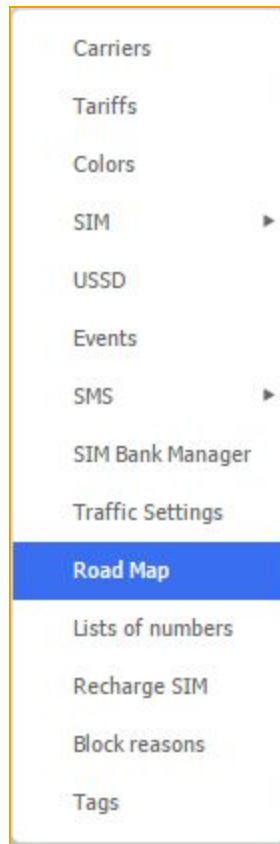
Figure “Number list generation”

In this window, you can choose how you want to generate a list, according to source number or destination number. You can generate your own lists of numbers using filters and statistics of phone calls from your account. It is possible to select a number calls to which were varying by duration, numbers on the quantity of calls to them. You can render it into grid or save it as file with .csv extension.

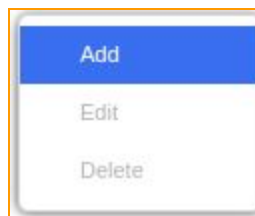
4.3 Road Map

Road map (a map for location changing) is a set of rules applied to SIM-cards to move between different locations. According to this function the card will not load in the same location twice in a row (except you make such a rule), simulating the human behavior in GSM network.

To make a route click **Config - Road Map**.



In a new tab click RMB on an empty area and select **Add**.



In a new panel you have to name your map, i.e. Route 1, and in Locations tab you need to mark SIM-card “arrival” locations among which it will be traveling.

The screenshot shows a window titled "ROAD MAP FORM" with a close button in the top right corner. On the left is a map area with two points: "Location 1" (blue dot) and "Location 2" (orange dot). On the right is a configuration panel:

- Name:** A text input field containing "Route #".
- Locations:** A dropdown menu showing "Location 1, Location 2".
- Table:** A table with columns "From", "To", and "Loc".

From	To	Loc
Location 1		<input checked="" type="checkbox"/> Location 1
Location 2		<input checked="" type="checkbox"/> Location 2
		<input type="checkbox"/> Location 3
		<input type="checkbox"/> Location 4
- Buttons:** "Save" and "Cancel" buttons at the bottom right.

Figure “Road map creation”

In this panel you can oblige the SIM-card to move FROM one location TO another. You can specify how much time the SIM-card will be “offline” while moving FROM Location 1 TO Location 2.

ROAD MAP FORM

Name:

Locations:

From	To	Location 1	Location 2
Location 1			
Location 2			00:00

00:15
00:30
00:45
01:00
01:15
01:30
01:45
02:00
02:15

Save Cancel

Figure “Temporary relocation interval of SIM-card”

In case you leave the interval empty, the service won't be able to use road map.

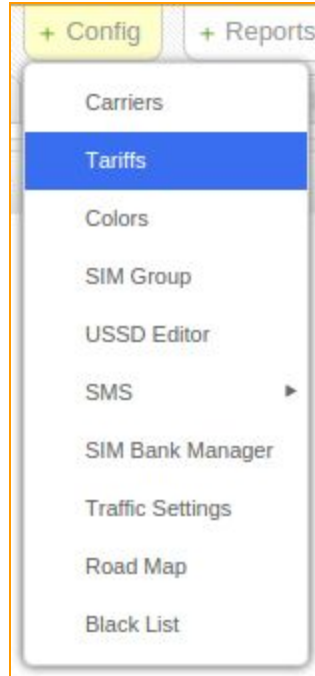
In case the location provides several directions (more than one parameter in Location passage), the SIM-card will choose the route randomly.

Take in concern that if there are 3 routes, i.e. 10, 15 and 20 minutes, the SIM-card will choose the shortest one, because the blockage of this route will be deactivated sooner than the other routes.

After you completed the grid, save the rules for this SIM-card by clicking



To use the new map, proceed to *Tariffs* tab.



You can either create a new tariff, or upgrade the existing one with the route rules. To do so, choose an existing tariff and click RMB on it. In tariff editor mark the line “*Not duplicate location*” and select the desired Road Map.

The screenshot shows a web interface titled "TARIFF EDITOR" with a "General" section. The fields and their values are as follows:

Field	Value
Name:	all in
Loading timeout: ?	00:10:00
Channel offline timeout: ?	00:15:00
No load block: ?	5
Not duplicate location: ?	<input type="checkbox"/>
Next counters reset: ?	2016-04-05 12:00
Reset interval (in hours): ?	24
Road Map:	Map #1
Voip timeout:	00:05:00
GSM timeout:	00:02:00
Clients:	
Lists of numbers:	

Figure “Appoint the route of relocation to tariff”

The road map must be appointed to each tariff separately. One road map can be appointed to several tariffs.

4.4. Event Log

GoAntiFraud service has its event log with the list of all the events which took place during the working session.

The events are displayed in the bottom corner of the GoAntiFraud main page

The screenshot shows a "Log Tab" window with a table structure. The table has four columns: Time, Line, SIM, and Message. The table is currently empty.

Time	Line	SIM	Message

Figure “Log tab window”

You can choose what exact events there will be displayed in the event log. In order to do that, you have to click your right mouse button on the “**Log tab**” line and choose the “Log tab settings” option. Then a new window appears and there you can give this log tab a name and configure the number of the lines to be displayed.

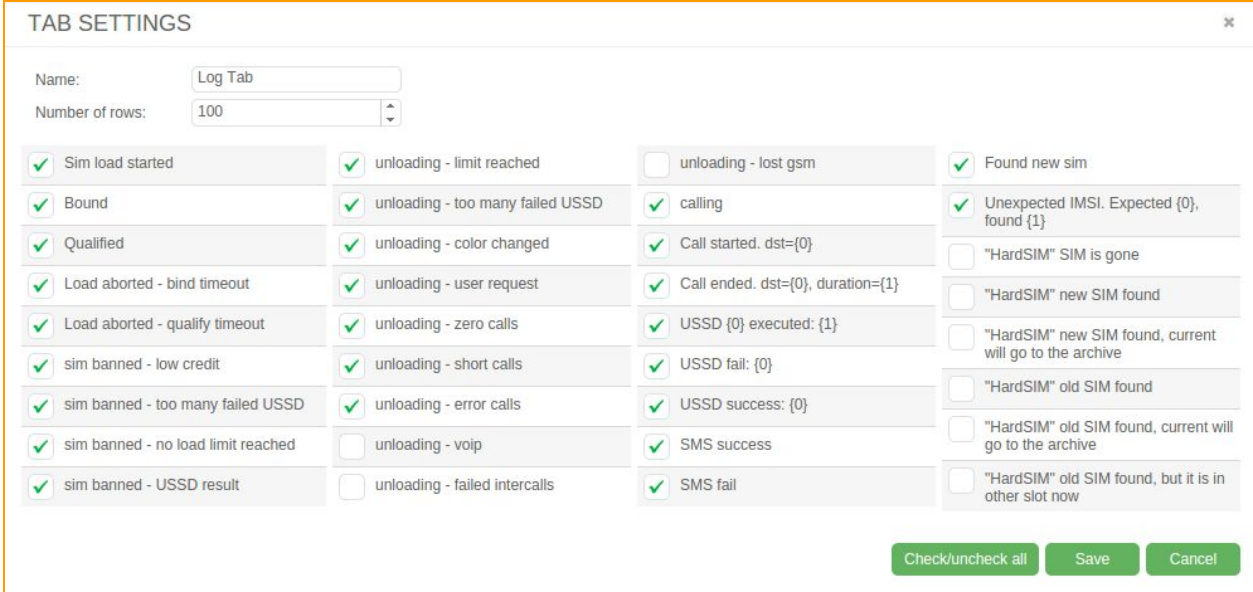


Figure “Log tab settings”

You can also see marked events that display in the event log. You can unmark the events that you don’t want to be displayed.

There are some details on each of the events:

While working with the GoAntiFraud service, the log tab automatically highlights all the main procedures. They are shown in the lower part of the GoAntiFraud main page.

You can yourself choose what exact logs will be shown there. To do so, you have to click the right mouse button on the “Log tab” line. In the appeared window you can give a name to your tab and determine the number of logs that are to be shown.

Lower you can see the logs marked with checkmarks. Those are the ones that are shown in the log tab. You can also unmark the logs that you’re not interested in. Let’s take a look at every one of them.

In the first line the “**Sim load started**” log means that a SIM card has started to load into the GSM gateway channel.

The ***“Pin change fail - gate offline”*** log means that the system can’t change a PIN code because it can’t find connection with the GSM gateway.

“Pin change fail” means that most likely the error was caused by the wrong SIM card’s PIN code settings.

“Binded” - the card has binded into the GSM gateway channel.

“Registered” - the card has registered in the GSM network.

“Qualified” - the card has received a definite GSM signal level.

“Insert SIM failed” - The error of the SIM card’s loading into the GSM gateway.

“Bind timeout” - The limit of time for binding the card into the channel has expired.

“Gsm timeout” - The limit of time for registration the card in the GSM network has expired

“Load aborted - USSD fail” - the message appears if an attempt to send a USSD is failed on the condition that the “block” function in the USSD settings is on.

“opening channel” - means that the channel is opening.

“Gate {0} online” - The GSM gateway with the corresponding number is in use.

“Gate {0}offline” - The GSM gateway with the corresponding number is not in use.

“Bank {0} online” - The SIM bank with the corresponding number is in use.

“Bank {0} offline” - The SIM bank with the corresponding number is not in use.

And there are **the SIM cards status logs**.

“sim banned - low credit”

“sim banned - too many failed USSD”,

“sim banned - no load limit reached”,

“sim banned” - USSD result.

“Unloading- limit reached” - one of the SIM card’s limit has been reached.

“Unloading- too many failed USSD” - the limit of failed USSD requests has been reached

“Unloading- color changed” - card’s unloading because of the channel color change.

“Unloading- user request” - card’s unloading according to the user’s request

“Unloading- gate offline” - card’s unloading because of the GSM gateway not being in use

“Unloading- bank offline” - card’s unloading because of the SIM bank not being in use.

“Unloading - gate and bank offline” - card’s unloading because of the GSM gateway and SIM bank not being in use

“Calling” - the card is calling

“Call started. dst = {0}” The card has started to make a call. In the brackets there is the phone number the card is calling to

“Call ended dst={0} duration ={1}” - The call to the phone number {0} has ended, call duration - {1}

“USSD {0} executed: {1}” - The USSD request from the card (number {0}) has been executed successfully

“USSD ne fail:{0}” - The USSD request has been failed

“Sending USSD {0}” - the USSD sending

“USSD success:{0}” - the USSD has been executed successfully

“Found new sim” - the previous SIM card can’t go on being in use for some reasons. The system has found another SIM card.

“Load aborted: found old SIM”

“Load aborted: found new sim in used slot”

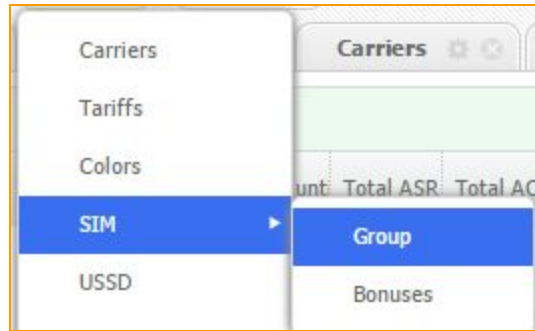
“Load aborted: found old sim in used slot”

“Load aborted: can’t read IMSI”

“Unexpected IMSI. Unexpected {0}, received {1}” - The system informs you that there’s the card in the SIM bank that you have not expected to be there because you have changed the cards in the SIM bank. Once you have marked the events to be displayed, click the **“Save”** button.

You can also create a few more event logs by clicking the “+” button and mark the events that you wish to be displayed there.

4.5. SIM groups



SIM groups ensure the so called parameter as “calls to familiar numbers”, moreover this is how the SIM-cards can make not only outbound calls but inbound as well. During the inbound call a real conversation is being transmitted into media channel.

To configure SIM groups you have to primarily set the percentage of generated calls in the tariff settings (it’s a percentage from general quantity of calls). You can check this parameter in an already existing tariff (“Config” - “Tariff” - RMB on the tariff - “Edit”) or in a new one.

Maximum index of generated calls can be no more than 50%. At the rate of 50% the SIM-cards will call only on themselves without receiving any traffic.

Other work parameters can be set in “Config” - “SIM groups” - “Add”.

A screenshot of a dialog box titled "SIM GROUP FORM". It contains two input fields: "Name:" with an empty text box, and "Balance: ?" with a numeric input field containing the value "0". Below the fields are two green buttons labeled "Save" and "Cancel".

Figure “SIM group creation tab”

Here you enter the name of a new group and the balance. This is a minimum balance that allows SIM-cards to call among each other.

After this, in a SIM bank window click RMB on a SIM-card and choose “Change” - “Change SIM options” - “SIM group”.

The image shows a 'SIM OPTIONS' dialog box with the following fields and values:

Own number:	998911342362
Balance:	6.8196
Activated:	<input checked="" type="checkbox"/>
Tariff:	Test
Color:	Red
Sim Group:	2
Bonus minutes:	be1
Bonus expire date:	2
Pin:	3
IMEI:	131740921654094

Buttons: Save, Cancel

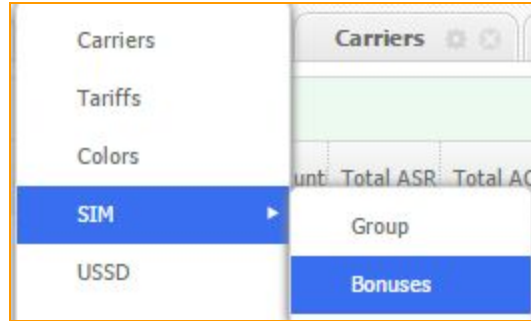
Figure “Sim options”

Find a desired group in a dropping list, and this is how you will add it. To establish generated calls among SIM-cards, there have to be at least 2 SIM-cards.

4.6. SIM bonuses

If you want to create bonuses for different carriers, you have to open **Bonuses** tab.

Config-> SIM ->Bonuses.



You have to set name of this bonus and assign it to carrier.

