CPY Server- Manual

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2 INTRODUCTION

2.1 General description

Welcome to the CPY Software manual. This guide will cover the essentials of setting up and using the CPY software included with your Dupline® 3 Parking Guidance System. We will start with a brief description of the system.

The Dupline® 3 Parking Guidance System is built up of a number of hardware and software components. The most common components in the system are the Dupline® 3 Parking Sensors. These are installed in each parking bay. A bay sensor detects when a bay is occupied and reports it to the Dupline® Master it is connected to, as well as indicating it with a coloured light. This coloured light is also used to indicate if the space is booked.

2.2 System Architecture

The SBP2CPY is a micro PC with Web-Server and Web-Service capabilities suitable for gathering information from up to 10 UWP 3.0s. In a project with more than one UWP 3.0 controller, the SBP2CPY module is required.

If only one UWP 3.0 controller is used in the Car Park project, the CPY Server is integrated into the controller: the address to access it is:

[UWP 3.0 IP address] ***/CP3App***

e.g., 192.168.2.71/CP3App

2.3 Applications

The SBP2CPY aggregates data from multiple controllers in a single centralized database. You can access from anywhere by Web Browser, through a highly interactive interface, in order to manage the entire parking lot. The main features are as follows:

- Booking bays with scheduled actions or from the overview
- Checking the bay sensors in alarm
- Viewing the real-time status of each bay sensor with drawings and reports
- Setting the Bay sensor's category and status
- Configuring the Displays and Indicators
- Secure remote connection through the Carlo Gavazzi MAIA Cloud solution

All the data is available as charts, tables and reports based on an XLS format.

3 SYSTEM REQUIREMENTS

3.1 Browser

The CPY Web-Server is a software application that runs in a Web Browser. To ensure optimal performance, the **recommended** browser is **Google Chrome**, a modern browser that you can download free of charge.

4 ACCESS TO THE SYSTEM

4.1 Network configuration

To access the system, you first need to establish a network connection between your PC and the SBP2CPY: you have the following options:

- Directly connect the two devices (SBP2CPY and PC) through a network cable
- Connect both devices (SBP2CPY and PC) to your local network
- Directly connect the two devices (SBP2CPY and PC) through a USB/mini-USB cable.

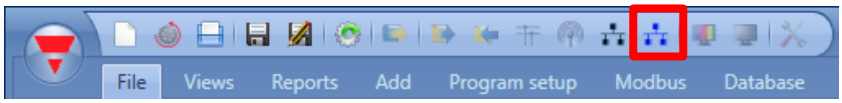
The SBP2CPY IP settings are factory-configured to start as DHCP.

Technical support operators can also communicate with the SBP2CPY through the same LAN port, using the address 192.168.253.254 (this address is fixed and cannot be changed).

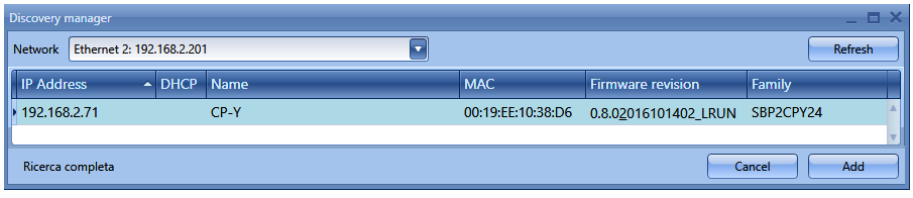
If using a mini-USB cable to connect the devices, use the address 192.168.254.254.

4.1.1 Discover the SBP2CPY IP address via the UWP 3.0 Tool

To find the SBP2CPY IP address, click on the icon marked in red to start the discovery:



The following window will appear with all the SBP2CPYs in the network:



Note: Please check the relevant UWP 3.0 Tool documentation for further information concerning the exchange data with UWP 3.0 controllers.

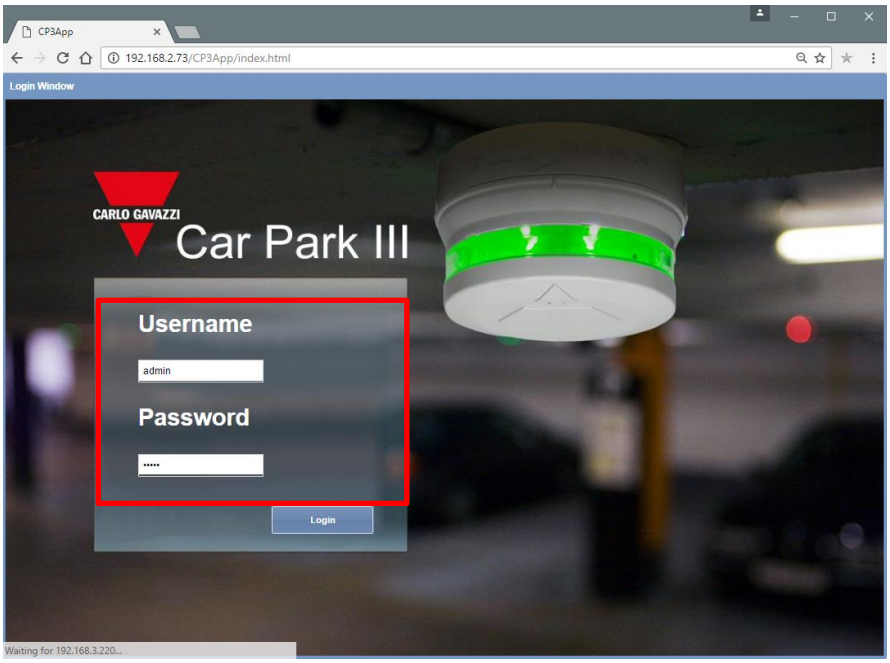
4.1.2 Access the SBP2CPY Web-Server

After the IP address of the SBP2CPY has been discovered, you can access the Web-Server. Follow this procedure in order to grant the access:

Step	Action
1	Open a Web Browser and type the URL, based on the device used:

Device	CPY Server URL
SBP2CPY	SBP2CPY IP address *e.g. 192.168.2.73*
SBP2WEB/UWP3.0	[*Controller IP address*]/CP3App *e.g. 192.168.2.71/CP3App*

2 Enter the **username** and **password** in the Login page**,** as shown below:



The default **username** and **password** are shown in the table below:

Username	Password	Name	Level
admin	admin	admin	administrator

Security Note: To prevent any undesired access to the system, it is recommended that you modify the default password during the first configuration.

3 Click the **Login** button to access the Main page

After you have granted the access, you can change the IP settings (see Specify an IP address manually).

4.1.3 Access remotely the SBP2CPY Web-Server with MAIA Cloud*

**MAIA Cloud is the Carlo Gavazzi PaaS (Platform as a Service) solution that allows a seamless connection of different remote devices through SBP2CPY24 units, so to develop the necessary car park guidance solutions by connecting and setting the relevant items. Users who have access to the MAIA Cloud can easily reach the gateways and the endpoints, provided they have the necessary access rights, using a PC and a standard browser.*

Notes:

- *For more information about MAIA Cloud, see the MAIA cloud user manual*
- *MAIA Cloud is compatible with SBP2CPY24 version **2.6.3 onwards**.*
- *For more information about the device activation, go to How to activate SBP2CPY24 in MAIA Cloud*

Follow this procedure to set up a remote connection to a device activated in MAIA Cloud:

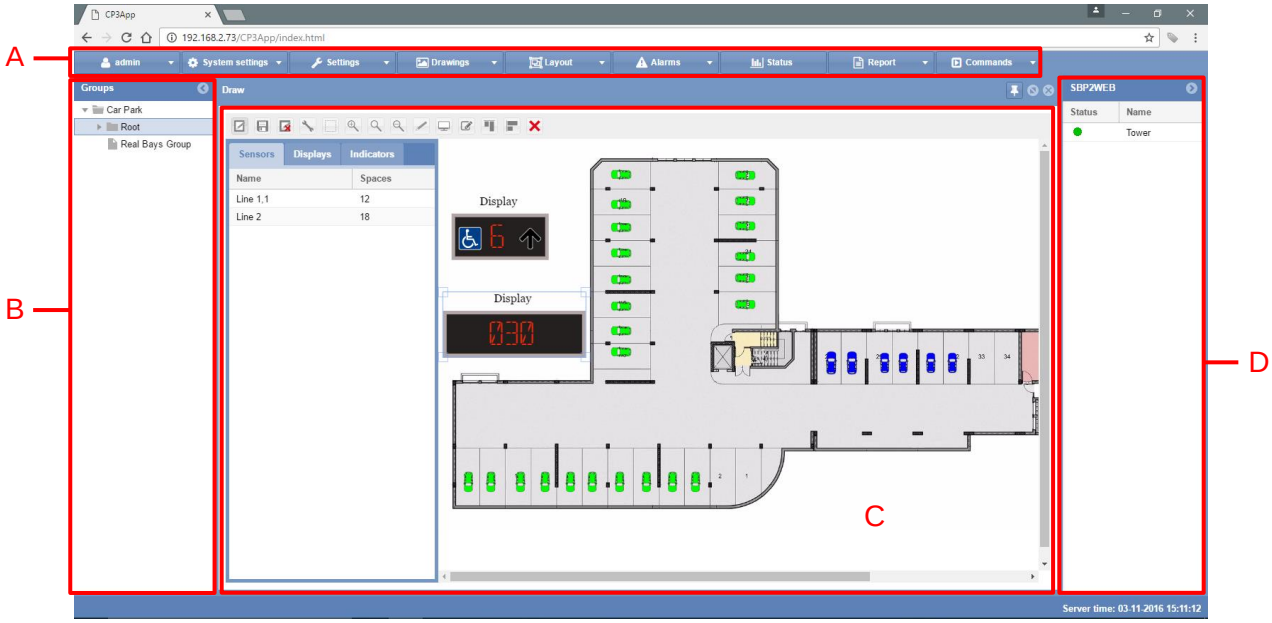
1. Log in to your MAIA Cloud (link here)
2. Open the home page or the **main menu** and go to ***Devices > VPN***
3.

If you want to…	**Then…**
Use a predefined application to create a VPN tunnel to the gateway	You can a. Click ⌄ to open the **Connection** drop-down menu of the device Or b. Click on the device you want to connect in the map and click **Applications** to open the **Connection** side panel After that, click one of the available applications. *If the connection is correctly established, the status icon becomes green.*
open all the ports of the application which composed the device and endpoint profile	You can a. Click ⋮ > **Connect** from the **Action** menu of the device Or b. Click ⌄ to open the **Connection** drop-down menu of the device and click **Connect** Or c. Click on the device you want to connect in the map and click **Connect**

	After that, you can enter the Virtual IP address that you find in the **Connection** drop-down menu or side panel, in your browser or in your application.
Disconnect from the endpoints/gateway	You can a. Click ⋮ > **Disconnect** from the **Action** menu of the device Or b. Click ⌄ opening the Connection drop-down menu of the device and click **Disconnect** Or c. Click on the device you want to disconnect in the map and click **Disconnect**

4.2 Main page

The figure below shows the **CPY server main page:**



Main page

When you access the Web Server main page, you can see the following areas, which are always available while using the software. The different areas are as follows:

Area	Description
A	The **navigation bar** located at the top of the main page has the following tabs:

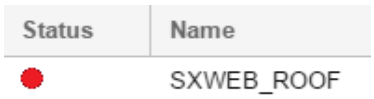
Tab	Description
User	Settings for e.g. language and date/year *It is necessary to run the CPY with correct date and time format (Europe/US)*
System settings	To select LAN, Modem, Clock and Firmware *It is necessary for LAN or Modem settings, together with the Clock. The clock is needed for real time stamp and for internal use of the clock. Always check for the latest firmware release*
Settings	To select General park settings such as Account, status/category setup
The first three menus must be completed because the settings have an impact on the future database in the carpark software. The last two menus (Group settings and Scheduler) can be filled out later. They are used for e.g. booking and sending data to emulated displays	
Drawings	To add drawings and design Car Park structures *In this menu, you can build up the entire structure for the Car Park project. Drawings can be imported and icons can show the status of status of each bay, such as Vacant, Occupied, Disabled, VIP etc. Physical displays with steady or moving arrows can be assigned and configured and reproduced displays can be configured to show specific status, such as the number of occupied bays, VIP bays in one floor or the entire system*.
Layout	Option for personal screen view. E.g. Status page and alarm page as preferred screen view *This menu is optional but can be used to personalize each user's screen layout. It shows the menus as a cascade or in layers. The user can decide which menus are in focus*
Alarms	See historical alarms and acknowledge alarms. It is also possible to set different alarm set point for groups or individual bays *It is optional but useful for e.g. investigating the time each car has been parked with a selectable time limit or a complete group of cars.*
Status	Displays the entire parking lot as bar graphs or as a table *Optional, but gives the operator useful information about occupancy on each floor or entire system*
Report	For occupancy and space statistic *Optional but useful for historical investigations of space and area statistic such as occupancy, available spaces, most used /not used spaces in either as graph or as table*
Commands	E.g. sequence setup to control a gate when carpark is occupied *Optional but useful to control e.g. a gate when floor/all is occupied*

B The **left panel** contains the hierarchical tree view of the entire parking lot structure as created in the UWP 3.0 Tool.

Note: the left panel can be hidden by pressing the ❮ button

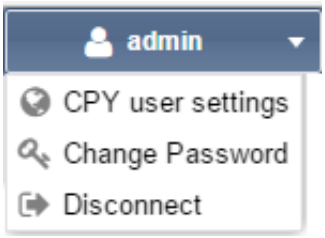
C The **main area** shows the drawing and status windows, the reports window, etc..

D The **right panel** displays the SBP2CPY date and time, and some information about the status of all the UWP 3.0 controllers that are part of the current project, as follows:

Status	Description
	The UWP 3.0 controller **is connected** with the SBP2CPY
	The UWP 3.0 controller **is not connected** with the SBP2CPY

Note: the right panel can be hidden by pressing the ❯ button

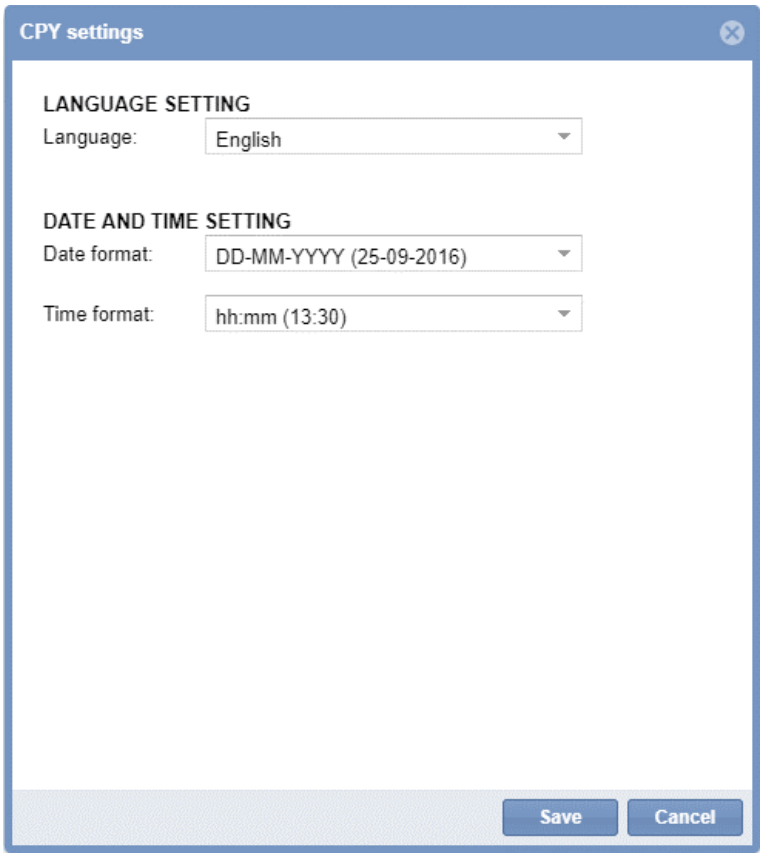
If you click on the **User** tab (the label shows the username currently connected) from the navigation bar, the following menu will appear:



5 CPY USER SETTINGS

5.1 User interface

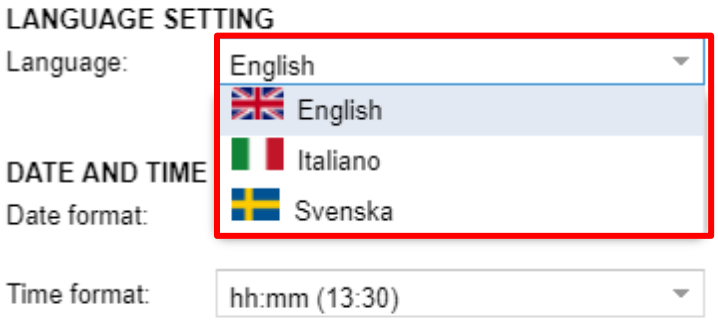
The **CPY user settings** window is where you view or change the language setting and the date and time formats.



5.2 Procedures

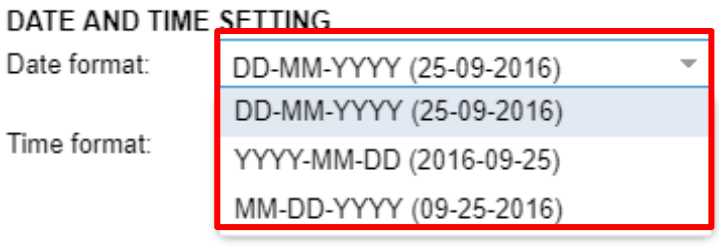
5.2.1 Change default language

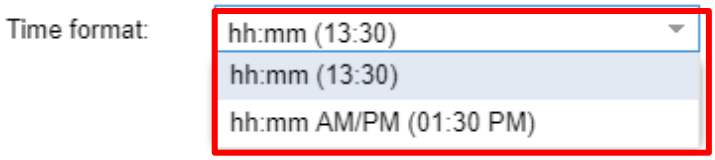
To set the system language, follow this procedure:

Step	Action
1	Click on the **User** *(e.g. Admin)* tab from the navigation bar, then click **User International Settings**
2	From the **Language** drop-down menu select the desired language 
3	Click on **Save** to store the changes

5.2.2 Change date and time format

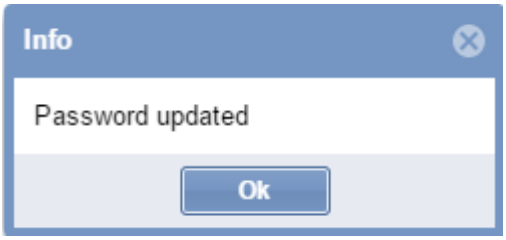
To set the system date and time format, follow this procedure:

Step	Action
1	Click on the **User** *(e.g. Admin)* tab from the navigation bar, then click **User International Settings**
2	From the **Date format** drop-down menu select the desired format: 

3	From the **Time format** drop-down menu select the desired format: 
4	Click on **Save** to store the changes

5.2.3 Change the password for a non-administrative user

The user without administrative privileges, who cannot access the **Account** settings window, but is allowed to change the password, can follow this procedure:

Step	Action
1	Click on the **User** tab from the navigation bar, then click Change user password
2	Enter the current password in the Current password box, then type the new password in the boxes below:
3	Click on **Save** to store the changes *Note: the following message will appear to confirm the password has been updated correctly:* 

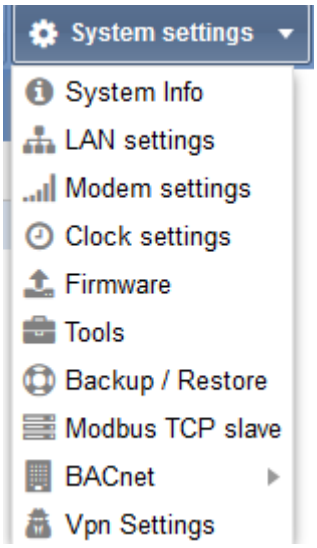
5.2.4 Log-off from the system

To Log-off a user from the CPY webserver, click on the **User** tab from the navigation bar, then click on **Disconnect**.

The current user will be logged-out and will return to the login page.

System settings

If you click the **System settings** tab from the navigation bar, the following menu will appear:



Use the **System settings** menu to view system information and make system settings. The menu includes the following sections, shown in the table below:

Section	Features
System Info	▪ See the device information (such as the serial number, the Mac address, the firmware version)
LAN settings	▪ Configure the IP address of the SBP2CPY ▪ Configure the DynDNS parameters
Modem settings	Configure the network parameters of the 3G modem for the internet connection. *Note: the SH2DSP24 accessory module is required*
Clock setting	Set the date and time used by the SBP2CPY
Firmware	Upgrade the firmware of the SBP2CPY module
Tools	▪ Reboot the SBP2CPY ▪ Restore to factory settings
Backup / Restore	▪ Backup and restore the data
Modbus TCP Slave	▪ Create the Modbus map ▪ Export the Modbus map

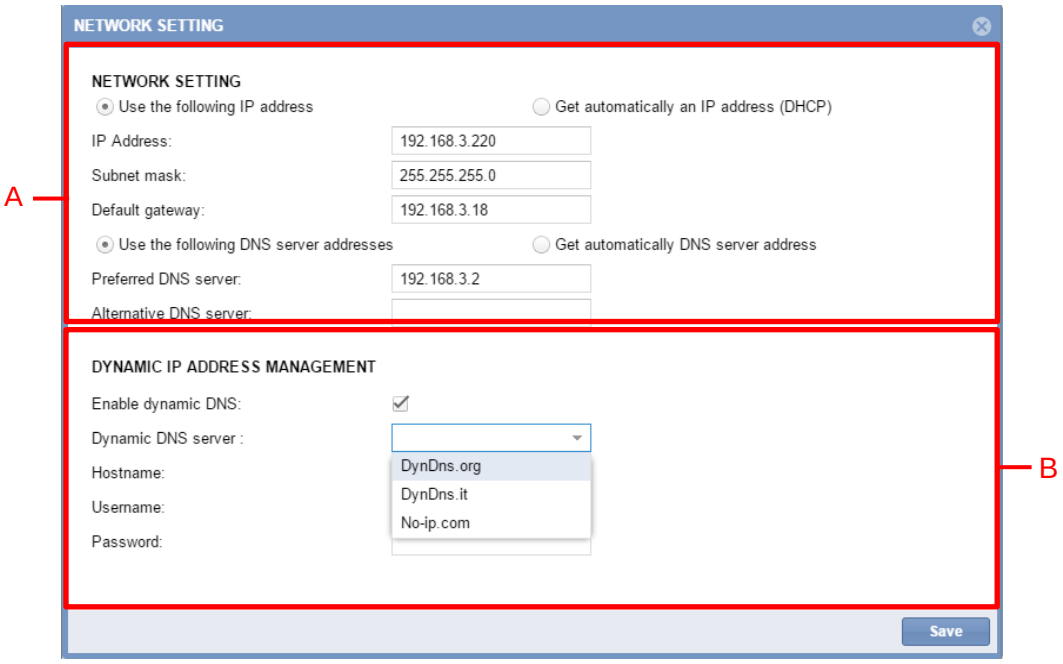
BACnet	▪ BACnet configuration ▪ BACnet settings
VPN settings	▪ Manage the MAIA Cloud VPN remote connection ▪ Check the VPN connection status

*Note: The **System Settings** menu is ONLY available for the SBP2CPY24 Server*

6 LAN SETTINGS

6.1 User interface

The **LAN settings** window is where you view or change network information such as the IP address of the SBP2CPY and the DynDNS parameters.



LAN settings window

6.2 Things to know

6.2.1 Network communication

The SBP2CPY module must be installed and connected to the same *local area network (LAN)* of the UWP 3.0 controllers of the Car Park Guidance installation. A valid IP address must be assigned, manually or automatically, to communicate with the other network devices. The parameters are:

Parameter	Description
IP address	The IP address is the LAN IP address assigned to the SBP2CPY. It must be unique in the *local area network.*
Subnet mask	The mask is the subnet mask of the LAN to which the SBP2CPY is connected.

Default gateway	This is the IP address of the computer or device on your network that connects your network to another network, or to the Internet. *Note: the default gateway is only mandatory if you plan to access SBP2CPY through the Internet using the LAN connection*
DNS server	The Domain Name Server (DNS) address is used to look up site addresses based on their names. Use the DNS server if you want to reach SBP2CPY from the internet.

