# Wialon User Guide

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## Overview

Complex monitoring system software of fifth generation in which best and innovative ideas are gathered. For practical acquaintance and testing you can try the newest version of Wialon™ B3.

Web browsers supported:

- **Mozila Firefox 3+**
- **Opera 9.6+**
- **Internet Explorer 8+**
- **Google Chrome 2.0+**

Distinctive features over similar software products are:

- Client/server architecture with support of multichannel asynchronous connections;

- Built-transactional storage system from the well-known producer in the world;

- High data performance;

- Script supporting, i.e. opportunity to work with the system at the macrolanguage;

- Distributed architecture designed for the millions of users and tracking units;

- Support for GSM modems, binary SMS, long SMS, and also possibility to work with SMPP protocol, de facto standard protocol for receiving/sending messages to mobile operators;

- Embedded web server integrated with operating system functions (Linux version);

- Modular system - for today there are about 50 modules and even more variety of plugins;

- Control access and user rights;

- Close integration with WebGIS-3 server - search on map, route construction, address detection by coordinates, image reception map and many more;

- Unit remote control via SMS/GPRS;

- Notification for various events such as speeding, entrance to a geofence, change of sensors value and digital inputs;

- Notifications can be sent by e-mail or SMS, displayed online or stored in the unit history to be later included in a report;

- Support jobs running under a specific schedule, such as the delivery of reports via e-mail or execute a command over the unit;

- Unit groups support;

- Access from mobile devices such as a phone or PPC;

- Large, constantly expanding list of supported devices (over 120 types at the moment).

# Login

Enter service URL into the address line of your browser.

On the login page key in your **username** and **password** that were given to you while registering. If you are using a private computer, you can put a check mark near **Remember on this computer**. In this case, the next time you enter the system you will not be asked to input your login and password again.

When user name and password are entered, press **<Enter>**.



The first thing you see when entered the system is the Monitoring window.

## If You Forgot the Password

If you have already registered in the system but forgot the password, please, follow the link **Forgot your password?** There you will be asked to key in your user name and e-mail address that were indicated while registering. Then push the **Reset password** button. A password reset link will be sent to you. Follow this link to get your new password.



If you press **Forgot your password?** by accident, just ignore the e-mail with password reset link and use your former login and pass. If you still follow this link, you will have to accept a new password.

⚠️ *Note.*
The current password can be changed in the User Settings dialog.

# Interface

User interface of the service is simple and in many cases intuitive intelligible. There is plenty of screen tips associated with various buttons, icons, dialog boxes and other interface elements.

In the picture below, you see the service general view. To observe the site in a greater scale, enter the fullscreen mode by pressing the **<F11>** button on the keyboard. This hotkey is supported by most of browsers.
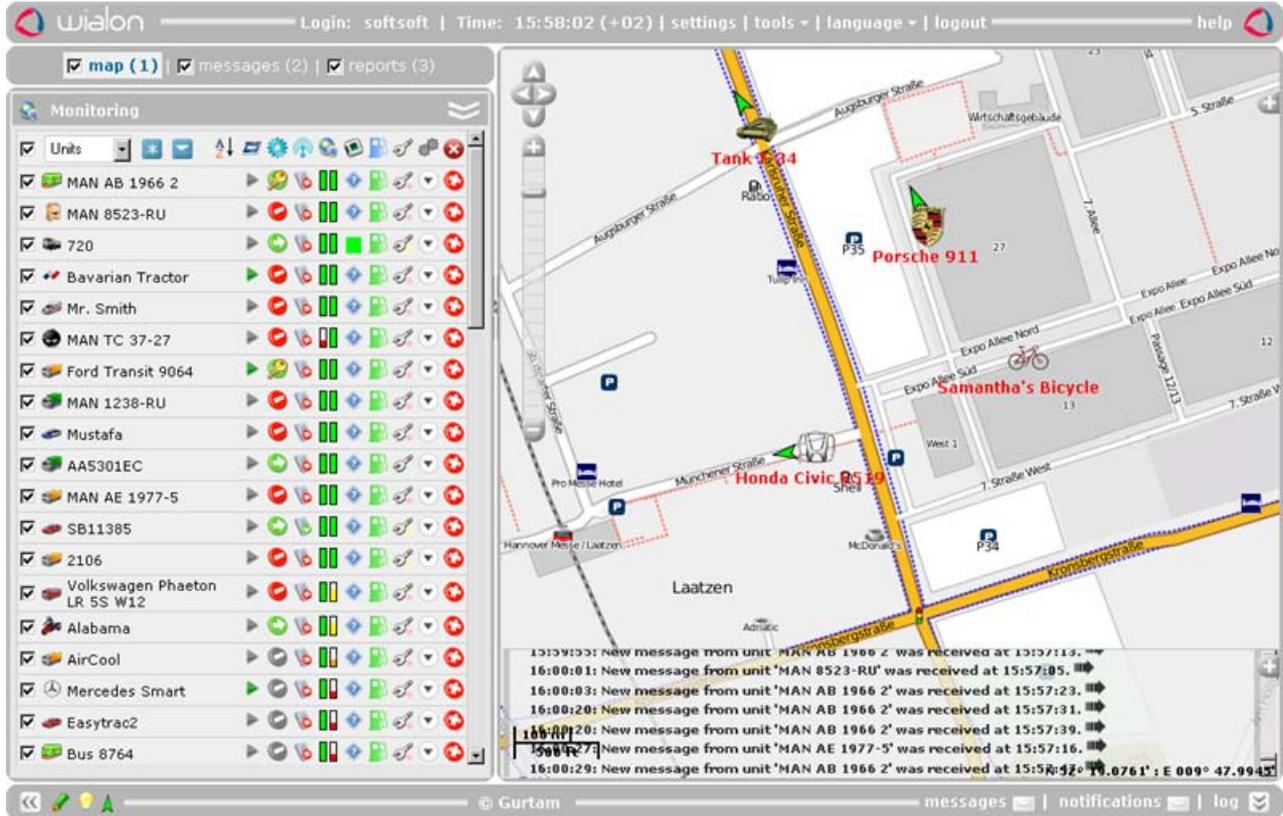


## Top Panel

At the top of the window there are the following elements: **login** (username) which has been used to enter the service, the current **time** (in brackets there is a **time zone**), the **Settings** button, the **Tools** menu, the **Language** menu, the **Logout** button, and **Help**.

If the time is displayed in red color, it means that the server is not available at the moment. This can happen by a number of reasons. For example, the Internet connection is broken or some trouble has happened to the server.

In case you see the red time, refresh the Internet page by pushing **<F5>** or **<Ctrl+F5>** (these keys are supported by most of browsers).
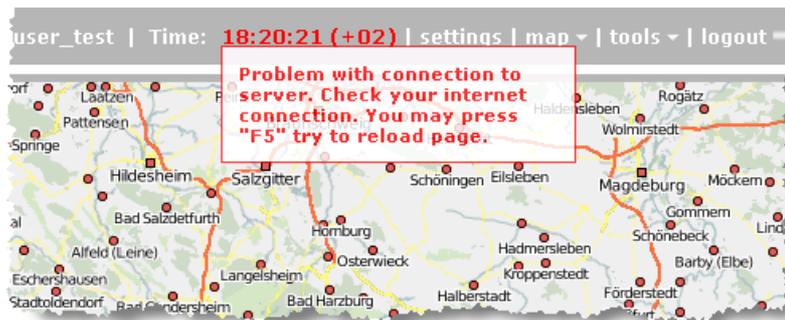


Besides, in the top panel the notification about days left will appear (if it is provided in your billing plan).

## Modes Panel

Three basic modes are available in Wialon:

- **Map Mode** where you track you units and manage attendant system objects like geofences, drivers, job, notifications, etc.

- **Messages Mode** where you can view database of messages received from your units.

- **Reports Mode** where you generate reports based on data received in messages.

To switch between the modes, click on the item you need in the modes panel.
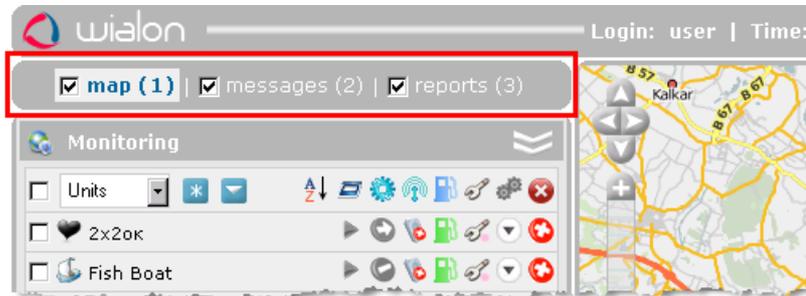


## Work Area

The left side of the screen is the work area. There several panels can be selected. They contain the basic instruments to manage the service:

- Monitoring (tracking units position, state and movements);
- Tracks (viewing movement history);
- My Places (POI) (creating, editing, removing points of interest on the map);
- Geofences (creating, editing, removing geofences);
- Notifications (creating, editing, removing notifications about events);
- Jobs (creating, editing, removing jobs);
- Route Control (controlling units on routes);
- Units (managing available units):
- Users (managing other users);
- Unit Groups (grouping units in your own way);
- Drivers (creating drivers and assigning them to units). `

The panels are available only in the Map Mode, which can be selected in the modes panel. To navigate through the panels, place the cursor over the name of the panel on top of the work area. Then in the list that appears select the necessary panel.



It is more convenient to navigate between panels using Shortcuts.

⚠ *Attention!* Your package may contain not all of modules mentioned above. So, the list of panels may have fewer items.

The work area size is changeable. Click on its right border and drag right or left to widen or narrow it.

## Ground Panel

At the left bottom corner there is a button to hide or show the work area. Depending on the work area state, the arrow on the button changes its direction:

- hide work area,

- show work area.

On the right you see three buttons to manage unit display mode:

- hide/show unit traces.

- hide/show unit names.

- hide/show unit movement direction.

In the center of the ground panel there is your copyright with a hyper link.

At the right end of the ground panel there are three buttons which are used to show or hide additional windows:

- **Log** window which contains current events and operations.
- **Notifications** window which pops up when an online notification triggers.
- **Messages** window which displays messages received from drivers.

## Map

The map occupies the greater part of the window. Here all units and their movements are displayed. Along the right edge of the map there are two plus buttons . Clicking on them will open the following panels:

- **Map sources** to choose the map source.
- **Minimap** to navigate the map.

Read the following topics to get more detailed information on Wialon Web interface:

- Maps
- Log
- Shortcuts

# Maps

The Map Mode can be selected in the modes panel.
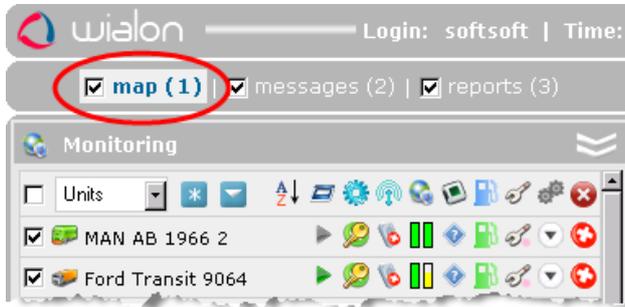
Usually, the map occupies the greatest part of the screen. Units and their traces, marked places, geofences and other elements are displayed on the map.

To expand the map, hide the work area and the log. The appropriate buttons are situated on the ground panel at its ends: ≪ and ⌄ . In addition, you can switch to the fullscreen mode by pressing **<F11>** that is supported by most of browsers.

## Map Types

Along the right edge of the map there are three buttons ⊞. Clicking on the upper one will open an additional window to choose the map source. Select the map source you like, and currently displayed map area will be reloaded from different source.

To expand the list of available maps, go to User Settings.

## Navigation

There are three basic ways to navigate over the map.

1. **Using corresponding buttons**
   At the left top corner of the map there are four arrow-like buttons that allow you to move map over the screen up, down, right, and left correspondingly.
2. **Using the mouse**
   This is similar to drag and drop method. Left klick on any place of the map and drag to necessary direction. Then release the mouse button.

3. **Using minimap panel**

This way is more convenient when working with large scaled maps. To open this panel, the lowest of plus-buttons ⊞ at the right edge of the map. Click on any place in the minimap window to move fast over the map.
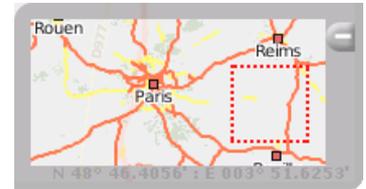
## Zooming the Map

Here several methods are also assigned:

1. **Scale on the map**

At the top right corner of the map under navigation buttons there is a scale that allows to zoom in (+) or zoom out (-). At the same time, the center of the map is staying stable.

2. **Mouse scroll wheel**

It is more convenient to adjust zoom level using mouse scroll wheel. Scroll up corresponds to zoom in, scroll down corresponds to zoom out. During the scrolling actions point the mouse cursor at needed place so that it would not get out of sight.

3. **Mouse and <Shift> button**

If you push and hold **<Shift>** button and select some area of the map with the left mouse button, the map will be zoomed in to this area.

4. **Double-click**

Double-click on any place of the map to zoom it in.

At the bottom of the map the current scale (in kilometers/meters and miles/feet) and geographical coordinates of the cursor are indicated.



## Using the Map in Different Modes

The map is common for all of three modes: map mode, messages mode, and reports mode. It means that while switching between modes the zoom and coordinates of the map center remain the same. Graphic elements such as track lines, markers, places, geozones, units icons stay in their places as well.

However, graphic elements maped in any mode can be easily on or off. To display or hide these elements, put marks in the corresponding check boxes in the modes panel.



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## Log

In the right bottom corner there is a button to show or hide the log:

- show log window,

- hide log window.

The log is semitransparent so that the map under it stays visible.
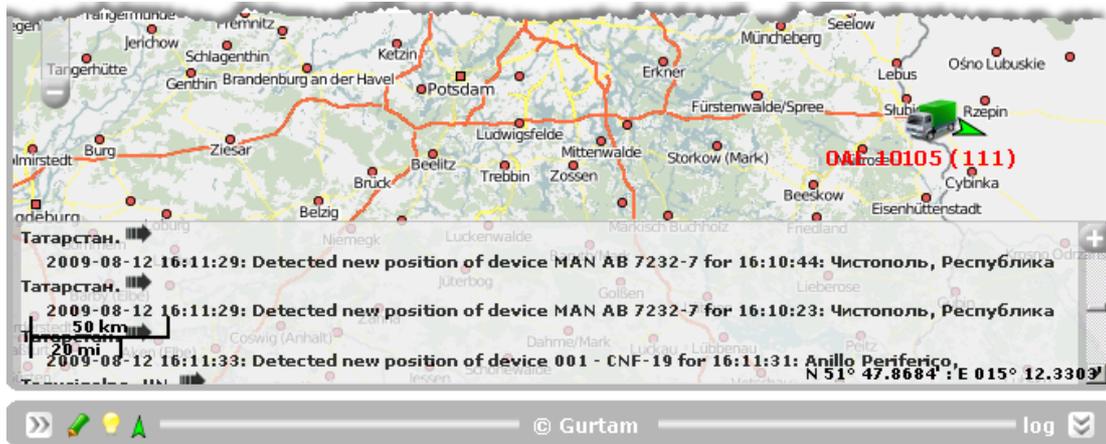


The log contains records of current events and operations running in the system: new message from unit appears, new SMS is received, unit configuration is changed, new geofence is created, etc. The log contains messages from units in the work list.

If an event registered in the log has happened in a certain place (for example, a new location of a unit was detected), you can move to this place on the map clicking on the black arrow at the end of the entry ➡ .

The log uses fonts of different colors in order to separate different type of entries from each other. The black color is used for most regular messages concerning units motions and actions. The green indicates user's activity: creation and editing of places, units, geofencs, user settings changes, etc. Red color is used to display error messages. The bordeaux entries mean alarm messages received from units.

Depending on the units quantity and equipment configuration, the messages in the log can appear even every second.

The log size is adjustable. To enlarge or decrease the log, drag the horizontal slider at its top up or down.

Trace: » Login » Interface » Maps » Log » Shortcuts
You are here: Wialon User Guide » Interface » Shortcuts

# Shortcuts

Keyboard shortcuts give more convenient and quick to navigate through the site. This feature is activated in User Settings.

**Switch mode shortcuts:**

- **1** - the Map Mode;
- **2** - the Messages Mode;
- **3** - the Reports Mode (if only you have purchased reports module).

**Tools shortcuts:**

- **5** - the distance tool;
- **6** - the area tool;
- **7** - the address tool;
- **8** - the routing tool;
- **9** - the hittest tool.

**Interface shortcuts:**

- **~** - hide/show the work area;
- **L** - show/hide the log window.

**Panels shortcuts**

- **Q** - Monitoring;
- **W** - Tracks;
- **E** - My Places;
- **R** - Geozones;
- **A** - Jobs;
- **S** - Notifications;
- **D** - Routes Control;
- **Z** - Units;
- **X** - Users;
- **C** - Unit Groups;
- **V** - Drivers.

The hints for the shortcuts are given in brackets as it is shown in the picture below.



As it is seen, the names of the panels are divided into three columns. The content of columns can be different and depends on the modules installed. For example, the first column consist minimum of two items: Monitoring and Tracks.

You can see with half an eye that to reach the items from the first column keys on the top row of the keyboard are used: **Q**, **W**, **E**, **R**.

For the second columns of items are used hot keys **A**, **S**, **D** that correspond to the middle row of the keyboard.

Similar situation is with the third column items which hotkeys are letters of the bottom row on the keyboard: **Z**, **X**, **C**, **V**.

If not all of listed services are included in you package, hotkeys will shift. If for example you do not have jobs, then **A** will be used for notifications, and **S** for routes.

Trace: » Interface » Maps » Log » Shortcuts » Tools
You are here: Wialon User Guide » Tools

## Tools

Tools are additional service features that do not require working with database. The list of available tools is accessible through the **Tools** menu in the top panel.

With a help of such features as **Distance**, **Area**, **Address**, **Routing**, **Hittest**, and **Nearest units** you can measure the length of polyline or just a distance between two points, measure an area of any zone, find out the address of some place on the map, get to know the shortest way to a certain destination point, etc.
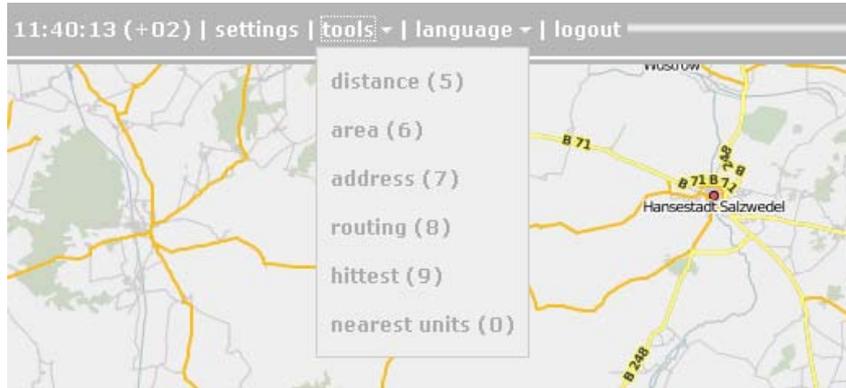


To get more accurate measurements, observe the following rules:

- To add a point, double-click on any place;
- To insert a point, double-click on the segment between two points;
- To delete a point, double-click it;
- To reposition the point, click on it and holding the left mouse button drag to another place on the map;
- To stop measuring, push the **Cancel** button in the popup window.

Find detailed information here:

- **Distance**
- **Area**
- **Address**
- **Routing**
- **Hittest**
- **Nearest Units**

## Distance

Choose **Tools** **Distance** to measure the distance between two objects. To indicate the initial point, double-click on any place of the map. Then sequentially add new points. At any moment you can move the map or zoom it using any of ways described in [maps#navigation|Maps]] topic.

Near each point the distance from the previous point is indicated. The total sum of all segments is known from the popup window in the corner. To know the sum, the mouse pointer must be placed over the last point of the polyline. Unlike other points that are red, it is white with blue border. If the cursor points some other place, the total sum will also include the distance to the current cursor position. At the same time, in brackets two numbers are given: the sum of all segments drawn + the distance to the cursor (if the cursor is over the last drawn point, this distance is 0m).

When the line is on the map, move the cursor along the line to get the distance from the starting point to the current cursor position. Cursor position is marked by a white point (if put the cursor over, it becomes plus-shaped), and a black font is used to display distance value.
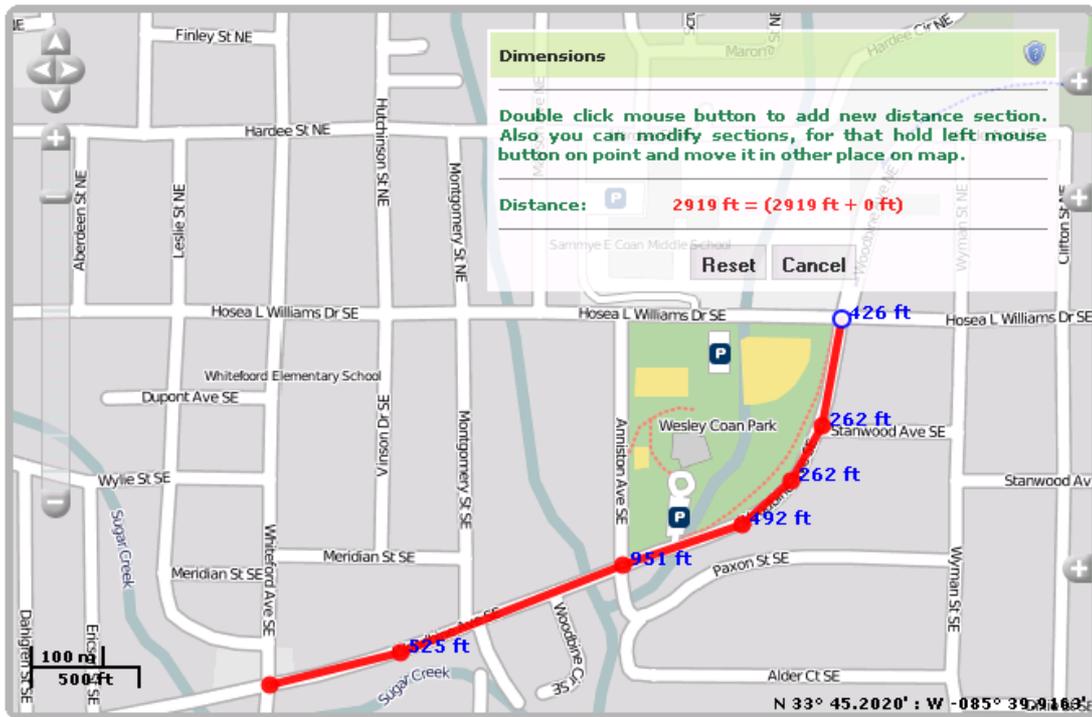


To clean the map and start new measurements, use the **Reset** button.

To close the distance tool, push the **Cancel** button.

See also:

- **Area**
- **Address**
- **Routing**
- **Hittest**
- **Nearest Units**

## Area

Choose **Tools    Area** in the menu. To draw a polygon follow the same directions as for polyline creation. The perimeter and total area can be known from the popup window in the corner.



It is also possible to calculate the area of intersecting polygones. When creating such an area, sections filled by semitransparent white color are included to the resulting area.

Use the **Reset** button to clean the map and draw a new area.

See also:

- **Distance**
- **Address**
- **Routing**
- **Hittest**
- **Nearest Units**

# Address

Th address tool is designed to:

- find a place (city, house, etc.) on map ;
- detect the address of a place.

Choose **Tools    Address** in the menu to make use of the tool.

The address information can be received form different provider (depending on maps activated and their support): WebGIS, Google, Yandex, etc. (see type of map).
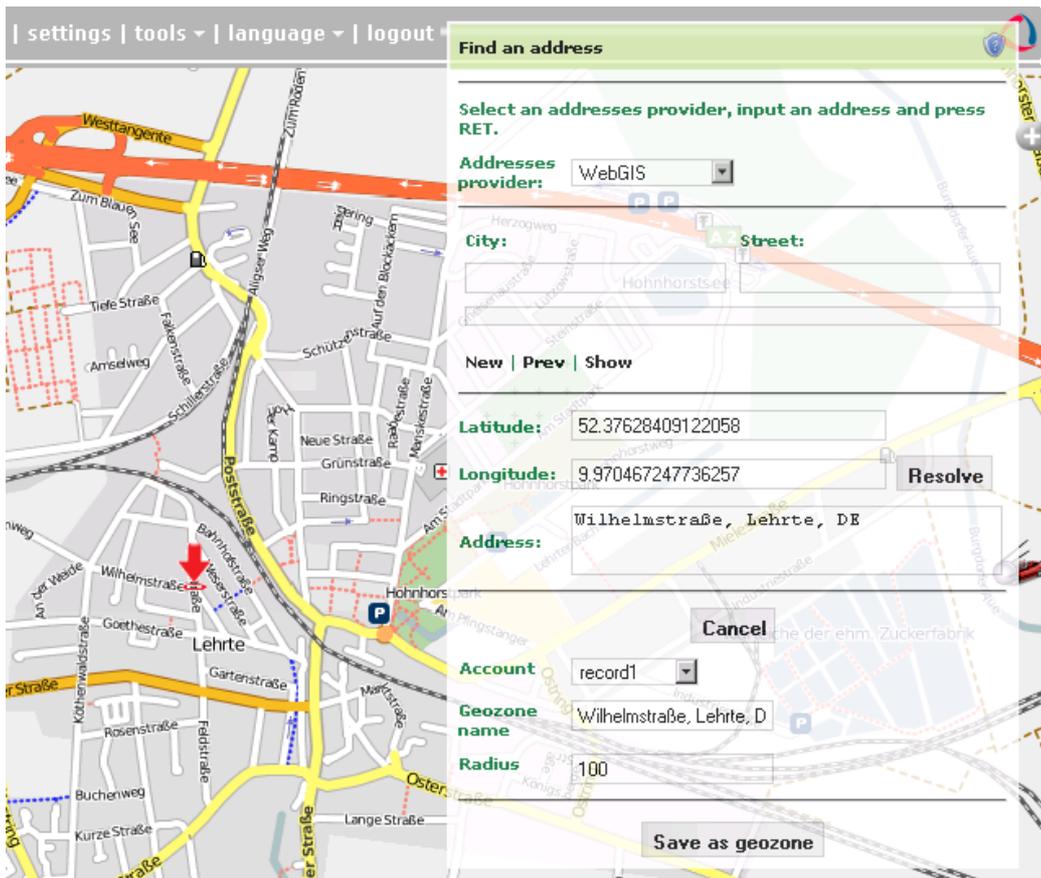


## Search

To start searching, input the first letters of the name of the city/town into the **City** field. After typing three or more characters, in the **Results** field a list of places starting with these letters will appear. If the place you are looking for is the first on the list, push **<Enter>**. In other case, select the necessary item in the list and click on it.

The similar actions can be performed in the **Street** field. After selecting the street, a list of houses located there becomes available. Choose one, and the map will be centered at this house. The place will be marked with a blinking red pointer.

The search can be stopped on city or street if it is enough for you.

The **Prev** button is used to go back to the street search (if you are already selecting a house) or to the city search (if you are in the street field).

If you have moved the map or zoomed it, you can reset changes pushing the **Show** button.

To start a new search, press **New**.

## Address Detection

To know address of a point on the map, just double-click on it. See the address and the coordinates in the popup window.

It is possible also to detect address by coordinates. Input latitude and longitude in grades and fractions (they should be separated by a dot) and push the **Resolve** button. The map will be centered at this point.

## Save as Geofence

The place where the red marker blinks, can be saved as a geofence in the shape of a circle with 100 m radius. The detected address will be used as the name for this geofence.

See also:

- **Distance**
- **Area**
- **Routing**
- **Hittest**
- **Nearest Units**

## Routing

This tool helps to quickly make routes from one point to another. These routes can be saved as geozones and edited later.

Choose **Tools    Routing** to make use of this feature. Double-click on the map to indicate the departing point. In the same way mark passing points if needed, and finally put the ending point. After that, push **Calculate**. The route will be tracked automatically and snapped to roads.



Depending on map provider (it can be chosen on the dropdown list), more features can become available. For example, if Google is the source of map, the route can be mapped regarding the way you travel: by car (default option) or **walking** (if the appropriate check box is ticked); or you can choose to **avoid highways**. Yandex adds possibility to take into account traffic jams.

To track another route, push **Reset**. To exit the tool, push **Cancel**.

After the route is mapped, it can be saved as a line-shaped geofence. To do this, enter geofence name and push **Save**. The newly created geofence will appear on the **Geofences** panel.

See also:

- **Distance**
- **Area**
- **Address**
- **Hittest**
- **Nearest Units**

## Hittest

This tool is applied to tracks only. There three ways to get a track on the map:

1. In the map mode, open the Tracks panel and request tracks of unit movement for the indicated period.

2. In the messages mode, while viewing messages for the indicated period, the track is mapped automatically.

3. In the reports mode, while generating a report the track is mapped if the corresponding option ('Trip routes' or 'All messages on map') is selected in report template.

Choose a track in the dropdown list. Hover the cursor over track to get accurate information about any point in a tooltip. Double-click at any place of the track (or even on the map), and the nearest to your click message will be found and highlighted by the marker. The map will be centered on this point.

Two modes are available here: single-point and multipoint. Depending on your choice, you can get information about one or more points at once. The information is displayed in the popup window when placing the cursor over a marker. The information is: date and time, location, coordinates, speed, sensors values. It is duplicated in the table at the top of the screen.
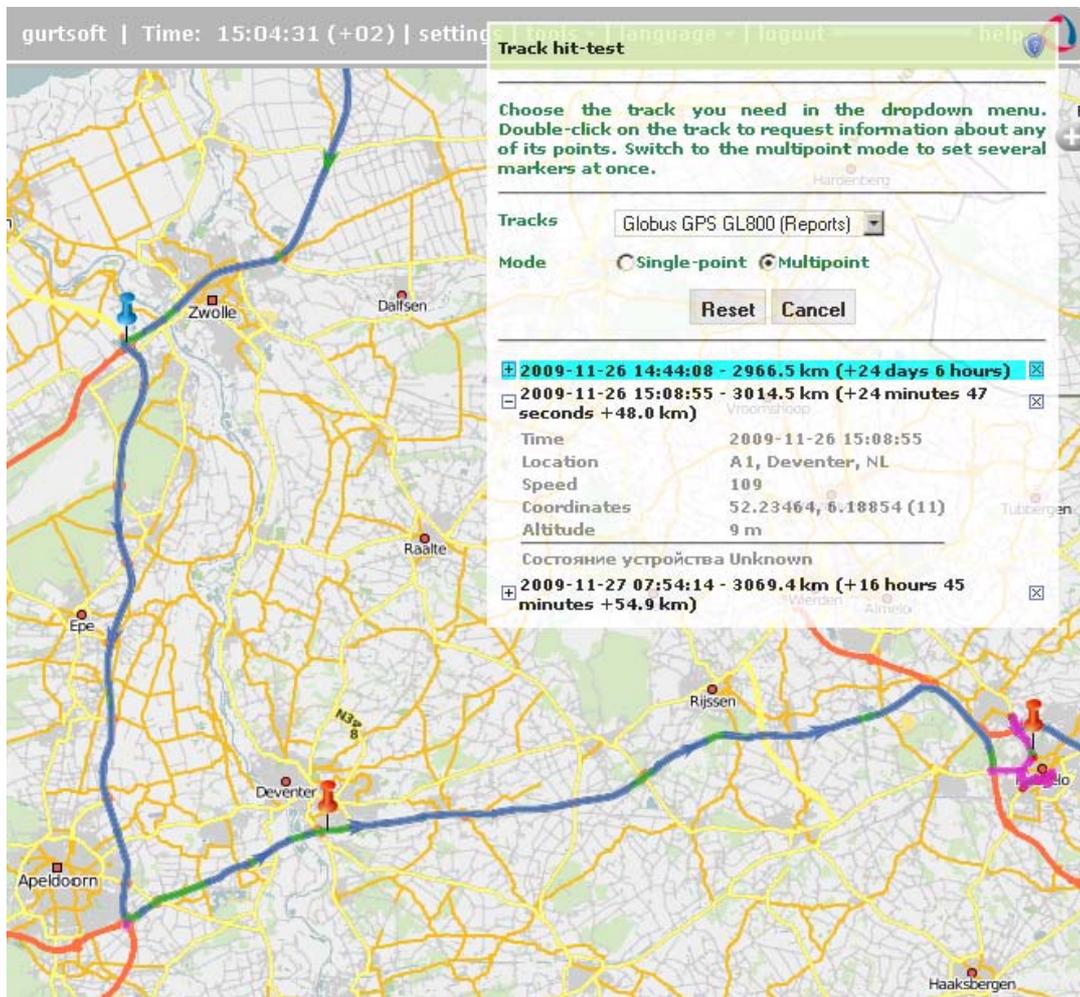


If the multipoint mode is selected, you can mark several point of the track. The active (selected) point is then blue and others are red. In the table the active point is also highlighted by blue color. To navigate from one point to another, click on a corresponding marker on the map or corresponding row in the table. Besides, if the multipoint mode is selected, the displacement from the starting point (in time and distance) is calculated, and in brackets you can find the displacement from the previously put point.

See also:

- **Distance**
- **Area**
- **Address**

# Nearest Units

This instrument is designed to help you to find units which are the nearest to a certain place according to their last message.

Choose **Instruments    Nearest units** in the menu. In a special window set the parameters of your request and observe search results.

## Request

There are two ways to indicate a place:

1. Double-click on the map in this place.
2. Enter city and street in the appropriate fields. When you start to enter a street, the system starts looking for streets which names start from these letters. Soon a list of streets is generated and you can choose a street from it. Then buildings are displayed (if there are available) and you can choose from them, too.

In the selected place a red cursor starts to blink, and at the bottom the list of nearest units is displayed.

🟡 *Note*.
If in User Settings the parameter **City** is set, then the city is already entered when you open the instrument and you need just enter a street.

## Additional Parameters

Several additional parameters can be applied to the search:

**Number of units to be shown**
5, 10 or 20 units can be shown (choose the number from the dropdown list).

**Use routing**
When choosing this option, the distance from the indicated place to a unit is calculated not directly but taking into account existing roads. The source for routing are Visicom maps.

**District**
Any geofence can be selected as district limitation. If any geofence in selected, the search is performed only among the units which are in this geofence at the moment. This feature is designed to exclude from search results the units which are far away from the indicated place.

## Search Results

Search results are presented at the bottom of the window as a list of units. There you can see unit name, driver's phone number (if any driver with indicated phone number is bound to unit), distance to the indicated place, and the button to send commands to unit (including sending a message to driver).

If you are not satisfied with search results, please, check your work list because the search of nearest units is made on the basis of units displayed on this list.

- **Distance**
- **Area**
- **Address**
- **Routing**
- **Hittest**

You are here: Wialon User Guide » User Settings

# User Settings

To view user settings, click on **Settings** on the top panel. Here you can customize some parameters of service functionality.

The User Settings dialog can contain up to five tabs according to the service configuration: Settings, Monitoring Panel, Maps, Account, and Retranslation.

## General Settings

The first tab contains general settings. Here you indicate you time zone, input your e-mail address, change the password to enter the system, and set many other parameters.
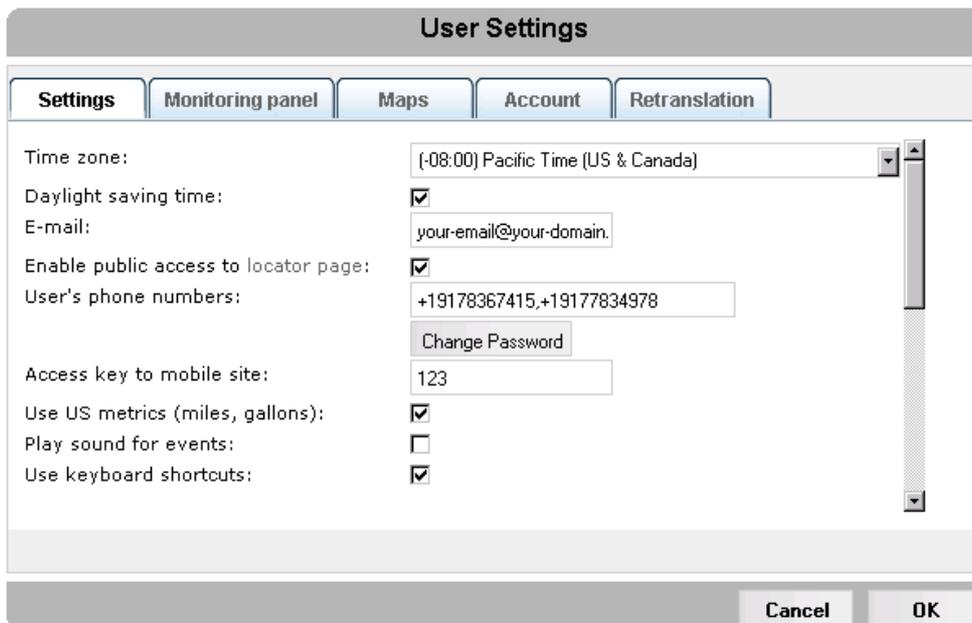
**Time zone**
Indicate your time zone accurately because all time values in messages got from devices are displayed in accordance with time zone selected.

**Daylight saving time**
Check this option if in your region you use summer and winter time.

**E-mail**
This e-mail address will be used to send you a reset password link in case you forget your password.

**Enable public access to locator page**
If you enable public access to your account, your units location will become available to other people and at any moment accessible to other people through the locator page. Enable the option and save user settings. Then display the dialog again and follow the *locator page* link to see how it will look. The feature works only with Google Map service.

⚠ *Attention!*
When the public access is enabled, it means any who knows your login can track your units.

**City**

In this field you can indicate your city. It will be used in the Nearest Units instrument as the default city. Enter the full city name or its beginning, and in the dropdown menu below confirm your choice selecting a needed city from the list (there can be several towns with the same names in different countries).

**User's phone numbers**

Key in one or more phone numbers which you are going to use to manage units via SMS. If a command comes from some other phone, it is not processed. Phone numbers should be written in international format (for instance, +19176726154,+15551234567) and separated by comma (with no spaces). They should start from "+", then follow country code, communication statement code and the phone number itself.

**Change password**

If you push this button, some additional fields will appear. You will be asked to input your current password, and then your new password (two times).

**Access key to mobile site**

If you are going to use mobile phone or PPC to manage the server, enter the access key. If you leave this field empty, the access will be denied.

**Use US metrics (miles, gallons)**

By default distance is measured in meters (kilometers), and fuel level is given in liters. Mark this check box to switch to the US units of measurement - miles and gallons.

**Play sound for events**

The sound can be played for online notifications and driver's messages. When a notification or message pops up, the browser will play sound. In Windows OC ⬤ QuickTime Alternative can be used as media player.

**Use shortcuts**

Check this box to activate Shortcuts.

## Show in unit info tip

**Parameters in the latest message**

Message parameters are CAN bus, power voltages, and many others. Their names (as they come in messages) and their raw values can be shown in unit info tip.

**Presence in geofences**

If unit is situated in a geofence, its name will be displayed.

**Sensors values**

If activated, all sensors configured for the unit and their known values will be listed. Custom sensor name is displayed and the value processed according to calculation table of this sensor.

**Custom fields**

If activated, all custom fields will be listed in unit info tip.

**Drivers information**

If activated, driver(s) bound to the unit will be displayed in unit info tip.

**Maintenance state**

If activated, service intervals together with their state (days/engine hours/kilometers left or expired) are shown.

## Unit vizualization on map

**Replace unit icons with motion state signs**

If marked, unit icons are hidden, and all units are displayed with motion direction arrows (if they are in motion) or with blue rhomb shaped marker (if they are stationary).

**Display overlapping units in one icon**

If one or more units overlay on the map, their icons can be grouped into one. It lightens visual reception of the map. The exception is in two biggest zooms where all icons are displayed regardless their overlapping.

**Show unit icons at map borders**

If a unit gets out of view, its icon will be displayed at map border in the direction where the unit is located. Click on this icon to move to this unit on the map.

**Trace**

It is possible to indicate the length of the trace which is added to a moving unit on the map (the 'Points in traces' parameter), and choose the color and width for it.

## Monitoring Panel

In this tab you can customize the view of your monitoring panel. Choose the elements to be displayed in the working list. If you mark an element in the left check box, this item will have its own column in the monitoring list.

If you mark an element in the right check box, this item will get into device actions menu under ⬤ button. If not marked at all, the item is not displayed.
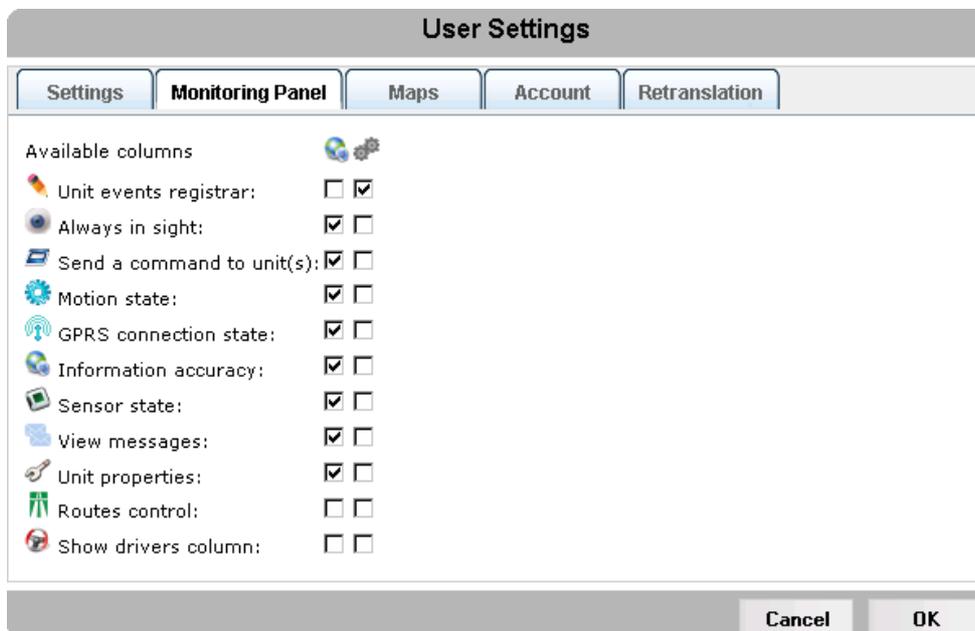
## Maps

**Store coordinates and zoom**
Map current position and zoom can be remembered and loaded when starting Wialon the next time. To restore default map position, push the **Reset** button.

