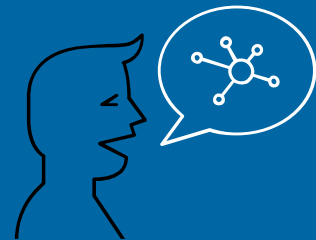
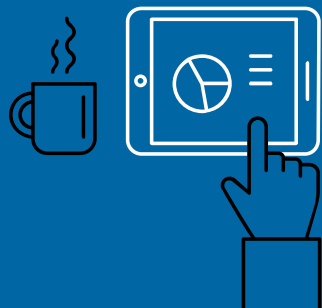




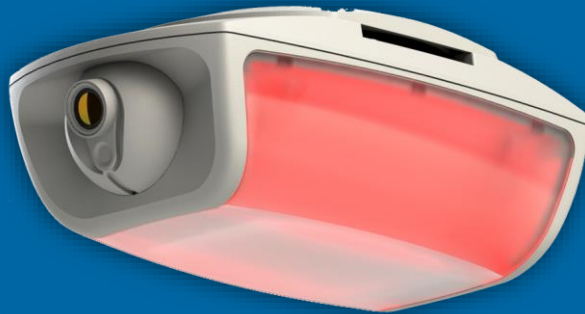
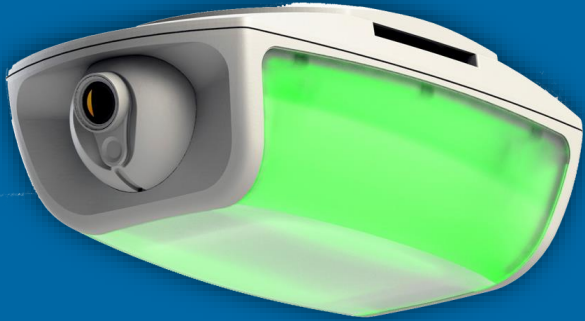
Simple to install, effortless to park



# Indoor PGS with Video Analytics and LPR (Indipark)

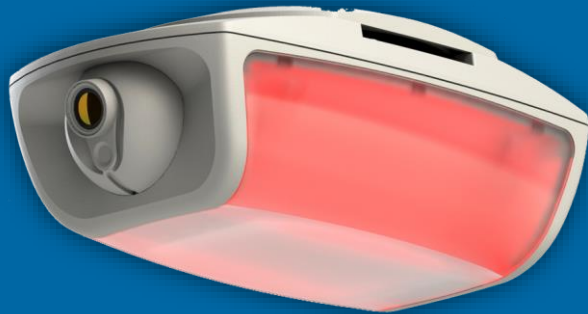
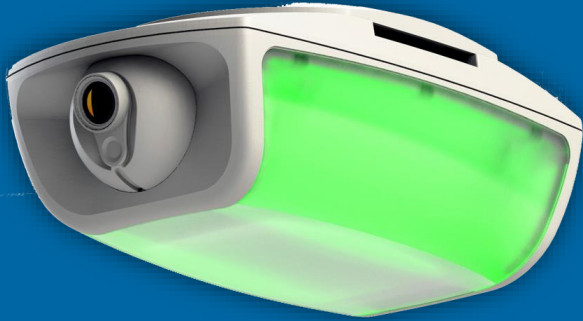


# About solution



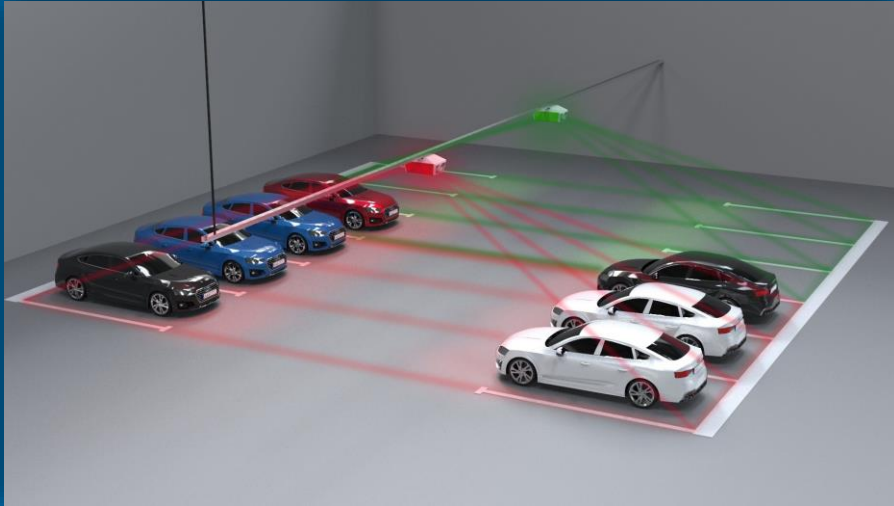
- An innovative and comprehensive solution for the modern indoor car park.
- System uses stream from CCTV cameras and detects cars in parking lots using our developed AI deep learning algorithm. Data about parking space availability is transmitted in real-time to the Parksol system and LED displays.
- Our advanced LPR system can process every type of license plate from around the globe.

# About solution



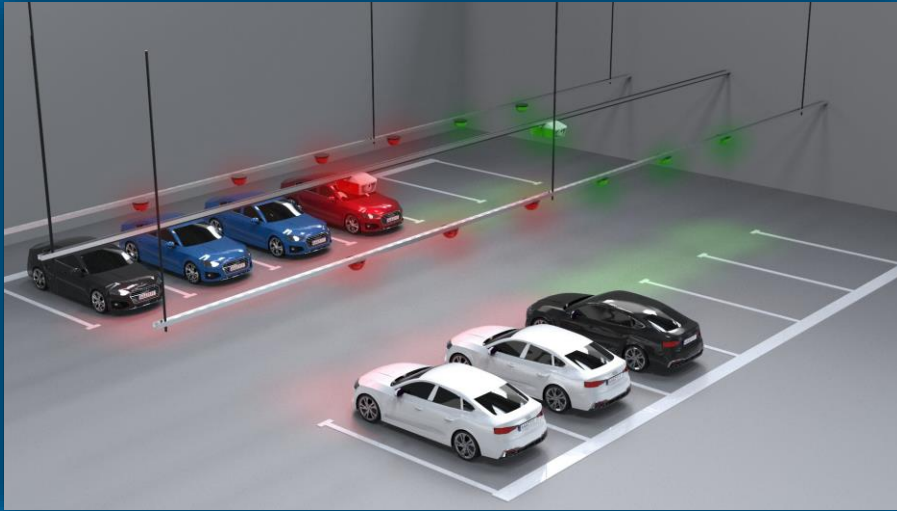
- It is an **all-in-one system**:
  - car identification with LPR,
  - occupancy detection,
  - parking guidance,
  - video surveillance,
  - analytics,
  - other custom features.
- With a dual-camera back to back design, the detector can simultaneously **monitor up to 6 parking spaces on both sides** (up to 3 spaces on one side and up to 3 spaces on another side).

