



Technical Data Sheet

ParkSol Monitoring Software



1. Description of the system

ParkSol monitoring software ensures the most efficient usage and management of parking lot. It allows to control parking load and reduces traffic jams. The software instantly transmits information of available parking spaces to LED displays and detects illegally parked vehicles. It enables real-time monitoring of the parking status (availability, temperature changes) and control of parking places (reservations, timing etc.). The software is developed using client-server architecture and supports multiple clients. It can be installed into the user's existing systems or in a separate server. Additionally, ParkSol monitoring software can be integrated with the third party systems (barriers, lighting, ventilation etc.).

ParkSol provides the following opportunities:

- a real-time monitoring of parking-lot status (busyness, temperature changes, car parking time);
- management of parking spaces statuses (to make reservation, to close inactive spaces and etc.);
- review of the reports of busyness, turnover, faults, parking times;
- publication of information in the information screens thus providing the drivers with the opportunity of faster finding of vacant parking spaces.

ParkSol is responsible for communication with the following components of ParkSol system:

- car detection system that consists of parking space sensor and the hub of the zone;
- escort system that consists of information screens.

The purposes of the information system are stated below:

- data storage,
- reports formulation,
- linking of ParkSol components and their management by User's Interface.

Why ParkSol Monitoring software?

- P architecture, the Linux environment.
- Real time car guidance till free parking space.
- Manager has all site situation real-time visualization.
- Collection of statistical information.
- Generation of reports.
- Spaces reservation.
- Each space ambient temperature monitoring, temperature maps.
- Security features - reports if the car left the parking space.
- LED display control.
- Parking time management.
- Forecast function.

2. Users of the system

The following user groups are using ParkSol:

- **observer** is the user who has view-only rights and able to observe parking status, however such the user is not allowed to take any management actions;
- **operator** is the user who performs the functions of PARKSOL maintenance: monitors the busyness of parking lot, if there is demand such the user makes reservation of parking spaces, opens/closers the areas of parking-lot, indicates the faults of parking spaces, turns on/off sensors and etc.
- **administrator** is the user who performs administration of the system users and prepares working positions for them. Such the user has the rights of operator and performs the functions of users management;
- **installer** is the user who performs technical maintenance of the system and its installation, also develops the initial configuration of ParkSol.

3. The parking-lot hardware

The sensor of parking space (in PARKSOL system it is marked as ¹⁾) indicates the status of parking space. These sensors are connected to **the hub** (the latter is marked as 

There can be such the zones in the parking-lot where every parking space has no sensor of parking space; however **loops** (they are marked in the map with the symbol prescribed by the installer) are installed at every entrance and exit to/from the zones. The loops of entrance calculate the cars that enter the zone, whereas the loops of exit calculate the cars that are moving away from the zone. Thus the system is able to determine the current number of the cars that are in the zone and how many parking spaces are (will be) engaged (i.e. a car can be away from the parking space, but it is assumed that some parking space of the zone will be engaged in case the car has entered the zone of entering the parking space and hasn't departed from it). Same as the sensors of parking space the loops are connected to the hub.

Drivers are informed about vacant parking spaces in the parking-lots over **information screens** (the symbol 

Other devices (e.g. barriers, lighting lamps, doors and etc.) can be installed in the parking-lot too, they can be connected to the hub.

4. Graphical user interface

4.1. The structure of User's Manual

The document of ParkSol User's Manual is divided into the sections that correspond to the windows and the groups of windows of graphical user interface of the system. Every section can contain links to other sections.

The aspects of introduction of the system to its user through the User's Manual are set below:

- Provision of the main possibilities of the system;
- Provision of the detailed descriptions of windows and the elements of windows of subsystem.

4.2. Arbitrary signs and symbols

The symbols that are used for description of windows and their elements in the ParkSol User's Manual are presented in the table below.

Table 1. Arbitrary signs and symbols

Arbitrary sign or symbol	Description
{Field}	Parentheses {} are used to mark data field, the name of the field must be entered between the parentheses.
[Key]	The key of window is marked with parentheses [], the name of the key must be entered between the parentheses.
"Menu Item"	Quotation marks "" are used to mark the Menu Item, the name of Menu Item must be entered between the quotation marks.
<input checked="" type="checkbox"/> Checkbox	The square-shaped figure, the text must be entered on its right side. The figure indicates if the indicated value is selected or not. The system user can change the value of the selected window. The mouse must be used to mark or eliminate the indication in the checkbox.
<input type="radio"/> Option button	The round figure, the text must be entered on its right side. The figure indicates the selection of several available actions. After selection of option button it is painted in black. The system user can use the mouse to mark the desired button.

4.3. The main window of the system

After successful connection to the system the interface of ParkSol operator appears (see figure 3). All open windows are presented, i.e. the windows that were opened by the operator before log-off from the system. The system language, the settings of user's interfaces are presented in the form that was configured by the operator.

More information about configuration of user's interface can be found in the section 4.6.

The parts of the main window of the system are numbered and their explanations are shown in the table.