A screenshot of a 'BONUS' configuration window. The window has a title bar with 'BONUS' and a close button. Below the title bar, there are two fields: 'Name:' with a text input field containing 'Bonus name', and 'Carriers:' with a dropdown menu showing 'carrier' and a red indicator. At the bottom, there are two green buttons: 'Save' and 'Cancel'.

Figure “SIM bonus window”

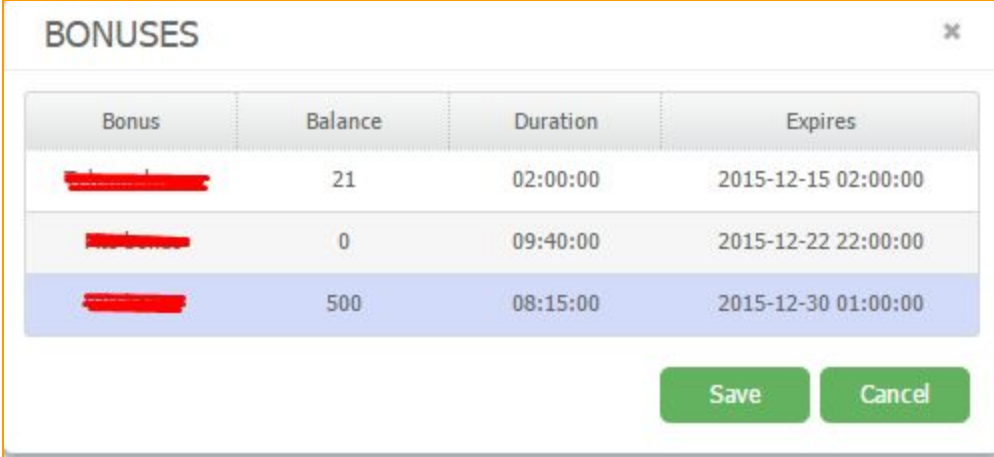
In the tariff options we have to set bonuses.

OPTIONS ✕

Name:	<input type="text" value="Random name"/>		
Calls limit: ?	<input type="text" value="999"/>	+/-	<input type="text" value="0"/> %
Duration limit: ?	<input type="text" value="23:59:59"/>	+/-	<input type="text" value="0"/> %
Pause: ?	<input type="text" value="00:01:00"/>	+/-	<input type="text" value="0"/> %
Generated calls %: ?	<input type="text" value="0"/>	+/-	<input type="text" value="0"/> %
Generated calls duration:	<input type="text" value="00:00:00"/>	+/-	<input type="text" value="0"/> %
Generated calls in advance:	<input type="text" value="0"/>		
Use only bonus: ?	<input type="checkbox"/>		
Consider generated calls in limits:	<input type="checkbox"/>		
Min balance: ?	<input type="text" value="-1"/>		
Min balance to channel close: ?	<input type="text" value="0"/>		
After-loading Pause:	<input type="text" value="00:00:30"/>	+/-	<input type="text" value="0"/> %
Unload interval: ?	<input type="text" value="00:00:00"/>	+/-	<input type="text" value="0"/> %
Bonus:	<input type="text" value="Bonus name"/>		
⋮ Bonus name			

Figure “SIM bonus option window”

Also if you have more than one bonus you can separate them.



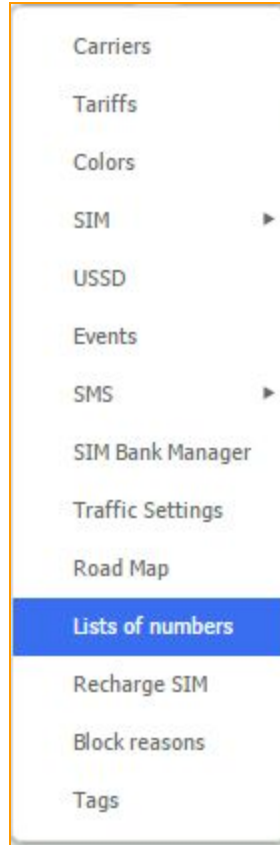
Bonus	Balance	Duration	Expires
[REDACTED]	21	02:00:00	2015-12-15 02:00:00
[REDACTED]	0	09:40:00	2015-12-22 22:00:00
[REDACTED]	500	08:15:00	2015-12-30 01:00:00

Save Cancel

You can check all your bonuses via USSD editor.

4.7. List of numbers.

The function derives into two options. The blacklist allows to reject the calls on server from undesired numbers, avoiding the redirection on SIM-card. The other one allows to add “white numbers”, so SIM-cards will receive calls only from the given list of numbers. The settings are located in config:



In a new tab we see two windows:

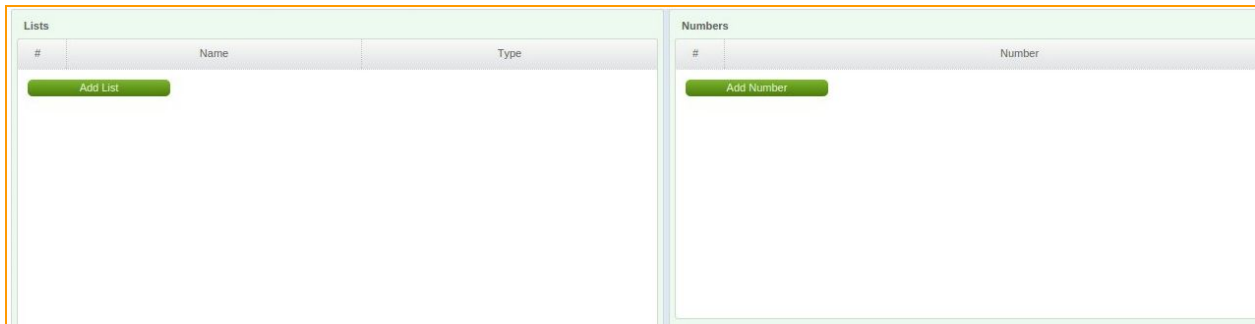
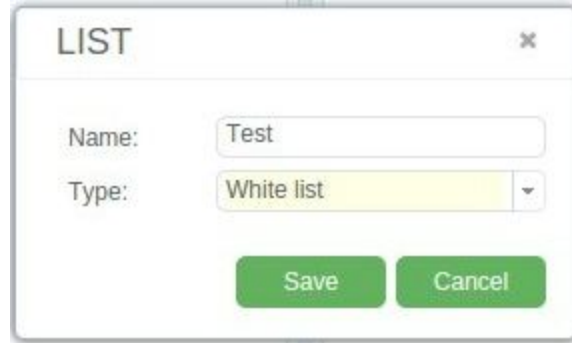



Figure “List of numbers”

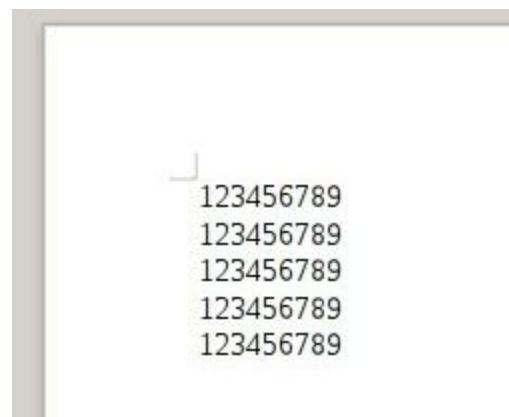
In a first window press “**Add list**” or click RMB on empty space and select “**Add**”. Then type “**Name**” and choose “**Type**” of list (black or white).




In a second window add numbers. You can do it by one or put the whole amount. To add numbers by one press **“Add number”** or click RMB on empty space to open context menu and select **“Add”**. The new window will appear, where you have to put in the number in international format without “+”. After number is put, press 



To add the several numbers at once click RMB on empty space and select **“Import”**. Then click **“Select”** and choose the file with the list of numbers. You can take any text file with line-by-line list (one line - one record).



Then press 



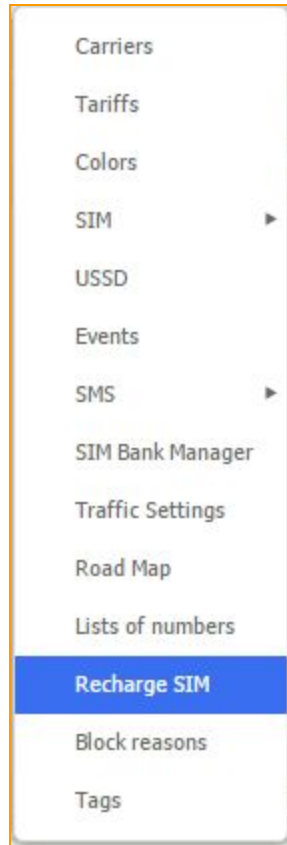
In a panel “*Numbers*” you can see the full list of added numbers by page.

#	Number	
1	123456789	
2	123456789	
3	123456789	

Figure “Numbers in the list”

4.8. SIM recharge

You can set the automatic SIM recharge in Config



Next we make a pool. In pool settings you have to make USSD request and minimum balance, the reach of which will trigger the SIM recharge.

A dialog box titled "POOL" with a close button (X) in the top right corner. It contains three input fields: "Name:" with the value "1", "USSD:" with a dropdown menu showing "Balance", and "Min balance:" with the value "0.5". At the bottom, there are two green buttons labeled "Save" and "Cancel".

Figure "SIM pool"

To create USSD request for balance recharge, you have to make a simple USSD rule in USSD edit and activate the "recharge" field.

The USSD may be like *123*{recharge code}#, then in USSD field type the request *123*{recharge_code}#. You need to use regular expression in order to save the rule.

In order to monitor the success of USSD requests in the "Editor" you need to enter text that sends you a statement after the deposit through the code. Change the balance of the regular expression to {sim_balance}, changing text can be replaced by ([\ w \ W]) *
Then press save USSD request.

The screenshot shows a web interface for configuring a USSD request. At the top, the title is "USSD". Below it, there is a "Name:" field with the value "Recharge" and a "Recharge:" field with a green checkmark. A "Step 1" indicator is on the left. The main configuration area includes a "USSD:" field with the code "*100*{recharge_code}#" and a "Recharge code" button. Below this is a "Case 1" section with a "Success:" field and a green checkmark. A "Regex Editor" is open, showing a list of options: "Balance", "Phone", "Bonus", "Text", "Note", "Priority", and "Or". The selected text in the editor is "Your balance has been refilled! Your current balance is (? P<sim__balance>-?\d+(\.\d*)?) Rs\.". Below the editor is a "USSD Test" section with "Send USSD" controls, including "Select the tariff" and "Select Sim" dropdowns, and a "Send USSD" button. The test result shows "Your balance has been refilled! Your current balance is 200 Rs.". There are "Export To Editor" and "Send Test" buttons. At the bottom, a "Regex Test" section shows the output "sim__balance: 200".

Figure “USSD for recharging”

Add a schedule for our USSD recharge. Fill in the required fields.

SCHEDULE ✕

General

Enabled: ?

Tariff:

Tariff option:

Closing channel: ?

Fails tracking

Fails to close: ?

Fails to unload: ?

Fails to block: ?

Fail pause: ? +/- %

Execute rules

Order: ?

Use it once: ?

On load: ?

Calls: ? +/- %

Duration: ? +/- %

Interval: ? +/- %

Exact time: ?

Skip first interval execution: ?

Min balance: ?

Recharge groups:

1 ⋮ 22323

Figure “Schedule for recharge USSD”

In the right window “Recharge SIM” you have to add the recharge codes. To do so by one click “*Add code*” or click RMB on empty space and choose “*Add*”. There’s also an option to import a text file with line-by-line list of codes (one line - one code). You need to click RMB on empty space and choose “*Import*”.

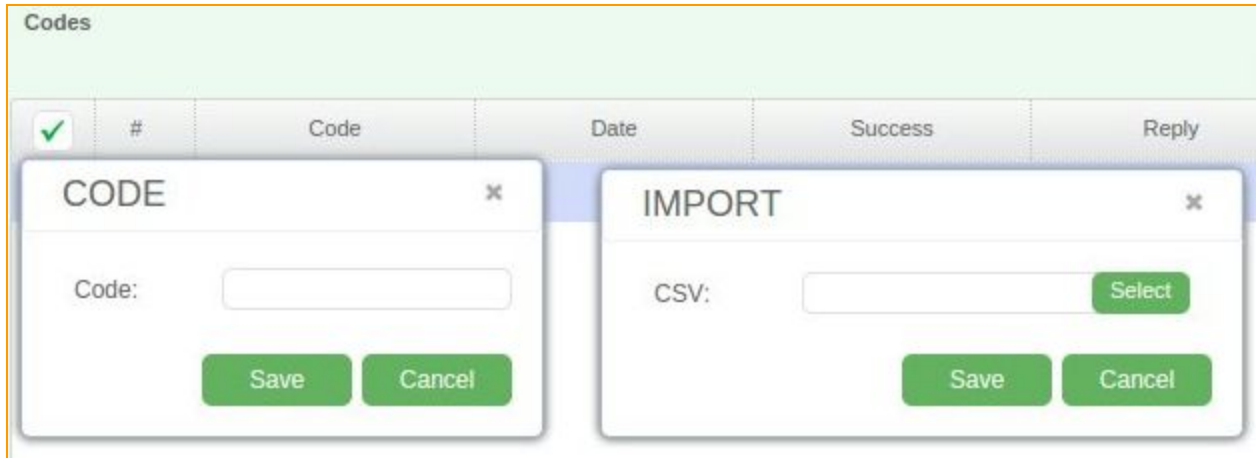
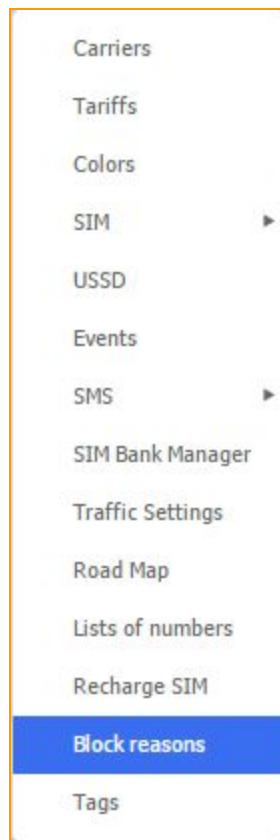


Figure “Import of recharge codes”

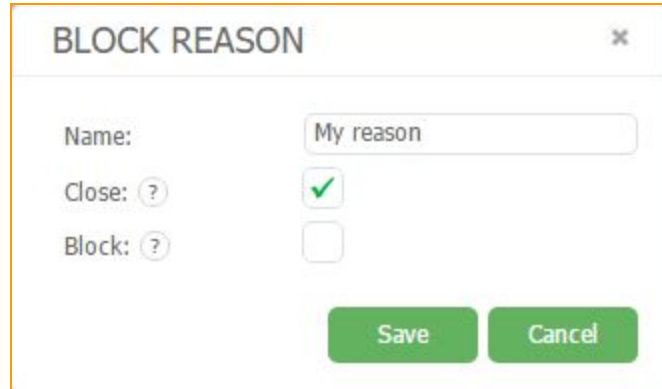
After usage of your recharge code, in the right window you will see the information on date of completion and text that your carrier responded on this USSD. If this text matches the one you put in the edit field of USSD request then balance recharge will be considered successful.

