

WiaTag2.4

User Guide

date: July 11, 2018

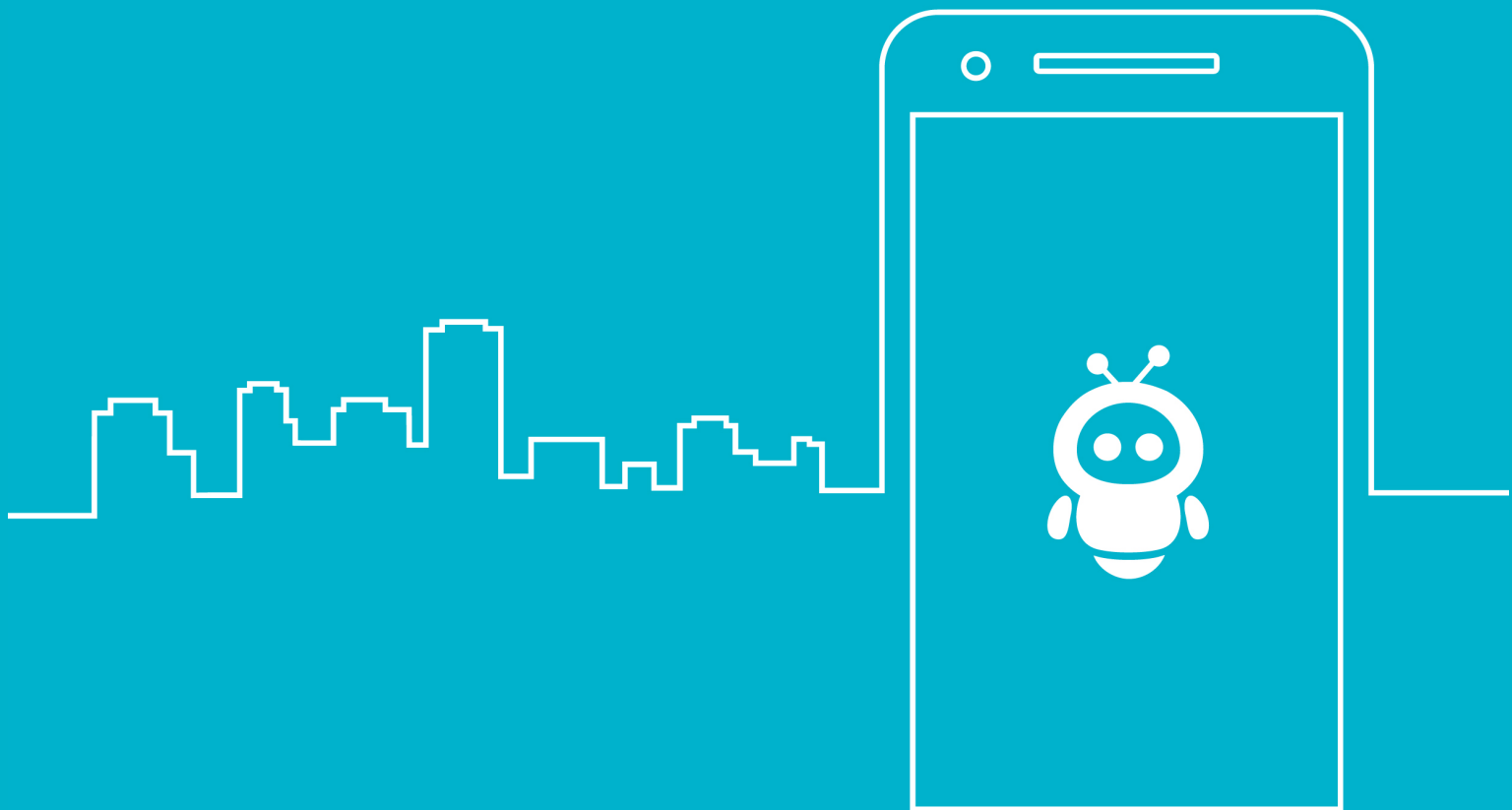


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Overview

WiaTag is an application that allows you to turn your mobile device into a GPS tracker.

The application is compatible with GPS and GLONASS satellite monitoring systems [Wialon](#) и [Wialon Local](#).

The data about the location is sent from a mobile device to the monitoring server. In addition to the positional data (coordinates, course, speed, etc.), images, alarm messages, custom states, service and text messages can be sent to the server.

The data received from the mobile device can be later processed by the monitoring system and presented to the user in the form of tracks of unit movement on the map, reports, etc.

System permissions

For the correct performance of the application on the device, the following permissions are requested:

Notification and background app refresh — to work with the chat, use remote control and accept service notifications from the application.

- **Camera access** — to take a photo or scan a QR-code.
- **Photo gallery access** — to select photos.

Location services access — to use the application as a GPS-tracker.

- **Accelerometer access** — to determine the movement which is used in the smart mode.
- **Background app refresh** — to correctly send push-notifications in the background.