**WebGIS server URL**
If you have local WebGIS server installed or your default server is a bit slow, in this field you can indicate a new URL address for another server.

**Enable...**
Tick the appropriate check boxes to activate Google Maps, Microsoft Virtual Earth and Yahoo Maps. The changes will take effect after clicking OK and refreshing the page (use **<F5>** button). To choose another map as a base layer, open Map types panel clicking on the upper plus button .
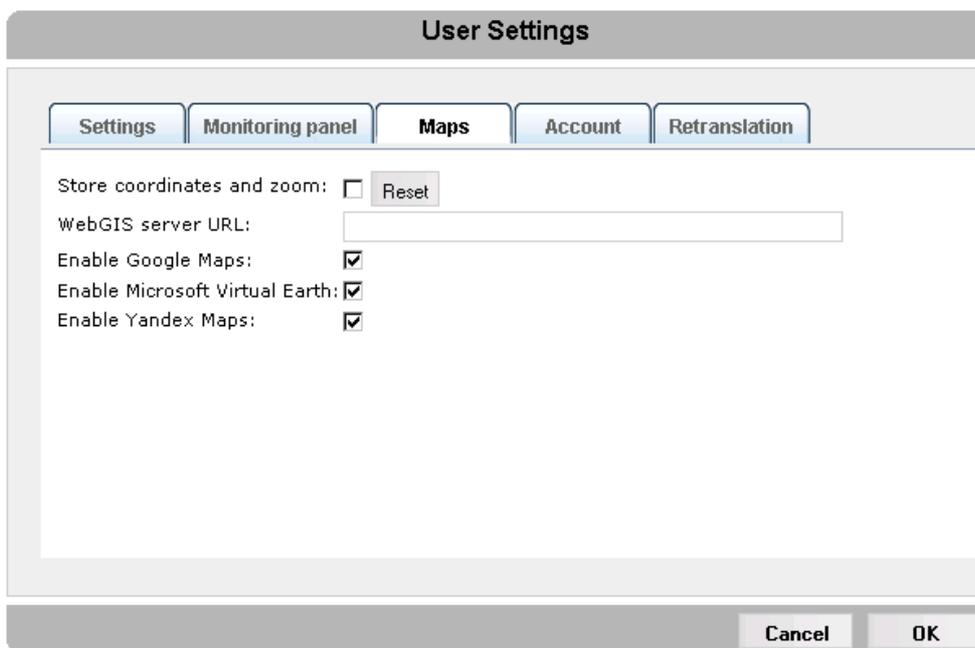


## Account

⚠️ *Attention!* This tab is available when billing system is used.

The Account tab has two sections: General and Statistics. In the General section information on billing plan and current balance is presented. You see also how many objects (like places, geozones, devices, users, etc.) you can create and how many of them already exist.
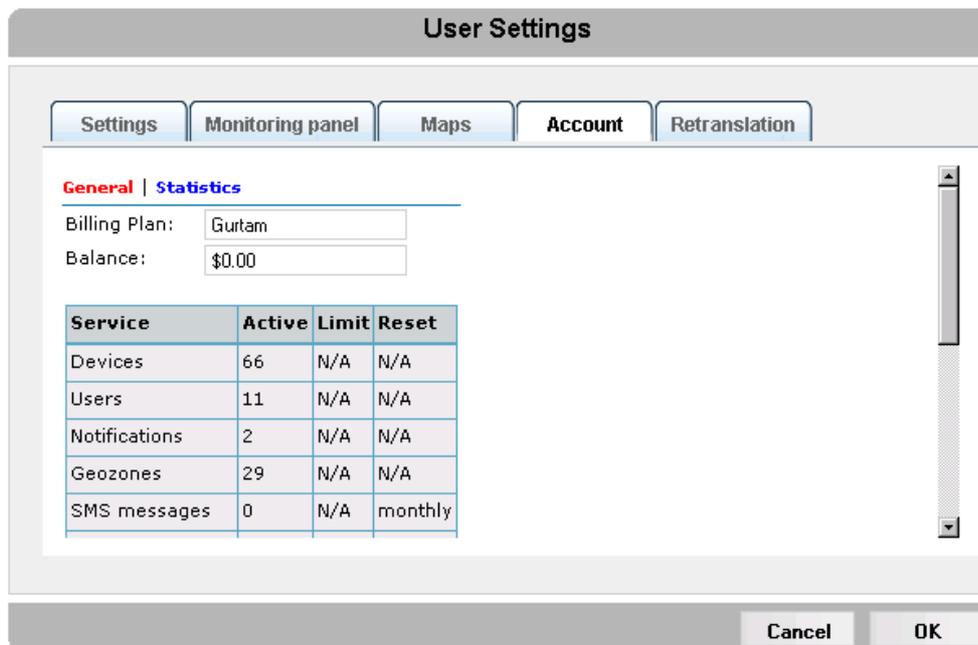
In the Statistics section you can make an inquiry about charges for different operations produced over a given period. Specify the period of time and push the **Show** button to see statistics.
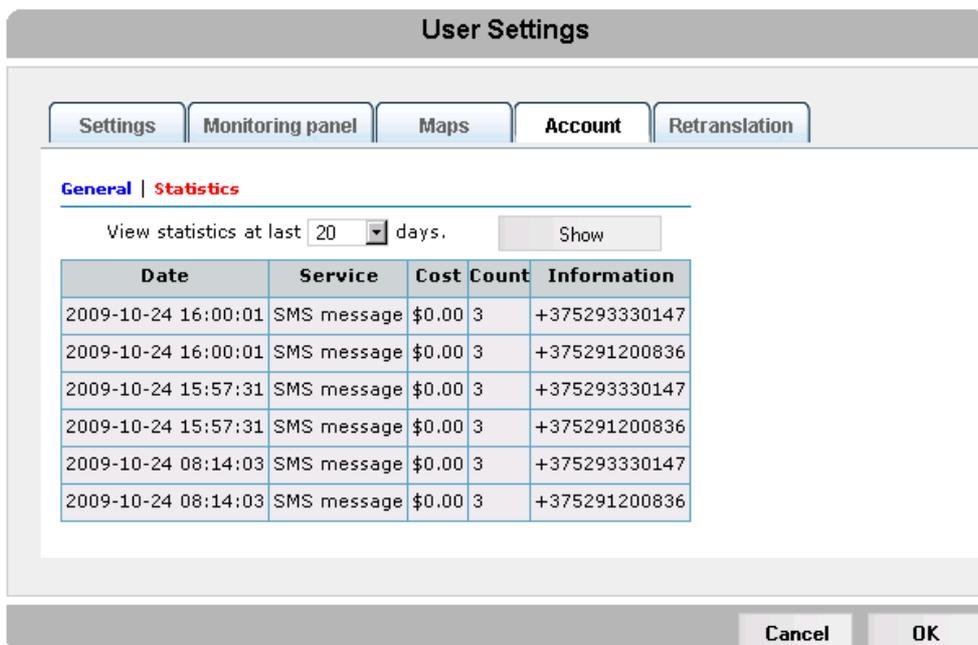


## Retranslation

⚠️ *Attention!* You must have Retranslation module purchased to use this feature.

Messages from device can be retranslated in real-time operation mode from your server to other servers or systems including Wialon B2.

The address of retranslation server should be entered in the form "host:port". If **Retranslation server** field is left empty, retranslation will not occur.

Bellow select devices for retranslation operation. To do this, move items from the left list to the right double-clicking on device or using the **Add** button. To remove an item from the right list, push the **Remove** button.

## User Settings

| Settings | Monitoring panel | Maps | Account | **Retranslation** |

Retranslation server:  [                    ]

    May contain limitations

---

All devices:

```
AirCool
Alabama
Mustafa
test_icon
Bus 9764
Bus 8764
Bus 5689
```

Retranslation devices:

```
Globus GPS GL800
GlobusGPS GL-TR1
hgh2
lexxat
MAN AB 1966 2
MAN M9873(imp fuel)
MAN AB 7232-7
```

[ >> Add ]     [ << Remove ]

[ Cancel ]     [ OK ]

# Monitoring

Unit tracking includes:

- detecting unit position and watching its motion;
- unit management(sending messages, assigning jobs and drivers, adjusting notifications, etc.);
- supervising unit parameters such as speed, fuel level, temperature, voltage, etc.;
- interpreting information derived from the unit.

The results of monitoring can be presented on the computer screen as well as exported to structured reports in different formats.

Tracking is performed in the main window. In the work area open the **Monitoring** panel. There the work list of the units being controlled at the moment is displayed.
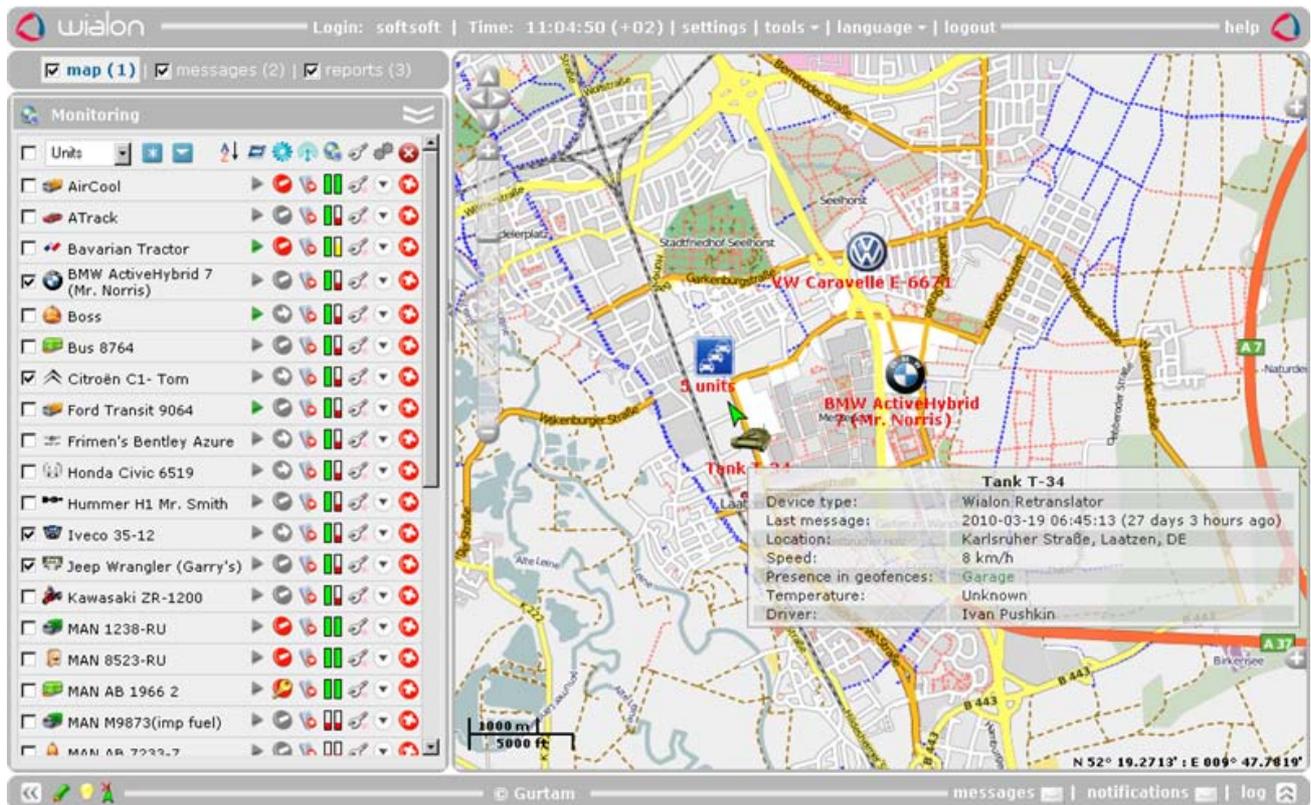


## Tracking Overview

To see a unit on the map, click on its name in the work list. The map will be centered by this unit, and current map zoom will remain the same. Hover the mouse pointer over the unit to see detailed information about unit current state in a special info tip: unit name, device type, last message time, location (if address information is available for these coordinates), speed, altitude, number of satellites locked, sensors and counters values and parameters, driver, geofences and many other depending on user settings.

Only units checked in the first column of the table are displayed on the map. To display all units from the work list, mark a check box in the left top corner of the table. Unmark this check box to remove unit icons from the map. However, if the option **Show unit icons at map borders** is selected in user settings, in case a unit gets out of view, its icon is displayed by map border. Click on such an icon to move to the unit on the map.

The units marked in the first column are seen on the map if only the map is positioned and zoomed in such a way that these units get in sight. However, you can watch a unit constantly if checking the box **Always in sight** . Units marked in this column are always seen on the map. If such a unit gets out of view, the map automatically centers at this unit each time when a new message comes.

On the map units are displayed by the images attached to them and their names. If a unit is currently in motion, a green arrow shows movement direction. If the unit is stationary (according to the last message), this arrow is not shown. If the **Unit movement directions** option is off, the direction of movement is shown when hovering the mouse cursor over the unit.

The unit can b e followed by a blue tail. This line shows the track passed furing several latest messages. If no track is displayed, it means that the unit was stationary these messages or the page has been just loaded.

Three buttons can be found in the ground panel of the window. They control how units are displayed on the map:

- hide/show unit traces;

- hide/show unit names;

- hide/show unit movement directions.

Navigate the map and zoom it according to your needs. Detailed description of how to manage the map is given in Maps.

Get to know more:

- **Icons Explanation**
- **Unit List Management**
- **Executing Commands**
- **Unit Groups Monitoring**
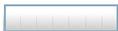
## Icons Explanation

All icons have tooltips that explain icon's meaning. To read a tooltip, put a mouse pointer over a chosen icon.

| | |
|---|---|
| ☑ | The first column in the table is filled by check boxes. Put flags near units you want to be displayed on the map. Put a flag at the top of the table to mark all units at once. |
| ✳ | The button to add units to the list using a filter. |
| ▼ | The button to add all available units to the work list. |
| ᴬᶻ↓ | The button to sort units by name in direct order. |
| ᴬᶻ↑ | The button to sort units by name in reverse order. |
| ⚙ | Unit state:<br> - unit is moving,<br> - unit is moving, engine is on,<br> - unit is stationary,<br> - unit is stationary, engine is on;<br> - the last message from unit was received over an hour ago: unit was stationary;<br> - the last message from unit was received over an hour ago: unit was moving.<br>Unit state is detected according to its speed value in the last message received. |
| 📡 | Unit connection to server:<br> - unit is connected,<br> - unit is not connected. |
| 🌐 | This column indicates information accuracy.<br>**First bar** shows if there are satellites which captured the unit:<br> green - satellites are available,<br> red - none of satellites is available.<br>To know the precise number of satellites locked, place a mouse cursor over the icon.<br>**Second bar** shows the last data was get from unit:<br> green - unit sent data less then 3 minutes ago,<br> yellow - unit sent information within the last hour ,<br> orange - unit sent data within the last day,<br> red - there was no messages for a long period of time.<br>To know the precise time of the latest information update, place a cursor over the icon and read a tooltip. |
| ▣ | In this column sensor state can be shown<br>(if the appropriate parameters are set in Unit Properties => Advanced => Sensor color in the Monitoring panel):<br> the value is unknown (or the option is not activated for this unit);<br> ■ (or a small square of any other color) visualizes sensor's value. When putting a cursor over the square, in the popup window you can see the value or description. |
| 🖥 | The button to send a command or a message to unit:<br> ▶ - there are available commands,<br> ▷ - there are no commands available. |
| ◉ | Mark a unit to perform its active tracking, that means it will be always in view when a new message comes from it. |
| ✉ | View messages received from unit (see Messages Mode) |
| ✎ | Register an event like fuel filling, maintenance work, etc. |
| 🔑 | Display unit configuration dialog. Close to the icon you can see a point of a color which corresponds to your access level to this unit:<br> yellow - view level,<br> green - execute commands level,<br> blue - edit level,<br> pink - manage level. |

| | Unit behavior on routes. |
|---|---|
| | ![x] - no routes are assigned to unit. |
| | ![check] - unit is moving according to schedule. |
| | ![clock] - unit is ahead of schedule . |
| ![icon] | ![clock] - unit is behind of schedule. |
| | ![hourglass] - a route is assigned to unit but not yet activated. |
| | ![flag] - the route is completed. |
| | ? - several routes are assigned to unit. |
| | ![marker] - unit left the zone of route. |
| ![photo icon] | In this column driver's small photo is displayed. Put a cursor over it to see enlarged photo and driver's name. |
| ![x icon] | Remove all units from the working list (the button is at the top of the table). |
| ![remove icon] | Remove a unit from the working list (the button is situated against the selected unit). |

That is the list of all icons which can be presented in the monitoring table. Depending on your individual needs you can hide or show certain columns. User Settings => Monitoring Panel.

## Displaying Units on the Map

Each unit can have its individual image. It can be selected from a standard set, for example ![car], or you can set your own image. To learn more, see Unit Properties => Image.

Besides, the units can be displayed by the following signs:

- yellow circle - the unit is not moving but the engine is on;
- red square - the unit is not moving, and the engine is off;
- green arrow - the unit is moving, and arrow's direction shows movement direction.



This option is called **Replace unit icons with motion state signs** and set in User Settings.

**USER GUIDE**

Trace: » Nearest Units » User Settings » Monitoring » Icons Explanation » Unit List Management
You are here: Wialon User Guide » Monitoring » Unit List Management

# Unit List Management

## Sorting Items

For your convenience, the items on the list are sorted by name. They can be sorted in direct alphabetical order or in reverse order. To change the order, use the switch button ↕ or ↕ .

Besides, it is possible to sort the items on the list by other attributes like motion state, connection quality, etc. To do this, push the appropriate button in the head of the list. For instance, to sort units by state, press the button ⚙ . Then at the top of the list there will be moving units, and at the bottom - staying, or vice versa if you press this button twice. Some other buttons at the top of the list are also useful to sort the units.

## Units Search

It is not obligatory to display all available units on the working list. Units can be easily added to and removed from the list. Sometimes it is more convenient to work with a certain group of units and have it on the screen.

To add a unit or several units to the list, push the asterisk button at the head of the table 🔳 and set search parameters.

Select the criterion of search (**Search by** dropdown list): by name, creator, phone number, unique ID, device type, access for user, geofences, unit groups, sensor, custom field, driver.

Then formulate your inquiry in the **Template** field. The asterisk sign replaces any number of characters and can be put at the beginning or at the end of an inquiry, or on both sides at once, depending on which part of the name is known or is the same for several units. You can do a search without using the asterisk but then you have to indicate the name (geofence, driver, sensor, etc.) exactly as it exist in the system. The asterisk can be put also in the middle of the inquiry. Besides, note that the search is not case-sensitive.

For example, to find all MANs, select search by name, and in the template field type **\*man**\*. After that push the **Find** 🔍 button. All units which names contain the combination of characters *man* (both at the beginning and at the end of the name) will be found and displayed.

If the search by creator, phone number, unique ID, geofence, units group, sensor, driver or custom field as selected, the template field can be left empty. Then the search result will be units which do not have such parameters. In case of geofences, this will be units which are not located in any of geofences.

If doing a search by sensor, not only sensor name can be entered in the template field, but also a part of its description, parameter type or parameter name.

The most of search parameters (except geofences and drivers) are taken and can be viewed and changed in Unit Properties.

If you need to add all units from a unit group, select a search by unit group, and in the template field enter the group name (or a part of the name).

After the first search is complete, another search can be done on the second level: a search among the first search results. To do this, push **Add to search list** 🔍. The principals of inquiry formulation remain the same.

To add all units existing in the system, use the button 🔽 .
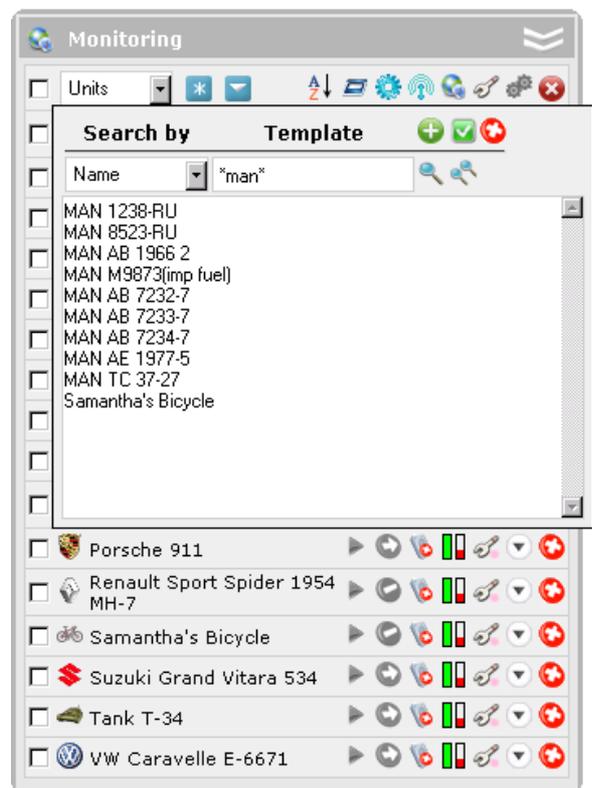
## Add Units to the List

- To add search result to the working list, press ⊕. The found units will be added to the list.

- To replace existing working list with search results, press ☑.

- To add a single unit form search results to the monitoring list, double-click on the needed unit.

## Deleting Units from the List

There is a button to delete a unit from the working list against each unit ✱. Note that the unit is deleted from the list and not from the system. It can be added back at any time using the ways described above.

To clear the working list (delete all unit), use the similar button at the head of the list ✖.

# Executing Commands

While tracking units it is possible to perform actions over them like executing commands and sending messages.

Put the cursor over the commands button ▶ against the needed unit to see the list

of available commands. If the button is dimmed ▶, it means there are no available commands. If you do not have such a button in the Monitoring panel, you can add it through User Settings => Monitoring Panel.
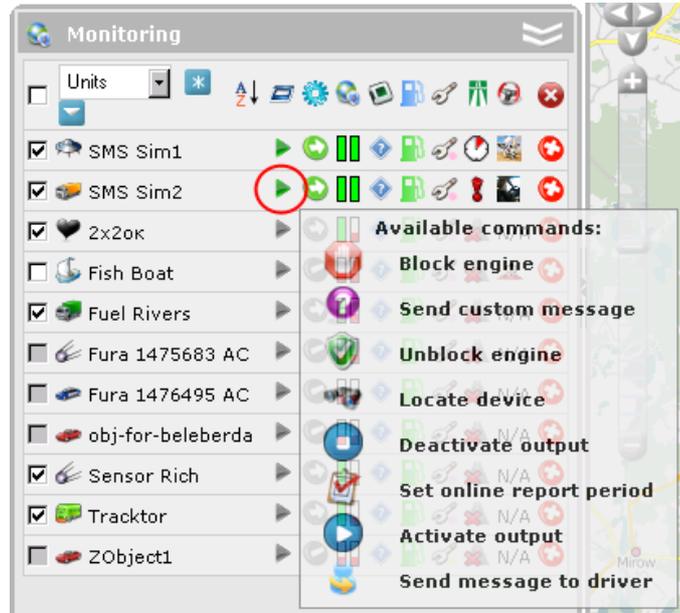


Not all of commands supported by a device can get to this list. However, if command text is known, this command can be sent as a custom message.

## Sending Commands and Custom Messages to Unit

**1.** Push the commands button.
**2.** Select a command from the list of available commands and press **Next**.



**3.** Set additional parameters if needed. For example, input/output index, report interval, etc. (depending on command type). If you select **Send custom message**, enter the text to be sent or select one from previously saved. To save your message in the list below, press **Store**. To delete a message, press **Delete**.

**Send command to device**

4. Press **OK**. The command will be executed immediately, and its result will be reported in the log. To show or hide the log window click on the double-arrow in the right bottom corner of the window.

A command can be sent to a group of units at once.

## Chat with Driver

Operator (dispatcher) can exchange messages with drivers. To do this, select the command **Send message to driver** and type a text.



**Execute a command**

In case the driver answers, driver's message will popup in a special window at the top of the map. New message can be accompanied with a signal (see User Settings. If you have unread messages, the icon at the bottom of the window near the **messages** button blinks, and in its tooltip you can see the number of unread messages.
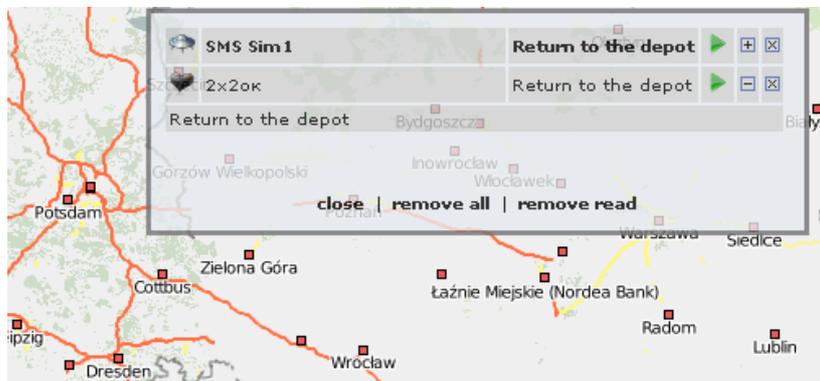
In the list newly coming messages are added to the top. The headers of unread messages are bold. To expand/hide the full text of a message, use the switch button *plus-minus*.

When clicking on a message, the map is focused on the place where this message was received. When clicking on a unit name, the map is focused on its last location.

To delete a message, click on the cross at its right. You can also delete read messages or all messages at all if you use the appropriate buttons at the bottom of the messages window. To simply hide the messages window, click on the *messages* button at the top of the browser. To display the messages window again, click on the same button.

The operator can quickly send a reply to the driver. When clicking on the green triangle-shaped button *Send messages to driver*, command executing dialog appears, and the operator can type the messages and send it.

Besides, you can generate a report called Chat, which will contain all chat history including operator's messages and driver's answers.

# Events Registrar

Different events can be registered in unit history and then shown in the corresponding reports. Some events such as speeding, idling, visits to geofences, sensor values, etc. can be detected automatically be the system with the help of notifications. Other events such as fuel filling, maintenance or any custom event are registered in unit history manually with the help of a special tool - **Events Registrar**.

To display the registrar, press the button on the monitoring panel ✏. If you do not see such a button , it can be added in User Settings => Monitoring Panel.

🔔 *Attention!*
To register events for a unit, you need to have the access to this unit *execute commands*, *edit*, or *manage*. If you have just *view* access, the registrar button is dimmed.

Push the button and choose one of three types of events to be registered: register filling, register custom event or register maintenance work. Press Next.
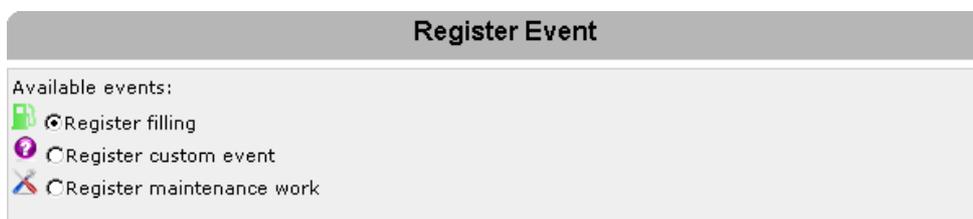


## Register Fuel Filling

In the Monitoring panel you can register fuel fillings for units manually. Manual registration helps to estimate the difference between registered and detected fuel, compare consumed fuel with consumption rates, calculate running costs, etc.

In the registrar select **Register filling** and press Next.



Enter the volume of filled fuel in liters and the cost. Fractional numbers (up to hundredth) can be also used for fuel volume and cost. To enter fractional numbers, use *point* as delimiter. For example, to register fuel filling for 77 dollars and 88 cents you enter '77.88'.

Entered values will be automatically added into the Description field below. If necessary, you can edit the text manually. Then enter date and time when the filling happened and possible deviation from this time in minutes.

Besides, it is possible to indicate the place where the filling happened. To do this, press the Select Location button. The focus will switch to the map, and you can indicate the place by double-click. The address of the place will be detected by Web-GIS and written in the Location field. Press the Reset Location button to clean this address and indicate another one. Besides, you can manually edit this field (for example, you can add gas station name). When the focus is on the map, the dialog moves to the up left-hand corner, and the Restore Dialog button appears. If you [ress it, the dialog becomes active again even if you do not indicate any place on the map.

## Register Custom Event

Select **Register custom event** in the registrar and press Next. Give the event a name, enter description and choose the place.

If you check **Violation**, the event will be registered in unit history as violation, otherwise it is registered as simple event. It means this event will appear in different kinds of reports: report on events or report on violations.

## Register Maintenance Work

In the registrar choose *Register maintenance work* and press Next.



Enter the following data:

- kind of work (type from the keyboard or select from available service intervals on the right),
- custom description,
- cost,
- service duration in minutes,
- location (press the Select Location button and double click on the map or edit this field manually),
- date and time when the work was done (be default, the current date and time are offered),
- values of mileage and engine hours counters at the moment of the event (the current values are displayed but you can edit them).

In the right part of the dialog you see the list of service intervals contained in Unit Properties => Service Intervals. Check the services which were done that time. This this action the interval selected will be zeroed and will start the count again. Note that if you select anything here, the contents of 'Kind of work' field changes.

## Registered Events in Reports

Registered fillings and maintenance can appear in the report on events together with other things. Registered custom event depending on your choice can get into report on events or report on violations. Both report have the similar structure. ˙Ch\Yf˙fYdcfhg˙k \]W˙i gY˙fY[ ]ghYfYX˙Yj Ybhg˙UfY˙fYdcfh˙cb˙a U]bhYbUbW˙UbX˙i h]˙]nUh]cb˙Wˈghg"

When transporting registration data to a report on events (violations), the information is distributed among columns which contents are taken from certain fields of registration dialog. The table below gives the correspondence between the column in report and the field in registrar.

| Column Header | Column Content |
|---|---|
| Event time | Date and time when event happened. |
| Time received | Date and time when event was registered. |
| Event text | Text is taken from the **Description** field. For maintenance, if there is no description, the text can be taken from the field 'Kind of work'. |
| Location | Unit location at the moment of event. It is taken from the coordinated indicated while registering th event (the Select Location button and double-click on the map). If Web-GIS has address information for these coordinated, this information is given in this cell of report. |

If any of above mentioned fields are not filled correctly, then the corresponding columns will be empty.

USER GUIDE

Trace: » Icons Explanation » Unit List Management » Executing Commands » Events Registrar » Unit Groups Monitoring
You are here: Wialon User Guide » Monitoring » Unit Groups Monitoring

# Unit Groups Monitoring

Sometimes it is more convenient to track units by groups. To switch to the mode of unit groups monitoring, select this option in the Monitoring panel.



Groups are added to the work list using the filter . The rules of using the filter are the same as for units (see Unit List Management. One can search groups by name, unit or creator. To add all available groups to the work list, press the button .

The icons described above are used in the work list. When hovering the mouse cursor over an icon such as *Motion state*, *GPRS connection*, *Information accuracy* or *Sensor state*, in a popup tooltip you see information about all units in group. To adjust columns to be displayed in the work list, go to User Settings => Monitoring Panel and select/unselect items in your own way.

Here is the list of all columns available in the group mode:

motion state (moving/standing, engine on/off),

information accuracy (the number of satellites locked and last message time),

GPRS connection state (online/offline),

sensor state,

display group properties dialog,

execute a command.

The check box before each group in the list is to show or hide units icons on the map.

## Sending Commands/Messages to Unit Group

To send a command or a messages to a group of units:

1. Click on the button against the needed group. If the button in dimmed, it means you do not have rights to execute commands over this group or there are no commands supported.
2. In the dialog you will see the list of units in the group which support at list one command. Select necessary units and press Next.
3. Select a command from the list of available commands.

   A green sign against the command means that *all* selected units support the given command.

   A yellow sign with the exclamation mark means that *not all* units support the command, and in the tooltip you can see the list of units which *do not support* it.\\

| Execute a command | | | |
|---|---|---|---|
| **Available commands** | | | **Supported** |
| ○ | ❓ | Send custom message | ✅ |
| ● | 🔭 | Locate device | ✅ |
| ○ | 📋 | Set online report period | ⚠️ |

Not supported by :
- Boss
- Polo_2

**Cancel**   **OK**
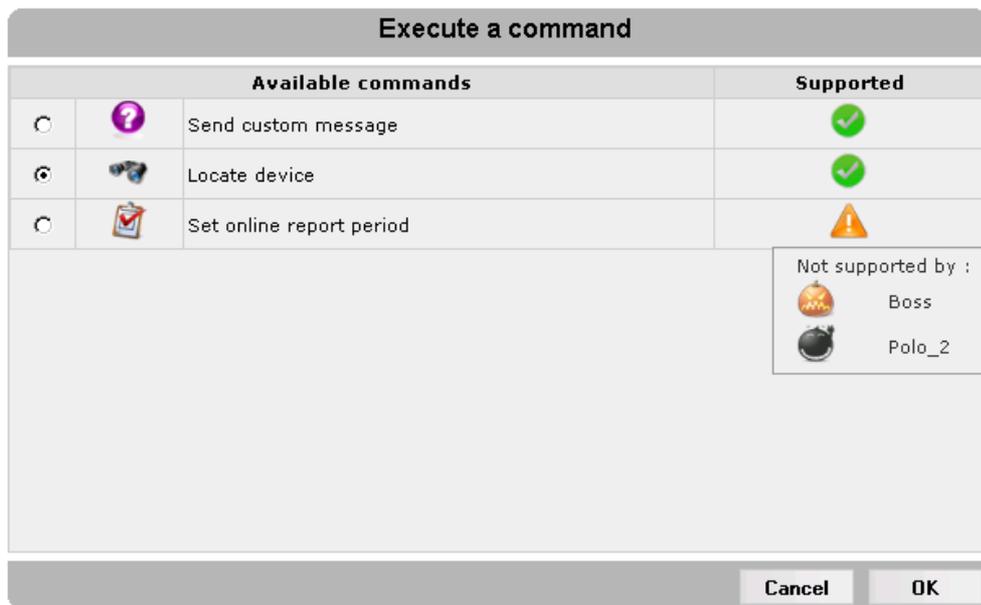
**4.** Set additional parameters if needed. For example, input/output index, report interval, etc. (depending on command type).

**5.** Press OK. The command will be executed immediately, and its result will be reported in the log.

# Tracks

Track is a line drawn on the map that shows how a unit moved during the indicated period of time. A track is mapped according to the points from where messages came. Each point stores also date and time when the message was received and speed at that moment.

To view trip history in the map, switch to the Tracks panel.
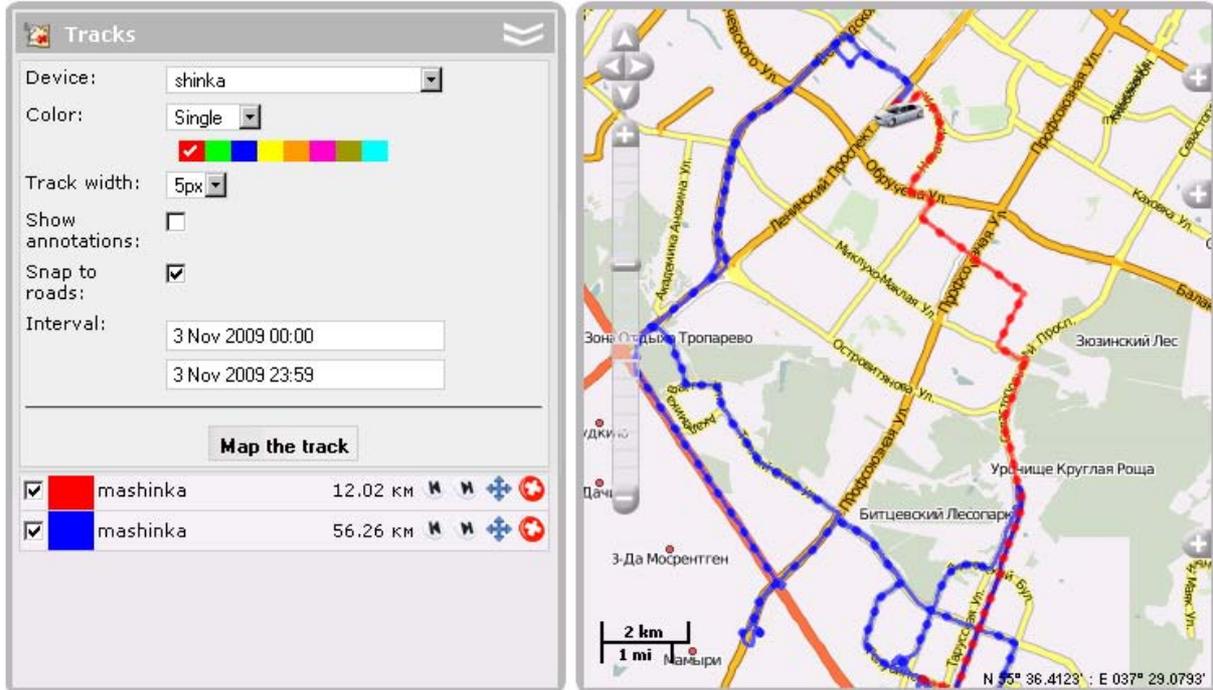
## How to Map a Track

1. First, select a **unit** in the drop-down list.
2. Select **color** for the track. It can be one-colored or multicolored (colored by speed or sensor values).
3. Indicate **track width** in pixels (track line thickness).
4. Indicate weather you want **annotations** to be displayed. Annotations are hints which are attached to each point of the track to show when (date and time) the message was received. On big zooms information about speed becomes also available. Annotations are rather informative but they make visual reception of track more complicated. That is why it is reasonable sometimes to switch them off.
5. **Trip detector** affects mileage and track visualization. For example, in places of stops and parkings there will be just one point instead of conglomeration of points, and the mileage will include just intervals detected as trips.
6. Define the **interval** within which you want to get the data.
7. After filling in all fields, press **Map the track**. A point-to-point track built according to preset parameters will appear on the map.

If within the indicated period there was no messaged form unite, the button **Map the track** is not active.

If within the indicated period the unite was not moving there will be no track on the map, however it will be in the list of tracks below, and the distance travelled will be 0 km.

If it is too long to wait the track to appear on the map, it may mean you have indicated too large interval or your Internet access rate is low.

You can add tracks on any unite for any time interval. The list of tracks created will be displayed in the work area at the left. To prevent tracks merging, select different colors for them.

After you have drawn the track it is impossible to change its parameters (time, unite, color, annotations). In case of error, delete incorrect track and create a new one.

## Speed Based or Sensor Based Tracks

A track can be displayed in different colors depending on detected speed or sensor values registered on a segment of route.

This option is activated and adjusted in Unit Properties => Advanced. If in unite configuration one of the options('Speed based track colors' or 'Sensor based track colors') is selected and intervals and colors are set, then in the Tracks panel the palette becomes available.
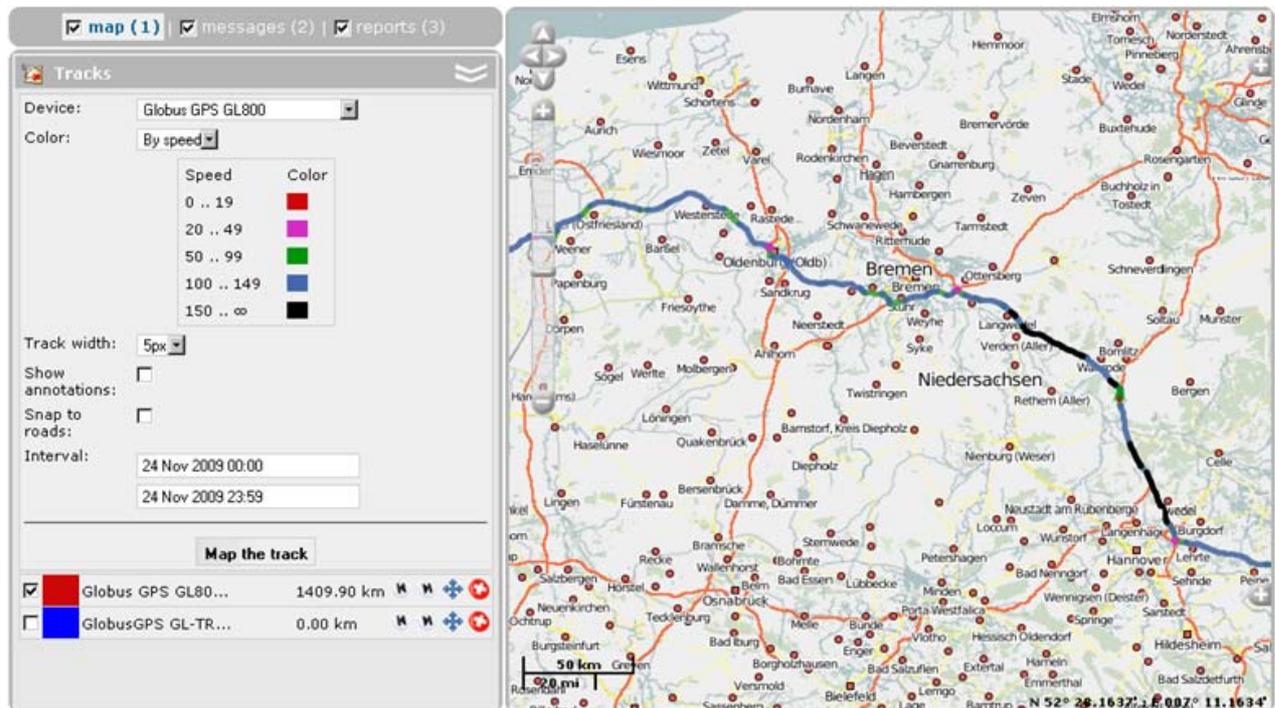


## Tracks Management

Hover the cursor over track to get accurate information about track point (points where messages were received). Messages are searched in the radius of 50 pixels to the cursor. Points found are highlighted by small green circle, and a tooltip appears with the following information: time, speed, coordinated, altitude, and sensor values.
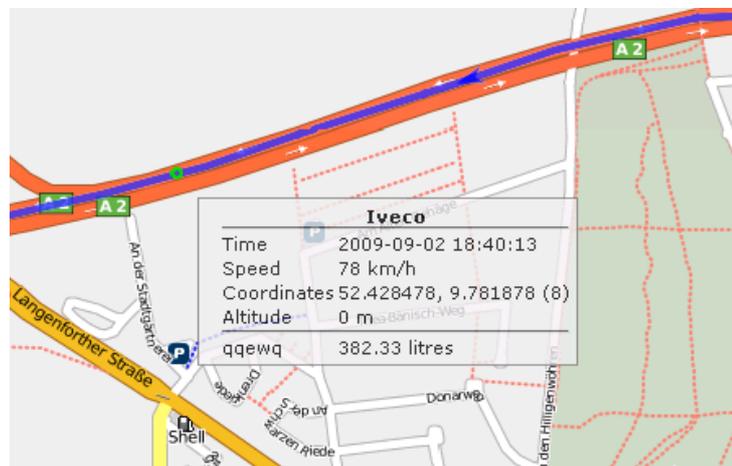


🛈 *Note.*
If track is snapped to roads, some points may be located not exactly on the track.