4.9. Block reasons

To add your own block reason go to the “*Block reasons*”.



Click on the **“Add block reason”** button and you will see field, where you could type name for the reason and action (close channel or block it). **“Close”** only closing channel by this reason and **“Block”** causes card to go to the SIM block report. To activate this reason you could use USSD or SMS actions editor.

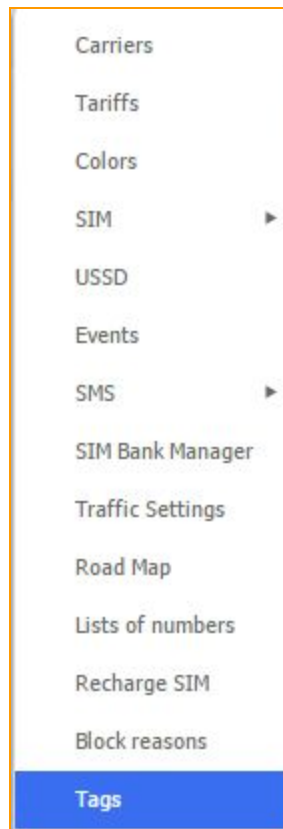


The image shows a dialog box titled "BLOCK REASON" with a close button (X) in the top right corner. Inside the dialog, there is a "Name:" label followed by a text input field containing "My reason". Below this, there are two rows: "Close: ?" with a checked checkbox, and "Block: ?" with an unchecked checkbox. At the bottom of the dialog, there are two green buttons: "Save" and "Cancel".

Figure “Block reason”

4.10. Tags

To add your tag go to the **“Tags”** section.



Click on the **“Add tag”** button and put name for our tag. We use tagging to marking, filtering and tracking our SIM cards.

4.11. Events

The "*Events*" function allows you to perform actions (similar to actions under USSD or SMS) according to a predetermined schedule. To create an event you need to select the point in settings.

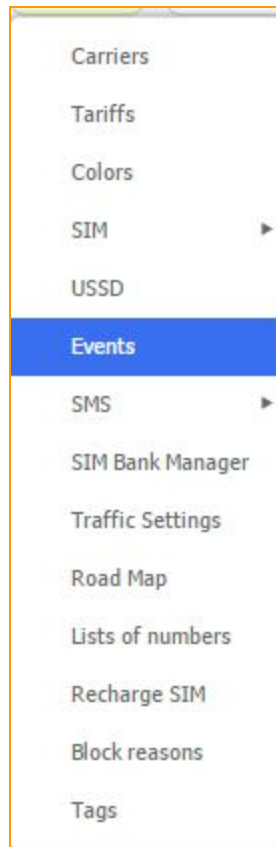


Figure "Events"

To add your own Event click on the "*Add event*" button on the left side.



Figure “Adding event”

After that put name for it, pick an action (similar with USSD/SMS). Also you have a possibility to test your action on any card.

A screenshot of a form titled "EVENTS" with a close button (X) in the top right corner. The form contains several sections: a "Name:" label followed by an empty text input field; an "Event Test" section with a dropdown arrow, containing a "SIM" label and two dropdown menus labeled "Select the tariff" and "Select Sim", along with a green "Send Test" button; and an "Actions" section with a dropdown arrow and a green "Add" button. At the bottom right of the form, there are two green buttons labeled "Save" and "Cancel".

Figure “Events menu”

After end of your settings, click on the **“Save”** button .

After adding your event you have to add schedule for its work. To do this click on the **“Add schedule button”**.

Schedule settings are the same as for USSD.

The image shows a 'SCHEDULE' configuration window with three main sections: General, Fails tracking, and Execute rules. Each section contains various input fields and checkboxes for configuring the schedule.

Section	Field Name	Value / Control
General	Enabled: ?	<input type="checkbox"/>
	Tariff:	[Dropdown menu]
	Tariff option:	[Dropdown menu]
	Closing channel: ?	<input type="checkbox"/>
Fails tracking	Fails to close: ?	5 [Spinners]
	Fails to unload: ?	10 [Spinners]
	Fails to block: ?	20 [Spinners]
	Fail pause: ?	00:02:00 [Dropdown] +/- 0 [Spinners] %
Execute rules	Order: ?	[Dropdown menu]
	Use it once: ?	<input type="checkbox"/>
	On load: ?	<input type="checkbox"/>
	Calls: ?	[Spinners] +/- 0 [Spinners] %
	Duration: ?	[Dropdown] +/- 0 [Spinners] %
	Interval: ?	[Dropdown] +/- 0 [Spinners] %
	Exact time: ?	[Dropdown menu]
	Skip first interval execution: ?	<input type="checkbox"/>
	Min balance: ?	[Spinners]

Figure “Events schedule”

4.12. Additional modules

Our service provides additional features to improve the performance customers.

- Traffic Optimization - Due to competent data optimization, algorithm can significantly reduce the size of the packages, without compressing voice data. Thus, software module reduces the traffic consumption 3 times without sacrificing quality of communication. The function will be useful for users in regions with low network bandwidth and high cost of Internet services. The module will save on payment if the provider charges the Internet traffic in terms of MB consumption.
- SIM-cards Unload Protection - The software module ensures uninterrupted operation of channels and allows not offload cards when communication between the gateway and the user's SIM-bank is interrupted. The software simulates the presence of SIM-cards in the gateway and keeps channels active up to 6 hours *. The function will be useful in regions with poor Internet connection and allow using SIM-banks in an unstable network.
*The duration of autonomous operation of cards depends on the frequency of sending SIM-card authorization packages and may vary according to the GSM-operator.
- Call Recording - he software module allows storing and listening to calls made via the user's SIM-card. The function will be useful for monitoring the traffic provided by the originator. Listening to records made over the specified period allows quickly analyzing the causes of troubles to ACD and ASR in channels and directly ensures what the quality of the provided communication is.
*Call Records are stored on the server for 24 hours and updated every day.

For more information about these modules, you can visit our official site

<https://goantifraud.com/en/> or get by clicking on your account name in the upper-right corner of the screen and select the section "**License fee**"

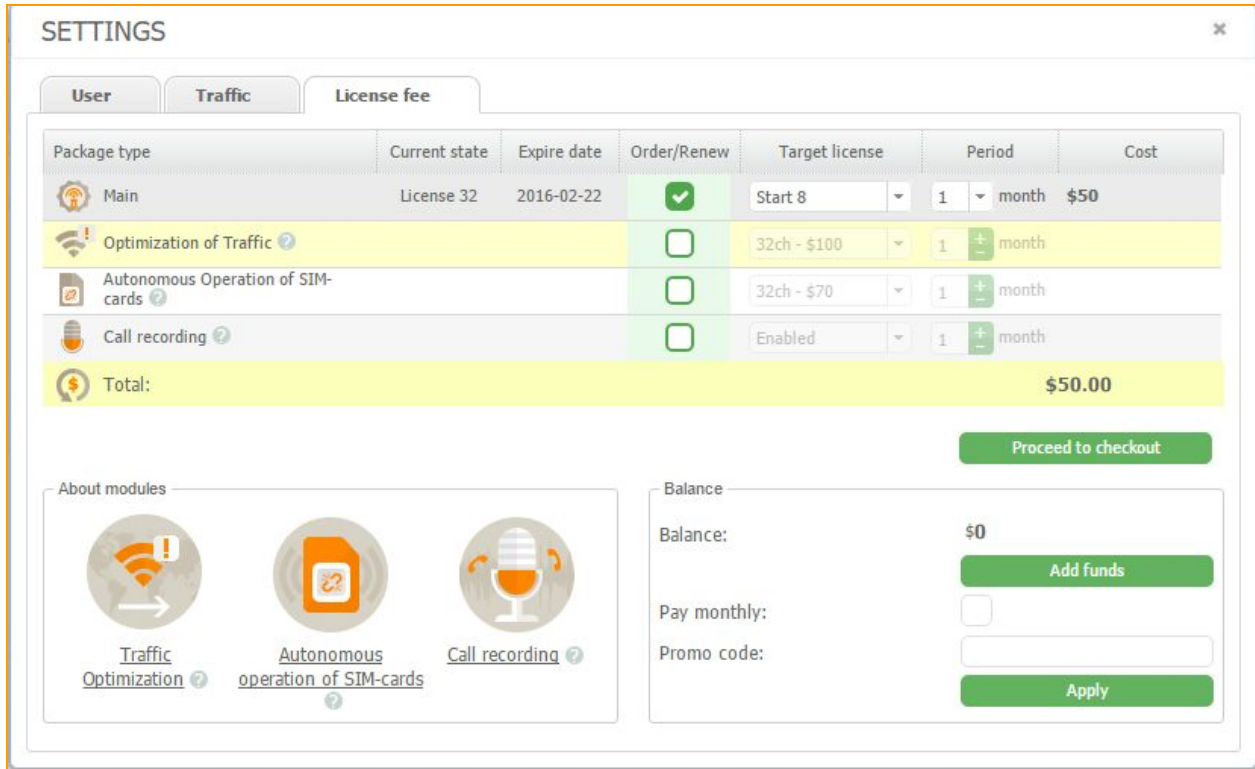


Figure “License fee with additional modules”

5. SIM-CARDS

SIM card is a subscriber identity module used in the mobile connection service. SIM cards are applied in GSM networks.

5.1. SIM Calls History

Click the right mouse button on the SIM card in the SIM bank window in the main tab to open context menu and choose **“History”** item. The options “SIM Calls History”, “SMS History” and “USSD History” are available to watch.

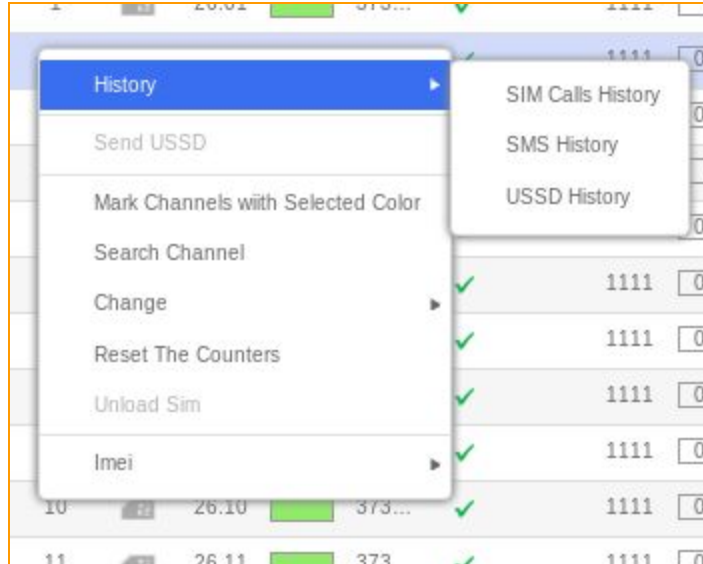


Figure “Choose options “SIM Calls History”, “SMS History”, “USSD History””

5.1.1. SIM Calls History

In the “SIM Calls History” it is available to trace the whole calls history of the given card. Namely the time of call started, its duration, the telephone number of subscriber’s number, who **called** and **received** the call (**destination**).

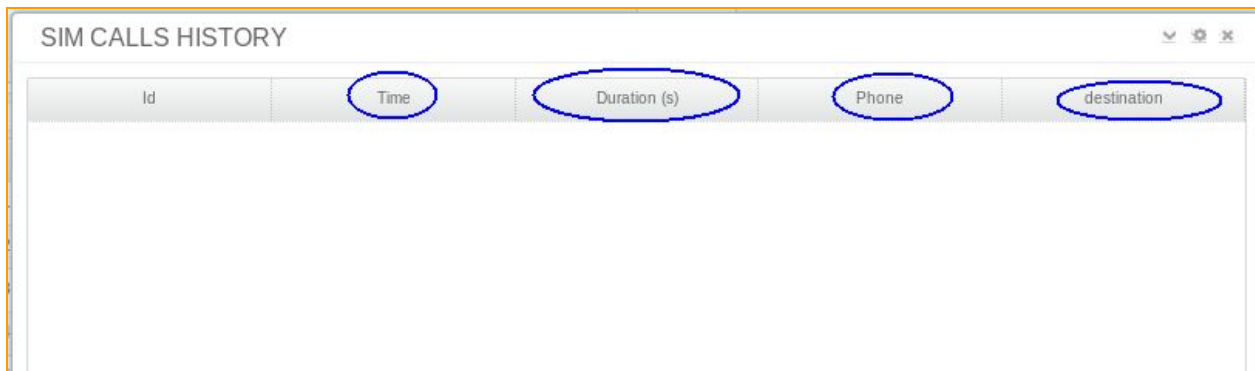


Figure “SIM Calls History window”

5.1.2. SMS History

In the “SMS History” item it is available to watch the history of incoming SMS messages to the given SIM card.