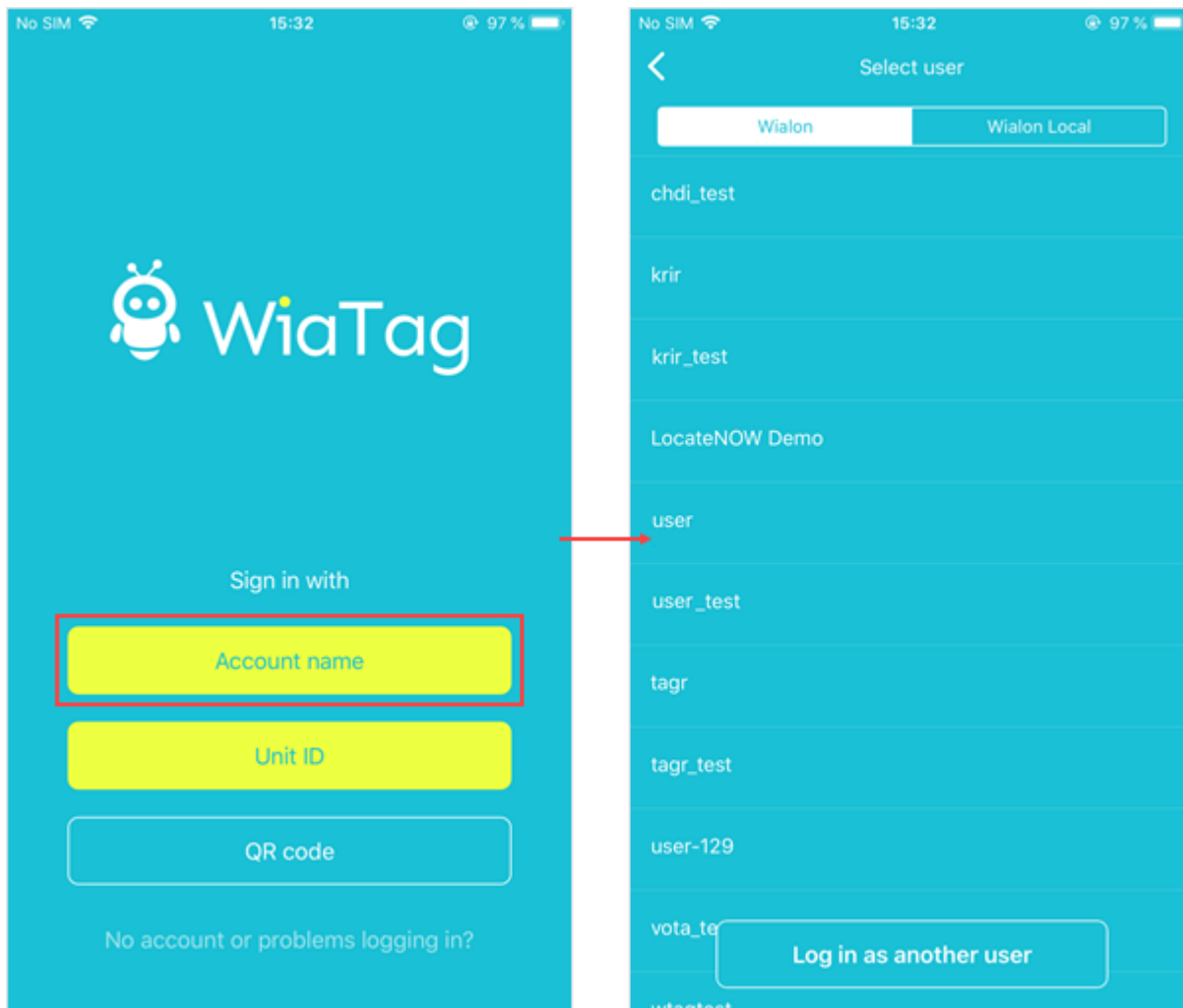
Authorization

To enter the application, you must log in using one of the available methods. Select the authorization method on the screen: account name, unit ID or QR-code.



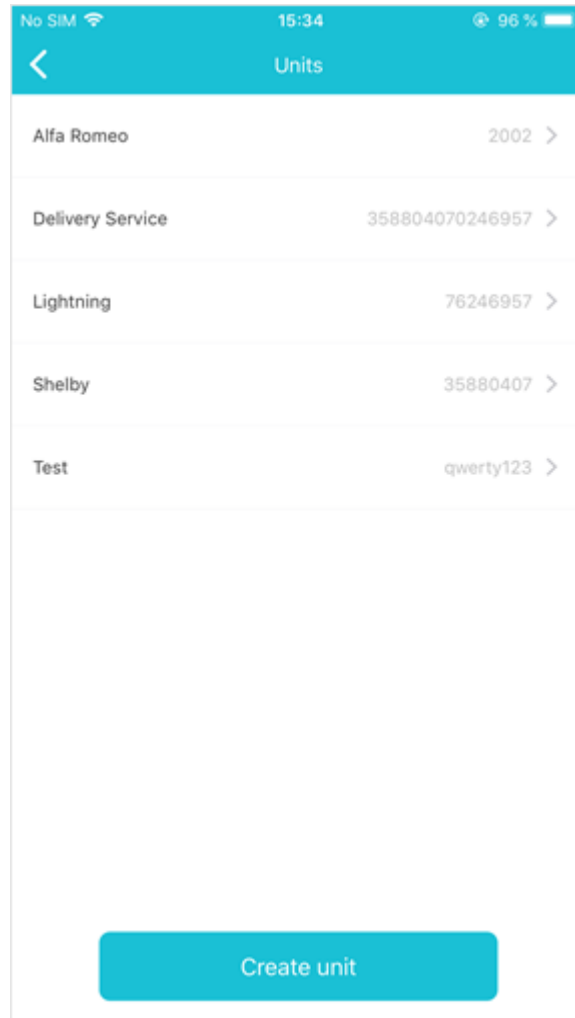
Sign in with the Account Name

With this type of authorization, you must first specify the monitoring system in use — Wialon or Wialon Local, and then select the required user from the list below.



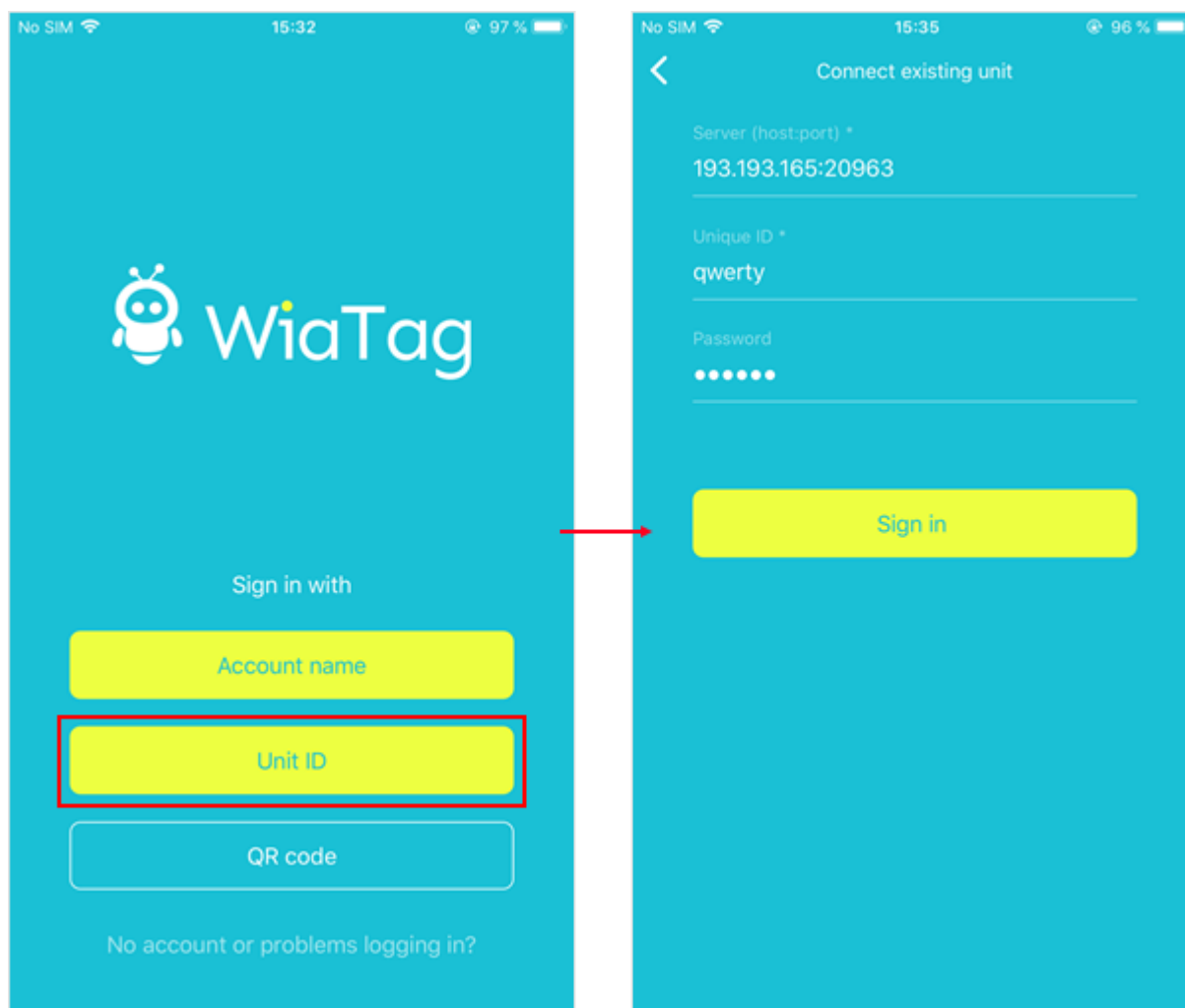
If the list is empty or the required user is absent from it, press the *Log in as another user* button at the bottom of the screen, enter its name and password on the authorization page and tap *Authorize*. For Wialon Local first indicate the server address.

Next select the required unit from the list of the available ones ([created](#) previously in the monitoring system) or [create a new one](#).



Sign in with the Unit ID

With this type of authorization, you must specify the server address (host:port), unit's unique ID and password (if there is one).