6.2.2 Dynamic IP address (DynDNS) service

To access your SBP2CPY from the Internet, when a static public IP address is not available, you can use a commercial Dynamic DNS service: the DynDNS service lets you register your domain to their IP address and forwards traffic directed at your domain (see "B" area) to your frequently changing IP address. The SBP2CPY can be reached by a user-friendly Internet name, such as SBP2CPY.dyndns.org

6.3 Procedures

6.3.1 Specify an IP address manually

By default, the IP address is automatically acquired from a DHCP server when the SBP2CPY is switched ON.

To manually assign a static IP address to the SBP2CPY (e.g. if a DHCP server is not available in the LAN) follow this procedure:

Step	Action
1	Click on **LAN settings** from **System settings** menu
2	In the **IP address** box, type the IP address of the SBP2CPY *e.g. 192.168.1.100*
3	In the **Subnet mask** box, type the subnet mask of the local network *e.g. 255.255.255.0*
4	In the **Default gateway** box, type the IP address of the default gateway of the local network *e.g. 192.168.1.254*

5	**DNS servers**: • select to automatically get the **DNS server address** check-box to acquire the DNS server automatically from the DHCP server • or select **Use the following DNS server addresses** to manually specify the addresses in the **Preferred DNS server** and **Alternative DNS server** boxes *Note: The **Alternative DNS server** is not mandatory*
6	Click on **Submit** to save the new network settings. Note: click the icon to close the window without saving any changes: the SBP2CPY will keep the current network settings.

Note: the SBP2CPY needs a restart, which is performed automatically; wait until the count-down is over; then you will be routed back to the main page.

6.3.2 Get an IP address automatically (DHCP)

If the SBP2CPY is set with a static IP address, follow this procedure to change it to obtain an IP address automatically from the DHCP server.

Step	Action
1	Click on **LAN settings** from the **System settings** menu
2	In the **Network settings** window check to **automatically get an IP address**
3	Click on **Submit** to save the new network settings. *Note: Click on the icon to close the window without any changes and keep the current network settings.*

6.3.3 Set up the DynDNS service

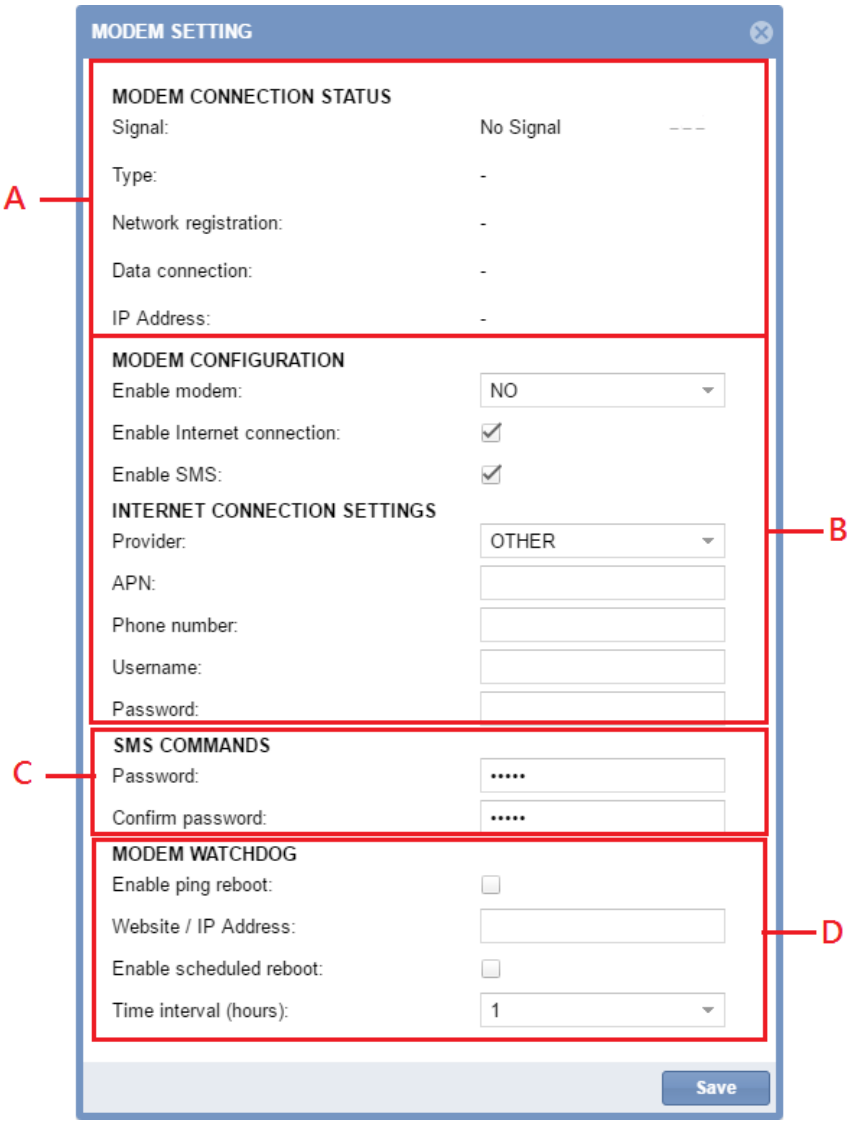
To enable the management of the dynamic public IP address, follow this procedure:

Step	Action
1	Register for an account with one of the Dynamic DNS service providers whose URLs are in the Service provider list *For example, for DynDNS.org, select www.dyndns.org*
2	Click on **LAN settings** from the **System settings** menu
3	Select the ☑ to e**nable the dynamic DNS** check box
4	Type the chosen **Dynamic DNS server**
5	Type the **Hostname** that the chosen provider DynDNS gives you
6	Type the **Username** provided during account registration
7	Type the **password** provided during account registration
8	Click on **Submit** to save the new network settings. *Note: the service will be available after about 6 minutes.*

7 MODEM SETTINGS

7.1 User interface

The **Modem settings** window is where you view the modem connection status and configure the internet connection settings when the modem is used.



The **Modem setting** window includes 4 areas:

<table>
<tr><th>Area</th><th>Description</th></tr>
<tr><td>A</td><td>Information about the modem data connection:

<table><tr><th>Parameter</th><th>Description</th></tr><tr><td>Signal</td><td>Modem signal level (Rx)</td></tr><tr><td>Type</td><td>Modem model (third party p.n.)</td></tr><tr><td>Network registration</td><td>The name of the ISP to which the modem is connected</td></tr><tr><td>Data connection</td><td>Connection status</td></tr><tr><td>IP address</td><td>IP address assigned to the device by the ISP</td></tr></table></td></tr>
<tr><td>B</td><td>Configuration of the network parameters of the 3G modem for internet connection</td></tr>
<tr><td>C</td><td>Password setting required for security reasons to send SMS command

See the list for all the SMS commands available</td></tr>
<tr><td>D</td><td>It is possible to resolve common issues in mobile communication by means of two different mechanisms, such as ping reboot and scheduled reboot</td></tr>
</table>

7.2 Things to know

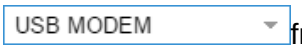
7.2.1 Internet Service Provider

To access the Internet through a 3G connection some parameters need to be requested from the mobile company (ISP): APN (Access Point Name), available network (HSPA....), optional dial up number.

7.3 Procedures

7.3.1 Modem configuration

You need to install the SH2DSP24 adapter module **before** configuring the modem, then follow this procedure:

Step	Action
1	Click on **Modem settings** from **System settings** menu
2	Select  from the **Enable modem** combo-box
3	Select the **Enable Internet connection** check box to enable data communication via the Internet
4	Select **OTHER** from **Provider** combo-box *Note: Select predefined Vodafone IT M2M to load the predefined Vodafone APN configuration. Steps 5 to 9 may then be ignored*
5	Enter service Provider name in **APN** box
6	Enter *99# or *99***1# in **Phone Number** box
7	Leave **Username** box blank if the username is not required by the ISP
8	Leave **Password** box blank if the password is not required by the ISP
9	Click on **Save** to store the modem settings.

7.3.2 Set the password for SMS commands

To enable the 3G modem to accept SMS commands through the SIM, follow this procedure:

Step	Action
1	Click on **Modem settings** from the **System settings** menu
2	Select the **Enable SMS** check box to enable SMS alarm dispatching
3	Enter a numeric password in **Password** box *e.g. 1234*
4	Re-enter the same password in **Confirm Password** box

7.3.3 Modem watchdog

To solve common issues in mobile communication, follow this procedure:

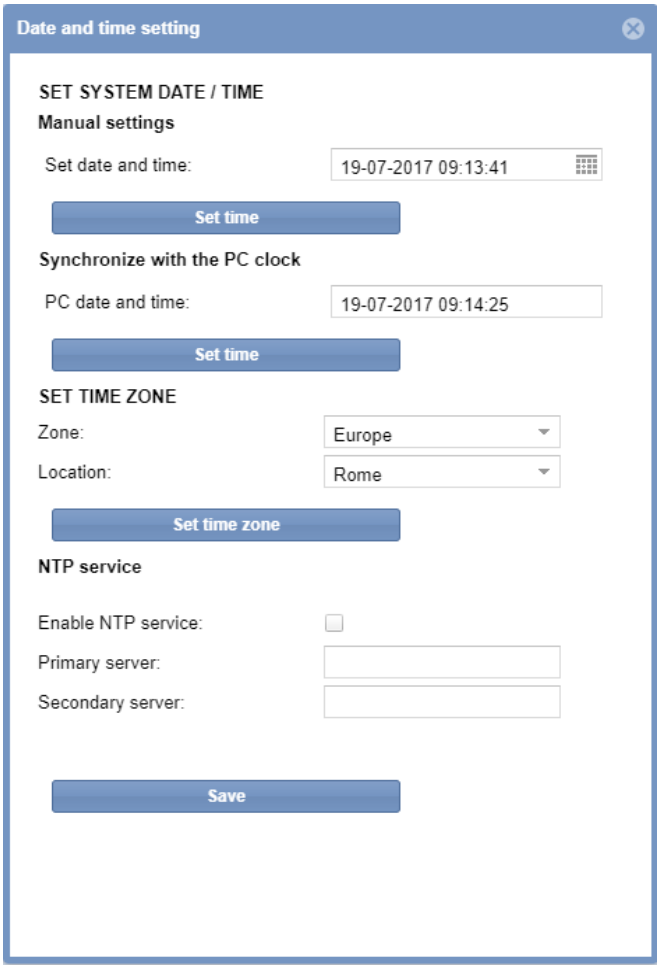
Command	Action
Enable ping reboot	If enabled, the SBP2CPY sends a PING command to the defined Website / IP address chosen in the **Website/IP Address** box. In case of repeated lost answers from the PING command, the system reboots
Enable scheduled reboot	The system reboots at each timed interval, chosen in the **Time interval** box (hours)

8 CLOCK SETTINGS

8.1 User interface

The Clock settings window is where you can set the system **date** and **time** for the SBP2CPY module.

Note: The SBP2CPY and the UWP 3.0 controllers parts of the Car Park project should be synchronized with the same NTP server(s).



The menu includes the following sections, as shown below:

Section	Features
Manual settings	Set the date and time manually
Synchronize with PC clock	Date and time are automatically synchronized with the internal clock of the PC
Set time zone	Set the time zone where the SBP2CPY is located
NTP service	Specify the NTP server to obtain the date and time from time servers

8.2 Things to know

8.2.1 NTP service

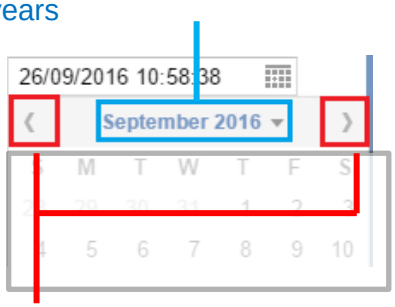
The NTP server can be used to obtain the date and time information from one of several network time servers on the Internet.

Note: an internet connection is required for the SBP2CPY to give this information

8.3 Procedures

8.3.1 Set date and time manually

To set the system date and time manually, follow this procedure:

Step	Action
1	Click on **Clock settings** from the **System settings** menu
2	In the **Set system date/time** section, click on the icon
3	Select the **date** from the popup calendar Click on the month to select the year through years  Click on the arrows to select the month through months
4	Enter the current **time** in the box *Please see SBP2CPY user settings for the date and time format*
5	Click on **Set time** to store the new settings.

8.3.2 To synchronize with PC clock

To synchronize the date and time **automatically** with the PC clock, follow this procedure:

Step	Action
1	Click on **Clock settings** from **System settings** menu
2	Click on **Set time** in the **Synchronize with PC clock** section
3	Close the **Clock settings** window to store the new settings

8.3.3 Set the time zone

To set the **time zone** where the SBP2CPY is located, follow this procedure:

Step	Action
1	Click on **Clock settings** from the **System settings** menu
2	In the **Set Time Zone** section: • choose your **Zone** from the drop-down menu • choose your **Location** from the drop-down menu
3	Click on **Set time zone** to store the new settings

8.3.4 Set NTP service

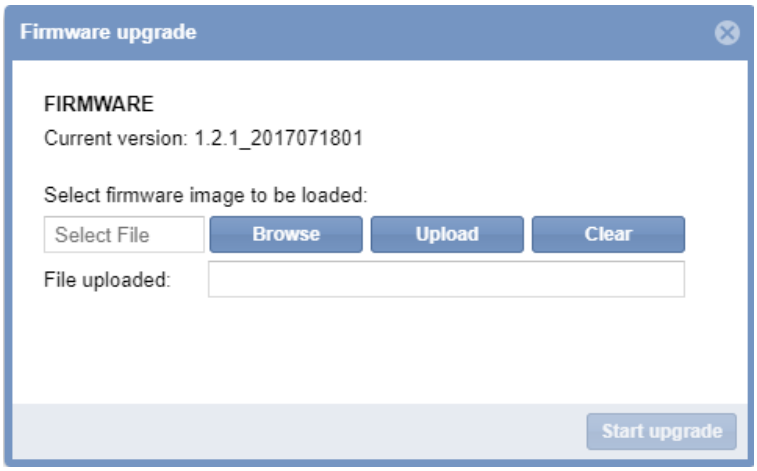
To set the NTP Service, follow this procedure:

Step	Action
1	Click on **Clock settings** from the **System settings** menu
2	Select the ☑ **Enable NTP service** to turn it ON
3	Type a valid NTP server in the **Primary server** box *e.g. ntp1.inrim.it*
4	Type a valid NTP server in the **Secondary server** box *e.g. ntp2.inrim.it*
5	Click **Save** to store the new clock settings

9 FIRMWARE

9.1 User interface

The Firmware window is where you can check and update the firmware version of the SBP2CPY.



9.2 Things to know

9.2.1 Firmware package

A firmware update is a single binary file that contains the entire firmware payload *([firmware_revision].bin)* of the SBP2CPY module.

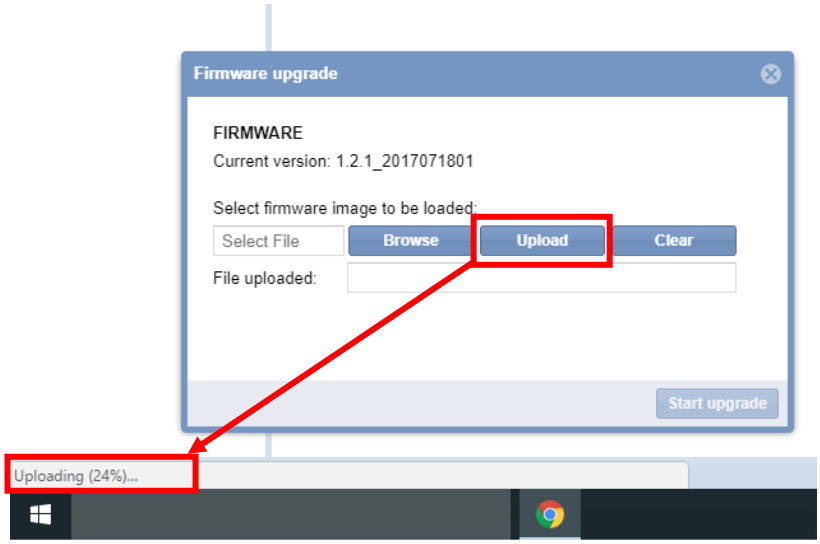
Carlo Gavazzi regularly releases new firmware versions to improve product performance or to introduce new functionality.

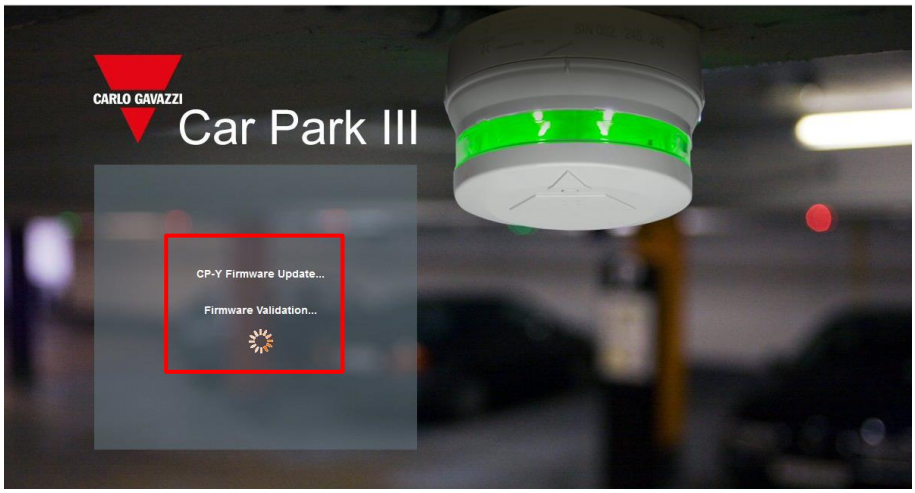
The upgrade is highly recommended every time a new release is available.

9.3 Procedures

9.3.1 Firmware update

To update the SBP2CPY module with a new firmware revision, follow this procedure:

Step	Action
1	Download the latest firmware available from the Carlo Gavazzi web site, save it to your Desktop and unzip the archive if necessary. *Note: The correct firmware file uses a **.bin extension***
2	Click on **Firmware** tab from the **System settings** menu
3	Click the **Browse** button
4	Locate and highlight the saved firmware and click the **Upload** button: the firmware package will upload into the SBP2CPY, see the uploading progress on the browser bar  *Note: Click on the **Clear** button if you have selected the wrong file.*

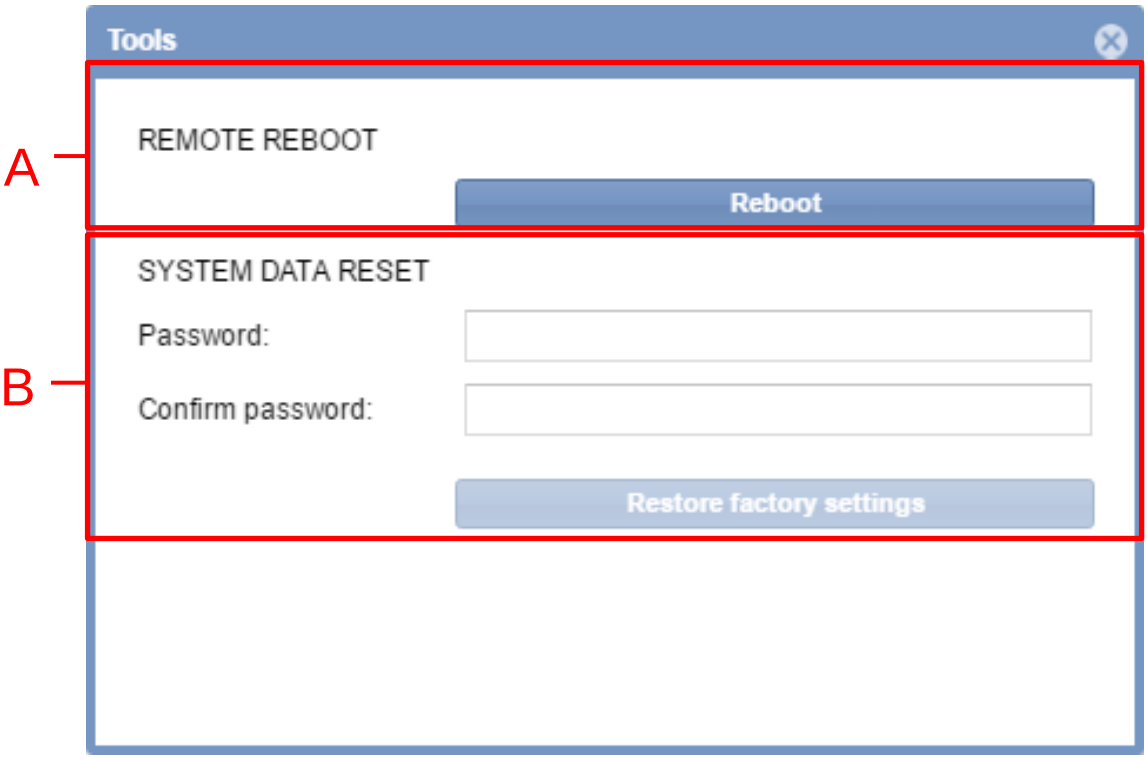
5	Click on **Start upgrade,** the firmware update operation will start, **where** the following window can be seen:  *Note: When uploading firmware to the SBP2CPY, do not interrupt the web browser by closing the window, or loading a new page. If the browser is interrupted, it could corrupt the firmware.*
6	*Your SBP2CPY will reboot after the firmware is uploaded.*

Note: The upgrade process depends on the present SBP2CPY load (in terms of connected devices), the Internet connection speed and the size and complexity of the update package.

10 TOOLS

10.1 User interface

If you click on the **System settings** tab from the navigation bar, then **Tools**, the following window will appear:



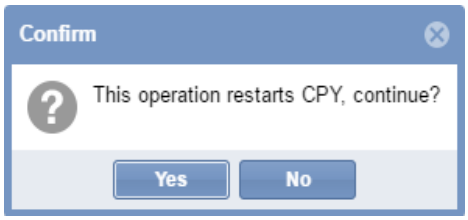
Tools window

Section	Features
A	Remote Reboot turns your SBP2CPY module **OFF** and then **ON**. When rebooting, all the user will be disconnected.
B	System data reset sets the SBP2CPY module back to its default settings and will allow you to reconfigure it based on your Car Park project.