SMS HISTORY			
Id	Phone	Message	Time
43510	+37378036667	Abonatul 78036667 a incercat sa va ...	2014-08-10 18:53:03
43508	1111	Numarul dvs. a fost reincarcat cu succ...	2014-08-10 13:57:24
43507	255	Vash Kredit: 0.82 lei. Pojaluista, pere...	2014-08-10 13:05:39
43504	9494	Abonatul: Vash Kredit: 0.82 lei. Pojaluista, perezareadite Vash schet chtoby uslugi Orange postoeanno byli vklucheny. Spasibo!	
43503	Prepay	privet, Optsia Vne seti zakonchilas', P...	2014-08-09 20:26:51
43500	Prepay	Vy aktivirovali Optsiiu Vne seti. Ispofz...	2014-08-09 19:38:39
43499	Prepay	S predlojeniem 6000 lei Vy poluchili: 1...	2014-08-09 19:17:07
43498	Prepay	Dobro pojalovat' v Orange! U Vas tarif...	2014-08-09 19:16:06
43496	1111	Numarul dvs. a fost reincarcat cu succ...	2014-08-09 15:06:52

Figure “SMS History window”

5.1.3. USSD history

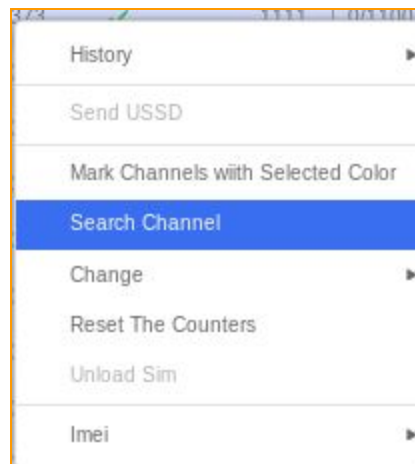
In the “*USSD History*” it is available to watch the whole history of USSD requests been sent from the given card. Namely USSD number, USSD response and the time it was sent.

USSD HISTORY			
Id	USSD	Message	Time
2689	*133#	send, but provider not reply.	2014-07-31 23:02:57
2682	*99#	MSISDN: 37360489574	2014-07-31 16:07:09
2674	*133#	Kredit 20 lei. Vy mojete zvonit' do 02....	2014-07-31 15:45:44
2666	*133#	Kredit 20 lei. Vy mojete zvonit' do 02....	2014-07-31 15:15:12
2645	*99#	Usluga vremenno nedostupna. Pojalu...	2014-07-31 15:06:49
2642	1	Vy aktivirovali Optsiiu Vne seti. Vy moj...	2014-07-31 15:04:33
2641	3	Optsiia Vne seti stoit 10 lei i predosta...	2014-07-31 15:04:29
2640	*100*31#	Vyberite podhodeashuiu Optsiiu PreP...	2014-07-31 15:04:24

Figure “USSD History window”

5.2. Search Channel

“*Search Channel*” option is used for quick and easy channel searching. By clicking the right mouse button open context menu and choose the “*Search channel*” item - the channel in which the SIM card is loaded now will mark out.



Click the right mouse button on the SIM card and choose “*Change*” item in the context menu. It is available to change the following SIM card’s parameters: PIN and SIM card’s Color, as well as to set or change some SIM card’s options.

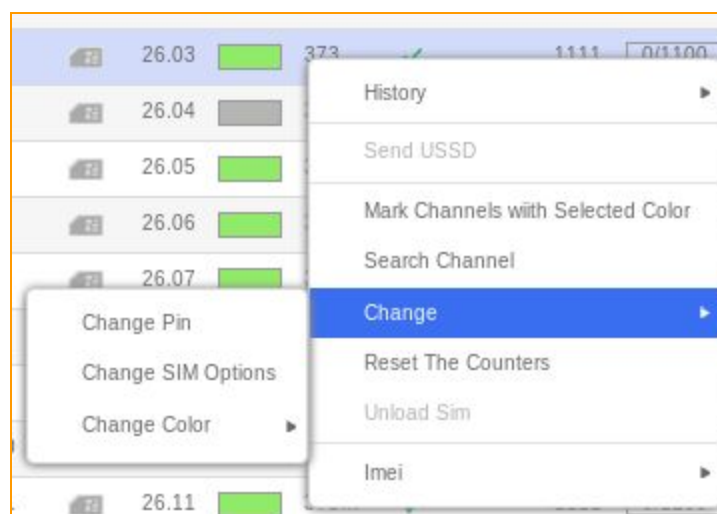
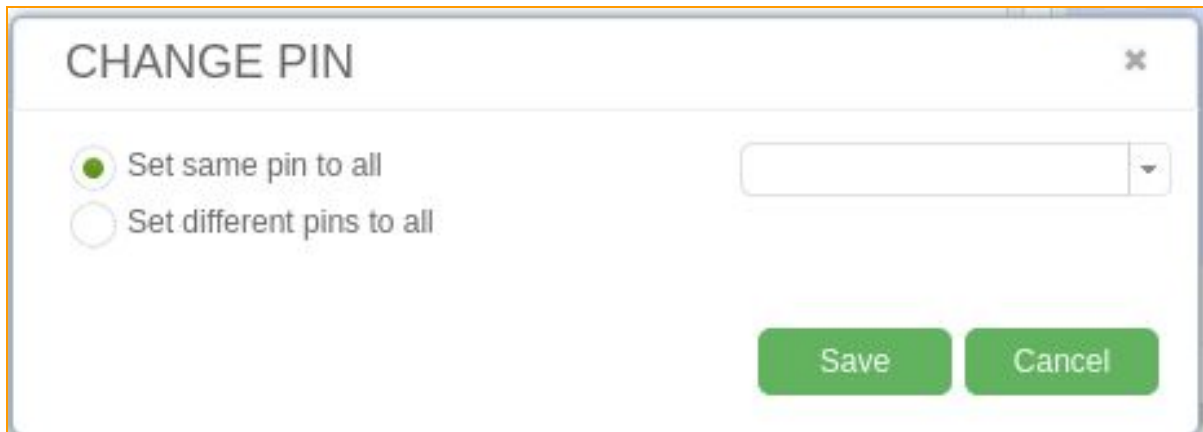


Figure. “Change “Pin”, “SIM Options” and “Change color””

5.3. Changing parameters

5.3.1. Change PIN

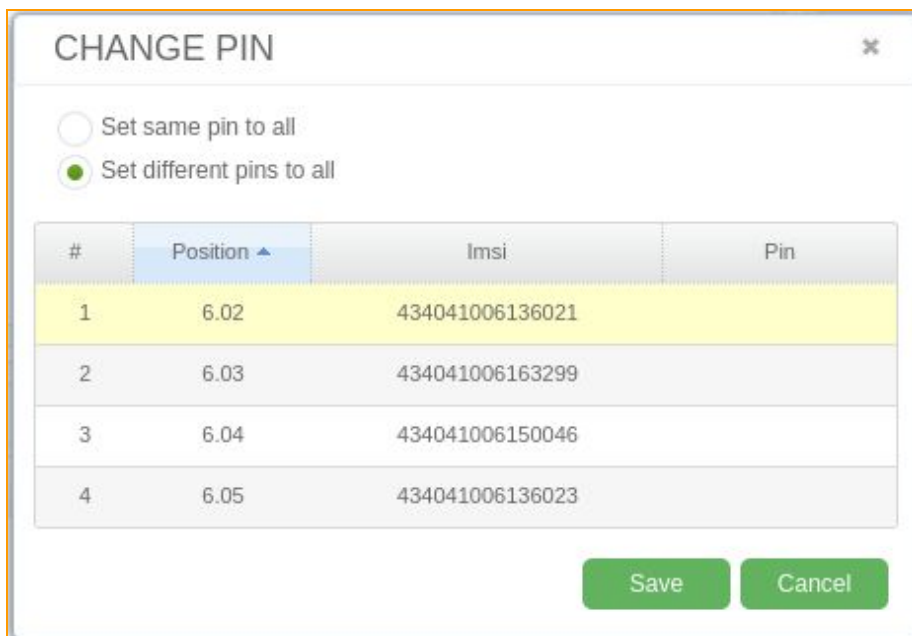
In this field it is needed to set a PIN number to one or several SIM cards so they activate in a GSM network successfully. If all SIM cards have the same PIN number, then there may be put a checkmark against the “Set same pin to all” option and set the needed PIN number in the appearing line.



The screenshot shows a dialog box titled "CHANGE PIN" with a close button (X) in the top right corner. It contains two radio button options: "Set same pin to all" (which is selected) and "Set different pins to all". To the right of these options is a text input field with a dropdown arrow on its right side. At the bottom of the dialog are two green buttons labeled "Save" and "Cancel".

Figure “The “Change PIN” field”

If you need to set different PIN numbers to different SIM cards, choose the “Set different pins to all” option and manually set PIN numbers to each SIM card.



The screenshot shows the same "CHANGE PIN" dialog box, but now the "Set different pins to all" option is selected. Below the options is a table with four columns: "#", "Position", "Imsi", and "Pin". The first row is highlighted in yellow. At the bottom are "Save" and "Cancel" buttons.

#	Position	Imsi	Pin
1	6.02	434041006136021	
2	6.03	434041006163299	
3	6.04	434041006150046	
4	6.05	434041006136023	

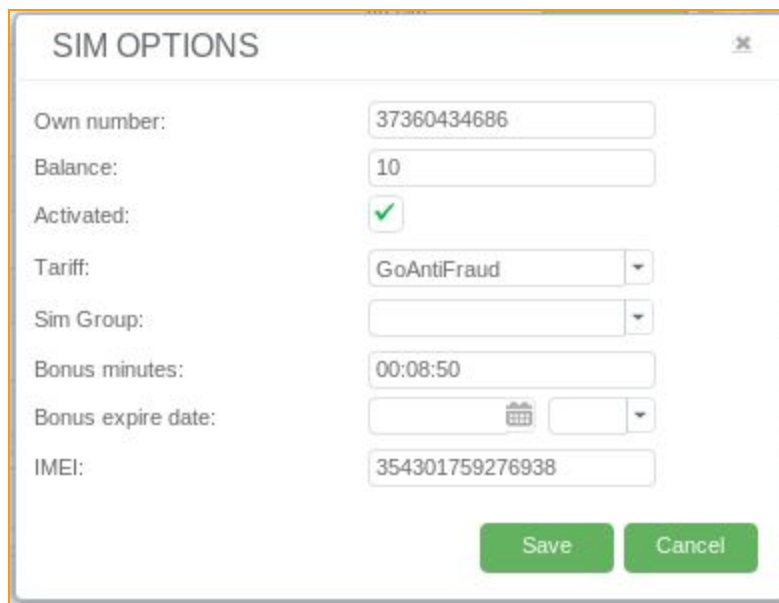
Figure “The “Change PIN fields”

If your card does not use the PIN verification, in field "Change PIN" you still need to edit it by leaving it empty, and then save the settings.

5.3.2. SIM Options

In the “**SIM Options**” item it is available to change some of the SIM cards parameters. In the field “Own number” you can assign MSISDN of this SIM-card. In the “Balance” field you can input your SIM-card's balance. It is used to assign an initial balance of the SIM-card or after balance refill. Opposite the “**Activated**” item you need to put the green checkmark, if the SIM-card was already activated and ready to work. In the “**Tariff**” item, you need to choose a tariff, which SIM-card will be connected. **SIM-group** is used to distribute of generated calls and SMS.

Cards will call and send SMS only within their group. Availability of bonus minutes you can assign in the field “**Bonus minutes**”. In the “**Bonus expire date**” it is possible to assign the date of ending bonuses of the SIM-card. In the “**IMEI**” field you can insert IMEI number manually.



The image shows a dialog box titled "SIM OPTIONS" with a close button in the top right corner. The dialog contains several input fields and a checkbox:

- Own number: 37360434686
- Balance: 10
- Activated:
- Tariff: GoAntiFraud (dropdown menu)
- Sim Group: (empty dropdown menu)
- Bonus minutes: 00:08:50
- Bonus expire date: (calendar icon and dropdown menu)
- IMEI: 354301759276938

At the bottom right of the dialog are two buttons: "Save" and "Cancel".

Figure “SIM options”

Several SIM-cards can also be edited simultaneously. Select the SIM-cards you want, open the context menu and select "SIM Options".

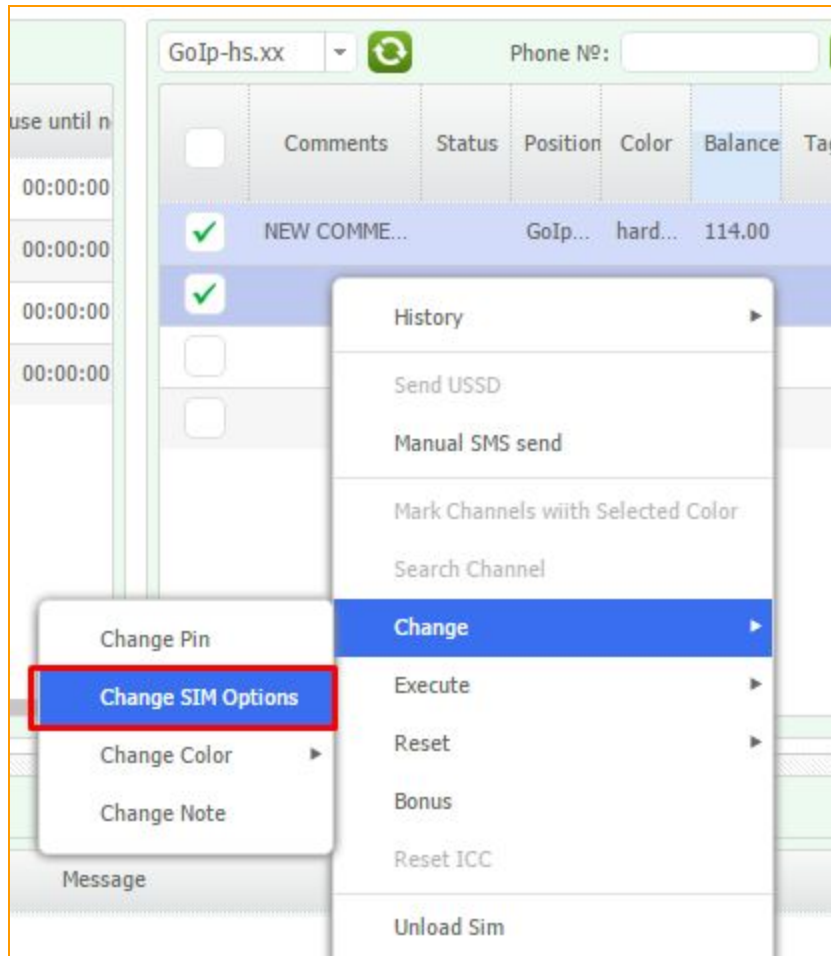


Figure "Change the SIM option settings"

In the fields *"Holder number"*, *"Balance"*, *"Bonus minutes"* and *"IMEI"* are blocked. Next to "activate" you can put a checkmark and activate all of the selected SIM-card. In the "Tariff" you can set one tariff for a group of SIM-cards. Similarly, we can do the same with "Color", "SIM-group", "Deadline bonuses" and "Pin". Check marks that are on the right from the fields mean that the exhibited settings apply to all selected SIM-cards.