Sign in with the QR Code

To authorize with the help of the QR code, the latter should be generated at wiatag.com, and the device in use must be equipped with a camera. After scanning the correct QR code, you will enter the application. In this case, there is no need to select the user mode as it is set during the creation of the code.

User Mode Selection

After logging in, you must select one of the user modes: *Active*, *Standard*, *Lite* and *Custom*. Each mode has its own settings for the [filtration of messages](#), data collection and data sending. Data collection refers to the periodicity and method of data gathering by the device. Sending data is the frequency and method of sending collected data to the monitoring system.

Active

This mode allows to receive the most detailed track of the movements of the unit and guarantees the highest accuracy of the positional data. The drawback of this mode is the relatively high battery and

traffic consumption comparing to the other modes.

Data collection: continuous (messages are generated each time the location is determined).

Data sending: continuous (messages are sent immediately after their generation).

Maximum accuracy value: 30 meters.

Standard

This mode allows to receive a detailed track of the movements of the unit due to the intelligent data collection mode. Unlike the *Active* mode, the data is not sent continuously, but once in five minutes.

Data collection: by timeout (5 minutes).

Data sending: by timeout (5 minutes).

Max accuracy: 50 meters.

Lite

This mode allows to monitor the location of the unit with a minimum consumption of traffic and battery power. The drawback is that the track of the unit's movements may have some errors.

Data collection: by timeout (5 minutes).

Data sending: by timeout (15 minutes).

Max accuracy: 1000 meters.

Custom

The custom mode settings have standard values and can be changed independently in accordance with the monitoring objectives.

Creating a unit for WiaTag

To work with the WiaTag application, you need a unit in Wialon or Wialon Local. There are two ways to create a unit: in the monitoring system or in the application (in case of [authorization through the user name](#)).

Creating a Unit in the Monitoring System

The process of creating a unit, as well as the fields that should be filled in, are described in the documentation for [Wialon](#) and [Wialon Local](#). Below we will look at the fields that are directly related to the operation of the application. In the *Device type* field, select *WiaTag*. Then specify the unit's unique ID. Any numeric and alphabetic combinations can be used as the unique ID (for instance, IMEI of a mobile device). This identifier is required to connect the unit to WiaTag. If you want to use a password when connecting, indicate it in the *Password* field.

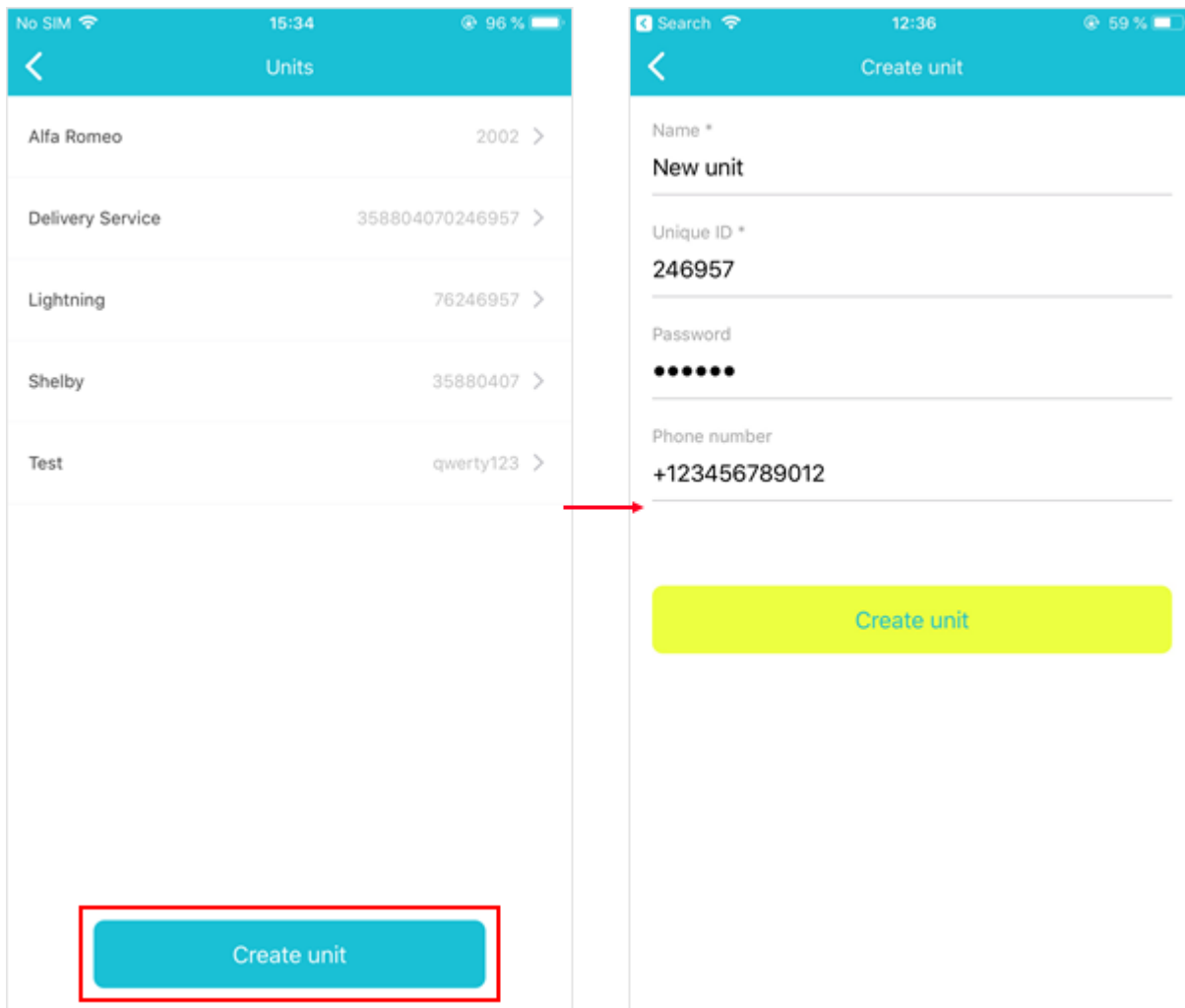
General	Access	Icon	Advanced	Sensors	Custom Fields	Unit Groups	Commands	Eco Driving
Profile	Trip Detection	Fuel Consumption	Service Intervals					
Name: *	WiaTag unit							
Device type: *	WiaTag Wialon IPS WiaTag GPS Tag							
Server address:	193.193.165.165:20963							
Unique ID:	123456789							
Phone number:								
Password:	123							
Creator:	Erik							
Account:	tagr_test							

The list of units created in the monitoring system for working with WiaTag is available in the application after [authorizing on the basis of the user name](#).

Creating a Unit in the Application

In order to be able to create units in WiaTag, the *Can create items* option should be activated in the user properties in the monitoring system, and the *Create units* service should be enabled for the account in which it was created.