You can manage tracks in the left part of the window under the "Map the track" button. It is possible to view all created tracks on the map simultaneously or select just certain track(s). The tracks marked with flags are displayed. Unmark a track to hide it.

In the tracks list there is also unite name and distance travelled during the preset period.

Use buttons:

🏁 to locate the initial position of the track;

🏁 to locate the final position of the track;

✥ to adjust map zoom to track;

⭘ to remove track.

🛈 *Hints*:

- To view messages that form a track, go to the Messages Mode.
- The Hittest tool can be applied to a track.

## Invalid Tracks

When mapping a track you can get a dashed line that means that some track coordinates are doubtful. It may occur because of connection loss or other malfunction.

Trace: » Executing Commands » Events Registrar » Unit Groups Monitoring » Tracks » My Places (POI)
You are here: Wialon User Guide » My Places (POI)

# My Places (POI)

⚠ *Attention!* This module is licensed separately and can be not included in your package.

This feature allows marking points of interest on the map. Each of such places can have its image on map (an con). In addition you can add any comments. How many POIs you can create can be known from your account parameters (see User Settings => Account).

In the work area in the left section of the window open **My Places** panel. Here the list of all created POIs is displayed.
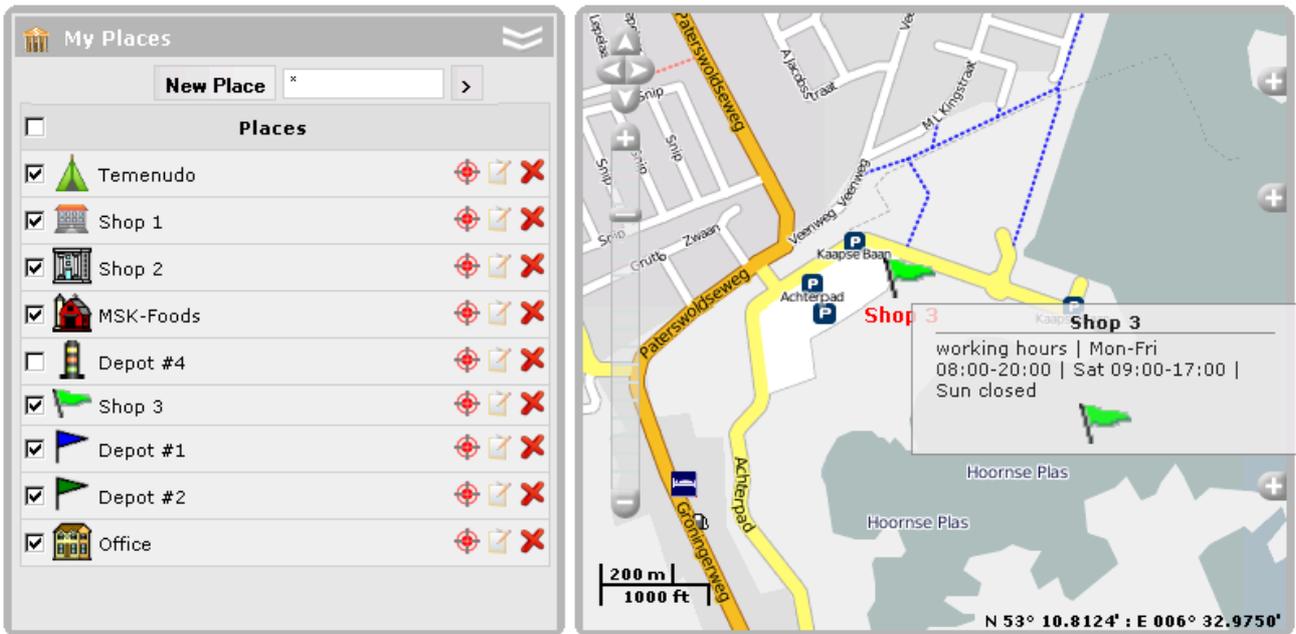


## How to Create a New Place

1. Push the **New Place** button.
2. Double-click on a point on the map to locate the place.
3. In the **Creating Place** dialog key in a name for the place.
4. Give custom description (optional).
5. Attach an image to the place (optional). To upload an image from your computer, push **Browse** and select a needed file (PNG, JPG, GIF are allowed). To use an image from standard set, push **Library**.
6. To apply changes, push **OK** button.

The coordinated of the place are indicated automatically depending on point on the map you have clicked. However, latitude and longitude of the place can be corrected manually if needed.

If there is no image attached to some place, this place cannot be displayed on the map, although it will be listed in the work area.

All images attached are automatically proportionally resized to 256x256 pixels.

## Places Management

In the first column of the table mark places that should be displayed on the map. To move to a created place, click on its name in the list.

The places are marked by their names and images (if attached).
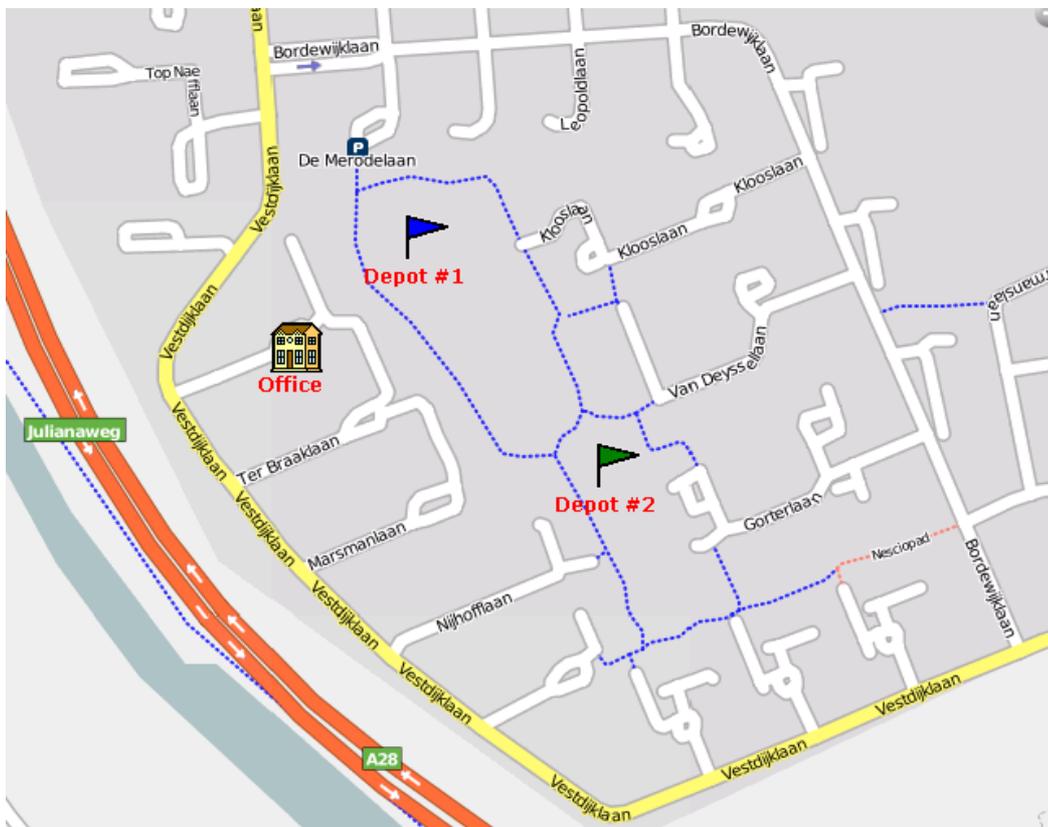


To change place location, push the button ⊕ . In this case, the place will be highlighted with a red marker. Then double-click on a place where a new location should be and press **Save**. Press **Cancel** if you do not want to apply changes.

Another way to change place location is to indicate its new coordinates in **Update Place** dialog that is activated by the button 📝 . In this dialog one can change also other place settings like name and description or attach a new image.

Trace: » Events Registrar » Unit Groups Monitoring » Tracks » My Places (POI) » Geofences
You are here: Wialon User Guide » Geofences

# Geofences

⚠️ *Attention!* This module is licensed separately and can be not included to your package.

Geofence, or geographical zone, is some area on the map. It can be used to control unite activity in this area. By its shape geofence can be a polyline (for example, a street or a highway), a polygon (for example, some factory or a whole city) or a circle.

The number of geofences allowed can be known from your account parameters (see User Settings => Account).

In the work area open **Geofences** panel. Here you can create, edit and delete geofences.
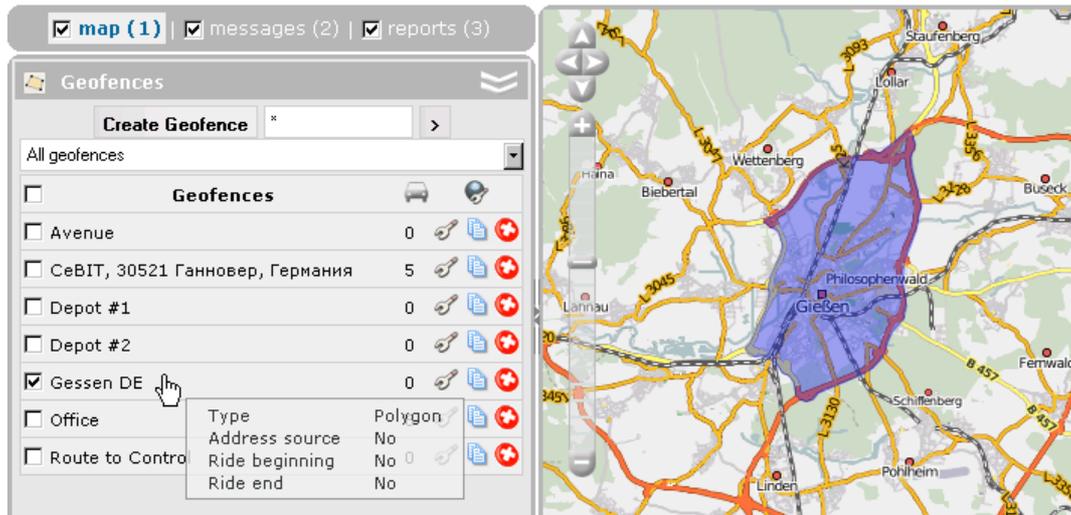


## How to Create a Geofence

### 1. Map Geofence

After you have pushed the **Create Geofence** button, a help window appears to provide you instructions about drawing geofences. Choose geofence type on the left: line, polygone or circle. Then map the geofence.

Here are the basic rules for mapping a geofence:

- Double-click on any place of the map to put the first point. Then add more points using the same method. Put the points as close or far to each other as you want.
- To insert a point between two other points, double-click on a segment between them.
- To move a point to another place, click on it and holding the left mouse button drag to another place on the map. Then release the mouse button.
- To delete a point, just double-click on it. Note that points can not be deleted if they are only two - for lines, or three - for polygons.

⚠️ *Hint.*
A quick way to map a geofence is by using the **Routing tool** (create lines) or **Address tool** (create circles).

### 2. Set Parameters

- **Name**: geofence's name to be used while tracking units as well as in reports and notifications.
- **Type**: line, polygon or circle. For line you also have to indicate its width, for circle - radius (in meters).
- **Account**: this dropdown list is shown if the current user has the access to more than one account.
- **Area & Perimeter**: these fields are not editable, they are calculated automatically when mapping a geofence.
- **Address source**: check this box if you want the geofence to be used instead of usual addresses. In this case, geofence's name can be used in reports in the location columns. It happens if **Geofences as address source** option is activated in the report template.
- **Ride beginning/end**: these parameters are important for reports on rides. The same geofence can be simultaneously the end of one ride and the beginning of another ride, but cannot be the beginning and the end of the same ride.
- **Color**: choose color using the palette or enter color's RGB code. This color will be used to display the geofence on the map and show its name in unit info tip (if unit is located in this geofence). If color is not set, the default (green) color will be used for the geofence.

### 3. Save Geofence

When finished, press **Save**. In case of mistake, press **Clear** and try again. To close the create mode without saving results, press **Cancel**.
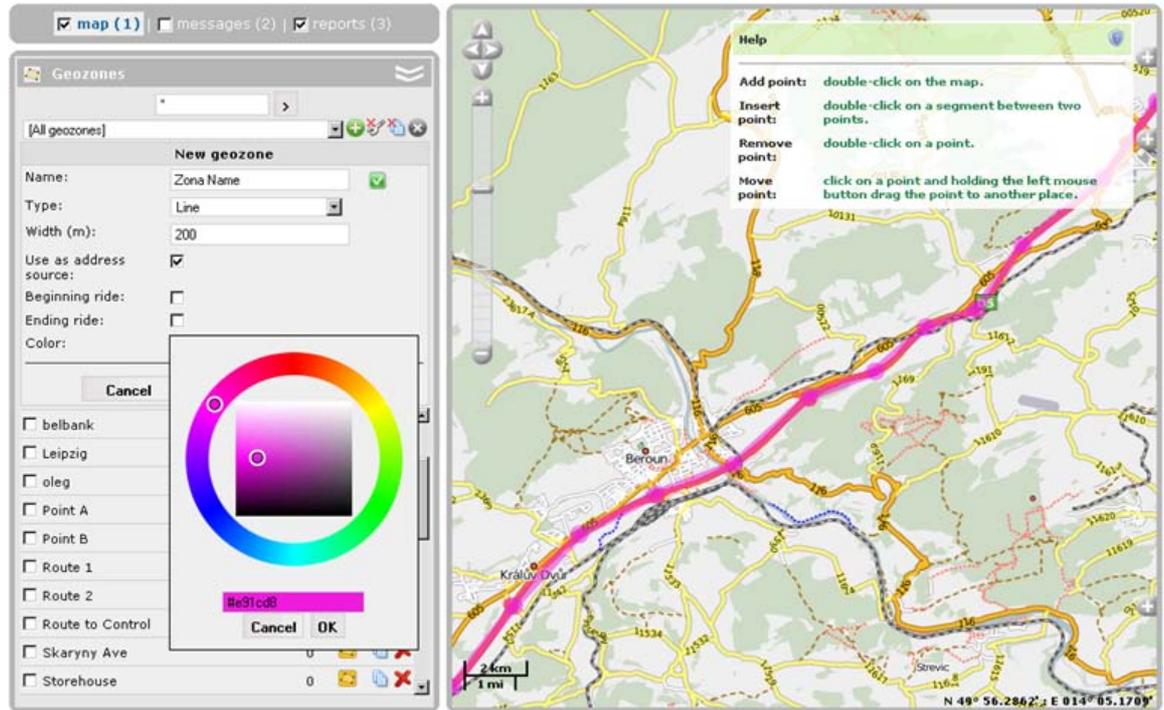


## Geofences Management

In the work area there is a list of all created geofences. Geofences are given in the alphabetical order. If placing a cursor over a geofence's name, in the popup window you get information about geofence type and other parameters (ride beginning/end, address source).

| | |
|---|---|
| ☑ | Put check marks in the left column to show which geofences should be displayed on the map. Unselect this box to remove geofences from the map. |
| 🚗 | Shows how many units are situated in the geofence at the moment. To know which are these units, place the cursor over the number. |
| 🖋 | The button to edit geofences. The size, shape, name, color, position, and other parameters can be changed. |
| 📄 | The button to copy a geofence. You can edit the geofence and save it under another name. |
| ⊗ | The button to delete a geofence. |

For your convenience, there is a **filter** with several predefined criteria to sort the geofences:

- All geofences;
- Geofences with control points;
- Geofences without control points;
- Geofences used as address;
- Ride beginning;
- Ride end;
- Ride beginning and and;
- Polygons;
- Lines;
- Circles.

To quickly find a needed geofence, you can use a search field. Enter geofence name or a part of the name, replacing any number of unknown characters with the asterisk sign (*). Press **<enter>** to apply the search parameters.

## Import/Export

Geofences can be exported and imported via KML files.

## Usage

### While Tracking Online

Geofences can be displayed on the map and mark some area of interest and simplify visual reception of the map. If a geofence is displayed on the map and the mouse cursor is placed over it, you can press **<ctrl>** to

see its name, area, perimeter, and the list of units located in this geofence at the moment with addresses where they are.
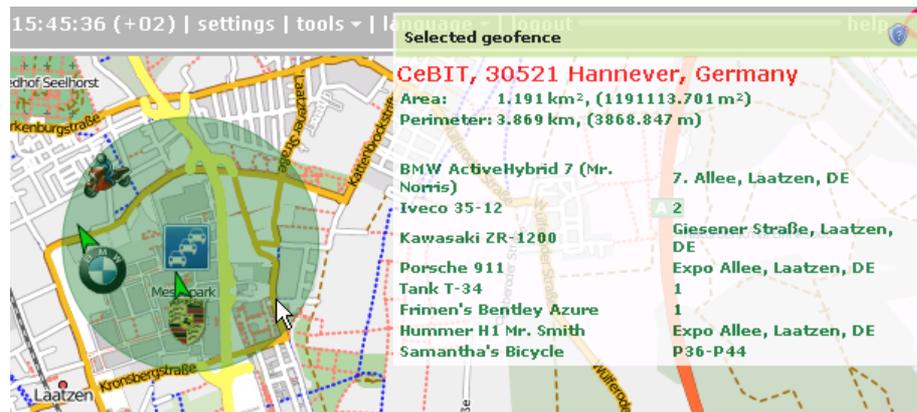


If a unite is situated in a geofence, this fact can be shown in unit info tip. For this, check the option **Presence in geofences** in User Settings.

### To Routes Control

Line-shaped geofences with control points can be used to control routes: following th predefined route and visiting indicated points in indicated time. See Route Control.

### In Notifications

You can be notified by e-mail, SMS, online or by other means when your unit leaves a geofence or enters in a geofence. It is possible also to set speed limitations and sensor range for unit during its presence in a geofence. Besides, on an entrance to a geofence or an exit from it, an action can be performed automatically: send a message to driver, block the engine, change users access to this unit, and many others. See Notifications.

### In Reports

Geofences can be used in reports as addresses (in the Location column), if **Geofences as address source** is checked. See Data in Reports.

Geofences can be used to generate reports on rides and unfinished rides. This is used, for example, to control how a cargo is transported in several trips.

A specialized report on geofences can be generated. In it all entires and exits to/from selected geofence(s) are given together with visit duration, distance travelled within the geofence, average and maximum speed, etc.

# Jobs

⚠ *Attention!* This module is licensed separately and can be not included in your package.

A job is a set of actions which are performed by schedule. A job can be instruction execution, sending reports by e-mail or something else.

To create, edit and delete jobs, open the **Jobs** panel in the work area. Here you see the list of all jobs created before, information on their state, and the button to create a new job.

The number of jobs that can be created verify in your account parameters (see User Settings => Account).
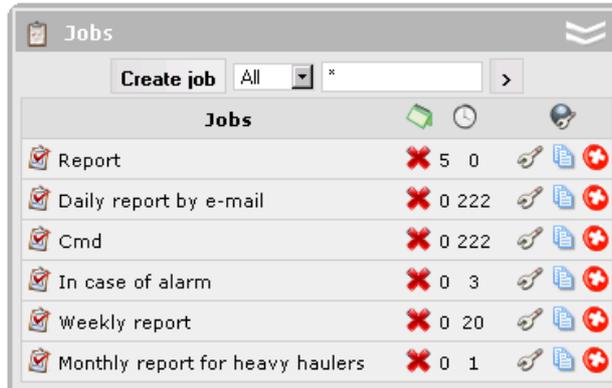
To create a new job, press **Create job** button. In the dialog choose job type (execute a command over a unit, reset GPRS traffic counter, send information about fuel or send a report by e-mail). In the next window check units to assign the job to. Then follow the instructions on the screen.
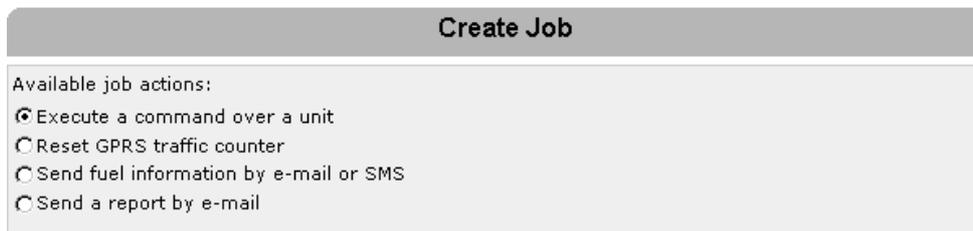
## Execute a Command over a Unit

1. Push the **Create Job** button.
2. Choose the option **Execute a command over a unit**.
3. Select **Units** to execute a command and push the Next button.
4. Select a command from the given list of **Available commands**.

   ⚠ A green sign beside a command means that all selected units support this command.

   ✅ A yellow triangle means that not all of selected units can perform this job. In a popup window you can see the list of units which do not support it.

5. Define basic job parameters:
   - **Job name**.
   - **Job description** (optional).
   - **Execution schedule**. It can be **each .. minutes/hours** or **on schedule**. In the second case you have to key in time in the format of "hours:minutes" or just "hours". If you need to indicate several points in time, separate them by spaces.
   - **Activation time**: date and time when the job will be activated.
   - **Maximum executions**: enter the maximum number of job executions after which it will automatically disabled. If you leave this field empty, the job will be executed endlessly until you delete it or disable manually.
   - **Enable** the job to activate it just after creation. If this check box is not marked, the job will be included in the list anyway, and you can activate it later.
   - In the right part of the dialog one can define **Time limitations** by days, months, time, etc. For

instance, the job can be assigned to a unit just on weekdays and within working hours from 9 AM to 6 PM.

6. When finished, press **OK**. The job will appear on the list.



## Reset GPRS Traffic Counter

This job is aimed to automate traffic counter reset. For example, you can assign to reset the traffic counter once a month and register each reset with the current value in unit history.

1. Push the **Create Job** button.
2. Choose the option **Reset GPRS traffic counter**.
3. Indicate the status of the option **Store GPRS traffic counter value in unit events history**. If the option is activate, each reset is registered in the system, and you can generate a report on events to see traffic consumption. If the option is not activated, resets are not registered anywhere.
4. Select **Units** to execute a command and push the Next button.
5. Define basic job parameters and execution interval as it were described for Execute a Command over a Unit.

## Send Information about Fuel

You can get information about fuel (fillings, thefts, fuel level) by e-mail or SMS according to predefined schedule.

To detect fuel fillings and thefts, the appropriate unit settings are used (see Unit Properties => Fuel Consumption).



1. Push the **Create job** button.

2. Choose the option **Send fuel information by e-mail or SMS** and press the Next button.
3. Define basic job parameters:
   - **Event type**: filling, theft, fuel level (all three can be chosen). Fuel level means fuel level at the beginning and at the end of the interval (the interval is set later).
   - **Method of delivery**: by e-mail and/or SMS. On the right enter your e-mail(s) and phone number(s).
   - **Message type**: one unit for one message or all units in one message.
   - **Time offset** (in minutes). This parameter allows you to analyze messages from the black box. In this case, time offset value is subtracted from interval beginning and end.
4. After pushing the Next button, the list of available units will be displayed. Select needed units.
5. Define basic job parameters and execution interval as it were described for Executing a Command over a Unit.

## Send a Report by E-mail

1. Push the **Create Job** button.
2. Choose the option **Send a report by e-mail** and press the Next button.
3. Define report parameters:
   - In the dropdown list select a **report template** from available items.
   - Choose **Object** which can be unit, unit group or user (this choice is defined in the report template). If the object of the report is dedicated to unit or unit, they are selected in the next page of the dialog.
   - **File format**: HTML, PDF, Excel, XML, CSV.
   - **Compress report files** or not.
   - **Attach the map image** to the report or not. Note that the image will make a report larger.
   - **Report interval**: a specified interval or previous … days/weeks/months/years.
   - **Recipients**: enter e-mail address(es) where to send reports.
   - When finished, press the Next button.
4. Select **Units** to execute a command (for reports on units only) and push the Next button.
5. Define basic job parameters as it were described for Executing a Command over a Units.
6. When finished, press **OK**. The job will appear on the list.
7. After you have received a letter with a report, extract the file to some folder and open it with the appropriate application depending on the file format.



🔔 *Note*.
If in your company the workday sometimes finished after midnight (because some vehicles may arrive late at night), then you can adjust the parameters for the daily report in the following way. Select report interval 'for previous 24 hours' and set job activation time at 4 AM. Then the report will be automatically generated every day at 4 AM. It will contain data for the last day, and the trips which finished after midnight will not be broken into two parts.

## Jobs Management

The list of jobs contains the following information: job type, job name (in a popup window there is a full information); job state (enabled/disabled); how many time the job has been already executed and the number of maximum executions allowed.

Different job types are marked with special icons:

command execution;

sending report or information about fuel;

reset GPRS traffic counter.

One can also handle jobs in the following way:

- Clicking on job state sign at the header of the table, you can enable/disable all jobs at once.
- Enable or disable a certain job.
- Change job properties.
- Create a new job on the basis of this one.
- Delete a job.

Using the **filter** will save your time when managing jobs. Enter job name or its part into the search field, replacing any number of unknown characters with the asterisk sign. Press <enter> to apply the search parameters. To return to the complete list of jobs, leave just one asterisk in the search field and press <enter>. Additional search parameters are set in the dropdown list where you can choose the resource (account) or leave *All*.

Trace: » Tracks » My Places (POI) » Geofences » Jobs » Notifications
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# Notifications

⚠ *Attention!* This module is licensed separately and can be not included in your package.

You can be notified about any activity of an object that you consider to be significant. It can be speeding, location, sensors values, etc. A notification can be delivered by e-mail or SMS, shown online in a popup window or just registered in the system to be included later in the report.

The number of notifications allowed can be known from your account parameters (see User Settings => Account).

To create, edit and view notifications, open the Notifications panel in the work area at the left.
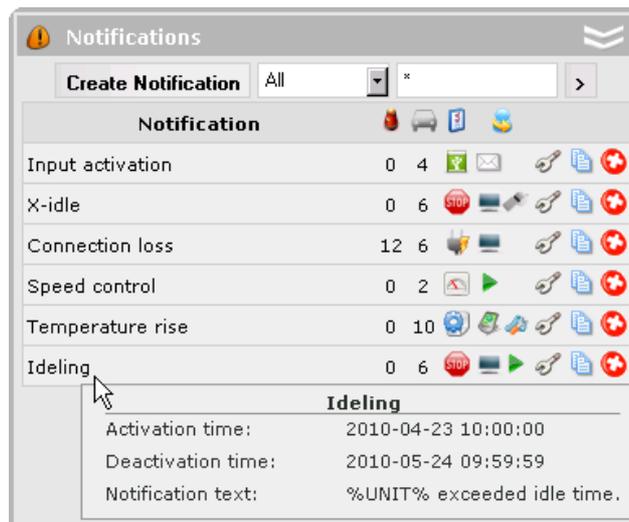


## How to Create a Notification

1. Push the **Create notification** button.
2. Choose object(s) to create a notification for, and push Next. If you have only one unit available, it is selected automatically, and this page is not displayed.
3. Select what you would like to control: geofence, speed, alarms, sensor values, message parameter, etc. Push Next.
4. Adjust control parameters needed for the notification type selected in the previous window: select geofences, indicate speed limits, etc. Push Next.
5. Input your text for the notification using special tags listed in the table below. They will be substituted with real values when notification triggers.
6. Indicate how the notification should be delivered: sent by e-mail or SMS, popup online, registered in unit history, etc.
7. Key in a name for the notification and adjust the schedule for its performance.
8. Push OK. The created notification will appear on the list in the left part of the window.

All of the steps of creating notification are described in detail below.

### Selecting Units

By default, only units which are in the work list at the moment are displayed in the dialog. To show *all* available units or unit groups, check the box **Display all available units/groups** on the top. To switch between units and groups use the selector on the left.

Mark units/groups to apply the notification to. If you select a group, it means the notification will be applied to all units in this group.

While editing a notification (**Notification Properties** dialog), this page contains units selected for the notification (they are checked) and units displayed in the work list at the moment. You can attach more units to the notification or remove some.

## Notification Type



### Geofence control

In case of this choice, in the following window you have to select geofence(s) to control and control type: control entries to or exits from geofence(s). To choose several geofences at once, hold <ctrl> key and click on needed geofences in sequence.

In addition you can narrow trigger case adjusting speed limitations or sensor value range inside (outside) the geofence. Then the notification will trigger when a unit being inside (outside) a controlled geofence breaks these limitations.

For additional speed control, indicate lower and higher speed limit, and the notification will trigger if beyond the limits.

For sensor control you can set trigger inside the indicated values as well as outside them. Choose sensor types in the dropdown list or set the mask using a wildcard symbol (*). If there will be two or more sensors of the same type or mask found, their values can be summed or calculated separately (select the corresponding option).

### Speed control

Define the minimum and/or maximum speed values. If a unit goes out of this range, the notification will trigger.



### Alarm button trigger

For this type of notification no specific settings are needed.

### Digital input activation/deactivation

Specify the number of digital input and select control type: trigger on input activation or deactivation.



### Message parameter control

Specify parameter, define minimum and maximum values for it, and select control type: trigger in the specified range or out of it.



### Sensor value control

Choose sensor type in the dropdown list or set the mask usin a wildcard symbol (*). Preset minimum and maximum values, indicate if you want similar sensors to be summed or calculated separately, and select control type: trigger in the specified range or out of it. If there will be two or more sensors of the same type or mask found, their values can be summed or calculated separately (select the corresponding option).

**Sensor value control**

Select sensor:
  Select sensor on type: ⦿
  Select sensor on the mask name: ○
Sensor type: [ Temperature sensor ▾ ]
Value from: [ -10 ]
Value to: [ -3 ]
Similar sensors:
  Sum up values ○
  Calculate separately ⦿
Trigger in specified range: ○
Trigger out of specified range: ⦿

### Connection loss

Choose control type. It can be a simple connection loss which registers cases when no satellites lock the unit during a period of time. There are also cases when all sensors are active and their values are known but it is impossible to locate the unit. To register such cases, choose the option "Connection or coordinates loss". Set also loss time: how long (in minutes) the loss of connection should continue before a notification triggers.

**Connection loss**

Control type: [ Connection or coordinates loss ▾ ]
Time interval, min: [ 60 ]

### Idles

For this type of control, indicate speed and time. Speed should be more then 0 km/h in order to exclude possible equipment errors. Indicate also time allowed for staying. If this time exceeded, this will be considered as an idle, and the notification will trigger.

**Idles control**

Speed, no more than, km/h: [ 0 ]
Max idle time allowed, min: [ 10 ]

### Routine servicing

First, you choose trigger type: notify when service term approaches or notify when service term is expired. Then indicate the interval before or after the term for the notification to trigger. This interval can be in days, kilometers or engine hours or all together. You can control all intervals existing in the Service Intervals tab in unit properties or just several intervals. To indicate certain intervals, deselect 'Control all service intervals' option and enter a mask using wildcard symbols like * and ?.

**Routine servicing**

Notify when service term approaches: ⦿
Notify when service term is expired: ○
Mileage interval: ☑ [ 100 ] km
Engine hours interval: ☑ [ 50 ] h
Days interval: ☑ [ 5 ] days
Control all service intervals: ☑

## Notification Text

The text of notification can be written in any language, contain any characters, words and phrases, and be of any size. Large messages are acceptable for e-mail notifications. Of course, for SMS notifications it is better to form more compact messages.

## Create Notification

Enter your notification text using special parameters listed below that will be substituted with real values when notification comes:

```
%UNIT% arrived to %ZONE%. At %POS_TIME% it moved with a speed of %SPEED%
near '%LOCATION%'.
```

| Parameter | Description |
|---|---|
| **%UNIT%** | Device name |
| **%CURR_TIME%** | Current date and time |
| **%LOCATION%** | Device location at the moment of notification |
| **%SPEED%** | Device speed at the moment of notification |
| **%POS_TIME%** | Date and time at the moment of notification |
| **%ALL_SENSORS%** | All device sensors and values |
| **%ZONE%** | Triggered geozone name |

Cancel    Back    Next

To be more informative, a notification should contain special parameters (tags) which are substituted with real values in an incoming notification.

Below id the list of such parameters:

| %UNIT% | Unit name |
|---|---|
| %CURR_TIME% | Current date and time |
| %LOCATION% | Unit location at the moment when notification triggered |
| %SPEED% | Speed registered at the moment when notification triggered |
| %POS_TIME% | Date and time at the moment when notification triggered |
| %ALL_SENSORS% | All sensors and their values |
| %ENGINE_HOURS% | Engine hours at the moment of notification |
| %MILEAGE% | Mileage at the moment of notification |
| %SENSOR_NAME% | Triggered sensor name |
| %SENSOR_VALUE% | Triggered sensor value |
| %ZONE% | Triggered geofence name |
| %SERVICE_NAME% | Service interval name |
| %SERVICE_TERM% | Service interval state (left/expired value) |

Note that a parameter must be marked by percent sigh from both sides. Otherwise, it will considered as simple text as is and will be not converted to real values.

**Example.**
The text *«'%UNIT%' violated speed limitations. At '%POS_TIME%' it moved %SPEED% near'%LOCATION%'»* can be transformed to *«'Rover-119' violated speed limitations. At '2000-01-01 12:01:37' it moved 136 km/h near 'KU 8, Thurnau, DE'»*.

## Method of Delivery

- **E-mail**

  You can indicate one or more e-mail addresses to send a notification to. Maximum e-mails allowed is 4.

- **SMS**

  Key in one or more telephone numbers in the international format, for example, +375293293294. Maximum numbers allowed is 4.

- **Display online notification in popup window**

  In this case a notification will be displayed in a popup window when the monitoring site is loaded.

- **Register event for unit**

  In this case a notification is stored in unit history. Then a report on these events can be generated. If this option is selected. **Register as violation** is additionally proposed. If you check it too, the notification will be registered not only as event but as violation, and one more report type will be available to you. For further information see reports on Events and Violations.

- **Execute a command**

  If you choose this option, when the notification triggers, a command is executed over the unit. Select a command from the list of available items and set necessary parameters if needed.



- **Modify users access level**

  Choose users which access rights to be modified when trigger conditions occur. Select access level to be set to this user after notification triggers: no access, view, execute commands, edit. This feature can be used, for instance, in the following situation. Let us assume, we have created a user to give him opportunity to track his cargo transportation - we have given him *view* access to a unit which is carrying this cargo. When this unit enters a destination place (a geofence under control), the notification triggers, and the unit becomes unavailable to the user (*view* access is modified to *no access*).

- **Send a report by e-mail**

  Enter e-mail address(es) to send a report to if the notification triggers. Select report template, object, format, and other parameters to get a needed report.

- **Reset driver**
  This feature can be used, for example, to reset driver automatically when the unit returns to the depot.

## Notification Name and Schedule



In the given window you can set general parameters for a notification as well as define the specific character of its operation:

- **Notification name**
  Key in any mane. It will be displayed on the list of notifications and in the notification itself.

- **Time interval**
  The period after which the notification will be deleted.

- **Control period from current time**
  This is a period of between the time when the notification triggered and the current server time. If this interval is exceeded, the message is not taken into account.

- **Minimum duration of alarm state**
  This parameter is aimed to exclude cases of accidental trigger that can be caused by equipment errors and inaccuracy. For example, a tracker can show that a unit left a geofence but returned 10 seconds later. In this field you can define how much time the alarm state have to continue in order to be registered.

- **Maximum triggers**
  How many notifications can be delivered until it will be automatically deleted.

- **Generate notification: (1) Only when state changed, (2) For all messages**
  In the first case the notification will trigger when unit state changes, that is if at the moment when the

notification was activated a unit is already in a alarm state, the notification will not trigger. In the second case the notification will trigger as soon as an alarm state is detected. If the second option is selected, the following parameters are not needed.

- **Min duration of the previous state**

  This parameter is needed to exclude excessive triggers. For example, the unit can return to the normal state for a very short time and then returns back to the alarm state. In order that the notification in such a case would not trigger twice, this parameter is used.

- **Maximum time difference between messages**

  Maximum time between the latest message and the previous one to form a notification. If the interval between the current message and the previous one exceeds this value, the notification does not trigger.

- **Timeout**

  Delay from the moment when message was received and before it it will be checked. This delay is especially recommended if a unit has a black box that usually requires time to unload all messages stored in the period of communication loss (for instance, while it was abroad).

- **Time limitations**

  It is possible to set limitations depending on time, day or month. For example, the control can be performed only on weekdays and within working hours.

## Notifications Management

From the list of notifications you can get the following information:

| | |
|---|---|
| 🚨 | how many times a notification has already triggered; |
| 🚗 | how many units are under control of this notification; |
| 📁 | **control type:**<br>🏁 speeding,<br>🗺️ geofences,<br>🚨 alarm button trigger,<br>📟 digital input activation/deactivation,<br>📦 sensor value control,<br>💬 message parameter control,<br>🔌 connection loss,<br>🛑 idle,<br>🔧 routine servicing. |
| 👥 | **method of delivery:**<br>✉️ e-mail,<br>📱 SMS,<br>🖥️ online popup window,<br>🔖 event registration,<br>🔖 violation registration,<br>▶️ command execution,<br>📋 send a report by e-mail,<br>👥 modify users access level,<br>🚶 reset driver. |

The following actions can be executed over notifications:

🔑 edit a notification settings,

📄 create a new notification using this one as the basis,

❌ delete a notification.

Using the **filter** will save your time when managing notifications. Enter notification name or its part into the search field, replacing any number of unknown characters with the asterisk sign. Press <enter> to apply the search parameters. To return to the complete list of notifications, leave just one asterisk in the search field and press <enter>. Additional search parameters are set in the dropdown list where you can choose the source (account) or leave *All*.

## Online Notification

Online notifications will popup on the map. It can be accompanied by a special sound (see User Settings). As more notifications come, they are stored in the same window.

Newly come notifications are added to the list on the top. The captions of unread notifications are bold. The caption for notification is taken from the name that was given while creating notification. To expand or minimize a notification, use the switch button **+/-**.

If clicking on a notification, the map is centered on the place where the event happened. If clicking on a unit name, map is centered on the latest unit position.

To delete a notification, click on a cross against it. Is it possible also to delete all messages (**remove all** button) or delete all read messages (**remove read** button).

You can hide or show notifications window. To hide it, press **close** button or click on **notifications** icon on the bottom. Click it again when need to show the notifications window again. If the icon blinks, it means there are unread notifications. If you place the mouse pointer over the icon, in the tooltip you can see the number of unread notifications.

**USER GUIDE**

# Route Control

⚠️ *Attention!* This module is licensed separately and can be not included in your package.

Wialon gives you an opportunity to track units which go along the route with control points and predefined schedule.

Open the Routes Control panel in the work area on the left. Here you see the list of existing routes and can create a new one. The number of routes allowed can be known from your account parameters (see User Settings => Account).

Let us assume that a vehicle have to transport goods to five points. To control its activity you need to:

1. Prepare the route that is create a line-shaped geofence presenting a consequent movement along the route.
2. Mark five control points in the appropriate places and assign a schedule for them.
3. Create a route based on this geofence (give it a name, assign to needed unit(s).
4. Activate the route when needed.
5. Monitor how the route is accomplished.

## Preparing a Route

A route is based on a geofence. If this is a polygon, the system traces unit presence in the geofence. Much richer possibilities of control exist for line-shaped geofences. They can contain control points and the schedule of visiting them.

⚠️ *Note.*
A line-shaped geofence intended for controlling a route should be mapped from its start point toward its end and not vice versa, because the sequence of control points is automatically defined according to line direction and cannot be changed manually.

### How to add control points:

1. Open **Geofences** panel.
2. Press **Edit** 🔶 against the needed geofence. Mind that it must be a line.
3. Place the mouse cursor over any point of the line and press **Add control point** button ➕ .
4. Fill in the form:
   - **Control point name** that will be visible in messages about the route.
   - **Arrival time** is time to arrive to this control point counting from activation.
   - **Arrival time variation** is needed to give a unit some degree of freedom. For example, if a five minute delay or advance is allowed, enter '300' (in seconds).
   - **Departure time** is time to leave the control point. It is also calculated from the activation time.
   - **Departure time variation**.
   - **Control point radius**. By default the radius of control point is the same as line thickness, but you can indicate your own value.
5. Entries are saved automatically. To delete a control point, press **Remove control point** button ❌ at the top of the form.
6. Similarly add the other control points.
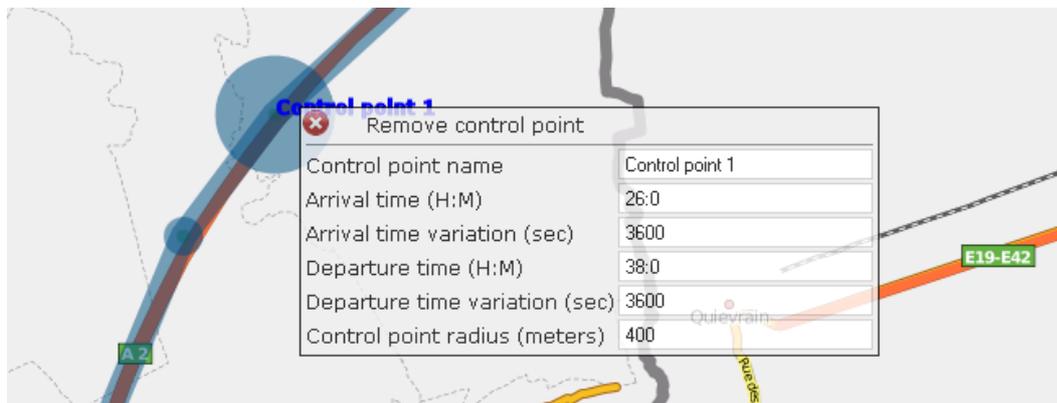


When the geofence with control points is done, a controllable route can be created on its basis.