5.3.3. Change Color

In the *"Change color"* item it is available to set or remove the color of the SIM card. The colors are used to set the cards and channels sequence within the system. The card can load into the channel with the same color only.

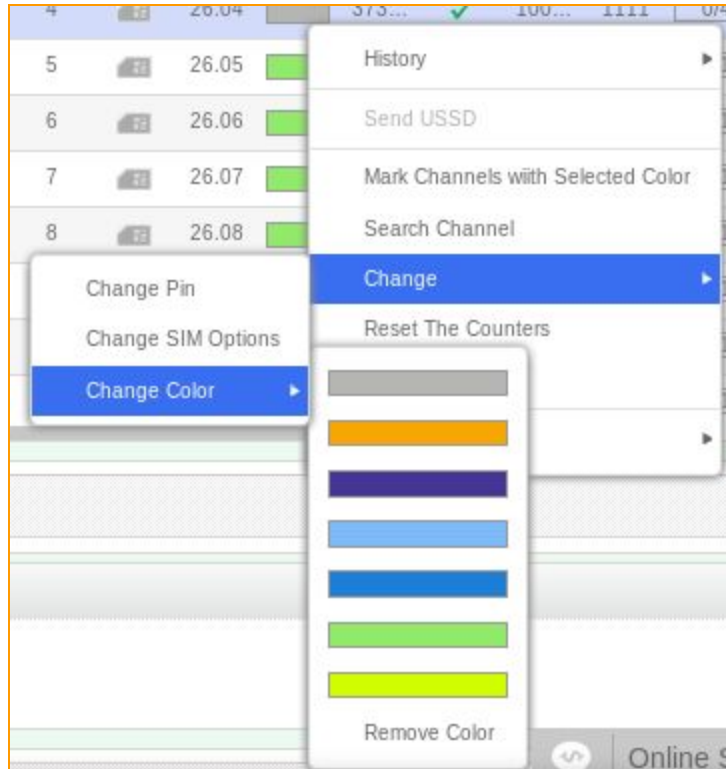


Figure “Change color”

5.3.4. Change note

You could change or add you comment to your cards in here.

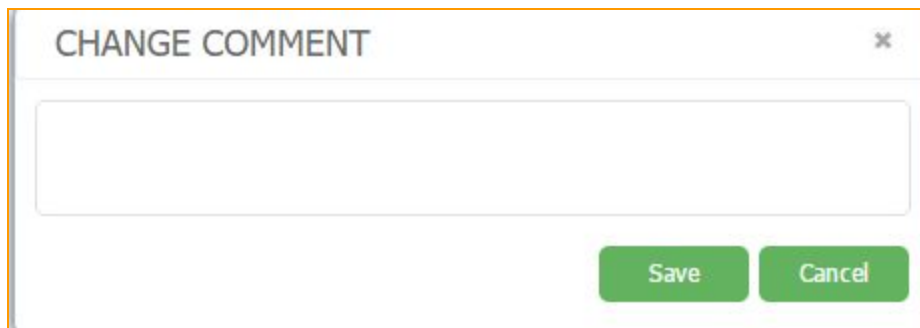


Figure “Change note”

You could see your note in the “Comments” column on the SIM panel.

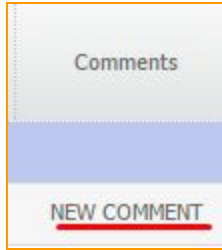


Figure "Comment"

5.4. Execute

Using this tool you can send USSD, SMS or event manually. It won't interrupt schedule.

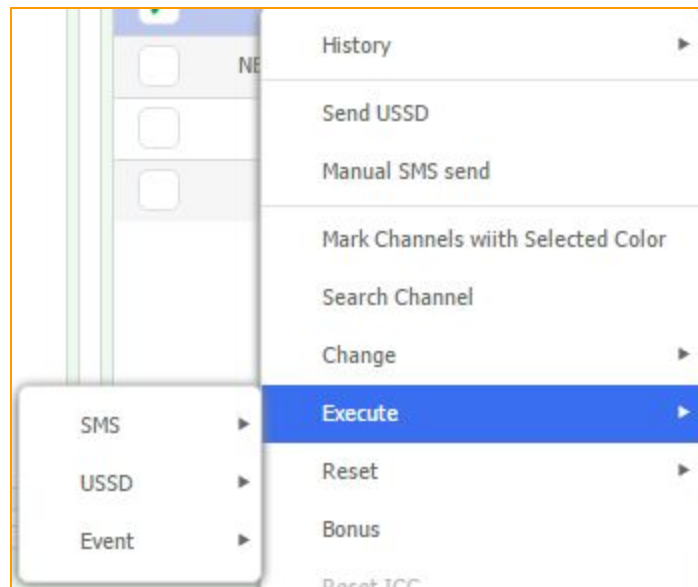


Figure "Execute"

5.5. Data reset

5.5.1. Reset counters

It is available to reset all the counters of the given SIM-card by clicking the "***Reset The Counters***" item.

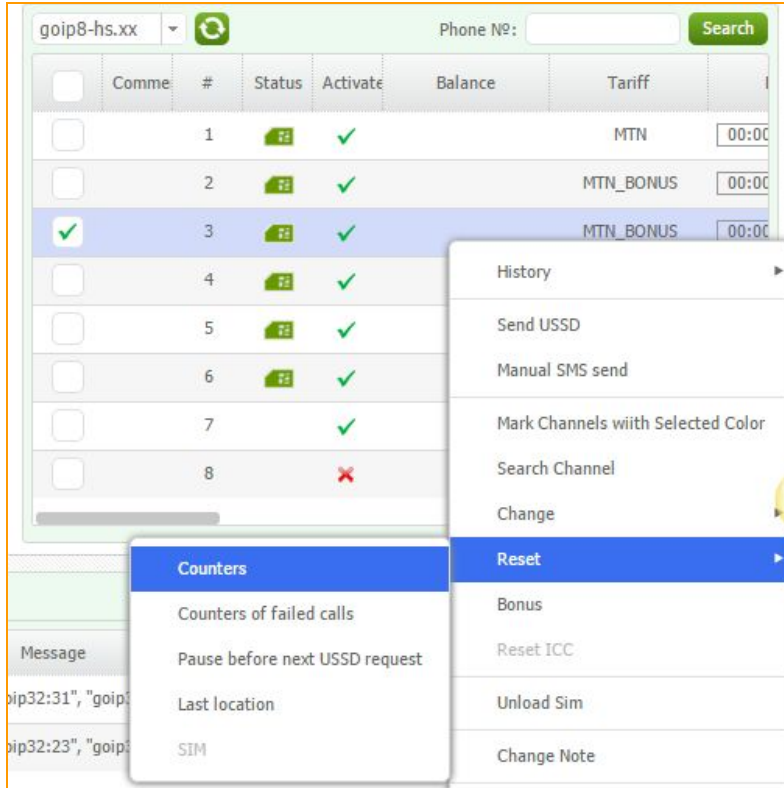


Figure “Reset counters”

5.5.2 Reset SIM

Reset SIM function allows our system to reread all information about SIM-card. Sometimes SIM bank sends us poor information, after saving cards don't want to load into a channel.

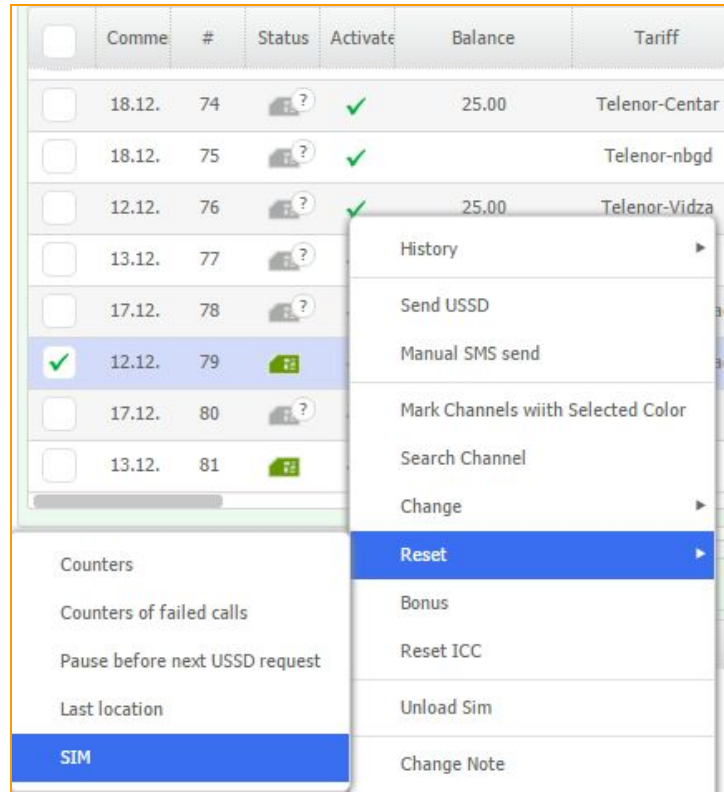


Figure Reset SIM

5.5.3. Reset last location

Reset last location allows SIM cards to go to the channels despite in which location it used to be

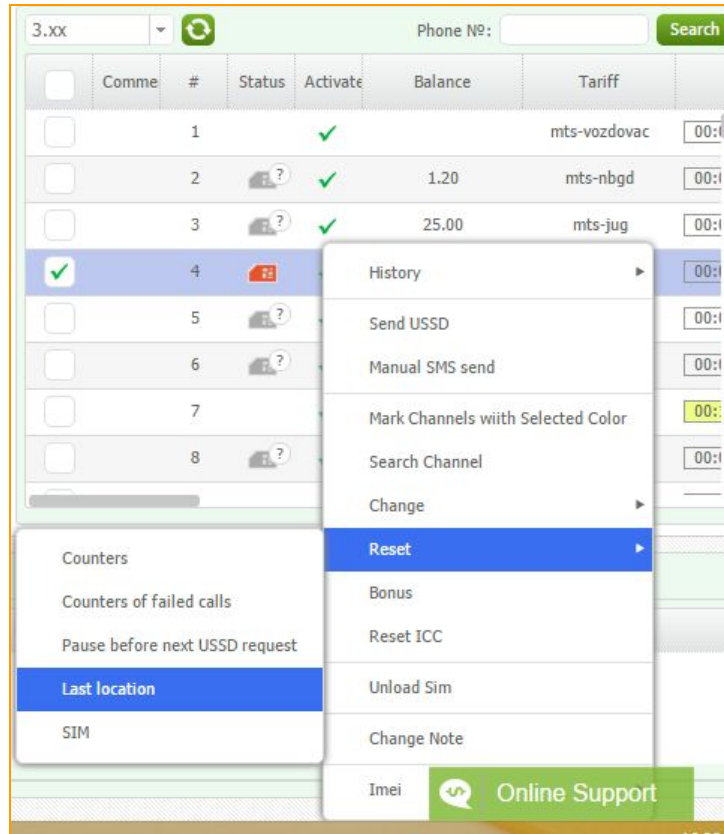


Figure “Reset last location”

5.4.4. Reset pause before next USSD request

Reset pause before next USSD request - resetting pause till next USSD request.

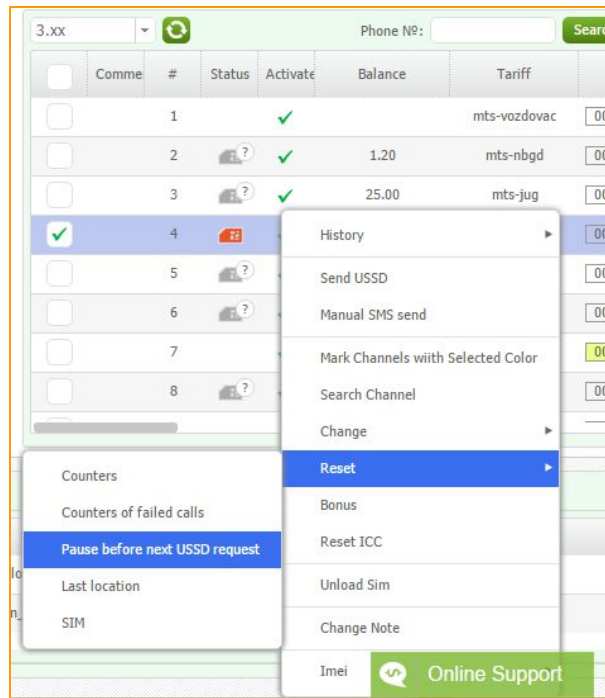


Figure “Reset pause before next USSD request”

5.6. IMEI

It is available to generate automatically Imei for the card or to set by means of the GoAntiFraud service. Clicking the right mouse button open context menu of the SIM-card and choose the “Imei” item then choose needed variant.

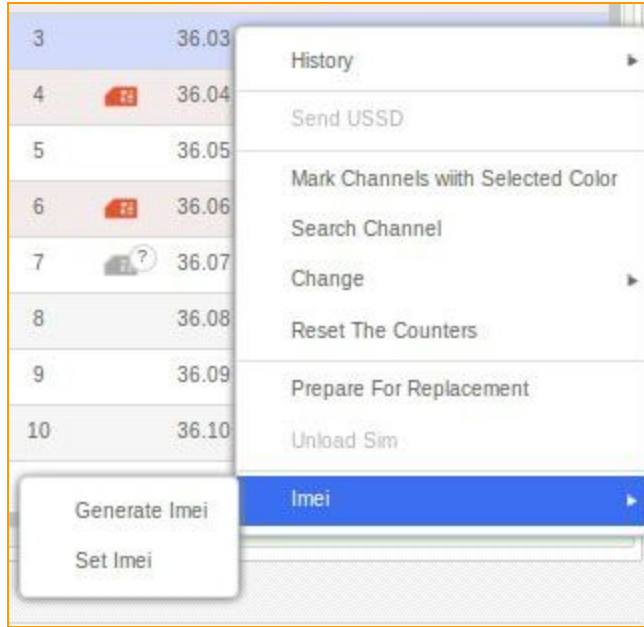


Figure “IMEI”

5.6.1. Generate IMEI

For the system to generate Imei code automatically choose an appropriate item in the menu. That will result an automatic generation and setting the Imei for the given card.