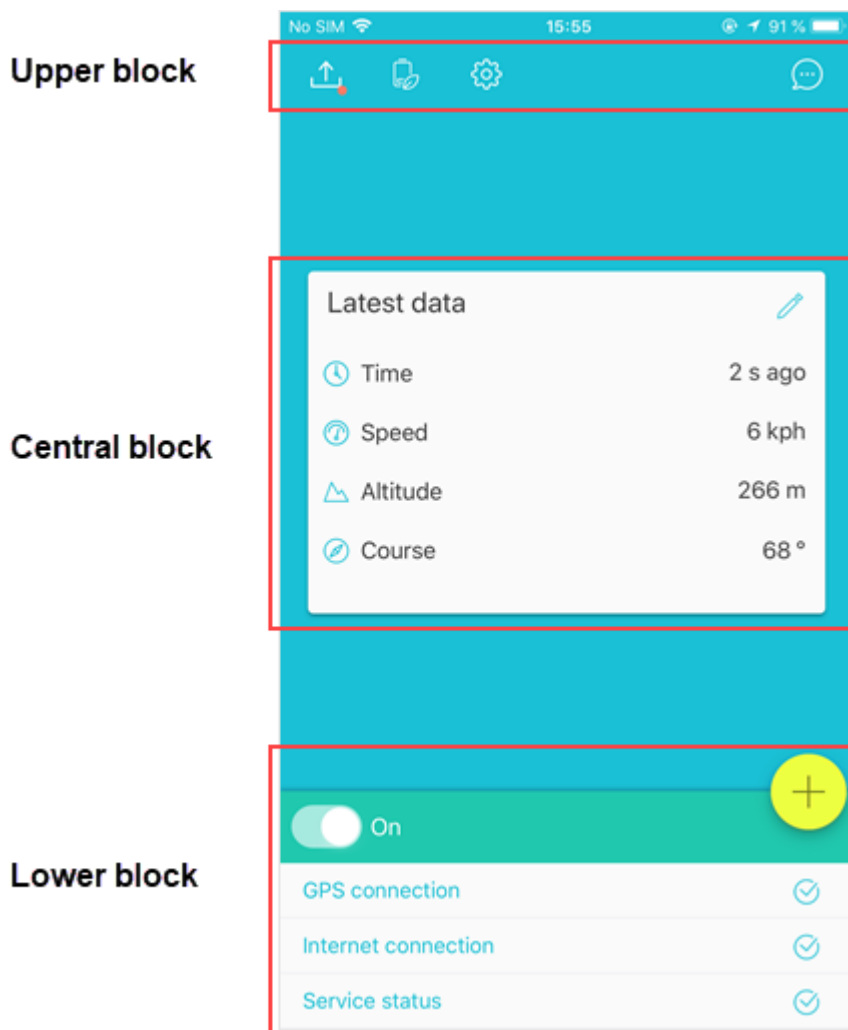
To create a unit with the help of WiaTag, you need to sign in using the user name, and then click the *Create unit* button at the bottom of the screen when selecting a unit.



To create a unit, specify its name and unique ID. In addition, you can also enter the password for accessing the unit and its phone number. Click *Create unit* to finish. A new unit is displayed in the list of units in the application, as well as in the same-name panel in the monitoring system.





Main Screen

The interface of the main screen can be divided into 3 blocks: upper, central and lower.




Upper Block

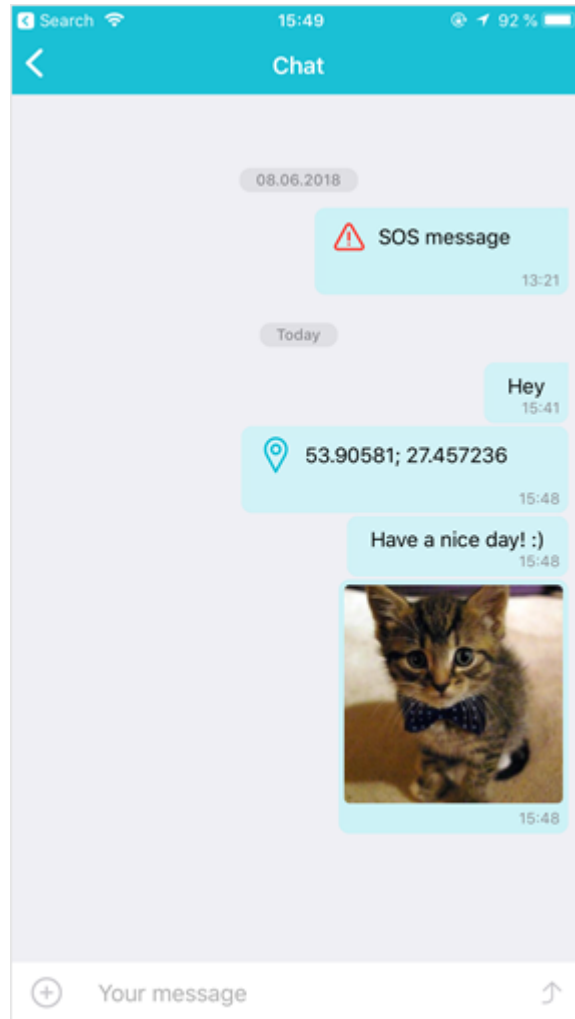
There are up to four buttons in the upper block:

-  — this button unloads messages from the black box. The red dot indicates that there are messages in the black box.
-  — this button switches to the [power save mode](#).
-  — this button switches to the settings.
-  — this button switches to the chat.

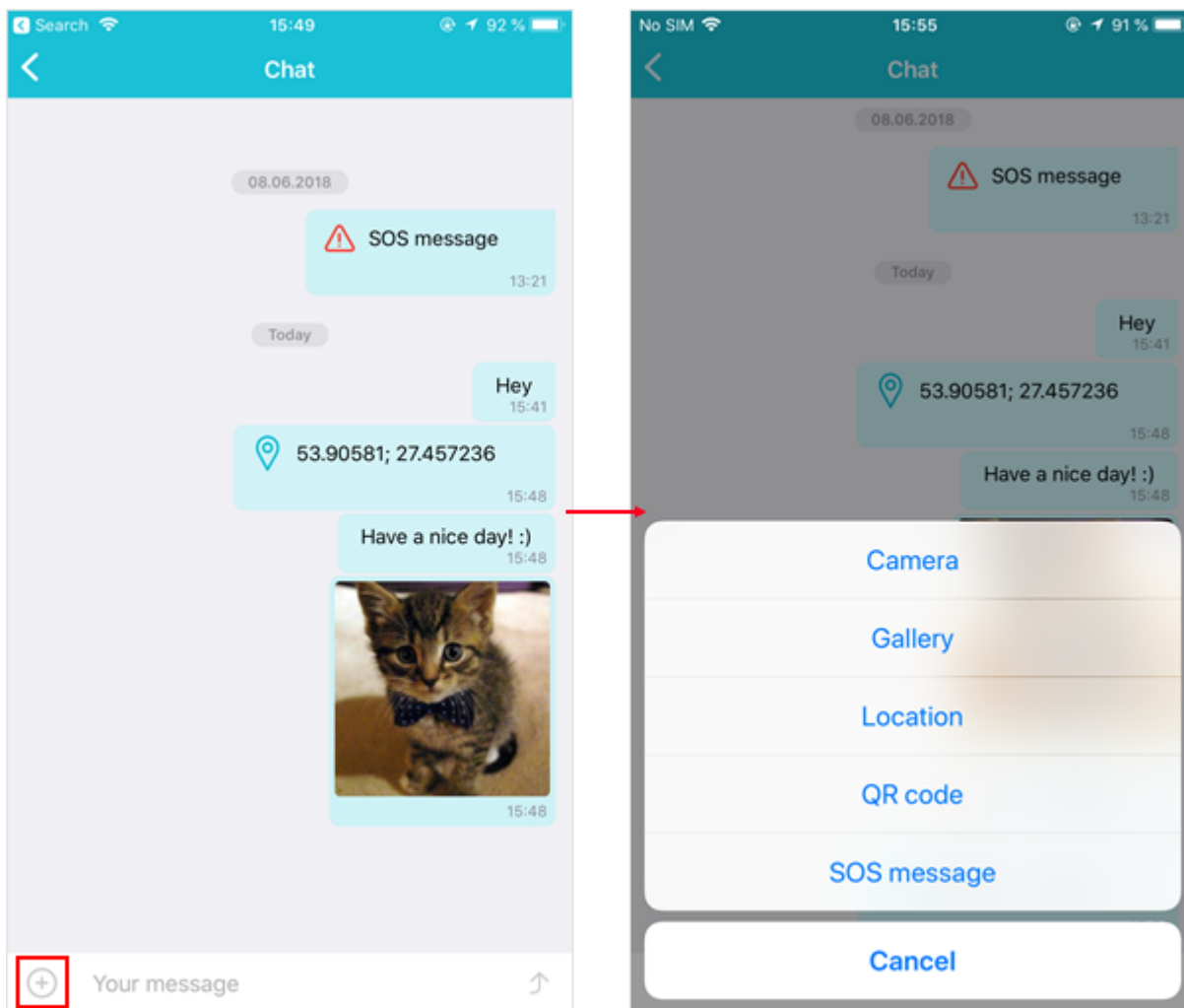
Chat

The chat allows you to send various types of messages to the monitoring system. In order for the chat button to be displayed of the main screen, first activate the same-name option in the [global_settings](#) of the application.