## Creating a Route

1. Open the **Routes Control** panel.
2. Push **Create route** button.
3. Select unit(s) to assign the route to.
4. Set the following parameters:
   - **Route name** to be displayed in the routes list and when tracking the route.
   - **Route description** (optional).
   - **Route geofence**: select a fence to control from the dropdown list.
   - Mark **Route auto delete** check box if you prefer the route to be deleted when finished.
   - Specify **Activation time** for the route, that is date and time when the control of this route will be started. As it is not always possible to know departure time exactly, you can specify it later at any moment, even post factum (within today only). If we know, for example, that the vehicle left at 12:00, and now it is already 13:00, enter '12:00' as activation time, and the route schedule will be counted from this time.
   - Mark **Route enabled** check box to enable the route immediately after creating it. Otherwise, it can be enabled later.
5. Press **OK** to finish.
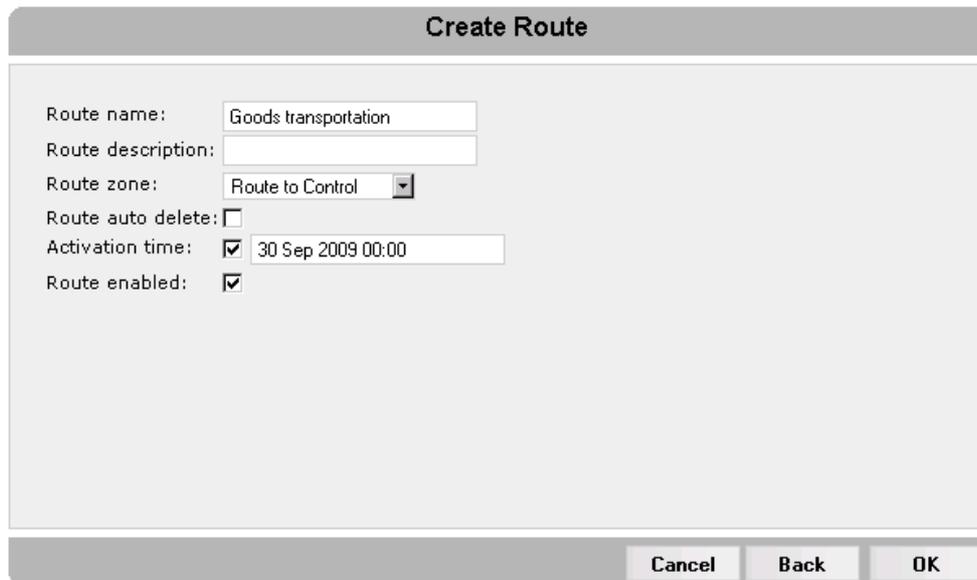


After you pressed OK, the route appears on the list. If you selected several units for route control, several routes will be added. They will have the same names, but if placing the mouse cursor over each of them one can know the details.

## Routes Management

If there are many routes, they can be filtered by various criterion, for example, finished routes, or waiting for arrival/departure, delayed, etc. The list of filters available see in the dropdown list.
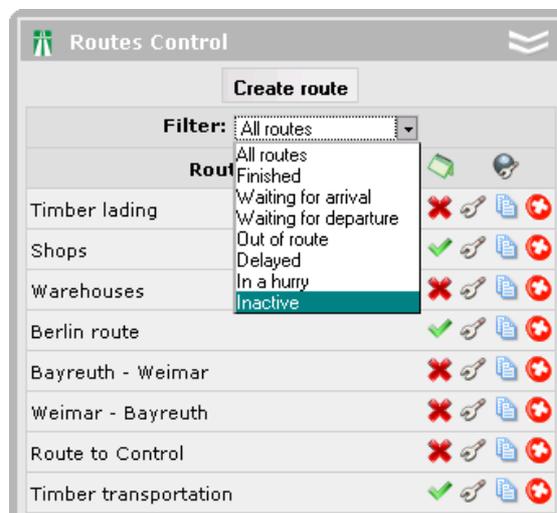


In the table there is information about the route: route details (in a popup window), route status , etc.

You can also perform the following actions over routes:

✔ enable a route;

✘ disable a route;

✎ change route parameters (name, description, activation time, etc.);

▤ create a new route on the basis of another route (this is also a way to reassign a route to a different unit);

⊗ delete a route.

When a route is finished, its tracking stops automatically. To put a unit on the route again, enter a new activation time in route settings.

## Tracking the Route

There are several ways to monitor how a unit is accomplishing a route.

### In the Monitoring panel

In the Monitoring panel in the working list there is a column 🏁 presenting information on routes for each unit separately. The following icons are used:

✘ - no routes are assigned to the unit;

✔ - the unit is moving according to the schedule;

🕐 - the unit is in hurry;

🕐 - the unit is delayed,

⏳ - the route assigned to this unit is not activated yet;

🏁 - the route is finished;

? - the unit is doing several routes at once;

❗ - the unit left the geofence of control.

Put the cursor over any of these icons to see details in a popup window. For example, it can be specified exactly what time the unit is late.

⚠ *Attention*
If there is no such a column in the Monitoring panel, it is probably not activated. To check it, go the User Settings and put a check mark near **Show routes control column on the Monitoring panel**.

### In the Routes Control panel

In the Routes Control panel place the cursor over a route name to see details in a popup window (unit, geofence, status, etc.). Under the horizontal line it is indicated on which stage of the route the unit is at the moment.

# Units

Open the Units panel in the work area. Here you see the list of units available to the current user. Units are created and configured here, and after that they become available for tracking. On the list the units are displayed in the alphabetical order.

The number of units allowed can be known from your account parameters (see User Settings => Account).

## Unit Properties

You configure unit while creating it (the **Create unit** button) or while updating it (the **Edit unit** button ✎ ).
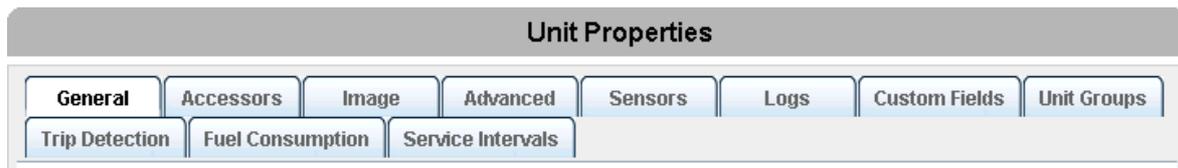


Unit properties dialog has several tabs which detailed description can be found in the following topics.

- **General**
- **Accessors**
- **Image**
- **Advanced**
- **Sensors**
- **Logs**
- **Custom Fields**
- **Groups**
- **Trip Detection**
- **Fuel Consumption**
- **Service Intervals**

At the end press OK.

⚠️ *ATTENTION!*
Units with the same IDs or phone numbers cannot exist in the system. If you are trying to create a unit with ID or phone number which already belong to a unit in the system, an alert will be displayed and you will be offered to edit the unit. If you will not edit these fields, the unit will be created anyway but with *no* ID or phone number.

## Units Management

### 🚌 List

As needed, a filter can be used to easily find a necessary unit. Enter a name of a part of a name using asterisk sign (*) to replace any number of characters at the beginning or at the end of the name. Push the **Apply filter** button to start search. Units which fit your request will be displayed on the list. To return all units back to the list enter '*' in the search field and apply.

Place a mouse cursor over unit to display its details in a popup window (type, ID, phone number). Unique ID and unit phone number are shown only to users who have *edit* or *manage* access level to the unit.

Units on the list can be edited, copied, deleted, their properties can be exported or imported.



### ✎ Edit

You can view and/or edit unit properties. To do this, press the configuration button. A color of the point near the button indicates your access level to the unit:

- ✎ (rose) - manage,
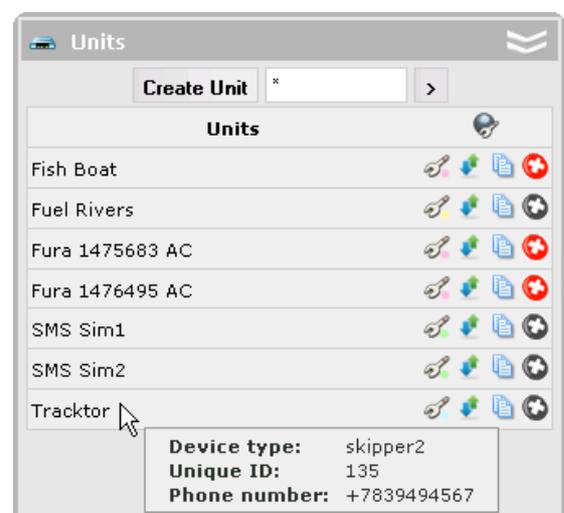
- (blue) - edit,
- (green) - execute commands,
- (yellow) - view.

If you access rights are *execute commands* or *view*, some information in the unit properties dialog will be not available, and OK button will be inactive.

### Export/Import

Under this button there is a menu to import/export unit properties to/from a file or a unit. The settings of the current unit can be exported to a file or to another unit. Besides, the settings of a unit previously saved to a file can be imported to the current unit.

- import settings from a file to the current unit,
- export the current unit settings to a file,
- export the current unit settings to other unit(s).

For further information see Unit Properties Export/Import.

### Copy

Copying units is convenient to quickly create new units with similar properties. After you press the copy button, unit properties dialog opens. All fields it contains are the same as in the source unit. If not all fields and tabs are available to you according to your access rights, they remain hidden and cannot be copied.

Edit the unit if needed (for example, give it another name, change ID and the phone number, etc.) and save the unit pressing OK button. New unit will appear at the bottom of the list.

While copying a unit, the current user (which is performing the copy operation) is assigned its creator automatically.

### Delete

Using the delete button it is possible to delete a unit from the system completely. To do this, you need *manage* rights. If you do not have such right, the delete button is inactive.

You are here: Wialon User Guide » Units » General

# General

In the General tab set the following parameters:

- **Name**
  Enter a name for the unit from 4 to 50 characters.

- **Device type**
  Select device type from the list of supported equipment.

- **Unique ID**
  Enter a unique ID for the unit to be identified by the system. Usually it is IMEI or serial number.

- **Phone number**
  Here type phone number of the unit if it has embedded SIM card. Phone number should be written in international format, that means they start from "+", then follow country code, communication statement code and the phone number itself. Examples: +7903726154,+15557654321).

- **Device access password**
  Type password to manage the unit remotely if needed.

- **Creator**
  This combo box is available if you have several users under your control.



🔔 *Note!*
If you access rights to the unit is *View*, some of the fields will be hidden.

## Counters

On the General tab counters parameters are adjusted.

**Mileage counter** is used to unify distance calculation in different modules like Tracks panel, Messages Mode, and reports. Four methods are suggested for calculating mileage:

- GPS: mileage is calculated by GPS coordinates. It means if the change of coordinates was detected, the distance between them is added to mileage.
- Mileage sensor: mileage is calculated by mileage sensor.
- Relative odometer: mileage is calculated by relative odometer sensor.
- GPS + engine ignition sensor: mileage is calculated by GPS coordinates considering ignition state.

Be careful when selecting a method. If you choose to calculate mileage by a sensor, and your unit does not have this sensor, then mileage values will be zero.

**Engine hours counter** calculates engine hours by one of two sensors:

- engine ignition sensor,
- engine hours sensor.

**GPRS traffic counter** is used to calculate Internet traffic consumed by the unit to transmit and receive data. The traffic is measured in kilobytes (KB). At any moment you can reset this counter manually if pressing the **Reset counter** button. At this you will be offered to save the event of reset and teh current value in unit events history to be exported to a report later.

You can set the **Current value** for each counter, and the further calculations will start from the indicated point. In order the new data were added to the current value automatically, activate the **Auto** option at the right of the counter. You can manually zero counters if entering '0' to the current value field. To enter a fractional number, use dot as delimiter and enter no more than two decimal places.

Trace: » Notifications » Route Control » Units » General » Accessors
You are here: Wialon User Guide » Units » Accessors

# Accessors

On this tab you indicate access level to the unit for different users. There are four access types:

- **None**: the user will have no access to the unit at all.
- **View**: the user will be able to view unit movement and location on the map, read notifications, generate reports.
- **Execute commands**: the user is allowed to execute commands over unit.
- **Edit**: the user is allowed to change unit properties.
- **Manage**: the user will have exhaustive rights, up to delete the unit.

Select user at the left, and assign access type at the right. You can determine rights for several users at once. To do this, select the needed items holding **<ctrl>** or **<shift>** key. After the access level has been assigned to a user, this user's name on the left acquires the corresponding background.

If you have less than 100 users, the full list of available users is displayed when you open the tab. If you have more than 100 users, the list is empty, and you need to apply the filter to search and display users. On the bottom of the dialog enter request text using wildcard symbols * (replaces any number of characters) and ? (replaces one character). After entering a text, press **Apply**. Search results will be displayed on the list.

To assign access for users to a unit, you need to have *manage* rights to these users. Otherwise, you will not see the users on the list at all.



🟡 *Note.*
This tab is not available if:

- you have no users;
- you have no *manage* right to your users;
- your access rights to this unit are lower than *manage*.

# Image

You can select and load any image to display the unit on the map.

There is a number of standard images: push the **Image Library** button and select one.

You can load your own image. Push **Browse** and select a file on the disk.

Otherwise you can leave the unit without image. In this case the unit is represented on the map by its name or by motion/stop signs (depending on user settings).

# Advanced

On this tab messages validity parameters are defined, colors for tracks are adjusted, and speed limitations are set.

### Speed limit

Enter the maximum speed allowed. All messages with higher speed will be detected as cases of violation and exported to the report on speedings.

### Maximum interval between messages

Maximum interval between messages (in seconds) is needed to exclude invalid messages. When the indicated value is exceeded it is regarded as connection loss (GSM). These cases can be viewed in the report on connection quality.



### Daily engine hours rate

If the unit has an engine hours sensor, here you can indicate the daily rate of engine hours to use this value in the corresponding report.

### Speed based track colors

This feature is used to draw unit tracks in the Tracks panel, in the Messages Mode, and in the reports. If this option is activated, track colors will depend on unit speed. If not activated, one color is applied to the track regardless the speed.

Enter pairs Speed/Color separating them by ';'. For example, if '0 ff0000; 60 cc0000ff' is entered the track consisting of messages with speeds form 0 to 59 km/h will be displayed in red color, over 60 km/h - in blue.

To set a color you can use also a color panel on the right of the table of speed and colors. To activate the panel, click on any colored rectangle.

To apply settings push **Refresh** 🔄 .

To restore default colors push **Reset to default** ⬅ .
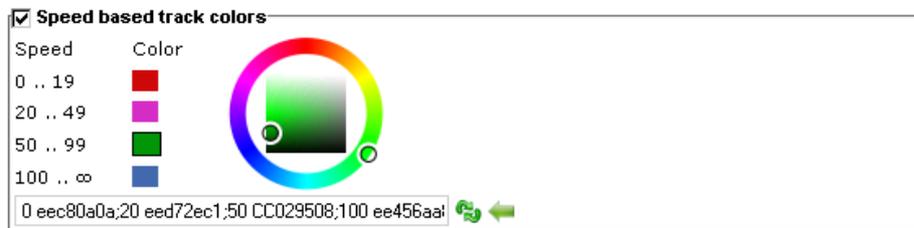
## Sensor based track colors

The track can be drawn in different colors according to a sensors values. Choose a sensor to be taken into account. Then define sensor values and colors corresponding to them in the same way as for speed based track colors.



## Sensor color in the Monitoring panel

It is possible to visualize sensor state on the monitoring panel in the appropriate column that is activated in User settings => Monitoring panel.

Value intervals and colors are set in the manner as for track colors. Besides, you can enter description for each interval. These descriptions will be used in popup windows for the Sensor Value column in the monitoring panel. If no description is assigned here, the exact value will be displayed in the popup window.
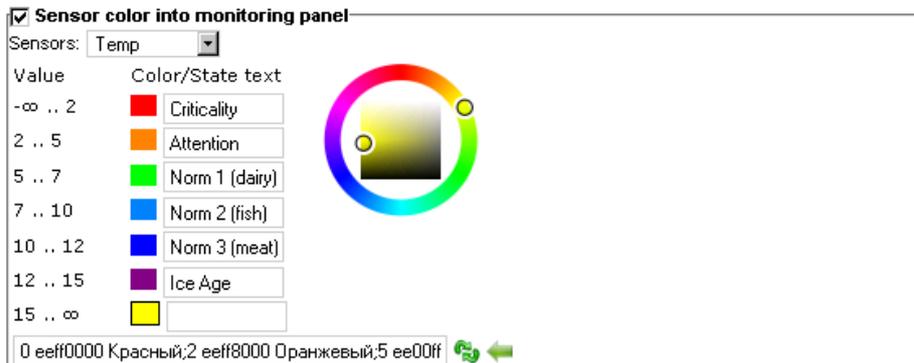


## Enable filtration of unit position information in messages

All messages without any exception are stored in the system. However, if having outlying data, it can affect reports and other processes based on database analysis. That is why, it is recommended to enable filtration of data. For example, if there are outlying data, messages without coordinates, etc, these messages can be marked as invalid and ignored when generating reports, calculating mileage, and so on. To adjust filtration settings, fill in the fields:

**Skip invalid messages**
Some controllers may send a flag about coordinates validity/invalidity in messages. A messages with invalid coordinates is marked by the flag of invalidity, and when sending such a message to the server, the current time and the last valid coordinates are given. Wialon will consider this message as a message without position data, and it will be not used when constructing movement tracks, detecting location in reports, etc. However, if this messages contains other parameters (such as sensors values), they will be used.

**Maximum speed**
The messages which contain the speed higher than set here, are marked as invalid.

**Minimum satellites**
If the number of satellites locked is lower, the message considered to be invalid. Recommended value is three and more, but some equipment can give correct coordinates beginning form two satellites.

**Maximum HDOP value**
HDOP refers to Horizontal Dilution of Precision. Here you set the minimum HDOP value for messages to be regarded as valid. The lower this parameter, more accurate the coordinates.

# Sensors

On this tab sensors connected to equipment are added and configured as well as edited and removed.

To create a new sensor push **Add a new sensor** button, fill in the fields and press OK.

| General | Accessors | Image | Advanced | **Sensors** | Logs | Custom Fields | Unit Groups |
|---|---|---|---|---|---|---|---|

| Trip Detection | Fuel Consumption | Service Intervals |
|---|---|---|

Add a New Sensor | Clone Sensor | Modify Sensor | Delete Sensor

| | Name | Type | Metrics | Parameter | Description |
|---|---|---|---|---|---|
| ⦿ | engine operation | Engine ignition sensor | On/Off | pwr_int | |
| ○ | voltage | Voltage sensor | V | pwr_int | |
| ○ | power backup | Custom digital sensor | On/Off | in3 | |
| ○ | GSM | Custom sensor | | gsm | |
| ○ | temp2 | Temperature sensor | °C | temp_int | |
| ○ | Roaming | State sensor | | in4 | |
| ○ | battery operation | Custom digital sensor | On/Off | pwr_int | |
| ○ | temp1 | Temperature sensor | °C | temp2 | |

## Sensor Parameters

- **Name**
  Give a name to the sensor. It will be visible.

- **Sensor type**
  Choose the sensor type form the dropdown list of available types.

- **Unit of measure**
  As a rule, possible unit of measure is given. However you can key in your own. This is especially applicable for digital sensors such as engine operation sensor, cargo load sensor or custom digital sensors. Instead of default On/Off values you can key in Activated/Deactivated, "Laden/Unladen", and so forth.

- **Parameter name**
  This name comes in messages. If the unit already has messages, parameter's name can be picked up from the list of available in the last message.

- **Description**
  This field is optional. Add any description and options if needed.

Digital inputs/outputs and analog inputs are defined in the system automatically. The numeration starts from 1.

| | |
|---|---|
| **inX** | digital input parameter |
| **outX** | digital output parameter |
| **adcX** | analog input parameter |

(where *X* is the sequence number of input/output)

For example, *adc8* is refereed to as parameter which registers the values coming form the eighth analog input.

## Calculation Table

For analog sensors it is usually needed to compile a calculation table from the equations of straight line. When a value comes, it is substituted for *X*, and *a* and *b* are taken from the calculation table. As a result *Y* value becomes known. Each row of the table operates only within its segment that is till *X* value on the next row. *X* values cannot repeat.

*a* coefficient is the tangent of angle (relation of the opposite cathetus to the adjoining one), *a* coefficient is Y-axial displacement. If you use *a* coefficient and want to take into account the previous segment for Y-axial displacement, put the **Continue last segment** flag.

It is possible to get the tangent of angle (that is needed to be substituted for *a* coefficient) using mathematics. To do this, find on *X* and *Y* axes segments of values operation (deltas). Then divide the values **Δy/Δx**. The result value is the tangent of angle.



Here you have some examples of how the table can be compiled:

1. Fill in *X* and *b* values, and *a* set as zero. This method is convenient if converting a analogue signal to a digital.
2. Select *Continue last segment* if needed to count Y-axial displacement. Fill in *X* and *a* values. This method is convenient if needed to get a curve knowing the angles.
3. Fill in *X*, *b* and *a* values. Use this method to get the calculation table under your complete control.

## Calculation Table Wizard

This way of creating the calculation table if more atomized. Here it is enough to enter input *X* values and output *Y* values. After entering each pair of values, push the **Add** button. Incorrect pairs can be deleted using button.

When all values are entered, press **Generate calculation table**. The calculation table in the previous tab will be replaced with new values.

## Calculation Chart

The graphic implementation of the created calculation table can be viewed in the **Calculation Chart** tab. Push the **Refresh** button to build the chart on the basis of your calculation table.

The function continue operating to infinity if there is no limitations. The chart extends also to the left to minus infinity. If there are limitations, the chart expands quarter-size to both sides right and left.
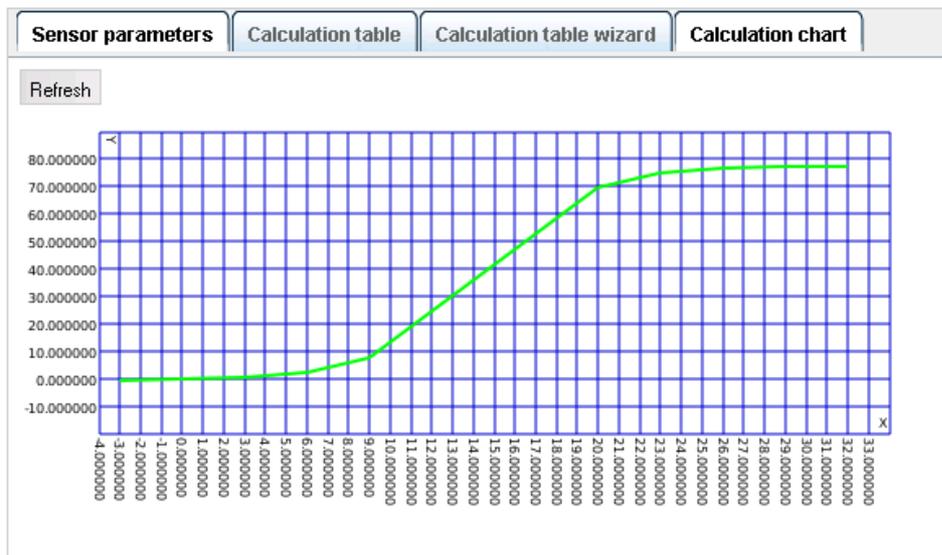
Trace: » Accessors » Image » Advanced » Sensors » Logs
You are here: Wialon User Guide » Units » Logs

## Logs

This tab is available only when you update an existing unit (not create a new one).

A log refers to a list commands or SMS messages sent to unit within the indicated period of time.

To get a log first choose **message type** (received SMS or commands), then specify the interval (**time from**, **time to**), and press **Show**. If the unit has such messages for the specified period, they will be listed below.

| Date | Time | Modem | Text |
|------|------|-------|------|
| 2010-05-05 | 08:21:35 | +3750000000 | PC,0001,05/05/10,06:21:32,5545.8496,N,03739.3864,E,43.0km,345.6,A,010005 |
| 2010-05-05 | 08:22:35 | +3750000000 | PC,0001,05/05/10,06:22:32,5546.1250,N,03738.9898,E,34.0km,315.6,A,010004 |
| 2010-05-05 | 08:23:35 | +3750000000 | SIGNAL,0001,05/05/10,06:23:32,5546.3410,N,03738.2368,E,32.0km,290.6,A,010003 |
| 2010-05-05 | 08:24:35 | +3750000000 | PC,0001,05/05/10,06:24:32,5546.4154,N,03737.6278,E,20.0km,285.6,A,010002 |
| 2010-05-05 | 08:25:35 | +3750000000 | PC,0001,05/05/10,06:25:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010002 |
| 2010-05-05 | 08:26:35 | +3750000000 | SIGNAL,0001,05/05/10,06:26:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010012 |
| 2010-05-05 | 08:27:35 | +3750000000 | PC,0001,05/05/10,06:27:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010032 |
| 2010-05-05 | 08:28:35 | +3750000000 | PC,0001,05/05/10,06:28:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010052 |
| 2010-05-05 | 08:29:35 | +3750000000 | SIGNAL,0001,05/05/10,06:29:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010072 |
| 2010-05-05 | 08:30:35 | +3750000000 | PC,0001,05/05/10,06:30:32,5546.4154,N,03737.6278,E,0.0km,285.6,A,010092 |
| 2010-05-05 | 08:31:35 | +3750000000 | PC,0001,05/05/10,06:31:32,5546.4034,N,03736.5316,E,50.0km,255.6,A,010090 |
| 2010-05-05 | 08:32:35 | +3750000000 | SIGNAL,0001,05/05/10,06:32:32,5546.3806,N,03736.3390,E,50.0km,248.6,A,010088 |
| 2010-05-05 | 08:33:35 | +3750000000 | PC,0001,05/05/10,06:33:32,5546.3368,N,03736.2268,E,50.0km,245.6,A,010086 |
| 2010-05-05 | 08:34:35 | +3750000000 | PC,0001,05/05/10,06:34:32,5546.2684,N,03735.9880,E,50.0km,240.6,A,010084 |

Trace: » Image » Advanced » Sensors » Logs » Custom Fields
You are here: Wialon User Guide » Units » Custom Fields

# Custom Fields

Custom fields can be added to register additional information of any type. This can be some notes or precisions about the equipment, vehicle or any other information needed.

Key in a field name and its value and press the **Add** button. To delete a field press **Remove**.

| General | Accessors | Image | Advanced | Sensors | Logs | **Custom Fields** | Unit Groups |
|---|---|---|---|---|---|---|---|

| Trip Detection | Fuel Consumption | Service Intervals |
|---|---|---|

| **Name** | **Value** | |
|---|---|---|
| Carrying capacity | 3 tonnes | ✪ |
| Fuel | Gas | ✪ |
| Year mark | 1999 | ✪ |
| Made in | Italia | ✪ |
| | | ✚ |

When the next time you will open unit properties dialog, the entered fields will be alphabetized. The same will happed when displaying custom fields in unit info tip and in statistics of reports.

## Usage

Custom fields can be displayed **in unit info tip** when you put a mouse cursor over the unit name or unit icon on the map. This option is switched on/off in User Settings => General => Show in unit info tip.

Custom fields can be also displayed **in reports** in the Custom Fields report.

Trace:  » Advanced » Sensors » Logs » Custom Fields » Groups
You are here: Wialon User Guide » Units » Groups

## Groups

On this tab you can view whether the unit is included in some group or not. You can also see the list of all existent groups and include the unit to one or several groups if needed.

To include/exclude the unit in/from groups, use the appropriate buttons **Add** and **Remove** or double-click on a group in the appropriate list.

| General | Accessors | Image | Advanced | Sensors | Logs | Custom Fields | Unit Groups |
|---|---|---|---|---|---|---|---|

| Trip Detection | Fuel Consumption | Service Intervals |
|---|---|---|

All groups:

Group 1
Group 3
Heavy Haulers
Administration
Mexico
weyn
Family

Groups which include the unit:

Group 2
Oceanic 10

>> Add          << Remove

# Trip Detection

Here you define parameters to detect trips and stays. Trip is a period of time when a unit was moving. Stay is a period of time when a unit was motionless.

Depending on the equipment installed and the parameters set on this tab the reports on movement intervals (trips) and idles (stops, parkings) can be rather different.

## Movement Detection

There are five main methods of how movement intervals are detected:

1. **GPS speed**
   This method is universal and can be applied to any device type and configuration. The parameters of this method are described below.

2. **GPS coordinates**
   This method is universal as well. The movement is detected if the coordinates in two successive messages are different. The fact is that some equipment types do not provide speed parameter in messages. In this case, movement can be detected by coordinated without installing additional equipment.

3. **Engine ignition sensor**
   This method is available for units having ignition sensor. If so, the trip begins when the sensor is switched on and ends when the sensor is switched off. Besides, GPS correction can be added.

4. **Mileage sensor**
   This method can be used for units which have a mileage sensor. The sensor transmits the absolute mileage. The beginning of a trip is detected when the mileage value increases, and the end is detected when mileage value stops to grow. Here GPS additional correction is also available.

5. **Relative odometer**
   shows what distance was rolled from the previous message. Note that 'Minimal movement speed' parameter must be '0'.



In all cases you can additionally use GPS correction to receive more precise data in reports.

## GPS Correction

To activate GPS correction of data put a check mark near **Allow GPS correction**.

- **Minimum satellites count**
  It means how many satellites are needed to consider data to be valid. Recommended number is three and more, but two are enough for some types of equipment.

- **Minimum moving speed**
  Specify which speed should be considered as the beginning of the motion. This is needed to exclude adjustment of data. The equipment can locate coordinates with an accuracy of ±10, so a speed of 1-2

km/h can be assigned to the unit which is not moving in fact. To exclude such cases from the trips, set this parameter.

- **Minimum perking time**

  Set time in seconds how long the unit should be immovable to register this as a parking. This option allows excluding stops in traffic jams, at a lights or at an intersections.

- **Maximum distance between messages**

  Indicate the distance in meters to exclude adjustment of data. It means if according to the message received the unit moved relatively to the previous message greater distance, then the previous trip is over and a new trip begins.

- **Minimum trip time**

  This is also to exclude cases of adjustment of data. For example, the unit on the parking moved from one place to another, and movement during 40 seconds was detected. To exclude such cases from trips, set minimum trip time (in seconds).

- **Minimum trip distance**

  This is a similar parameter. But here you indicate the minimum trip distance (in meters). For example, the car is parked, and the device sends coordinated according to which the car has moved a couple of meters. It can happen because of permissible equipment error. In order to not count such situation as movement, indicate how far the unit have to move to consider it as the start of a trip.

# Fuel Consumption

Wialon has instruments to calculate fuel level and fuel consumption. Parameters to calculate fuel and calculation method itself are set on this tab.

Fuel fillings and thefts can be detected only if unit has fuel level sensors. Fuel consumption calculation will be more accurate if unit has fuel consumption sensors, however it can be calculated with mathematical method.

## Fuel fillings/thefts detection

**Minimum fuel filling volume**: how considerable should be increasing of fuel level to be regarded as a filling.

**Minimum fuel theft volume**: how considerable should be fuel level fall to be regarded as a discharge. This is activated only when the unit is stationary.

**Ignore the messages after the start of motion, sec**. At the very beginning of movement the data on fuel level can not accurate, so you can ignore these messages.

**Minimum stay timeout to detect fuel theft, sec**: how long should continue a stay accompanied with fuel level decreasing to be regarded as fuel theft.

**Detect fuel filling only while stopped**. If activated, the volume of filling registered can be fewer. In this case, fuel level before filling is taken from the messages with zero speed only.

## General sensors parameters

**Merge same sensors values (fuel level)**. If there are several fuel level sensors, their values can be summed. If this feature is not activated, the search of fillings/thefts is done for each sensor separately.
⚠️ *Attention!* If a message contains no value of a sensor, this message is ignored in calculations.

**Merge same sensors values (fuel consumption)**. If a unit has several engines and absolute fuel consumption sensors or impulse fuel consumption sensors are installed, this feature is useful. The values from different sensors will be summed (the sensors must have the same names). If the option is not activated, each sensor is controlled separately.

**Time-based fuel level sensors consumption**. This option is useful for non moving units. As a rule, fuel consumption is calculate by mileage, but it can be calculated by time as well (for hoisting cranes, for example).

**Filter fuel level sensors values**: apply smoothing algorithm for sensors. If marked, set also **Filter quality** (from 0 to 255). The greater this parameter, the smoother are the charts.

## Consumption Math

This is a purely mathematical method of calculate fuel consumption (no sensors are required). To use this method, the following parameters should be set:

- **Idling, litres per hour**: fuel consumption when staying with engine on;
- **Urban cycle, litres per 100 km**: fuel consumption when moving with a speed less than 36 km/h;
- **Suburban cycle, litres per 100 km**: fuel consumption when moving with a speed more than 80 km/h (fuel consumption at speed between 36 and 80 km/h is calculated in direct proportion of urban cycle to suburban cycle);
- **Coefficient when moving under load**: the impact of loading on fuel consumption (if there are several lading sensors their values are summed up).

## Consumption by rates

This is also a mathematical method. If the previous method takes account of speed and load, this method considers the season (winter/summer time). Specify the following parameters:

- **Summer consumption, litres per 100 km**: the rate of fuel consumption in summer time.
- **Winter consumption, litres per 100 km**: the rate of fuel consumption in winter time.
- **Winter from/to**: winter time period.

## Fuel level sensors

Fuel consumption is defined from fuel level in the tank where fuel level sensors are installed. The difference between the average values at the beginning and at the end of the period is calculated.

## Impulse fuel consumption sensors

The readings are taken from impulse fuel consumption sensors. A sensor of this type needs a calculation table to convert impulses to liters. If there is a limit after which impulse counter is zeroed, this limit can be specified (*Maximum impulses* field). However, with such a limit, in case of abnormal reset, the further calculations become senseless. In such a case, the limit must be 0.

## Absolute fuel consumption sensors

The readings are taken form absolute fuel consumption sensors. The calculation table is applied to each sensor separately, and then the difference between transformed sensor values in two consecutive messages is calculated. You may need to add a coefficient to get more precise values. Then add to the calculation table the following entries: *X:0, a:coefficient value, b:0*. For example, to increase fuel consumption level for 10%, *a* coefficient must be *1.1*.

## Instant fuel consumption sensors

The readings are taken from instant fuel consumption sensors. It calculated how much fuel has been consumed since the previous message. Thus, unlike other fuel sensors, there is no connection between consecutive messages.

⚠️ **ATTENTION!**
Fuel can be calculated by one selected and available method or using several methods at once (you can choose even all methods if there are enough sensors). However, using many methods can make your reports too large and complicated for reception and interpreting data. That is why it is recommended to choose one or two methods which fit better to a unit, its equipment type, configuration and operation conditions.

# Service Intervals

In this tab you define maintenance intervals to perform all needed for your unit routine servicing in time. These can be oil change, yearly checkup or just a washing.

In the list you see the name of each interval, its description (if available) and the state - how much days, engine hours or kilometers has left or are already expired to do this service. Depending on the state (time left or expired), the lines are red or green.



To add a new service interval, press **New Service Interval** button. Then enter necessary parameters: name, description, interval and last execution time.



Three ways to indicate an interval are possible:

- **Mileage interval** means that the service must be done every *n* number of kilometers travelled.
- **Engine hours interval** means that the service must be done every *n* number of engine hours.
- **Days interval** means that the service must be done every *n* number of days.

You can simultaneously choose several interval types at once, and each of them will be calculated independently. That is the term by days cab by expired, but by mileage the term has not passed yet.

When choosing an interval, indicate which counter value (or day) was when this kind of service was made the previous time. Enter this value into the **Last Service** field. For your convenience, the current values of the counters are indicated below.

⚠ *Attention.*
Check your counters properties on the schetchiki*General tab, do not forget to mark the Auto checkbox.

**Done times**: here you indicate how many time this kind of service was already done. This number can be entered into this field manually or changed automatically when registering a service of this kind. Besides, after registration the time of the Last Service changes, and the count of days/kilometers/engine hours will be zeroed and started again.

At the end press OK. The newly created service interval will appear on the list. To manage intervals, use the following buttons:

- **New Service Interval** opens a dialog to create a new service interval and set parameters for it.
- **Clone Service Interval** opens a dialog with all parameters of the selected interval. You can edit these

parameters and save the interval under another name.

- **Modify Service Interval** opens a dialog to view and/or edit the interval.
- **Delete Service Interval** deletes the selected interval.

## Service Intervals in Use

### Tracking

Service intervals with their terms can be indicated in unit info tip. See User Settings.

### Events Registration

Maintenance works can be registered in unit history and used in report later. When registering maintenance, it can be bound to a certain service interval (existing in unit properties). After registration, the count of days/kilometers/engine hours will be restarted, done times will be added, and the last service term will change. The changes can be estimated in unit info tip as well as in unit properties dialog.

### Notifications

There is a notification of the *Routine servicing* control type. With the help of this tool you can receive automatic notifications by e-mail, SMS, in online popup window or by other means about service terms which are approaching or expired. See Notifications.

### Reports

Two tables concerning service intervals can be generated for units or unit groups: *Maintenance* and *Utilization cost*. The report on maintenance presents the list of registered maintenance works. The report on utilization cost includes maintenance works as well as fillings.

Some information about maintenance can be shown in Statistics: total duration of maintenance works, total cost of maintenance works, the number of services done, total utilization cost, and the number of fillings and services.

# Unit Properties Export/Import

Export option is useful when you have several units with similar equipment. You adjust these settings just once and then export them to other units.

**Export to unit** allows to copy several properties of the current unit to other existing unit(s).

**Export to file** allows to store several properties of the current unit to a text file (XML) that can be used at any time when configuring new units.

**Import from file** is used to transmit needed properties from a previously saved XML file to a unit.

Import and export are executed in the **Units** panel where a special menu of import/export exists:

import settings from a file to the current unit
(this button is not displayed if you have no *view* or *manage* access to the unit),

export the current unit settings to a file,

export the current unit settings to other unit(s).
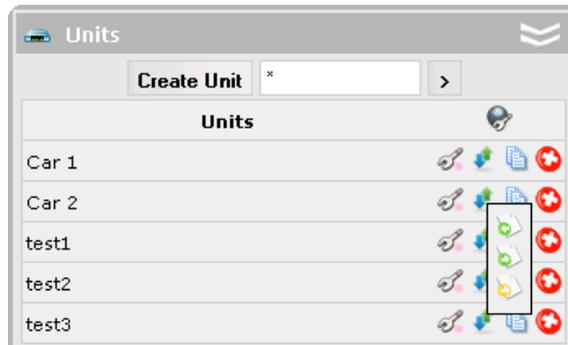


The settings which can be saved, exported and imported are: General tab (including counters), sensors, custom fields, trip detector and fuel consumption.

## Import Settings from File

Settings previously saved to an XML file can be imported to a unit. To do this, in the import/export menu select the option **Import from file**, choose a file on the disk, check needed settings and press OK. The result will be shown right in the dialog:

- "OK" - the section has been imported successfully;
- "Missing" - the source file does not contain such section at all, so this section in the destination file will remain untouched;
- "Error" - this section cannot be imported because of some file error.
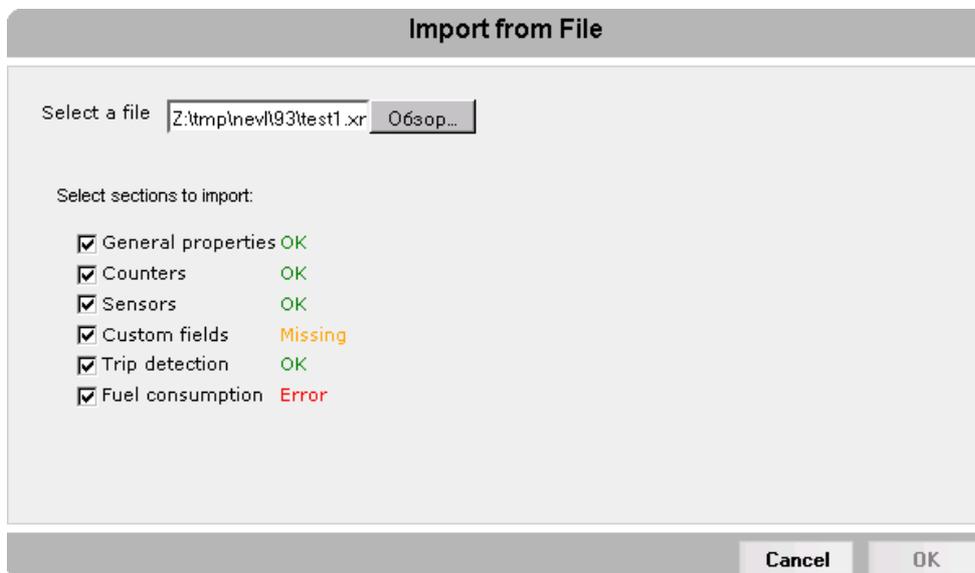
After that you can press Cancel to finish the import operation or select another file and import settings from it.

⚠ To make import to a unit, you need to have *edit* or *manage* access rights to this unit.

Unit properties from file can be imported to several units at once - see Unit Groups.

## Export Settings to XML File

Unit settings can be stored to a file. It gives possibility to create templates of unit configuration. Afterwards, the settings stored can be wholly or partly imported to new units of a similar kind which considerably facilitates unit creation.