10.2Procedures

10.2.1 Remote reboot

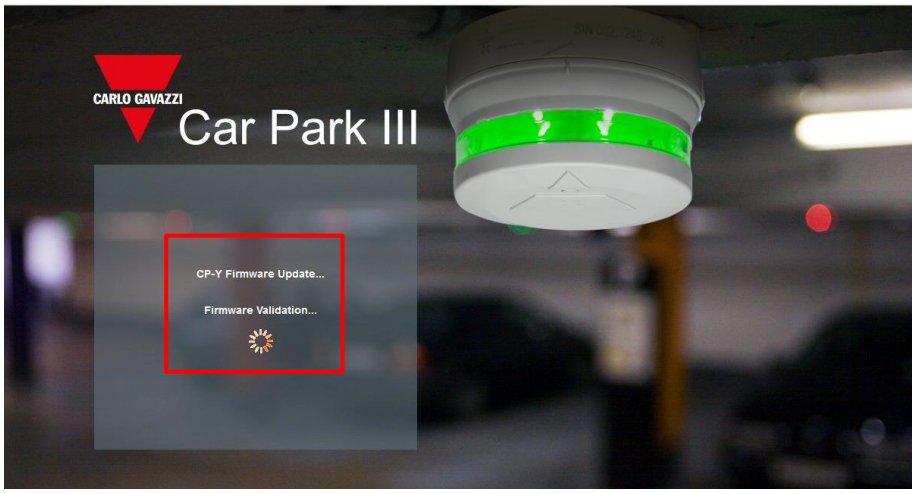
To reboot the SBP2CPY module, follow this procedure:

Step	Action
1	Click on **System settings** from the navigation menu, then click **Tools** tab
2	Click the **Reboot** button
3	On the **Confirm** popup, click **Yes** button  *NOTE: Observe the Power light on the SBP2CPY when rebooting. It goes OFF and then ON as an indication that the module is going through the process. Wait for few minutes to finish the process.*

10.2.2 System data reset

To restore SBP2CPY to factory settings, follow this procedure:

Step	Action
1	Click on **System settings** from the navigation menu, then click **Tools** tab
2	Enter the password of an admin user with privileges permission *Note: the password must match, otherwise you cannot continue with the restore operation*
3	Click the **Restore factory settings** button
4	The SBP2CPYmodule reboots and will be restored to factory settings **WARNING: Do not interrupt the restore process**

5	Click on Start upgrade, the firmware update operation will start, where the following window can be seen:  *Note: When uploading firmware to the SBP2CPY, do not interrupt the web browser by closing the window, or loading a new page. If the browser is interrupted, it could corrupt the firmware.*
6	*Your SBP2CPY will reboot after the firmware is uploaded.*

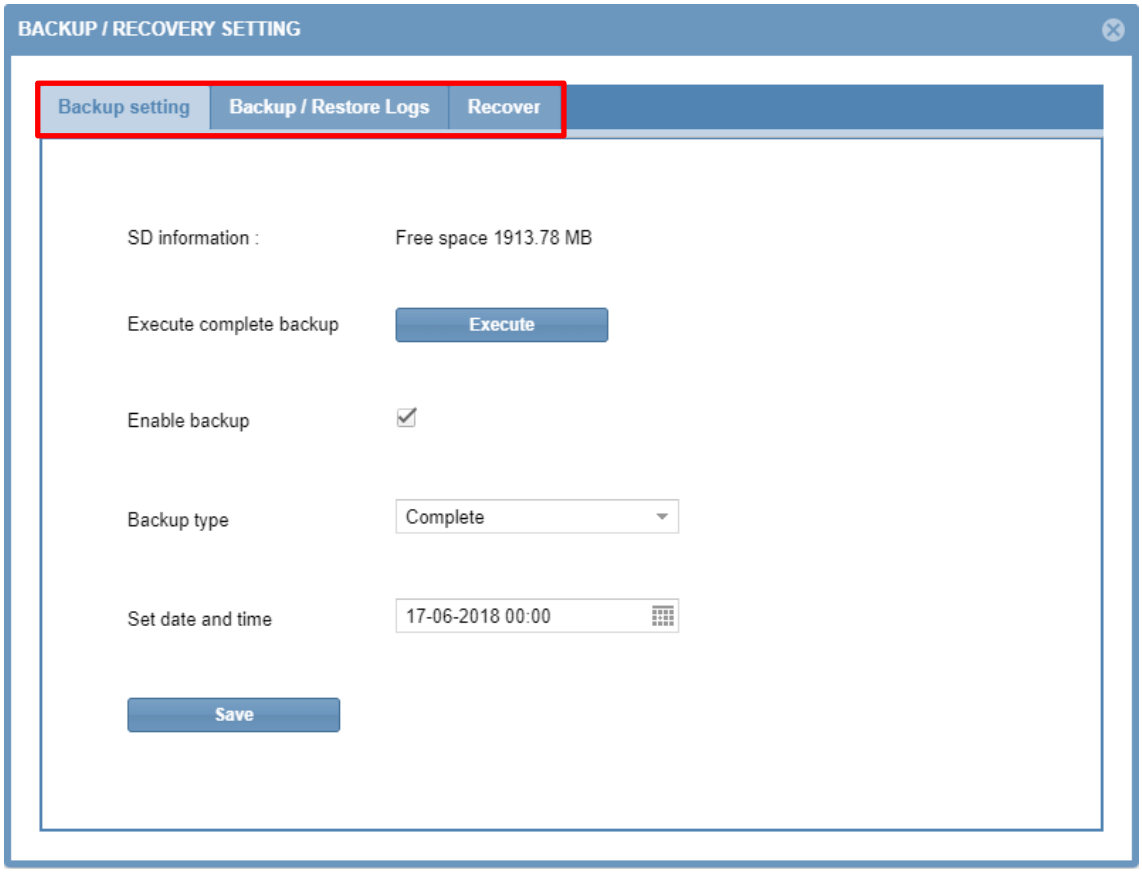
Note: The Restore procedure does not affect firmware which will remain the latest one installed

11 BACKUP / RESTORE

11.1 User interface

The Backup/Restore window is where you can manage the backup and restore process in order to have a snapshot of your Car Park database. An SD card is required for *backup and restore* operations. The maximum SD card capacity supported is up to 32 GB.

If you click on the **System settings** tab from the navigation bar, then **Backup / Restore**, the following window will appear:



The menu includes the following sections, as shown below:

Section	Features
Backup setting	Sets the backup options
Backup/Restore Logs	Shows the backup processes that have been executed
Recover	Selects an available backup to be restored

11.2 Procedures

11.2.1 How to create a complete backup

This option creates a complete backup of the SBP2CPY24 database.

Note: Backup and restore operations can take a considerable amount of time due to the size of the database

To create a new complete backup, follow this procedure:

Step	Action
1	Click on the **Backup/Restore** tab from the **System settings** menu
2	In the **Backup setting** tab, the SD information shows if an SD Card is available. Otherwise please insert an SD Card into the module
3	Click on the **Execute** button to start the process
4	Click on the **Save** button to store the changes

You can check in the *Backup/restore Logs* tab the backup status

11.2.2 How to schedule a complete backup

This option makes the complete backup of the SBP2CPY24 database.

To schedule a complete backup, follow this procedure:

Step	Action
1	Click on **Backup/Restore** tab from the **System settings** menu
2	In the **Backup setting** tab, the SD information is shown to notify that a SD Card is available. Otherwise please insert a SD Card into the module
3	Checks the **Enable** checkbox to enable the backup process
4	In the **Backup type** combo box select the **Complete** option
5	In the **Set date and time** field you have to select the point in time when the backup will take place
6	Click on the **Save** button to store the changes

11.2.3 How to create an incremental backup

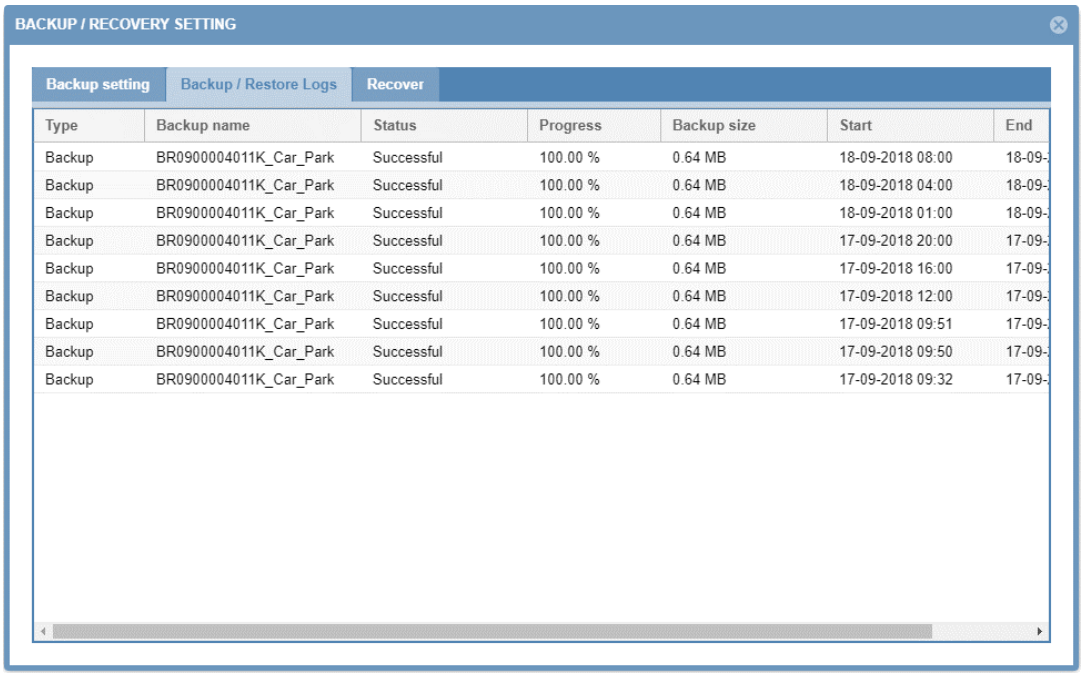
This is the automatic backup of your SBP2CPY24 database that occurs every 4 hours. To set the Incremental backup, follow this procedure:

Step	Action
1	Click on the **Backup/Restore** tab from the **System settings** menu
2	In the **Backup setting** tab, the SD information shows if an SD Card is available. Otherwise please insert an SD Card into the module
3	In the **Backup type** combo box select the **Incremental** option
4	Click on the **Save** button to store the changes

The system will automatically create an incremental image of the database every 4 hours. You can check the backup status in the *Backup/restore Logs* Tab

11.2.4 How to check the backup status

In the *Backup/restore Logs* tab you can check the list of the backup operations that have been performed.



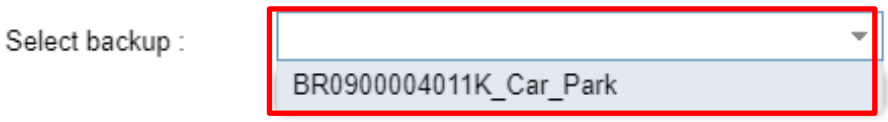
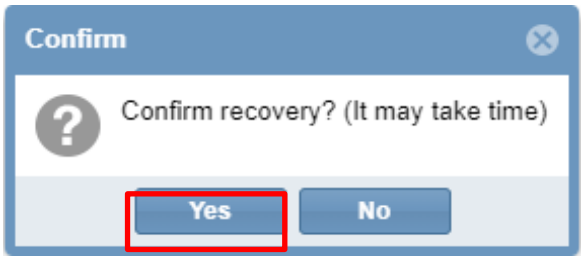
This table shows the list of the backup records that have been created. It has the following fields:

Field	Description
Type	This field shows the type of operation
Backup name	This field shows the backup name
Status	This field shows the status of a backup operation
Progress	This field shows the progress status of the operation
Backup size	This field shows the total size of the backup
Start	This field shows the starting time of the operation
End	This field shows the ending time of the operation

11.2.5 How to restore a backup from an SD Card

In the Recover tab of the **Backup/Recovery settings** window you can restore a previous backup that has been created from an SBP2CPY24 module. A backup can be restored on the same module or, in case of a disaster recovery, the backup can be restored on a new SBPCPY24 module.

To restore an available backup from an SD Card, follow the steps below:

Step	Action
1	Click on the **Backup/Restore** tab from the System settings menu
2	In the **Recovery** tab, select the *backup image* from the **Select backup** combo-box: 
3	Click on the **Start recovery** button
4	To start the recovery operation, click on the **Yes** button: 

Note: Backup and restore operations can take a considerable amount of time due to the size of the database

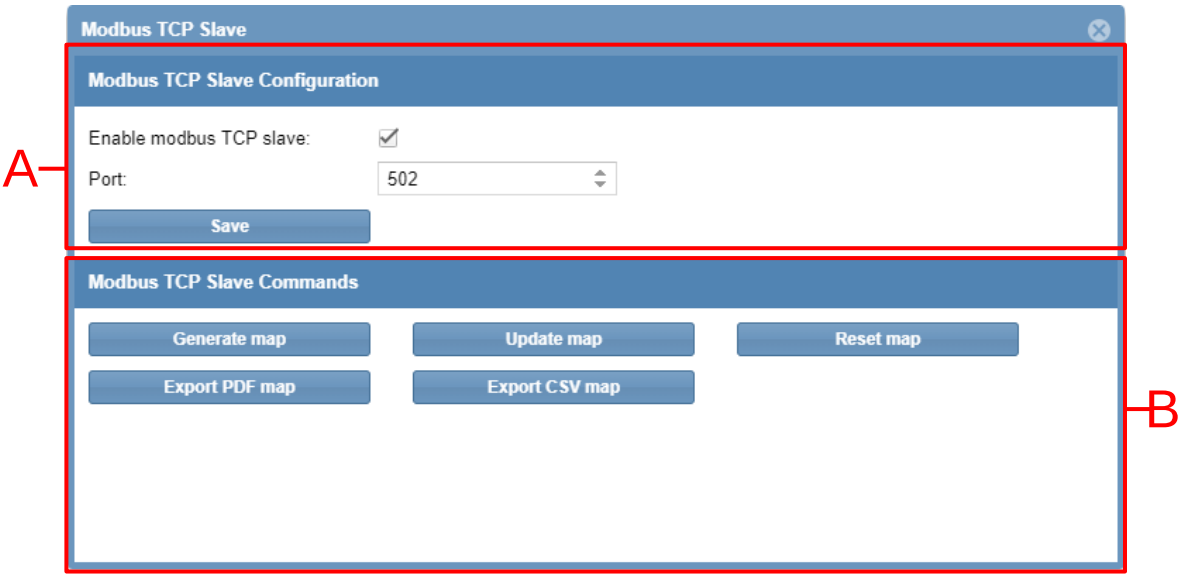
12 MODBUS TCP SLAVE

12.1 User interface

The *Modbus TCP Slave* window allows you to read the status of the Car Park server via Modbus TCP. The available signals are:

- Modbus signals related to modules;
- Modbus signals related to functions;

You can access the Modbus TCP Slave window by selecting **Modbus TCP Slave** from the **System setting** menu: the following window will appear:



The **Modbus TCP Slave** window includes these sections:

Area	Description
A	In the **Modbus TCP Slave Configuration** section, you can configure the Modbus protocol
B	In the **Modbus TCP Slave Commands** section, you can export the Modbus map using different formats

12.2 Procedures

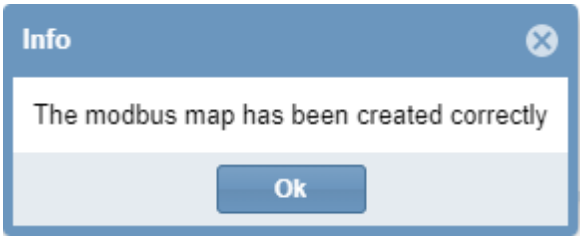
12.2.1 How to enable and configure the Modbus TCP protocol

Follow this procedure to enable the Modbus TCP protocol in the SBP2CPY24 module:

Step	Action
1	In the **Modbus TCP Slave configuration** check the flag to enable the protocol
2	In the **Port** field you have to enter the communication port for Ethernet connection (by default 502)
3	Click on the **Save** button to store the changes

12.2.2 How to create the Modbus map

The Modbus map can be saved as a .csv file: to generate it you can follow the steps below:

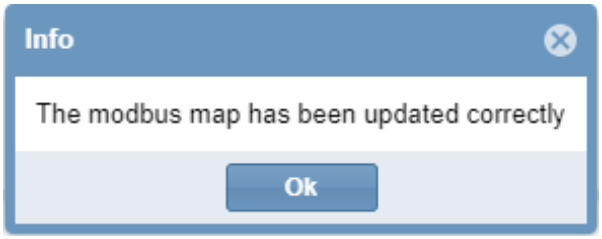
Step	Action
1	Click on the **Generate map** button: the following message will appear to confirm that the Modbus map has been created correctly 
2	Click on the **Export CSV map** button to save the Modbus map as a CSV file

Note: All the Modbus addresses can also be saved as a PDF file by clicking on the **Export PDF map** button (this shows the same info as the .CSV file but in PDF format).

12.2.3 How to update the Modbus map

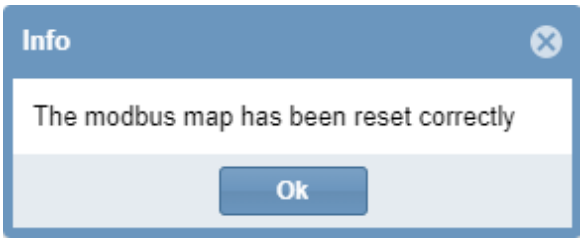
Important: Any time any changes are made in the project the Modbus map has to be updated.

Follow the steps below to generate an updated version of the Modbus map:

Step	Action
1	Click on the **Update map** button: the following message will appear to confirm that the Modbus map has been updated correctly 
2	Click on the **Export CSV map** button to save an updated version of the Modbus map as a CSV file

12.2.4 How to reset the Modbus map

If all the Modbus addresses have to be reset and a new map is needed, you can Reset the map. Follow the steps below to reset the map:

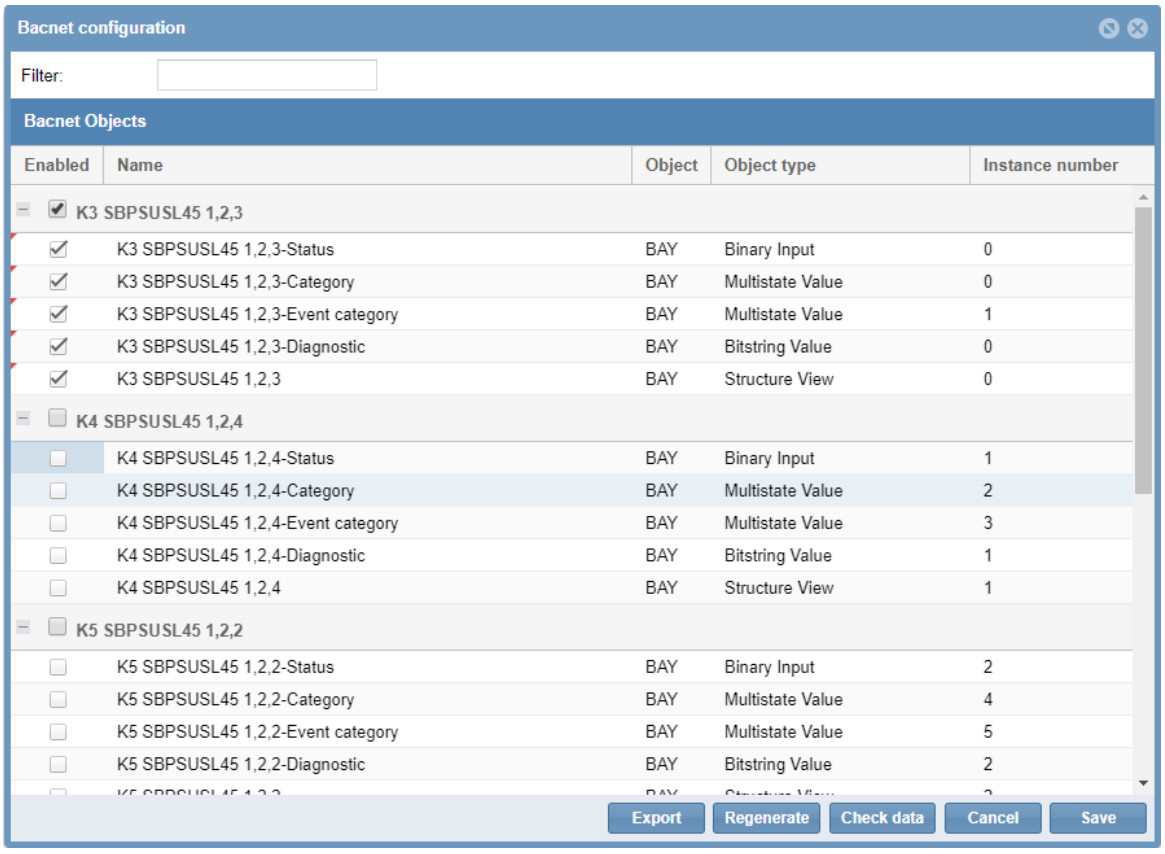
Step	Action
1	Click on the **Reset map** button: the following message will appear to confirm that the Modbus map has been reset correctly 
2	Click on the **Export CSV map** button to save the Modbus map as a CSV file

13 BACNET

13.1 User interface

The SBP2CPY24 operates as a server on BACnet/IP. This allows BACnet clients such as DDC controllers and building management systems to read and control the SBP2CPY24 functions. Two different groups of BACnet objects are managed:

- BACnet objects related to modules;
- BACnet objects related to functions



13.2 Procedures

13.2.1 How to select the BACnet objects

In the menu **BACnet configuration,** under the **System settings** menu, you can define which BACnet objects have to be managed. Follow these steps below:

Step	Action
1	Tick the BACnet objects to be used
2	In the column **Instance number**, you can change the number by clicking the box and entering a new instance number

13.2.2 How to create the EDE-files

To create the EDE files follow the steps below:

Step	Action
1	Tick the BACnet objects to be used
2	Click on the **Check data** button to verify that the objects are correctly defined
3	Click on the **Export** button to save the EDE files

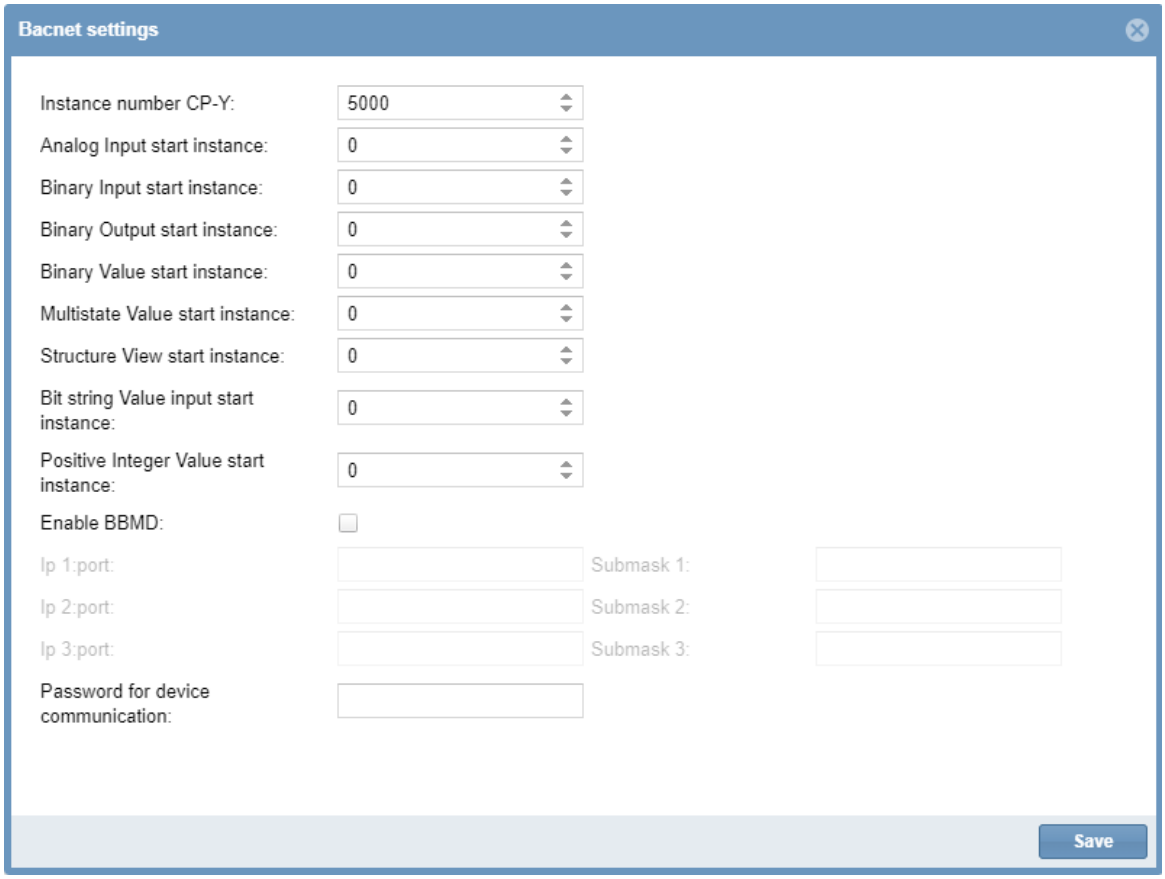
13.2.3 How to Regenerate the BACnet map

If all the BACnet objects have to be reset and a new BACnet map is needed, follow the procedure below: the user has to click on the *Bacnet management* icon and press *Regenerate BACnet objects* button, as shown below.