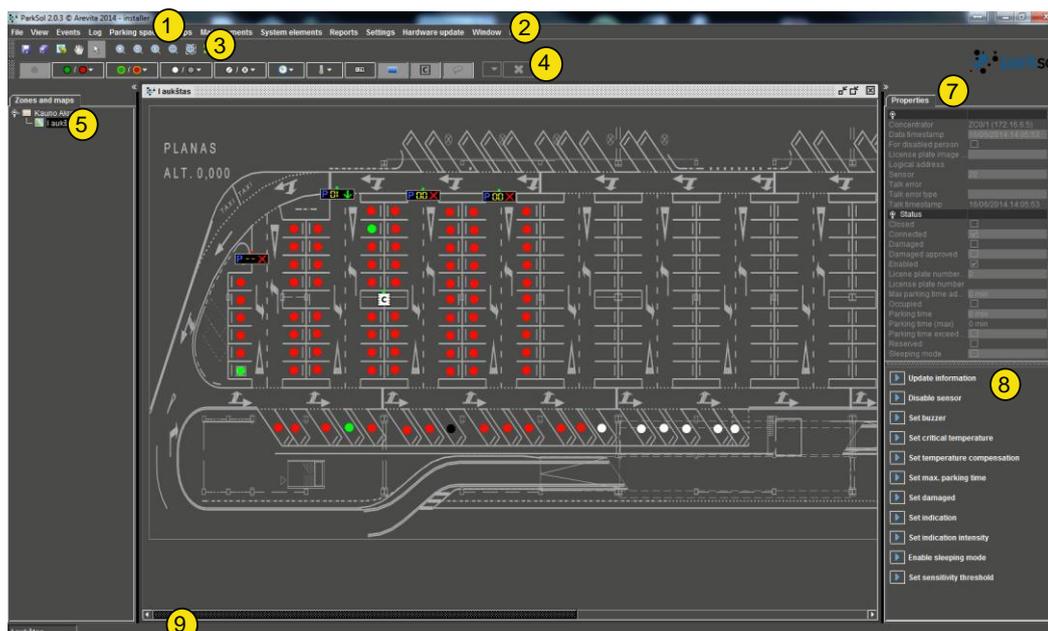


Figure 1. The system window that is shown after log-in to the system

2). When the selected window corresponds to Events list window - the Event filter appears (see figure

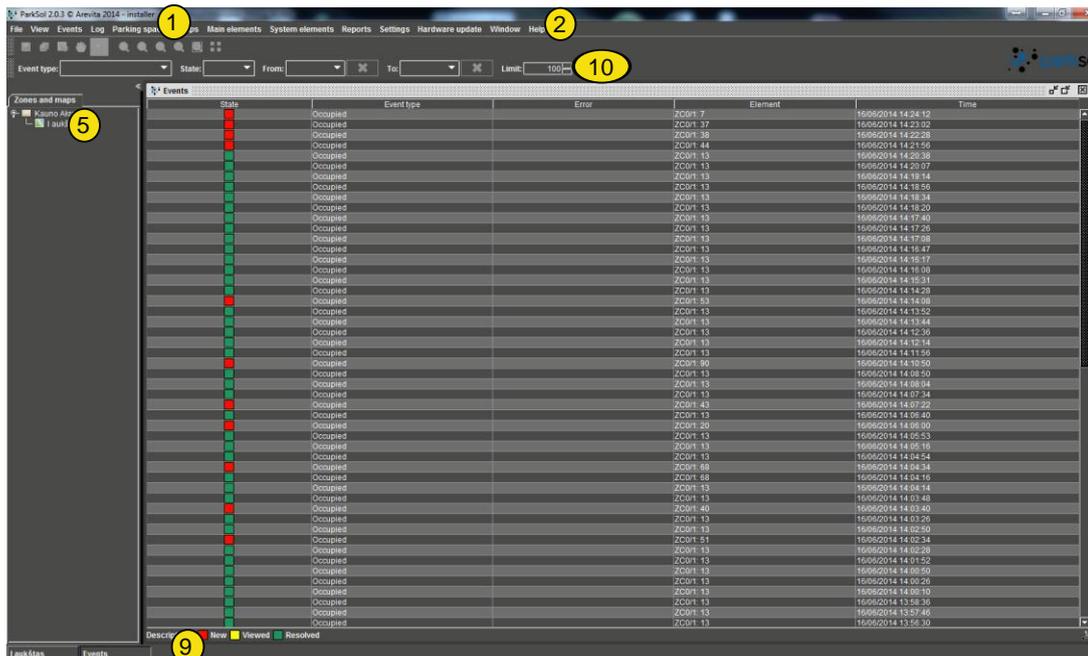


Figure 2. The system window that is shown after log-in to the system

Table 2. The parts of the main window

No.	Description
1	The name of the system, the system version, the name of installer and the year of the system development are presented in the window heading, also the name of the user who is connected to the system appears, e.g. PARKSOL 2.0.1 © Arevita 2012 – operator.
2	System menu that is described in the section Error! Reference source not found..
3	Toolbar described in the section Error! Reference source not found..
4	Map filter described in the section 4.5.1.3. It appears only in case the active window located in the main part of the window that is marked with No. 6 is recognised as a map.
5	Hierarchical tree of zones and maps described in the section 4.5.1.5.
6	The main part of the window that will contain information about all opened windows. More information about configuration of this part can be found in the section 4.6.
7	After selection of any element in the map table of properties appears. The properties can vary subject to the element selected. The table of properties is described in the section 4.5.1.6.
8	After selection of the element the Command menu appears in the map, it can be controlled in accordance with commands. The command menu is described in the section 4.5.1.7.
9	Open windows selection bar is described in the section Error! Reference source not found..
10	Event filter is described in the section 4.5.1.4. It appears only in case the active window located in the main part of the window that is marked with No. 6 is recognised as the window of Event list.

4.4. Menu, toolbar, side menu and contextual menu

Menu allows the user to use most of the functions that are realised in the system; the quick selection toolbar, i.e. the most commonly used functions in the map. The map filter allows comfortable selection of required information in the map. Using the hierarchical tree of zones and maps the user can quickly and comfortably find the required zone and various maps. The properties of the selected element can be reviewed comfortably in the table of properties, whereas the commands of the element can be selected in the command menu.

5. Information about manufacturer

