USER GUIDE

iRZ Online Tracking System

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1. About the Document

This document describes the interface and contains information on the main functions of the iRZ Online Tracking System. The guide is designed for the users who will work with the configured account. To obtain information on configuring accounts, creating organizations, configuring various system parameters and vehicle units, see the guide for resellers and administrators.

Version	Date	Author(s)	Changes
1.0	16.10.2014	V.N. Golovin	The main document

2. System Overview

2.1. Logging In

To log into the iRZ Online tracking system, open the website **web.irzonline.com**, enter your login, password and click "Enter":
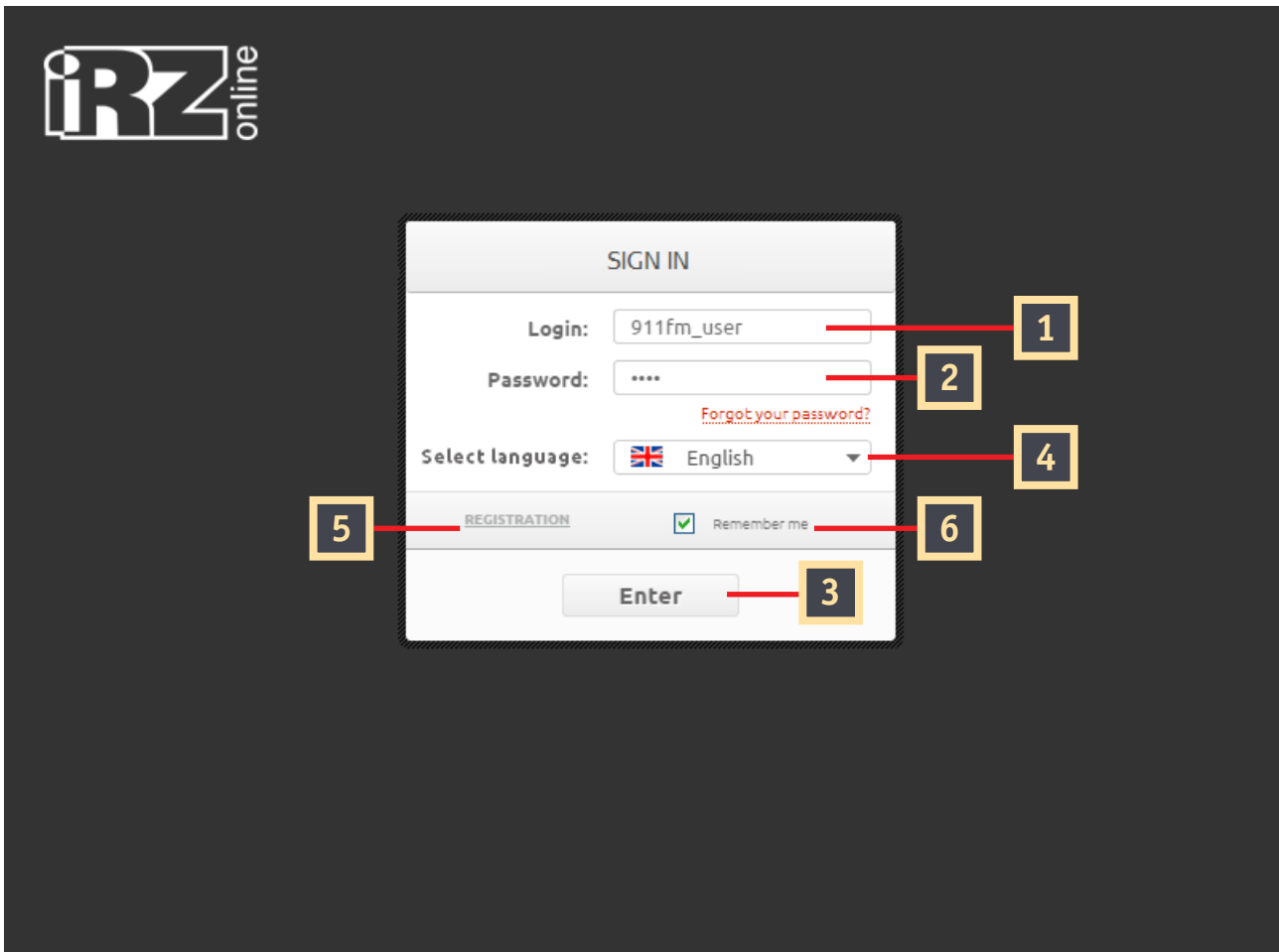
Fig. 2.1. Logging in

Marking	Description
1	Login entry field
2	Password entry field
3	Login button
4	Selecting language interface
5	Registering new account
6	The check mark for saving a password and login on the local device after signing out

2.2. Main Interface

2.2.1. Overview

After you have logged in, you get into the interface of the tracking system on the basis of the map and the list of vehicles attached to the profile:
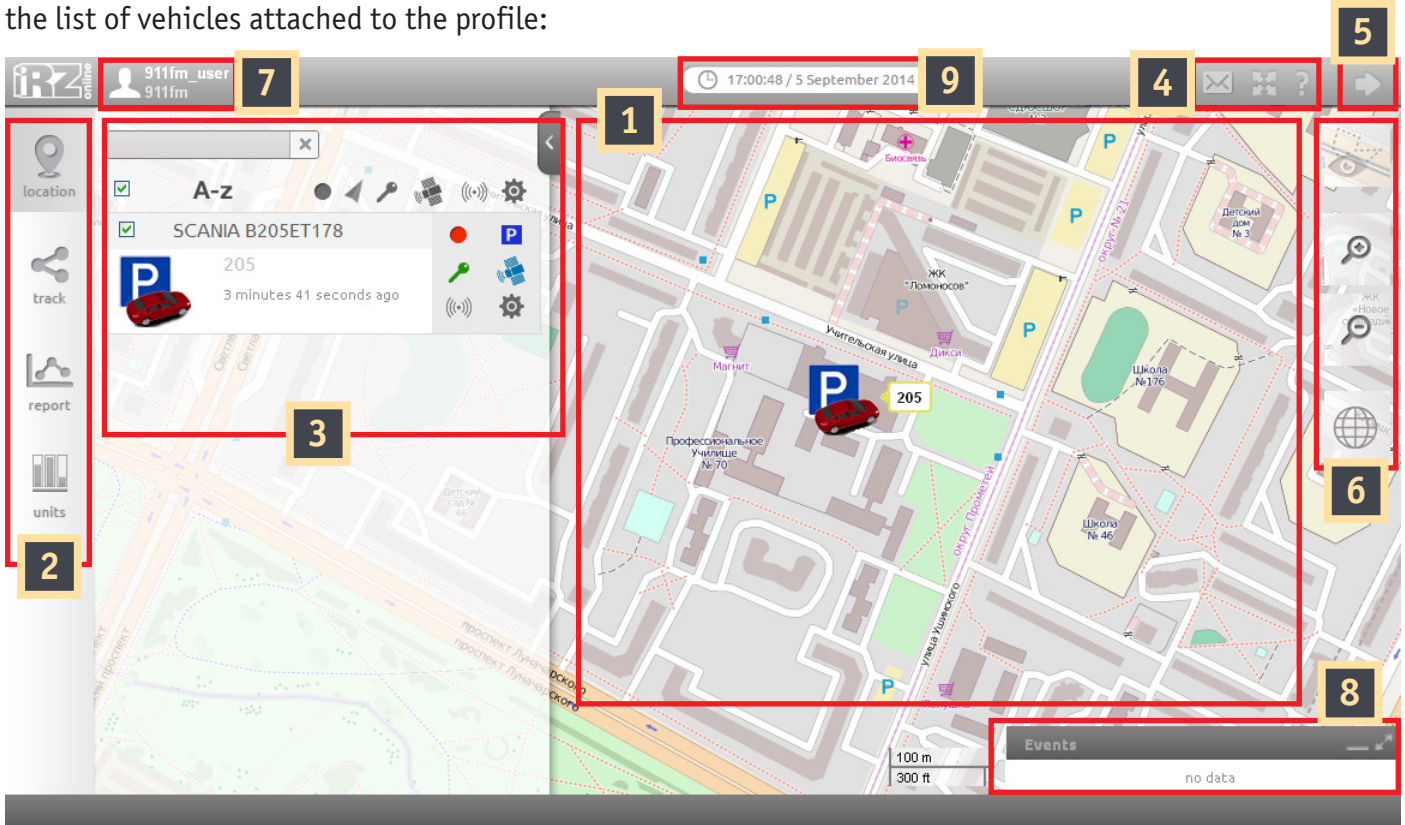

Fig. 2.2. Main interface of the system

| Mark.	Name	Description
1	Main map field	The main field with the map, vehicle location and travel data displayed
2	Control panel	Switching to various vehicle operation modes: "Location", "Track", "Reports", "Units"
3	Control panel operating field	Operating field containing the vehicle data. This example illustrates the operating field of the "Location" mode
4	Data field	Auxiliary data field with the buttons "System messages", "Full screen" and "Help"
5	Log out button	Logging out the profile and shutting down the system. By clicking the button, you return to the log in page
6	Navigation panel	Map zooming, map selecting, geofence mapping
7	Current profile data	Displaying user and organization name
8	Events log	Current events log
9	Time and date	Current time and date

2.2.2. Top Panel

The top panel contains common buttons and elements, available in various operation modes. For example, the information on active profile, time and data field, logout button and others.

Icon	Name	Description
	«Log out» button	Logging out the current profile. Clicking it you get into the «Log In» page. Use this button after completing the work with the tracking system or to change the operating profile
	«System messages» button	The switch to the window «System messages», which is a message log. It stores messages, regarding the tracking system operation
	«Full screen» button	Clicking the button you switch to the full-screen mode with the operation field covering the entire screen. To exit the full-screen mode, press «Esc»
	«Help» button	Information on the tracking system

2.2.3. Navigation Panel

The navigation panel is placed in the right upper part of the operating window, and used only for operations with the map: zooming in/out, selecting map type, displaying geofences.