# Standard solution



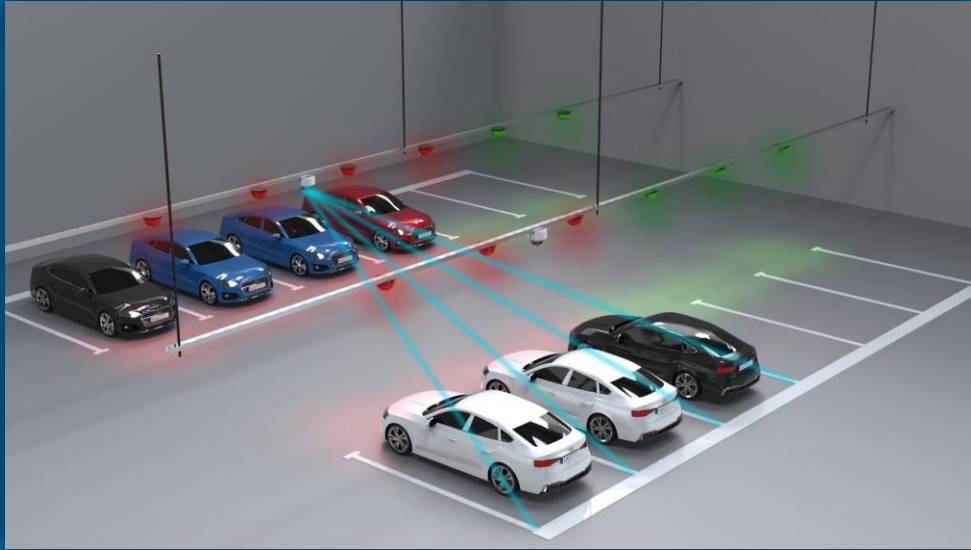
The camera has one integrated RGB indication for up to 6 parking spaces (if at least one parking space is empty, the indication is green/blue; if all parking spaces are occupied, the indication is red).

# Unique solution



If you need individual indications for every single parking bay, we have a unique solution in the market! We combine Indipark solution with individual bright indicators.

# Parksol system upgrade



If you already have any type of Parksol Guidance System, it can be easily upgraded to Indipark functionality.

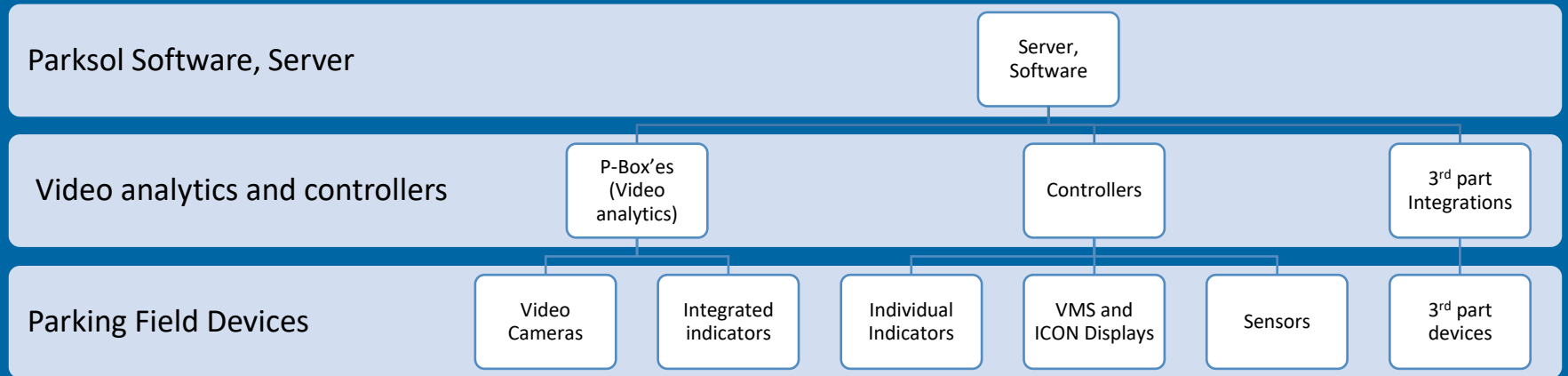
## BASIC FEATURES:

- Occupancy detection
- Parking guidance
- Car identification with LPR (license plate recognition)
- Parking violations (information about a vehicle parked in not allowed areas)
- Control of parking places (reservations for employees, VIP clients, timing)
- Real-time monitoring system
- Basic reporting

## ADVANCED FEATURES:

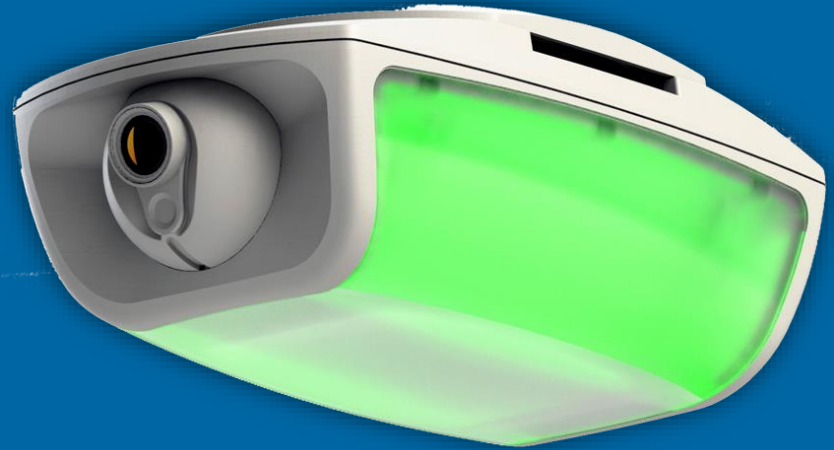
- Find my car
- Dynamic pricing
- Automatic visitor groups' detection and classification (commuters, overstays, new clients)
- Valet parking features
- Advanced reporting
- 60 minutes battery backup
- Integration with CCTV – Video Surveillance
- API for integration with third-party systems (payment system, VMS, APP, and so on.)

# System structure



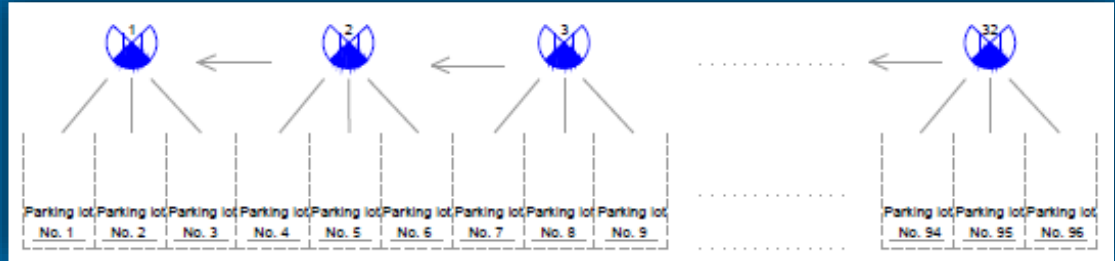
# Main elements: camera

- Single or Double camera model;
- Up to 3 (single cam) or up to 6 (double cam) parking spaces monitoring;
- 8 Megapixels Sony IMX CMOS sensors;
- Parked vehicle detection 3 – 8 seconds;
- Integrated RGB Indication with 256 colors;
- 2 pcs. of x Ethernet RJ45 ports – for daisy chain connection;
- Custom PoE power supply.