Step	Action
1	Click on the **Regenerate** button in the BACnet configuration window
2	Click on the **Check data** button to verify that the objects are correctly defined
3	Click on the **Export** button to save an updated version of the EDE files

13.3 Basic settings for instance numbers

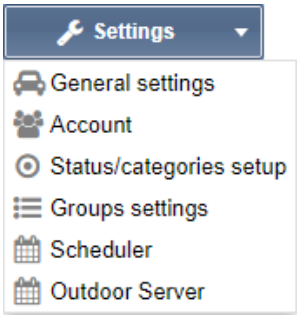
In the ***System settings*** menu, select **BACnet settings**. You can change the instance number for CPY device object (default:5000).



For the other BACnet object types that appear (Binary Input, Binary Output, Analog Input, Analog Output, Analog Value, Multi-state Input, Multi-state output, Bitstring value) there is the possibility to define the start instance number for each object type. The CPY server will then assign the first created object of this type with the entered instance number, and the rest of the objects of this type will be assigned the following numbers consecutively. The individual instance numbers can still be changed manually in the signal view menu if desired.

Settings

By clicking on **Settings** tab from the navigation bar, the following menu will appear:



Use the **Settings** menu to view information about the Car Park Guidance installation and make settings. The menu includes the following sections, as shown below:

Section	Features
General park settings	Set the name of the Car park installation
Account	**Users** and **permissions** management *Note: this window is only accessible to users with administrative rights*
Status/categories setup	Defines the status and categories of the **bays**
Group settings	Defines new groups that are an arbitrary aggregation of various elements: • Bays • Real groups (Sensor line, Lane, Zone) • MZC groups (Master Zone Counter)
Scheduler	Defines the scheduled job-activities
Outdoor Server	Configures the Car Park Outdoor Server

14 VPN SETTINGS

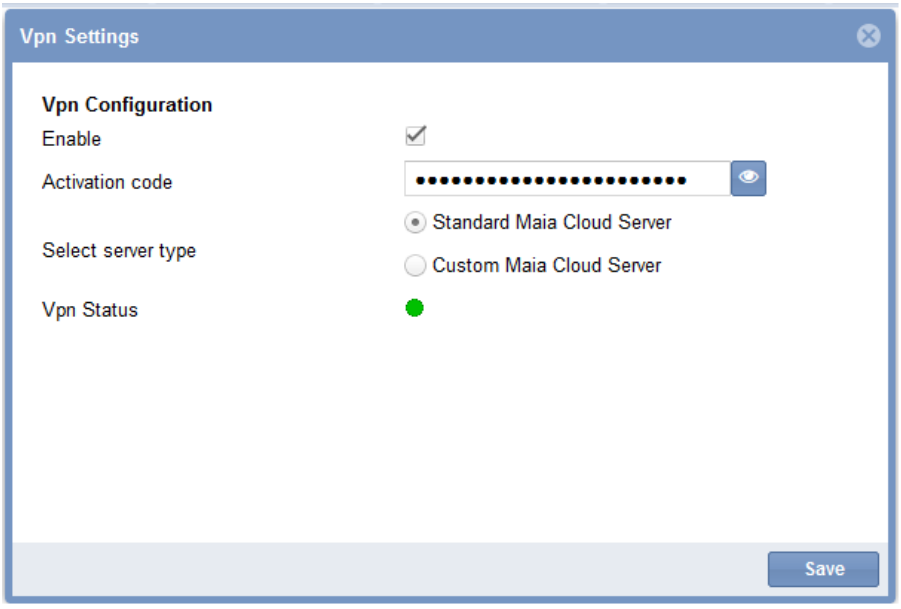
The **VPN settings** menu allows you to manage the MAIA Cloud VPN remote connection and check the VPN connection status.

Notes:

- *For more information about MAIA Cloud, see the MAIA cloud user manual*
- *MAIA Cloud is compatible with SBP2CPY24 version **2.6.3 onwards**.*

14.1 User interface

The **VPN Settings** window includes the following parameters:



Parameter	Description
Enable	If you check it, the VPN service will be available for that device.
Activation code	The Carlo Gavazzi UWP-ACTIVATION-KEY which allows you to activate the device in MAIA Cloud. *For further details, see the How to activate SBP2CPY24 in MAIA Cloud*
Select server type	*Note: The Standard MAIA Cloud Server has to be set.*

VPN Status	🟢 The green icon means that the device is available and you can connect to it through VPN. 🔴 The red icon means that the device is disconnected, and you cannot connect to it through VPN. Following are the possible reasons of this condition: • Wrong activation key. • Wrong DNS or network gateway settings. • Wrong settings in MAIA Cloud. ⚪ The grey icon means that the VPN service is disabled. Check the **Enable** field to use the VPN service.

14.2 Procedures

14.2.1 How to activate SBP2CPY24 in MAIA Cloud

1. Open a browser
2. Log in to your MAIA Cloud organization (https://app.maiaconnect.com)
3. Click ☰ to open the **Main menu**
4. Go to ***Devices > Activate***
5. Complete the activation with the following information:
   - **Device Label** (device name)
   - **Latitude** and **longitude** for the location

   Note: you can navigate the map or use the search box.

   - **UWP-ACTIVATION-KEY**. Write the activation code included in your UWP-ACTIVATION-KEY kit.

   *For further information, go to **Activation key user manual**.*
6. Click ✔
7. Go to your MAIA Cloud home page
8. Click ⋮ **> *Assign credit*** to enable the VPN service for your device.

*Note: to assign credits, you need at least one unused VPN month. To add resources to your organization, you need a UWP-LICENCE code (for further information, go to **Licence code user manual**).*

9.

If you use the version…	Then…
2.6.3 onwards	in few seconds SBP2CPY24 will be online

2.6.3 backwards	10. Update your SBP2CPY24 *Note: the VPN service is available in the SBP2CPY24 version 2.6.3 onwards.* 11. Log in to the CPY server 12. Go to ***System settings*** > ***VPN settings*** 13. Enable the service 14. Write the activation code of your UWP-ACTIVATION-KEY kit *Note: The Standard MAIA Cloud Server has to be set.* 15. Click **Save** *Note: ● the green icon means that the procedure is successfully finished.*

14.3 Things to know

14.3.1 MAIA Cloud ports

14.3.1.1 Inbound communication (through the tunnel)

TCP/IP port number	TCP/IP port description	Purpose
80	HTTP	Access the internal web-server
443	HTTPS	Access the internal web-server
52325	SSH	Remote tunneling; connection from UWP 3.0 to SBP2CPY24

14.3.1.2 Outbound TCP/IP communication

TCP/IP port number	TCP/IP port description	Purpose
53	DNS	Domain name resolution
37	NTP	Access the network time services

14.3.1.3 For tunneling

Access	Ports
MAIA Cloud Web	443/tcp and 1194/udp
MAIA Cloud Connector App software	443/tcp and 1194/udp

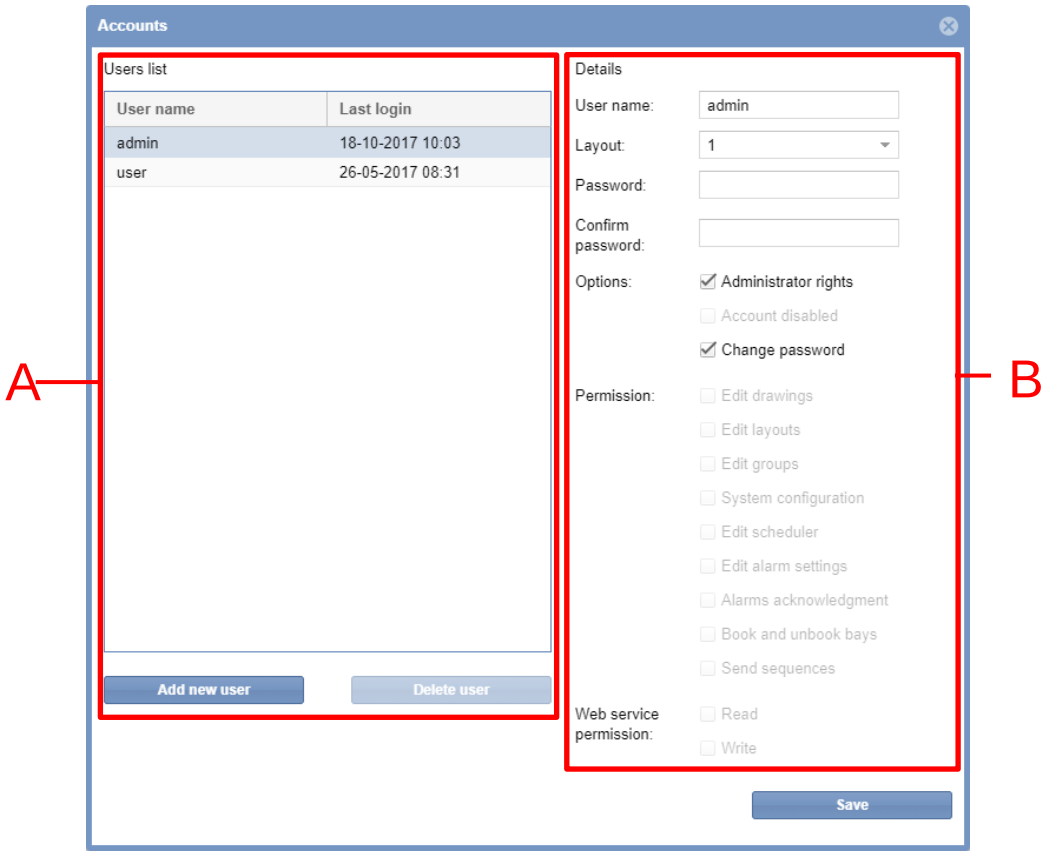
Note: all the above-mentioned ports are supported for the tunneling service.

15 ACCOUNT

15.1 User interface

User Management includes administrative tools to help the administrators manage and control user permissions.

***Note**: this window is only accessible to users with administrative rights*



Accounts window

This section includes information about how contract administrators can manage and control user access to the CPY webserver. The **Account** window includes 2 areas:

Area	Description
A (User list)	Only users with administrative rights can: ▪ Add users ▪ Edit users ▪ Delete users

B (Details and Permissions)	Modify user permissions *Note: an existing user must be selected in the user list before changing their rights*

15.2 Things to know

15.2.1 Users and permissions

The user list is the primary interface for managing users. By clicking on a user from the list (**A area**) the following information are shown:

Detail	Description
Username	Defines the unique identifier of the user account
Default layout	Defines the **layout** applied when the user logs-on to the system
Password and Confirm password	Defines the password the user account should have
Administrator rights	Indicates whether or not a user is an administrator. Administrative rights allow access to the User Management function
Account disabled	If this setting is enabled, the user will not be able to log-on. This is to be used as a security precaution. It might be used, for example, if a new employee needs to be added to the system but his account does not need to be active yet
Change password	This prevents the user from changing the password

A **user**'s permission determines what they can and cannot do in the SBP2CPY solution. A user with administrative rights can change (add or remove) the permissions for a user. The following sections describe these permissions. In general:

Permission	Description
Edit drawing	Defines whether a user can access the edit functionality of **Drawing**
Edit layouts	Defines whether a user can access the edit functionality of **Layouts**
Edit groups	Defines whether a user can access the edit functionality of **Groups**
System configuration	Defines whether a user can manage the **System settings**
Edit scheduler	Defines whether a user can access the edit functionality of **Schedules**
Edit alarm settings	Defines whether a user can modify **Area Alarms** settings and **Space Alarm**

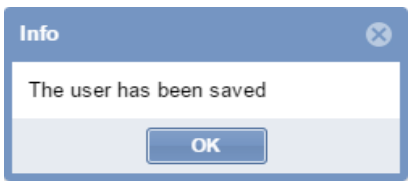
Alarm acknowledgement	Defines whether a user can acknowledge alarms in **Alarm>Status**
Book and unbook bays	Defines whether a user can **book/unbook** parking spaces
Send sequences	Defines whether a user can **send sequences** to the UWP 3.0 controllers
Web service permission	Defines whether a user can manage the **Web service permission (WEB-API)**

15.3 Procedures

15.3.1 Add new user

Note: ONLY the administrator accounts will be present in the list

To add a new user, follow this procedure:

Step	Action
1	Click on **Account** from **Setting** menu
2	Click on **Add new user** below **Users list**
3	In the **Details** section (*B area):* • Enter the username • Select a **Default layout** from the drop-down list • Enter the password in the **password** and **Confirm password** boxes
4	In the **Options** section (*B area):* ▪ Select ◉ check-box to manage the **options** required
5	In the **Permissions** section (*B area):* ▪ Select the ☑ check-box to manage the **permissions** required
6	Click the **Save** button to add the user: Note: if you have filled out all the information correctly, you will see a message informing you that the user has been created  Otherwise, an error message will inform you which part of the form has been filled out incorrectly

15.3.2 Edit user

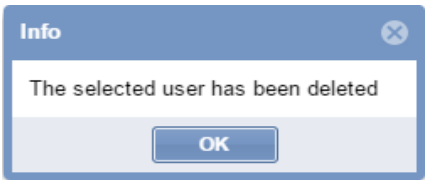
Once you have selected the required user from the list, follow this procedure to edit the user account:

Step	Action
1	Click on **Account** from **Setting** menu
2	Select the **user** you wish to modify from the **User list**
3	In the **Details** section (*B area):* • Change the **Default layout** from the drop-down list • Enter the password in the **password** and **Confirm password** box. *Note: The **username** cannot be changed*
4	In the **Options** section (*B area):* Select the check-box to manage the o**ptions** required
5	In the **Permissions** section (*B area):* ▪ Select the check-box to manage the **permissions** required
6	Click the **Save** button to save the changes

15.3.3 Delete users

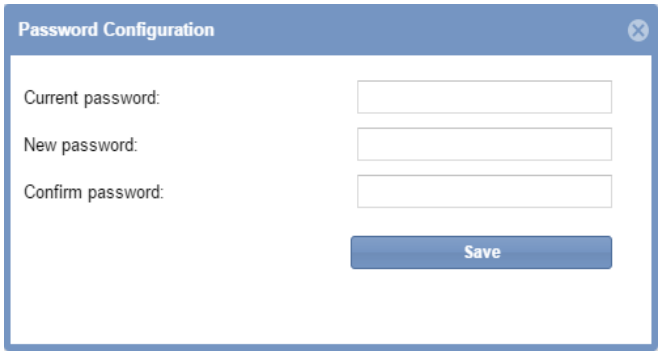
You cannot delete the user you are currently logged on to, as in the account window the Delete user button is not clickable.

To delete a user, follow this procedure:

Step	Action
1	Click on **Account** from **Setting** menu
2	Select the **user** you wish to delete from the **User list**
3	Click on **Delete user** button
4	Click **Yes** on the confirmation dialog to confirm the action *Note: the following message will appear to confirm the user has been deleted correctly, otherwise you will be given an error message detailing what went wrong* 

15.3.4 Change password

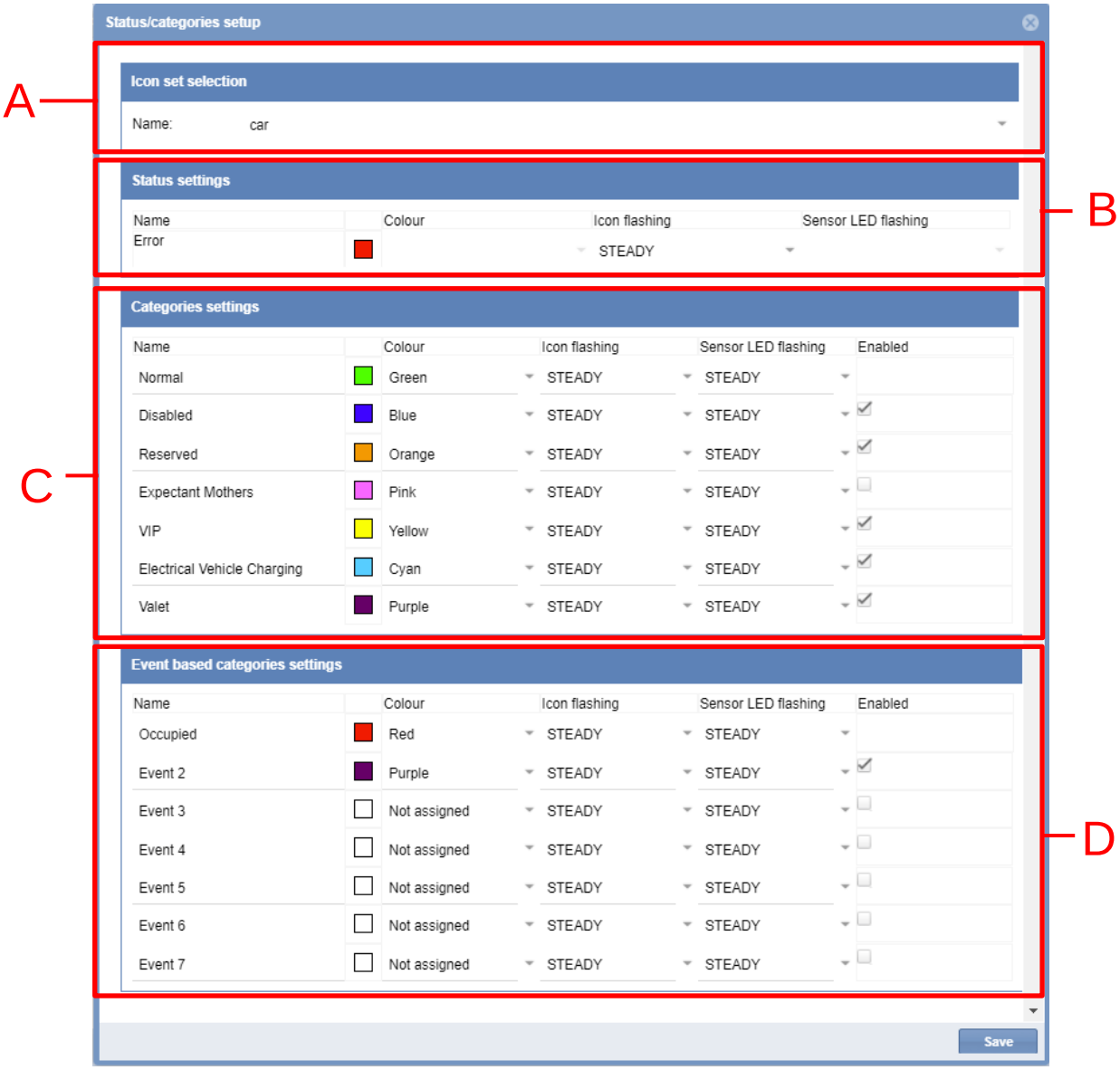
Once logged on, you can change the password from the first tab (User), by following this procedure:

Step	Action
1	Click on **Change password** from **User** menu
2	In the **Password configuration** window:  • Type the password used to log on to the CPY in **Current password** • Enter your new password in **New password**, then enter it again in **Confirm password**
3	Click on the **Save** button to store the new password

16 STATUS/CATEGORIES SETUP

16.1 User interface

The **Status/categories setup** window is where you view or change the attributes of the bays' sensors and the icon appearance of your Car Park project.



Status/categories setup window

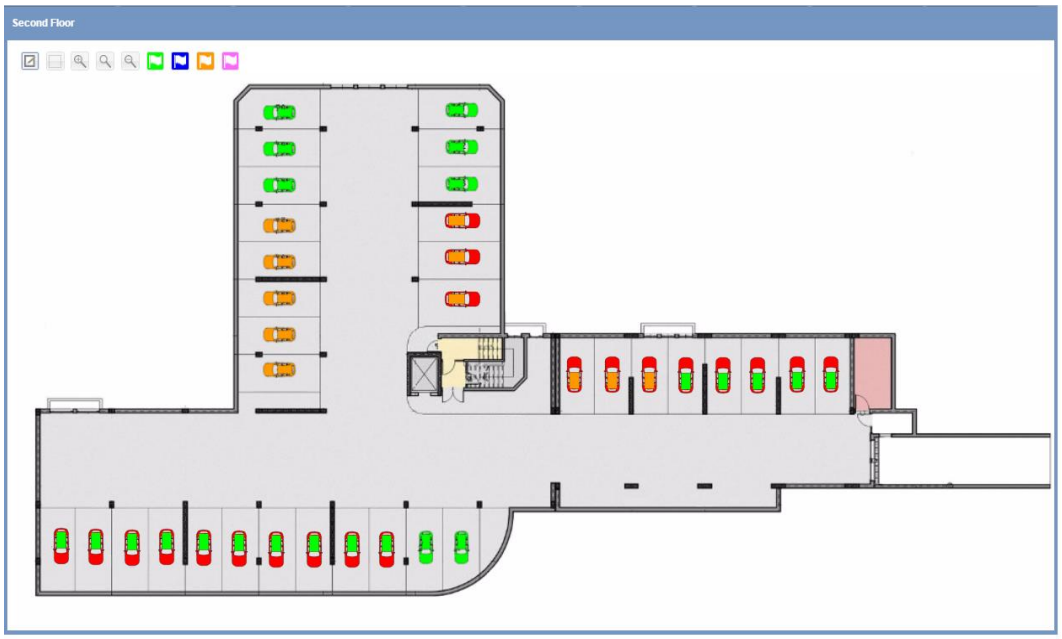
The window includes 4 sections:

Section	Description
A	To select the icon set to show the status and category in the drawing windows. *Note: this is related only to the CPY webserver*
B	Defines the attributes of the bay sensor and icon, in order to identify their **status**
C	Defines the attributes of the bay sensor and icon, in order to identify the **category to which they belong.**
D	Defines the attributes of the bay sensor and icon in order to identify the category based on event

16.2 Things to know

16.2.1 Bay status and category

The picture below shows an example of a drawing window in the CPY webserver



Example – a drawing window

Each car's icon represents a parking space and the icon represents the current status and the category to which they belong. **In this guide a parking space is referred to as a BAY.**

The status is the condition a bay is in and it is monitored in real-time by the software: the different statuses, Occupied, Unknown, Error, are represented by different icons so you can have a clear view of your parking lot. The categories to which the bays belong can be defined according to the Car Park project properties.

In the tables below you can see the meaning of each icon's colouring/pattern, as well as how many bay sensors in the drawing have this status right now.

Status	Default property
Occupied	Bay has car *Note: All occupied bays are represented by icons in the occupy colour (default is RED)*
Error	Bay has its sensor in error
Unknown	Bay is in an unknown status (e.g. at the start-up of SBP2CPY before UWP 3.0 controller sends bay events)

Note: Vacant is the status when a bay has no car; each bay in the vacant status could be set in one of the 7 available categories.