To send a text message, enter it in the line at the bottom of the chat and press the  button.



Besides text messages, you can also send images (from the camera or the gallery of the device), QR-codes, alarm messages and the current location. To select the required option, press the '+' button in the text input field.



Messages can be sent to the chat from the monitoring system using the [Send message to driver](#) command or with the help of the [Chatterbox](#) application.

Central Block

The central block displays the [latest data](#). It is also possible to send [statuses](#) from this block if the option is activated in the [user mode settings](#). To switch from viewing the latest data to sending statuses, swipe left. To display the current data and send the statuses from the main screen, it is required to have the GPS and Internet connections and also activate the data collection and sending services.

If the settings of the latest data and custom statuses are not specified for the [user mode](#), this block may be missing.

Lower Block

In the upper left part of this block, there is a switch with the help of which the service of collection and sending of data is activated (the service is in the stopped state when the application is started for the first time). The state of the GPS and Internet connections, as well as the status of the server, are shown below.

Attention!

Use the [administrator's password](#) to limit the possibility of stopping the service.

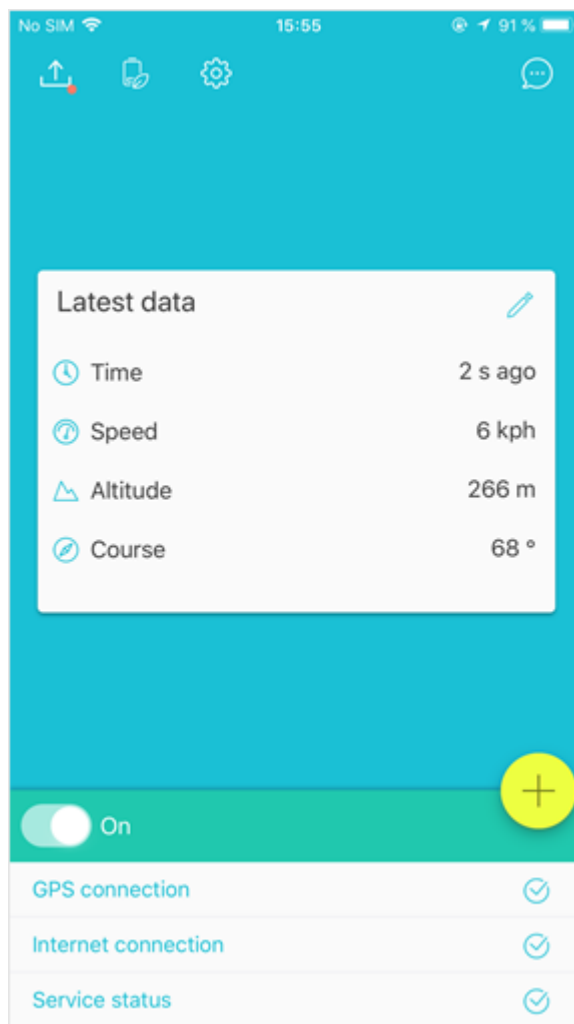
The service can be turned on or off automatically in the following cases: after the system is restarted, after the charger is connected or on schedule.

Additional Information

Press the '+' button in the lower block to open the [actions menu](#). The Internet connection is required to perform an action from this menu.

Latest Data

The latest data that is displayed on the main screen is taken from the messages. The data is updated automatically after a new message is generated.



There can be up to 4 items in this block, which are selected in the [user mode settings](#):

- Time — the time when the latest message was generated.
- Speed — the speed of the unit's movement.
- Altitude — the elevation above sea level.
- Course — the direction of motion (in degrees). Possible values range from 0 to 360 (0° is the direction strictly towards the north; the values increase clockwise).
- Position — the geographic longitude and latitude of the unit position;

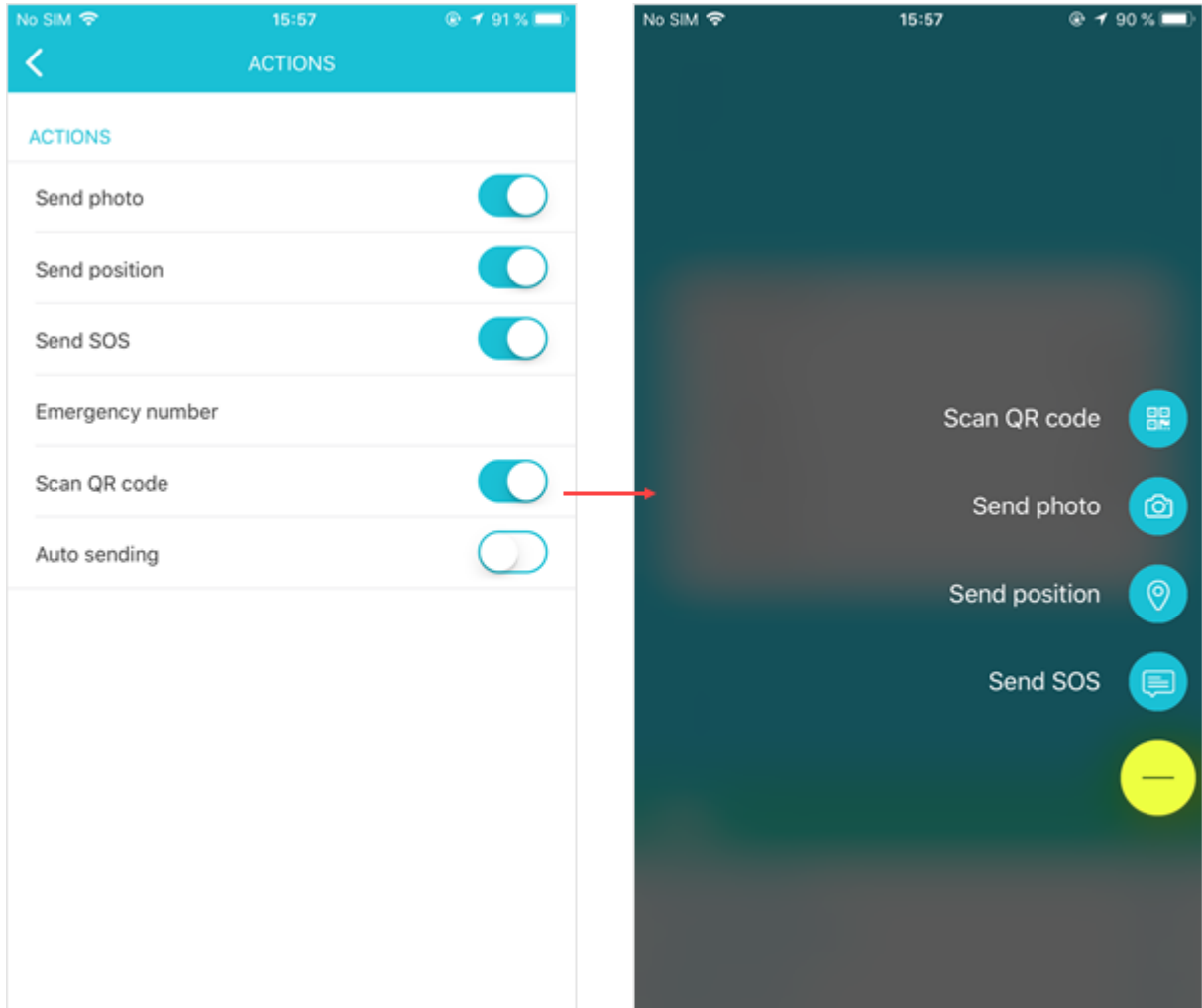
- Accuracy — the precision of positional data. In other words, it is a radius drawn around the point within which a unit can be located.