Icon	Name	Description
	Zoom in	The map scale increased to one position when clicking it
	Zoom out	The map scale decreased to one position when clicking it
	Select map type	Selecting map type. The tracking system supports operation with various map types. This button allows you to select the map type or source. For example, simple topographic map or satellite view. The traffic jam mapping is also available
	Show/Hide geofences	The button allows you to show or hide the user geofences on the map

In addition, the special panel, containing the data on current map scale in the metric system and British Imperial system, is displayed on the right bottom of the screen.
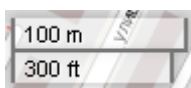
For example, means that the upper segment is 100 m long, the lower one is 300 feet.

2.2.4. Mapping Elements

The tracking system basic mode is operation with the map, displaying the vehicles, equipped with the special transmitters (trackers), connected to the user account. One or more vehicles can be available depending on the user account.
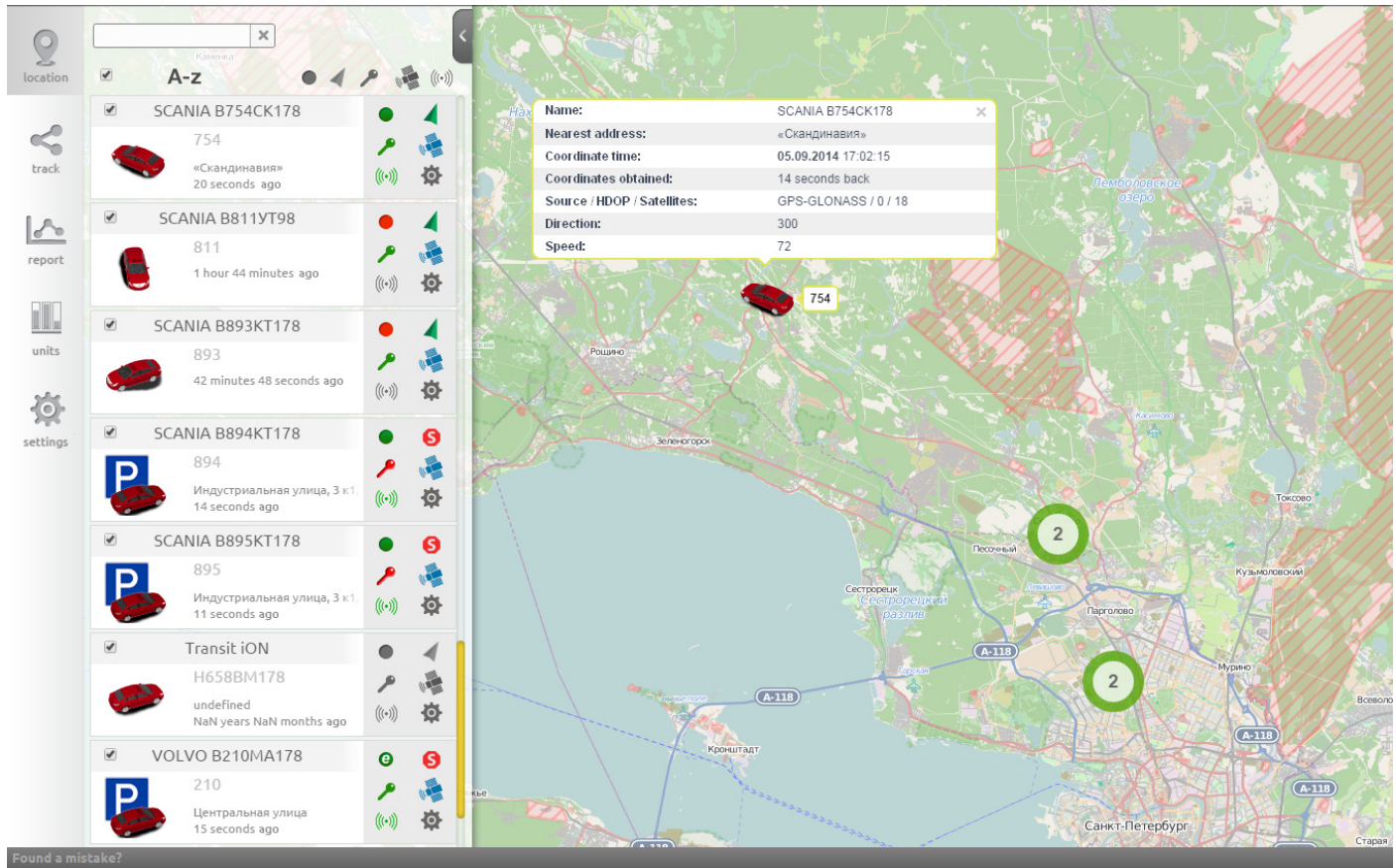

Fig. 2.3. Objects on the map

All objects are mapped in the form of automobile models. To simplify the data perception, various supplementary icons are mapped in addition to the vehicle images. For example, if the vehicle is parked, the blue icon «P» appears nearby. If several objects are close to each other, the vehicle icons will overlap due to the small map scale, therefore they are grouped into one joint object. For example, Figure 2.3. shows one vehicle model, and the circled «2» indicates that that two more vehicles are placed here. But such map scale produces overlapping of icons and therefore they are mapped as a joint icon. By clicking each object, you will see the additional information.
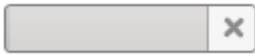
2.3. Control Panel

2.3.1. Working with the Vehicle List

The entire list of available objects is displayed on the left side panel of the screen in the «Location» and «Track» modes. This panel is especially relevant if the user has a large vehicle list. Thus, you can quickly find the required vehicle by its name selecting the vehicle list according to some feature. For example, you need to determine the vehicles that have not communicated for a long time, etc.

By clicking any object on the list, the tracking system centres the object on the map. Besides, the user can disable the display of unrequired vehicles to provide better focus on one or several vehicles from the list.

Icon	Name	Description
[search box]	Search field	Searching objects by the vehicle name, or type. By entering the part of the vehicle name the list will show the objects that meet the query
☑	Show/Hide object	This element enables you to show or hide separate vehicles on the map. By default all objects are mapped. If you clear check boxes in the vehicles list, these objects will not be mapped
A-z	Sort by name	Sequencing the vehicles list in alphabetical order
●	**Sort the vehicle list by the last connection**	
●	No connection data available	
●	Last connection was recorded over 24 hours ago	
●	Last connection was recorded less than 24 hours ago with 10 minutes length	
●	Last connection was recorded 5 to 10 minutes ago	
●	Last connection was recorded 5 minutes ago	
ⓔ	Circled "e"	Power-saving mode
◀	**Sort the vehicle list by the vehicles motion**	
◀	No data available	
◀	Vehicle in movement	
P	Vehicle parked	
🔑	**Sort the vehicle list by ignition sensor data**	
🔑	Ignition sensor not connected	
🔑	Ignition on	
🔑	Ignition off	

	Sort the vehicle list by transmitted data source
	No data available
	Data source — GSM channel
	Data source — GPS/GLONASS
	Sort the vehicle list by the objects "online"/"offline" status
	No connection with the vehicle (data not received)
	Vehicle connected (data received)
	Sort the vehicle list by connected unit
	Units not available
	Units available

2.3.2. Web-Tracking Operation Modes

Several web-tracking operation modes are available to the user. Each operation mode provides its own features, both general and proper interface elements. The control panel on the left side of the screen is used to switch between modes. For more details on the modes, refer to the table below or the further relevant sections.

Icon	Name	Description
Location	«Location» mode	The mode for tracking of vehicles. Functions: object real-time surveillance; filtering of the object list by features
Track	«Track» mode	The mode for generating a track. Functions: data on object motion; generating a track and graph within the time interval; generating express reports
Report	«Report» mode	The mode for generating report. Functions: making reports on the basis of the vehicle data for the time interval, taking a single or a group of vehicles; providing the report type from ready templates; saving reports in the HTML, PDF, Excel formats
Units	«Units» mode	Sensors data mode. Functions: displaying data from sensors in real time or for the elapsed time