The table below shows the default properties:

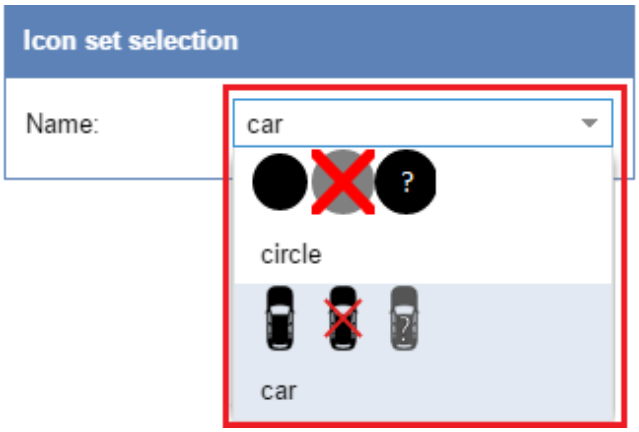
Category	Default property
Normal	Green colour
Disabled	Blue colour
Reserved	Orange colour
Expectant Mothers	Purple colour
VIP	Yellow colour
Electrical Vehicle Charging	Cyan colour
Valet	Violet colour

16.3 Procedures

16.3.1 Change the icons set

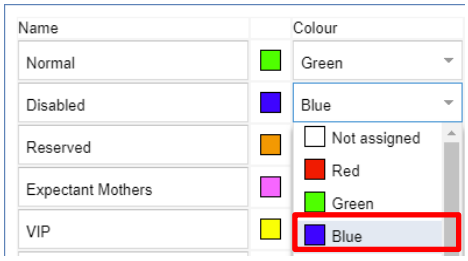
You can select, as global settings, the icon to represent the bay in the **Normal, Error** and **Unknown** statuses. Follow these steps to change the set:

Step	Action
1	Click on **Status/categories setup** from **Settings** menu
2	In the **Icon set selection** click the combo-box:

3	Select the icon set:  The icons are used only in the CPY webserver
4	Click on **Save settings** to store the changes

16.3.2 Change name, colour and flashing behaviour

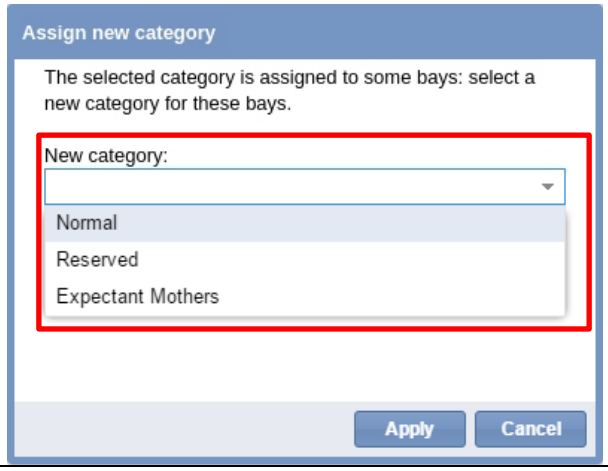
You can change the attributes for each status and category, configurable by:

Step	Action
1	Click on **Status/categories setup** from **Setting** menu
2	In the **Category settings**, in the **Name** column, you can change the name of the default categories.
3	In the **Colours** column, you can select the colour from the combo box:  *Note: the OFF colour is represented by black.*
4	In the **Icon flashing** column, select the behaviour to be applied to the icons used in the CPY webserver. You can choose from: ▪ Steady ▪ Flashing

5	In the **Sensor LED flashing** column, select the behaviour to be applied to the bay sensor LED. You can choose from: ▪ Steady ▪ Flashing 0.5 ▪ Flashing 1.0 ▪ Flashing 2.0
6	In the Enables column, select the ☑ check-box to manage the Category required
7	Click on **Save settings** to store the changes

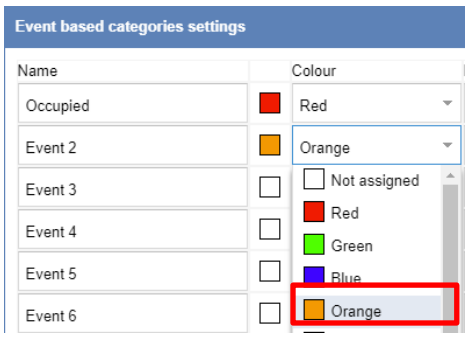
16.3.3 Remove existing categories

You can remove existing categories. Follow this procedure:

Step	Action
1	Click on **Status/categories setup** from **Setting** menu
2	In the **Enables** column, deselect the ☑ check-box to manage the **Category** required
3	
4	Click on **Save settings** to store the changes

16.3.4 Set events based on categories

You can create events based on categories status. Follow these steps to add:

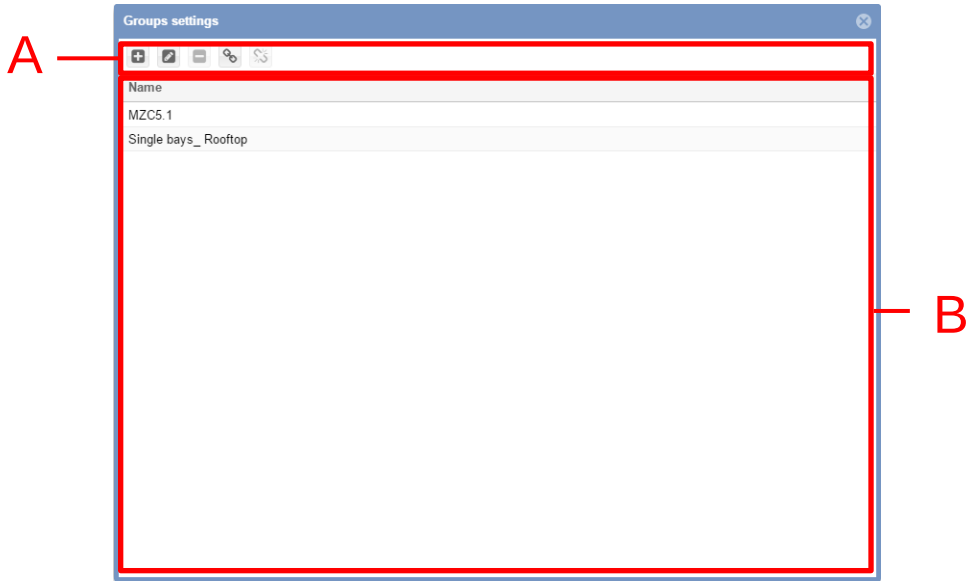
Step	Action
1	Click on **Status/categories setup** from **Setting** menu
2	In the **Event based categories settings** section, in the **Name** column, you can change the name of the default event.
3	In the **Colours** column, you can select the colour from the combo box:  *Note: the OFF colour is represented by black.*
4	In the **Icon Flashing** column, select the behaviour to be applied to the icons used in the CPY webserver. You can choose from: ▪ Steady ▪ Flashing
5	In the **Sensor LED flashing** column, select the behaviour to be applied to the bay sensor LED. You can choose from: ▪ Steady ▪ Flashing 0.5 ▪ Flashing 1.0 ▪ Flashing 2.0
6	In the Enables column, select the check-box to manage the event based category required
7	Click on **Save settings** to store the changes

17 GROUPS SETTINGS

17.1 User interface

The **Groups settings** window is used to define and manage **new groups**, which are an arbitrary aggregation of various elements:

- Bays
- Real groups (Sensor line, Lane, Zone)
- MZC groups (Master Zone Counter)



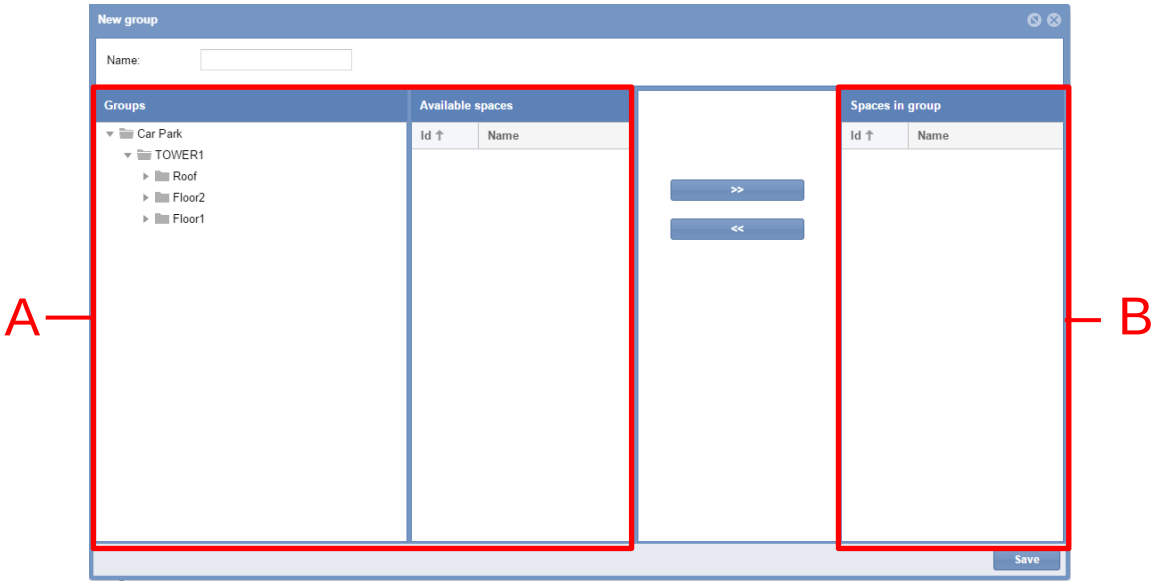
Groups settings window

The **Groups settings** window includes 2 areas:

Area	Description	
A	**Navigation bar**: the commands available are as follows:	
	Command	**Action**
		Create new group
		Edit group
		Delete group
		Create MZC group
		Split MZC group
B	Shows the available groups and MZC groups	

17.1.1 New/edit group window

The **New/Edit group** window appears by clicking on the **Create new group** and **Edit group** option:



New/edit group window

The window includes 2 main areas:

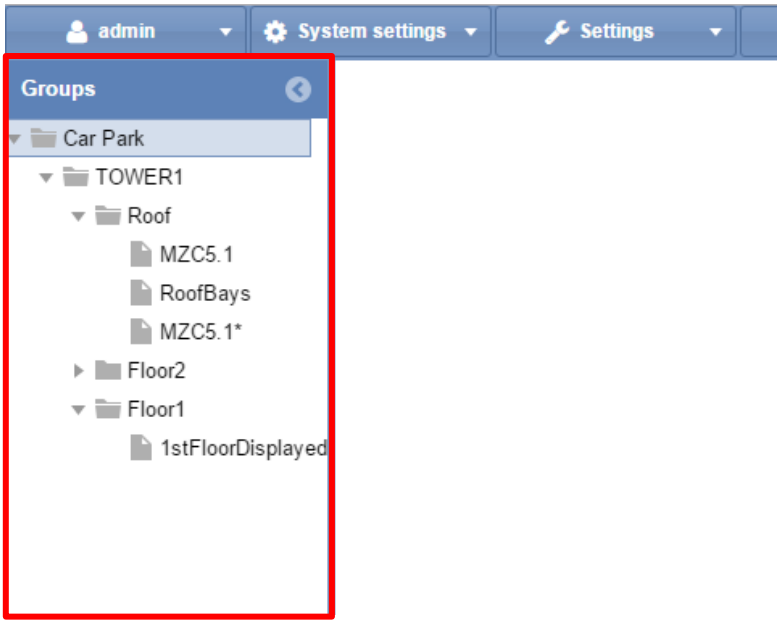
Area	Description
A	**Groups** This section controls which bays (sensors) are listed under **Available spaces** area **Available spaces** A list of available spaces in the group selected, which are not already added to the new group
B	**Spaces in group** A list of spaces added to the new group

17.2 Things to know

17.2.1 Groups definition

A group is the whole of bays in a delimited zone, such as a *floor*, a delimited *perimeter*, an *area*, etc.

You can create a new group starting from the existing groups that are sent by the UWP 3.0 Tool. They can be seen in the left panel of the CPY webserver, as shown in the red rectangle in the picture below:



A Car Park project, typically, consisting of several floors: in this example, there are three floors: **Roof**, **Floor2** and **Floor1**.

The *virtual* groups are useful when:

- You have to manage Master Zone Counter (MZC) groups
- You have to monitor a delimited zone of your Car Park project

17.3 Procedures

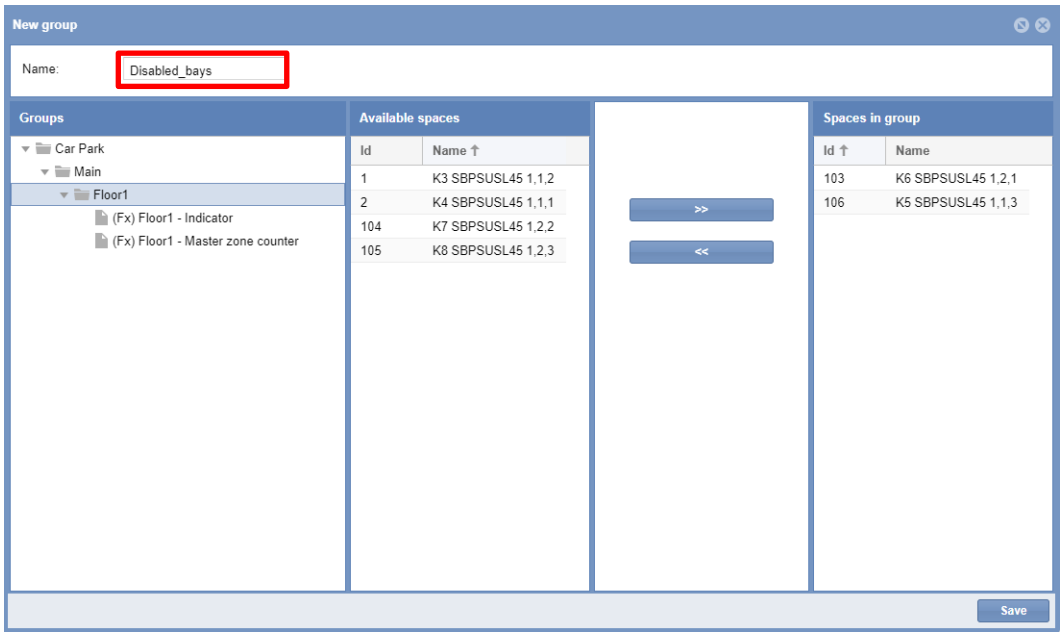
17.3.1 Create new group

To create a new group, follow this procedure:

Step	Action
1	Click on **Groups settings** from **Settings** menu
2	Click on **Create new group** from command bar; the **New Group** window appears
3	In the **name** box enter the name of the new group
4	From the **Groups** select a desired group: *Note: A list of **available spaces** in the selected group are shown*
5	Select a space from the **Available spaces** section. *Note: to select multiple spaces, select a space and hold shift to add several, or hold* *CTRL to select individual spaces*
6	**Adding spaces to a group** Click the >> button to add the selected spaces to the **Spaces in group** section
7	**Removing spaces from a group** To remove one or more spaces, 1. Select space(s) from the **Spaces in group** section 2. Click the << button to remove the selected spaces from **Spaces in group**. 3. The selected spaces will be added to the **Available spaces** section *Note: to select multiple spaces, select a space and hold shift to add several, or hold* *CTRL to select individual spaces*
8	Click on **Save** button to create the new group

17.3.1.1 Example

The example below shows a new named *Disabled_bays* with K5 and K6 sensors. The new group is shown in Group settings window and it appears in the Group panel of CPY Webserver



17.3.2 Edit a group

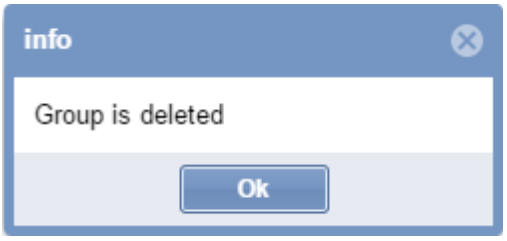
To edit an existing group, follow this procedure:

Step	Action
1	Click on **Groups settings** from **Settings** menu
2	Select **a group** from the list
3	Click on **Edit group** from command bar: the **Group window** appears with the properties of the selected group
4	***Adding spaces to selected group*** Click the >> button to add the selected spaces to the **Spaces in group** section

5	***Removing spaces from the selected group*** To remove one or more spaces, 1. Select space(s) from the **Spaces in group** section 2. Click the << button to remove the selected spaces from **Spaces in group**. 3. The selected spaces will be added to the **Available spaces** section *Note: to select multiple spaces, select a space and hold shift to add several, or hold CTRL to select individual spaces*
6	*Click on **Save** button to store the changes*

17.3.3 Delete a group

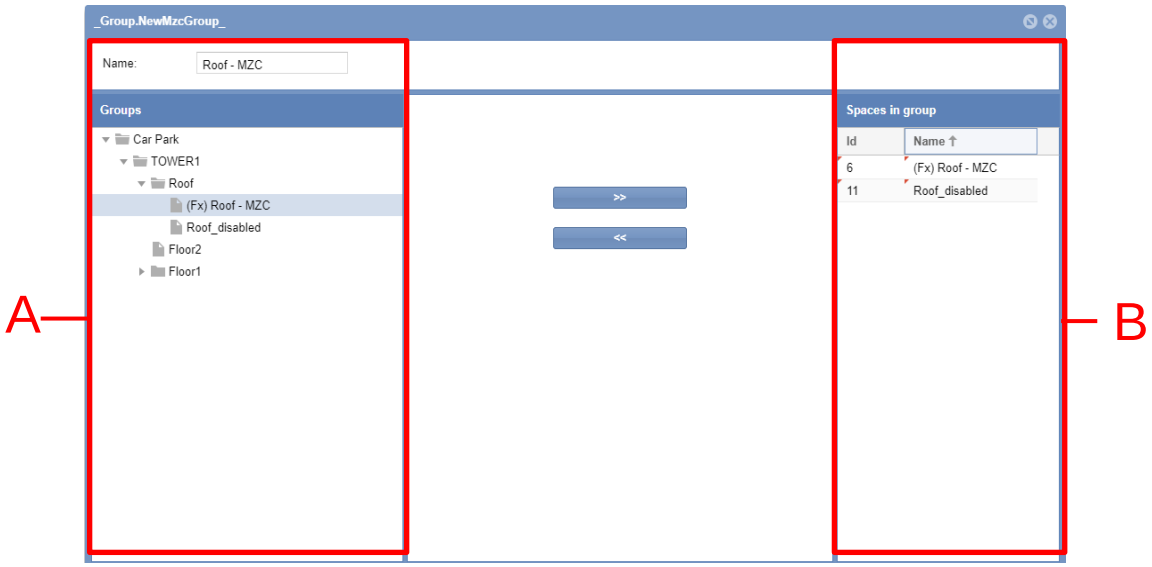
To delete an existing group, follow this procedure:

Step	Action
1	Click on **Groups settings** from **Settings** menu
2	*Select **a group** from the list*
3	Click on **Delete group** from command bar; the **selected group will be removed**  *Note: All the spaces which were part of the deleted group will be reassigned to the original group of the car park structure, sent by the UWP 3.0 Tool*

17.4User interface

17.4.1 Master Zone Counter (MZC) group

The **MZC group** window appears by clicking on the **Create MZC group** button from the **Group settings** command bar:



MZC group window

The window includes 2 main areas:

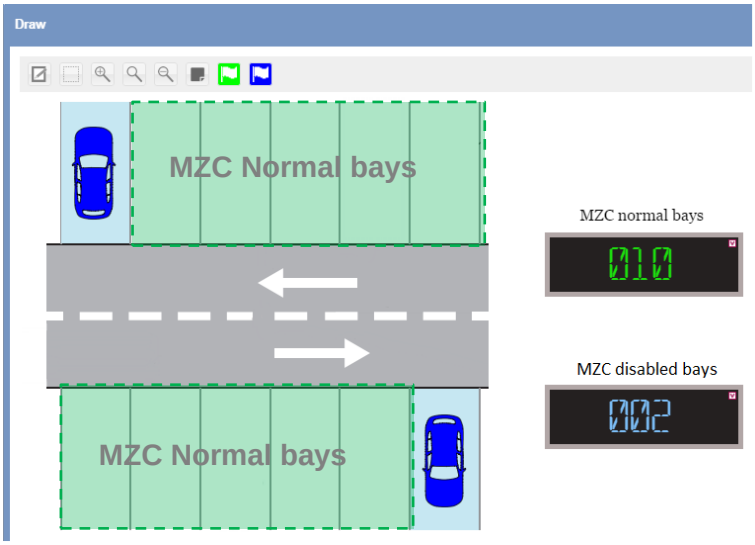
Area	Description
A	**Groups** This section shows the available MZC groups *Note: The Master zone counter (MZC) functions have to be created by the UWP 3.0 Tool. See the UWP 3.0 Tool Car Park Manual*
B	**Spaces in group** Shows the groups merged together to make the **MZC group**

17.5Things to know

17.5.1 Operating principles of the MZC group

The MZC functions represent the status of a Car Park area monitoring the entrance and exit points by counter sensors (DPO). The Master Zone Counter can work as a stand-alone zone count system or in a mixed solution together with the Car Park single spot detection system (lane sensors).

The picture below shows an MZC Area with a total of 12 bays: 10 bays are standard and 2 bays are equipped with lane sensors. *Note: The MZC bay icons are not available*



Example – a drawing window

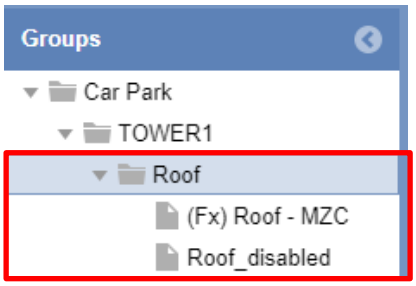
The MZC functions must be created in the UWP 3.0 Tool, please refer to the UWP 3.0 Tool; The CPY webserver is in charge of the following operations:

- MZC function is combined with a lane sensor group
- The MZC value can be Reset / Set manually or scheduled by an action
- Union of two MZC groups

The CPY web server offers the functionality to manage the split between standard bays (*e.g.* **Normal** bays) and reserved bays (*e.g.* **Disabled** bays). The reserved bays are implemented as a single space system where each bay is equipped with a Car Park lane sensor, the total number of standard bays in a Car Park Area is managed by MZC function from the UWP 3.0 Tool.

17.5.1.1 Example of an MZC area with lane sensors bays inside.

As illustrated in the figure above, a *Master Zone Counter* Area has a total number of 12 parking lots where 10 bays are standard and 2 bays are equipped by lane sensors.



In the figure shown on the left, the groups involved in MZC are represented in the CPY as follows:

(Fx) Roof MZC is the *MZC function* defined in the UWP 3.0 Tool for standard bays

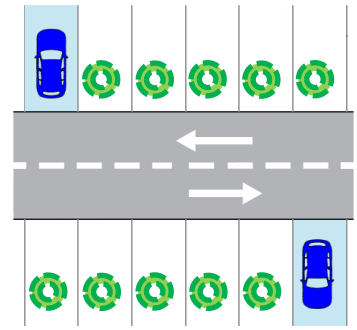
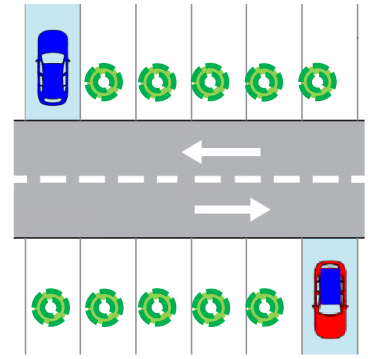
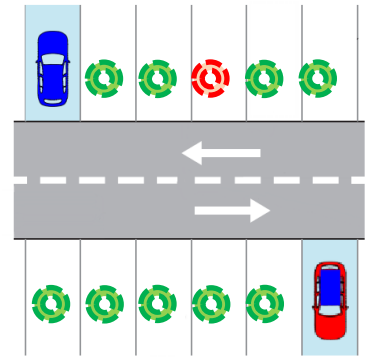
Roof_disabled is a virtual group created in the CPY that defines the lane sensor bays for reserved bays

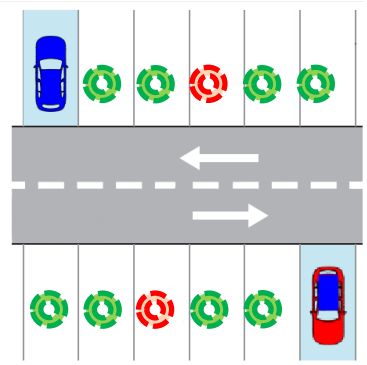
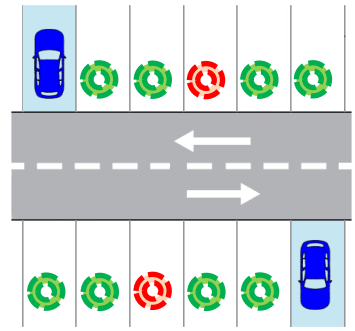
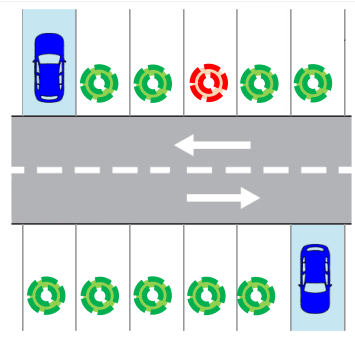
All 12 bays are counted by the MZC function but the status of 2 Disabled bays are managed by the lane sensor. In order to perform the right counts, you can create a new virtual group as a union of two groups. the two groups above must be combined by means of a *MZC group* functionality, otherwise the system counts 14 bays instead of 12 bays.