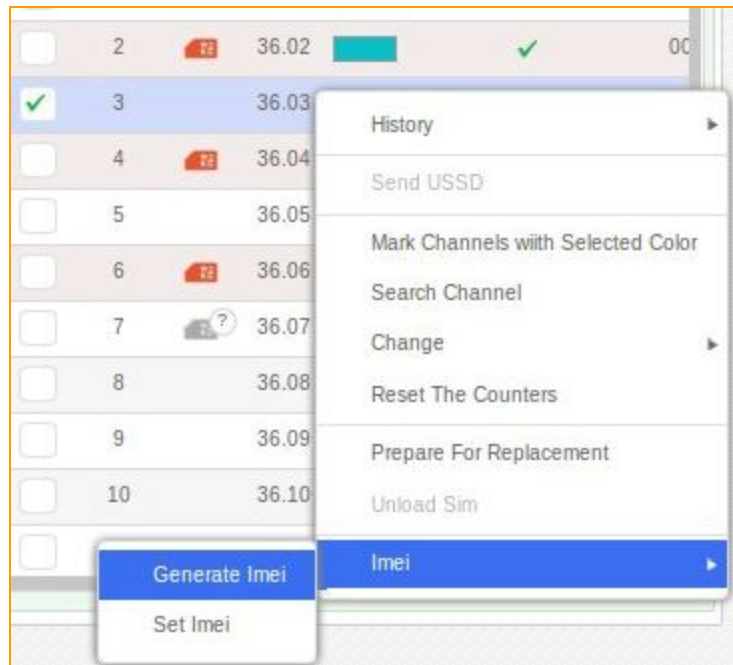
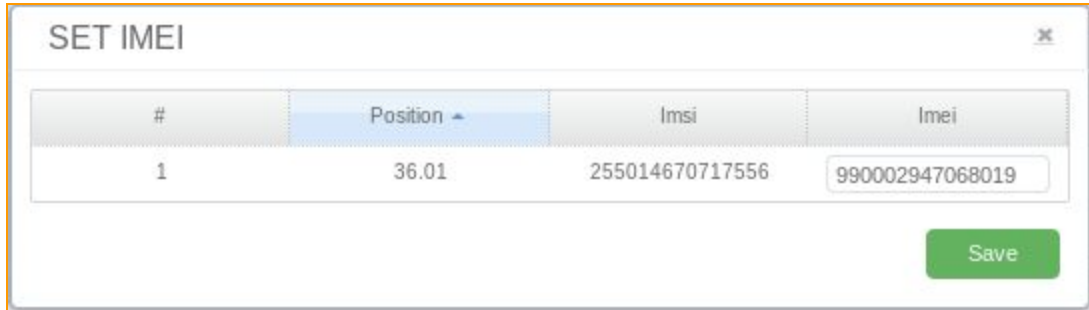


Figure “Generate IMEI”

5.6.2. Set IMEI

In order to set Imei code for the card manually, go to the context menu of the SIM-card and choose “Set Imei” item.

In the same manner, marking a few SIM-cards is possible to assign them Imei.



#	Position	Imsi	Imei
1	36.01	255014670717556	990002947068019

Save

Figure ““Set Imei” tab”

You can insert the needed number in the “Set Imei” tab.

5.7. Send USSD

To send a fast USSD and avoid creating the rule of automatic dispatch in USSD edit, you can choose “Send USSD” in the context menu of SIM-card.

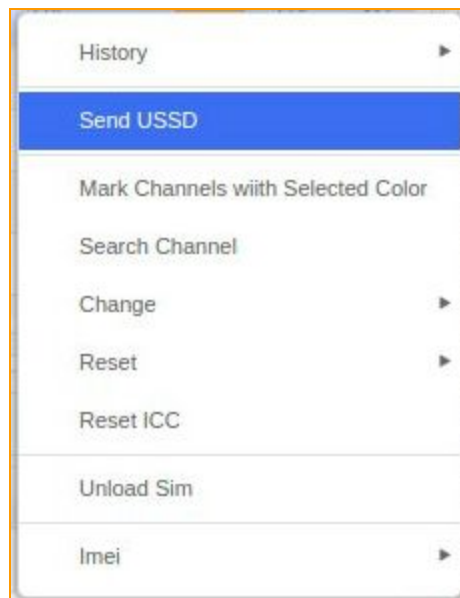


Figure “Send USSD”

In the window “Send USSD”, in field “USSD” you can type the number of desired request.

After that click **“Send USSD”**. The answer to USSD request will be shown in the large field below.

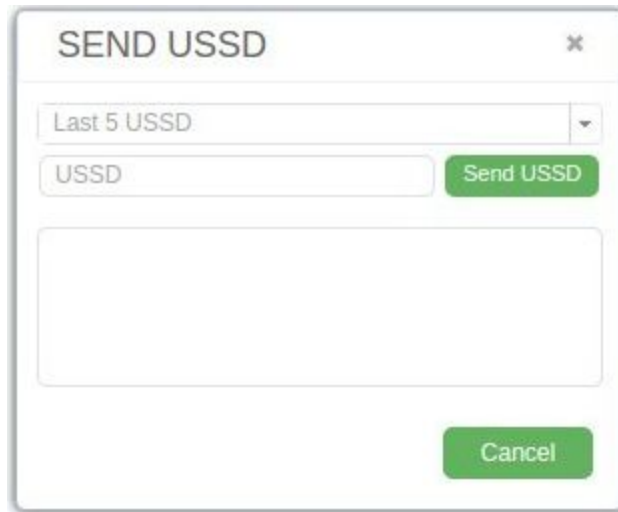


Figure “USSD fast sending field”

5.8. Manual SMS send

To quickly send SMS, you can do it in the SIM card’s menu, just pick **“Manual SMS send”** option.

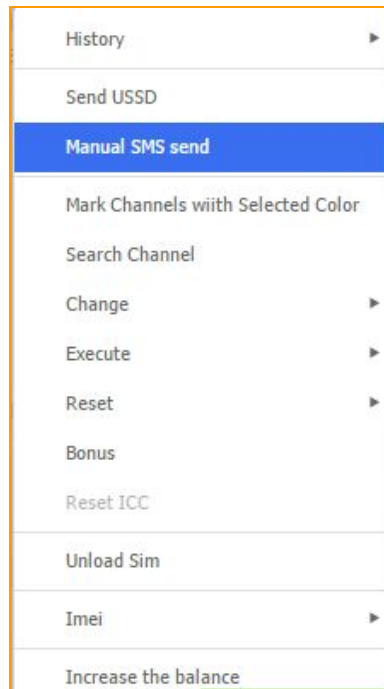


Figure “Manual SMS send”

In the **“Manual SMS send”** window, in **Phone #** field you can put number, you want send SMS to. After that fill text field and click on the **“Send”** button.

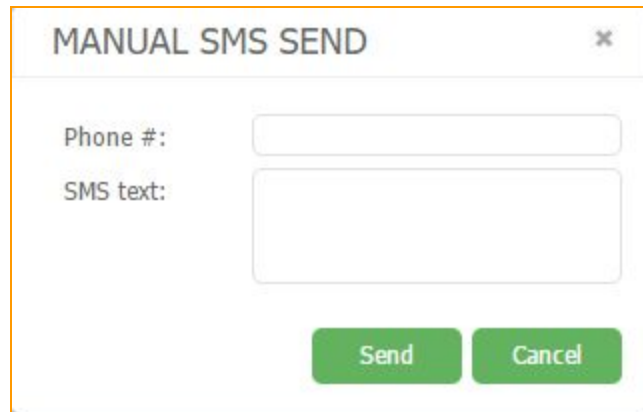


Figure “Fast SMS sending”

5.9. Mark channels with selected colors.

To paint the channels with the color of SIM-card, you need to click RMK on SIM-cards and choose **“Mark channels with selected colors”**. All channels of GSM gateway that were selected before, will be painted in the color of the given SIM-card.

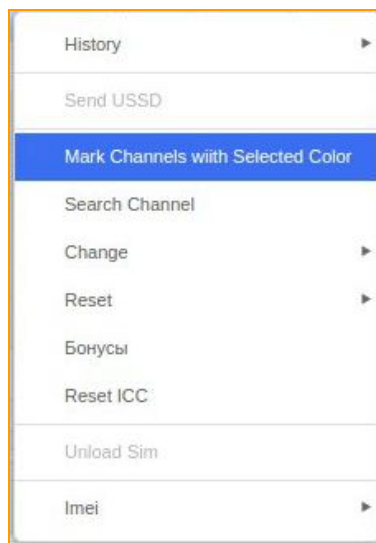


Figure “Mark channels with selected color”

5.10. Unload SIM

To unload SIM-card immediately from the GSM gateway channel, click **“Unload SIM”** in the context menu of SIM-card in SIM panel. After that the card will be unloaded from the channel.



5.11. Reset ICC

Allows to intentionally check what SIM-card resides in the slot.

5.12. Increase the balance

Using this tool you can increase the balance of your SIM card by using SIM menu.

A dialog box titled "INCREASE THE BALANCE" with a close button (X) in the top right corner. Below the title bar, there is a "Value:" label followed by a text input field containing the number "1". At the bottom of the dialog, there are two green buttons: "Save" and "Cancel".

Figure "Increase the balance"

In this field you have to put your value. This value will be added to current balance of the SIM card.

6. GSM CHANNELS

6.1. Channels statuses

You can see status of the card in the "*Status*" field on the Main page of manager's interface.

	Filter				Gateway1 x			
	#	GSM	Online	Port	RSSI	Status	Pause until next	
<input type="checkbox"/>	1		Yes	Gateway1:01		in call	00:00:00	
<input type="checkbox"/>	2		Yes	Gateway1:02		closed ?	00:00:00	
<input type="checkbox"/>	3		Yes	Gateway1:03		in call	00:00:00	
<input type="checkbox"/>	4		Yes	Gateway1:04		in call	00:00:00	
<input type="checkbox"/>	5		Yes	Gateway1:05		closed ?	00:00:00	
<input type="checkbox"/>	6		Yes	Gateway1:06		in use	00:00:00	
<input type="checkbox"/>	7		Yes	Gateway1:07		closed ?	00:00:00	
<input type="checkbox"/>	8		Yes	Gateway1:08		closed ?	00:00:00	

Figure “Channels statuses”

no sim - means there is no SIM in channel, GSM is grey

loading - means SIM-card is loading in the channel from SIM bank (status of the card), or

registering in the GSM (GSM is green)

closed - means card is in port but becoming in pause.

in use - card is ready to receive a call.

incall - card is calling at the moment, GSM -

incoming call - card is receiving intercall now, GSM -

outgoing call - card is making intercall now, GSM -

6.2. Show Call Statistics

In order to look through the Call Statistics of GSM-Gateway channel, it is necessary to select “*Show Call Statistics*” option in the context menu of GSM-Gateway channel.

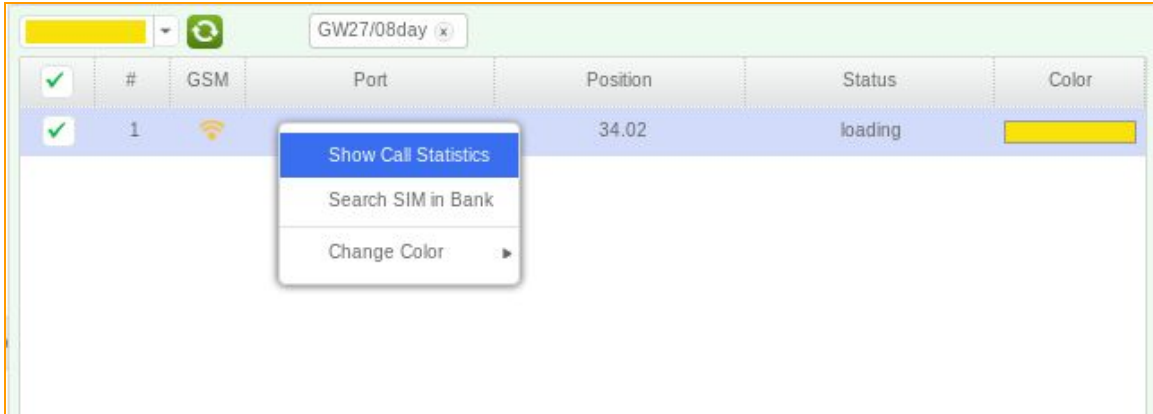


Figure “Selecting “Show Call Statistics” option”

After clicking, a **“Call Statistics”** window will be appeared.

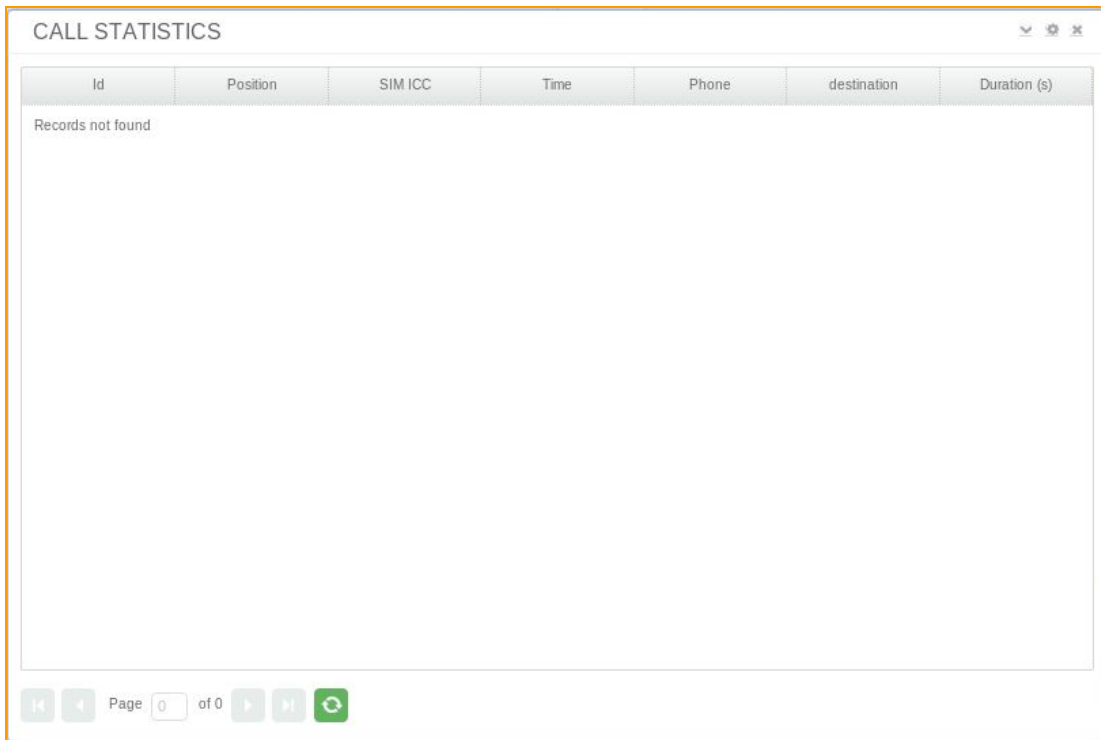


Figure ““Call Statistics” window”

6.3. Search SIM in a Bank

In order to find SIM-card in the SIM-bank, it is necessary to select **“Search SIM in a Bank”** option in the context menu of GSM-Gateway channel or make double-click of the left mouse button on the line of the channel.