3. Generating a Track

3.1. Configuring Parameters

To generate the track, switch to the «Track» mode **1**.
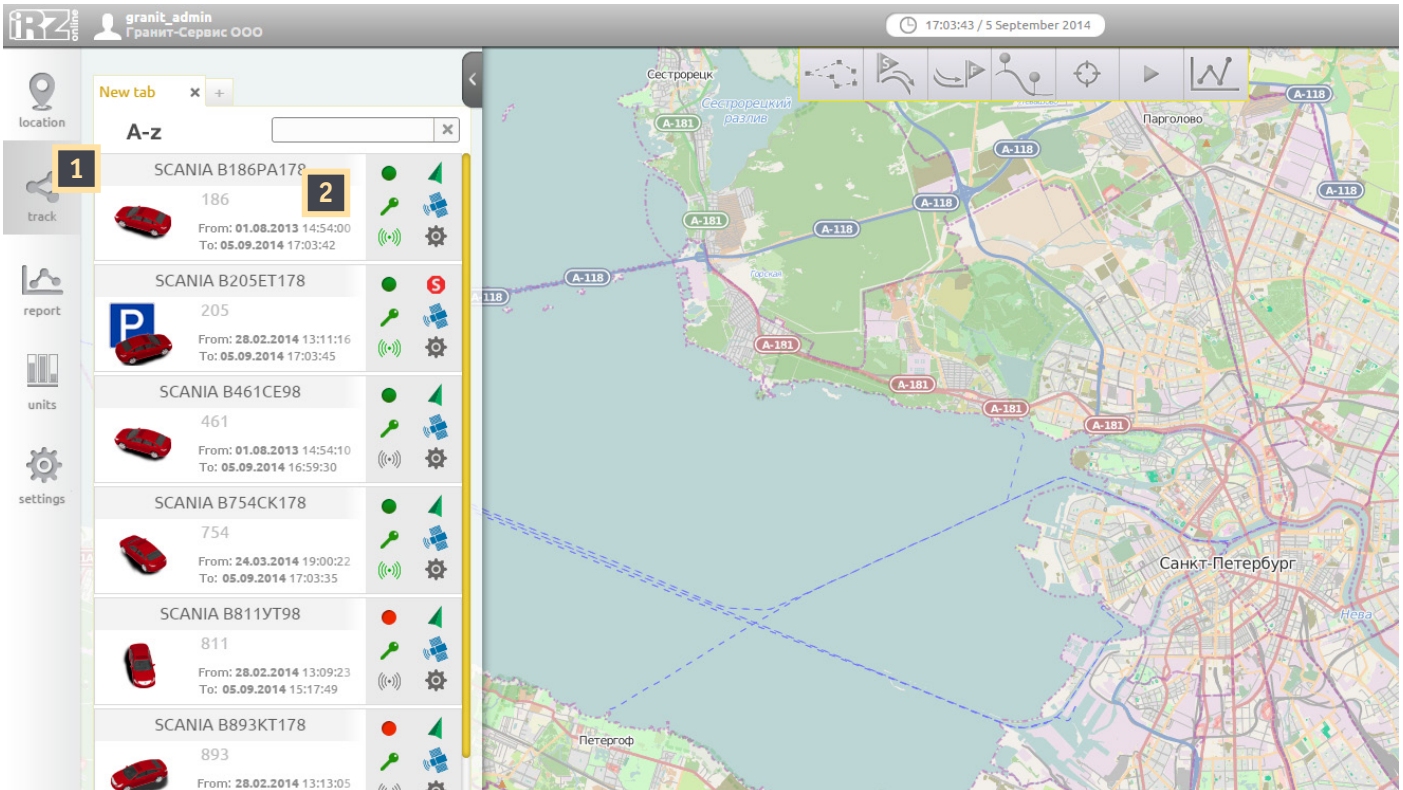
Fig. 3.1. «Track» mode

Select an object from the list for which you want to generate, the track by clicking the car icon in the left control panel **2**. For example, «Scania B186PA178».

Then, select the time interval:

Specify the time interval for which you need to build the track. For example, you can set the start **3** and end **4** date/time manually. For example, the figure illustrates the interval from 00:00 05.09.2014 to 17:01 05.09.2014.

In addition, you can specify dates using the calendar or set the interval automatically via the «Yesterday» (for the day before), «Week» (for the past 7 days), and «Month» (for the past 30 days) buttons.

After selecting the time interval, click «Generate Track», **5** as a result, the track for the selected vehicle will be mapped.
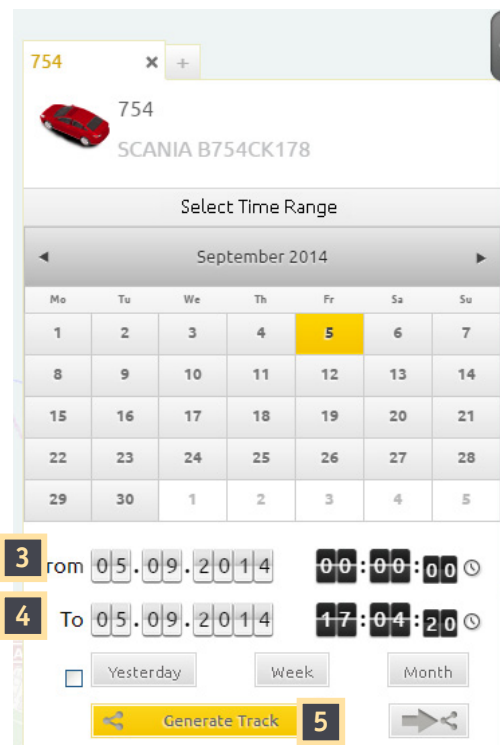
Fig. 3.2. Selecting time range

The user can generate up to three tracks. To build another track, create a new tab on the selection panel and set the required parameters.

Click the «+» icon to create the tab:
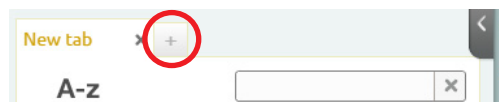
Click «x» to close the tab:

3.2. Working with a Track

After the track has been generated, the user has an additional opportunity for processing of the received data.
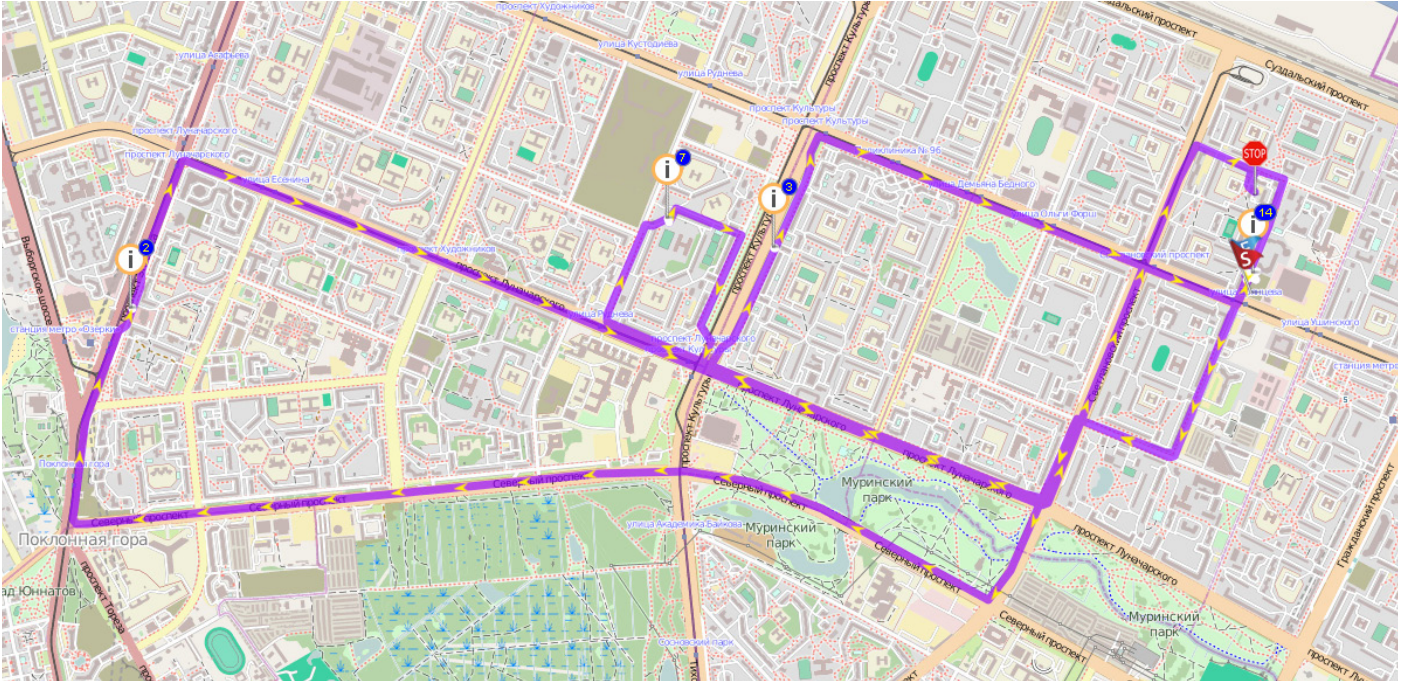
Fig. 3.2. «Track» mode

The vehicle movement direction is indicated by the arrows. The supplementary information icons indicate the events that happened during the vehicle movement at the specified time interval:

Icon	Name	Description
	Start point	The point of the track where the vehicle started its movement (track start point) within the specified time interval
	End point	The point of the track where the vehicle finished its movement (track end point) within the specified time interval
	Parking	The point of the track where the vehicle made a long-term parking (parking for over 10 minutes)
	Stop	The point of the track where the vehicle stopped (parking for less than 10 minutes)
	No signal	The segment of the track where no data from the vehicles was received
	Overspeed	The point of the track where the vehicle exceeded the speed limit
	Event group	If several event icons overlap, they are grouped into one icon

You can obtain more details by clicking each icon.

The panel for the operation with the track is at the top of the map and available only for the «Track» mode. The table below describes the functions for working with the track:

Icon	Name	Description
	Geofences management	Viewing current geofences, adding, removing and editing geofences. For more details, see Section 3.3.1
	Switch to the start of an active track	Map centring by the track start point
	Switch to the end of an active track	Map centring by the track end point
	Mark the interval on the track for detailed view	Allocating the track segment to obtain the detailed information on it. See Section 3.3.3 for details
	Full screen	The map is zoomed to fit the track on the screen
	Enable track player	Imitating the vehicle movement on the selected track
	Graph management	Graphed data on the connected sensors. For more details, see Section 3.3.4

3.3. Main Functions

3.3.1. Working with Geofences

Sometimes it is hard to control the vehicles operation if the number of tracked vehicles or mobility is great. For example, you need to be sure that the construction machinery will not leave its site within the operating time period or there are sites where vehicles entry is not allowed. In the iRZ Online tracking system the user can create such areas (geofences) on his/her own, and the system controls their crossing.