To export unit properties to file, choose the option **Export to file**. Depending on browser settings, you will be asked to open or save the file. File format is XML. Here is an example of such a file:

```
<devices>
        <device name="0025 МАЗ АА 7904-4" type="CAP WP AVL" unique_id="2888888108">
                <custom>
                        <field name="Математический расход топлива" value="0 18 16.2"/>
                        <field name="Новые коэф. с загрузкой" value="22.2 и 20"/>
                        <field name="0025" value=""/>
                </custom>
                <fuelc>
                        <absolute active="false"/>
                        <impulse active="false" impulses="0" skip_first_zero="false"/>
                        <instant active="false"/>
                        <level active="false" correct_invalid_values="false"/>
                        <math active="true" coefficient_when_loaded="1.3" idle="3.0" suburban="20.0"
urban="22.2"/>
                        <rates active="false" summer_consumption="10.0" summer_idle="2.0"
winter_begin_day="1" winter_begin_month="11" winter_consumption="12.0" winter_end_day="30"
winter_end_month="1" winter_idle="3.0"/>
                        <general filter_level_values="true" filter_quality="5"
merge_consumption_sensors="true" merge_level_sensors="false" time_based_calculation="false"/>
                        <theft detect_fill_when_stopped_only="true" fill_volume="20.0"
ignore_stay_timeout="10.0" theft_timeout="60.0" theft_volume="10.0"/>
                </fuelc>
                <sensors>
                        <sensor name="зажигание" parameter="in1" type="engine operation" unit="Вкл/Выкл"/>
                        <sensor name="Уровень топлива в баке." parameter="adc2" type="fuel level"
unit="litres">
                                <ctable>
                                        <row a="0.0" b="-348201.3876" x="0.0"/>
                                        <row a="16.666667" b="-16.666667" x="1.0"/>
                                        <row a="10.309278" b="-6.494845" x="1.6"/>
                                        <row a="11.363636" b="-9.204545" x="2.57"/>
                                        <row a="11.764706" b="-10.588235" x="3.45"/>
                                        <row a="12.658228" b="-14.43038" x="4.3"/>
                                        <row a="11.627907" b="-9.186047" x="5.09"/>
                                        <row a="12.048193" b="-11.686747" x="5.95"/>
                                        <row a="11.494253" b="-7.931034" x="6.78"/>
                                        <row a="11.904762" b="-11.071429" x="7.65"/>
                                        <row a="11.235955" b="-5.393258" x="8.49"/>
                                        <row a="11.904762" b="-11.666667" x="9.38"/>
                                        <row a="10.869565" b="-1.086957" x="10.22"/>
                                        <row a="10.526316" b="2.736842" x="11.14"/>
                                        <row a="0.0" b="-348201.3876" x="11.3"/>
                                </ctable>
                        </sensor>
                </sensors>
                <tripd gps_correction="true" lock_to_roads="true" message_distance="10000"
moving_speed="2" satellites="3" stay_time="300" trip_distance="100" trip_time="60" type="3"/>
        </device>
</devices>
```

## Export Settings to Unit

The fastest way to export unit properties is to export them right from one unit to another (others). Select the option **Export to unit**, in the list select choose unit(s) to export settings to. In the next page indicate which settings must be exported: general settings, counters, custom fields, sensors, trip detector and/or fuel consumption. At the end press OK.

If there are sensors or custom fields among selected sections, you need to indicate **export type** choosing it from three options:

- **Replace**: custom fields and sensors will be replaced completely.
- **Merge**: custom fields or sensors having the same name will be replaced and the new ones will be added.
- **Append**: custom fields or sensors having the same name will be left intact but the new ones will be added.

### Export into Units

General settings

Counters

☑ Custom fields

☑ Sensors

☑ Trip detector

☑ Fuel consumption

Export type:

Append

Custom fields or sensors having the same name will be left intact but the new ones will be added.

Cancel    Back    OK

# Sensors Types

How to create a sensor, see Sensors. Below is the list of sensor types which can be created:

| Sensor type | Metrics | Description |
|---|---|---|
| **Impulse fuel consumption sensor** | - | The sensor shows fuel consumption over a period of time and presents this data number of impulses. Such sensors usually have a limit after which they are zeroed. The calculation table must be compiled to make it possible to convert impulses to liters. The sensor is needed to make reports on fuel consumption when the calculation method is 'Impulse fuel consumption sensor'. |
| **Absolute fuel consumption sensor** | liters (lt) | The sensor detects fuel consumption over all period of vehicle operation. The sensor is needed to make reports on fuel consumption when the calculation method is 'Absolute fuel consumption sensor'. |
| **Instant fuel consumption sensor** | - | The sensor shows fuel consumed from the previous measure (message). The sensor is needed to make reports on fuel consumption when the calculation method is 'Instant fuel consumption sensor'. |
| **Fuel level sensor** | liters (lt) | This sensor is placed in the tank. The sensor is needed to make reports on fuel consumption when the calculation method is 'Fuel level sensor'. |
| **Fuel level impulse sensor** | liters (lt) | The sensor detects the number of impulses in a period of time. Fuel level in the tank is calculated from receives values. |
| **Temperature sensor** | Celsius degrees (°C) | The sensor showing some parameter value (not necessary temperature). It can be used to analyze input data. |
| **Engine RPM sensor** | rounds per minute (rpm) | The sensor displays engine speed. |
| **Engine operation sensor** | On/Off | This is ignition sensor that is used in the report on engine hours as well as in trips/stays detection. |
| **Cargo load sensor** | On/Off | The sensor that shows whether a vehicle is laden or unladen. It can be also used as enlarging coefficient in the reports on fuel consumption where 'Mathematical' method of calculation is chosen. |
| **Voltage sensor** | volts (V) | The sensor showing some parameter value (not necessary voltage). It can be used to analyze input data. |
| **Custom digital sensor** | On/Off | This sensor can register two states. Its values are displayed while monitoring the device in its popup window. |
| **Custom sensor** | any | This is a custom sensor for which you can set any unit of measure. Its values are displayed while monitoring the device in its popup window. |
| **Mileage sensor** | kilometers (km) or miles (mi) | The sensor showing the distance travelled. It can be used to detect trips and stays. |
| **Relative odometer** | kilometers (km) or miles (mi) | The sensor shows the distance travelled since the previous message. It can be used to detect trips and stays. |
| **Engine hours sensor** | hours | The sensor registers the total amount of engine hours. |
| **State sensor** | custom | This sensor can show unit state like busy/free or busy/free/free soon, etc. |
| **Counter** | number | The sensor can show passenger traffic or count the number of some actions like opening/closing the door, etc. Several calculation methods can be applied to these sensors: instant (counts the number from the previous to the current message), differential (shows total number), differential with overflow (2 bytes), switcher from OFF to ON (counts the number of activations), switcher from ON to OFF (counts the number of deactivations). |

# Users

Open Users panel in the work area on the left of the window. Here the list of all users available to you is displayed. Here you can create other users, edit and delete them.

The number of users allowed can be known from your account parameters (see User Settings => Account).



## How to Create a New User

To create a new user, push the **Create user** button. In the dialog that appears, fill in the field on the given tabs.

### General

Enter a name and a password (and its confirmation) for the user. This name and password will be used by this user to login to the monitoring site. Mark the check boxes **Can create objects** and **Can change password** to give the user the corresponding rights if needed. Tick **Activated** to let the user login to the service.



### Access to Objects

Here you give the user access rights to objects existing in the system: units, unit groups, users, and accounts. On the left choose objects and assign access type to them on the right. To select several objects at once, use **<ctrl>** and **<shift>** keys. After the access level has been assigned to an object, it acquires the corresponding background. If this tab is left empty, it is assumed by default that this user has no access rights to existing objects.

Access levels:

- no access;
- view;
- execute commands;
- edit;

- manage.

If you have less than 100 objects, the full list of available objects is displayed when you open the tab. If you have more than 100 objects, the list is empty, and you need to apply the filter to search and display objects. On the bottom of the dialog enter request text using wildcard symbols * (replaces any number of characters) and ? (replaces one character). After entering a text, press Apply. Search results will be displayed on the list.



To assign rights for a user you need to have *manage* access to this user as well *manage* access to any objects. If you access to a user is not *manage*, the tab 'Access to Objects' is not displayed at all in user properties dialog. If you do not have *manage* access to some system objects, they are not displayed on the list.

## Advanced

Activate access to mobile site for the user if needed and enter access key which is necessary to login to the system from a cell phone. Type user's phone number(s) in the international format to let the user manage units via SMS. Enter e-mail address that will be used to get notifications from the service administration. These settings can be changed by the user in User Settings when hi/she logs in.



## Custom Fields

Any kind of information can be added to users account using custom fields. This can be private phone, home address, post, experience, and so on.

The next time you open the dialog custom fields will be automatically alphabetized.

## Managing Users List

For your convenience, the users are arranged by name. If there are many users, use filter to easily find them. Enter your inquiry using the asterisk sign (it replaces any number of characters) and push **Apply filter**.

The following actions are possible:

edit user's configuration;

create a copy of this user;

delete user from the system.

The dialog to change user configuration is similar to the Create User dialog, but is has one more tab - **Log**. Here you can view all users' logins to the system during an indicated period of time. Specify the period and push **Show**.

# Unit Groups

Unit groups are created and managed on the Unit Groups panel.
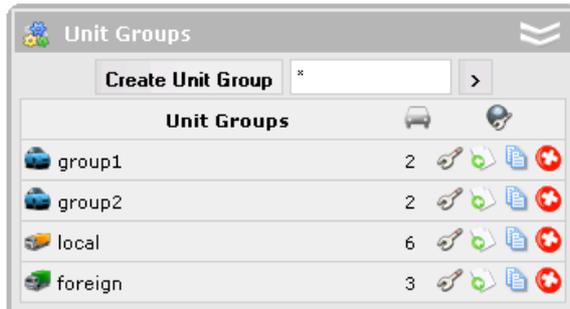
Unit group is a unity including several unitrs which have something in common. In many cases it is convenient to operate a group of units instead of performing an action over each unit individually. For example, you can easily open needed units group in the working list and then track them, create reports and notification, and units not included into the group will not catch your sight and confuse you. Assigning access rights using unit groups is also much easier.

There are several types of reports which are designed specially for unit groups (Trips of unit groups, Engine hours of unit groups, Violations by unit groups). They are a part of Advanced Reports module.

## How to Create a Group

On the Unit Groups panel press **Create group**. Fill in the dialog and press **OK**:

### General

Give group a name. Then add units to the group. On the left there is a list of all units available. On the right there is a list of units in the group. To add a unit to the group, double-click on it or push the **Add** button. To remove a unit from the group, push **Remove** or double-click on this unit in the right column.
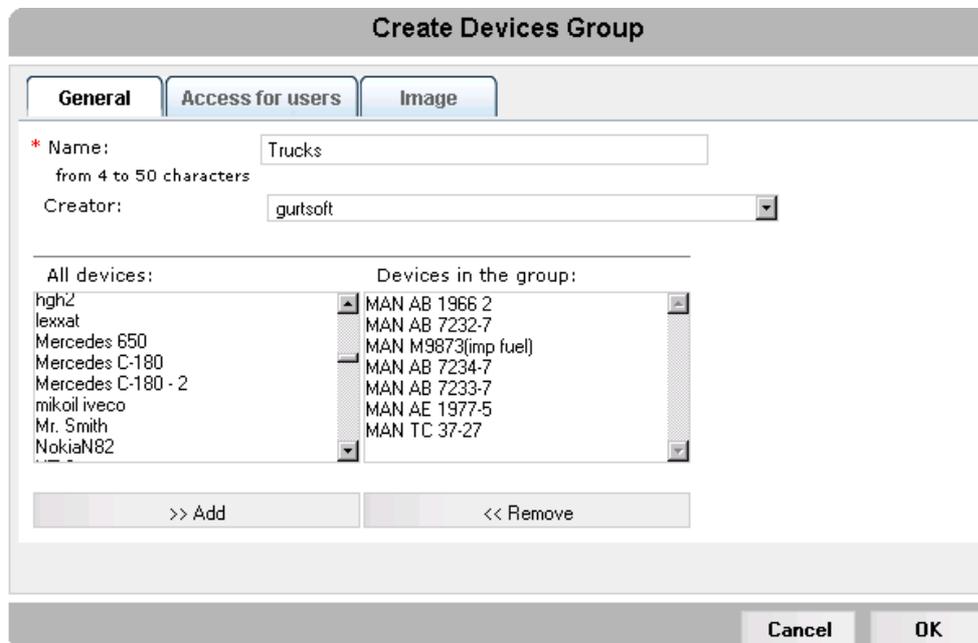
### Access for Users

Access level to the group can be assigned to each user. Push the Apply button to the list of available users at the left part of the dialog. Click on a user name and select access level for this user on the right. Several items can be selected at once using **<shift>** and **<ctrl>** keys. The rights assigned are marked by the corresponding background color.

### Image

Attach an image to the group. It can be selected from the set of standard images (**Image Library** button) or

load your own image (**Browse** button).

## Managing Groups

One unit can be included in any number of groups. Put the mouse cursor over a group name, and in the popup window you will see the names of all units in this group and their current location.

By default, the items in the list are arranged by name. For easy search and arrangement you can use the **filter**. Enter your inquiry using the asterisk sign (it replaces any number of characters) and apply the filter.

In the list of the groups there is a column that shows .

There is a number of actions possible:

the number of units in the group;

view and edit group properties (add/remove units, change image, reassign access rights);

import properties from a file;

create a new group using this one as a basis;

delete the group from the system (deleting a group does not mean deleting the units included).

## Import Unit Properties from File

Unit properties previously saved to an XML file can be imported to several units at once if these units form a group. To import properties, press the Import button  against the needed group. In the dialog check the units to import settings to and press Next. Then select a file, check needed sections and press OK. The result will be displayed in the same dialog. Details…
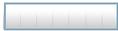
# Drivers

⚠️ *Attention!* This module is licensed separately and can be not included in your package.

In this panel you can list drivers who form your personnel. With one click of a mouse a driver can be assigned to a unit that is attached to a vehicle. Then in the reports on this unit the driver can be indicated. It is especially convenient when different persons drive a unit. There is also possibility to detect drivers automatically with the help of iButton system.

To create and manage drivers, open the Drivers panel.
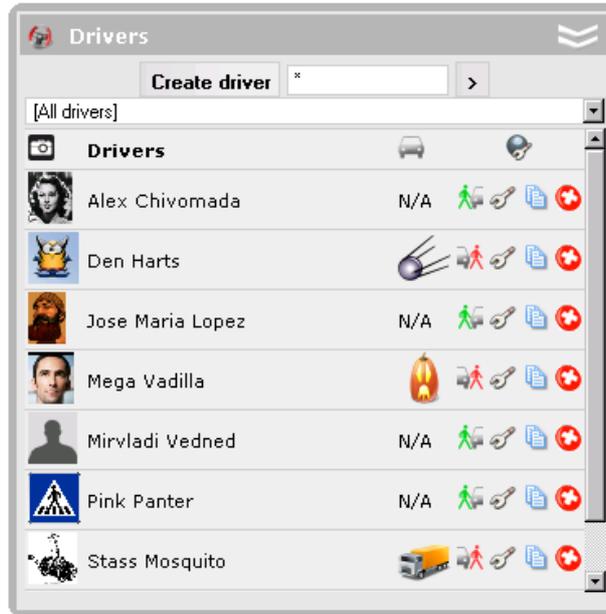


## How to Create a Driver

Push the **Create driver** button and set required parameters.

**Driver name**
Give driver a **name** that will be visible in reports.

**Driver code**
Enter unique driver **code** needed to identify the driver. The codes of different drivers can be the same only in case they are bound to one unit. The code is used to identify driver. It fixes in messages.

**Description**
Type any comments (optional).

**Phone number**
Enter driver's phone umber if needed.

**Photo**
To quickly identify a driver, you can attach an image. To do this, press the **Browse** button and find and load the necessary image from the disk.

At the end press OK. The new driver will appear in the list.

## Bind Driver to Unit

There are two ways to bind a driver to a unit: manual and automatic.

The manual assignment is done in the Drivers panel. For it **Bind/unbind** switch button can be used. After you press **Bind to unit** button 🚶, choose a unit in the dialog box.



To detect a driver automatically the corresponding equipment has to be installed. In authorized personnel control system iButtons with i-wire bus inside are widely used. When bording the vehicle, the driver applies the electronic key to be identified by the system.

When a driver is bound to the unit, the system registers this fact in messages. In the column with parameters the following data can be find:

| | Time | Speed | Coordinates | Location | Parameters |
|---|---|---|---|---|---|
| 50 | 10:02:27 | --- | --- | --- | ID= |
| 51 | 15:02:43 | --- | --- | --- | ID=123 |

**ID=** means that the driver was unbound from the unit (manually only).
**ID=123** means that the driver with the code '123' was bound to the unit (manually or automatically).

## Managing Drivers List

In the tooltip of each driver you can see his/her descriptions (if there is such), the name of a unit he/she is driving. and enlarged driver's photo.

If a driver is bound to a unit, unit icon is displayed in the next column. If place the cursor over this icon, the unit

popup window is displayed (the same as in the Monitoring panel). 'N/A' in unit icon place means that the driver is not bound to any unit.

The next column contains **Bind/unbind** switch button:

- bind driver to a unit;

- unbind driver from the unit.

Several actions are also allowed:

- configure driver;

- create a new driver using this one as a basis;

- delete driver.

## Two Drivers for a Unit

If you are trying to bind a driver to a unit already having a driver, that driver will be automatically unbound and a new deriver will be assigned.

Sometimes it is necessary to set two (or even more) driver to a unit. For instance, in case of a large travel when the drivers work by relay. In this case it is obligatory that these drivers had the same code. Then when you unbind one of the drivers, the others having the same code are unbound, too.

## How Drivers Can Be Used

The name of the driver is displayed (if available) in unit info tip. To activate this option, check **Show drivers information in the unit info tip** in User Settings. The photo is also displayed if available.
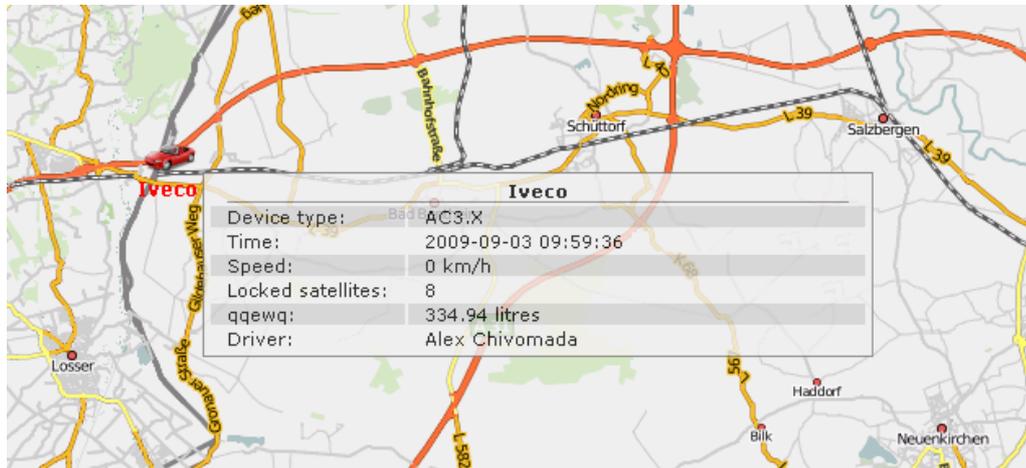


Besides, it is possible to have a special column in the monitoring panel to display drivers. For this, is is required to activate **Show drivers column** in the monitoring panel settings.

The drivers are also shown in reports if the appropriate column is chosen in report template (for tables only).

Trace: » Sensors Types » Users » Unit Groups » Drivers » Messages Mode
You are here: Wialon User Guide » Messages Mode

# Messages Mode

The Massages Mode presents data received from a unit in the form of a table where each message with all parameters available is listed. Messages got from a unit for any period of time can be viewed. Besides, they can be exported to the most widespread formats.

## Messages Window Layout

Choose **messages** in the main menu to open the Messages Mode. In this mode the workspace can be divided into four sections:

- in the left top corner you can set parameters of your request;
- in the bottom left part there are some tabs that help to manage the messages: statistics, export/import messages, message parameters description;
- in the top right section there is the map;
- at the right bottom there are messages themselves.

Vertical sizes of the messages panel and the map are adjustable. To control them, click on the splitter between them and holding the mouse button, drug to a required direction.
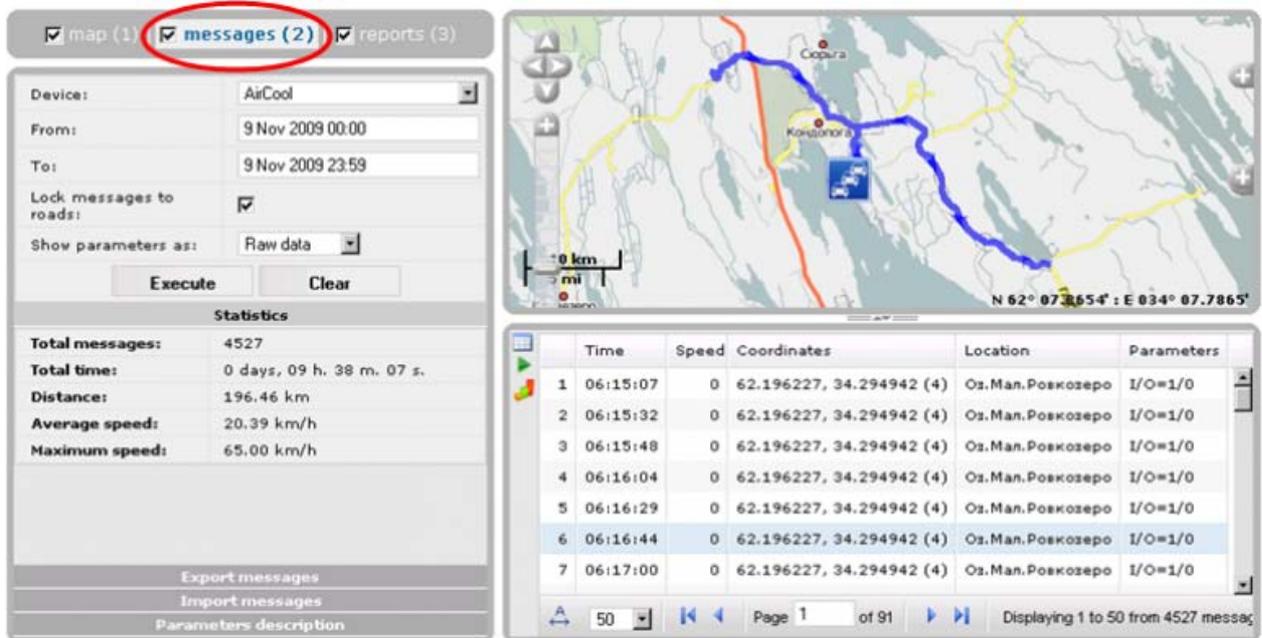


## Request Messages from Server

The request is formulated in the top left cornet of the window. You specify the following parameters:

- Select a unit for execution.
- Specify the period of time to show messages for.
- Decide if you would like the messages to be locked to roads or not (this option is active for WebGis-3 maps only).
- Choose how the parameters should be displayed: as raw data or as sensor values. If **raw data** is selected, in the table there is one column for all parameters, and they are displayed in one line in their initial form. If **sensors values** are selected, each parameters has its individual column in the table).

When you have configured your request, push the **Execute** button. If the button is not active, it means that the selected unit has no messages for the indicated period.

Press **Clear** to make another request or change the parameters of this one.

## View Messages

You can observe messages in different ways. They can be presented in the form of a table or as a chart, play the track or just examine the statistics.

### Statistics

In the **Statistics** panel the general information about the request is given:

- **Total messages**: the number of messages for the whole period;
- **Total time**: the interval between the first and the last message in the selected period;
- **Distance**: the distance traveled by the unit within the indicated time interval;
- **Average speed**: the average of all speed values registered during the period;
- **Maximum speed**: the maximum speed registered.

| Statistics | |
| --- | --- |
| **Total messages:** | 331 |
| **Total time:** | 0 days, 07 h. 43 m. 45 s. |
| **Distance:** | 10.90 mi |
| **Average speed:** | 1.41 mi/h |
| **Maximum speed:** | 44.09 mi/h |

### Table

The table of messages has the following columns:

- **Time** when the message was received.
- **Speed** registered at that point. It is calculated as the distance travelled between the previous message and the current one divided on time between these two messages.
- **Coordinates**: latitude and longitude, in the brackets the number of satellited locked is displayed.
- **Location**: country, city, street (if available).
- **Parameters** (if available) can be given in one row (if raw data is selected) or separate column for each parameter (if sensors values are selected). Parameters description is given in the tab with the same name that can be open on the left.
- **Delete**. This column contains buttons to delete messages and is available only if you have manage access right to the unit. Deleting a message can be applied when you think the message is invalid and can affect reports, tracks, etc.

Red rows in the table mean alarm messages registered by the system.

#### Table Management

Table's content is adjustable. It is possible to hide and show back any column. To choose columns to be displayed, place the cursor over table's header. Near each column name there is a button to show the dropdown list where you can choose what to display. Note that all columns cannot be hidden simultaneously.

The width of the columns is also customisable. To change it, drag column edge with the mouse to the required direction.

To reset columns width, push **Set column auto width** button in such a way that *A* letter appeared there.

To save columns width when moving to other page of messages, make the button inactive.

If there are many messages, they are presented in several pages. Use navigation panel (blue arrows) to move through the pages, or enter page number manually and press **<enter>** to display the page.

Set the number of messages to be displayed on one page: 25, 50, 75, 100.

## Using the Map

The track for the chosen period is displayed on the map. Click on any message in the table to move to this point on the map. The map is centered by this point and a green marker is set there. Place the mouse over the marker to view details.
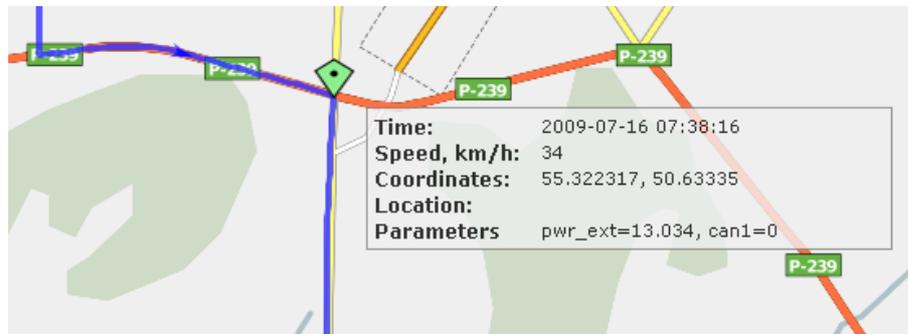


Besides, to get information about track points, hover mouse cursor over and see information in a tooltip (time, speed, coordinates, altitude, sensor values). Note that messages are searched in the radius of 50 pixels to the cursor.

### Play the Track

The map is also used to play the track. That means the marker can move along the track playing it with different speed. The following buttons can be used here:

| ► | play the track with the speed of 500 msec; |
| --- | --- |
| ◄◄ | decrease playback speed on 100msec; |
| ►► | increase playback speed on 100msec; |
| ▐▐ | pause. |

While playing the track the paged are shifted automatically.

If after a pause the playback is started again, it continues from the point it stoped the previous time.

If the track has finished, to play it again, go to the first message in the table. In other case, only the last page of messages will by played (if there are several).

## Charts

Except the text mode that is the table, some data can be presented in the graphical form. To switch between the modes, use 🔲 and 📊 buttons correspondingly.

In the graphical mode, parameters charts are available. When you switch to the graphical mode, the **Chart legend** panel opens on the left. There you tick parameters to be displayed in the chart. Several parameters can be selected simultaneously. Then the chart will contain several curves. For your convenience they will by drawn with different colors.

The chart can be zoomed with the help of a mouse. Select the necessary section holding the left mouse button.

Place the mouse pointer over a point to get the precise value at the point in a tooltip. To reset chart, press 🔄 .
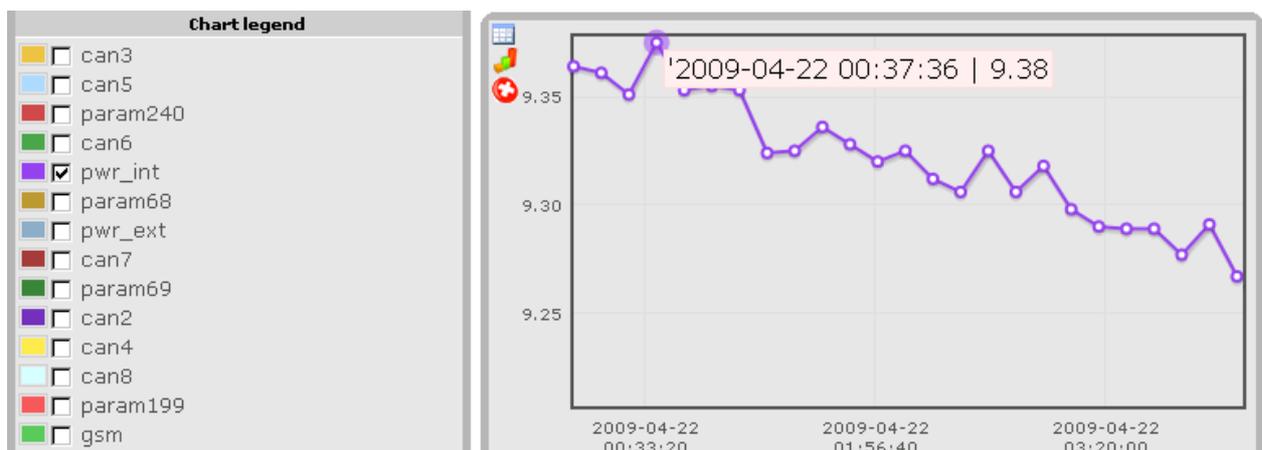
## Export Messages

Open the **Export messages** tab in the left section of the window. Select destination format and push **Export**. Depending on your browser configuration settings, you will be offered to open or save the file.
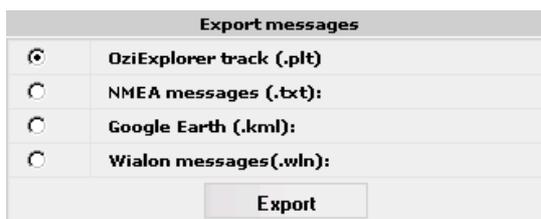


The supported formats are:

- OziExplorer track(.plt): Ozi Explorer format that stores track as a list of coordinates of track's points;
- NMEA messages (.txt): National Marine Electronics Association text file, communications protocol used in sea navigation equipment;
- Google Earth (.kml): XML-based format used in Google Earth to transmit three-dimensional geospatial data;
- Wialon messages (.wln): the format to be used by Wialon software.

## Import Messages

Select **Import messages** tab in the left section of the window.

The supported formats are:

- Raw GPRMC navigator logs in format defined by NMEA 0183 specification - searched in files with extension .txt or .log;
- Rainbow Skipper messages from MMC card - searched in files with extension .gps;
- Wialon messages - searched in files with extension .wln.

Push **Browse** to define a file (or an archive) to import messages from and push the **Import** button.

🔔 *Hint.*
To simplify and accelerate the process you may first compress files with ZIP or GZIP. After upload process is completed, files will be unpacked and processed on server.
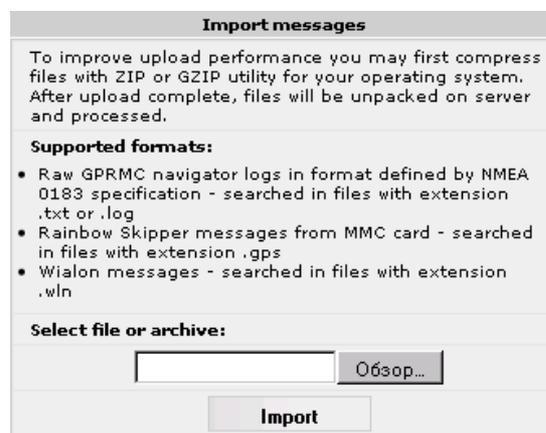
# Wialon

**USER GUIDE**

# Reports Mode (New Version)

⚠️ *Attention!* This module is licensed separately and can be not included in your package.

To switch to the Reports Mode, select the appropriate item in the modes panel. As a result reports window will open. Here you can generate reports in real time and view them right in the browser or export them to files of various formats like PDF, XML, XLS (Excel), HTML, CSV.
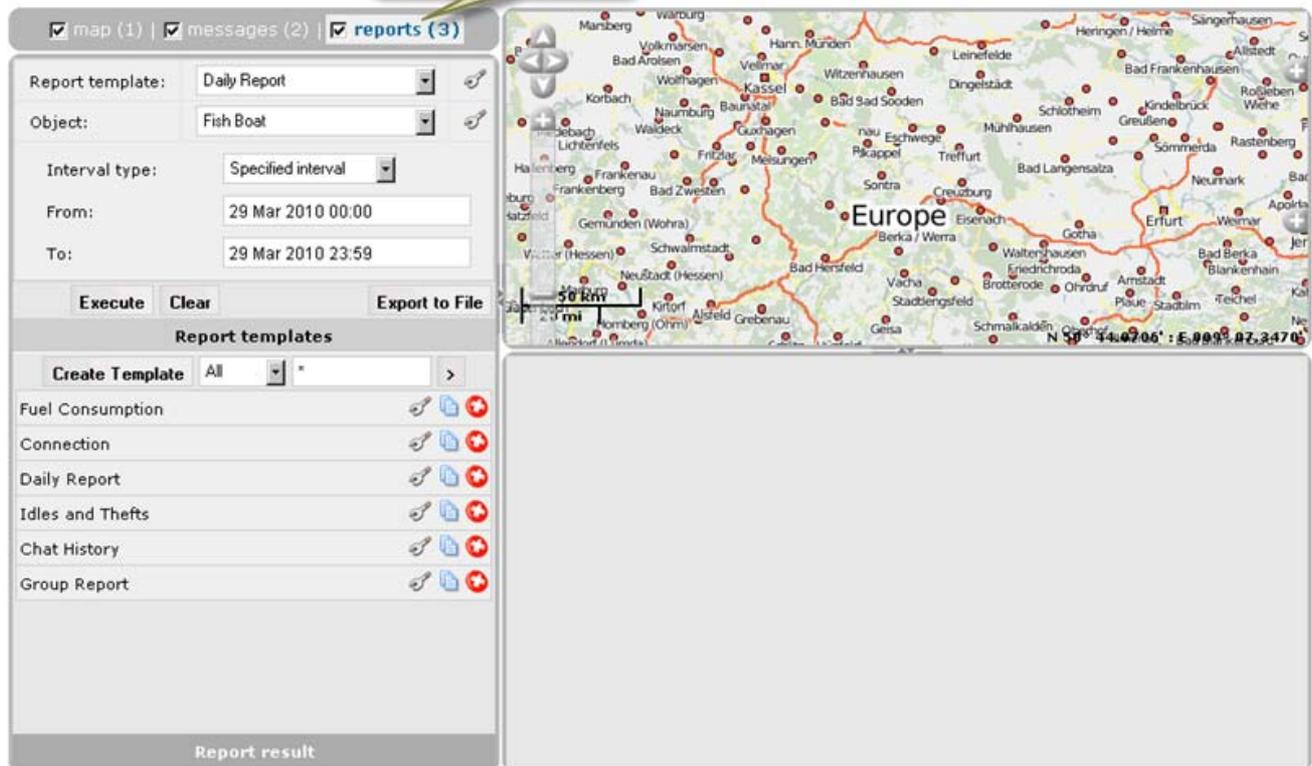


The Reports Mode window can be separated into four sections:

- In the top left hand corner the basic parameters to generate a report are adjusted.
- In the bottom left hand corner you create and store your report templates. After an online report is generated, this section changes for the navigation bar.
- In the top right hand section there is the map.
- In the bottom right hand section you see the report itself if it has been generated online. A report appears in the form of tables and charts.

The sizes of the sections are changeable. Click on the horizontal or vertical slider and holding the left mouse button drag it up/down or left/right.

## Report Generation

To generate a report, set the following parameters:

**Report template**

Choose a template from the dropdown list. On the right of the selected template there is a button 🔧 to display template settings for viewing and editing. ⚠️ If you have no templates, it is impossible to generate a report. Templates are created and stored below (see Report Templates for details).

**Object**

Each report can be dedicated to unit or unit group. This choice is defined when creating the template. So, depending on the selected template, you will be offered to choose an object from the dropdown list of units or unit groups. If the report is dedicated to unit group, *all* groups appear in the dropdown list (unit groups must be

created beforehand - in the Unit Groups panel). If the report is dedicated to unit, *not all* units are displayed in this dropdown list but only those which are in the work list of the Monitoring panel at the moment. If the group monitoring mode is selected, the units included in the groups chosen in the Monitoring panel are displayed in the dropdown list.

As in case of templates, on the right of the selected object there is a button ✍ to check object properties.

**Interval type**
Select a type of the interval and fill in the required fields to indicate the reporting period. Three ways to specify the interval are possible here:

- **Specified interval**: specify date and time (to seconds) of the interval beginning and end.
- **Starts 'From' until today**: specify the beginning only, and the and will be set automatically as the current date and time.
- **For previous** [select the number] days/weeks/months/years. The current day (week, etc.) can be included to the interval or not depending on the state of *Include current* checkbox.

## Online Report

To generate a report online, adjust the parameters described above and push the **Execute** button. If no tables or charts appear on the right, it means there is no data about the selected object for the selected period or poor report content is selected in the template.

After executing a report, the Report Templates panel changes to **Report Results** which displays report contents and provides navigation through the report. Usually, a report contains several pages. To switch between them, use navigation links in the Report Results panel. The name of the active page is bold and highlighted by a yellow background.

The information in reports can be presented in the form of tables or charts. Some information can be visualized on the map, for example, tracks and markers.



To delete an online report, push **Clear**. The map and the report itself will be cleaned, and the Report Result panel will be replaced by Report Templates again. However, you can switch between these two panels manually. To do this, just click on the header of the corresponding panel.

⚠ *Hints:*

- Reports can be generated and sent by e-mail automatically according to a preset schedule - see Jobs for details.
- Reports can be sent to you in case of event - see Notifications for details.

Further information:

- **Report Templates**
- **Tables**
- **Charts**
- **Map Output**
- **Statistics**
- **Advanced Reports**
- **Export Report to File**

# Report Templates

The list of all templates available is located in the bottom left hand corner of the window under the header **Report templates**. Here you can create, edit and delete templates for reports. Check the number of templates possible to create in your account parameters (see User Settings => Account).
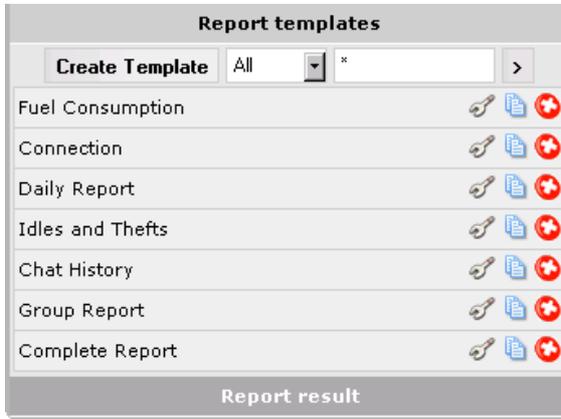
## How to Create a Report Template

To create a new report template, press the **Create template** button.
In the dialog enter a **name** for the template and choose one of two **types**:

- **Unit**: this template will be applicable to separate units.
- **Unit group**: this template will be used to gather information about several units at once. These units must be presented as a unit group. 🔔 *Note*: to create reports for unit groups, the Advanced Reports extension package is required.

🔔 *Attention!*
It is not recommended to change template type when editing a previously created template because all template contents will be lost with this action.
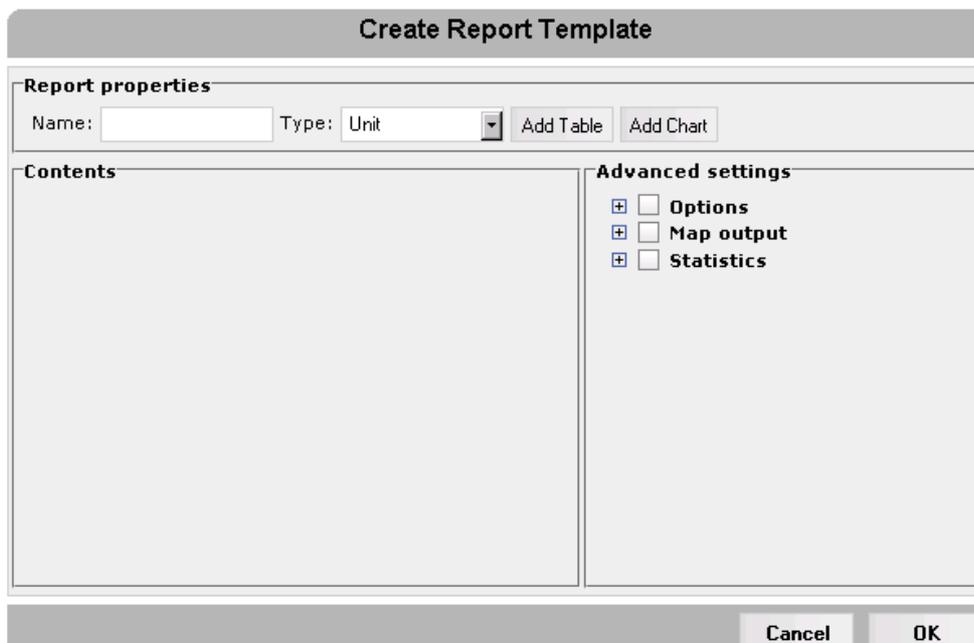


After entering name and selecting type, add tables and charts to your template, set statistics parameters and advanced settings as described below:

- **Tables**
- **Charts**
- **Options**

- **Map Output**
- **Statistics**

All added contents will be displayed at the left of the dialog. Here you can set the sequence order of the pages and give them custom names if needed.



To change page name, click on it and enter any text. To manage template contents, use the following buttons:

⬆ move up,

⬇ move down,

✐ edit a table/chart,

📄 make a copy of a table/chart,

⊗ delete page.

## Options

**Geofences as address source** option allows to use geofences names instead of usual addresses received from the Web-GIS. Addresses can be used in several tables to indicate unit location.

**Use US metrics (miles, gallons)** option defines how mileage, speed, and fuel are given in the report. If this box is checked, miles and gallons are used instead of kilometers and liters.

## Managing Report Templates

All created templates appear in the list of report templates. If clicking on a template, it becomes selected in the *Report template* field of report generation parameters.

When searching a template, it is convenient to use the filter. Enter template name or its part into the search field, replacing any number of unknown characters with the asterisk sign (*). Press <enter> to apply the search parameters. In order to return to the complete list of templates, just enter one asterisk in the search field and press <enter>. Additional search parameters are set in the dropdown list where you can choose the account or leave *All*.

The following actions are available:

✐ edit a report template;

📄 create a new template using this one as a basis;

⊗ delete template.

Further information:

- **Tables**
- **Charts**
- **Map Output**
- **Statistics**
- **Export Report to File**

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# Tables

The following tables can be added to the report:

- **Chat**
- **Chronology**
- **Connection Problems**
- **Counter Sensors**
- **Custom Fields**
- **Digital Sensors**
- **Engine Hours**
- **Events**
- **Fuel Fillings**
- **Fuel Thefts**
- **Geofences**
- **Last Location**
- **Maintenance**
- **Parkings**
- **Rides**
- **Sent Commands**
- **SMS messages**
- **Speeding**
- **Stops**
- **Trips**
- **Unfinished Rides**
- **Utilization Cost**
- **Violations**
- **Visited Streets**

A template can contain any number of tables and charts. You can even add the same table type several times with different configuration of columns, data grouping and other settings.