<input type="checkbox"/>	#	GSM	Port	Position	Status	Color
<input type="checkbox"/>	1		GW.28.8.day:5	36.07	idle	
<input type="checkbox"/>	2		GW.28.8.day:3	36.01	closed ?	
<input checked="" type="checkbox"/>	3		GW.28.8.day:2	36.06	idle	
<input type="checkbox"/>	4		GW.28.8.day:6	36.02	idle	
<input type="checkbox"/>	5		GW.28.8.day:4		no sim	
<input type="checkbox"/>	6		GW.28.8.day:7		no sim	

Show Call Statistics

Search SIM in Bank

Change Color ▶

Figure “Selecting “Search SIM in Bank” option”

After clicking, you will be shown the location of SIM-card in the SIM-bank.

<input type="checkbox"/>	#	GSM	Port	Position	Status	Color
<input type="checkbox"/>	1		GW.28.8.day:5	36.07	idle	
<input type="checkbox"/>	2		GW.28.8.day:3	36.01	closed ?	
<input checked="" type="checkbox"/>	3		GW.28.8.day:2	36.06	idle	
<input type="checkbox"/>	4		GW.28.8.day:6	36.02	idle	
<input type="checkbox"/>	5		GW.28.8.day:4		no sim	
<input type="checkbox"/>	6		GW.28.8.day:7		no sim	
<input type="checkbox"/>	7		GW.28.8.day:8		no sim	

<input type="checkbox"/>	#	Status	Position	Color	Phone	Activate	Balanci	Pin
<input type="checkbox"/>	1		36.01		380...	✓	0.05	00
<input type="checkbox"/>	2		36.02			✓		00
<input type="checkbox"/>	3		36.03			✗		
<input type="checkbox"/>	4		36.04			✓		00
<input type="checkbox"/>	5		36.05			✗		
<input checked="" type="checkbox"/>	6		36.06			✓		00
<input type="checkbox"/>	7		36.07		380...	✓	11.43	00

Figure “Displaying of SIM-card location in the SIM-bank”

6.4. SIM Unload

If you want to immediately unload your SIM you can click on it RMB and click on **“Unload SIM”** button.

6.5. Change color

In order to change color of the GSM-Gateway channel, it is necessary to select **“Change color”** option in context menu of the GSM-Gateway channel. You will be prompted to select a color from the existing ones, or delete a color, which channel has been painted with.

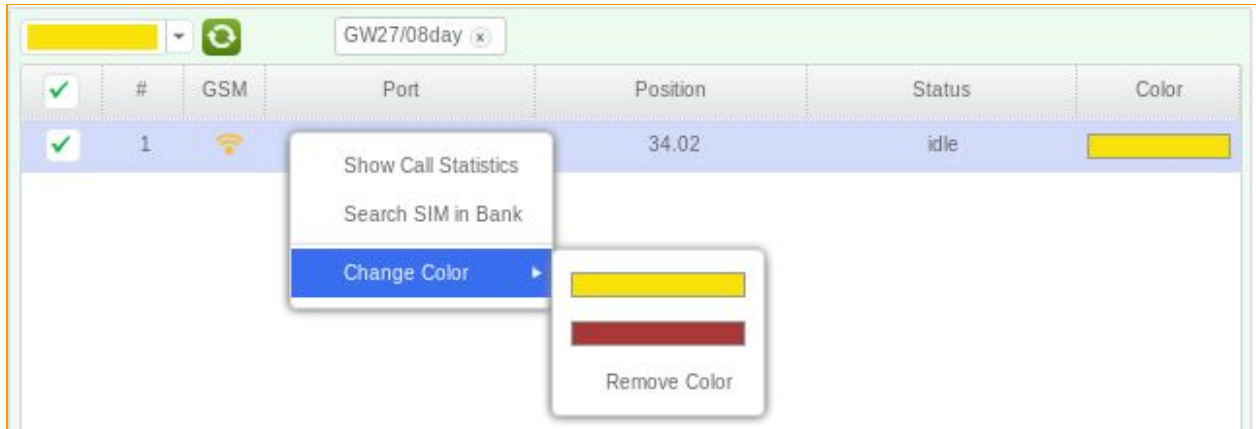


Figure “Selecting the “Change Color” option in the GSM-Gateway channel”

7. ADMINISTRATION PANEL



Figure “Administration panel”

There are several parameters located in the administration panel. They are: overall speaking time of the SIM-cards, number of SIM-cards which are ready for use, number of SIM-cards which are making outgoing terminated calls, ASR - Answer Seizure Ratio (percentage of answered telephone calls with respect to the total call volume), ACD - Average Call Duration.

7.1. Technical support

GoAntiFraud support service works 24/7. Contact us with phone number +1-202-864-1174, chat or via e-mail: support@goantifraud.com

7.2. Error messages

There is user panel located in the right up corner of the GoAntiFrud interface. In order to check the correct operation of the system (i.e. Error messages), it is necessary to click on “*bell*” symbol.



Figure “User panel”

In the appeared window you will see the report about equipment connection (GSM-Gateway, SIM-banks), SIM-cards status, date of the event. It helps to detect the faults in time and observe system remotely.

ERROR MESSAGES			
#	Problem	Date	Close
1	sim blocked - no load limit reached	2014-08-27 22:44:05	
2	gate 81 gone offline	2014-08-27 05:47:50	
3	gate 76 gone offline	2014-08-26 06:48:15	
4	gate 76 gone offline	2014-08-26 00:07:45	

Page 1 of 1

Figure “Error messages”

7.3. User menu

7.3.1. Settings

To open User menu click the button with user name in the upper corner of the user environment window.

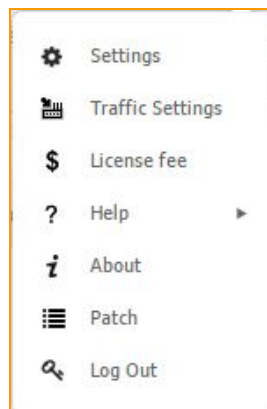
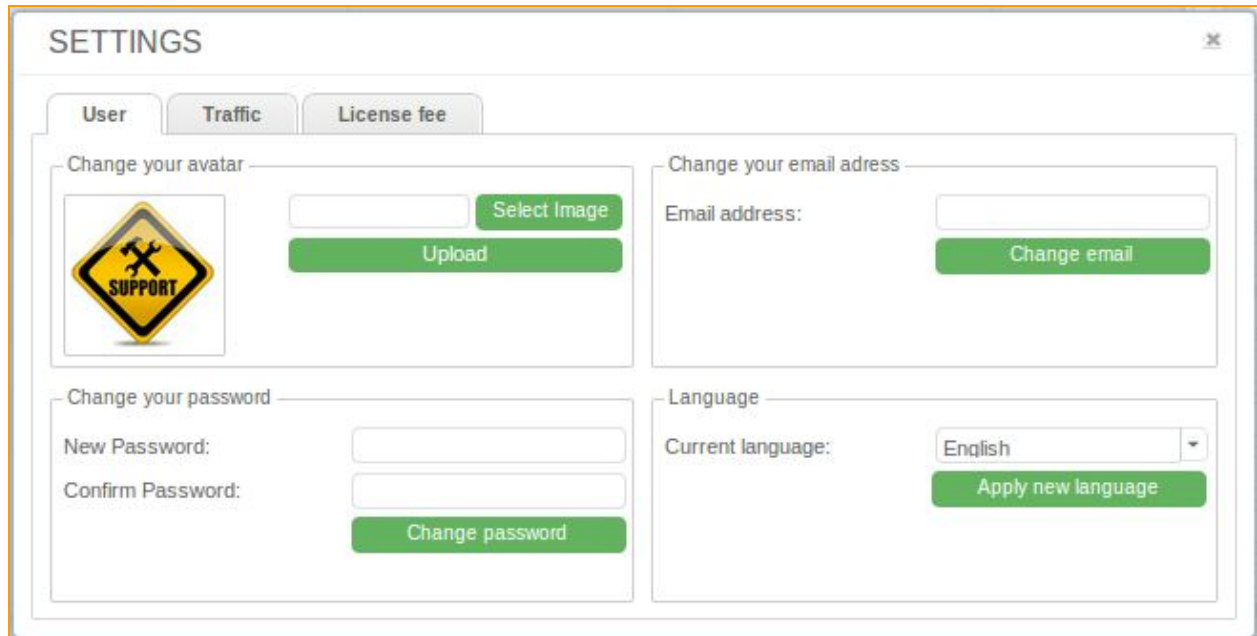


Figure “User menu”

After clicking the “**Settings**” item the User Profile window opens. It is available to change avatar, e-mail address, password and the language of User environment.



The screenshot shows a window titled "SETTINGS" with a close button in the top right corner. Below the title bar are three tabs: "User", "Traffic", and "License fee". The "User" tab is selected. The main content area is divided into four sections:

- Change your avatar:** Features a placeholder image of a yellow diamond with a black border and the word "SUPPORT" in black. To the right is a text input field with a "Select Image" button above it and an "Upload" button below it.
- Change your email address:** Features a text input field labeled "Email address:" and a "Change email" button below it.
- Change your password:** Features two text input fields labeled "New Password:" and "Confirm Password:", with a "Change password" button below them.
- Language:** Features a dropdown menu labeled "Current language:" with "English" selected, and an "Apply new language" button below it.

Figure “User interface Settings window”

7.3.2. Traffic Settings

In “**Traffic Settings**” you can see server’s IP provided by GoAntiFraud. There you have to add information about your clients: name of the client, prefix, select the tariff and add his IP address. For each of the clients you can select different prefix by changing the first digit in the range from 1 to 9 and therefore you can diversify the client's traffic among itself.

SETTINGS [X]

User **Traffic** **License fee**

Traffic Info

Your IP address for clients: 94.228.216.174

Client Name: 1 +

Client
1

Client Name

Prefix: 102853

Tariffs: test

Add Ip: Ip +

Ip
111.111.111.111

Save Cancel

Figure “Settings Traffic tab”

7.3.3. License Fee

To pay your license you have to go to the user’s menu by pressing the button with your account name and select ***“License fee”***. In appeared window you will see a new selection scheme and payment of the license and services, which shows the current license expiration date, the type of license selected, period for which you can renew the license and its cost.

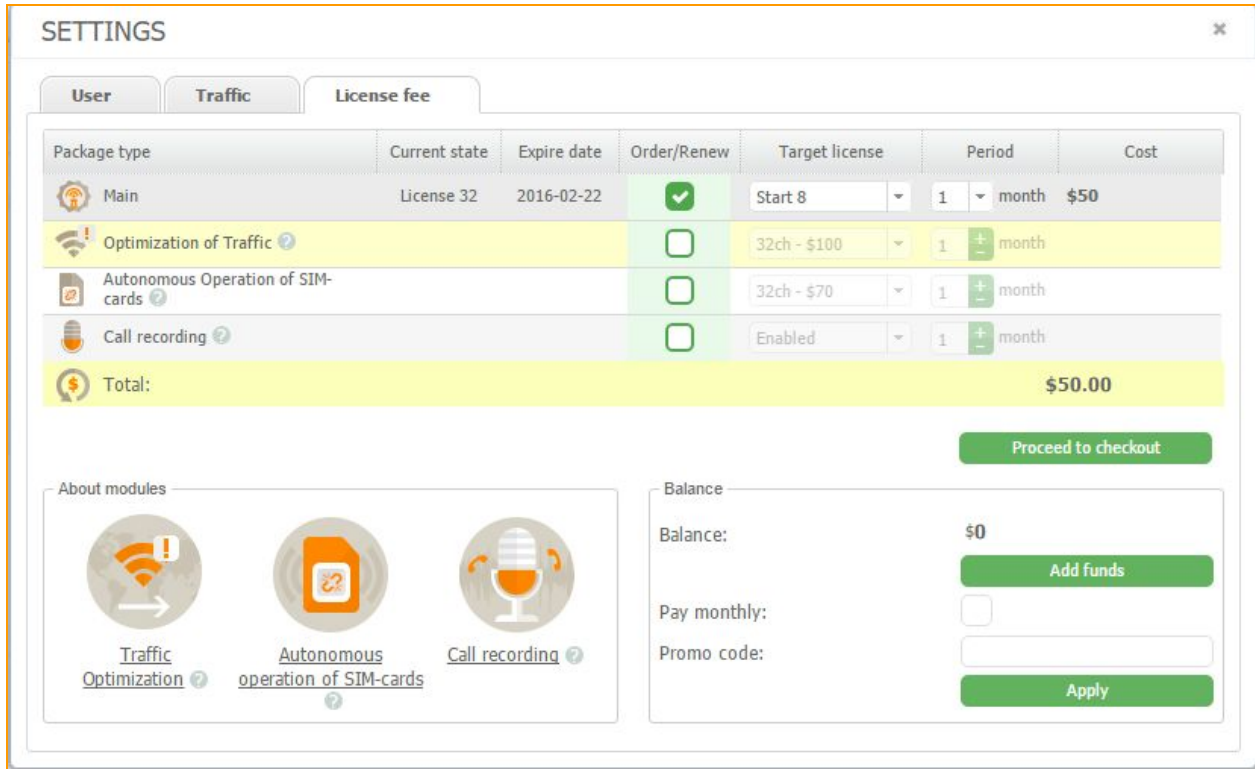


Figure "Settings License fee window"

Right here you can see a list of additional modules, such as "*Optimization of traffic (SBO)*", "*Autonomous Operation of SIM-cards (SIM Proxy)*", "*Call Recording*", as well as the current status of these modules, period of validity and their cost.