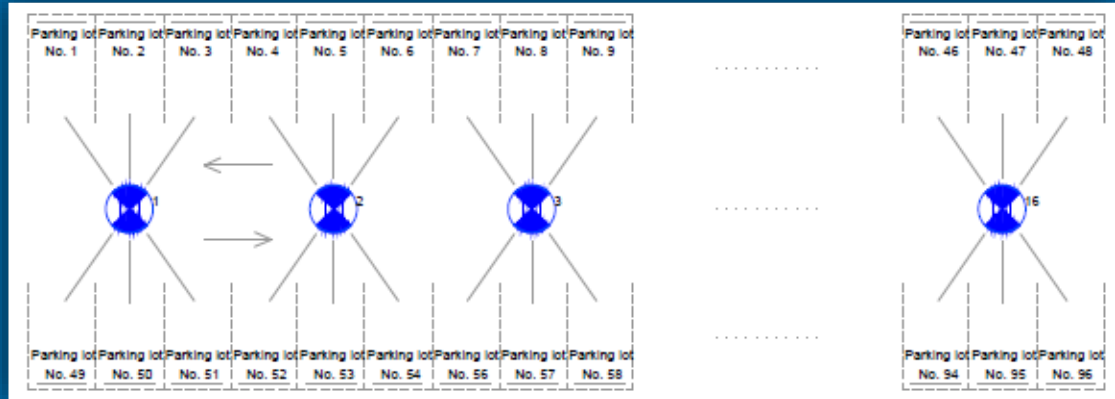


# Camera types

- **Single sided cameras** (up to 3 parking spaces per camera)



- **Double sided cameras** (up to 6 parking spaces – 3 from one side and 3 from opposite side)



# Main elements: individual parking space indicator



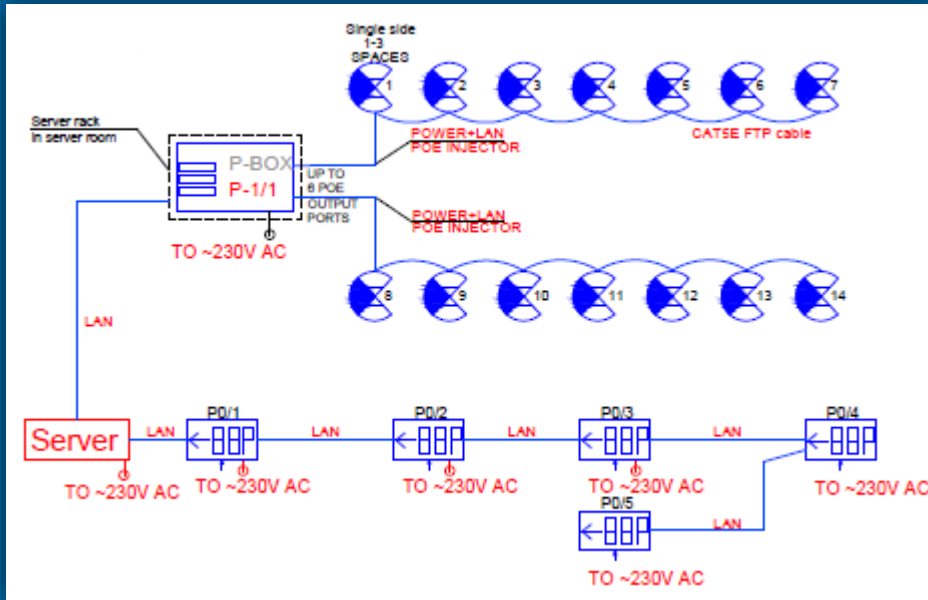
- RGB – Indication for each individual parking space;
- 360 degree viewing angle;
- Very simple installation using just 2 wire cable!;
- Wireless Bluetooth communication.

# Main elements: P-BOX

- Video Analytics controller P-Box;
- Supports up to 30 cameras (15 double sided or 30 single sided)
- 6 Ethernet channels for Camera's connection;
- Prepared in rugged IP class box – prepared for installation in the parking;
- Integrated PSU's – no need for any additional power supplies in the system;
- Integrated controller for Individual Indicators.

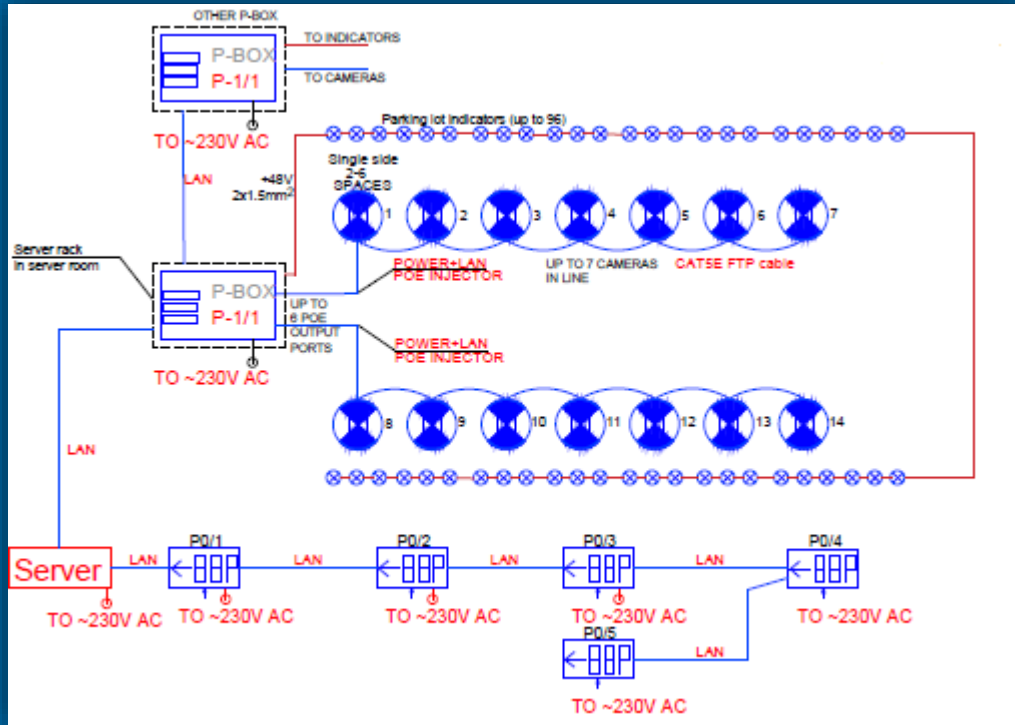


# Wiring structure: standard system



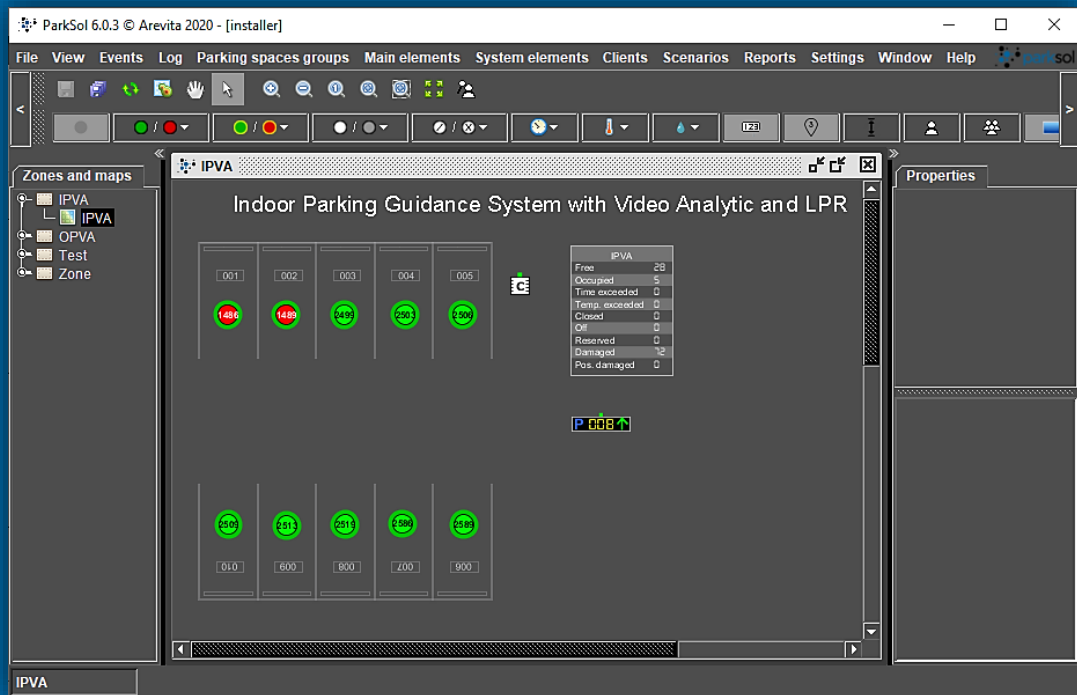
- All system Wiring based on Ethernet and Cat5 or Cat6 cable;
- For bigger bandwidth and distances - Fiber Optics can be used;
- All devices powered from 230Vac (110 Vac on request). Power supplies included.