The precise reserved bay availability information being achieved is calculated by the MZC Group as:

MZC vacant bays = MZC function value - Lane sensor bays

The table below shows an e*vents example*

Event	MZC Occupied bays (Normal + Disabled)	Disabled Occupied/Total	MZC Normal bays Occupied/Total
The MZC area has no cars 	0/12	0/2	0/10
A car enters in the MZC area and parks in a bay reserved for **Disabled** category 	1/12	1/2	0/10
A second car enters in the MZC area and parks in a **Normal** bay 	2/12	1/2	1/10

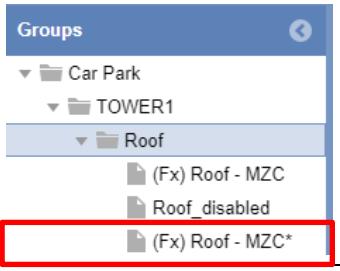
A third car enters in the MZC zone and parks in a **Normal** bay 	3/12	1/2	2/10
The car parked in the **Disabled** bay leaves the area, the MZC value is still the same. 	2/12	0/2	2/10
A car parked in a **Normal** bay leaves the area, the MZC value will be updated 	1/12	0/2	1/10

Note: the MZC bays have not got any available icon that can be used in a Drawings. In the example above it is used this *symbol for a better understanding.*

17.6 Procedures

17.6.1 Create an MZC group (Union of an MZC function and a lane sensor group)

To create an *MZC group*, combining an MZC function and a lane sensors virtual group, the result is a new virtual group that is the union of the two groups, follow this procedure:

Step	Action
1	Click on **Groups settings** from the **Settings** menu
2	Click on **Create MZC group** from the command bar; the **MZC group window** appears
3	In the Groups section of the window, select the MZC function and the lane sensors group you need to merge into a new MZC group Note: you must select at least one MZC function created in the UWP 3.0 Tool
4	Click the >> button to add the selected groups in the **Spaces in group** section
5	Repeat steps 3-4 to select any other group to be added to the **Spaces in group** section
6	Click on the **Save** button to create the new *MZC group,* it will be added in the *Group settings* window. *N.B. The new MZC Group is also added in the Groups panel as a new node.* *A * symbol is added to the ending* 

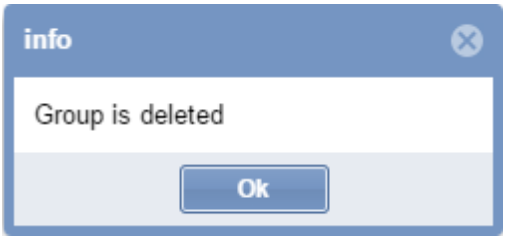
17.6.2 Edit a group

To edit an existing MZC group, follow this procedure:

Step	Action
1	Click on **Groups settings** from **Settings** menu
2	Select **an existing MZC group** from the list
3	Click on **Edit group** from command bar: the **MZC group** window appears with the properties of the selected MZC group
4	Edit the group then click on **Save** button to store the changes

17.6.3 Split an MZC group

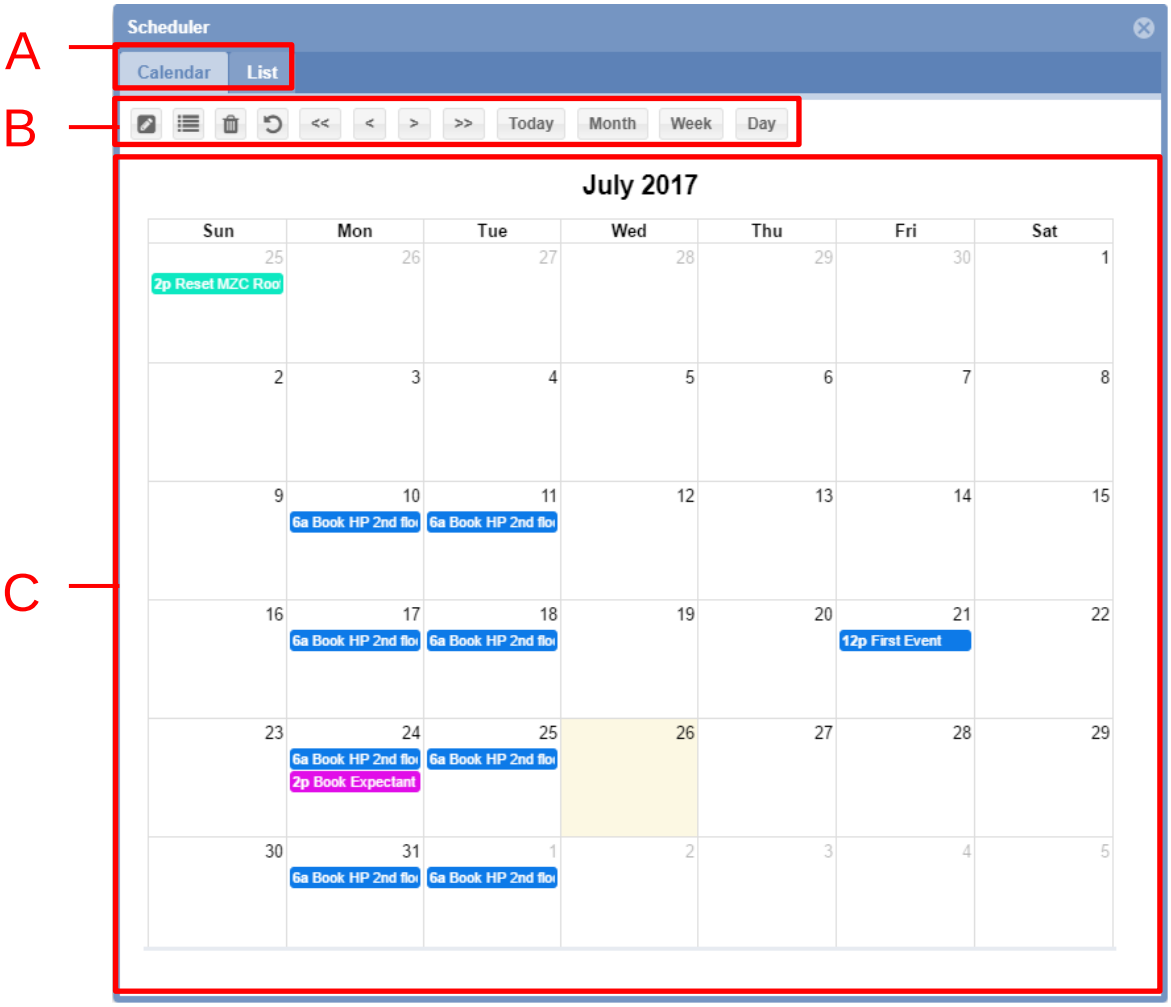
To split an existing MZC group, follow this procedure:

Step	Action
1	Click on **Groups settings** from **Settings** menu
2	*Select **an existing MZC group** from the list*
3	Click on **Split MZC group** from command bar: the selected group will be removed 

18 SCHEDULER

18.1 User interface

If you click on the **Settings** tab from the command bar, then **Scheduler**, the following window will appear:

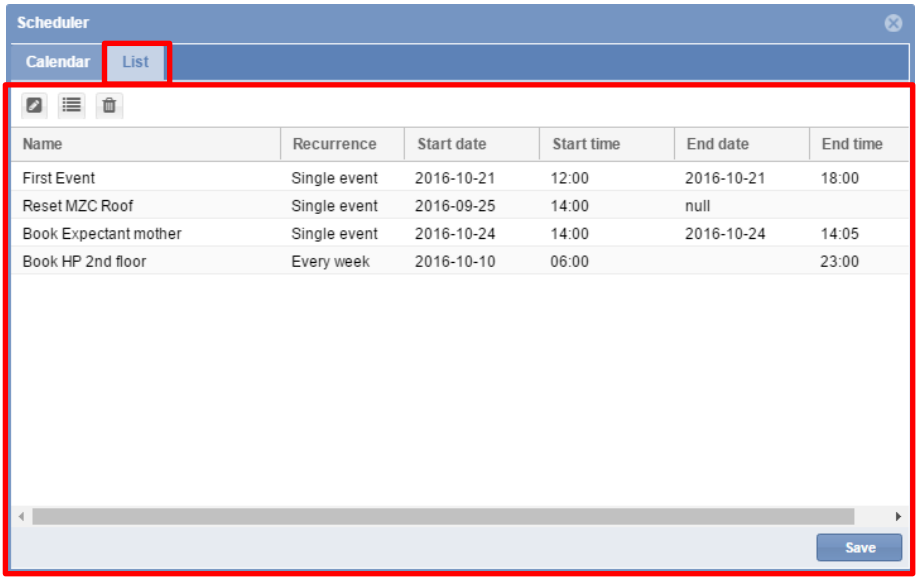


Scheduler window

The **Scheduler** window controls the scheduled events in order to:

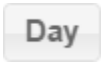
- Set group category (Booking of parking bays)
- Set a value for a MZC group (Reset or Set a specific value)
- Run a **UWP 3.0 sequence**
- Send commands to displays

The **Scheduler** window includes these sections:

Section	Description
A	Set the Scheduler view: • **Calendar** *(default view)* • **List** displays a timeline for the selected month. 
B	The **Scheduler** toolbar contains the buttons for moving to the previous or next period, changing the view and settings
C	The **Calendar** View shows the calendar by day, week, month, or as an Event list

18.1.1 Scheduler toolbar

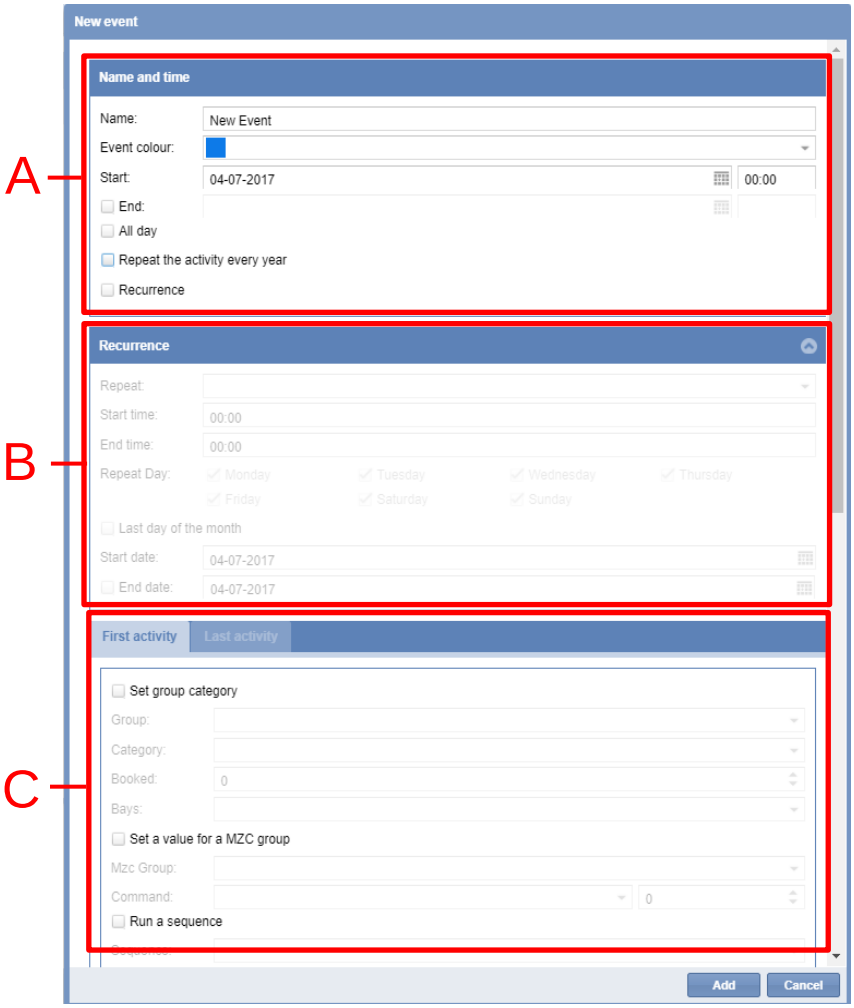
The **Scheduler toolbar** contains the buttons to manage the events and change the view of the calendar. The available tools are as follows:

Command	Action
	Edit event
	Edit series
	Delete event
	The **Restore default state** button will reload the schedule from the server. If clicked when changes have been made to the schedule, a prompt will appear to confirm whether the user wants to reload the schedule and discard the changes made.
	Moves the current view backwards a year or a week, depending on the view selected
	Moves the current view backwards a month, week or day, depending on the view selected
	Moves the current view forwards a month, week or day, depending on the view selected
	Moves the current view forwards a year or a week, depending on the view selected
	Centres the view on the current date, displaying the day, week or month, depending on the view selected
	Changes view of the Schedule to month
	Changes view of the Schedule to week
	Changes view of the Schedule to day

18.2User interface

18.2.1 New/Edit event window

The following window will appear when you create or edit an event:



New Event window

The **New/Edit event** window is divided into 3 parts, as you can create or edit an event to perform one or more actions. A scheduled event can be executed once or it can be recurrent.

18.2.1.1 Name and time section

The table below describes the fields of the **name and time** section as follows:

Field	Description
Name	Defines the **name** of the event
Event colour	Defines the colour of the event
Start	Defines the start **date** and **time** for the event *Note: This is disabled if a recurring event*
End	Defines the end **date** and **time** for the event *Note: This is disabled if a recurring event*
All day	Check if the event should occur all day
Repeat the activity every year	Check if the event should occur every year at the same time and date
Recurrence	Check if you want to make the event recurring

18.2.1.2 Recurrence section

The **Recurrence** section is enabled **only** if the Recurrence checkbox above is ticked. The fields are as follows:

Field	Description
Repeat	Defines the frequency with which the event action(s) will be repeated
Start time	Defines the **start time** for the recurring event action(s)
End time	Defines the **end time** for the recurring event action(s)
Repeat Day	Defines the **days of the week** for the recurring event action(s) *Note: This is disabled if Every month is selected*
Last day of the month	Check if the event should occur every last day of the month *Note: This is disabled if Every week is selected*
Start date	Defines the **start date** for the recurring event action(s)
End date	Defines the **end date** for the recurring event action(s)

18.2.1.3 First Activity/Last activity tabs

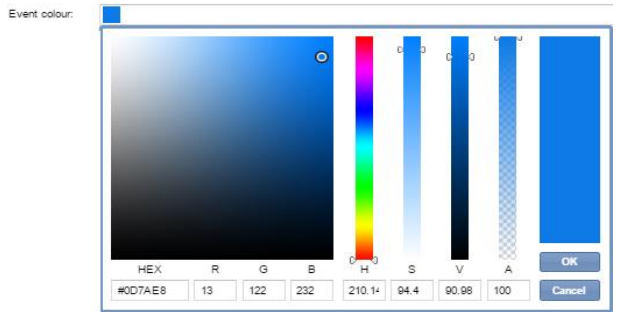
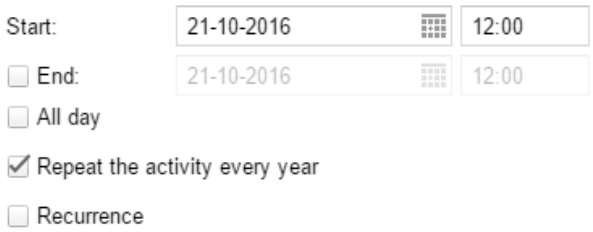
In the **First activity / Last activity** tabs you can define the different actions you want to perform according to the scheduled time and date. See the table below:

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Set group category</td><td>Set the group category in which the parking bays will be booked, defined as follows:
<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Group</td><td>The group containing the bays that will be booked</td></tr>
<tr><td>Category</td><td>The category containing the bays that will be booked</td></tr>
<tr><td>Booked</td><td>Number of bays in the group that will be booked</td></tr>
<tr><td>Bays</td><td>Select the single bays that will be booked</td></tr>
</table></td></tr>
<tr><td>Set a value for a MZC group</td><td>Set the value for the Master Zone Counter, defined as follows:
<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>MZC group</td><td>The MZC group that has to be changed</td></tr>
<tr><td>Command</td><td>Set the command type, such as Reset or numeric value</td></tr>
</table></td></tr>
<tr><td>Run a sequence</td><td>Defines the UWP 3.0 sequence that has to be executed</td></tr>
<tr><td>Send command to display</td><td>Defines the text that has to be displayed:
<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Display</td><td>The display that will show the text</td></tr>
<tr><td>Command</td><td>The text will be shown</td></tr>
</table></td></tr>
</table>

18.3 Procedures

18.3.1 Create a new event

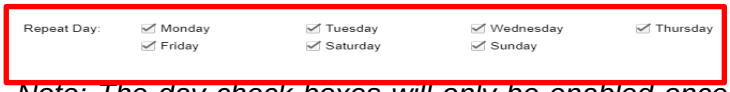
To create a new scheduled event, follow this procedure:

Step	Action
1	Click on any blank area (e.g. a **Day box**) on the calendar grid to create a new event
2	In the **Name** box, type a description
3	Click on the down arrow next to the **Event colour**
4	Select the colour you want from the palette 
5	Select **date and time** for your event, click the date and time boxes, and select when your event starts and ends 
6	Under the date and time, check the box next to **Recurrence**
7	Choose how often you want the event to be repeated, and when you want the repeating event to end. See Make an existing event repeated for more details
8	In the **Starting action** and **Ending action** tabs set the actions you want to manage with the event (see EVENT PROCEDURES)
9	Click **Add**
10	When you have finished creating your event, click **Save** from the **Scheduler window** to store the changes

18.3.2 Make an existing event repeated

To make an event recurring, follow this procedure:

Step	Action
1	Open the **Scheduler** window
2	Click the event you want to be recurring
3	Under the date and time, check the box next to **Recurrence.** In the Recurrence section, choose how often you want the event to be repeated, and when you want the repeating event to end.
4	Choose the drop-down next to the **Repeat** box to change the recurring event to Every week or Every month:
5	Select in the **Start time** box the time of day the recurring event will start
6	Select in the **End time** box the time of day the recurring event will end
7	Select in **Start date** the date the recurring event will start
8	Select in **End date** the date the recurring event will end *Note: The Recurrence will run until it is manually removed from the Scheduler*
9	Click **Add**
10	When you have finished editing your event, click **Save** to store the changes

Frequency	Option
Every week	Select in the **Repeat days** section the days the event will occur:  *Note: The day check boxes will only be enabled once Every week has been selected*
Every month	Check the optional parameter Last day of the month to enable

18.3.3 Make changes to repeating events

Choose which events in the series you want to update, as a single event or the entire series

To edit only the selected event: to change the options for one event that is part of a series, follow this procedure:

Step	Action
1	Open the **Scheduler** window
2	Open the event that you want to change, then click on the **Edit event** button
3	In the **date and time** section, change the options, such as name, time, that you want to change
4	In the **Recurrence** section, change the recurrence options
5	In the **Starting/ending action** tabs, change the actions that have to be executed
6	Click on **Add**
7	When you have finished editing your event, click **Save** to store the changes

Note: This event will be updated, but the details for all the other recurring events will stay the same.

To edit the entire series: to change the options for the entire series, follow this procedure:

Step	Action
1	Open the **Scheduler** window
2	Click one of the elements of the series, then click on the **Edit series** button
3	In the **date and time** section, change the options, such as name, time, that you want to change
4	In the **Recurrence** section, change the recurrence options
5	In the **Starting/ending action** tabs, change the actions that have to be executed
6	Click on **Add**
7	When you have finished editing your event, click **Save** to store the changes

Note: All events from the past and the future will be updated.

18.3.4 EVENT PROCEDURES

The scheduled event can be used to execute one or more actions at the **starting date** and/or at the **ending date**.

18.3.4.1 Configure an event to book parking bays

In the **Starting action / Ending action** tabs of the **New event** window you can define the action to book parking bays, as follows:

Step	Action
1	Set the date and time for the event (see the Procedures)
2	Check **Set group category** to enable the booking action
3	Choose the drop-down next to **Group** to select the node (group) of your Car Park project
4	Choose the drop-down next to **Category** to select the category of your Car Park project
5	Enter the quantity of bays you want to book in the **Booked** field
6	Click on **Add**
7	When you have finished editing your event, click **Save** to store the changes

18.3.4.2 Set a value for MZC group

In the **Starting action / Ending action** tabs of the **New event** window you can define the action to set a value for a Master Zone Counter, as follows:

Step	Action
1	Set the date and time for the event (**Recurrence**) (see Make an existing event repeated procedure)
2	Check **Set a value for a MZC group**
3	Choose the drop-down next to **MZC Group** to select the Master Zone Counter Group of your Car Park project
4	Choose the drop-down next to **Command** to select **Reset** or **Set a value**
5	If the **Set a value** option is selected, enter the value in the box next to **Command**
6	Click on **Add**
7	When you have finished editing your event, click **Save** to store the changes

18.3.4.3 Run a UWP 3.0 sequence

In the **Starting action / Ending action** tabs of the **New event** window you can select which SB2PWEB sequences will be executed according to the scheduler, as follows:

Step	Action
1	Set the date and time for the event (**Recurrence**) (see the Procedures)
2	Check **Run a sequence**
3	In the **Sequence** field select the sequence to be executed
4	Click on **Add**
5	When you have finished editing your event, click **Save** to store the changes

18.3.4.4 Send command to display (this feature is only for SBPDIS9 displays)

In the **Starting action / Ending action** tabs of the **New event** window you can select which text will be displayed according to the scheduler, as follows:

Step	Action
1	Set the date and time for the event (**Recurrence**) (see the Procedures)
2	Check **Send command to display**
3	Choose the drop-down next to **Display** to select the display of your Car Park project
4	Choose the drop-down next to **Command** to select the command you want to be shown *Note: **Special text n refers** to the SBPDIS9 display only*
5	Click on **Add**
6	When you have finished editing your event, click **Save** to store the changes

18.3.4.5 Delete an event

To delete a single event, follow this procedure:

Step	Action
1	Open the **Scheduler** window
2	Click on the event you want to delete
3	Click

18.3.4.6 Delete a series (recurring event)

To delete a recurring event, follow this procedure:

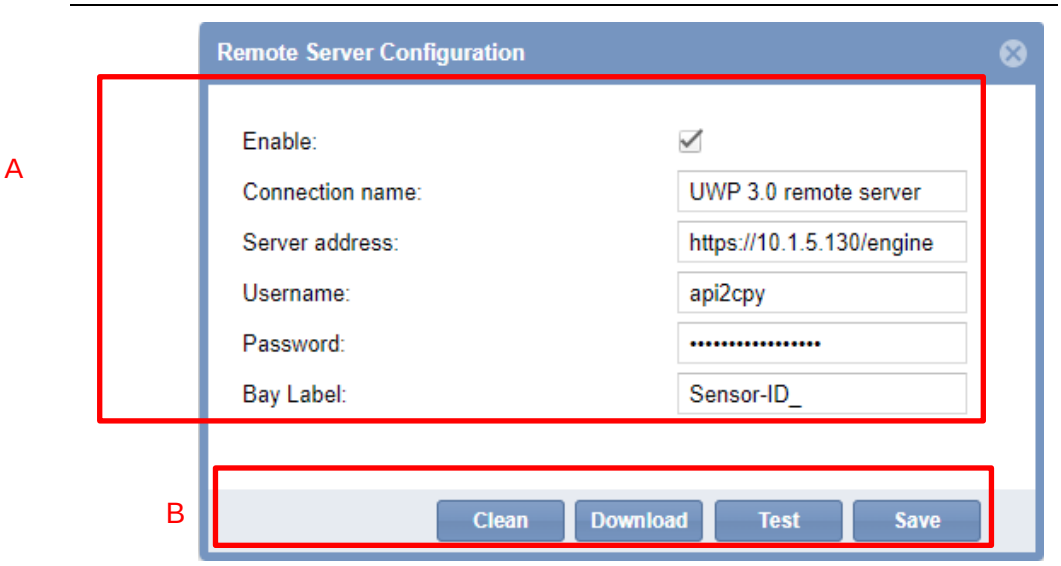
Step	Action
1	Open the **Scheduler** window
2	Click on an event part of a series: the following window appears:
3	**Delete repetition:** delete this event, but keep all the other future events; **Delete series:** delete this event and all the future events;

19 REMOTE SERVER CONFIGURATION

To manage digital signals provided by the remote server as car park sensors, like the indoor parking bays, the installer has to configure the **Remote Server** connection parameters in the CPY Server. The CPY server, using those parameters, will set a connection to the remote server and through the API service will collect the occupancy information of all the signals configured and enabled in the remote server.