To add any of above mentioned tables to the template, click the **Add Table** button and choose a table from the list.
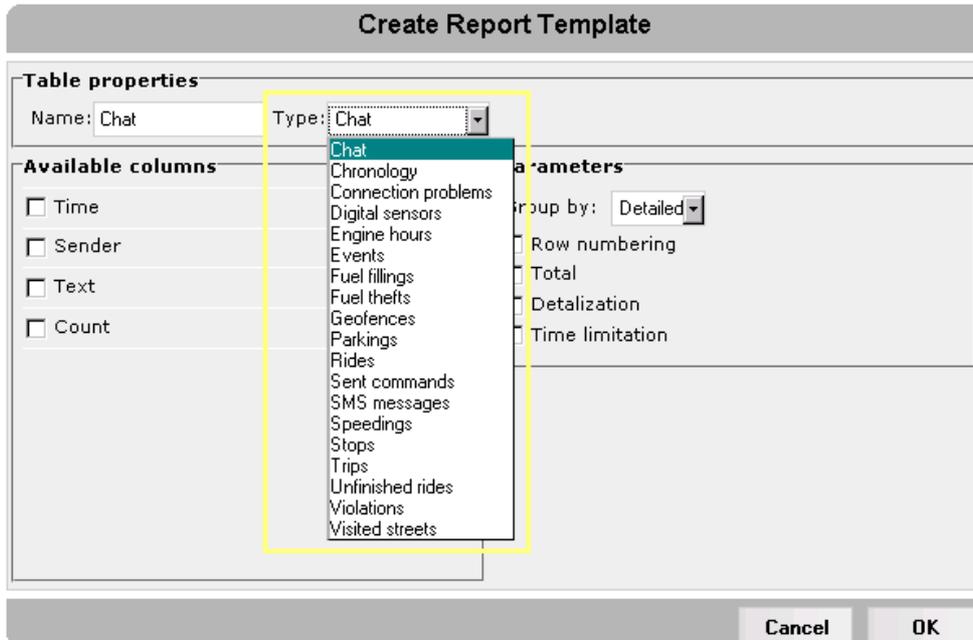


Each table type has its set of columns which can form this table. After you have chosen table type, the list of columns available is displayed below. Check the columns you would like to include in the resulting table. To select all columns at once, press <ctrl> on the keyboard and click on any checkbox. To make all columns unselected, repeat the same operation.

You can rename columns, clicking on their names and editing the text. In the same way you can change the name of the table itself (the **Name** text box at the top of the dialog). To restore default column names, use the button **Restore default**.

Besides, you can apply to the columns any sequence order. Move them up and down using the green arrows ⬆ ⬇ .

## Table Parameters

In the right part of the dialog you can set additional parameters for the table such as grouping, detalization, total raw, and time limitations. These parameters can be applied to any kind of table.

### Grouping

Data given in the table can be grouped by time intervals such as days, weeks and months. By default, the grouping is off. It means the data is given in the detailed view that is each raw of the table represents a separate event (such as fuel filling, violation, parking, SMS, etc. depending on table type selected), and these raws are arranged in the chronological order.

If any grouping interval is set, then each raw in the table will correspond to an interval (day, week or month). An additional column named **Date**, **Week** or **Month** will be added as the first column of the table.

Below there are two examples. The first one is a detailed report on parkings from 8th to 12th of March 2010. No grouping is applied.

| Beginning | End | Duration | Location |
|---|---|---|---|
| 2010-03-01 00:00:42 | 2010-03-01 10:26:22 | 10 hours 25 minutes | Walsroder Straße, Langenhagen, DE |
| 2010-03-01 10:55:44 | 2010-03-01 11:14:47 | 19 minutes 3 seconds | Donaustraße, Hannover, DE |
| 2010-03-01 11:52:29 | 2010-03-01 14:07:02 | 2 hours 14 minutes | 7 |
| 2010-03-01 14:23:21 | 2010-03-01 15:31:37 | 1 hours 8 minutes | IKEA |
| 2010-03-01 15:46:51 | 2010-03-01 17:15:11 | 1 hours 28 minutes | Expo Allee, Laatzen, DE |
| 2010-03-01 17:52:19 | 2010-03-02 08:08:22 | 14 hours 16 minutes | Walsroder Straße, Langenhagen, DE |
| 2010-03-02 08:44:49 | 2010-03-02 19:41:13 | 10 hours 56 minutes | P33 |
| 2010-03-02 19:56:57 | 2010-03-02 20:15:00 | 18 minutes 3 seconds | Hildesheimer Straße, Laatzen, DE |
| 2010-03-02 20:22:55 | 2010-03-02 22:40:20 | 2 hours 17 minutes | 1 - 2, Laatzen, DE |
| 2010-03-02 23:02:38 | 2010-03-03 08:17:22 | 9 hours 14 minutes | Walsroder Straße, Langenhagen, DE |
| 2010-03-03 08:58:58 | 2010-03-03 21:09:40 | 12 hours 10 minutes | P33 |
| 2010-03-03 21:37:55 | 2010-03-04 08:17:15 | 10 hours 39 minutes | Walsroder Straße, Langenhagen, DE |
| 2010-03-04 08:47:13 | 2010-03-04 22:22:07 | 13 hours 34 minutes | P33 |
| 2010-03-04 22:46:23 | 2010-03-05 08:40:29 | 9 hours 54 minutes | Walsroder Straße, Langenhagen, DE |
| 2010-03-05 09:12:15 | 2010-03-05 20:16:43 | 11 hours 4 minutes | P31 |
| 2010-03-05 20:54:26 | 2010-03-05 22:16:42 | 1 hours 22 minutes | Joachimstraße, Hannover, DE |
| 2010-03-05 22:43:44 | 2010-03-05 23:59:00 | 1 hours 15 minutes | Walsroder Straße, Langenhagen, DE |

The second table represents parkings for the same unit and interval, but here the data is grouped by days.

| Date | Beginning | End | Duration | Count |
|---|---|---|---|---|
| 2010-03-01 | 00:00:42 | 2010-03-02 08:08:22 | 1 days 5 hours | 6 |
| 2010-03-02 | 08:44:49 | 2010-03-03 08:17:22 | 22 hours 46 minutes | 4 |
| 2010-03-03 | 08:58:58 | 2010-03-04 08:17:15 | 22 hours 50 minutes | 2 |
| 2010-03-04 | 08:47:13 | 2010-03-05 08:40:29 | 23 hours 29 minutes | 2 |
| 2010-03-05 | 09:12:15 | 23:59:00 | 13 hours 42 minutes | 3 |

🔔 *Note 1.*
When using a grouping, all events which *began* in the analyzed interval are included in this interval, and when calculating event's duration *all* its duration is considered. That is why in the example above the total duration of parkings for the 8th of March is "1 day 5 hours" that is larger than a day.

🔔 *Note 2.*
It is convenient to include the **Count** column in the table with a grouping. In this column you get the count of events which happened within the current interval (day/week/month). In a detailed report this column will contain only ones. At the same time, it is recommended to exclude such columns as **Location** when configuring a table with a grouping because events happen in different places. However, even if you have selected this column, note that the location for the first event in the interval will be displayed.

### Detalization

A table with a grouping applied can be supplemented with detalization. Then a plus-shaped button will be added at the beginning of each raw. Press this plus to expand the hidden raw contents. For example, if there were four parkings detected at a day, in the grouped report the beginning of the first parking and the end of the last one will be indicated. But if you expand the hidden contents, you can get a detailed information for each of parkings in between. In the examples below you see the same report on parkings with grouping and detalization.

| | Date | Beginning | End | Duration | Count |
|---|---|---|---|---|---|
| ⊞ | 2010-03-01 | 00:00:42 | 2010-03-02 08:08:22 | 1 days 5 hours | 6 |
| ⊟ | 2010-03-02 | 08:44:49 | 2010-03-03 08:17:22 | 22 hours 46 minutes | 4 |
| | ----- | 08:44:49 | 19:41:13 | 10 hours 56 minutes | 1 |
| | ----- | 19:56:57 | 20:15:00 | 18 minutes 3 seconds | 1 |
| | ----- | 20:22:55 | 22:40:20 | 2 hours 17 minutes | 1 |
| | ----- | 23:02:38 | 2010-03-03 08:17:22 | 9 hours 14 minutes | 1 |
| ⊞ | 2010-03-03 | 08:58:58 | 2010-03-04 08:17:15 | 22 hours 50 minutes | 2 |
| ⊞ | 2010-03-04 | 08:47:13 | 2010-03-05 08:40:29 | 23 hours 29 minutes | 2 |
| ⊞ | 2010-03-05 | 09:12:15 | 23:59:00 | 13 hours 42 minutes | 3 |

Detalization can be applied only to grouped tables; it does not affect detailed tables.

## Total

The **Total** raw can be added to any table regardless its type, grouping or detalization applied. The total raw is added as the last raw in the table and contains the resulting information such as total duration of a state, total number of events registered, etc.

| | Date | Beginning | End | Duration | Count |
|---|---|---|---|---|---|
| ⊞ | 2010-03-01 | 00:00:42 | 2010-03-02 08:08:22 | 1 days 5 hours | 6 |
| ⊞ | 2010-03-02 | 08:44:49 | 2010-03-03 08:17:22 | 22 hours 46 minutes | 4 |
| ⊞ | 2010-03-03 | 08:58:58 | 2010-03-04 08:17:15 | 22 hours 50 minutes | 2 |
| ⊞ | 2010-03-04 | 08:47:13 | 2010-03-05 08:40:29 | 23 hours 29 minutes | 2 |
| ⊞ | 2010-03-05 | 09:12:15 | 23:59:00 | 13 hours 42 minutes | 3 |
| | ----- | **2010-03-01 00:00:42** | **2010-03-05 23:59:00** | **4 days 16 hours** | **17** |

In online reports the total raw is located at the bottom of the window regardless the number of pages in the table or scrolling bar location.

Location information is not given in the total raw (replaced by dashes).

## Row Numeration

Row numeration can be added to any table type. To switch the numeration on, check **Row numeration** box in table advanced parameters. The numeration is added to the table as its first column.

When numeration and detalization meet together, you get two-level numeration. The first level is a usual numeration of main rows with integer numbers. The second level is the numeration of nested rows as "main row number - dot - neted row number".

## Time Limitation

Time limitations can be applied to tables to limit data analysis by some time intervals, days of the week, days of the month or months. For example, you can select working days and working time to be considered while generating the table. However, if a state (for example, a trip) began within the indicated interval and finished outside this interval, the state will not be cut off and its duration will be wholly included in the report.

## Managing Online Tables

To adjust the number of rows to be displayed on one page, choose the number in the dropdown menu: 25, 50, 75 or 100. To navigate between the pages, use the blue buttons:

 go to the next page,

 go to the previous page,

 go to the first page,

 go to the last page.

The page number can be entered manually. After entering a number, push <enter> on the keyboard to go to the required page.

## Chat

This report unites commands of the kind *Send message to driver* and replied got from the driver. How to carry a chat with driver...

- **Time**: date and time when the message was received.
- **Sender**: driver or operator (operator's username in brackets).
- **Text**: message text.
- **Count**: the number of messages.

| Time | Sender | Text | Count |
|------|--------|------|-------|
| 2010-04-26 04:47:57 | Operator (user) | Return to the depot | 1 |
| 2010-04-26 04:48:48 | Driver | Finishing. | 1 |
| 2010-04-26 04:53:31 | Driver | Filled 50 gal. | 1 |
| 2010-04-26 04:53:54 | Operator (user) | Filling registered | 1 |
| 2010-04-26 04:58:45 | Operator (user) | New order near Gorky Park. | 1 |
| 2010-04-26 04:59:14 | Driver | 10 min | 1 |

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## Chronology

This kind of report gives information about all actions and changes in unit state during the indicated period of time. Unlike most of other tables which are dedicated to a certain thing (parkings, sensors, trips, etc.) this table can unite phenomena of various kinds which allows to estimate movement history in the whole.

The following things can be included to the chronology (in the template select necessary):

- Trips
- Parkings
- Stops
- Engine hours
- Fillings
- Thefts
- Events
- Drivers
- Speedings
- Connection loss
- Sensor trigger (enter one or two masks to indicate needed sensors)

The following columns can be selected to form the table:

- **Type**: trip, parking, stop, engine hours, filling (or reg. filling), theft, event (or violation), driver, connection loss, sensor.
- **Beginning**: when the detected activity began.
- **Initial location**: unit location at the moment of activity beginning.
- **End**: when the detected activity finished.
- **Final location**: unit location at the moment of activity end.
- **Duration**: how long this activity lasted.
- **Description**: for trips and speedings - mileage, for events and violations - the text of notification, for engine hours - duration, for drivers - registered driver name or 'driver unbound', for fuel fillings and thefts - the volume of fuel and sensor name, for sensors - sensor activation/deactivation.

| Type | Beginning | Initial location | Duration | Description |
|---|---|---|---|---|
| Stay | 2010-03-04 00:00:28 | P33 | 12:21:39 | ----- |
| Trip | 2010-03-04 12:22:07 | P33 | 0:24:16 | Mileage: 16.91 km |
| Speeding | 2010-03-04 12:26:52 | Messeschnellweg, Laatzen, DE | 0:01:40 | Mileage: 3.42 km |
| Stay | 2010-03-04 12:46:23 | Walsroder Straße, Langenhagen, DE | 9:54:06 | ----- |
| Trip | 2010-03-04 22:40:29 | Walsroder Straße, Langenhagen, DE | 0:31:46 | Mileage: 16.88 km |
| Stay | 2010-03-04 23:12:15 | P31 | 11:04:28 | ----- |
| Trip | 2010-03-05 10:16:43 | P31 | 0:37:43 | Mileage: 10.04 km |
| Stay | 2010-03-05 10:54:26 | Joachimstraße, Hannover, DE | 1:22:16 | ----- |
| Reg. filling | 2010-03-05 11:00:00 | ----- | 0:00:00 | 40.00 lt, sensor: Mathematical |
| Trip | 2010-03-05 12:16:42 | Joachimstraße, Hannover, DE | 0:27:02 | Mileage: 8.61 km |
| Stay | 2010-03-05 12:43:44 | Walsroder Straße, Langenhagen, DE | 10:17:06 | ----- |
| Trip | 2010-03-05 23:00:50 | Walsroder Straße, Langenhagen, DE | 0:59:08 | Mileage: 14.93 km |
| Connection loss | 2010-03-05 23:23:50 | 1 | 0:36:09 | ----- |

## Connection Problems

This kind of report lists cases when connection with server or satellites was lost. The parameters for this report are adjusted in Unit Properties => Advanced where you set *Maximum interval between messages.*

The following information can be presented in this kind of report:

- **Beginning**: date and time when connection loss happened.
- **End**: date and time when connection was recovered.
- **Duration**: time interval of connection loss.
- **Location**: the address where the unit was right before the connection broke.
- **Count**: the number of connection gaps detected.

| № | Beginning | End | Location | Duration |
|---|---|---|---|---|
| 1 | 2010-02-01 00:00:00 | 2010-02-28 14:00:42 | Walsroder Straße, Langenhagen, DE | 27 days 14:00:42 |
| 2 | 2010-03-05 23:23:50 | 2010-03-06 09:59:21 | 1 | 10:35:31 |
| 3 | 2010-03-15 06:32:25 | 2010-03-31 23:59:59 | Walsroder Straße, Langenhagen, DE | 16 days 16:27:34 |

# Counter Sensors

This table shows the operation of *counter* type sensors. In the template you set the mask (filter) for sensors or choose **All sensors**. Possible columns are:

- **Sensor**: sensor name.
- **Activated**: activation time.
- **Deactivated**: deactivation time.
- **Duration**: operation time.
- **Location**: unit location when counter was activated.
- **Mileage**: distance travelled for the operation period.
- **Avg speed**: average speed in this period.
- **Max speed**: maximum speed in this period.
- **Counter**: the value.

| Sensor | Activated | Duration | Location | Mileage | Avg speed | Max speed | Counter |
|---|---|---|---|---|---|---|---|
| Counter01 | 2010-04-04 20:23:47 | 0:52:17 | 1ra Av. Comayaguela, Tegucigalpa | 14.21 km | 16 km/h | 70 km/h | 141 |
| Counter01 | 2010-04-04 21:35:21 | 0:00:30 | Calle Real, Tegucigalpa, HN | 0.01 km | 1 km/h | 0 km/h | 1 |
| Counter01 | 2010-04-04 21:53:10 | 0:26:07 | 1ra Av. Comayaguela, Tegucigalpa | 0.13 km | 0 km/h | 0 km/h | 10 |
| Counter01 | 2010-04-04 22:35:24 | 0:51:42 | 1ra Av. Comayaguela, Tegucigalpa | 14.24 km | 17 km/h | 67 km/h | 149 |
| Counter01 | 2010-04-04 23:30:17 | 0:00:18 | 1ra Av. Comayaguela, Tegucigalpa | 0.01 km | 2 km/h | 0 km/h | 1 |
| Counter01 | 2010-04-05 00:14:53 | 0:01:00 | Calle Real, Tegucigalpa, HN | 0.02 km | 1 km/h | 0 km/h | 1 |
| Counter01 | 2010-04-05 00:38:45 | 0:02:36 | 1ra Av. Comayaguela, Tegucigalpa | 0.01 km | 0 km/h | 0 km/h | 3 |
| Counter01 | 2010-04-05 00:55:17 | 0:51:54 | 1ra Av. Comayaguela, Tegucigalpa | 12.66 km | 15 km/h | 60 km/h | 142 |
| Counter01 | 2010-04-05 01:51:13 | 0:09:35 | Blv Santa Fe, Tegucigalpa, HN | 2.60 km | 16 km/h | 32 km/h | 26 |

Counter sensor's value can be visualized in the chart that shows counter's operation intervals and its value. More about charts...
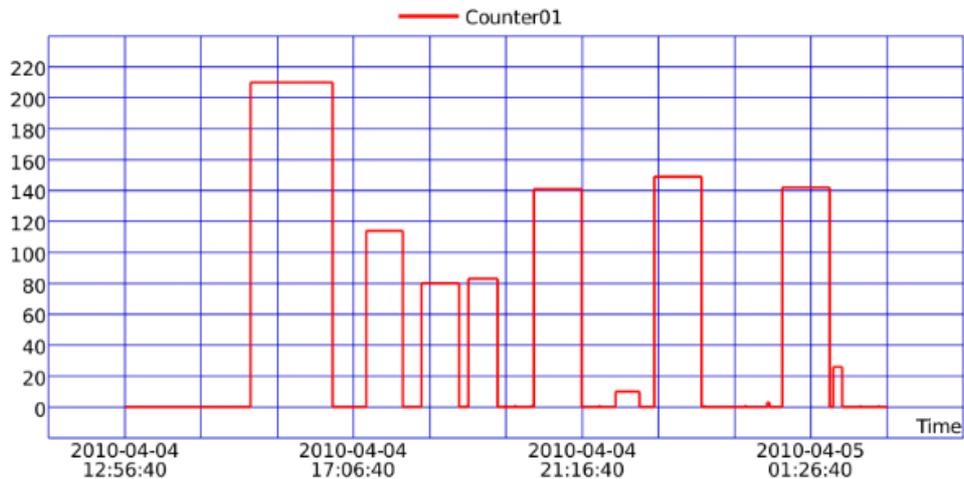
## Custom Fields

The table *Custom fields* represents the list of custom fields entered in the corresponding tab of unit properties dialog (see Unit Properties => Custom Fields). Possible columns:

- **Name**: custom field name.
- **Value**: custom field value.

| Name | Value |
|---|---|
| Carrying capacity | 3 tonnes |
| Fuel | Gas |
| Year mark | 1999 |

## Digital Sensors

Usually, digital sensors have two states: on/off, activated/deactivated, busy/free and so on. For example, it can be ignition sensor or cargo load sensor. All sensors are configured in Unit Properties.

In the report template you can select up to four sensors using masks. Enter sensor's full name or a part of the name using wildcard symbols like asterisk * (replaces several characters) or question sigh **?** (replaces one symbol). Sensor name cannot contain commas. Check the **All sensors** check box to automatically select all existing sensors. If no sensors are selected or sensors are indicated incorrectly, the table cannot be formed.

The table can contain the following graphes:

- **Sensor**: the name of the sensor under control.
- **On**: time when the sensor was activated.
- **Off**: time when the sensor was deactivated.
- **Duration**: the interval when the sensor was on.
- **Location**: unit location at the moment of activation.
- **Mileage**: the distance travelled while the sensor was on.
- **Avg speed**: average speed of movement when the sensor was on
- **Max speed**: maximum speed detected in the interval.
- **Activations count**: the number of activations.

| Sensor | Activated | Deactivated | Duration | Mileage | Avg speed | Max speed |
|---|---|---|---|---|---|---|
| voltage | 2010-01-01 13:57:52 | 2010-02-01 23:58:59 | 31 days 10:01:07 | 7753 km | 10 km/h | 118 km/h |
| battery operation | 2010-01-01 13:57:52 | 2010-01-11 05:35:28 | 9 days 15:37:36 | 1994 km | 9 km/h | 116 km/h |
| temp1 | 2010-01-01 13:57:52 | 2010-01-03 11:07:19 | 1 days 21:09:27 | 10.05 km | 0 km/h | 44 km/h |
| temp2 | 2010-01-03 11:07:19 | 2010-01-03 11:09:19 | 0:02:00 | 0.00 km | 0 km/h | 0 km/h |
| temp1 | 2010-01-03 11:09:19 | 2010-01-16 12:39:49 | 13 days 1:30:30 | 3854 km | 12 km/h | 116 km/h |
| power backup | 2010-01-11 05:35:28 | 2010-01-11 05:37:28 | 0:02:00 | 0.01 km | 0 km/h | 0 km/h |
| battery operation | 2010-01-11 05:37:28 | 2010-01-13 13:38:23 | 2 days 8:00:55 | 705 km | 13 km/h | 112 km/h |
| power backup | 2010-01-13 13:38:23 | 2010-01-13 13:50:23 | 0:12:00 | 0.02 km | 0 km/h | 0 km/h |
| battery operation | 2010-01-13 13:50:23 | 2010-01-22 06:26:41 | 8 days 16:36:18 | 2266 km | 11 km/h | 116 km/h |

# Engine Hours

Engine hours report shows working actively of a unit, its productivity and utilization as well as fuel consumption and some more things. The activity and efficiency of work of attached implements can be also analysed.

To generate this report the unit must have the following sensors: engine ignition sensor, and advisably engine efficiency sensor and any fuel sensors.

The method of calculating engine hours (by engine hours sensor or by engine ignition sensor) is set in Unit Properties => General. On the Advanced tab *Daily engine hours rate* is indicated.

In the table you can see:

| Beginning | Initial location | End | Final location | Engine hours | In movement | Idling | Mileage | Mov. prod. | Utilization |
|-----------|------------------|-----|----------------|--------------|-------------|--------|---------|-----------|-------------|
| 2010-01-26 08:02:12 | 0.41 km from TBILISI AVE., Baku | 2010-01-26 08:02:52 | 0.41 km from TBILISI AVE., Baku | 0:00:40 | 0:00:40 | 0:00:00 | 0.23 km | 100.0 % | 0.4 % |
| 2010-01-26 08:03:02 | 0.36 km from TBILISI AVE., Baku | 2010-01-26 10:09:27 | 0.36 km from TBILISI AVE., Baku | 2:06:25 | 1:34:25 | 0:32:00 | 24 km | 74.7 % | 70.2 % |
| 2010-01-26 10:13:27 | 0.42 km from TBILISI AVE., Baku | 2010-01-26 10:15:27 | 0.42 km from TBILISI AVE., Baku | 0:02:00 | 0:00:00 | 0:02:00 | 0.01 km | 0.0 % | 1.1 % |
| 2010-01-26 10:15:52 | 0.41 km from TBILISI AVE., Baku | 2010-01-26 15:23:17 | 0.41 km from TBILISI AVE., Baku | 5:07:25 | 3:11:25 | 1:56:00 | 130 km | 62.3 % | 170.8 % |
| 2010-01-26 15:31:17 | 0.36 km from TBILISI AVE., Baku | 2010-01-26 18:24:13 | 0.36 km from TBILISI AVE., Baku | 2:52:56 | 1:46:10 | 1:06:46 | 83 km | 61.4 % | 96.1 % |
| 2010-01-27 07:56:37 | 0.42 km from TBILISI AVE., Baku | 2010-01-27 09:15:32 | 0.42 km from TBILISI AVE., Baku | 1:18:55 | 0:10:55 | 1:08:00 | 2.58 km | 13.8 % | 43.8 % |
| 2010-01-27 09:17:32 | ----- | 2010-01-27 10:25:52 | 0.42 km from TBILISI AVE., Baku | 1:08:20 | 0:44:20 | 0:24:00 | 28 km | 64.9 % | 38.0 % |
| 2010-01-27 10:42:37 | 0.41 km from TBILISI AVE., Baku | 2010-01-27 10:52:27 | 0.37 km from TBILISI AVE., Baku | 0:09:50 | 0:03:50 | 0:06:00 | 0.15 km | 39.0 % | 5.5 % |
| 2010-01-27 11:20:27 | 0.36 km from TBILISI AVE., Baku | 2010-01-27 11:29:57 | 0.42 km from TBILISI AVE., Baku | 0:09:30 | 0:03:30 | 0:06:00 | 0.14 km | 36.8 % | 5.3 % |
| 2010-01-27 11:31:57 | 0.42 km from TBILISI AVE., Baku | 2010-01-27 13:09:47 | ----- | 1:37:50 | 1:03:50 | 0:34:00 | 38 km | 65.2 % | 54.4 % |

- **Beginning**: time when ignition was on.
- **Initial location**: location at the moment when the ignition was on.
- **End**: time when ignition was off.
- **Final location**: location at the moment when the ignition was off.
- **Engine hours**: time interval of engine operation. While operating, the unit can move or just stand with the engine on.
- **In movement**: how much time the unit had been moving within this interval.
- **Idling**: how mush time the unit was standing with the engine on.
- **Mileage**: distance travelled with engine on.
- **Counter**: counter sensor value.
- **Driver**: driver's name if such was identified.
- **Movement productivity**: percentage ratio of engine hours in movement to engine hours duration.
- **Engine efficiency duration**: the duration of attached implements operation (if having engine efficiency sensor).
- **Engine efficiency idling**: engine operation time after deduction of efficiency time (total engine hours subtract engine efficiency duration).
- **Utilization**: percentage ratio of engine hours duration to engine hours rate (engine hours divided by daily engine hours rate indicated in unit properties).
- **Useful utilization**: percentage ratio of engine efficiency duration to engine hours rate.
- **Productivity**: percentage ratio of engine efficiency duration to engine hours duration
- **Consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: fuel volume used in engine hours. It can be detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates. Details about fuel in reports…
- **Consumption by ... in movement**: fuel volume used in engine hours while moving.
- **Consumption by ... in idling**: fuel volume used in engine hours during idle running.
- **Avg consumption by ...**: average fuel consumption in engine hours.
- **Initial fuel level**: fuel level at the beginning of the interval.
- **Final fuel level**: fuel level at the end of the interval.

## Events

All events registered by the system can be shown in the report on events. Events are:

1. Triggered notifications which method of delivery is *Register event for unit*;
2. Fuel fillings, maintenance work and other things registered by the user in events registrar;
3. GPRS traffic counter reset (if it was chosen to save the reset as event).

The following columns can be included to this table:

- **Event time**: time when the event happened.
- **Time received**: time when the server received this data.
- **Event text**: notification text or event description.
- **Location**: unit location at that moment.
- **Count**: the count of events.

| Event time | Time received | Event text | Location |
|---|---|---|---|
| 2010-02-27 13:22:09 | 2010-02-27 16:22:09 | Gurtam@CeBIT: GPRS connection loss detected from 2010-02-27. | ----- |
| 2010-03-23 13:37:24 | 2010-03-23 13:39:18 | Bavarian Tractor убыл из аэропорта Minsk-2 Intl. | 0.18 km from Уша |
| 2010-03-24 09:09:54 | 2010-03-24 12:09:55 | Bavarian Tractor: GPRS connection loss detected from 2010-03-24. | A3, Vilnius, LT |

In addition, you can use special markers for this report: yellow flag means event, red flag means violation. In the tooltip you can find the detailed information.



See also Violations.

## Fuel Fillings

These reports shows where and when a vehicle was filled up. The parameters for this report to be generated are set in Unit Properties => Fuel Consumption.

- **Beginning**: date and time when the filling began.
- **Initial location**: unit location at that moment.
- **End**: date and time when the filling finished.
- **Final location**: unit location at that moment.
- **Duration**: filling duration.
- **Initial fuel level**: fuel level before the theft.
- **Filled**: the volume of filled fuel (sensor name may be indicated in brackets).
- **Registered**: the volume of registered fuel.
- **Difference**: difference between detected and registered filling volume.
- **Sensor**: sensor which detected the filling.
- **Driver**: driver's name if one was identified.
- **Count**: the number of fillings.

| Beginning | Initial location | Duration | Initial fuel level | Filled | Sensor name |
|---|---|---|---|---|---|
| 2010-02-20 12:28:06 | ----- | 0:25:48 | 1788 lt | 95 lt | FLS |
| 2010-02-20 15:21:31 | T 16 07 | 0:46:55 | 2050 lt | 165 lt | FLS |
| 2010-02-21 13:35:25 | ----- | 5:24:05 | 3433 lt | 94 lt | FLS |
| 2010-02-22 10:57:12 | Burdur-Antalya yolu, Antalya, TR | 0:39:02 | 3087 lt | 27 lt | FLS |
| 2010-02-25 17:17:34 | ----- | 6:57:12 | 2140 lt | 30 lt | FLS |
| 2010-02-26 06:33:57 | 29, Varna, BG | 0:32:41 | 1808 lt | 10 lt | FLS |
| 2010-02-26 13:20:53 | Drumul Viilor, Galaţi, RO | 0:04:22 | 1850 lt | 9.00 lt | FLS |
| 2010-02-26 13:39:54 | DN2B, Galaţi, RO | 0:03:01 | 1899 lt | 8 lt | FLS |
| 2010-02-26 15:01:18 | Dn2B/E584, Galaţi, RO | 4:09:06 | 1967 lt | 131 lt | FLS |

You can use special markers for this report to mark places of fillings on the map.

See also Fuel Thefts.

# Fuel Thefts

This report is aimed to show all thefts - when, where and how much fuel was stolen. The parameters fro this report are set in Unit Properties => Fuel Consumption.

In the table you can have:

- **Beginning**: date and time when the theft began.
- **Initial location**: unit location at that moment.
- **End**: date and time when the theft finished.
- **Final location**: unit location at that moment.
- **Duration**: theft duration.
- **Initial fuel level**: fuel level before the theft.
- **Stolen**: stolen fuel volume.
- **Sensor name**: sensor which detected fuel theft.
- **Driver**: driver's name if one was identified.
- **Count**: the number of thefts.

| Beginning | Initial location | End | Duration | Stolen | Initial fuel level | Final fuel level |
|---|---|---|---|---|---|---|
| 2010-01-11 13:44:20 | Dachi, 34TC, UA | 2010-01-11 13:44:21 | 0:00:01 | 8.33 lt | 72 lt | 64 lt |
| 2010-01-11 13:44:32 | Dachi, 34TC, UA | 2010-01-11 13:44:34 | 0:00:02 | 8.33 lt | 72 lt | 64 lt |
| 2010-01-11 13:46:19 | Dachi, 34TC, UA | 2010-01-11 13:46:20 | 0:00:01 | 17.22 lt | 37.94 lt | 20.72 lt |
| 2010-01-11 13:48:56 | Dachi, 34TC, UA | 2010-01-11 13:48:57 | 0:00:01 | 5.67 lt | 28.63 lt | 22.96 lt |
| 2010-01-11 13:48:58 | Dachi, 34TC, UA | 2010-01-11 13:49:00 | 0:00:02 | 5.67 lt | 28.63 lt | 22.96 lt |
| 2010-01-11 13:51:22 | Dachi, 34TC, UA | 2010-01-11 13:51:23 | 0:00:01 | 5.67 lt | 28.63 lt | 22.96 lt |

Special markers can be shown on the map in the places of thefts.

See also Fuel Fillings.

## Geofences

This report shows when and how often a unit visited different geofences existing in the system. At the right part of the template dialog the list of all geofences is displayed. You can indicate one or more geofences. If no geofences are selected there, the table cannot be generated.

⚠️ *Note!*
To generate this report for a unit, this unit must have the trip detector configured correctly because the search of entries and exits to/from a geofence are made in movement intervals (in trips).

The following columns can be selected for this table:

- **Geofence**: geofence name.
- **Type**: polygon, line, circle.
- **Time in**: the time when the unit entered the geofence.
- **Time out**: time when the unit left the geofence.
- **Duration in**: duration of the visit.
- **Mileage**: mileage in this visit.
- **Avg speed**: average speed the unit was moving in the geofence.
- **Max speed**: maximum speed detected in that visit.
- **Visits**: the number of visits.

| Geofence | Type | Time in | Time out | Duration in | Mileage | Avg speed | Max speed | Visits |
|---|---|---|---|---|---|---|---|---|
| Point B | Circle | 2010-02-18 17:42:30 | 2010-02-18 17:44:30 | 0:02:00 | 0.29 km | 9 km/h | 52 km/h | 1 |
| Point A | Circle | 2010-02-18 17:48:23 | 2010-02-18 17:49:23 | 0:01:00 | 0.66 km | 40 km/h | 43 km/h | 1 |
| Point A | Circle | 2010-02-19 09:40:26 | 2010-02-19 09:41:26 | 0:01:00 | 0.66 km | 40 km/h | 43 km/h | 1 |
| Space Travel | Line | 2010-02-19 10:06:26 | 2010-02-19 10:29:08 | 0:22:42 | 6.87 km | 18 km/h | 88 km/h | 1 |
| Point B | Circle | 2010-02-19 10:06:26 | 2010-02-19 10:08:26 | 0:02:00 | 0.29 km | 9 km/h | 52 km/h | 1 |
| Point A | Circle | 2010-02-19 10:15:08 | 2010-02-19 10:16:08 | 0:01:00 | 0.66 km | 40 km/h | 43 km/h | 1 |
| Space Travel | Line | 2010-02-19 10:41:08 | 2010-02-19 11:03:08 | 0:22:00 | 6.87 km | 19 km/h | 99 km/h | 1 |

Geofences can be displayed on the map. For this choose *Render geofences* option in the report template.

## Last Location

This kind of table available only for unit groups. The table gives the last location of units known for the current time. This feature can be used, for example, to detect which unit is the nearest to a certain place.

The following columns can be selected to form the table:

- **Unit**: unit name.
- **Last message**: time when the latest message form the unit was received.
- **Last position**: time when the latest message with valid coordinates was received (not always coincides with the previous column).
- **Mileage counter**: current value of the mileage counter.
- **Engine hours counter**: current value of engine hours counter.
- **Location**: address of the last location (if available).

| Unit | Last message | Last position | Mileage counter | Engine hours counter | Location |
|------|-------------|---------------|-----------------|---------------------|----------|
| 2x2ок | 2010-04-26 14:47:09 | 2008-12-09 09:51:35 | 0.00 km | 0:00:00 | пр. Октябрьский 14а, Губаха |
| Fish Boat | 2010-04-01 11:59:36 | 2010-03-15 16:32:25 | 2634 km | 666:00:00 | ул. Лещинского, Минск |
| Fuel Rivers | 2010-03-23 00:34:27 | 2010-03-23 00:34:27 | 1230 km | 450:00:00 | Strada Macului, Galaţi, RO |
| SMS Sim1 | 2010-04-28 10:35:44 | 2010-04-28 10:35:44 | 27842 km | 0:00:00 | Смоленский 2-й 1, Москва |
| SMS Sim2 | 2010-04-28 10:35:45 | 2010-04-28 10:35:45 | 39146 km | 765:00:00 | Маросейка 17С2, Москва |
| Sensor Rich | 2010-03-25 11:20:41 | 2010-03-25 11:20:41 | 25574 km | 554:35:12 | ----- |
| Tracktor | 2010-03-23 00:34:27 | 2010-03-23 00:34:27 | 0.00 km | 0:00:00 | Strada Macului, Galaţi, RO |

Last location can be visualized on the map by units icons - activate the option *Unit last location* in the report template.

# Maintenance

The table n maintenance contains the list of service works done during the indicated period and и registered by users who have at least *edit* access to this unit. The table can be composed of the following columns:

- **Service time**: date and time that were indicated during the registration.
- **Registration time**: date and time when the event was registered.
- **Kind of work**: the text from the field 'Kind of work'.
- **Comment**: the text from the field 'Description'.
- **Location**: location indicated while registering (together with comments entered manually).
- **Duration**: duration of work.
- **Cost**: service cost.
- **Mileage**: mileage counter value at the moment of registration.
- **Engine hours**: engine hours counter value at the moment of registration.
- **Count**: the number of services.

| Service time | Kind of work | Location | Duration | Cost | Mileage | Engine hours |
|---|---|---|---|---|---|---|
| 2010-05-01 13:59:00 | Yearly Checkup | Coerdestiege, Münster, DE | 0:24:00 | 500.00 | 123 km | 3 days 0:00:00 |
| 2010-05-03 14:01:00 | Oil Change | Kleiweg, Gelsenkirchen-Alt, DE | 0:30:00 | 17.00 | 234 km | 37 days 7:00:00 |
| 2010-05-08 14:02:00 | Washing | Brieger Straße, Langenhagen, CTO | 1:00:00 | 12.00 | 465 km | 43 days 0:00:00 |

⚠ *Attention*: if the rows in the table are white and not green, it means that during the registration the place was not shown on the map.

## Parkings

Parkings are estimated according to parameters set in Trip Detection when configuring a unit. To get information as accurate as possible, it is advised that you configure each parameter individually for every piece of equipment.

A parking is an interval of time when the following conditions are satisfied:

1. **Insignificant speed**. The speed detected must fall in the range from 0 to the *Minimum moving speed*. When this speed is achieved, unit's behavior is regarded as movement (=trip), if by time and distance it corresponds to trip definition (*Minimum trip time* and *Minimum trip distance* parameters). Then the parking finishes. But if by time or distance the movement does not fall into trip definition, the parking is prolonged.

2. **Sufficient time interval**. Insignificant speed must continue not less than *Minimum parking time*. If this time is not achieved, unit's behaviour are not regarded as parking. It may be regarded as a stop, but only in case there was a zero speed registered.

3. **Insignificant location change**. As it has been already noted above, the parking is also an insignificant movement in space, that is a travel which in not longer than *Minimum trip distance* if by time it not shorter than *Minimum parking time*.

The following information is presented in this kind of report:

- **Beginning**: the time when the parking started.
- **End**: the time when the parking ended.
- **Duration**: time interval of the parking.
- **Location**: the address where the unit was stationary. If there was an insignificant movement detected, the initial address is used.
- **Count**: the number of parkings.
- **Counter**: counter sensor values.

| № | Beginning | End | Duration | Location | Count |
|---|---|---|---|---|---|
| 1 | 2010-02-28 14:00:42 | 2010-03-01 00:26:22 | 10:25:40 | Walsroder Straße, Langenhagen, DE | 1 |
| 2 | 2010-03-01 00:55:44 | 2010-03-01 01:14:47 | 0:19:03 | Donaustraße, Hannover, DE | 1 |
| 3 | 2010-03-01 01:21:47 | 2010-03-01 01:32:51 | 0:11:04 | Am Eisenwerk, Laatzen, DE | 1 |
| 4 | 2010-03-01 01:52:29 | 2010-03-01 04:07:02 | 2:14:33 | 7 | 1 |
| 5 | 2010-03-01 04:23:21 | 2010-03-01 05:31:37 | 1:08:16 | IKEA | 1 |
| 6 | 2010-03-01 05:46:51 | 2010-03-01 07:15:11 | 1:28:20 | Expo Allee, Laatzen, DE | 1 |
| 7 | 2010-03-01 07:52:19 | 2010-03-01 22:08:22 | 14:16:03 | Walsroder Straße, Langenhagen, DE | 1 |
| 8 | 2010-03-01 22:44:49 | 2010-03-01 23:59:06 | 1:14:17 | P33 | 1 |

The parkings can be displayed on the map. To make use of this feature, select Parking markers in the report template.

🔔 *Attention!*
You should distinguish parkings from stops.

# Rides

A ride is a travel from one point (called ride beginning) to another (called ride ending). A ride can be done many times in a specified period of time. Rides are useful, for example, when controlling cargo transportation form one point to another in several attempts.

For the report to be generated, two factors are significant:
1) when a unit leaves the ride beginning zone;
2) when a unit enters the ride ending zone.
If both of these factors occur, then a ride is completed and can be included in the report.

## Preparing a Ride

To get a report on rides performed, you must create geofences which would be ride beginning and ride end. The beginning and the end can be the same geofence if the ride starts and ends in one point, for example, if needed to travel ride around the shops and come back to the base. These geofences should be polygons.