## Wiring structure: system with individual indicators



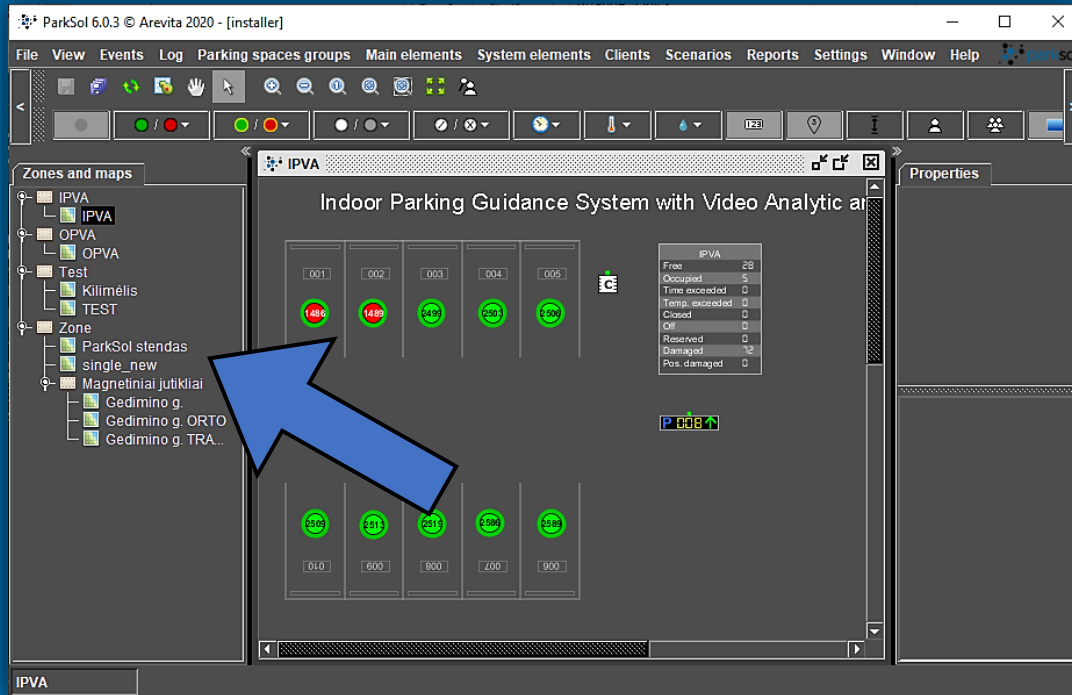
- Wiring based on Ethernet and Cat5 or Cat6 cable;
- For Individual Indicators 2x1.5 cable is used;
- For bigger bandwidth and distances – Fiber Optics can be used.

# The main window of the system



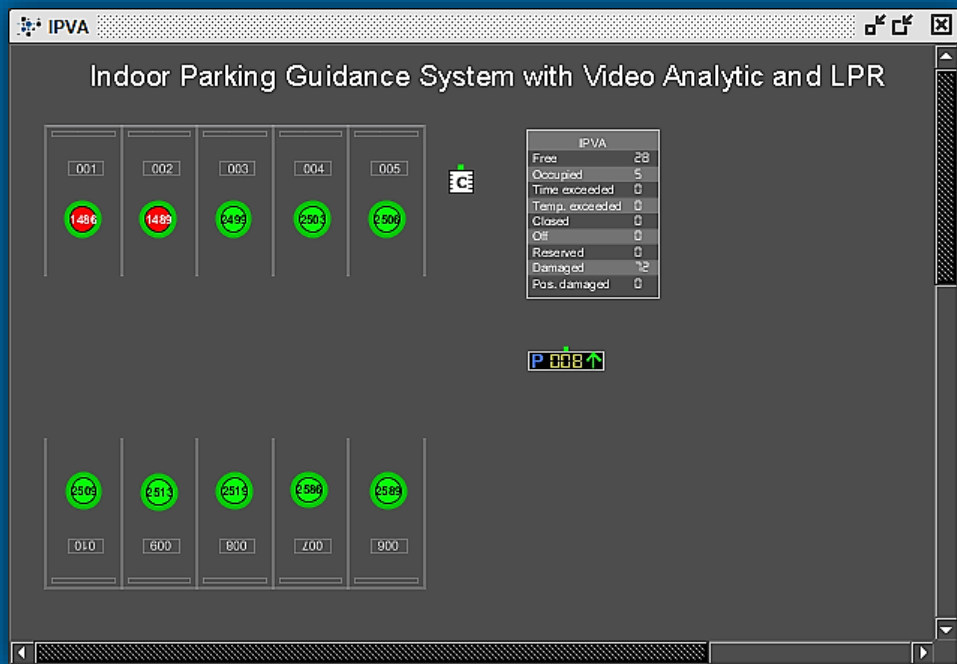
- After successful connection to the system the interface of PARKSOL system appears.
- All open windows are presented, i.e. the windows that were opened by the user before log-off from the system.

# Left side menu - Parking maps tree



- The parking maps tree allows easier administration of the parking lot.
- The installer of the system determines the hierarchy of parking-lot in the system.
- The parking maps tree consists of zones and each zone can have one or more maps.

# Map window, Dashboard on Map



IPVA	
Free	28
Occupied	5
Time exceeded	0
Temp. exceeded	0
Closed	0
Off	0
Reserved	0
Damaged	72
Pos. damaged	0

- On the map window, the user can see all devices installed on this map and monitor their status.
- The status of zone devices can also be monitored in the summary - dashboard.

# Right side menu - Properties

The screenshot displays the IPVA software interface. On the left, the 'Indoor Parking' view shows three parking spaces labeled 001, 002, and 003. Each space has a red circular indicator with a white number: 1486 for space 001, 1489 for space 002, and 2499 for space 003. A large blue arrow points from the bottom of the parking view towards the 'Properties' panel on the right.

The 'Properties' panel on the right is divided into two sections. The top section lists various system parameters, and the bottom section contains a list of actions.