To quickly go to the settings of the latest data block, press the edit button in the upper right corner. The button may be missing if the editing is restricted by the [administrator's password](#).

The measurement system which is used to display the latest data is displayed is indicated in the [settings of the application](#).

Actions Menu

To open the Actions menu, tap '+' located in the lower block of the main screen. Selections of the available actions for this menu is done in the [user mode settings](#).



Scan a QR Code

This action scans QR or bar codes and then sends them to the monitoring system. After scanning the code, a message with the 'qr' parameter is sent to the server, which is saved in the database of the monitoring system. The location of the unit during the scanning of the code and the time of the message generation are indicated in the message.

Auto Sending

This option allows to specify whether a preview of the scanned QR or bar code should be used or the code should be sent to the monitoring system automatically.

Send Photo

This action sends images to the monitoring system. Additionally, the location and the time of the generation of the message are sent to the server. Before sending images, it is recommended to set the [photo_quality](#) settings. Camera or image gallery of the device can be selected as the source of the photo. If image gallery is used, select the required file in the file manager that opens.

Send Position

This action sends the current location to the monitoring system. The time of the generation of the message is sent as well.

Send SOS

An alarm message (SOS) is sent in case of a critical situation. Such a message contains the 'alarm=1' parameter, and its line in the messages panel of the monitoring system is highlighted in red (if the *Data messages* type is selected). In addition to the parameter, the message also contains the information about the location of the unit at the time of sending the message and the time of its generation. In case it is not possible to determine the location at the time the message was sent, the last known position is used.

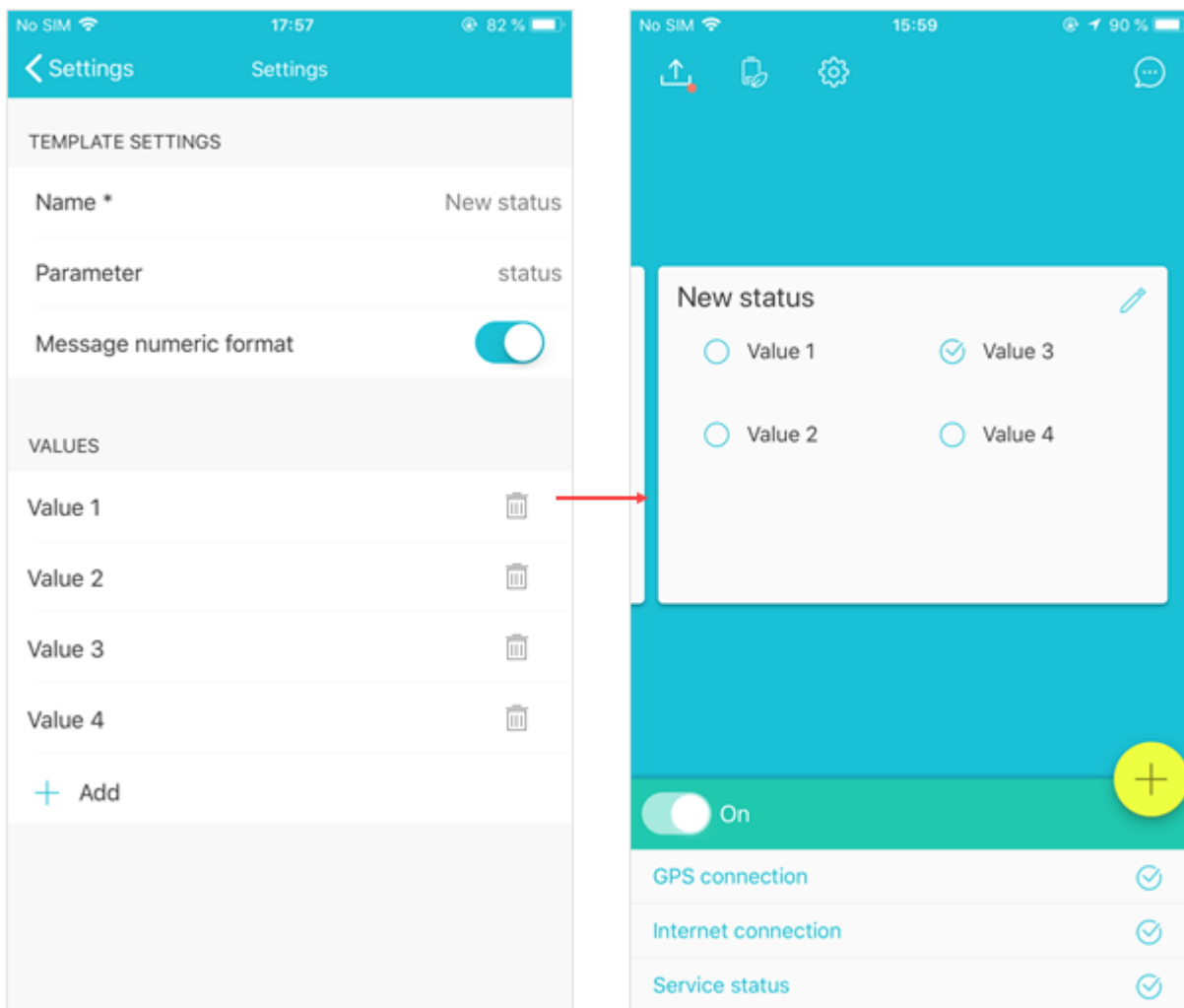
Custom Statuses

In WiaTag, it is possible to send custom statuses as a parameter in a message. The user can create any number of custom statuses with different values in them. Thus, for instance, *Status 1* can have the *Free*, *Busy*, *Away* values; *Status 2* can have such values as *Personal*, *Business*, *Other*, etc.

Creating a Status

To create a status, open the [Administrative settings](#), select *Custom statuses* and tap *New status*. Specify the parameters:

- **Name** is the name of the state.
- **Parameter name** is the name of the parameter which should arrive in the messages when the status is sent.
- **Message numeric format** is the parameter that enables or disables the sending of a numeric index of the state along with a text parameter. The numeric index looks as follows: 'status_index=3' (the status count starts from 0).
- **Values** are the values of a custom status. Any number of statuses can be added. If there are more than six statuses, use vertical scrolling to view them all on the main screen.



Editing and Deleting a Status

To *edit* a status, open its settings. To do this, swipe left the line with the name of the required status and press the edit button. To quickly jump to the settings of the custom status which is selected for display on the main screen, tap the edit button in the upper right corner of its block. Edit the required parameters.