19.1.1 User interface

In the **Remote Server configuration** window, the installer can manage the connection parameters. This window also shows the expiring dates of the license and the service.



Remote Server Configuration window

Area	Description
A	Sets the **Remote Server configuration** parameters
B	Buttons to **manage** the **Remote Server configuration** and data

19.2Things to know

19.2.1 Remote Server

The **Remote Server** functionality uses a proprietary API service to get and collect the occupancy information of the digital input signals, in real-time, in the CPY Server. Following are the information you get:

- **Digital signal status**, i.e., the contact status of the signal.
  Vacant = the contact status is OFF
  Occupied = the contact status is ON
- **Diagnostic information** of digital signals (such as communication problem, hardware issue, and so on.)

19.3Procedures

19.3.1 Set the Remote Server configuration

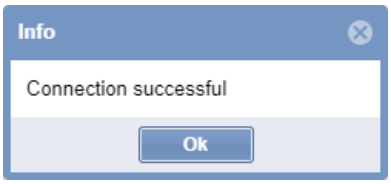
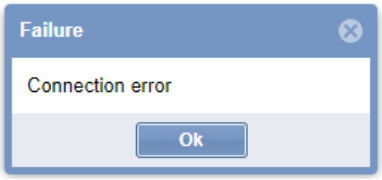
To configure the CPY server with the parameters of the controller from which the information are read through the API web service, follow the procedure below.

*Note: ONLY one **Remote Server** can be managed in a CPY Server configuration.*

Step	Action
1	Open the **System** tab from the navigation bar, then open the **Remote Server** tab
2	**Enable** ☑ the service
3	Type an identification name in the **Connection name** field. It will be shown on the right panel.
4	Type the **Server address**, i.e., the IP address or the DynDNS of the UWP 3.0 **Remote server** with the digital inputs signals you want to manage. It appears as follows: https://*[UWP 3.0 IP address or DynDNS]*/engine
5	Type the **username** and **password for the API service** *Note: these parameters have to match those set in the UWP 3.0 **Remote server** API service.*
6	**Save** the changes

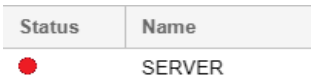
19.3.2 Check the connection between the Remote Server and the CPY Server

To test the API service connection between the **Remote Server** and the CPY Server, follow this procedure:

Step	Action
1	Open the **System** tab from the navigation bar, then open the **Remote Server** tab
2	Click the **Test** button to start the test. This confirmation message should appear:  If an error appears, check both devices to be connected and the information to be correct. 

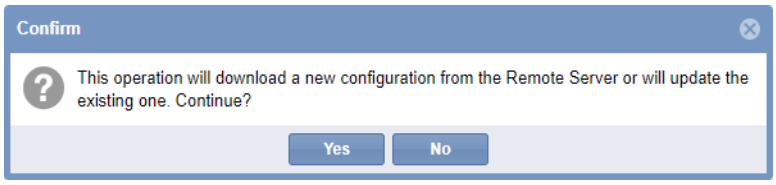
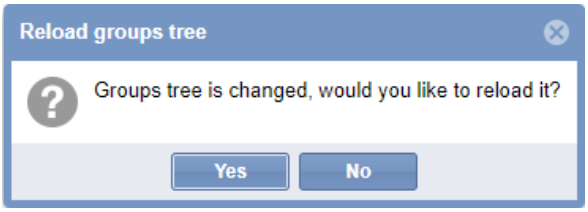
19.3.3 How to check the communication

The installer can see the connection status in the right panel:

Connection status	Description
	The **Remote Server** communicates properly with the CPY Server
	The **Remote Server** does not communicate to the CPY Server. You have to check the network connection/settings and the API service configuration.

19.3.4 Download the Remote Server configuration

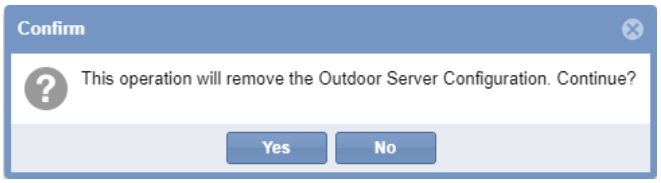
After setting the parameters of the UWP 3.0 **Remote Server**, the installer can download the configuration of digital input signals so to add their information to the CPY Server. Please follow the procedure below:

Step	Action
1	Open the **System** tab from the navigation bar, then open the **Remote Server** tab
2	Click the **Download** button. The following message appears:  *Note: this operation will download a new **Remote Server** configuration or will update the existing one.*
3	Click **Yes** to download/update the configuration.
4	Click to close the **Remote Server Configuration** window.
5	Click **Yes** to update the CPY configuration accordingly. 

19.3.5 Clean the data of Remote Server Configuration

To remove the configuration of the **Remote Server** digital inputs and the relevant historical data, follow the procedure below:

Step	Action
1	Open the **System** tab from the navigation bar, then open the **Remote Server** tab.

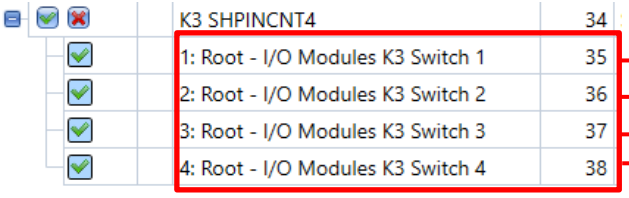
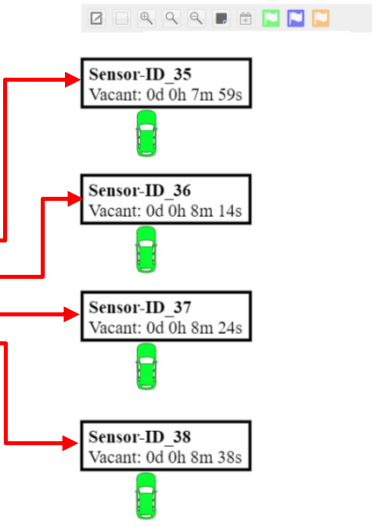
2	Click **Clean**. The following warning message appears: 
3	Click **Yes** to complete the cleaning procedure.

19.3.6 How to check the association between the digital signal and the Car Park sensor

The association between the digital signal (configured from the UWP 3.0 Tool) and the CPY Server is carried out through ID parameter. The system assigns this parameter to each signal automatically (the user cannot change it) and each signal added to the configuration it will be shown in the CPY Server with that ID.

This ID has to be considered during the system planning and configuration in order to identify each signal as CPY server sensor easily.

The below example shows the association of four digital signals of a Smart Dupline® module and the relevant sensors in the CPY Server Car Park:

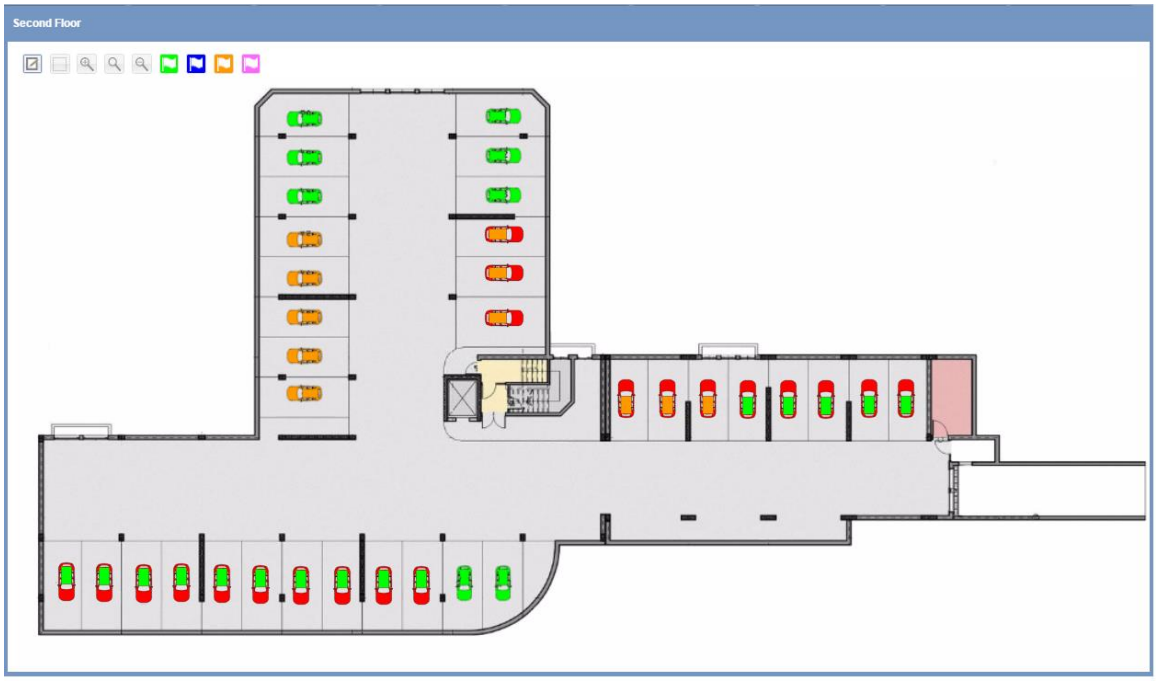
UWP 3.0 Tool - Car park digital window	CPY Server - Drawing
	

Click here to see the video of this procedure.

20 DRAWING

20.1 User interface

The **drawings** window gives you a real complete overview of the layout of the Car Park installation and shows the current status of the parking bays included in the drawing.



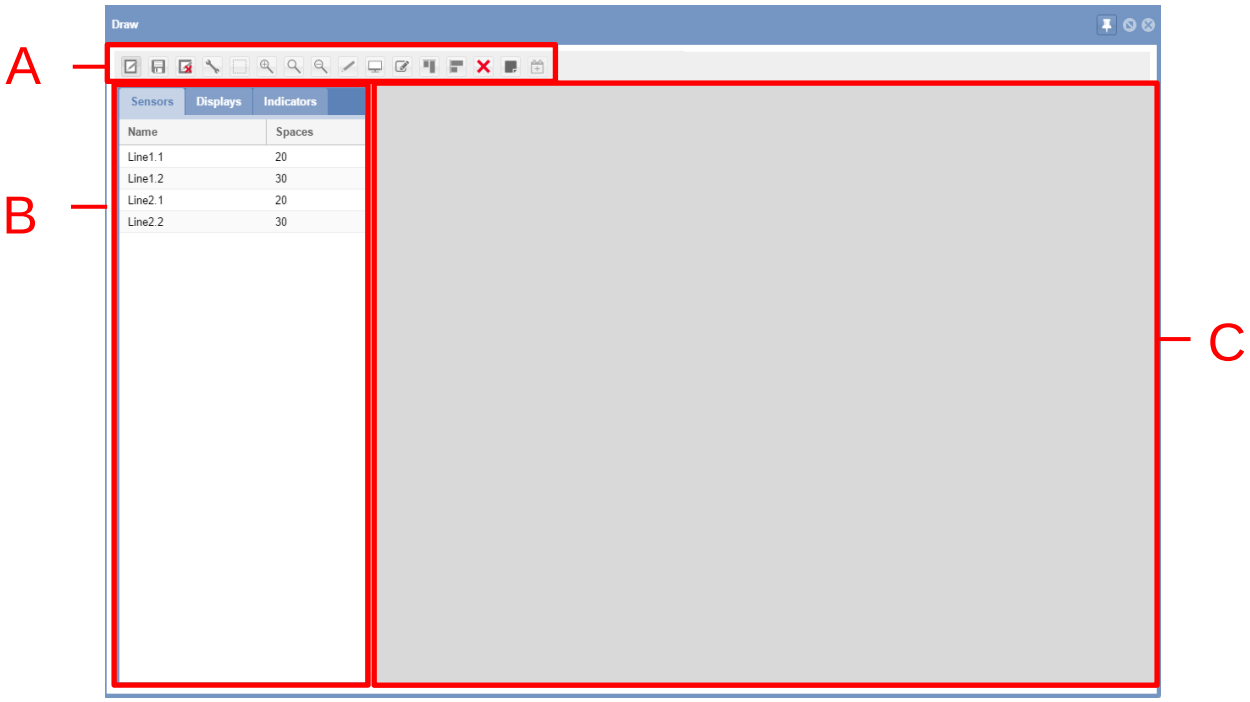
A Drawing window

The image above shows an example of a drawing: each icon (a small car) represents a parking space (in this manual it is referred to as a **bay**). The colouring/pattern of each bay is an indication of the bay sensor's status and its category. These properties can be defined in the Status/categories setup of this manual. This information tells you what the real-time status of each of them is.

You can create a drawing for each floor of your Car Park project; the different drawings are shown by clicking on the related node (group) on the left panel of the CPY Web Server, or you can define a Layout in order to display all the drawings at a glance in the dashboard area.

20.1.1 Drawing window

If you click on the **Drawings** tab from the navigation bar, then **Add Drawing**, the following window will appear:



Drawing window in edit mode

The **Edit Drawing** window includes 3 sections:

Section	Description
A	The **Drawing toolbar** offers all the tools for Drawing and Category assignment
B	The list shows **Sensor** and **Displays and Indicators** tabs available for the selected node (group)
C	The **Canvas area** includes all the graphical items such as background image, bay icons and displays. The area can be panned (scrolled left/right and up/down) and zoomed

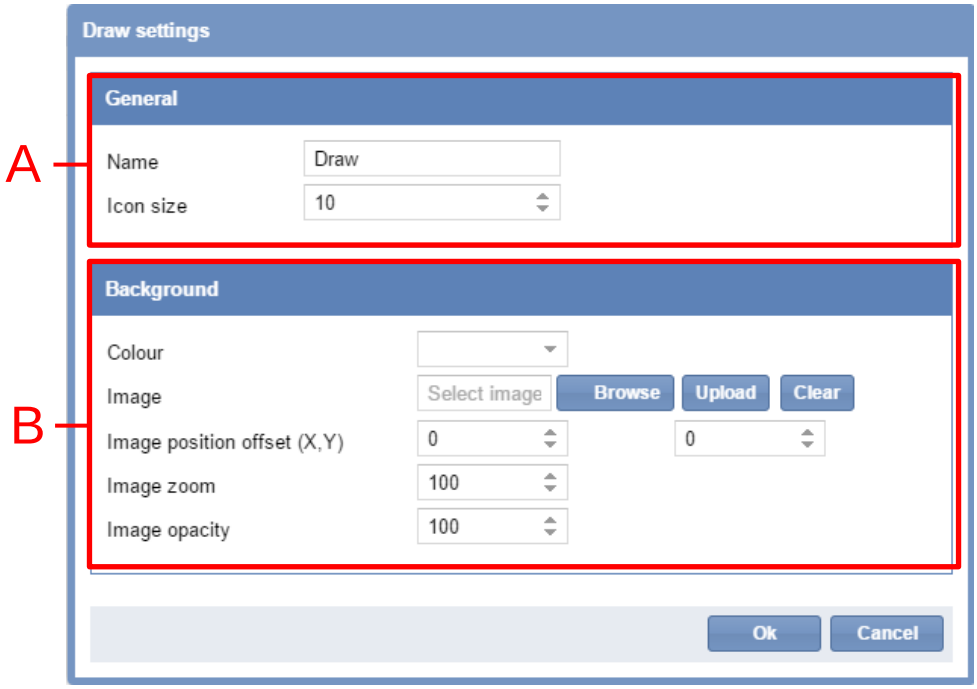
20.1.1.1 Drawing toolbar

The **Drawing toolbar** offers several tools for selecting, drawing, or modifying the bay and display properties. The available tools are as follows:

Command	Action
	Edit drawing
	Save drawing
	Delete drawing
	Settings
	Selection (works as a toggle): click to select and click again to deselect. It can be used to activate drag handles
	Zooming
	Assisted Drawing / Free hand drawing Works as a toggle: click to select the **Free hand drawing** and click again to select **Assisted drawing** mode
	Display settings
	Edit position for selected bays
	Vertical alignment
	Horizontal alignment
	Delete
	Works as a toggle: show/hide **lane, line, position** information for each bay
	Shows the bays that belong to an Indicator
	Quick booking activity for selected bays

20.1.1.2 Draw settings

The **Settings** are accessed by clicking the button in the **Drawing toolbar**:



In this dialog, you can configure the drawing's name, the size of the bay icons in the drawing and decide how the drawing's background image is displayed. When a field is updated, the changes can immediately be seen on the drawing. The dialog has the following fields:

Section	Field description
A	**Name** Can be used to modify the name of the drawing
	Icon size Sets the size of the bay icon representing parking bay sensors. The number represents the length in pixels. This option is useful when making your bay icons match the scale of your background image
B	**Colour** Shows a colour-picker dialog that selects the colour that will be seen behind the background image
	Image Upload a background image

Image position offset (X, Y)

First field: this field contains the horizontal offset of the background image. The offset is measured in pixels. The higher the offset, the further the image moves to the right

Second field: this field contains the vertical offset of the background image. The offset is measured in pixels. The higher the offset, the further the image moves down

Image zoom

This field scales the background image size up or down, depending on whether the number entered is above or below 100. The number in the field represents the percentage of the image's original size that you want it to be scaled to

Image opacity

This sets the opacity of the background image. It is possible to set an opacity between 0% and 100%. The lower the opacity, the more transparent the background image will become and the more the selected Colour will be seen

20.2 Procedures

20.2.1 Upload a background image

You can put a background image in your drawing window. This is not interactive but serves to put the bay icons location in perspective. Follow this procedure:

Step	Action
1	Click on **Draw settings** from the Drawing menu *Note: this is accessible only in E**dit mode***
2	In the **Image** section, click the **Browse** button: a standard Windows browse interface will appear
3	Locate and highlight the background image from your computer *Note: The supported file formats are JPG, PNG and GIF*
4	Click on **Open**, then on the **Upload** button
5	The background image will also be uploaded onto the canvas area

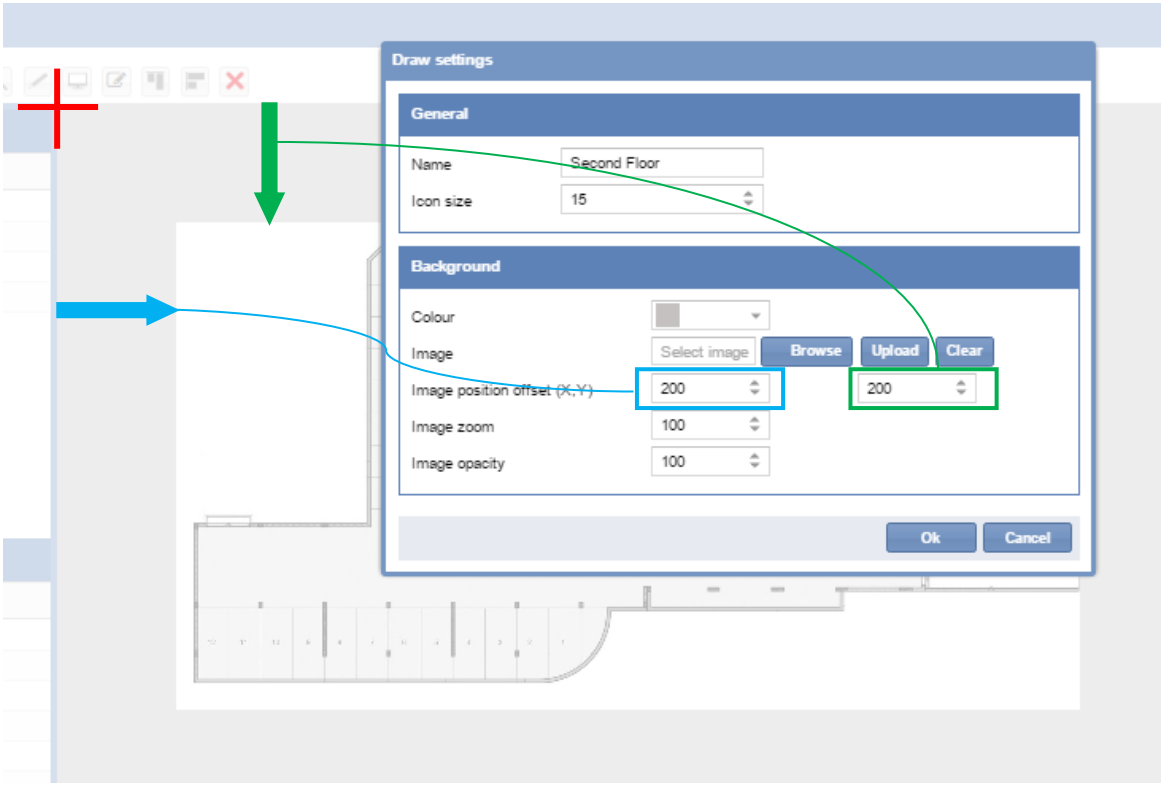
20.2.2 Delete a background image

To delete a background image that has been uploaded in a drawing, follow this procedure:

Step	Action
1	Click on **Draw settings** from the Drawing menu *Note: this is accessible only in E**dit mode***
2	In the **Image** section, click the **Clear** button: The drawing's current background image will be deleted

20.2.3 Apply an offset Image position

Follow this procedure to apply an offset to the background image:

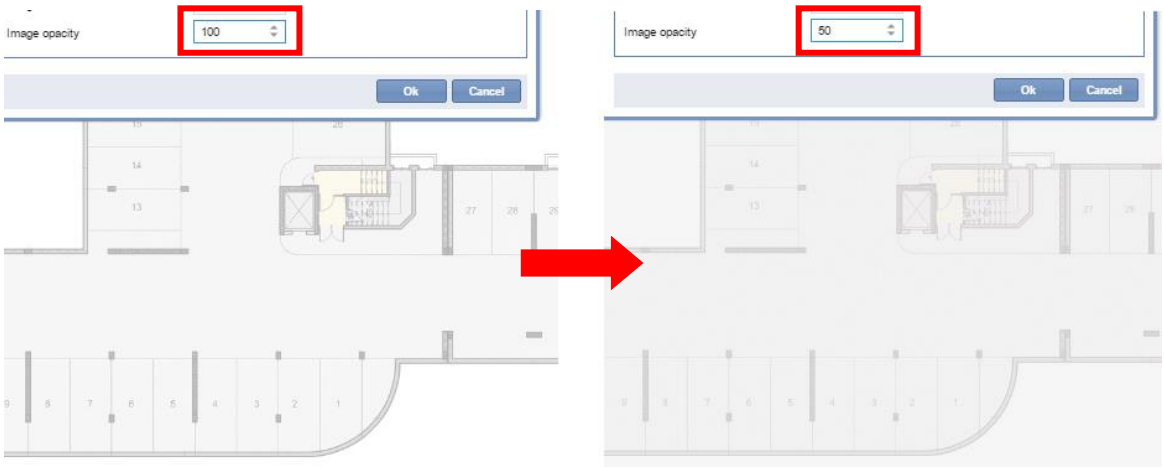


The changes made are not permanent until the **OK** button is pressed. If you are not satisfied with the changes, simply press **Cancel** and the changes will be reversed after closing the drawing.

20.2.4 Manage the image opacity

The opacity property specifies the **transparency** of the background image. This property can take a value from 0 (%) to 100(%). The lower the value, the more transparent the image is.

The picture below shows the original background image (100%) and the opacity set to 50%



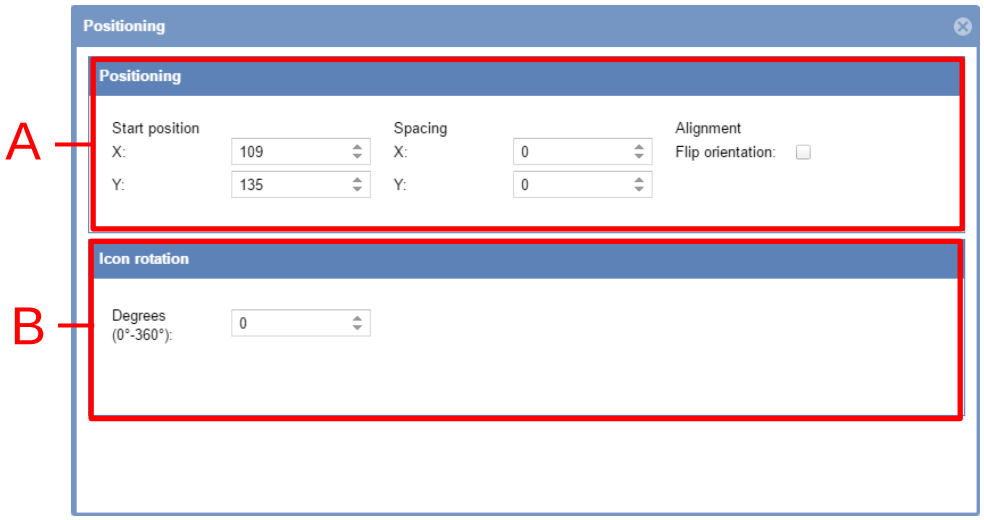
The changes made are not permanent until the **OK** button is pressed. If you are not satisfied with the changes, simply press **Cancel** and the changes will be reversed after closing the drawing.