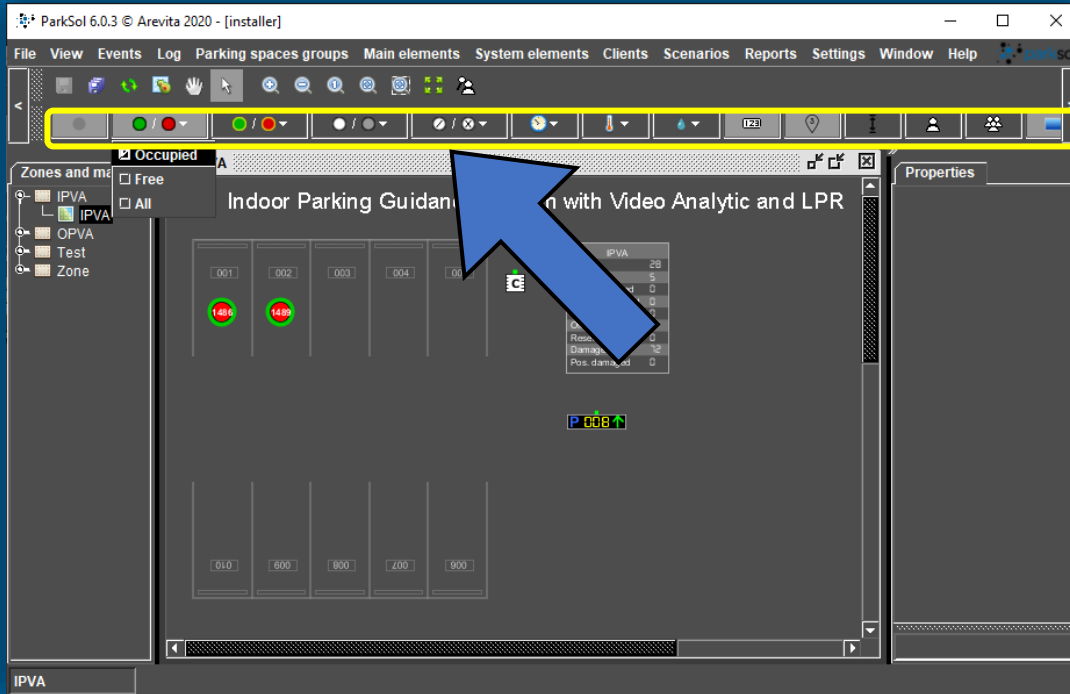
Properties	
Camera ID	65
Concentrator	P-BOX-METAL (192.168.1.103)
Logical address	
P-BOX ID	pbox-metal
Sensor/Detector	2499
Type	Regular
Video stream	http://192.168.1.103/api/?id=55
Indicator	
Indicator	65
Indicator concentrator	P-BOX-METAL (192.168.1.103)
Indicator type	IP
IP address	172.16.7.62
Profile	Default
Setup address	65
State color	#00CC00
State profile ID	1
State type	Free
Status	
Connected	<input checked="" type="checkbox"/>
Damaged	<input type="checkbox"/>
Damaged approved	<input type="checkbox"/>
Data timestamp	2020/09/09 13:52:51
Enabled	<input checked="" type="checkbox"/>
Sensor mode	PBOX
Status/Detector	
Detection confidence	1
License plate number	
Not in place	<input type="checkbox"/>
Occupied	<input type="checkbox"/>
Occupied state	
Reserved	<input type="checkbox"/>
Reserved by system	<input type="checkbox"/>
Status/Parking time	
Max parking time addition	0 min
Max parking time ignore	<input type="checkbox"/>
Parking time	0 min
Parking time (max)	0 min
Parking time exceeded	<input type="checkbox"/>

Below the properties table, there is a list of actions:

- Disable sensor
- Set max. parking time
- Show video stream
- Update indicator info
- Set indicator properties

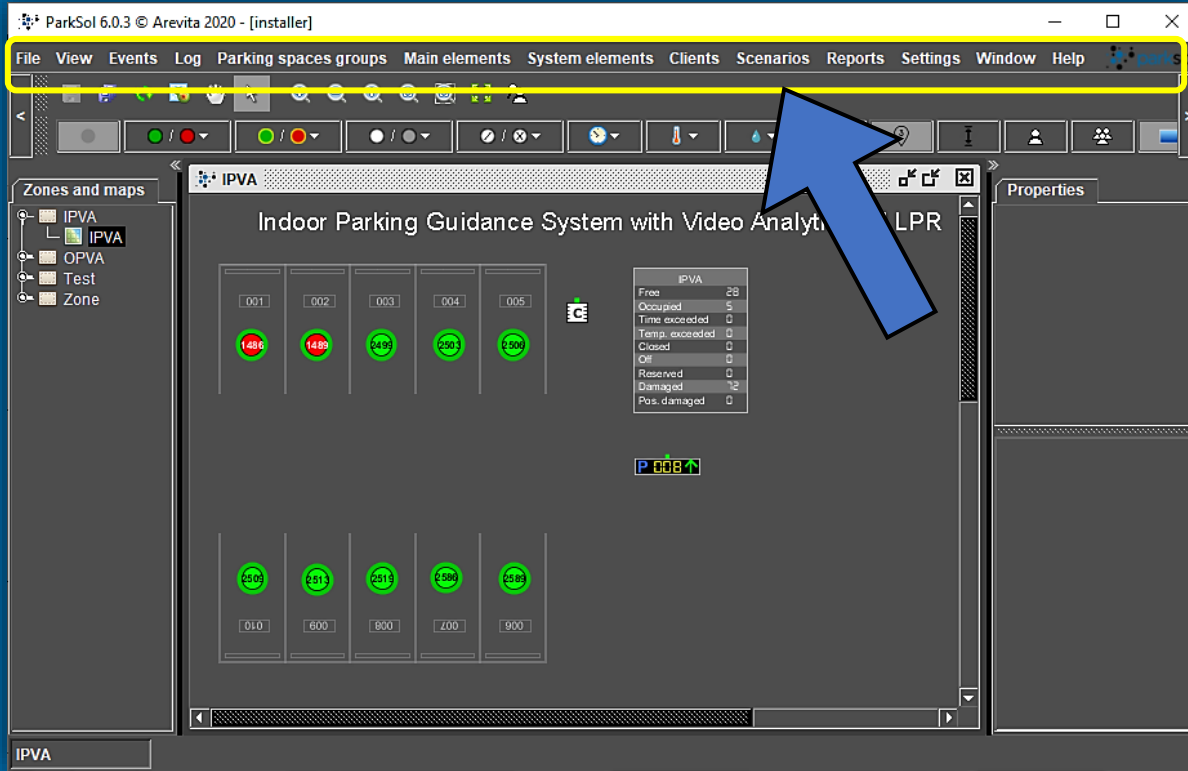
- The more detailed corresponding status value of an individual system element is shown in the "Properties" view.

# Map filters



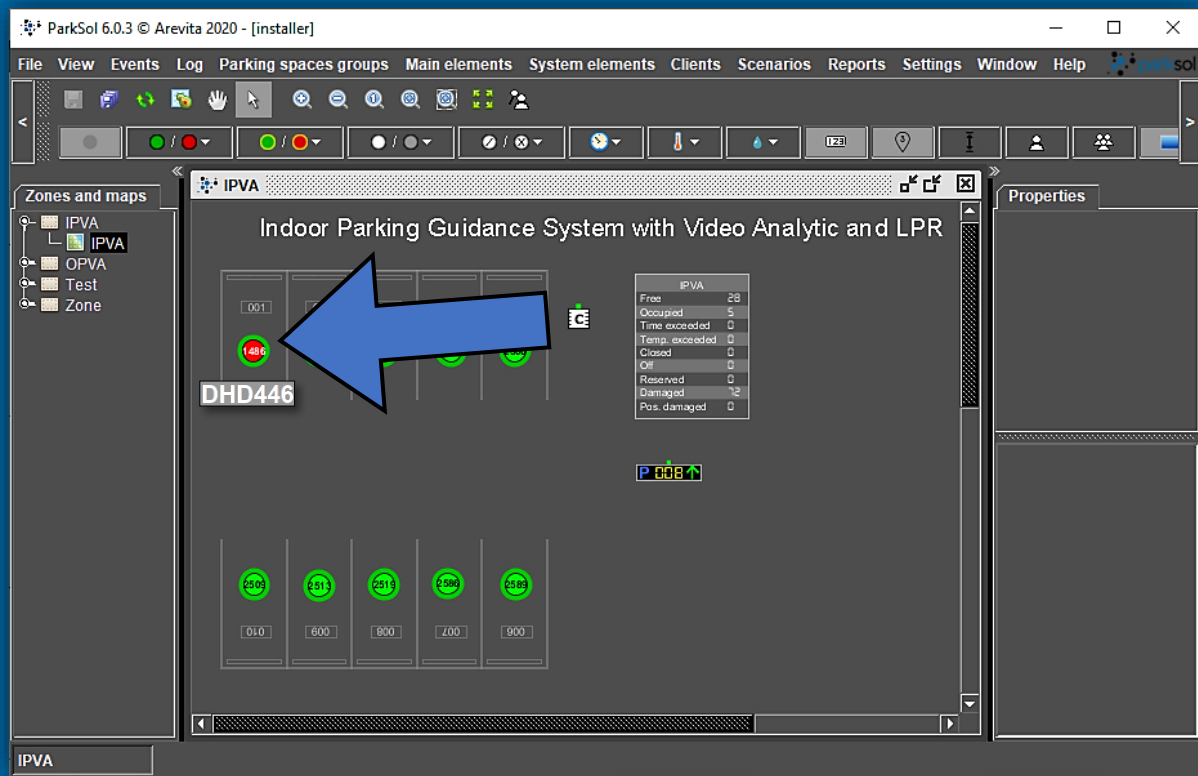
- The top menu bar has a map display filters.
- We can choose which status sensors we want to see on the map and which we do not.
- We can also select what devices or additional parameters we want to see on the map.