Before you start working with the user geofences, click «Geofence management» on the panel with the track management functions (mode «Track»).
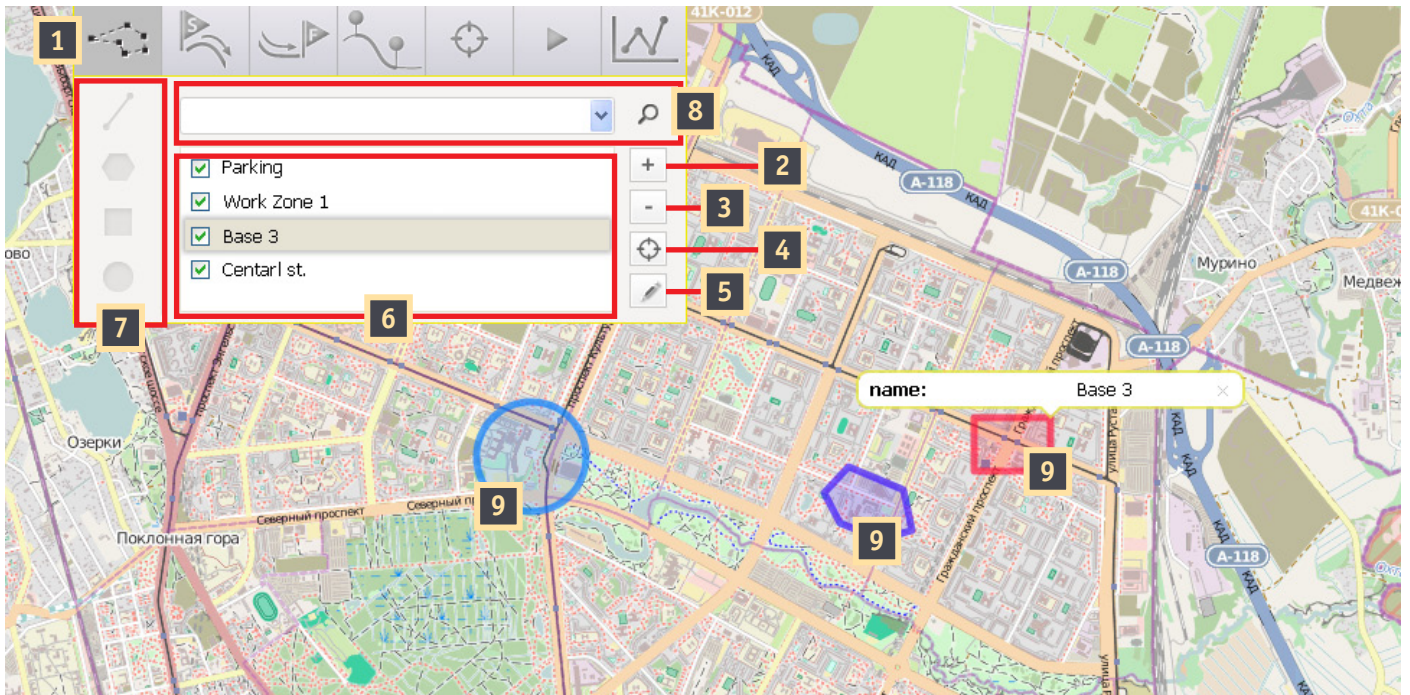
Fig. 3.3. Working with geofences

The figures in the picture indicate:

Mark.	Description
1	«Geofence management» button
2	«Create geofence» button. *After clicking the button, the tools for drawing of geofences become available (7)*
3	«Remove geofence» button. *Select the geofence you want to remove and click the button*
4	«Full screen» button. *The selected geofence is mapped*
5	«Edit geofence» button. *To edit name or color, click (5) and press «Enter». To change the size, drag down the emerged point «⊠» for required distance*
6	Geofence list. *Click the required geofence for working with it. Use the check box «☑» to show/hide geofence on the map*
7	Geofence drawing tools. *Click «Create geofence» (2) to activate. Consequently, four types of geofences are available: line segments, a complex closed figure, a rectangle, a circle (see section 3.3.2 for details)*
8	Geofence search filter by name. *Click «Lens», enter the part of the geofence name to find in the list. Geofences without the typed combination of the name will be hidden*
9	Geofences

3.3.2. Generating Geofences

Four types of tools are available for creating geofences (see Section 3.3.1. - element 7):
Line:
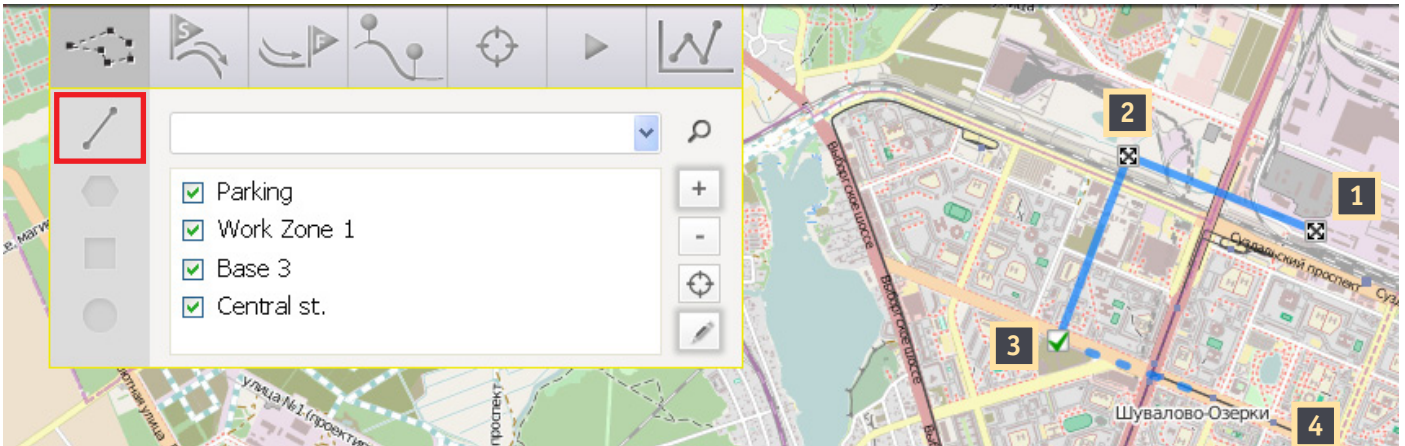
Fig. 3.4. Constructing lines

To construct a line or a group of connected lines, click the «Line» icon. Put a point - the start of the line **1** , and at least the second point - the end of the line. The generated pattern can include many connected fragments, for example, the figure illustrates two fragments connecting **1** with **2**, and **2** with **3**. To construct the next segment, click position **4** (dotted line), and to fix the generated geofence, flag the check box ☑ in position **3**.

Polygon:
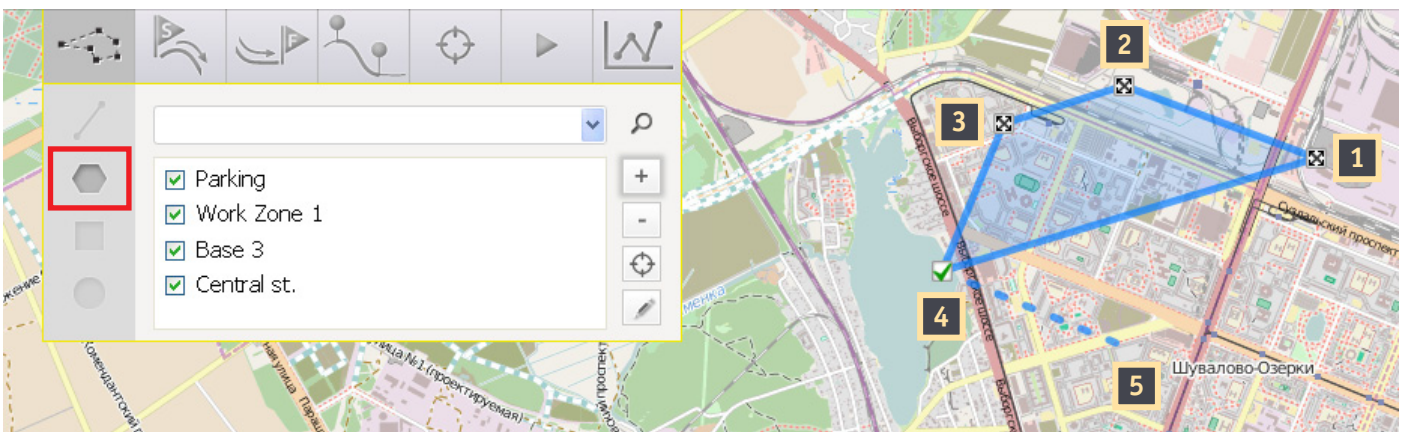
Fig. 3.5. Constructing a polygon

To construct a polygon, click the «Polygon» icon. This figure is constructed in the same way, as the line. The polygon lines are closed.

Therefore, to construct this figure, you need to specify at least two points. The figure illustrates the polygon with four points: **1**, **2**, **3** and **4**, lines are connected automatically and can intersect. To save the figure, flag the check box ☑. You can proceed constructing by clicking, for example, position **5**.