Let us assume, that it is needed to transport goods from one place to another, and more than one ride is needed to do this. To control this process, we create **Point A** geofence and make it the beginning of the ride. Then create **Point B** geofence and make it the end of the ride. How to create geofences, see Geofences topic.
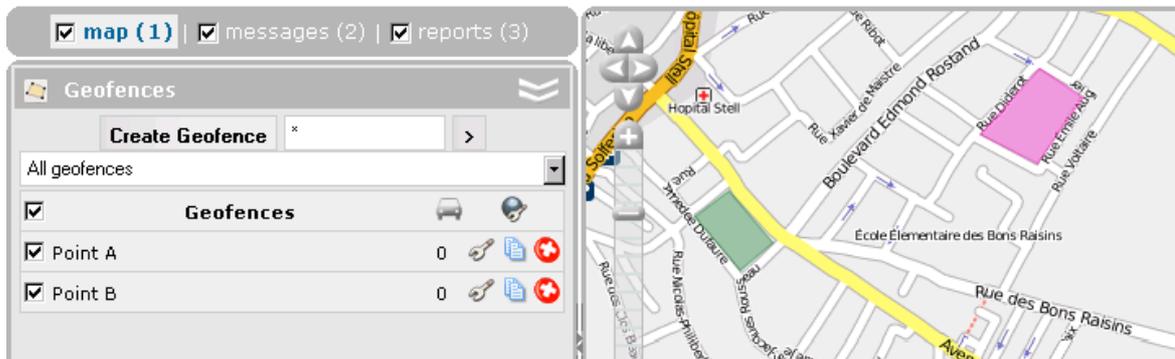


## Report on Rides

The report on rides gives the list of all performed rides. The table can contain the following information:

- **Ride**: ride mane consists of starting geofence name and final geofence name hyphenated compound.
- **Beginning**: date and time when the ride began.
- **End**: date and time when the ride ended.
- **Mileage**: distance travelled in this ride.
- **Duration**: how much time it took to perform the ride.
- **Avg speed**: average speed calculated for this ride.
- **Max speed**: maximum speed registered during this ride.
- **Driver**: driver's name if he was identified.
- **Counter**: counter sensor value.
- **Count**: the number of rides.
- **Consumed by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: the volume of consumed fuel detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates.
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: average fuel consumption in the ride detected by one of the methods mentioned above.

| Ride | Beginning | End | Mileage | Duration | Avg speed | Max speed |
|------|-----------|-----|---------|----------|-----------|-----------|
| Point A - Point B | 2010-04-01 00:13:16 | 2010-04-01 00:37:16 | 13.01 km | 0:24:00 | 33 km/h | 99 km/h |
| Point A - Point B | 2010-04-01 00:53:16 | 2010-04-01 01:19:16 | 13.01 km | 0:26:00 | 30 km/h | 132 km/h |
| Point A - Point B | 2010-04-01 01:29:16 | 2010-04-01 01:44:16 | 13.01 km | 0:15:00 | 52 km/h | 99 km/h |
| Point A - Point B | 2010-04-01 02:00:16 | 2010-04-01 02:26:16 | 13.01 km | 0:26:00 | 30 km/h | 132 km/h |
| Point A - Point B | 2010-04-01 02:36:16 | 2010-04-01 03:00:16 | 13.01 km | 0:24:00 | 33 km/h | 99 km/h |
| Point A - Point B | 2010-04-01 03:16:16 | 2010-04-01 03:42:16 | 13.01 km | 0:26:00 | 30 km/h | 132 km/h |
| Point A - Point B | 2010-04-01 03:52:16 | 2010-04-01 04:16:16 | 13.01 km | 0:24:00 | 33 km/h | 99 km/h |
| Point A - Point B | 2010-04-01 04:32:16 | 2010-04-01 04:58:16 | 13.01 km | 0:26:00 | 30 km/h | 132 km/h |
| Point A - Point B | 2010-04-01 05:08:16 | 2010-04-01 05:32:16 | 13.01 km | 0:24:00 | 33 km/h | 99 km/h |

See also Unfinished rides.

## Sent Commands

This kind or report gives a list of commands and messages sent to a unit. Possible columns are:

- **Sending time**: time when the command was sent to the unit.
- **User**: login name of the user who performed the command.
- **Command**: command type.
- **Parameter**: additional parameter in the command (for messages it is text).
- **Execution time**: time when the command was executed.
- **Channel**: channel type used to transmit the command (phone number, TCP, UDP, GSM).
- **Count**: the number of sent commands.

| № | Sending time | User | Command | Parameters | Execution time | Channel | Count |
|---|---|---|---|---|---|---|---|
| 1 | 2010-04-27 13:57:54 | user | Locate device | ----- | 2010-04-27 13:57:55 | +3750000000 (gsm) | 1 |
| 2 | 2010-04-27 13:58:22 | user | Set online report period | 30 | 2010-04-27 13:58:23 | +3750000000 (gsm) | 1 |
| 3 | 2010-04-27 13:58:45 | user | Custom message | art_rock | 2010-04-27 13:58:46 | +3750000000 (gsm) | 1 |
| 4 | 2010-04-27 13:58:54 | user | Locate device | ----- | 2010-04-27 13:58:55 | +3750000000 (gsm) | 1 |
| 5 | 2010-04-27 13:59:12 | user | Message to driver | Go back! | 2010-04-27 13:59:13 | +3750000000 (gsm) | 1 |
| 6 | 2010-04-27 13:59:54 | user | Locate device | ----- | 2010-04-27 13:59:55 | +3750000000 (gsm) | 1 |
| 7 | 2010-04-27 14:00:54 | user | Locate device | ----- | 2010-04-27 14:00:55 | +3750000000 (gsm) | 1 |
| 8 | 2010-04-27 14:01:54 | user | Locate device | ----- | 2010-04-27 14:01:55 | +3750000000 (gsm) | 1 |
| 9 | 2010-04-27 14:02:54 | user | Locate device | ----- | 2010-04-27 14:02:55 | +3750000000 (gsm) | 1 |
| 10 | 2010-04-27 14:03:43 | monstr | Block engine | ----- | 2010-04-27 14:03:45 | +3750000000 (gsm) | 1 |
| 11 | 2010-04-27 14:03:54 | user | Locate device | ----- | 2010-04-27 14:03:55 | +3750000000 (gsm) | 1 |
| 12 | 2010-04-27 14:04:02 | monstr | Unblock engine | ----- | 2010-04-27 14:04:03 | +3750000000 (gsm) | 1 |

There are two ways to send a command to a unit:

- the Send Command button in the Monitoring panel;
- by SMS.

## SMS messages

This report gives possibility to view all SMS messages receives from a unit in a specified period. Here you see date and time when the message was received and the text of the message.

- **Time received**: date and time when the data was received by the server.
- **SMS text**: message text.
- **Count**: the number of messages.

| Time received | SMS text |
|---|---|
| 2010-03-26 17:36:02 | GPS:1 Sat:7 Lat:53.914577 Long:27.451012 Alt:272 Speed:0 Dir:0 Date: 2010/3/26 Time: 15:35:48 |
| 2010-03-26 17:37:14 | WARNING: Not supported Param ID detected: 245 |
| 2010-03-29 07:22:28 | 04B8B24213C00000401F7112609901D60263C09B000141F0769415F6 |
| 2010-03-29 10:01:20 | Param ID:3245 New Text:212.98.191.50 |
| 2010-03-29 10:02:43 | WARNING: Not supported Param ID or Value detected: 311 |
| 2010-03-29 10:04:38 | Param ID:3231 New Val:1 |
| 2010-03-29 10:04:47 | WARNING: Not supported Param ID or Value detected: 11 |

# Speeding

This kind of report shows speed limitations violations. The parameters for this report are set in Unit Properties => Advanced where you set *Speed limit*. The messages (at least two in succession) containing a speed value greater than set in that parameter will become the basis for this report. If these messages are several in succession, they are united in one speeding event.

The following information can be presented in this kind of report:

- **Beginning**: date and time when the speed limit was excessed.
- **Location**: device location at that moment.
- **Duration**: how long the violation continued.
- **Max speed**: maximum speed within this period.
- **Mileage**: the distance travelled with exceeded speed.
- **Avg speed**: average speed within the interval.
- **Average excess**: average speed excess within the interval.
- **Driver**: driver's name (if a driver was identified).
- **Count**: the number of speed violations.

| Beginning | Location | Duration | Max speed | Avg speed | Mileage |
|---|---|---|---|---|---|
| 2010-03-07 00:52:49 | A 2, Braunschweig, DE | 0:03:21 | 185 km/h | 184 km/h | 10.26 km |
| 2010-03-07 01:01:51 | ----- | 0:01:50 | 184 km/h | 186 km/h | 5.69 km |
| 2010-03-07 01:10:41 | 0.55 km from Auf dem Gutshof, Uhrsleben, DE | 0:23:34 | 185 km/h | 184 km/h | 72 km |
| 2010-03-07 01:35:34 | ----- | 0:00:47 | 184 km/h | 185 km/h | 2.41 km |
| 2010-03-07 01:51:11 | Berliner Ring, Berlin, DE | 0:00:46 | 185 km/h | 185 km/h | 2.37 km |
| 2010-03-07 02:05:36 | Berliner Ring, Berlin, DE | 0:00:40 | 184 km/h | 185 km/h | 2.05 km |
| 2010-03-07 02:09:14 | Berliner Ring, Berlin, DE | 0:00:46 | 184 km/h | 185 km/h | 2.36 km |
| 2010-03-07 02:12:24 | A 10, Berlin, DE | 0:02:20 | 185 km/h | 184 km/h | 7.15 km |
| 2010-03-07 02:28:50 | A 12, Berlin, DE | 0:00:34 | 184 km/h | 190 km/h | 1.79 km |
| 2010-03-07 02:35:13 | A 12, Berlin, DE | 0:03:16 | 186 km/h | 180 km/h | 9.81 km |

You can use special markers for this report.

Other means to control speed are described in Notifications.

## Stops

A stop is two or more consecutive messages with a zero speed. Stops can be registered at lights, intersections, in traffic jams, and they can partially coincide with stays.

If there are several messages in succession, they are united in one stop. If total time of such a stop reaches *Minimum parking time*, it is registered as a parking (not a stop).

The following information is presented in this kind of report:

- **Beginning**: the time when the stop started.
- **End**: the time when the stop ended.
- **Duration**: total time of the stop.
- **Location**: the address where the unit stopped.
- **Count**: the number of stops.
- **Counter**: counter sensor values.

| № | Beginning | End | Duration | Location | Count |
|---|---|---|---|---|---|
| 1 | 2010-03-01 00:28:19 | 2010-03-01 00:29:19 | 0:01:00 | Walsroder Straße, Langenhagen, DE | 1 |
| 2 | 2010-03-01 01:43:02 | 2010-03-01 01:44:02 | 0:01:00 | 1 | 1 |
| 3 | 2010-03-01 05:44:29 | 2010-03-01 05:45:30 | 0:01:01 | 7 | 1 |
| 4 | 2010-03-01 07:41:22 | 2010-03-01 07:42:22 | 0:01:00 | Vahrenwalder Straße, Hannover, DE | 1 |
| 5 | 2010-03-01 07:48:37 | 2010-03-01 07:49:37 | 0:01:00 | Walsroder Straße, Langenhagen, DE | 1 |
| 6 | 2010-03-02 09:43:49 | 2010-03-02 09:44:50 | 0:01:01 | P33 | 1 |
| 7 | 2010-03-02 09:50:43 | 2010-03-02 09:51:44 | 0:01:01 | Kronsbergstraße, Laatzen, DE | 1 |
| 8 | 2010-03-02 10:18:32 | 2010-03-02 10:19:33 | 0:01:01 | Loccumer Straße, Hannover, DE | 1 |
| 9 | 2010-03-02 22:19:28 | 2010-03-02 22:20:28 | 0:01:00 | Walsroder Straße, Langenhagen, DE | 1 |

⚠ *Attention!*
You should distinguish stops from parkings.

# Trips

In this kind of report all intervals of movement (together with location, time and speed information) are shown. Trips are estimated according to parameters set in Trip Detection. To get information as accurate as possible, it is advised that you configure each parameter individually for every unit.

The following columns can be included in this kind of report:

- **Beginning**: date and time when the trip began.
- **Initial location**: the address where the device was at the begining of the trip.
- **End**: date and time when the trip ended.
- **Final location**: the address where the device was at the end of the trip.
- **Driver**: driver's name (if a driver was identified).
- **Duration**: time interval of the trip.
- **Mileage**: the distance travelled in the whole trip.
- **Average speed**: average speed within the trip.
- **Maximum speed**: maximum speed registered within this interval.
- **Trips count**: the number of trips made.
- **Counter**: counter sensor value.
- **Messages count**: the number of messages that formed the trip.

Depending on hardware and software configuration information about fuel can be also included:

- **Consumed by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: the volume of consumed fuel detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates.
- **Deviation by ImpFCS/AbsFCS/InsFCS/FLS**: difference between consumed fuel detected by a sensor and consumption rates. If a number in this cell is negative, it means detected consumption does not exceed the indicated rates.
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: average fuel consumption in the trip detected by one of the methods mentioned above.
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates (km/1l)**: average fuel consumption in the trip detected by one of the methods mentioned above.
- **Initial fuel level**: fuel level at the beginning of the trip.
- **Final fuel level**: fuel level at the end of the trip.

**Details about fuel in reports...**

| Beginning | Initial location | Final location | Duration | Mileage | Avg speed | Max speed | Cons. by math |
|---|---|---|---|---|---|---|---|
| 2010-03-01 00:26:22 | Walsroder Straße, Langenhagen, DE | Donaustraße, Hannover, DE | 0:29:22 | 12.84 km | 26 km/h | 83 km/h | 1.19 lt |
| 2010-03-01 01:14:47 | Donaustraße, Hannover, DE | Am Eisenwerk, Laatzen, DE | 0:07:00 | 1.89 km | 16 km/h | 41 km/h | 0.20 lt |
| 2010-03-01 01:32:51 | 0.12 km from Am Eisenwerk, Laatzen, DE | 7 | 0:19:38 | 4.59 km | 14 km/h | 53 km/h | 0.47 lt |
| 2010-03-01 04:07:02 | 7 | IKEA | 0:16:19 | 4.66 km | 17 km/h | 61 km/h | 0.46 lt |
| 2010-03-01 05:31:37 | IKEA | Expo Allee, Laatzen, DE | 0:15:14 | 4.93 km | 19 km/h | 92 km/h | 0.47 lt |
| 2010-03-01 07:15:11 | Platz der Nationen, Laatzen, DE | Walsroder Straße, Langenhagen, DE | 0:37:08 | 16.35 km | 26 km/h | 122 km/h | 1.46 lt |
| 2010-03-01 22:08:22 | Walsroder Straße, Langenhagen, DE | P33 | 0:36:27 | 17.62 km | 29 km/h | 122 km/h | 1.53 lt |
| 2010-03-02 09:41:13 | P33 | Hildesheimer Straße, Laatzen, DE | 0:15:44 | 2.72 km | 10 km/h | 66 km/h | 0.32 lt |
| 2010-03-02 10:15:00 | Hildesheimer Straße, Laatzen, DE | 1 - 2, Laatzen, DE | 0:07:55 | 1.08 km | 8 km/h | 46 km/h | 0.14 lt |
| 2010-03-02 12:40:20 | Hildesheimer Straße, Hannover, DE | Walsroder Straße, Langenhagen, DE | 0:22:18 | 13.76 km | 37 km/h | 65 km/h | 1.29 lt |
| 2010-03-02 22:17:22 | Walsroder Straße, Langenhagen, DE | P33 | 0:41:36 | 18.11 km | 26 km/h | 71 km/h | 1.71 lt |

*Tip:*
The tracks of the trips can be displayed on the map. To make use of this feature, select Trips routes on map in report template.

## Unfinished Rides

See the previous topic Rides to learn how to prepare rides for this report.

This report includes rides which finished in the geofence they began. It means, if a unit left the beginning-ride geofence and then returned to this geofence without visiting the end-ride geofence this event will get to the report.

The structure of the report is the same as for usual rides:

- **Ride from**: the name of the geofence where the ride began.
- **Beginning**: date and time when the ride began.
- **End**: date and time when the ride ended.
- **Mileage**: distance travelled in this ride.
- **Duration**: how much time it took to perform the ride.
- **Avg speed**: average speed calculated for this ride.
- **Max speed**: maximum speed registered during this ride.
- **Driver**: driver's name if he was identified.
- **Counter**: counter sensor value.
- **Count**: the number of rides.
- **Consumed by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: the volume of consumed fuel detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates. Details about fuel in reports…
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: average fuel consumption in the ride detected by one of the methods mentioned above.

| Ride from | Beginning | End | Mileage | Duration | Avg speed | Max speed |
|-----------|-----------|-----|---------|----------|-----------|-----------|
| Start | 2010-03-01 00:46:30 | 2010-03-01 07:27:45 | 30 km | 6:41:15 | 4 km/h | 22 km/h |
| Start | 2010-03-01 07:34:16 | 2010-03-01 22:20:41 | 15.62 km | 14:46:25 | 1 km/h | 9 km/h |
| Start | 2010-03-01 22:27:35 | 2010-03-02 12:48:32 | 21 km | 14:20:57 | 1 km/h | 22 km/h |
| Start | 2010-03-02 12:53:51 | 2010-03-02 22:31:33 | 14.97 km | 9:37:42 | 2 km/h | 6 km/h |
| Start | 2010-03-02 22:37:29 | 2010-03-03 11:19:28 | 21 km | 12:41:59 | 2 km/h | 15 km/h |
| Start | 2010-03-03 11:26:34 | 2010-03-03 22:29:50 | 15.69 km | 11:03:16 | 1 km/h | 2 km/h |

## Utilization Cost

The table on utilization costs unites two kinds of expenses: maintenance and fillings. Both of these things have their own detailed tables (Maintenance and Fuel Fillings). This tables is designed to show running costs. Note that only fillings registered manually in a special Events Registrar get here (*no* fillings detected by a fuel sensor!)

The table can be composed of the following columns:

- **Time**: date and time that were indicated during the registration.
- **Registration time**: date and time when the event was registered.
- **Expense item**: maintenance or filling.
- **Description**: custom description entered when registering.
- **Location**: location indicated while registering (together with comments entered manually).
- **Cost**: service or filling cost.
- **Count**: the number of services and/or fillings.

| Time | Registration time | Kind of service | Description | Location | Cost |
|------|-------------------|-----------------|-------------|----------|------|
| 2010-05-01 13:59:00 | 2010-05-11 14:01:11 | Maintenance | Yearly Checkup | Coerdestiege, Münster, DE | 500.00 |
| 2010-05-02 14:36:00 | 2010-05-11 14:37:51 | Filling | 80 lt for 44 rub was made. | B 327, Koblenz, DE | 44.00 |
| 2010-05-03 14:01:00 | 2010-05-11 14:01:58 | Maintenance | Oil Change | Kleiweg, Gelsenkirchen-Alt, DE | 17.00 |
| 2010-05-04 14:38:00 | 2010-05-11 14:39:06 | Filling | Fuel filling 120 lt 77 rub. | K 68, Waldweiler, DE | 77.00 |
| 2010-05-08 14:02:00 | 2010-05-11 14:03:15 | Maintenance | Washing | Brieger Straße, Langenhagen | 12.00 |

*Attention*: if the rows in the table are white and not green, it means that during the registration the place was not shown on the map.

## Violations

Violations are particular case of events. The report on violations gives the list of violations detected by the system and registered manually and stored in unit events history.

Violations are:

**1.** Triggered notifications which method of delivery is *Register as violation*;
**2.** Custom event with the flag *Violation* registered manually.

The following information can be presented in this kind of report:

- **Violation time**: time when the violation happened.
- **Time received**: time when the server received this data.
- **Violation text**: notification text or event description.
- **Location**: unit location at that moment.
- **Count**: the number of violations.

| Violation time | Time received | Violation text | Location |
|---|---|---|---|
| 2010-04-26 09:59:00 | 2010-04-26 10:01:13 | Service term is 1 mile expired. | Lonystraße, Gießen, DE |
| 2010-04-26 11:07:00 | 2010-04-26 11:15:27 | Speeding detected: unit moved 100 mph near 'Lelystad'. | ----- |
| 2010-04-26 11:16:00 | 2010-04-26 11:16:38 | Unit left permitted zone at B 466, Gnotzheim, DE. | 0.60 km from B 466, Gnotzheim |
| 2010-04-23 07:51:38 | 2010-04-23 07:51:41 | SMS Sim1 left the zones at 2010-04-23 07:51:38. | Lonystraße, Gießen, DE |
| 2010-04-23 07:51:38 | 2010-04-23 07:51:41 | SMS Sim1 violated speed limitations 88 km/h. | ----- |
| 2010-04-23 07:51:55 | 2010-04-23 07:51:58 | SMS Sim1 violated speed limitations 83 km/h. | 0.60 km from B 466, Gnotzheim |

In addition, you can use special markers for this report: yellow flag means event, red flag means violation. In a tooltip for a marker you can see time and description of the event/violation.

# Visited Streets

This report shows which streets were visited and when. Highways, roads, and other places with addresses are also detected as streets. The following information is presented in this kind of report:

The following columns can be presented in this kind of report:

- **Street**: street name. Except streets the report also detects roads, highways and other places with available addresses.
- **Beginning**: time when the unit started moving along this street.
- **End**: time when the unit left the street.
- **Duration**: total time the unit was there.
- **Mileage**: distance that was travelled by the unit while moving through this street.
- **Avg speed**: average speed while moving along this street.
- **Max speed**: maximum speed detected while moving along this street.
- **Streets count**: the number of performed visits.

| № | Street | Beginning | Duration | Mileage | Avg speed | Max speed |
|---|--------|-----------|----------|---------|-----------|-----------|
| 1 | Walsroder Straße, Langenhagen, DE | 2010-02-28 14:00:42 | 3:31:33 | 1.51 km | 0 km/h | 1 km/h |
| 2 | Rathenaustraße, Langenhagen, DE | 2010-02-28 17:32:15 | 0:02:01 | 0.03 km | 1 km/h | 0 km/h |
| 3 | Walsroder Straße, Langenhagen, DE | 2010-02-28 17:34:16 | 6:55:27 | 3.09 km | 0 km/h | 46 km/h |
| 4 | Angerstraße, Langenhagen, DE | 2010-03-01 00:30:40 | 0:01:03 | 0.97 km | 55 km/h | 73 km/h |
| 5 | 1, Langenhagen, DE | 2010-03-01 00:31:43 | 0:00:51 | 0.51 km | 36 km/h | 73 km/h |
| 6 | Vahrenwalder Straße, Hannover, DE | 2010-03-01 00:32:34 | 0:05:58 | 3.17 km | 32 km/h | 63 km/h |
| 7 | Vahrenwalder Straße, Hannover, DE | 2010-03-01 00:39:33 | 0:00:43 | 0.43 km | 36 km/h | 40 km/h |
| 8 | Hamburger Allee, Hannover, DE | 2010-03-01 00:40:16 | 0:01:36 | 0.79 km | 30 km/h | 81 km/h |
| 9 | Raschplatzhochstraße, Hannover, DE | 2010-03-01 00:41:52 | 0:00:07 | 0.16 km | 83 km/h | 83 km/h |

When clicking on a row in the table, the map is moved in such a way to display a point where the unit entered or left the indicated street, and this place is highlighted by a special marker.

Sometimes there can be gaps in cells. It may happen when only one message from a place was received in succession. In such cases, just the name of the street and arrival time are given.

More about address detection.

# Charts

Some reports give information in the form of a chart. For instance, it can be a chart showing how a unit speed varied with time or a chart showing dependence of fuel consumption on speed, and many other kinds of charts.

To receive charts in reports you need to have corresponding equipment (sensors) properly installed and configured (except speed and altitude charts which do not need any special sensors). How to create and configure sensors, read in Sensors.

To add a char to a report template, click the **Add Chart** button in the template properties dialog. 🟡 A chart cannot be included to a report if report type is *Unit group*.

Enter a name for a chart or live default *Chart* (the same for all charts).



## Regular Charts

There are several **types** of charts. First of all, this is Regular type. Their X axis always presents time scale, and you choose data for Y axis:

- Speed
- Altitude
- Voltage
- Temperature
- Engine revs
- Custom sensors
- Custom digital sensors
- Fuel level
- Fuel consumption by ImpFCS
- Fuel consumption by AbsFCS
- Fuel consumption by InsFCS
- Fuel consumption by FLS
- Fuel consumption by math
- Fuel consumption by rates

The names of these items are editable. However, when building a curve for a sensor, it will borrow sensor name.

Select data set for the chart checking necessary items in the list. You can select two items, then the chart will contain two curves, for example, speed and engine revs. You can select even more items but note that only two variables can exist in one chart in addition to time. It means if Y axis presents speed scale at the left and temperature scale at the right, there is no place for engine revs. But if Y axis presents speed scale at the left and consumption by ImpFCS at the right, it is still possible to add consumption by AbsFLS and other methods because

all they are measured in the same metrics and will use Y right scale.

In the picture below there a speed chart united with fuel level chart. To receive such a chart, it is needed to set Regular chart type and select Speed and Fuel level for data set.

IF there are more then one curve in the chart, they are displayed in different colors. At the top of the chart you can see the names of all lines as they are indicated in the report template or sensors names. In addition, the metrics are indicated for all axes.

## Chart Parameters

### Select Sensors

In the right part of the dialog you can indicate sensors to form the chart. This selection does not affect such charts as Speed, Altitude, Fuel consumption by math and Fuel consumption by rates because they do not need any sensors to be built.

To indicate necessary sensors, enter a mask to search sensors - full sensor name or its part using wildcard symbols like asterisk * (replaces any number of characters) or question sign ? (replaces one character). Sensor name cannot contain comma.

You can skip this possibility and select **All sensors** option. In this case the system will automatically define sensors of a required type when building a certain chart.

If any masks are assigned and *All sensors* option is selected, the chart will be built fro all sensors and masks will be cleaned.

### Split Sensors

IF there are several sensors of the same type and a chart of the same type is created, the curves for all sensors will appear in one chart. To split them, choose the appropriate option **Split sensors**. Then an individual chart will be built for each sensor. For example, there is a unit with two voltage sensors - external voltage and internal voltage. If creating a voltage chart for this unit we can get one chart with two curves on it or two chart with one curve on each (if *Split sensors* option is selected).
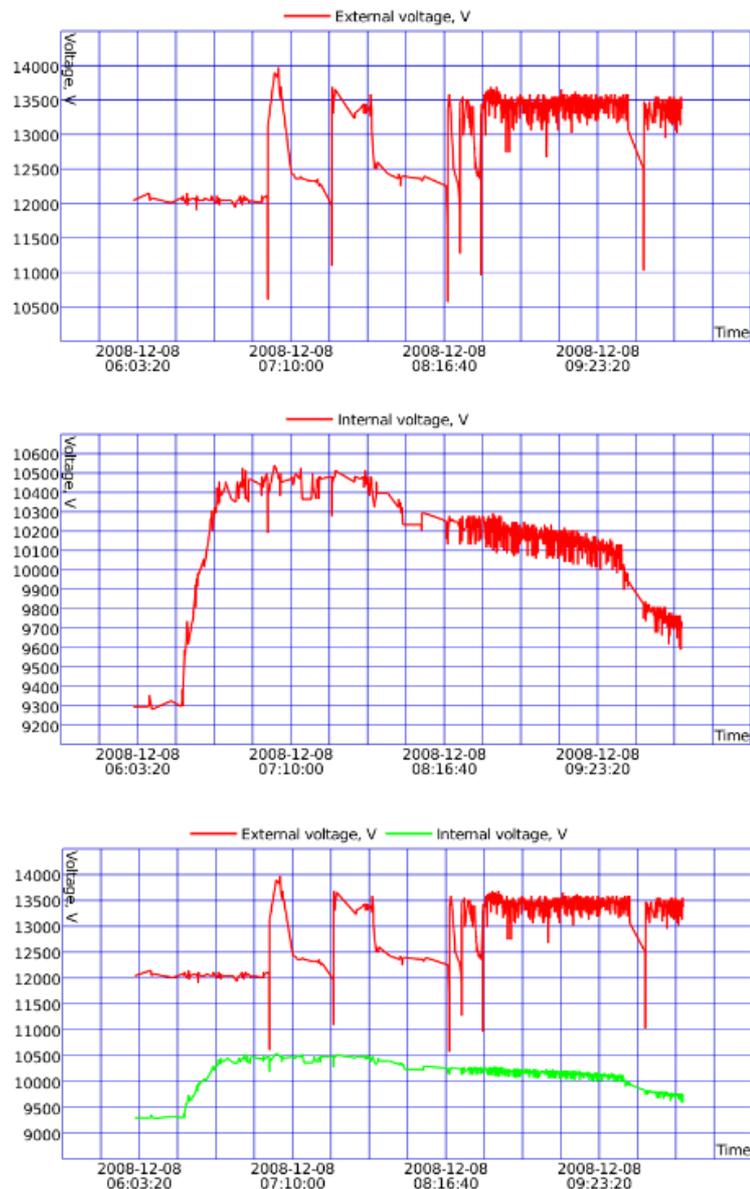
If several data is selected for the chart and for each several sensors exist, the *upper* one will be split. Let's assume that a unit has two voltage sensors and two temperature sensors, and you are building a voltage/temperature chart for it. If *Split sensors* option is off, you will get one chart with four curves in it. If *Split sensors* option is on, you will get two charts with three curves on each: one chart will contain the first voltage sensor and both temperatues sensors, and another one will contain the second voltage sensor and again two temperature sensors.

## Trips

The chart can contain a special line displaying unit state: upper position is for movement (trip), lower position is for stay. Movement/stay intervals are detected according to trip detector settings. If trip detector is not set, the line will not appear. To activate the line, choose **Trips** option in chart parameters.

## Smoothing

Almost all regular charts can be presented in two forms: raw and smoothed. Raw charts are drawn from one message to another in a linear way and have angular look. Smoothed charts look more streamlined. The smoothing algorithm is the same for all chart kinds.

Below is an example where the red line displays a raw voltage chart, and the green line displays a smoothed voltage chart. The blue line is to indicate trip and stay intervals.
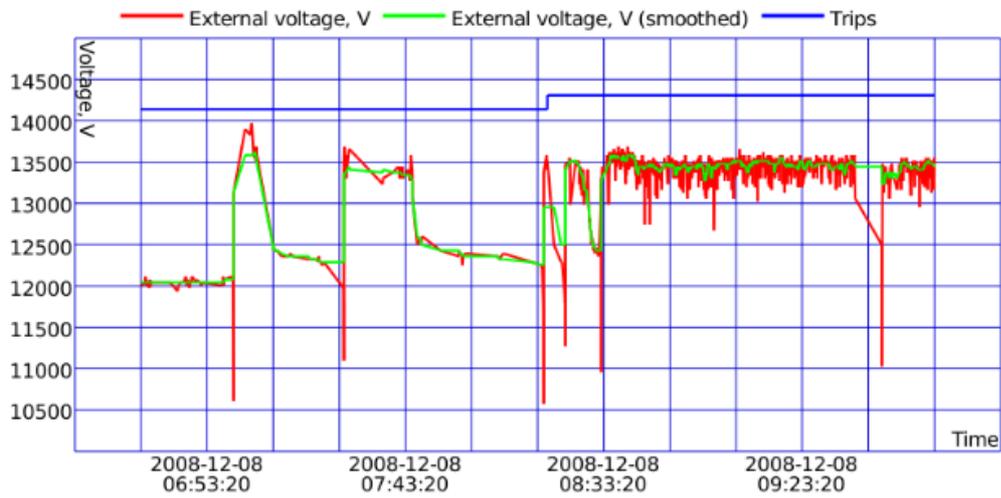
## Other Charts

Except regular charts you can generate the following charts:

- Processed fuel level
- Speed/Fuel Consumption by…
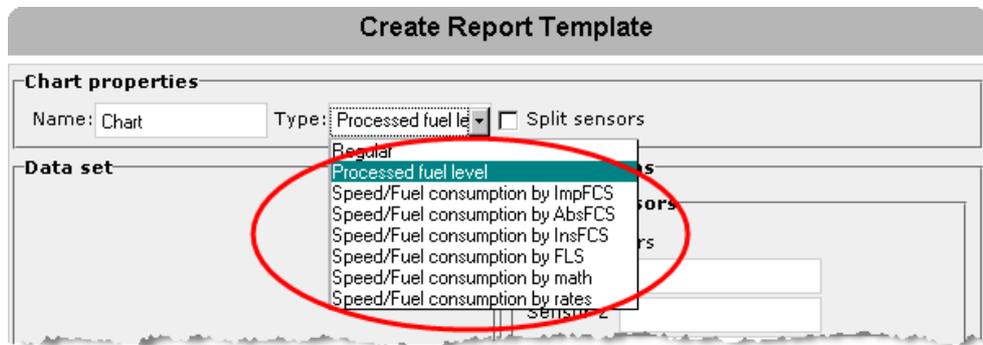


The axes of these charts cannot be changed, however, it is possible to change chart name and use *Select sensors* and *Split sensors* options.

### Processed Fuel Level

The chart shows how fuel level changes in time or depending on mileage. The caption of the tab will be correspondingly Time/Fuel level or Mileage/Fuel level. The chart Time/Fuel level is built only if in unit configuration the option *Time-based fuel level sensors consumption* is on. In all other cases the chart Mileage/Fuel level is built. Besides, the data is processed according to filtration level set on the Fuel Consumption tab (the option *Filter fuel level sensors values*).

Below are two fuel level charts: the first one is processed (time-based FLS is on, filtration is off, filtration level is 25), and the second one is not processed.
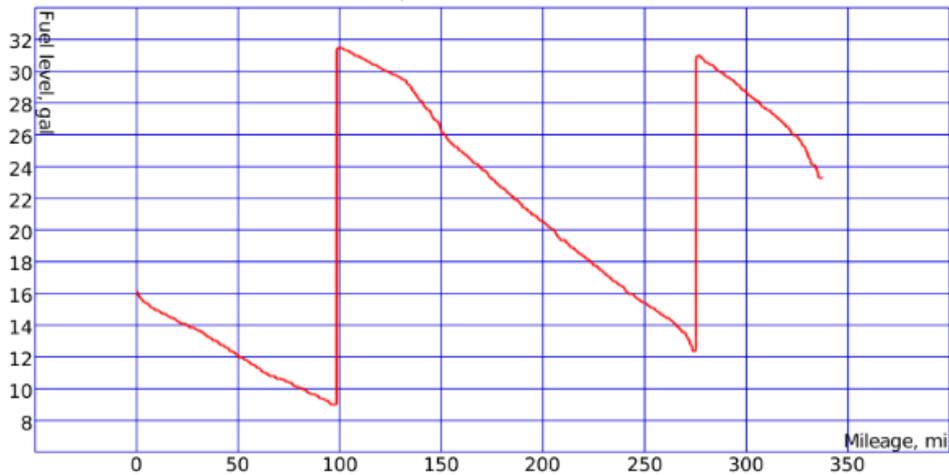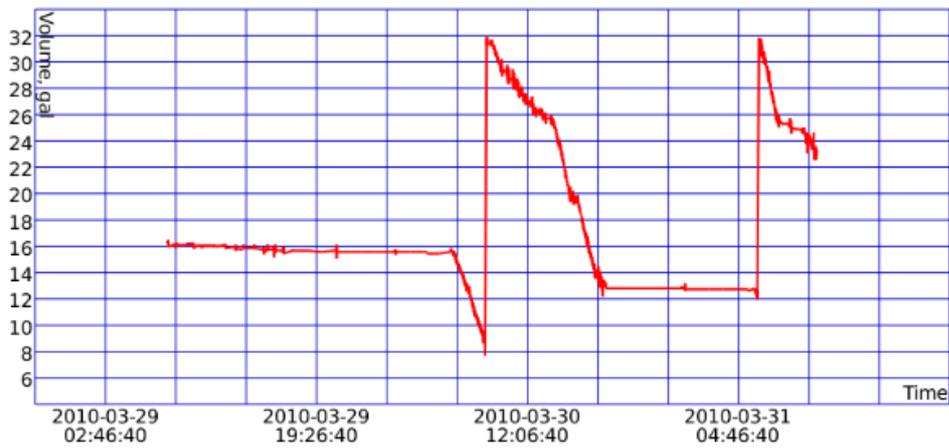
Processed fuel level chart shows the values which are used while calculating fuel level, fillings and thefts in tables.

## Speed/Fuel Consumption Chart

This chart shows dependence of average fuel consumption on speed. The data for these charts can be taken from fuel consumption sensors of different types (as impulse, absolute, instant) or fuel level sensor, or predefined consumption by math or rates. The appropriate calculation methods must be indicated in unit properties on the Fuel Consumption tab.

For example, to create this chart, a unit with instant fuel consumption sensor (InsFCS) was used.
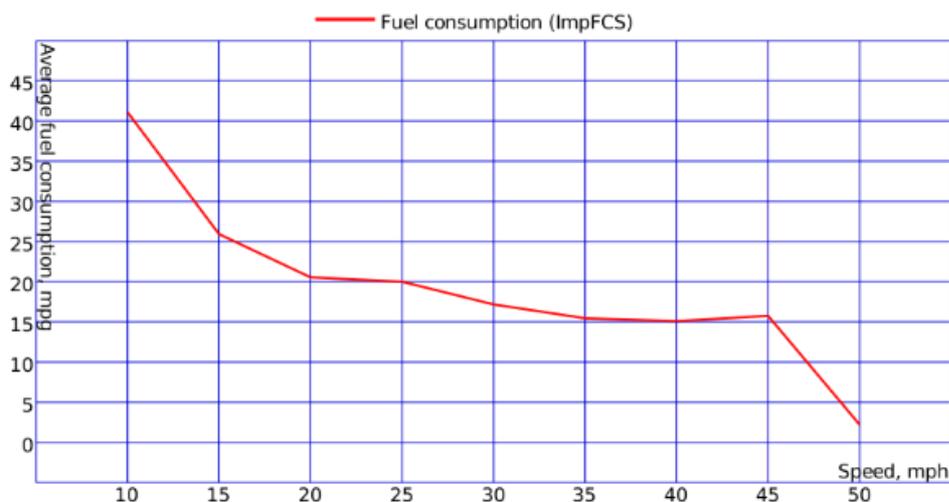


## Chart Management

A handy interface provides enough tools to work with charts. You can adjust a needed zoom, move along the chart left and right, get a precise sensor value in the indicated point, etc.

To navigate a chart, use the corresponding arrow-shaped buttons:

move left;

move right.

The buttons to scale a chart:

zoom in a chart in half the size;

zoom out in half the size;

custom zoom.

When the custom zoom is activated, a mouse cursor is displayed as a blue vertical line. Holding the left mouse button you can select a needed area of a chart to increase it. Repeat the operation several times. To reset zoom level to the initial position, press the **Reset to defaults** button .

To get a sensor value in a given point, activate **Trace chart values** option . A mouse cursor is then displayed as a red vertical line. Click on any place on the chart and read the exact value in a text box below (for instance, time and fuel level or time and speed). If there are several curves, choose a needed one in the dropdown menu at the end of the toolbar. If the X axis shows time, you move to the requested massage on the map, and a marker is put at that place.

See also:

- **Report Templates**
- **Tables**
- **Map Output**
- **Statistics**
- **Export Report to File**
- **Data in Reports**
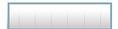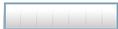
**USER GUIDE**

Trace: » Utilization Cost » Violations » Visited Streets » Charts » Map Output
You are here: Wialon User Guide » Reports Mode (New Version) » Map Output

# Map Output

In the Reports Mode the map can be scaled and moved in the same way as in the Map Mode: zoom, move, apply tools, change the map source, etc. Even being in the Reports Mode you can still track your units. Besides, some specific map options can be applied exactly to reports.

The map with tracks can be also exported to HTML or PDF file together with report text. To include the map to the exported report, in the Export dialog check the box Attach the map image.

In such reports as 'Trips', 'Parkings', 'Fuel fillings' and many others which contain information about unit location, this location can be easily shown on the map. To move to a place where something happened, click on a green row of the table. The map will be centered on the place and a marker will appear there. A similar feature is available in the regular charts (where the X axis displays time): when using the trace tool, you move to the requested massage on the map.

Some elements can be drawn on the map as a part of the report. They can be selected in the *Map output* section of the report template dialog. These can be routes traveled by unit, created places and geozones, as well as special markers in the form of small icons which can be put in the places of events, fillings, thefts, speedings, etc.
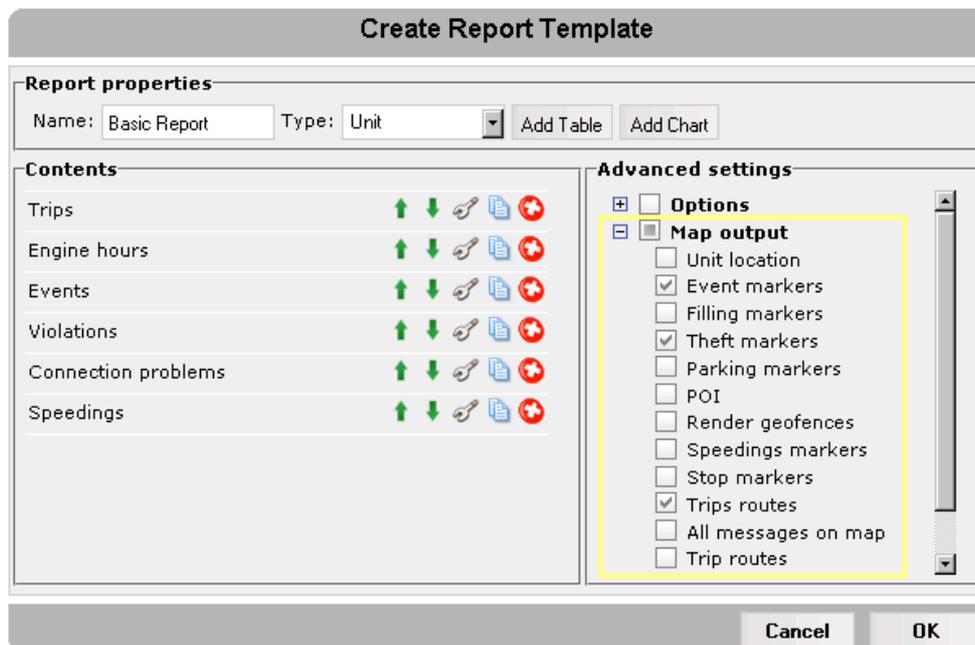


All graphical elements are shown for the current report. If generating a new report, all tracks and markers from the previous report will be erased and replaced by new.

When switching to other mode, all graphical elements from the current online report as well as map position and zoom remain on the map. To remove them , return to the Reports Mode and push the Clear button. Alternatively, the graphics of any mode can be hidden or displayed again. To do this, check the corresponding boxes in the modes panel.

## Tracks on Map

The routes traveled by a unit in a chosen period of time can be shown on the map. To do this, in advanced settings a report template dialog select the corresponding options - *Trips routes* or *All messages on map*. These options are similar but a bit different. In case of *Trip routes*, only the intervals considered as trips (according to Trip Detector) will be displayed as tracks. In case of *All messages on map*, all messages with valid coordinates will be converted into a track. If in unit history there are intervals where the connection has been lost (no messages for a long time) or coordinates miss in messages, such intervals are displayed with a dashed line.

By default the routes are drawn with blue color. But its color can be different according to speed or sensor state. The set of colors to be used in tracks is defined in Unit Advanced Properties).