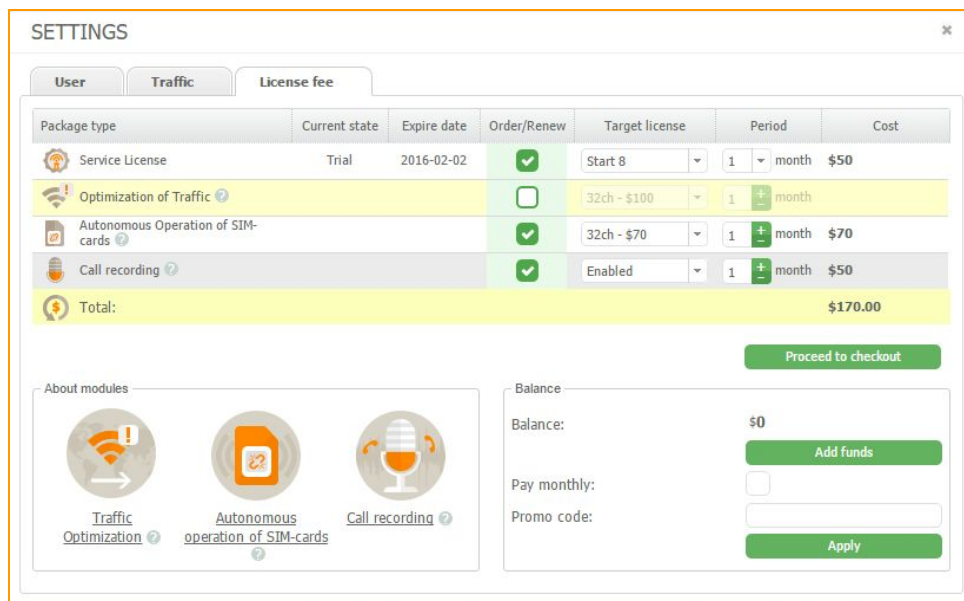


Figure "Additional modules choose and pay window"

Theoretical information about additional modules available in the bottom **“About modules”** menu. More information about these modules you can find by clicking on the module you are interested in and read the information on our web site.



Figure “Additional modules information window”

You can see your current balance in the **“Balance”** field in the left.

You can enter promo code to have your 10% discount if you have one.

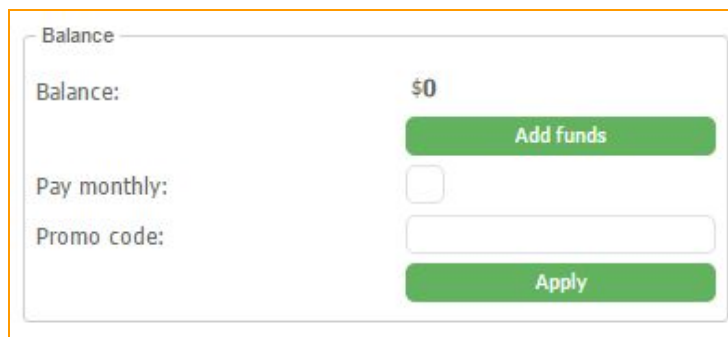


Figure “Balance field”

To renew your license, you have to select the desired license type and expiration date. Also choose the modules you are interested in and their duration. After that, the system will show you the total amount to pay.

If the funds on your current balance is insufficient to pay for the service, you have to replenish it. Click on the **“Add funds”** button to do that.

In the appeared window you have the opportunity to choose the electronic system of calculation and enter the desired amount of money. You can immediately add a large amount and click the **“Pay monthly”**. Therefore the required payment will be acting once per month.

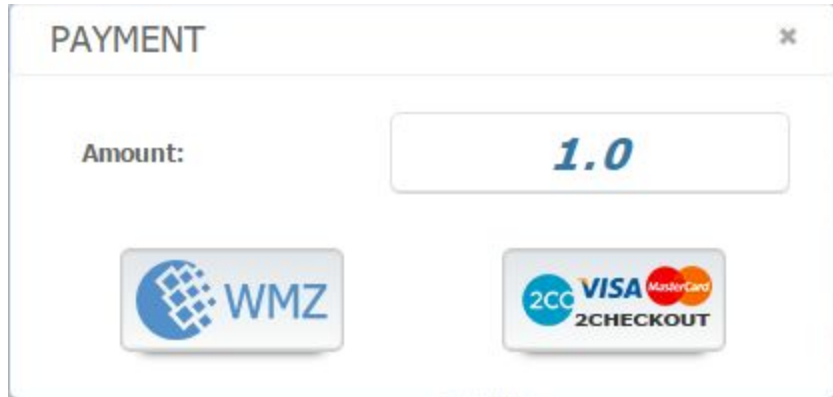


Figure “Adding balance field”

After that click on the *“Proceed to checkout”* button, the system will remove the funds from your main balance.

After confirming the success of the operation, you can continue to use the GoAntiFraud service!

7.3.4. Help

The *“Help”* item in the User menu is used to familiarize the User with GoAntiFraud User Interface.

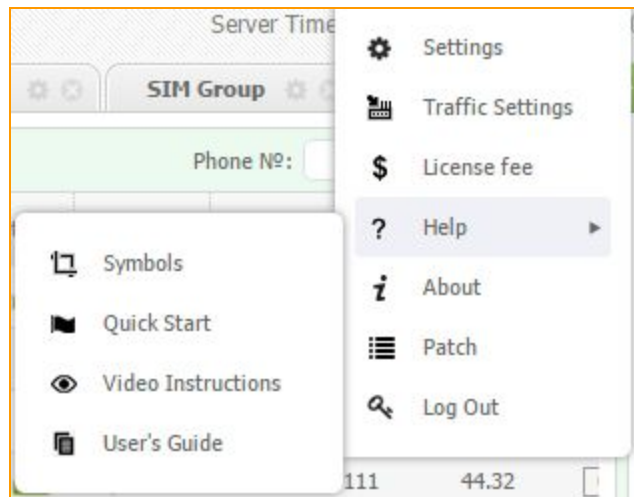


Figure ““Help” item in the User menu”

7.3.4.1. Symbols

In *“Symbols”* you can see what icons mean in service interface.



















SYMBOLS		
Location		
Icon	Description	Preview
	Location is empty. There are no gateways.	
	Location active. It have at least one working gateway.	
Gateways		
Icon	Description	Preview
	Gateway is offline or have connection problems.	
	Gateway is working.	
Channels		
Icon	Description	Preview
	Channel inactive.	
	Channel trying to connect GSM.	
	Channel connected to GSM and ready.	
	Channel is performing outgoing call.	
	Channel is accepting internal call.	
	Channel is accepting generated internal call.	
Sims		
Icon	Description	Preview
	SIM card slot is empty in SIM bank	
	SIM card is in SIM bank, but not linked with gateway.	
	SIM card linking with gateway.	
	SIM card linked with gateway.	
	SIM card is banned. Look why and unban it, you can in menu "Config" -> "Sim block report"	

Figure “Legend”

7.3.4.2. Quick start

Quick start is a short presentation that will guide you through interface and navigation about fundamental elements of the service.

7.3.4.3. Video instructions

In “*Video instructions*” you can watch the video tutorials about GoAntiFraud service.

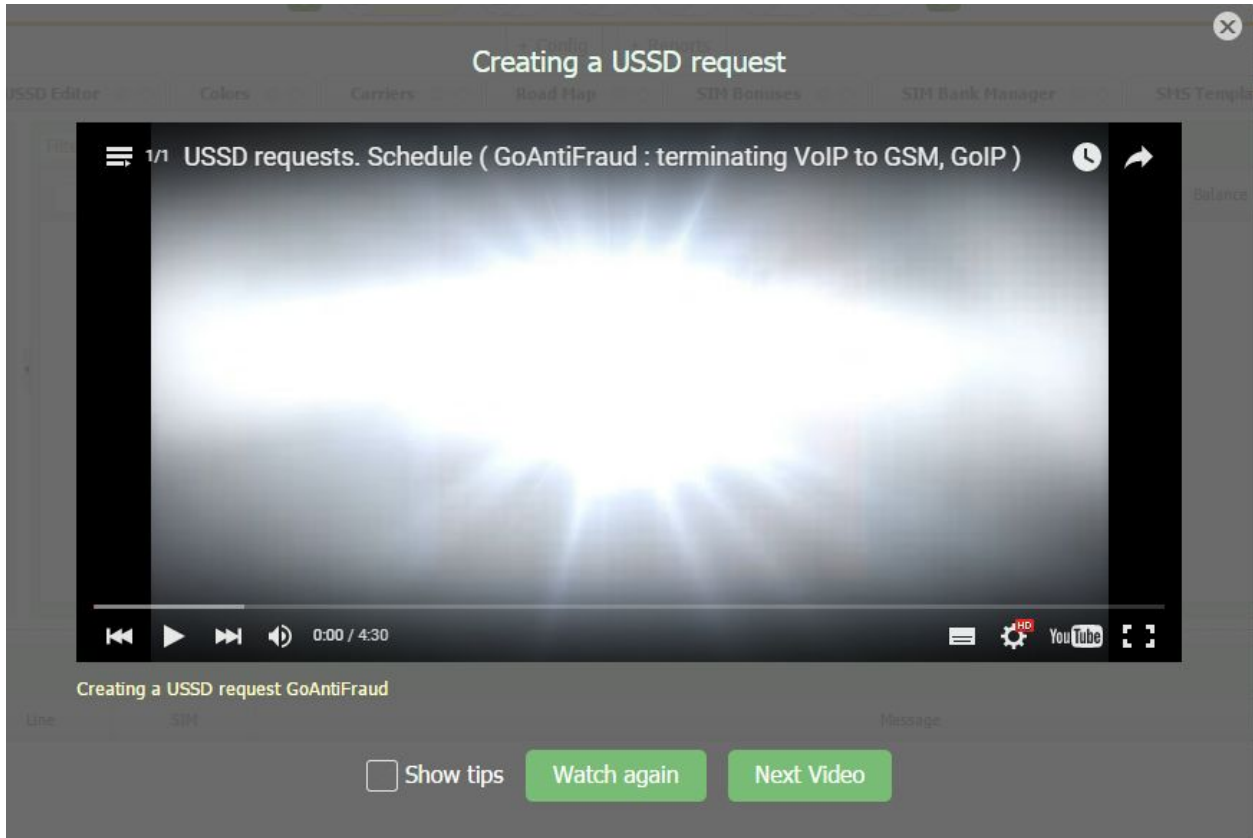


Figure “Video instructions window”

7.3.4.4. User’s Guide

In “*User’s Guide*” you will be automatically sent to current User’s Guide with detailed description on GoAntiFraud service configurations.

7.3.5. About service

When you click “*About*” you will see links to all GoAntiFraud resources.



Figure “Service links window”

7.3.6. Patch

If you click “*Patch*”

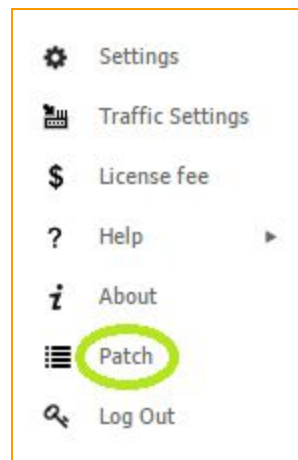


Figure “Patch menu”

you will see the changes that have been implemented with the last patch of GoAniFraud service. Also you can see the previous changes in the early versions.

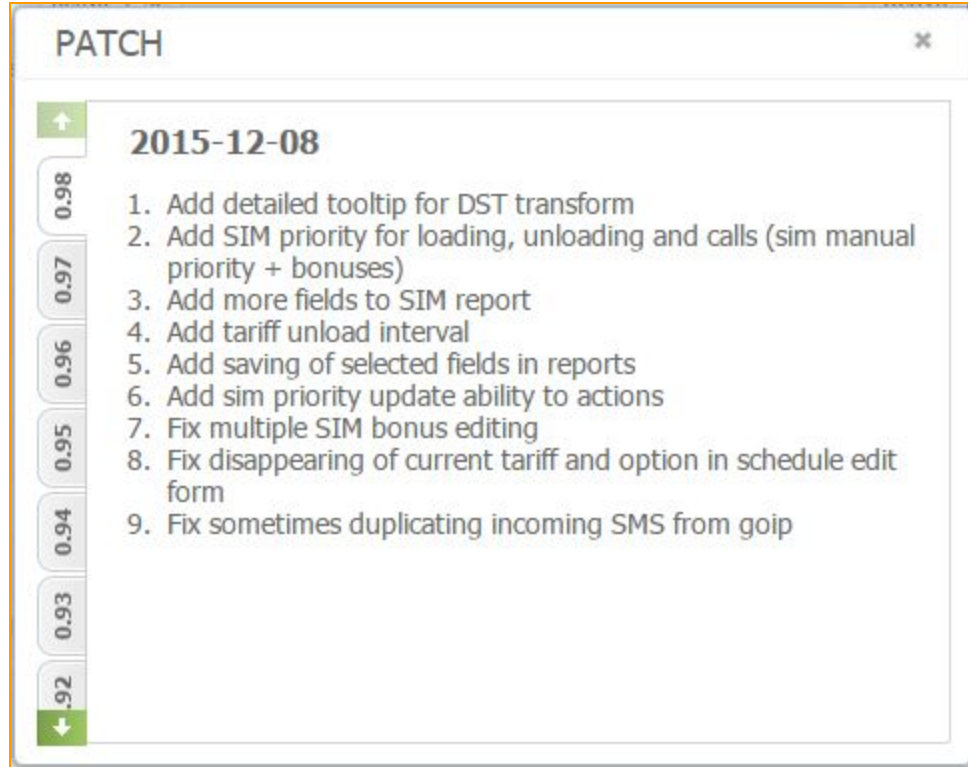


Figure "Patch window"

7.3.7. Log out

Before leaving the resource browser window choose "**Log out**" in the User menu.

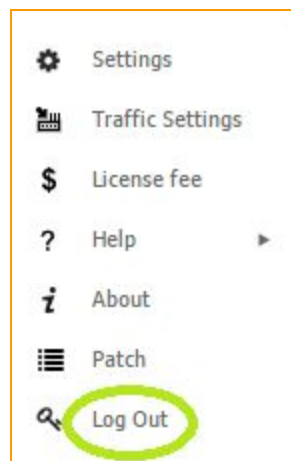


Figure "Log Out of GoAntiFraud user environment."