Rectangle:
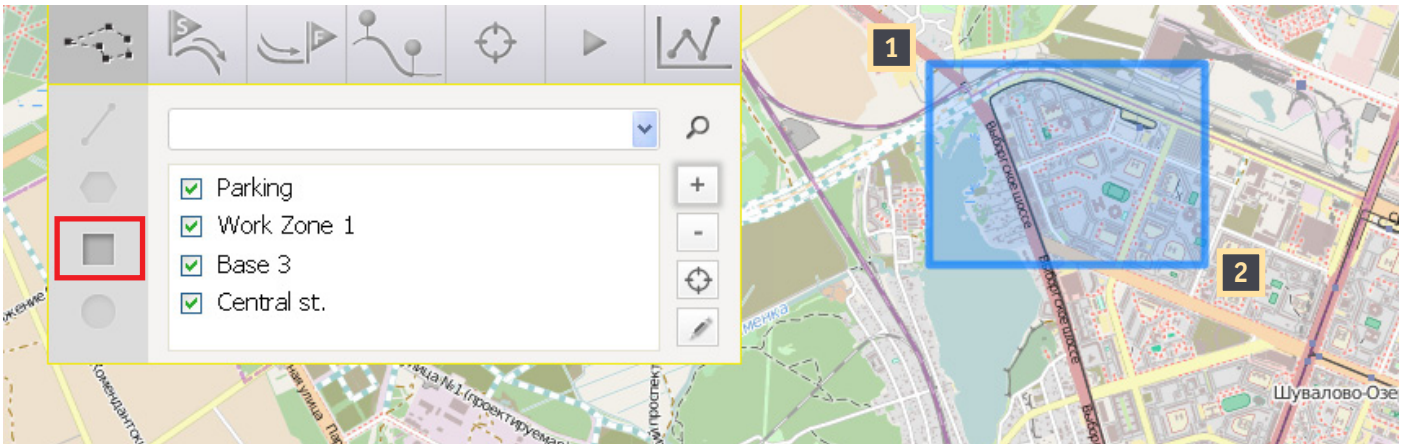
Fig. 3.6. Constructing a rectangle

To construct a rectangle, click the «Rectangle» icon.

Specify point **1**, which will be one of the angles of the rectangle, then specify the diagonal, holding down the mouse button and dragging the cursor in the required direction, for example, to point **2**. Release the button. As a result, the figure will be constructed.

Circle:
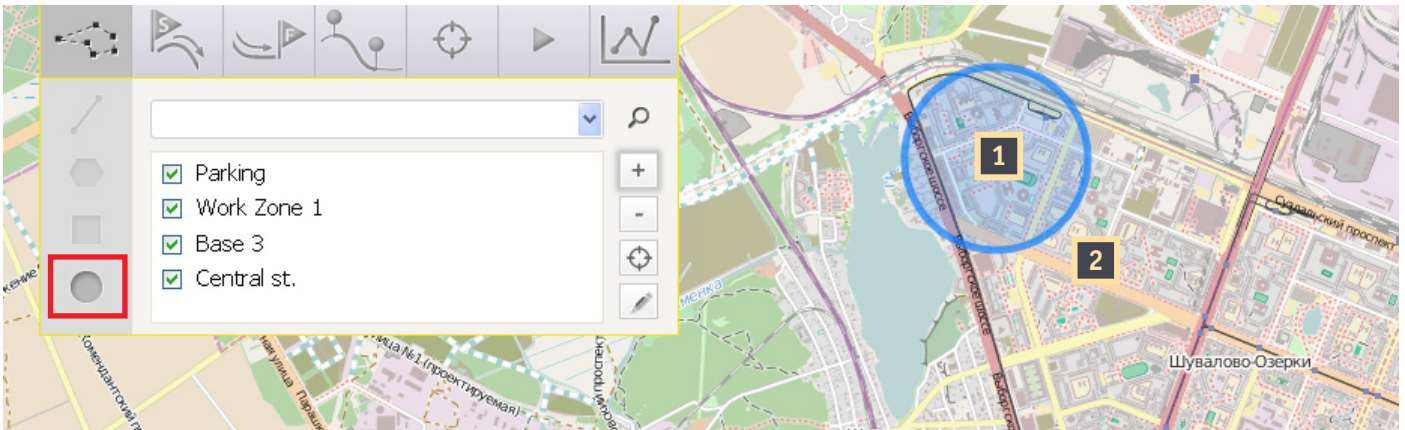
Fig. 3.7. Constructing a circle

To construct a circle, click the «Circle» icon.

Specify point **1**, which will be the circle centre, then specify the radius, holding down the mouse button in the required direction, for example, to point **2**. Release the mouse button. As a result, the figure will be constructed.

3.3.3. Working with Segments

You can work with individual segments on the track to obtain information on the particular travel site.
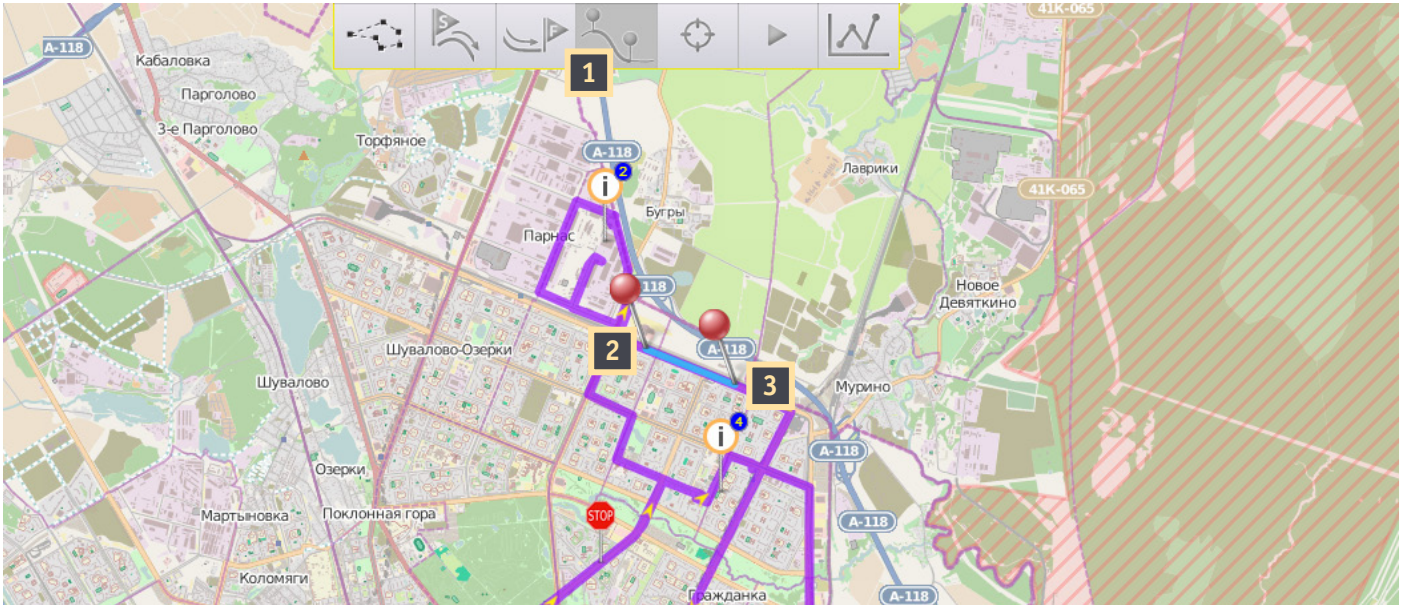
Fig. 3.8. Working with segments (intervals)

Select the tool to create the segments **1**, specify two points (**2** and **3**) on the track, which form the required segment.

Consequently, the static information on this segment will be displayed on the screen:
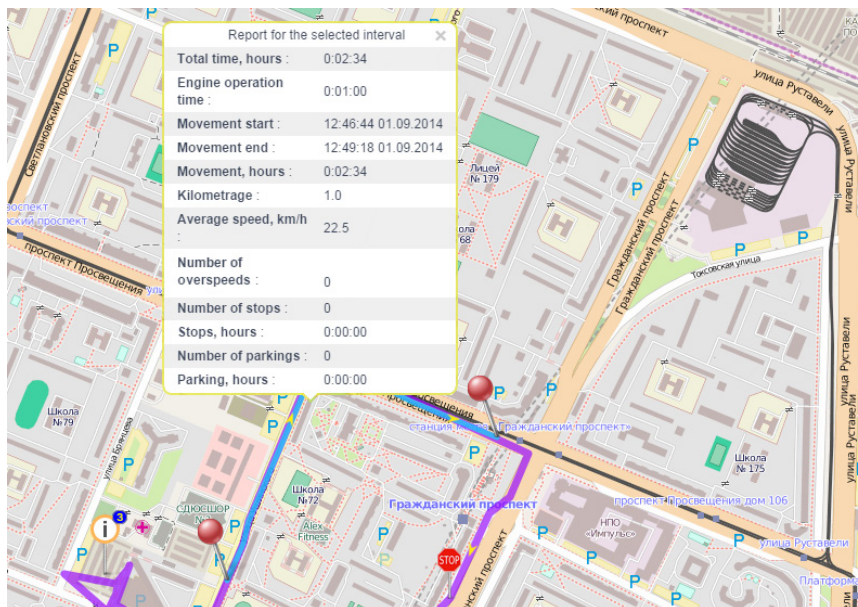
Fig. 3.9. Segment information