# Menu items



- The menu bar of the main window contains 13 menu items. Some of these items have their submenu.

# Live occupancy with License plate numbers



- When you hover the mouse cursor over the parking sensor, an information field with a license plate number appears.

# Live Parking time, max parking time, overstayed cars detection

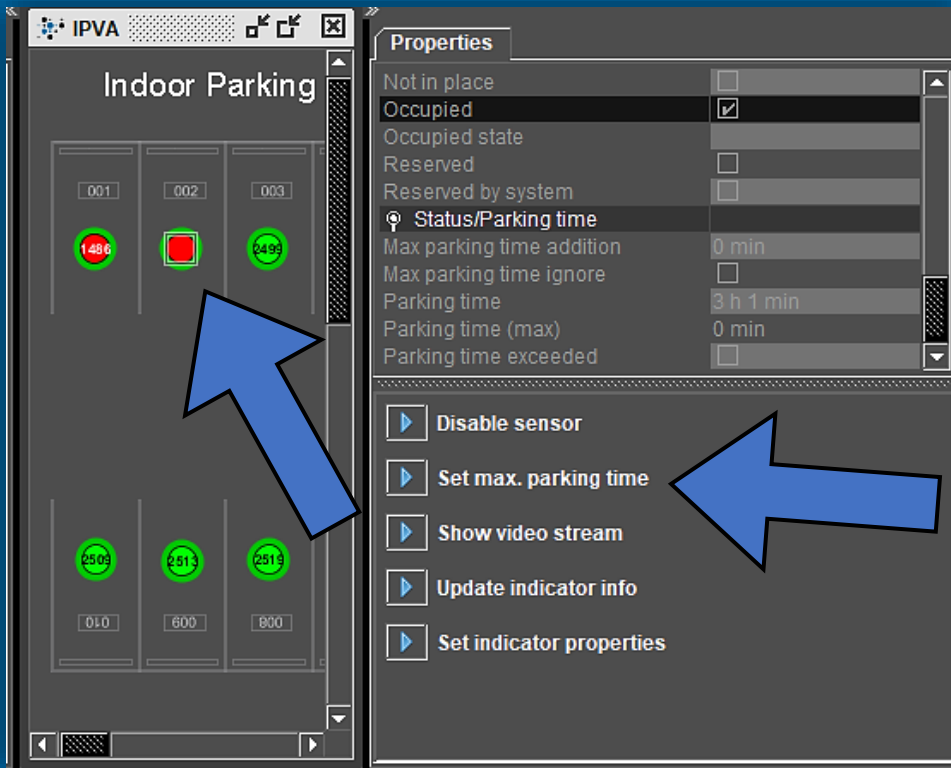
The screenshot displays the IPVA software interface. On the left, a grid of parking spaces is shown under the heading "Indoor Parking". The spaces are labeled 001, 002, 003, 010, 600, and 800. Each space has a corresponding sensor icon: 001 (red circle with 1486), 002 (red square), 003 (green circle with 2499), 010 (green circle with 2509), 600 (green circle with 2513), and 800 (green circle with 2519). A large blue arrow points from the "Parking time" property in the right-hand "Properties" panel to the sensor icon for space 002. The "Properties" panel on the right lists various sensor parameters and their current values or settings.

Properties	
State profile ID	1
State type	Free
📍 Status	
Connected	<input checked="" type="checkbox"/>
Damaged	<input type="checkbox"/>
Damaged approved	<input type="checkbox"/>
Data timestamp	09/09/2020 14:17:36
Enabled	<input checked="" type="checkbox"/>
Sensor mode	PBOX
📍 Status/Detector	
Detection confidence	99
License plate number	
Not in place	<input type="checkbox"/>
Occupied	<input checked="" type="checkbox"/>
Occupied state	
Reserved	<input type="checkbox"/>
Reserved by system	<input type="checkbox"/>
📍 Status/Parking time	
Max parking time addition	0 min
Max parking time ignore	<input type="checkbox"/>
Parking time	2 h 56 min
Parking time (max)	0 min
Parking time exceeded	<input type="checkbox"/>

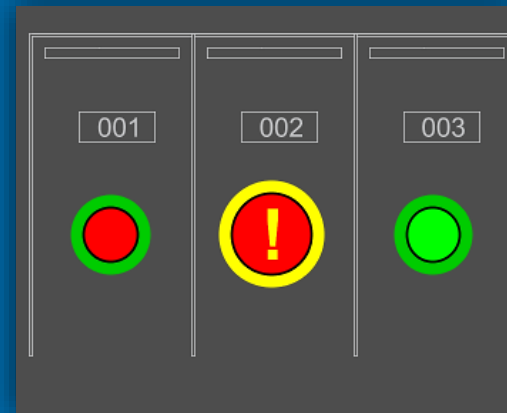
At the bottom of the "Properties" panel, there is a button labeled "Disable sensor".

- You can see the direct parking time of the selected parking space.
- Find the "Parking time" parameter in the properties menu.

# Live Parking time, max parking time, overstayed cars detection



- Set Max parking time for for a certain parking space.
- If the set maximum parking time is exceeded, the system show this alert on the map.



# Direct link from parking space to live parking spot video stream



- Double-click the mouse to open the video stream of the selected camera.

# Clients database

ParkSol 6.0.3 © Arevita 2020 - [installer]

File View Events Log Parking spaces groups Main elements System elements **Clients** Scenarios Reports Settings Window Help

**Zones and maps**

- IPVA
  - IPVA
- OPVA
- Test
- Zone

**Clients**

Filters









































































Licence plate

Type

Limit

Clear Refresh

New

ID	Licence plate	Type	Group	Command
58	590			   
187	946			   
65	997			   
2	ABC123	Testas, Nepageidaujami		   
32	AFG690	Nepageidaujami	VIP	   
190	AS977			   
74	B968			   
96	BOM895			   
17	BRQ49		Nauja_grupė	   
8	CBZ660	Nepageidaujami		   
180	CE37			   
27	CFN954			   
111	CJS792			   
14	CNG981			   
24	CZJ369			   
171	D752			   
11	DBR049			   
30	DD445			   

- Select "Clients" in the top menu bar.
- Here you can see all the clients and edit them.