To *delete* the status, swipe left the line with the name of the required status and press the delete button. It is possible to limit the editing and deletion of statuses with the help of the [administrator's password](#).

Sending a Status

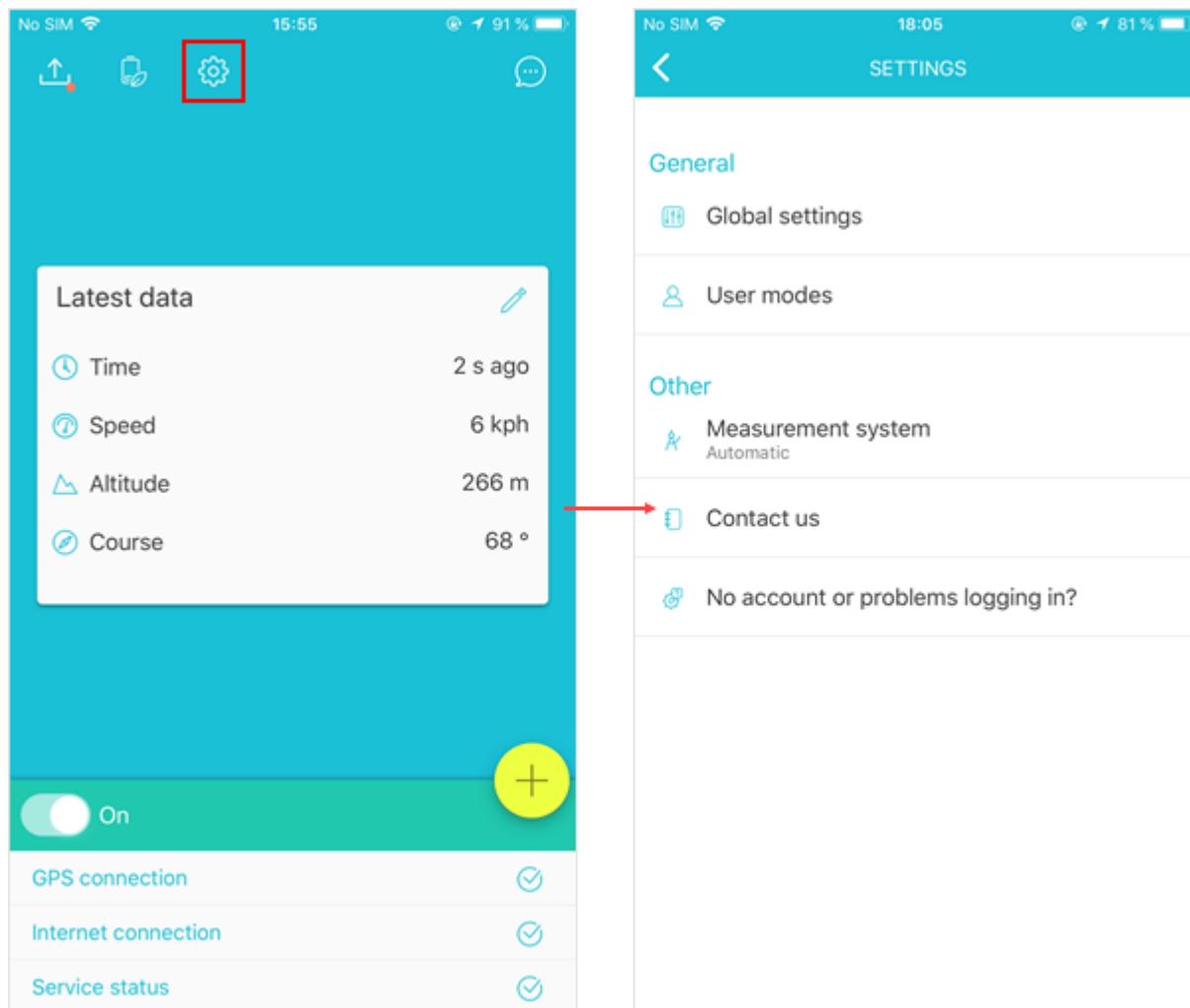
Custom statuses are sent from the [central block](#) of the main screen of the application. The status that should be displayed on the main screen is selected in the user mode settings (User mode settings > Main screen > Status on the main screen). Tap the required value of the custom message to send it. In the monitoring system, such messages contain the name and value of the parameter, as well as the numeric index of the parameter in case the *Message numeric format* option is activated for the status.

A custom status is sent together with the last known coordinates.

The received statuses can be used in the monitoring system for the notifications of the *Parameter in a message* type. With the help of the custom statuses it is also possible to assign or unassign drivers, trailers or passengers. To do this, specify the parameter of the sensor that signals about the assignment or unassignment and specify the codes from the properties of the required driver, trailer or passenger as the values of the parameter.

Settings

Tap the gear shaped button at the top of the main screen to open the settings of the application. Access to the settings can be restricted by the [administrator's password](#).



General

Global Settings

Connection Settings

Server

Host. In this field, you can change the server host that is registered at the [authorization](#) step.

Port. In this field, you can change the server port that is indicated at the authorization step.

Unit Properties

Unique ID. Any numeric and alphabetic combinations (for instance, IMEI of a mobile device) can be indicated as a unique ID. This identifier is required to connect a unit from the monitoring system to WiaTag.

Password. If you change the password of the unit in the application, you must change it in the monitoring system as well. Otherwise, it will be impossible to connect to the unit.

Unit binding. This option allows to connect the application to another unit. To do this, specify the user whose account the required unit belongs to and select the unit itself or [create a new one](#). If the user is not yet authorized on the device, complete the authorization. After you bind a new unit, you must restart the application.

Extensions

Chat

If this option is activated, the button that allows to open the chat in the [upper block](#) of the main screen appears.

Administrator Settings

Admin Password

Admin password allows to restrict access to application management and user modes. Activate the option and set the password. Admin password is used in the global settings and service management. You can also specify the type of access to the user modes by selecting one of the options: View only, Select mode, Select and edit, Full access.

Custom Statuses

In this section you can create and configure [custom statuses](#).

Remote Control

This setting allows to enable or disable remote management of application.

With the help of the remote control the request for the command execution is sent from the [monitoring system](#). The following commands are available:

- Query position;
- Query configuration;
- Start/Stop (the service);
- Flashlight;
- Send message to driver;
- Send position;
- Upload configuration .

The **Share configuration** option allows to remotely change some settings of the application. For details on sending a configuration, see [Appendix 1](#).

Clear Black Box

With the help of this option you can delete all messages from the black box.

Reset

This option is used both to reset the settings to the default values and to exit the application.

User Modes

The choice of the [user mode](#) depends on the monitoring objectives. The modes differ in settings, which affect the accuracy of the received data, as well as the consumption of traffic and battery power usage.

You can add your own user mode with an arbitrary configuration of settings. To do this, press *Add user mode*, indicate the name and make the necessary adjustments. Any mode can be changed or deleted. Swipe left the line with the mode and select the required action.

Operation Mode

Operation mode of the service is determined by three parameters. Depending on the monitoring objectives select the settings of data collection and data settings.

Data Collection

Data collection mode:

- Continuous — the position data is collected continuously and have high accuracy. This method is characterized by a high consumption of traffic and battery power.
- By timeout — the position data is collected regularly after the time interval specified in the *Timeout* field (by default — 5 minutes). The less the timeout is, the more accurate the data is. The

consumption of traffic and battery when using this method of data collection depends on the selected timeout.

- **Smart mode** — the data about the location is collected only when the unit is moving. As soon as the movement of the unit is detected, the positioning service turns on. Motion detection is based on the readings of the accelerometer, gyroscope and compass.