3.3.4. Working with Graphs

Having generated the track, the user can display the information on the vehicle configured parameters (connected sensors, units) in graphs. It can be useful to get prompt information for the specified time, for, example, on fuel draining or filling.
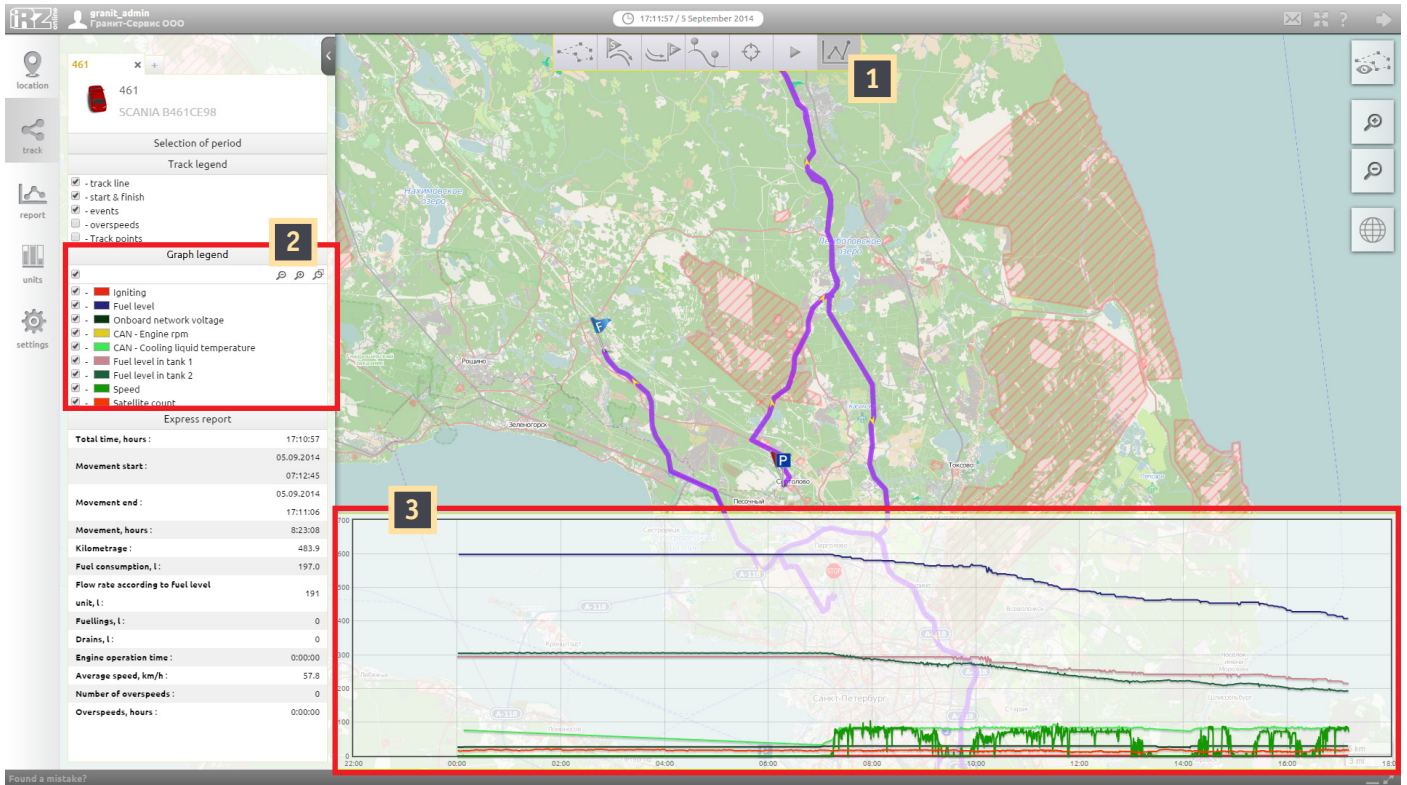
Fig. 3.10. Working with graphs

The figures in the picture indicate:

Mark.	Description
1	«Graph management» button
2	List of connected units
3	Graphs
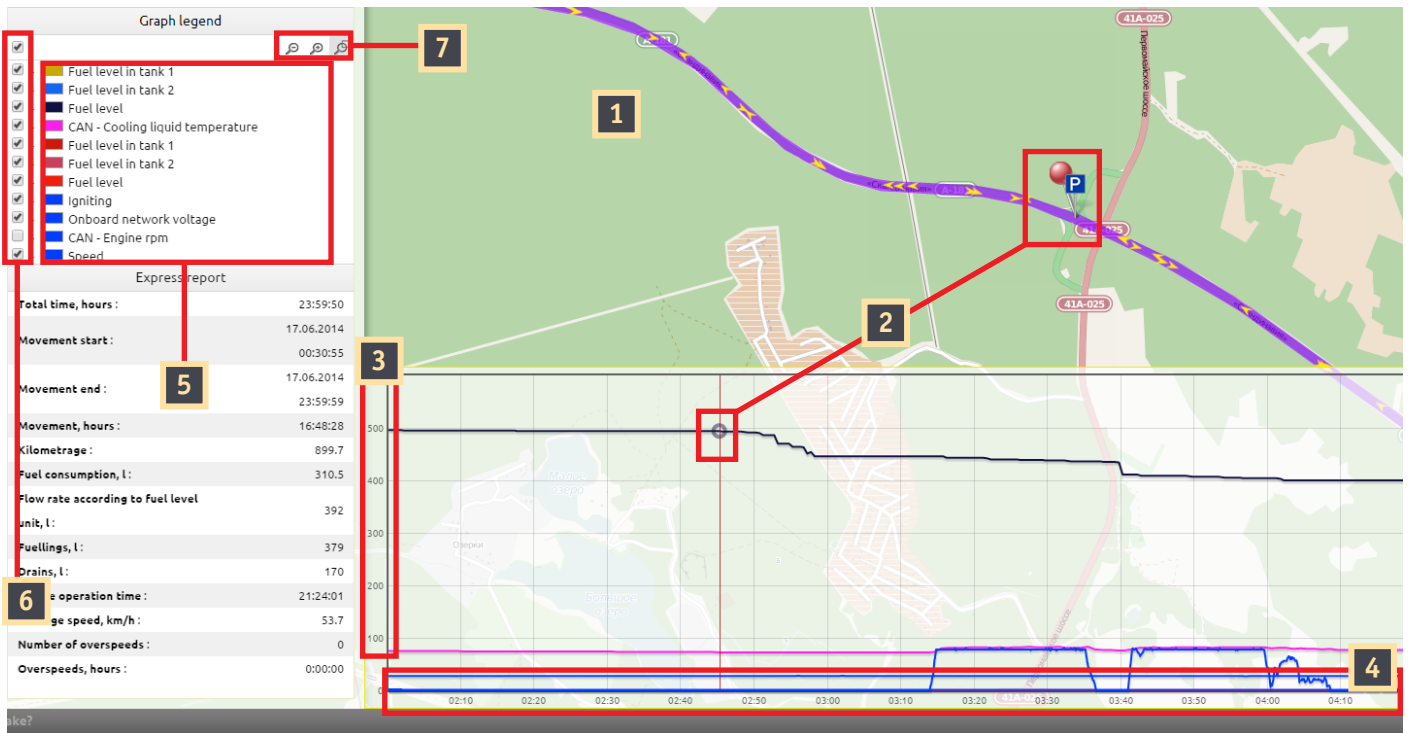
Fig. 3.11. Graph controls

The figures in the picture indicate:

Mark.	Description
1	Track
2	The point on track and on graph
3	Graph value scale
4	Graph time scale
5	The list of available graphs
6	Enable/disable graph
7	Graph display control button: ⊕ zoom in graph ⊖ zoom out graph ⊙ zoom the selected segment (click the button and allocate the segment you want to scale up on the graph)

3.3.5. Analysing Graphs

Graphs are important for analysing the vehicle performance efficiency. For example, you can readily analyze any given indicators of the vehicle performance as well as detect breakdowns.

As an example, let us generate the track for a vehicle and try to analyze its operation on the basis of

Fig. 3.12. An example of working with graphs

graphs.

Let us draw two graphs, where the blue graph shows the vehicle speed, the black one shows the fuel level. Now we will try to analyze what information we can obtain by these graphs.

The vehicle was always in movement starting from 9:30 to 19:00, as the speed graph shows **1**. Over 150 litres of fuel was consumed for this time **2**. This data can be calculated by subtracting of the initial value of the tank fuel from the finite value, that is 300 litres minus 150. Note that fuel is not consumed during the parking **3**. After 19:00 the vehicle was parked, at 20:00 it was filled **4**. Then the work was proceeded. Yet, we can see the location, where the filling took place **5**, parking sites and other data.

Analysing the data, we can conclude that the operation was in a regular mode, without downtimes and breakdowns detected.

For a change, let us view another example.
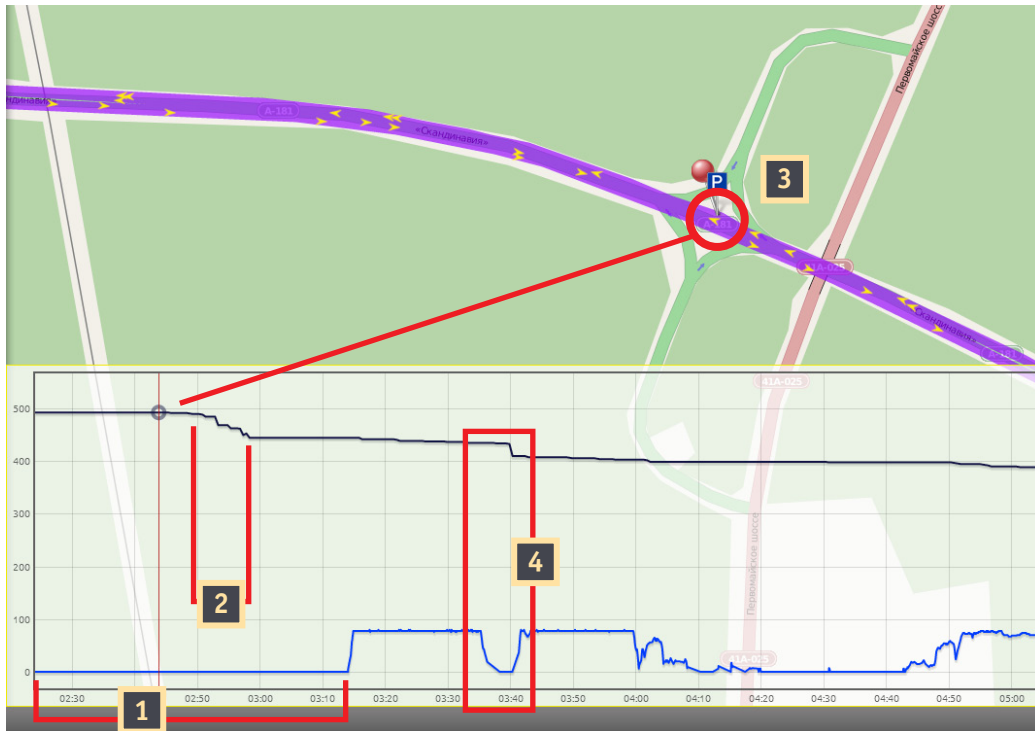
Fig. 3.13. An example of working with graphs

Let us draw the track and select two graphs: the blue graph indicates the vehicle speed, the black one indicates the fuel level. The figure shows that the vehicle was not moving at the selected time **1**, the speed value on the graph is «0».