**Edit client**

ID:

Licence plate:

Type:

Group:

First name:

Last name:

Car type:

Car make:

Car model:

Car color:

Phone No:

Email:

Address:

Custom 1:

Custom 2:

Custom 3:

Custom 4:


# Clients types


**Client types**


Filters









Name

Limit

 Clear

 Refresh

 New

ID	Name	Description	Command
3	Nepageidaujami	Nepageidaujami Valst Nr.	 
1	Testas	Testas Description	 
2	Testas2	testas	 
4	VIP		 



**Edit client type**

Type Clients

ID:

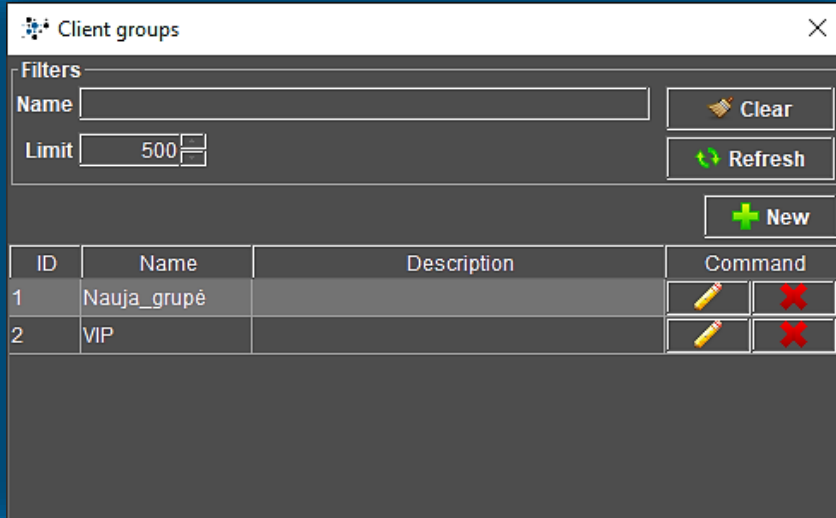
Name:

Description:





 Save  Cancel

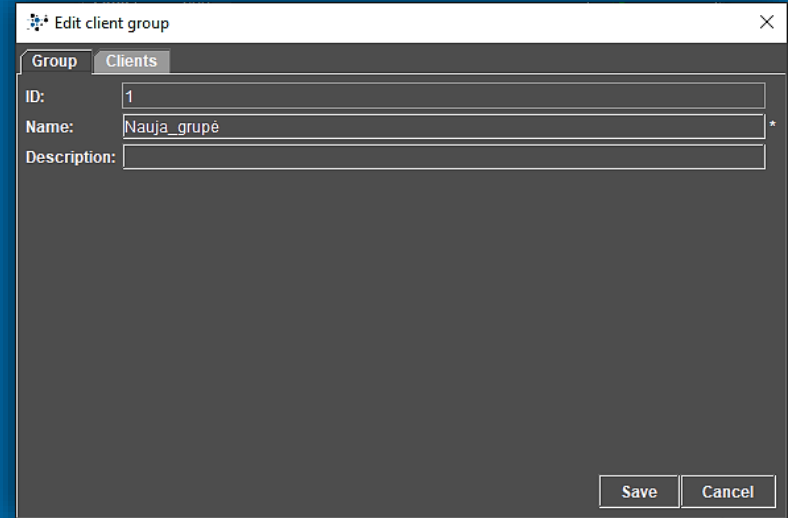
- Select "Clients" and "Client types" in the top menu bar.
- Here you can create new types or edit existing types of clients.

# Clients groups



The "Client groups" window features a "Filters" section with a "Name" text input and a "Limit" spinner set to 500. To the right are "Clear" and "Refresh" buttons. A "+ New" button is located below the filters. A table displays the current groups:

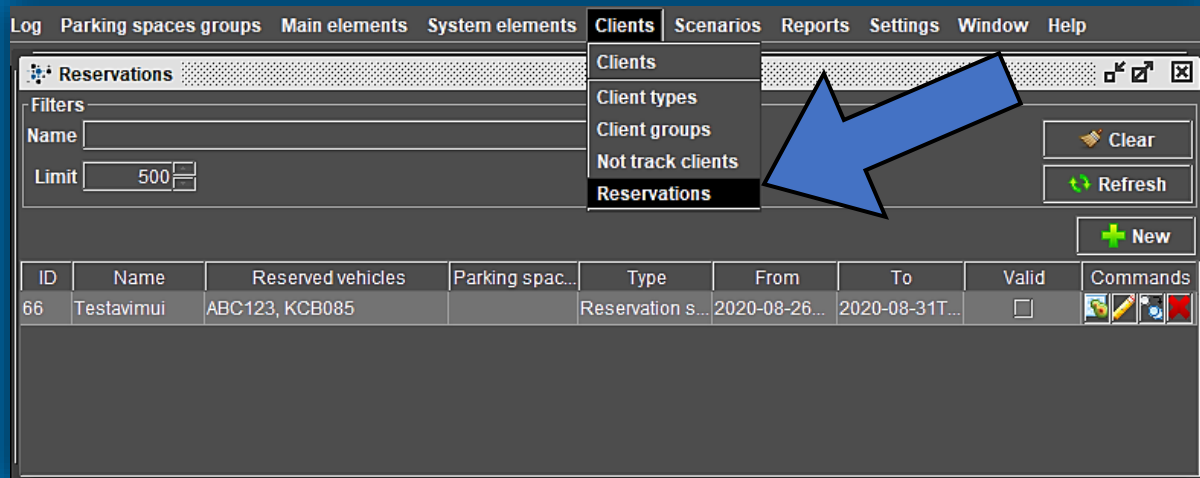
ID	Name	Description	Command
1	Nauja_grupė		 
2	VIP		 



The "Edit client group" window has tabs for "Group" and "Clients". The "Clients" tab is active, showing fields for "ID:" (value 1), "Name:" (value Nauja\_grupė with an asterisk), and "Description:". "Save" and "Cancel" buttons are at the bottom right.

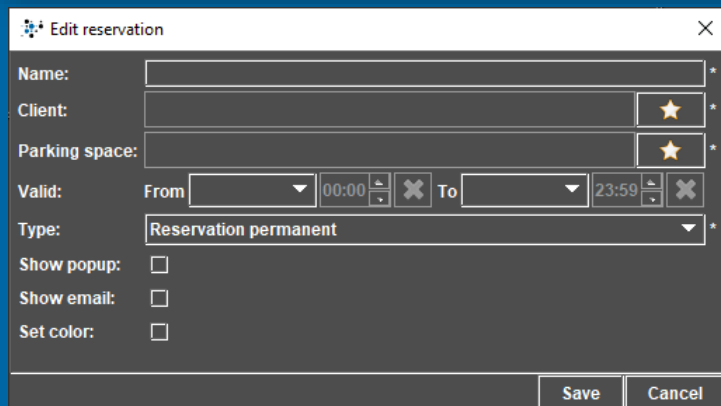
- Select "Clients" and "Client groups" in the top menu bar.
- Here you can create new groups or edit existing groups of clients.

# Parking spaces reservation for clients



The main application window has a menu bar with 'Log', 'Parking spaces groups', 'Main elements', 'System elements', 'Clients', 'Scenarios', 'Reports', 'Settings', 'Window', and 'Help'. The 'Reservations' tab is active, showing a 'Filters' section with 'Name' and 'Limit' (set to 500). A 'Clients' dropdown menu is open, with 'Reservations' highlighted. Other options in the menu are 'Clients', 'Client types', 'Client groups', and 'Not track clients'. To the right of the menu are 'Clear', 'Refresh', and 'New' buttons. Below is a table with columns: ID, Name, Reserved vehicles, Parking spac..., Type, From, To, Valid, and Commands. The first row shows ID 66, Name Testavimui, Reserved vehicles ABC123, KCB085, Type Reservation s..., From 2020-08-26..., To 2020-08-31T..., Valid (checkbox), and Commands (three icons).