Timeout. This setting can be used with the *By timeout* data collection method. It indicates the time after which the device must collect data.

Data Sending

Data sending mode. Data can be sent continuously, by timeout or manually.

- *Continuous*. According to this method, the location data is sent to the server constantly (as it arrives and if there is an Internet connection). Continuous method is characterized by a high battery usage.
- *By timeout*. According to this method, the location data is sent to the server regularly, after a specified time interval, after which the mobile device returns to sleep mode.
- *Manual unload*. According to this method, all the collected location data of the unit is sent to the black box, from which the user can subsequently send it to the server manually.

Timeout. This setting is only relevant for the *By timeout* data sending method. It indicates the time after which the device must send data.

Work in roaming. This option allows you to enable or disable the sending of data in roaming.

Data Settings

Filtration

Max accuracy. The maximum value of the error with which the messages can be sent. If it is exceeded, no message is sent to the server. This parameter is taken into account regardless of whether message filtering is enabled or disabled.

Filtration of messages. If this option is enabled, the filtering conditions specified below are applied to send messages to the server. Filtering applies only to messages received via GPS. In case location is detected by the cell towers or Wi-Fi, the messages have zero values of speed, course, number of satellites, and the accuracy can exceed 2000 meters. That is why they are not filtered.

Below are the parameters according to which filtration should be performed. The logical 'or' operation is applied to them, that is, a new message is generated when any of the specified conditions are met.

Min time. The minimum time interval between messages sent to the server (in seconds). According to this setting, a new message is generated after the specified time after the previous message.

Min distance. According to this setting, a new message is generated if the unit has passed a distance equal to or exceeding the specified value since the previous message.

Change in course. A new message is generated if the angle of the course change (i.e., the direction of travel) in degrees changes by an amount equal to or greater than the specified value.

Change in speed. A new message is generated if the speed difference (the speed difference between the previous and current messages) is changed by an amount equal to or exceeding the specified value.

If the filtering settings are too strict, messages will not be generated.

Additional Parameters

In this section you can specify additional parameters that must be received from the unit in messages.

Provider name. When this option is activated, the sent messages contain the parameter 'p', the value of which indicates the source of the positional data.

Accuracy. When this option is activated, the sent messages contain the parameter 'a', which shows the accuracy of the positional data (in meters).

Battery level. When this option is activated, the sent messages contain the parameter 'b' indicating the battery level of the device (in percent).

Last status. When this option is activated, the sent messages contain the last specified [state](#) of the unit.

Service messages. When this setting is selected, the message contains the following parameters:

service status (s_on=0 — disabled, s_on=1 — enabled);

location status (ls=0 — disabled, ls=1 — enabled);

unforeseen service crash (cr=1).

Main Screen

Status on the Main Screen

Selection of the [custom status](#), which must be displayed on the main screen.

Latest Data

Selection of the [information](#), that must be displayed in the latest data block on the main screen. Up to 4 points can be selected.

Actions

Selection of [actions](#), available to the user from the main screen of the application.

User Settings

Photo Quality

In this section you can set the image quality that should be used when sending photos (traffic consumption depends on the selected quality). The following options are possible:

- Original — original image without loss of quality;
- High — original image is compressed to 3 megapixels (no more than 600 KB);
- Medium — original image is compressed to 2 megapixels (no more than 300 KB);
- Low — original image is compressed to 1 megapixel (no more than 100 KB).

Sent photos show the time when they were taken.

Power Save Mode

Power save mode allows to reduce battery consumption. This is done by changing the settings of [data_sending](#) (manual unload is indicated).

Enable this option if you want the power save mode to be activated when the battery is low (15%).

Other

Measurement System

WiaTag supports work with two measurement systems — metric and U.S. Here you can specify the one you want to work with. If *Auto* is selected, measurement system is taken from the settings of the device.

Contact Us

This option is provided for communication with the developers of the application.

Help

Tap here to load the user documentation with the information on the functionality and features of the WiaTag application.

Appendix 1

The [Share configuration](#) option in the administrative settings of the application allows to remotely change some of the parameters. To do this, a text file in the [JSON format](#) containing the required configuration should be attached to the command. The file has the [following view](#).

The configuration file consists of 'key:value' pairs, where key is the setting of the application, and value is the configuration of the setting. Below is the list of keys and their configurations:

data_ collection_ mode	data collection	0 — continuous, 1 — by timeout, 2 — smart mode
data_ collection_ timeout	data collection timeout	custom, min
data_sending_ mode	data sending	0 — continuous, 1 — by timeout, 2 — manual
data_sending_ timeout	data sending timeout	custom value, min
enable_ filtration	enable filtration	true — enable, false — disable
filtration_min_ time	min time interval	custom value, sec
filtration_min_ distance	min distance	custom value, m (ft)
filtration_ change_in_ course	change in course	custom value, 0-360°
filtration_ change_in_ speed	change in speed	custom value km/h (mph)
filtration_max_ accuracy	max accuracy	custom value, m (ft)
filtration_max_ speed	max speed	custom value, km/h (mph)
send_ parameter_ provider_name	additional parameters, provider name	true — enable, false — disable

send_ parameter_ accuracy	additional parameters, accuracy	true — enable, false — disable
send_ parameter_ battery_level	additional parameters, battery level	true — enable, false — disable
send_ parameter_ last_status	additional parameters, last status	true — enable, false — disable
enable_action_ send_photo	actions menu adjustment, sending photo	true — enable, false — disable
enable_action_ send_position	actions menu adjustment, sending position	true — enable, false — disable
enable_action_ send_sos	actions menu adjustment, sending SOS	true — enable, false — disable
visible_ statistics	visible statistics	0x1 — time, 0x2 — speed, 0x4 — altitude, 0x8 — course, 0x10 — location, 0x20 — accuracy
user_mode	user mode	to prevent errors when loading the configuration, it is not recommended to change the user mode at the same time as changing the user settings. If both modifications are required, you must first upload the configuration with the user mode changes, and then the one with the user settings. 0 — active, 1 — standard, 2 — lite, 3 — custom
use_admin_ password	use admin password	true — enable, false — disable
admin_ password	set admin password	any numeric and alphabetic value
photo_quality	photo quality	0 — original, 1 — high, 2 — medium, 3 — low
enable_power_ save_mode	power save mode	true — enable, false — disable
statuses	custom statuses	this key has nesting, since the template of the arbitrary state includes several settings. Available settings are described below.
name	the name of	custom value

	the template	
param_name	the name of the parameter	custom value
values	values	custom values. The maximum number of values is 6. Each value is indicated in double quotation marks (for example, "Value1"). Comma (,) is used to separate values.
active	use the template from the main screen	true — enable, false — disable
visible_settings	visible settings	this key has nestings, as it is necessary to specify a section of visible settings, as well as a value. All the possible values for each section are listed below.
connection_settings	connection settings	0x1 — server, 0x2 — unit properties
operation_mode	operation mode	0x1 — data collection, 0x2 — data sending
data_settings	data settings	0x1 — messages filtration, 0x2 — extended parameters
main_screen_customizer	main screen	0x1 — latest data, 0x2 — actions
administrative_settings	administrative settings	0x1 — user mode, 0x2 — admin password, 0x4 — custom statuses, 0x8 — remote control, 0x40 — photo quality, 0x100 — power save mode, 0x200 — clear black box, 0x400 — reset
other_items	other	0x1 — contact us, 0x2 — help, 0x4 — measurement system

```

"visible_settings":{
  "connection_settings":1,
  "operation_mode":1,
  "data_settings":4,
  "main_screen_customizer":0,
  "administrative_settings":2,
"other_items":2

```