However, the fuel amount in the tank was reduced for some period of time **2**, indicating the fuel drain. The tracking system enables you to detect the location of this event **3**. Analysing the graph, you can see another fuel drain **4**.

4. Reports

4.1. Creating Reports
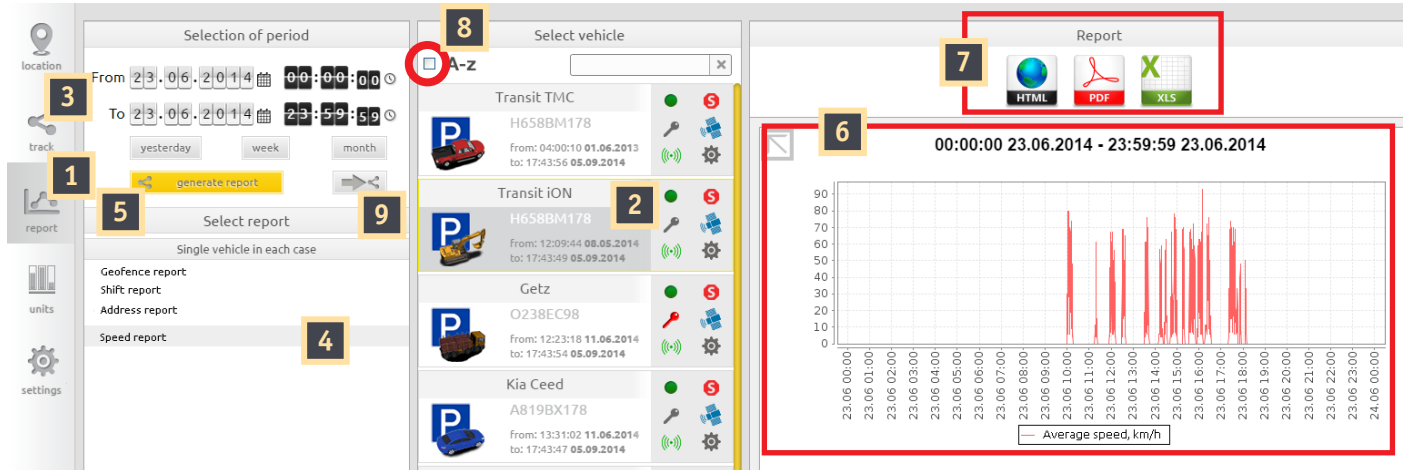
To create a report, switch to the «Reports» mode **1**.

Fig. 4.1. Generating a report

2 Select the vehicle from the list for which you want to create a report.
*The figure shows «Transit iON» selected: Button ☐ (**8**) enables you to select all vehicles from the list.*

3 Select the time period to create the report. Specify the time and date manually or automatically using the «Yesterday», «Week», or «Month» buttons.
The figure shows the period from 00:00. 23.06.2014 to 23:59:59 23.06.2014.

4 Select the report type.
The figure shows the speed report.

5 Click «Generate report».

Thus, the selected report will be displayed on the right part of the screen **6**.

Further, you can export the report data to the required format (html, pdf, Excel) **7**. The button **9** enables you to switch to the vehicle track, drawn for the same time period, as the report.

Creating some reports requires the additional data to be specified:

Fig. 4.2. Generating a report

For example, to create the report on shifts, you need to select the shift for which you want to generate the report. If you need to create the report on all shifts, select the «24 hours» value.

4.2. Report Types

Report types, selected from the list by the users, are created by an organization manager. For this purpose you can use the report builder. Three report templates are available by default:

Name	Description
Geofence report	Data on the vehicle staying in the user geofences and out of them: ● total time, h; ● movement start time; ● movement end time; ● movement time, h; ● engine operation time; ● kilometrage, km; ● fuel consumption, l; ● fuel consumption by LLS, l; ● average speed, km/h; ● overspeeds.
Address report	Data on the vehicle staying relative to the addresses on the map: ● total time, h; ● movement start time; ● address at the beginning of the period; ● movement end time; ● address at the end of the period; ● movement time, h; ● engine operation time; ● kilometrage, km; ● fuel consumption, l; ● fuel consumption by LLS, l; ● average speed, km/h; ● overspeeds.
Shift report	Data on the vehicle operation in the selected shift: ● total time, h; ● movement start time; ● movement end time; ● movement time, h; ● engine operation time; ● kilometrage, km; ● fuel consumption, l; ● fuel consumption by LLS, l; ● average speed, km/h; ● overspeeds.

The user can create reports both for a single vehicle, or a group of vehicles:
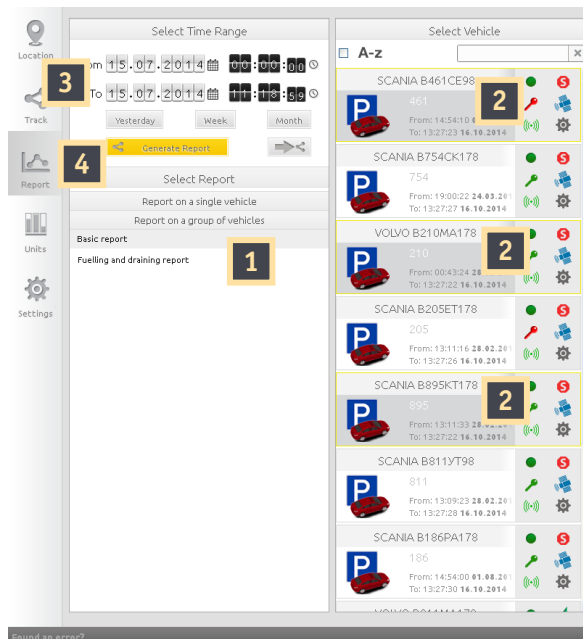
Fig. 4.3. Creating a group report

1 Select a report from the group list.
For example, «Basic».

2 Click the required vehicle to select.
The figure shows three vehicles from the list (461, 210, 895).

3 Select the time period to create the report. Specify the time and date manually or automatically using the «Yesterday», «Week», or «Month» buttons.
The figure shows the period from 00:00 15.07.2014 to 11:18:59 15.07.2014.

4 Click «Generate Report».

Thus, the selected report will be displayed on the right part of the screen.

5. Units

5.1. «Units» Mode

The «Units» mode is designed for working with the connected units (various sensors and other external devices). This mode presents the data from the units:

Fig. 5.1. «Units» mode

The figures in the picture indicate:

Mark.	Description
1	Connected units data
2	The vehicle with the data provided
3	Selecting unit data type. *«Current data» - units data in a real time* *«History» - units data for the elapsed time*

5.2. Unit Data Type
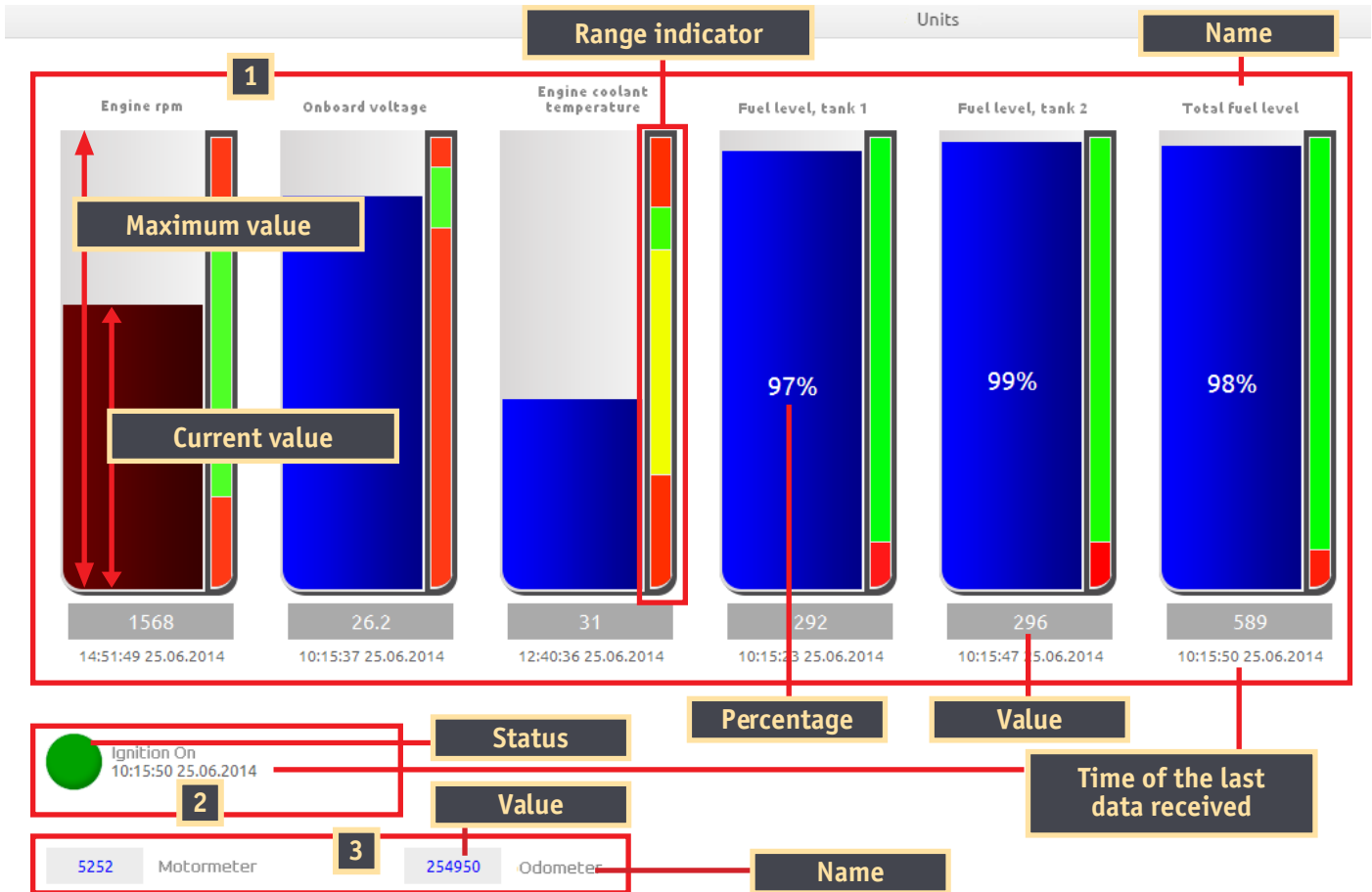
The data on units can be provided in one of the types:

Fig. 5.2. «Units» mode

The figures in the picture indicate:

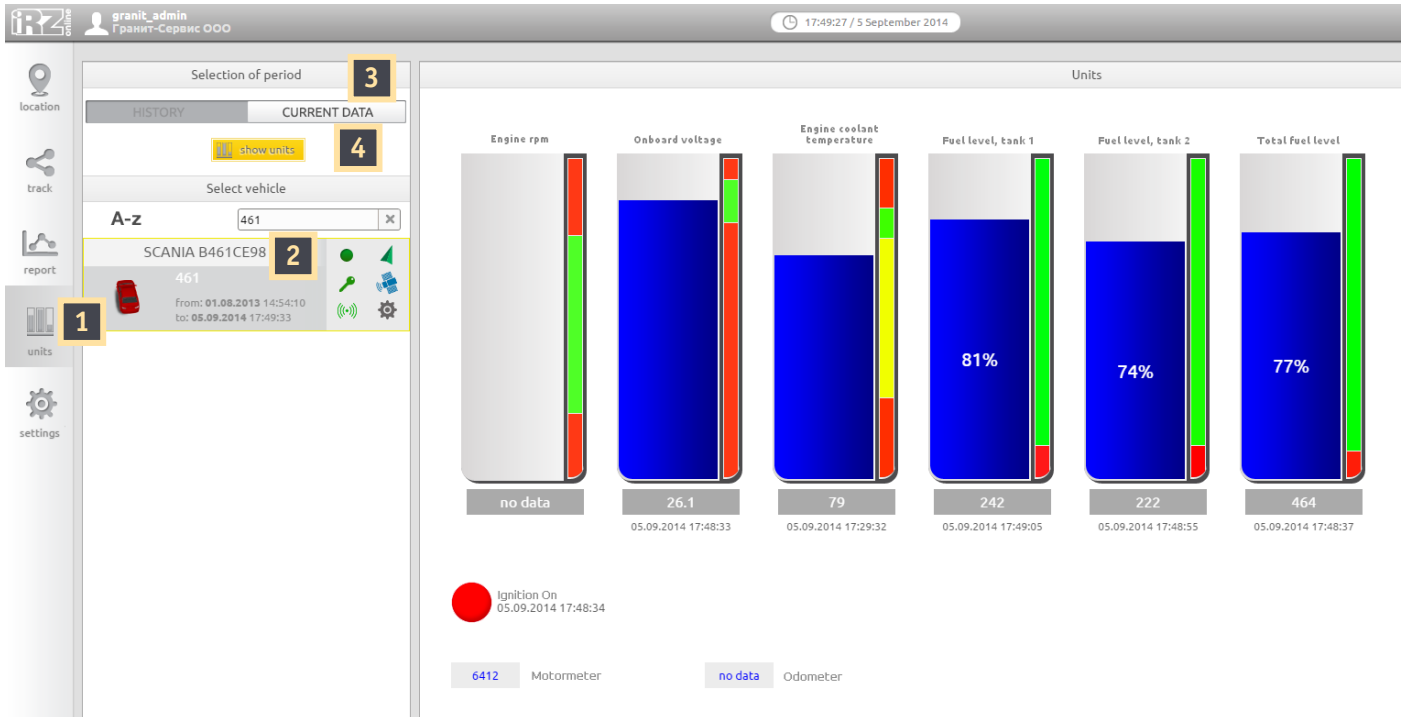| Mark.	Description
1	Bar chart. *The bar chart shows some current rate out of the maximum value. In addition, the percentage is indicated for consumable values. Each chart is accompanied by the indicator, displaying the valid and critical value ranges. The indicator provides fast and visual view of the measurable value states.* *For example, for the fuel tank the fuel level is indicated out of the maximum value. By the range indicator you can identify when the fuel level reaches the critical point (red range), meaning that you need to take some action. In this case it means to fill up the tank. The color explanation of range indicators:* ■ *(red) — critical rate;* ■ *(yellow) — valid operation state;* ■ *(green) — running state.*
2	Indicator. *Shows the state. For example, «enable» or «disable» for ignition*
3	Value. *Shows the value. For example, the vehicle mileage in kilometres for the odometer*

5.3. Current Time Data

Fig. 5.3. Selecting real time data

To display real time data on units, do the following steps:

1 Click the «Units» icon on the control panel;

2 Select the vehicle from the list;
The figure shows «Scania B461CE98».

3 Click «CURRENT DATA»;

4 Click «Show Units».
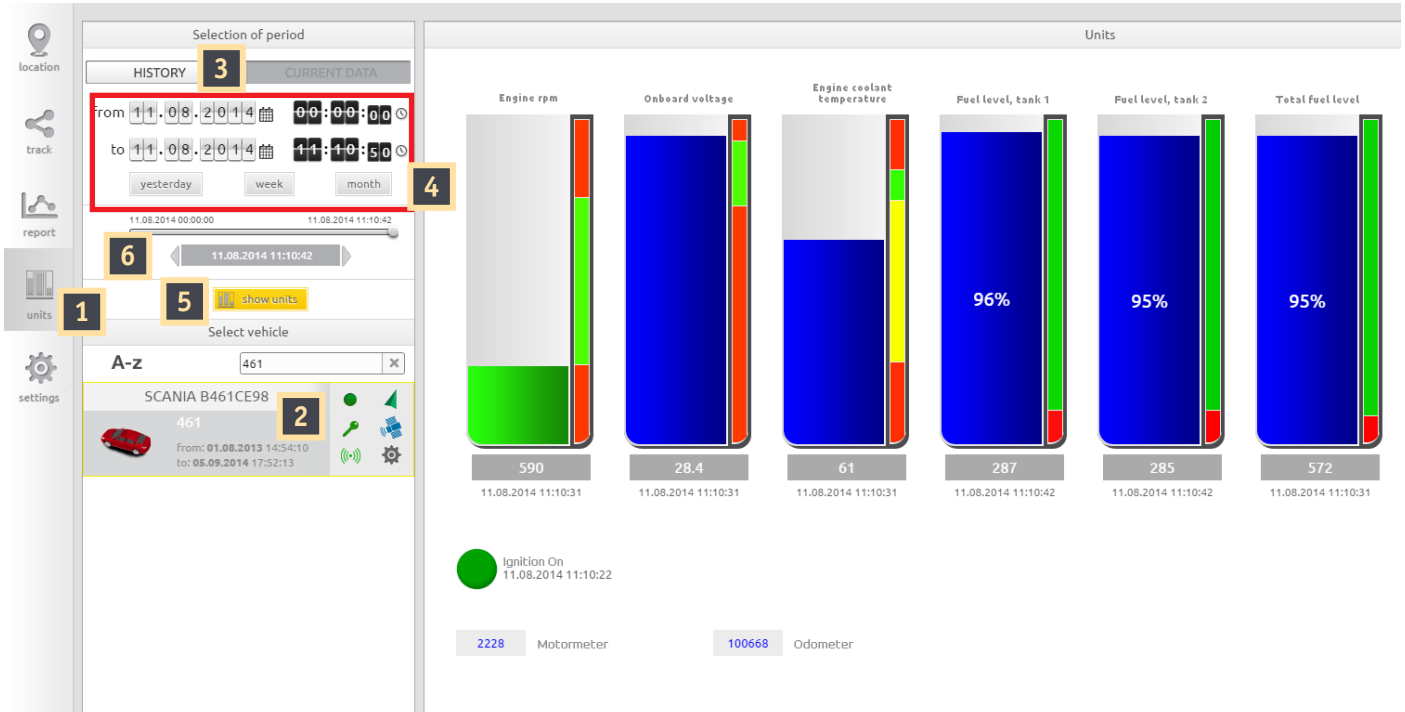
5.4. Elapsed Time Data

Fig. 5.4. Selecting elapsed time data

To display elapsed time data on units, do the following steps:

1 Click the «Units» icon on the control panel;

2 Select the vehicle from the list;
The figure shows «Scania B461CE98».

3 Click «History»;

4 Select the period for which you want to load the unit data;

5 Click «Show Units»;

6 Using the movable indicator or manually, select the exact time from the period data.

Terms and Abbreviations

Abbreviations	Expansion
GLONASS	Global Navigation Satellite System
GPRS	General Packet Radio Service, a packet-based mobile data service for cellular communications
GPS	Global Positioning System, global navigation satellite system
GSM	Global System for Mobile Communications
LLS	Liquid Level Sensor
NUT	Navigation User Terminal
USB	Universal Serial Bus