ID	Name	Reserved vehicles	Parking spac...	Type	From	To	Valid	Commands
66	Testavimui	ABC123, KCB085		Reservation s...	2020-08-26...	2020-08-31T...	<input type="checkbox"/>	



The 'Edit reservation' dialog box contains the following fields: 'Name' (text input), 'Client' (text input with a star icon), 'Parking space' (text input with a star icon), 'Valid' (From/To date and time pickers), 'Type' (dropdown menu set to 'Reservation permanent'), 'Show popup' (checkbox), 'Show email' (checkbox), and 'Set color' (checkbox). 'Save' and 'Cancel' buttons are at the bottom.

- Here you can do individual car parking spaces or group of parking spaces reservations for individual client or for a group of clients.

# Reports

Log Parking spaces groups Main elements System elements Clients Scenarios **Reports** Settings Window Help

Show reports

Filters

State: All Date: From To

Type: All Requested on: From To

Report Period: All Generated on: From To

Limit: 500

New

Export selected: PDF CSV

State	Name	Type	From.to	Requested on	Requested by	Generated on	Command
<input type="checkbox"/>	Request... PT [09/09/2020 - 10/09/2020]	Parking ...	09/09/2020 - 10/0...	09/09/2020 00:27...	[system]		
<input type="checkbox"/>	Request... CIR [09/09/2020 - 10/09/2020] perio...	Circulation	09/09/2020 - 10/0...	09/09/2020 00:24...	[system]		
<input type="checkbox"/>	Ge... CIR [08/09/2020 - 09/09/2020] period: Hour				[system]	09/09/2020 00:27...	
<input type="checkbox"/>	Ge... Request data				[system]	09/09/2020 00:24...	
<input type="checkbox"/>	Ge... Zone: Zone				[system]	08/09/2020 00:27...	
<input type="checkbox"/>	Ge... Group by: Hour Date: From 08/09/2020 To 09/09/2020				[system]	08/09/2020 00:23...	
<input type="checkbox"/>	Re... Scheduled report: Period Daily				[system]		
<input type="checkbox"/>	Ge... Filters				[system]	07/09/2020 00:28...	
<input type="checkbox"/>	Ge... Date: From 00:00 To 00:00				[system]	07/09/2020 00:24...	
<input type="checkbox"/>	Re... Status: <input checked="" type="checkbox"/> Arrived <input checked="" type="checkbox"/> Left <input checked="" type="checkbox"/> Alteration <input checked="" type="checkbox"/> Occupied				[system]		
<input type="checkbox"/>	Ge... All parking spaces: 8435				[system]	06/09/2020 00:29...	
<input type="checkbox"/>	Ge... Arrived: Max: 22 (08/09/2020 11) Average: 8.5				[system]	06/09/2020 00:26...	
<input type="checkbox"/>	Ge... Left: Max: 22 (08/09/2020 11) Average: 8.5						
<input type="checkbox"/>	Ge... Alteration: Max: 4 (08/09/2020 07) Average: -0						
<input type="checkbox"/>	Ge... Occupied: Max: 557 (08/09/2020 10) Average: 553						

Export: PDF CSV

Time	Arrived	Left	Alteration	Occupied
08/09/2020 00	5	7	-2	549
08/09/2020 01	0	1	-1	547
08/09/2020 02	0	0	0	547
08/09/2020 03	0	0	0	547

08/09/2020 00 08/09/2020 01 08/09/2020 02 08/09/2020 03 08/09/2020 04 08/09/2020 05 08/09/2020 06 08/09/2020 07 08/09/2020 08 08/09/2020 09 08/09/2020 10 08/09/2020 11 08/09/2020 12 08/09/2020 13 08/09/2020 14 08/09/2020 15 08/09/2020 16 08/09/2020 17 08/09/2020 18 08/09/2020 19 08/09/2020 20 08/09/2020 21 08/09/2020 22 08/09/2020 23

Arrived Left Alteration Occupied

- Select "Raports" in the top menu bar.
- Here you can create new reports or create automatic rules that generate reports at the desired time interval automatically.
- There are 4 report types available: Occupancy, Circulation, Parking times and average parking times reports.

# Scenarios – Parking behaviour rules for certain situations in the parking

The screenshot displays the 'Scenarios' management interface. The top menu bar includes 'Log', 'Parking spaces groups', 'Main elements', 'System elements', 'Clients', 'Scenarios', 'Reports', 'Settings', 'Window', and 'Help'. A blue arrow points to the 'Scenarios' menu item. Below the menu bar, there are filter options for 'State' (All), 'Last time executed' (From/To), 'Name', 'Tag', and 'Limit' (500). A 'New' button is located at the bottom right of the filter section. The main table lists various scenarios with columns for 'State', 'Name', 'Tag', 'Last time executed', and 'Command'. The 'MAX PARKING TIME' scenario is highlighted. A detailed view of this scenario is shown in the foreground, including its ID (63), Name ('MAX PARKING TIME'), and Tag. The 'Add condition' section shows a condition: 'When is P-BOX-METAL Any of sensor.parking\_time\_exceeded = TRUE'. The 'Actions' section includes buttons for '+', 'X', and a star icon, followed by 'VMS', 'IP', and a star icon. The 'Email to' field is set to 'support@parksol.com', and the 'Email subject' is 'Parkavimo laikas'. The 'Template' field is empty, and the 'Text' field contains 'Pasielktas maksimalus parkavimo laikas!'. The 'Save' and 'Close' buttons are at the bottom right.

State	Name	Tag	Last time executed	Command
Red	asdasd		30/01/2020 16:01:50	
Red	astest		06/11/2018 11:58:04	
Red	CO TEST		26/06/2020 09:45:46	
Red	čėasdfs dgdsgfhs dth			
Red	COVID-19 fun		11/05/2020 10:47:56	
Red	FIRE_ALARM_EXAMPLE	PARYZDYS_VEIKIA – V.T.	12/03/2019 09:49:49	
Green	Gedimino galvės magnetiniai davikliai -gedi...		14/07/2020 09:53:07	
Red	Gedimino ir kilpos.		05/11/2019 15:42:00	
Red	grupės kataliojimas		10/01/2019 10:38:35	
Red	Grupės vietų keitimas		10/01/2019 10:38:39	
Red	Ikea email			
Red	imec grupės perjungimo testui			
Red	Indication set			
Red	JSON			
Red	kas 10 min atnaujina			
Red	Kiskis & AUSTRALIA			
Red	Kiskis VMS test			
Green	MAX PARKING TIME			
Red	Nepageidaujami Auto (Popup + Indication + ...			
Red	RODYKLĖ			
Red	set occupancy			
Red	Sveiki atvykę! / Welcome!			
Red	Test_1	Kai rez...		
Red	Test2	Kai rez...		
Red	Testas			
Red	Test_DIM_DSP			
Red	TOF pėktrovimas	nuo m...		
Red	To long parking time			
Red	ui			
Red	VMS			
Red	VMS test Arunas			
Green	ZASEDENO			

- Select "Scenarios" in the top menu bar.
- Here you can create new rules, edit, start or stop existing rules.
- Scenarios can be very different, such as Pop-up Notifications, Email, email sending, messages on LED screens, field device management.

# THANKS!

Kristina Kablytė  
Project manager