Besides, to get information about track points, hover mouse cursor over and see information in a tooltip (time, speed, coordinates, altitude, sensor values). Note that messages are searched in the radius of 50 pixels to the cursor.
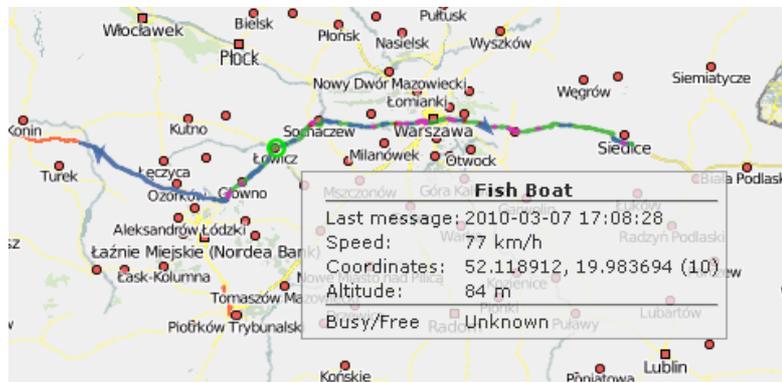
If tracks or all messages are on, then in such tables as Trips, Rides, Engine hours, Speedings will be supplied with an additional first column containing the icon of the globe. When clicking on the icon, the map is centered at a certain segment of the track, and this segment is highlighted by a thick red line on the map.



| | N | Initial location | Final location | Duration | Mileage |
|---|---|---|---|---|---|
| 🌐 | 1 | ----- | 2, Warsaw, PL | 1 hours 16 minutes | 134 km |
| 🌐 | 2 | 2, Warsaw, PL | 2, Warsaw, PL | 1 hours 19 minutes | 83 km |
| 🌐 | 3 | 2, Warsaw, PL | Aleja Jana Pawła II, Biała Podlaska, PL | 1 hours 51 minutes | 134 km |
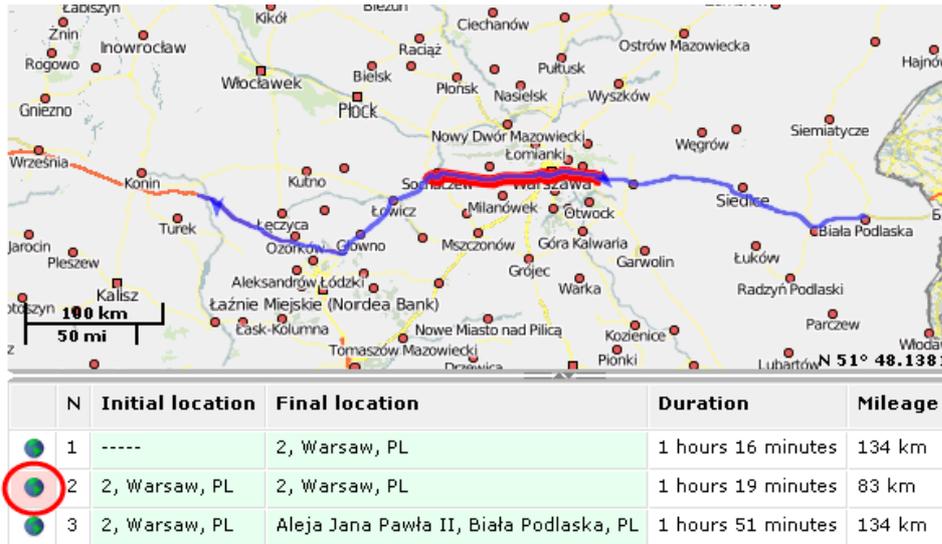
## POI and Geofences on Map

Created places (POI) and geofences can be a part of report. They will be displayed on the map if you check the corresponding boxes - *Render geofences* and *POI*.
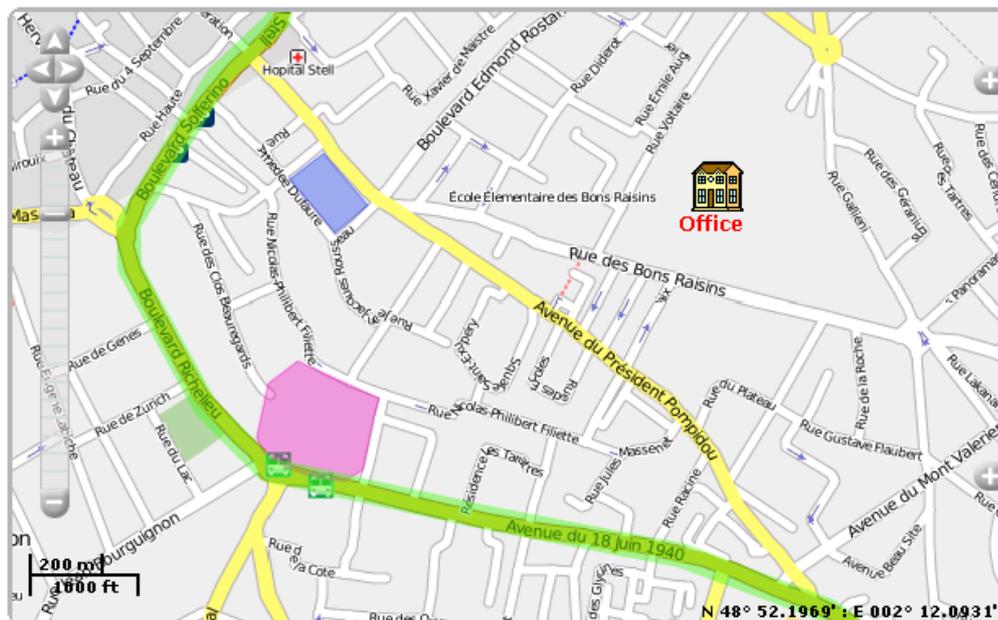


## Markers

Most kinds of reports can have additional visualized on the map with the help of special markers. To get these markers in a report, select necessary markers in a report template.

The table below presents all possible markers and their icons.

![P] Parking marker

![STOP] Stop marker

![Filling] Filling marker

![Theft] Theft marker

![Event] Event marker

![Violation] Violation marker

![Speeding] Speeding marker

Markers appear on the map after report is generated. If you see no markers, it means there is no events of the indicated type or the current map scale is not enough (try to zoom in).

When hover the mouse cursor over a marker, in a tooltip you see additional information: for stops and parkings - starting time and duration, for events and violations - time and notification text, for fillings and thefts - time and fuel volume, for speedings - starting time, speed limitation as it is defines in unit properties, how much the speed is exceeded, and duration of this speeding.



🔔 *Note*.
When enabling event markers, instead event markers you will get violation markers because violation is a special case of event.

## Last Location

The last location of the unit can be displayed on the map. To enable this feature, select the *Unit location* checkbox in map output settings of report template. Last location does not depend on the reported interval, it is taken from the latest message received from the unit. Units are displayed on the map by their icons or by motion state signs (depending on User Settings. In the popup tooltip you will find time when message received, speed at that point, altitude, and the values from mileage and engine hours counters.
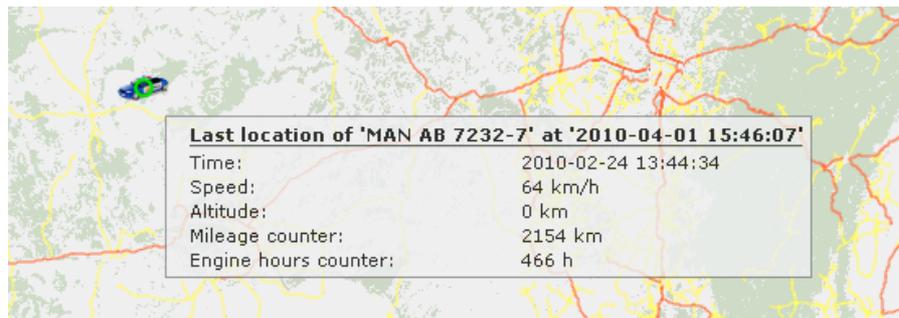


See also:

- **Report Templates**
- **Tables**
- **Charts**
- **Statistics**
- **Advanced Reports**
- **Export Report to File**
- **Data in Reports**

## Statistics

Statistics is a special table giving general information and results. It can contain reports name, unit name, reported interval, number of messages analyzed for the report, and any statistical information you select. It is recommended to include Statistics to any report as it contains the basic information about the report itself.

Statistics is adjusted in report template in the section of *Advanced settings*. Check the boxes you would like to include in Statistics. For your convenience, items are divided into subgroups. To select all items in a subgroup, press <ctrl> and click on any item. To select all items in advances settings (including, options, map output and all statistics), press <shift> and click on any item. The same operation is used to reset selection. Besides, you can rename statistics fields. To do this, click on any item and enter your text.
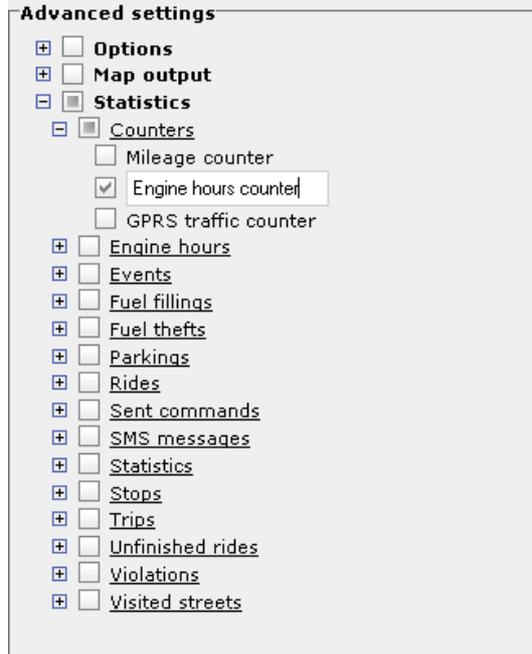


When a report is generated online or exported to file, Statistics is always displayed at the beginning of the reports. Statistics is a table of two columns where the first one contains the parameters you have chosen, and the second one gives their values.

| Report | Complete Report |
|---|---|
| Unit | Fish Boat |
| Interval beginning | 2009-02-18 17:17:00 |
| Interval end | 2010-03-31 23:59:59 |
| Messages | 26334 |
| Mileage counter | 2634 km |
| Engine hours counter | 666 hours 0 minutes |
| Parking time | 22 days 2 hours |
| Parkings count | 54 |
| Move time | 1 days 14 hours |
| Mileage in trips | 1761 km |
| Average speed in trips | 46 km/h |
| Maximum speed in trips | 186 km/h |
| Trips count | 53 |

If report type is *Unit group* or *User*, available statistics is different. See details at Advanced Reports. The following information can be included in Statistics for reports of *Unit* type:

### Statistics

- **Report**: reports template name.
- **Unit**: unit name.
- **Interval beginning**: reporting interval beginning.
- **Interval end**: reporting interval end.
- **Timezone**: time zone as it is set in user settings.
- **Messages**: messages analyzed within the reporting period.

- **Mileage in all messages**: mileage in all messages according to the mileage counter selected (without filtration by trip detector).
- **Consumed by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: the volume of consumed fuel detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates. Details…
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates**: average fuel consumption in trips detected by one of the methods mentioned above.
- **Initial fuel level**: fuel level at the beginning of the interval.
- **Final fuel level**: fuel level at the end of the interval. === Counters ===

## Counter sensors

- **Total counter**: the sum of values of all sensors of *counter* type.

## Counters

- **Mileage counter**: mileage counter values.
- **Engine hours counter**: engine hours counter values.
- **GPRS traffic counter**: consumed traffic counter.

For these counters, the latest values are given *regardless the reporting period*. How mileage and engine hours are calculated is adjusted in unit properties on the General tab.

## Engine hours

- **Engine hours**: engine hours duration. It can be calculated by engine hours sensor or by ignition sensor depending on unit properties.
- **Mileage in engine hours**: distance travelled during engine hours operation.
- **Engine efficiency idling**: engine hours minus engine efficiency time.
- **Utilization**: percentage ratio of engine hours duration to engine hours rate.
- **Useful utilization**: percentage ratio of engine efficiency duration to engine hours rate.
- **Productivity**: percentage ratio of engine efficiency duration to engine hours duration.
- **Consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates in e/h**: fuel volume used in engine hours. It can be detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates. Details…
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates in e/h**: average fuel consumption in engine hours detected by one of the methods mentioned above.

## Events

- **Events count**: the number of events registered (see Notification).

## Fuel fillings

- **Total filled**: the volume of fuel filled during the reporting interval.
- **Total registered**: registered fuel volume regardless binding to sensors and calculation methods.
- **Difference**: the difference between registered and detected fillings.
- **Total fillings**: the number of fuel fillings detected within the reporting period.

## Fuel thefts

- **Total fuel stolen**: the total volume of stolen fuel.
- **Total thefts**: the number of thefts detected within the reporting period.

## Maintenance

- **Total services duration**: time spent for servicing.
- **Total maintenance cost**: total cost of all maintenance works.

## Parkings

- **Parking time**: total duration of parkings for the reporting period. Parkings are detected by Trip Detector. IF it is not set properly, there may be no parkings found.
- **Parkings count**: the number of parkings for the reporting period.

## Rides

- **Rides count**: the number of accomplished rides.

## Sent commands

- **Sent commands**: the number of commands sent to the object (see Commands and Chat with a Driver).

## SMS messages

- **SMS messages**: the number of SMS messages received from unit.

## Stops

- **Stops count**: the number of stops for the reporting period.

## Trips

- **Move time**: the sum of durations of all trips.
- **Mileage in trips**: total distance travelled in all trips.
- **Average speed in trips**: average speed in trips (total mileage divided by move time).
- **Maximum speed in trips**: the maximum speed registered during the trips.
- **Trips count**: the number of trips.
- **Consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates in trips**: fuel consumed in trips. It can be detected by a fuel sensor (like impulse/absolute/instant fuel consumption sensor, fuel level sensor) or calculated by math or rates. Details…
- **Rates deviation by ImpFCS/AbsFCS/InsFCS/FLS in trips**: the difference between fuel consumption detected by a sensors and fuel consumption rates.
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates in trips**: average fuel consumption in trips detected by one of the methods mentioned above.
- **Avg consumption by ImpFCS/AbsFCS/InsFCS/FLS/math/rates in trips (km/1l)**: average fuel consumption presented as 'kilometers per one litre' .

## Unfinished rides

- **Unfinished rides count**: the number of unfinished rides.

## Utilization cost

- **Total utilization cost**:
- **Count of services and fillings**:

## Violations

- **Violations count**: the number of violations registered within the reporting period (see Notifications).

## Visited streets

- **Streets count**: the number of fount visits of streets.

See related topics:

- **Report Templates**
- **Tables**
- **Charts**
- **Map Output**
- **Advanced Reports**
- **Export Report to File**
- **Data in Reports**

# Advanced Reports

⚠️ *Attention!*

**To create reports on unit groups or users, you must have *Advanced reports* module in your package**.

Advanced reports are reports concerning such system objects as *Unit group* or *User*. These report types are defined when creating a template.
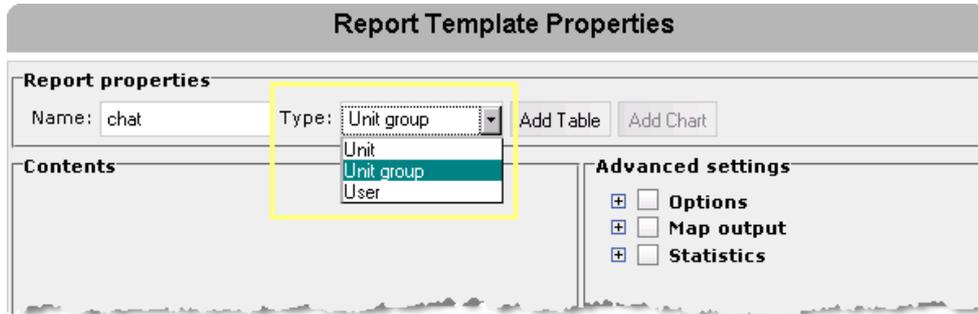


⚠️ *Attention!*

It is not recommended to change template type when editing a previously created template because all template contents will be lost with this action.

## Reports on Unit Group

Data from several units can be gathered in one report if these units from a unit group. To get a report on several units, select the *Unit group* type for the report template.

The functionality of these reports is very similar to reports on separate units but has a number of peculiarities and restrictions.

In *Unit group* reports the following features are **available**:

- Any tables;
- Graphical elements on map: POI, geofences, any markers, unit last location icons;
- Some graphs in Statistics: 'Report', 'Group', 'Interval beginning', 'Interval end';
- Advanced settings 'US metrics' and 'Geofences as address source'.

All tables available for units are available for unit groups, too. Besides, the table Last location is available for unit groups *only*.

In *Unit group* reports the following features are **not available**:

- Charts;
- Tracks and all messages on map;
- Most of statistics excluding report template name, unit group name, and reporting interval.

### Tables for Unit Groups

When configuring tables for unit groups, take into account some peculiarities. As the first column of the table you will see the list of all units included into the selected group (in the alphabetical order). Other columns are defined in the template in the same way as for usual tables. If there is no data for the given unit, in other cells there will be 'N/A'. In the columns such as 'Count' there will be the number of events registered in the reporting period for the given unit.

Below is an example of a table on speedings for a group of five units, for an interval of five days (detalization off):

| № | Unit | Beginning | Duration | Max speed | Mileage | Count |
|---|---|---|---|---|---|---|
| 1 | AirCool | 2010-03-29 14:11:11 | 1 minutes 52 seconds | 71 km/h | 2.14 km | 3 |
| 2 | MAN 1238-RU | 2010-03-29 06:45:12 | 47 minutes 21 seconds | 110 km/h | 54 km | 34 |
| 3 | MAN 8523-RU | 2010-04-02 13:29:31 | 11 seconds | 103 km/h | 0.32 km | 1 |
| 4 | MAN AB 1966 2 | 2010-03-30 04:40:36 | 4 minutes 4 seconds | 79 km/h | 4.94 km | 5 |
| 5 | Mr. Smith | 2010-03-31 15:07:09 | 32 seconds | 78 km/h | 0.66 km | 4 |

If the option of detalization is on, then expanding the contents of a basic row you can see a detailed list of

events for the given unit, and the number of hidden rows will coincide with the number in the 'Count' column.

| | № | Unit | Beginning | Duration | Max speed | Mileage | Count |
|---|---|---|---|---|---|---|---|
| ⊟ | 1 | AirCool | 2010-03-29 14:11:11 | 1 minutes 52 seconds | 71 km/h | 2.14 km | 3 |
| | 1.1 | AirCool | 2010-03-29 14:11:11 | 59 seconds | 69 km/h | 1.12 km | 1 |
| | 1.2 | AirCool | 2010-03-29 14:14:37 | 16 seconds | 71 km/h | 0.31 km | 1 |
| | 1.3 | AirCool | 2010-03-31 14:15:25 | 37 seconds | 69 km/h | 0.71 km | 1 |
| ⊞ | 2 | MAN 1238-RU | 2010-03-29 06:45:12 | 47 minutes 21 seconds | 110 km/h | 54 km | 34 |
| ⊞ | 3 | MAN 8523-RU | 2010-04-02 13:29:31 | 11 seconds | 103 km/h | 0.32 km | 1 |
| ⊞ | 4 | MAN AB 1966 2 | 2010-03-30 04:40:36 | 4 minutes 4 seconds | 79 km/h | 4.94 km | 5 |
| ⊞ | 5 | Mr. Smith | 2010-03-31 15:07:09 | 32 seconds | 78 km/h | 0.66 km | 4 |

If there is no detalization it does not matter whether the grouping by days/weeks/months is on or off, because the priority grouping is by units. If detalization and grouping are applied together, then in the expanded list you will get one row per one interval (day/week/month). However, if an event was not indicated in all intervals, there can be fewer rows that intervals. It is seen from the example below: the unit witch was speeding just two days of five has two hidden rows correspondingly, and the unit witch was speeding each has five rows.

| | № | Unit | Beginning | Duration | Max speed | Mileage | Count |
|---|---|---|---|---|---|---|---|
| ⊟ | 1 | AirCool | 2010-03-29 14:11:11 | 1 minutes 52 seconds | 71 km/h | 2.14 km | 3 |
| | 1.1 | 2010-03-29 | 14:11:11 | 1 minutes 15 seconds | 71 km/h | 1.43 km | 2 |
| | 1.2 | 2010-03-31 | 14:15:25 | 37 seconds | 69 km/h | 0.71 km | 1 |
| ⊟ | 2 | MAN 1238-RU | 2010-03-29 06:45:12 | 47 minutes 21 seconds | 110 km/h | 54 km | 34 |
| | 2.1 | 2010-03-29 | 06:45:12 | 29 minutes 7 seconds | 110 km/h | 38 km | 11 |
| | 2.2 | 2010-03-30 | 06:48:30 | 3 minutes 7 seconds | 68 km/h | 2.88 km | 4 |
| | 2.3 | 2010-03-31 | 06:44:23 | 2 minutes 27 seconds | 67 km/h | 1.92 km | 4 |
| | 2.4 | 2010-04-01 | 06:51:40 | 2 minutes 1 seconds | 70 km/h | 2.10 km | 2 |
| | 2.5 | 2010-04-02 | 06:50:12 | 10 minutes 39 seconds | 71 km/h | 9.57 km | 13 |
| ⊞ | 3 | MAN 8523-RU | 2010-04-02 13:29:31 | 11 seconds | 103 km/h | 0.32 km | 1 |
| ⊞ | 4 | MAN AB 1966 2 | 2010-03-30 04:40:36 | 4 minutes 4 seconds | 79 km/h | 4.94 km | 5 |
| ⊞ | 5 | Mr. Smith | 2010-03-31 15:07:09 | 32 seconds | 78 km/h | 0.66 km | 4 |

## Reports on Users

Two tables about users can be generated (*Logins* and *Custom fields*) and two charts (*Logins/Hours* and *Logins/Days of week*).

### Tables Applied to Users

This kind of table shows user activity: logins to different services. The table can contain the following columns (they are adjusted after you press the 'Add Table' button):

- **Login time**: time when user logged in a service.
- **Logout time**: time when user exited the service.
- **Duration**: time interval user was online on the service.
- **Host**: the address of the computer from which user logged in.
- **Site**: the name of service where user logged in.
- **Count**: the number of logins.

| Login time | Logout time | Duration | Host | Site |
|---|---|---|---|---|
| 2010-04-19 11:54:20 | 2010-04-19 11:54:20 | 0:00:00 | 127.0.0.1 | wialon-web |
| 2010-04-21 11:37:10 | 2010-04-21 11:49:42 | 0:12:32 | 127.0.0.1 | wialon-web |
| 2010-04-21 11:50:52 | 2010-04-21 18:07:03 | 6:16:11 | 127.0.0.1 | wialon-web |
| 2010-04-22 09:42:00 | 2010-04-22 14:00:44 | 4:18:44 | 127.0.0.1 | wialon-web |
| 2010-04-22 13:53:56 | 2010-04-22 14:28:52 | 0:34:56 | 127.0.0.1 | cms-manager |
| 2010-04-22 14:53:28 | 2010-04-22 14:55:44 | 0:02:16 | 127.0.0.1 | wialon-web |
| 2010-04-22 14:56:05 | 2010-04-22 14:58:47 | 0:02:42 | 127.0.0.1 | cms-manager |
| 2010-04-22 14:58:52 | 2010-04-22 14:59:02 | 0:00:10 | 127.0.0.1 | cms-manager |

The same parameters as for all tables can be applied to user logins table: grouping, detalization, row numbering, total row, and time limitations. In the example below you can see user logins table with grouping by days, detalization, numbering, and total row.

| №  | Date       | Login time | Logout time | Duration | Host      | Site        | Count |
|----|------------|------------|-------------|----------|-----------|-------------|-------|
| ⊞ 1 | 2010-04-19 | 11:54:20 | 11:54:20 | 0:00:00 | 127.0.0.1 | wialon-web | 1 |
| ⊞ 2 | 2010-04-21 | 11:37:10 | 18:07:03 | 6:28:43 | ------ | ------ | 2 |
| ⊟ 3 | 2010-04-22 | 09:42:00 | 17:36:44 | 5:46:40 | ------ | ------ | 6 |
| 3.1 | ------ | 09:42:00 | 14:00:44 | 4:18:44 | 127.0.0.1 | wialon-web | 1 |
| 3.2 | ------ | 13:53:56 | 14:28:52 | 0:34:56 | 127.0.0.1 | cms-manager | 1 |
| 3.3 | ------ | 14:53:28 | 14:55:44 | 0:02:16 | 127.0.0.1 | wialon-web | 1 |
| 3.4 | ------ | 14:56:05 | 14:58:47 | 0:02:42 | 127.0.0.1 | cms-manager | 1 |
| 3.5 | ------ | 14:58:52 | 14:59:02 | 0:00:10 | 127.0.0.1 | cms-manager | 1 |
| 3.6 | ------ | 16:48:52 | 17:36:44 | 0:47:52 | 127.0.0.1 | wialon-web | 1 |
| ⊞ 4 | 2010-04-23 | 10:27:26 | 18:08:15 | 0:28:59 | ------ | ------ | 2 |
| ⊞ 5 | 2010-04-26 | 11:59:11 | 18:10:33 | 6:11:22 | 127.0.0.1 | wialon-web | 1 |
| ------ | ------ | **2010-04-19 11:54:20** | **2010-04-26 18:10:33** | **18:55:44** | ------ | ------ | **12** |

The table *Custom fields* represents the list of custom fields entered in the corresponding tab of user properties dialog.

| Name | Value |
|------|-------|
| dispatcher | yes |
| region | Furmankan, East 7 Road |
| shift | 2 |
| units under control | 17 |
| working schedule | 13:00-17:00, 18:00-22:00 |

In the Statistics the following fields are available: report name, user name, reporting interval (beginning/end), total time spent on site, and logins count.

| Report | Logins |
|--------|--------|
| **User** | user |
| **Interval beginning** | 2010-04-19 00:00:00 |
| **Interval end** | 2010-04-26 23:59:59 |
| **Time spent on site** | 18:55:44 |
| **Logins count** | 12 |

## Charts Applied to Users

Two kinds of charts can be attached to the report on user logins: Logins/Hours and Logins/Days of week. To get these charts, in report template push the button Add Chart and choose the type in the dropdown list.

*Logins/Hours* chart shows how user's activity in different hours of the day:
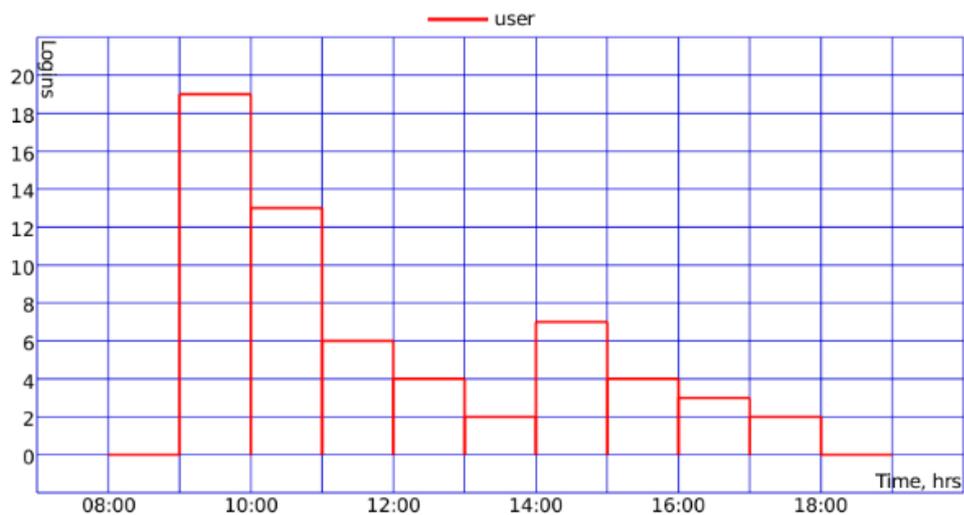


*Logins/Days of week* chart shows how often user logged to the system in different days of the week:
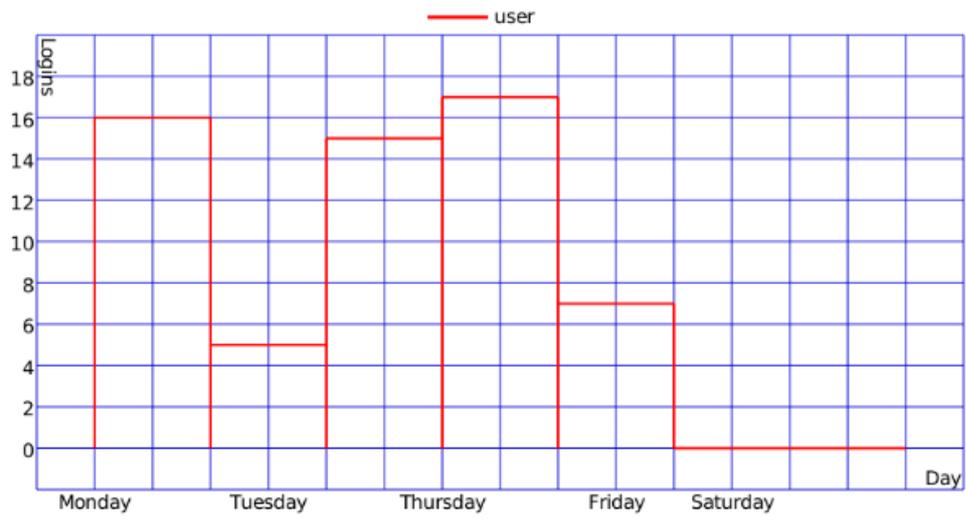
Related topics:

- **Report Templates**
- **Tables**
- **Charts**
- **Map Output**
- **Statistics**
- **Export Report to File**
- **Data in Reports**

## Export Report to File

To get a report in the form of a file that is suitable to save on the disk, print or send by e-mail, push the **Export to file** button.

Choose file format for the report:

- **HTML**

Your report will be generated as Internet page and will open in any browser.

- **PDF**

PDF is a widespread format suitable for electronic usage as well as for printing. To view these files Adobe AcrobatReader is used (for Windows OC only).

- **Excel**

Your report will be presented as Microsoft Excel electronic table.

- **XML**

XML is a textual data format that is notable for structured data storage and useful for data exchange between programs.

- **CSV**

CSV is a textual data format used for the digital storage of data structured in a table of lists form, where each each raw in the file corresponds to a raw of a table, and the columns are separates from each other by a special delimiter.

**Report to File**

| | |
|---|---|
| File format: | PDF |
| Page orientation: | Landscape |
| Page size: | A4 |
| Compress report files: | ☑ |
| Attach the map image: | ☑ |
| File name (optional): | enter_any_name |
| Generate report: | ☐ |

Cancel    Next
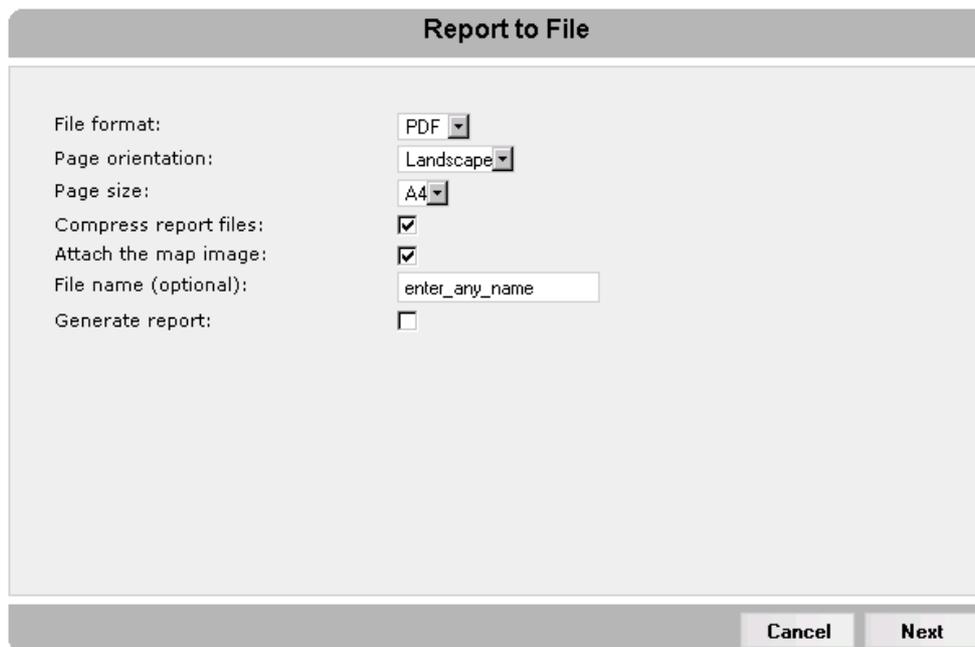
For PDF file set additionally page orientation (landscape or portrait) and page size (A4 or A3). For CSV file set additionally coding (utf8, cp1251) and delimiter (comma or semicolon).

You can **compress report files** if needed.

If a report concerns trips, stays and so forth, you can **attach the map image**. Note that the map will be attached to the file only if any graphical elements (as tracks, markers, POI or geofences) are chosen in the report template. The map cannot be attached to the files Excel, XML and CSV.

Type a **file name** for the file. It is optional and if left empty a file will be given a default name (like 'Online_report').

Do not check **Generate report** to export the current online report to file. Choose this option to generate a new report.

Depending on browser settings you will be offered to open the file or save it.

⚠️ *Note.*
When exporting PDF, HTML, Excel the **alignment** is used. The columns containing text (names of sensors, geofences, drivers, users, SMS and notification text, location addresses, etc.) are aligned left. The columns containing numeric

data (time, duration, speed, mileage, fuel, payments, count, etc.) are aligned right.

See also:

- **Reports Templates**
- **Tables**
- **Charts**
- **Map Output**
- **Statistics**
- **Data in Reports**

**USER GUIDE**

Trace: » Map Output » Statistics » Advanced Reports » Export Report to File » Data in Reports
You are here: Wialon User Guide » Reports Mode (New Version) » Data in Reports

# Data in Reports

## Time in Reports

Time when an event happened/begun/finished is given in reports in the form of date and time: YYYY:MM:DD HH:MM:SS.

The duration of a state is given in the format HH:MM:SS. If a duration is bigger than a day, first the number of days is indicated, and then HH:MM:SS. It can look like that: '5 days 12:34:56' which means '5 days, 12 hours, 34 minutes, 56 seconds'.

In some rare cases the duration of a state is '0 seconds'. It can happen if the state is detected by only one message. For example, a speeding was detected in one message, and in previous and next messages there is no speeding. The duration of a speeding is considered a period of time from the first message with speeding to the last messages with speeding in sequence. So, if having only one message with speeding, the duration turns to be zero.

If grouping is used, the time appears as follows:

- If grouping by days is used, the column called 'Date' is added. It gives the date in the format YYYY:MM:DD. If the columns 'Beginning' and 'End' are selected, they will contain only time (HH:MM:SS). However, if a state began in one day and finished in another, in the 'End' column date and time will be given.
- If grouping by weeks is used, the column called 'Week' is added. The month and the number of week of year are indicated there. The first week of year is considered the first *full* week. If a week begins in one month and ends in another, it refers to the month where it begins.
- If grouping by months is used, the column called 'Month' is added.

⚠️ *Attention!*
To receive reliable data for time/duration, it is important to correctly indicate the *time zone*, the first option in User Settings.

## Speed and Mileage

Mileage can appear in reports on trips, geofences, rides, speedings, digital sensors as well as in statistics and processed fuel level chart.

Mileage is calculated according to settings of mileage counter on the General tab in unit properties. Besides, mileage in trips, geofences and rides depends also on Trip Detector because the intervals of movement and stays are detected by it.

In Statistics you can find two possibilities for mileage:

- Mileage in all messages - the full mileage without any filtration by trip detector. It is always the longest mileage because it includes also all adjustment of data.
- Mileage in trips - total mileage of all movement intervals found according to trip detector.

Average and maximum speed values can be included in the same reports as mileage: trips, geofences, rides, speedings, digital sensors. Note that the average speed directly depends on mileage because it is calculated by dividing mileage by duration (for example, distance travelled with a sensor on divided by duration of on state. That is why a situation can happen when the average speed is zero and maximum speed is a positive number. It can happen (a) state duration is zero (see explanation above); (b) if mileage is zero (it can happen if the unit was parked or if the mileage counter is set incorrectly; © if the mileage is insignificant, for example, '0,01', and the result of division is smaller than one.

Maximum speed has nothing to do with mileage and any counters. To calculate maximum speed within an interval, all messages which get to this interval are analyzed and the largest speed value is selected and displayed in the corresponding cell.

Speed is given only in integer numbers. Mileage if less than 20 (miles pr kilometers) is given correct to the nearest hundredth. Measurement units for speed and mileage (kilometers and kilometers per hour or miles and miles per hour) are selected in additional settings of report template.

## Fuel in Reports

Many reports can provide information about fuel: fuel level (initial/final), the volume of filled/stolen/registered/consumed fuel, average consumption, etc.

To receive the most accurate information about fuel, you need to:

- install fuel sensors on your unit;
- properly configure the sensors in unit properties;
- on the Fuel Consumption select calculation methods corresponding to these sensors.

However, even if you do not have special fuel sensors, you can control fuel in the following ways:

- register fillings manually in the Monitoring panel;
- use mathematical method to calculate fuel consumed (it takes into account urban and suburban cycle, idle running, and moving under load);
- use consumption rates to calculate fuel consumed (it takes into account consumption rates in winter and summer periods);
- use mathematical method and consumption rates to calculate average fuel consumption within a given interval of movement.

To calculate fuel consumption by rates or math, you do not need any sensors to be installed. To use these method, it is enough to enter necessary values in the *Fuel Consumption* tab of unit properties dialog.

In report template several methods of calculating fuel can be selected simultaneously. In this case a separate column will be generated for each method. Above all, if there are several sensors of the same type (or corresponding to the given mask) and they are not summed (the option 'Merge same name sensors' is off), then a separate column will be generated for each of these sensors.

If in the report template you select columns which do not match with unit configuration, in the resulting report there will zeros in those cells.

Abbreviations used:

- FLS - fuel level sensor;
- ImpFCS - impulse fuel consumption sensor;
- AbsFCS - absolute fuel consumption sensor;
- InsFCS - instant fuel consumption sensor.

Fuel level is given in integer numbers. The volume of fuel consumed/registered/stolen as well as average consumption are given correct to the nearest hundredth. However, if the value is over 50 (liters/gallons), it is rounded to an integer number.

If US metrics are selected, fuel is measured in gallons, and average consumption in mpg (miles per gallon) unlike the European system where average consum,ption is measures as lt/100km (liters per 100 kilometers).

## Addresses

Address information can be displayed in many reports: initial/final location in trip, place of fuel filling or theft, location where the unit parked or had speeding, location where connection was lost, message received, event registered, etc.

Two things are crucial in defining an address:

- coordinates sent by device;
- Web-GIS server.

Address is searched in the radius of 1 km from the point where a message was received. If in this radius there is no available address information, then in this cell in report you will get dashed against a green background. However, if address information is not available, you can move to this point on the map if clicking on this cell.

Geofences created in the appropriate panel can be also used as addresses. These geofences must have the flag *Address source*, and the option *Geofences as address source* must be activated in advanced options of report template.

See related topics:

- **Reports Mode (New Version)**
- **Report Templates**
- **Tables**
- **Charts**
- **Map Output**
- **Statistics**
- **Advanced Reports**
- **Export Report to File**

# Managing Units via SMS

⚠ *Attention!* This module is licensed separately and can be not included in your package.

To manage units via SMS messages, it is required to enter your cell phone numbers to User Settings.

## Forming SMS Message

1. Create a new text message.
2. Enter unit name or its unique ID. You can type just some first characters that are enough to identify the unit. If several unit names begin from these characters, the command will be sent to the first found.
3. After a space enter a command. Leave it empty or type any character or question mark (?) to get last speed and location.
4. If you send a command to show a parameter, enter the parameter name, separating it by space.
5. Send the message to the phone number of the server modem. This number is given by your service provider.
6. As a response, you will get a message with the last detected unit location. The following information will be presented: unit name, date and time of the last message, speed and address at the moment of this message. If the server cannot detect the address, the coordinated will be given.

⚠ *Hint.*
To separate unit name/id form a command or a command from a parameter not only **<space>** sign can be used but also the line feed (**<enter>**).

## Commands

Here you have a list of standard command names that can be sent by the server via SMS and GPRS channels in case the equipment installed supports them.

| Command | Parameter | Description |
|---|---|---|
| **query_pos** | - | Get the current position of the unit. |
| **block_engine** | - | Block the engine. |
| **unblock_engine** | - | Unblock the engine. |
| **output_on** | inlet number | Activate the input. |
| **output_off** | outlet number | Activate the output. |
| **set_report_interval** | interval, in seconds | Set the interval of how often the unit sends messages to the server. |
| **custom_msg** | message | Custom message to the unit. |

## SMS Examples

Let us suppose that you have the access to three units: Athos, Porthos, and Aramis.

To get general information about Portos, sent from a registered phone the following text message:

```
p
```

The coincidence will be detected by the first letter because there is no more units which names begin from this letter.

To get information on Athos, you should already send two letters

```
at
```

In case you hesitate, send the full name of the unit.

To block the engine of Aramis (in case the corresponding equipment is installed), send the text:

```
ar block_engine
```

To make Portos send messages to the server every 30 seconds, sent the command:

```
p set_report_interval 30
```

# Wialon Mobile

⚠️ *Attention!* This module is licensed separately and can be not included in your package.

Wialon Mobile can be used from mobile phone or Pocket PC. The following features are presented on the site:

- display current location and movement history of a unit (or unit group) for a period of time on the map;
- information about unit state, its sensor values, its latest position and latest registered event;
- sending commands to a unit remotely;
- search cities, streets, addresses on the map.

To access the mobile site, enter address in the browser. On the first page, enter your user name and access key as it is set in User Settings. You can also select the interface language. When loged in, observe the main menu and select the operation to perform.



## Unit Information

Select unit to get information about, push Next and get the data. The information includes unit name and device type, its location and speed, time when the latest message was received. It also provides all sensors values, the latest event, and phone number if available.



When a time passed, you can get fresher information about the unit. Simply push the Refresh button to get the latest data.

To get information about some other unit, push Back and select other unit from the dropdown list.

## Monitoring

Select one or more units to monitor them and click Next. Select time interval to map the track for, indicate map size and scale. Push Show to display the search result.
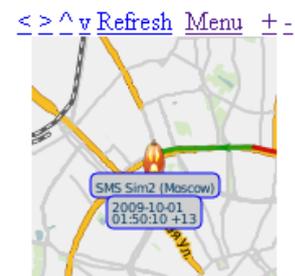
The map can be moved and zoomed using the appropriate buttons above (arrows - to move, plus and minus - to zoom). However, if more than one unit is selected, then the map is scaled in such a way to show all units, and it is impossible to move and zoom it.

When a time passed, you can get fresher information about the unit. Simply push the Refresh button to get the latest data.

Click on Menu to go back to the main menu.

## Commands

Select one or more units to execute a command. In the next window choose the command, if this is a custom message or a message for the driver, enter message text. At the end click the Send button. You will be notified whether the action was successful.



## Search

To find a place on the map, enter some first characters of the city and/or street, add house number if you need more accurate search. Set also map size and scale. The received result you can scale and move.