20.3User interface

20.3.1 Positioning

You can open the **Positioning** dialog by clicking on in the **Drawing toolbar.**

This dialog is used to define the placement of the sensors relative to each other, as well as to the rest of the drawing. Adjustments made here can instantly be seen on the drawing. The dialog has the following sections:



The dialog has the following fields:

Section	Field description
A	The **Start position** defines the collection of the positions of the bays icons on the drawing. The initial values are the positions where the bay icons were placed

Field	Action
X	The horizontal offset of the collection. The greater the number, the further left on the drawing the collection is moved
Y	The vertical offset of the collection. The greater the number, the further down on the drawing the collection is moved

The **Spacing** arrows increase/decrease the space between the bay icons on their respective axes.

Field	Action
X	Arrows increase/decrease spacing between sensors on the horizontal axis.
Y	Arrows increase/decrease spacing between sensors on the vertical axis

	The **Alignment Flip orientation** check box: enabling this will swap the number of bay icons spread across the vertical axis with the number of bay icons spread across the horizontal axis.
B	**Degrees (0° – 360°):** The position of a selected **Sensor line** can be adjusted by angle in degrees

20.4 Things to know

20.4.1 Selecting spaces

The bay selection can be performed in both **View** mode and **Edit** mode in a Drawing.
You are in edit mode when the edit button is pressed on a Drawing, otherwise you are in view mode. The actions available are as follows:

Mode	Actions
View mode	• Change categories • Perform selection
Edit mode	• Move bays in the canvas area • Select group of bays to edit spacing • Select group of bays to apply graphical properties

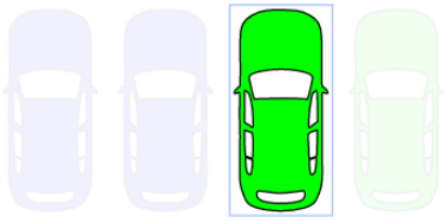
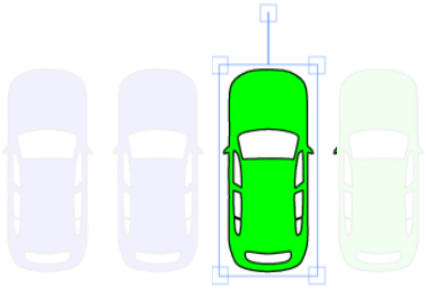
20.5 Procedures

Follow the proper procedure to make a selection:

20.5.1 Select a single bay

To select a single bay icon, click on it:

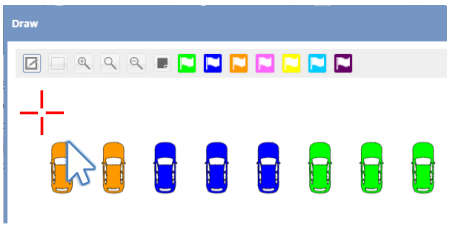
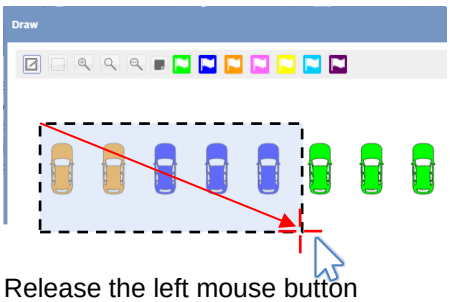
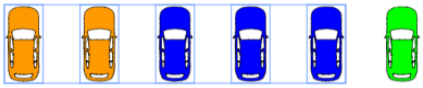
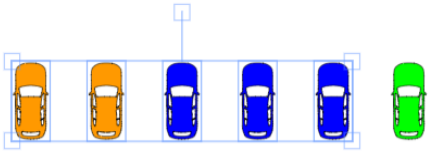
You will know a bay icon has been selected when a box appears around it

View mode	Edit mode
	
A light-blue box appears around the selected bay	A light-blue box with the drag point appears around the selected bay

Note: to deselect the bay, click on a blank part of the drawing

20.5.2 Select multiple bays

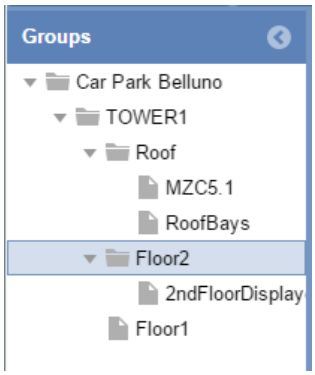
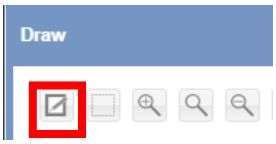
To select multiple bays, follow this procedure:

Step	Action
1	Select the Drawing with the bay icons you want to select
2	Put the mouse pointer near the first bay icon
3	**a.** Click and hold your left mouse button on the top left portion of where you want to start highlighting  **b.** Drag the box until the last bay icon has been highlighted  **c.** Release the left mouse button
4	Once the bay icons have been selected, they can be booked, moved, dragged to another canvas area or deleted The pictures below shown the selection according to the Drawing **mode** EDIT MODE  VIEW MODE 

Note: to deselect the bay, click on a blank part of the drawing

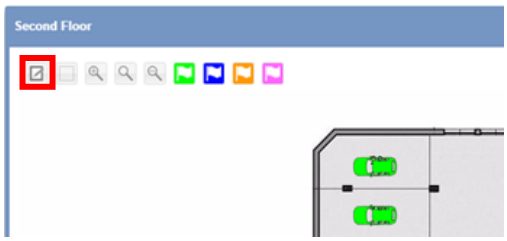
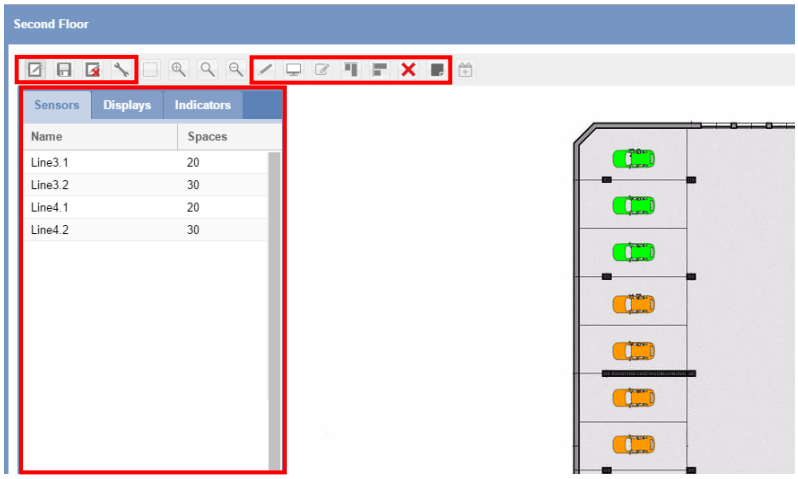
20.5.3 Add new drawing

To add a new blank drawing, follow this procedure:

Step	Action
1	Select a group from the Groups panel (see below)  *Note: you have to select a node (group), otherwise the Drawing window that will be shown will be blank (no Sensor, Displays or Indicators)*
2	In the **Drawings** tab, click **Add Drawing** button to open a *new blank drawing*
3	Click on the **Edit button** from the command bar to enter into **Edit mode** 
4	Click on the **Settings** button, where the drawing settings will appear: Enter the desired name for the drawing. Follow the procedures in Drawing chapter
5	Click **OK** to save the changes, or **Cancel** to exit without saving any changes

20.5.4 Edit a Drawing

To access a Drawing in **edit mode**, follow this procedure:

Step	Action
1	Click on the **Edit button** from the Drawing toolbar 
2	The extra button will be shown in the Drawing toolbar 
3	Click on the **Save** button to save the changes. *Note: the edit button works as a toggle: click to enter into **Edit mode** and click again to go back to View mode, without saving the changes.*

20.6 Things to know

20.6.1 Sensors Line

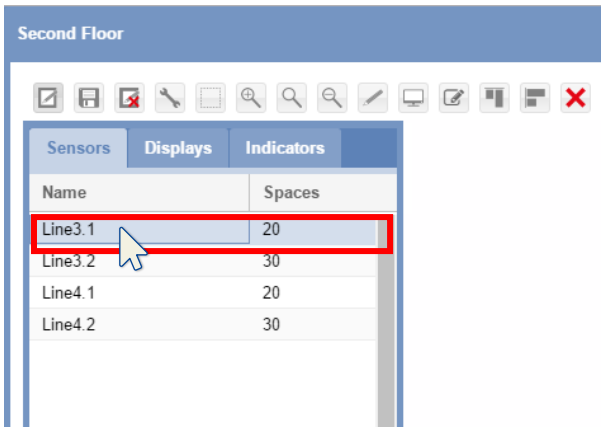
Before drawing a Sensor line, you have to select the node (group) which includes the sensor line you need to draw. After you have added a new blank drawing, all the sensor lines available for the selected group are shown in the menu on the left.

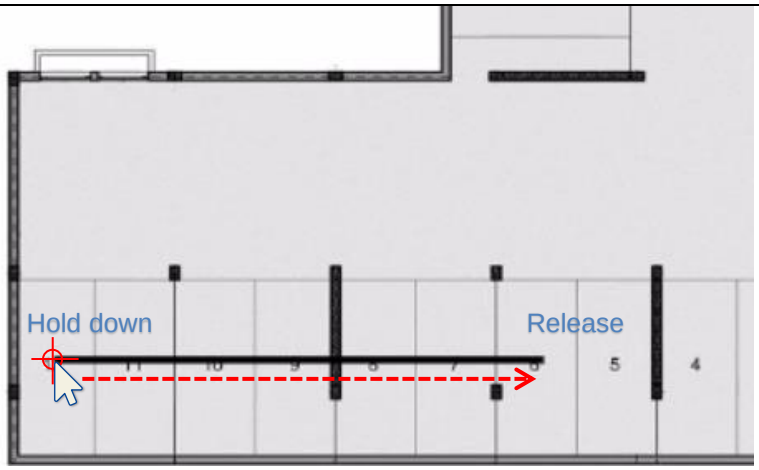
20.7 Procedures

20.7.1 Add a line in the drawing

In order to add a sensor LINE onto the canvas, follow this procedure:

Note: You can drag only one sensor LINE at a time

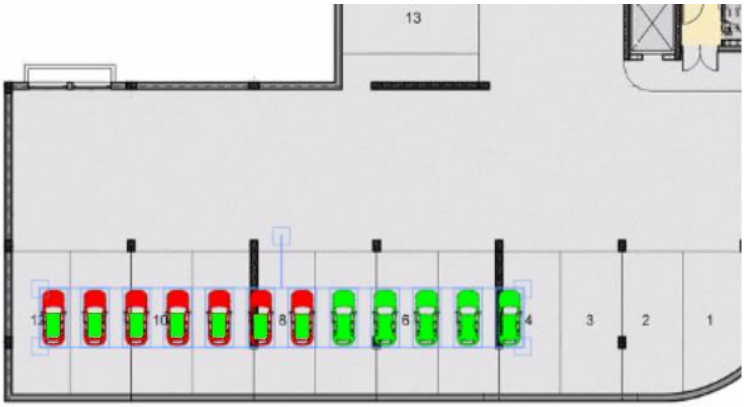
Step	Action
1	Add new drawing
2	From the **Sensors** tab in the **left panel**, click on a **Sensor line**  *Note: The selected Sensor line will be highlighted in light blue*
3	Once you have made your selection, position the mouse pointer onto the canvas area of your drawing
4	**a.** Hold the left mouse button down on the point where you want to start dragging **b.** Drag the Sensor Line to the point where you want to finish.



c. Release the left mouse button

The bay sensors will be added: see the picture below

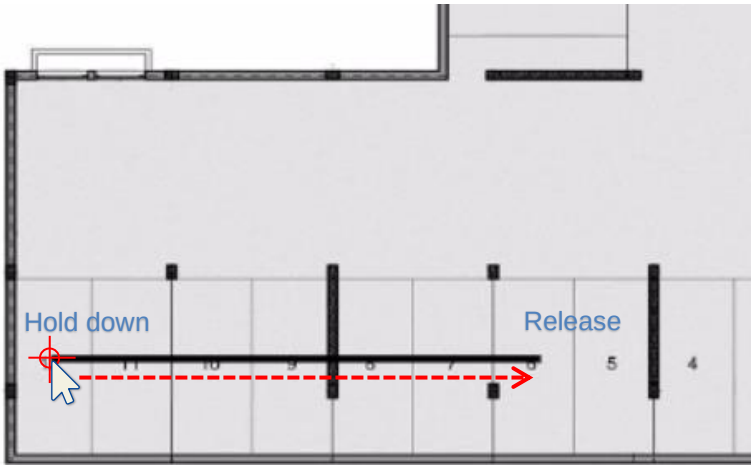
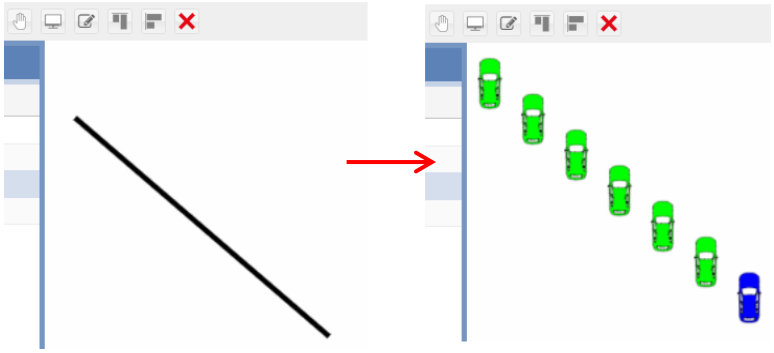
5



6 The sensors added remain selected: you can **move** them onto the canvas area, adjust the spacing by clicking the **Edit position for selected spaces** button, or deleted by clicking the **Delete** button

20.7.2 Assisted / Freehand drawing

A Sensor line can be dragged in two modes, **Assisted mode** or in **Freehand mode**, as follows:

Step	Action
1	By default, the **Assisted Drawing** option is selected: The **Line** can be dragged vertically or horizontally. 
2	By clicking on the **Assisted Drawing** button, the drawing mode turns into the **Freehand** drawing mode: you can drag a Sensor Line at any angle 

20.7.3 Move the bay icons in the drawing

Follow this procedure to move one or more bay icons into the drawing window:

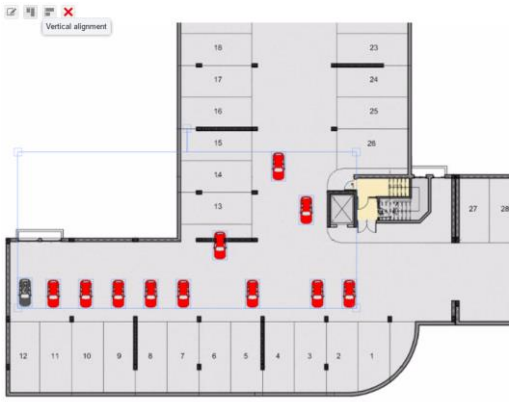
Step	Action
1	In Drawing **Edit mode**, click on one or more of the bay icons you wish to move
2	Hold the left mouse button down
3	Move the mouse cursor to the desired location
4	Release the left mouse button

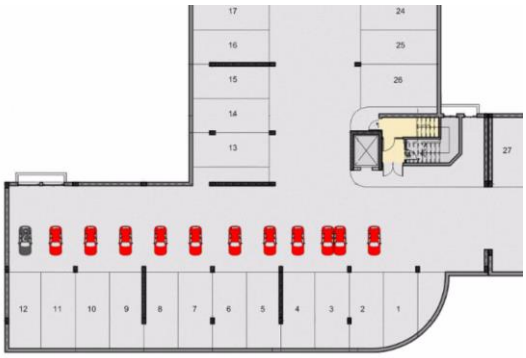
20.7.4 Alignment operations

If you have several unorganized bay icons you wish to align, you can do so with the **Vertical alignment** and **Horizontal alignment** buttons in the **Drawing toolbar**.

20.7.4.1 Horizontal alignment

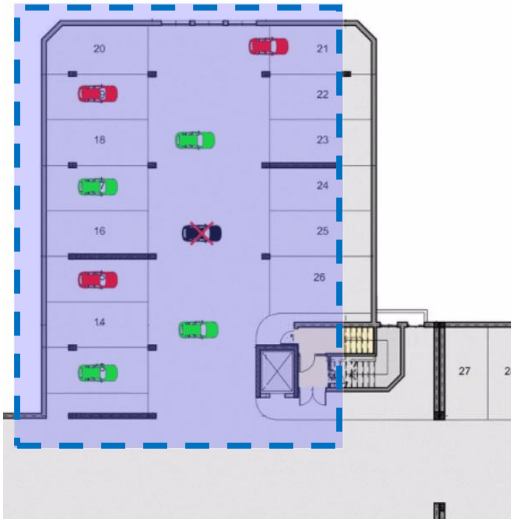
This button will align all the selected bay icons in a horizontal line, as seen below:

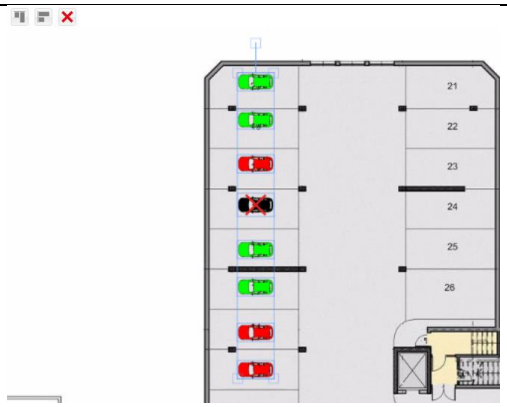
Step	Action
1	Select the bay icons
2	Click on the **Horizontal alignment** button 

3	

20.7.4.2 Vertical alignment

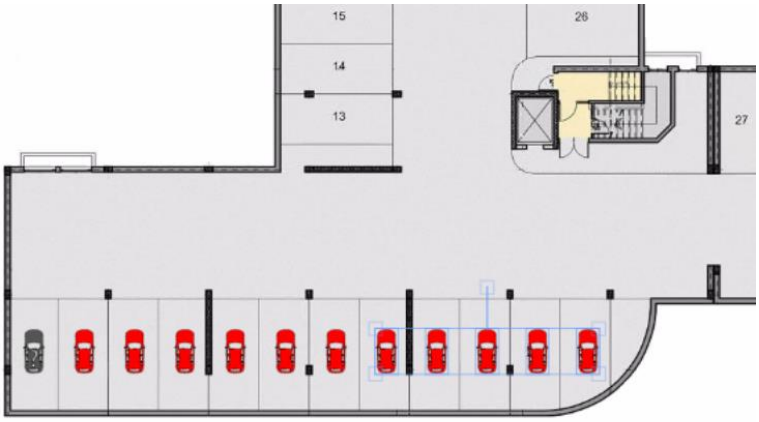
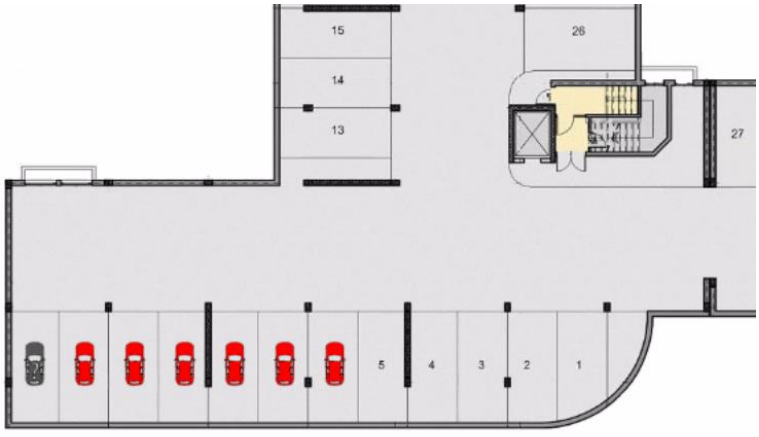
This button will align all the selected bay icons in a vertical line, as seen below:

Step	Action
1	
2	Select the bay icons 
3	Click on the **Vertical alignment** button


21
22
23
24
25
26

20.7.5 Delete a bay

To delete bay icons, follow this procedure:

Step	Action
1	Select the bay icons
2	Press the **Delete** button 
3	Press the **Yes** button for confirmation 

20.7.6 Delete a drawing

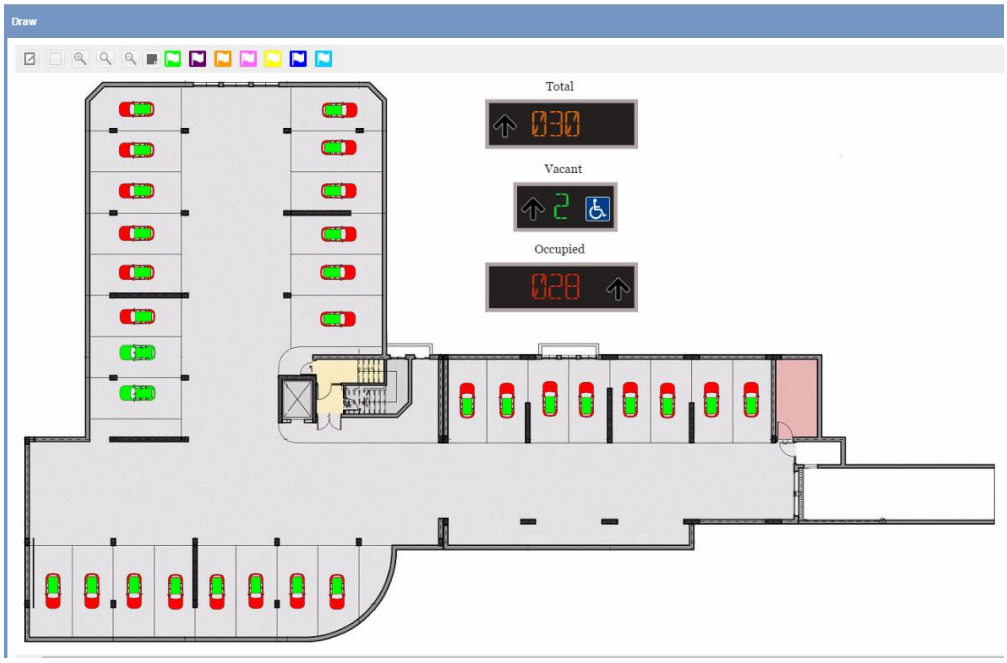
To delete a drawing from the **Drawings** menu and the system as a whole, follow this procedure:

Step	Action
1	Open a **Drawing window** by clicking on the selected node from the **Groups panel** on the left side
2	Once you have made your selection, click on the Edit button on the drawing you want to delete in order to show the extra button
3	Click on the **Delete drawing** button
4	Click on **OK** to confirm the operation, otherwise click on **Cancel** to annul the operation

20.8 User interface

20.8.1 Displays

The displays can be used to present an overview of the parking lot in real-time. The picture below shows a Drawing window of a Car Park project where three displays are used to present the occupancy status of a floor with **Total** bays, **Vacant** bays and **Total occupied** bays statuses.



Displays on a Drawing window

20.9 Things to know

20.9.1 Real display and virtual display

The displays that can be added in a Drawing, also called **Software display,** can be of two types:

Type	Description
Real display	A software version of a real display. *Note: See the Hardware manual for additional information about Display model and installation instructions.*
Virtual display	A Virtual display created by the user

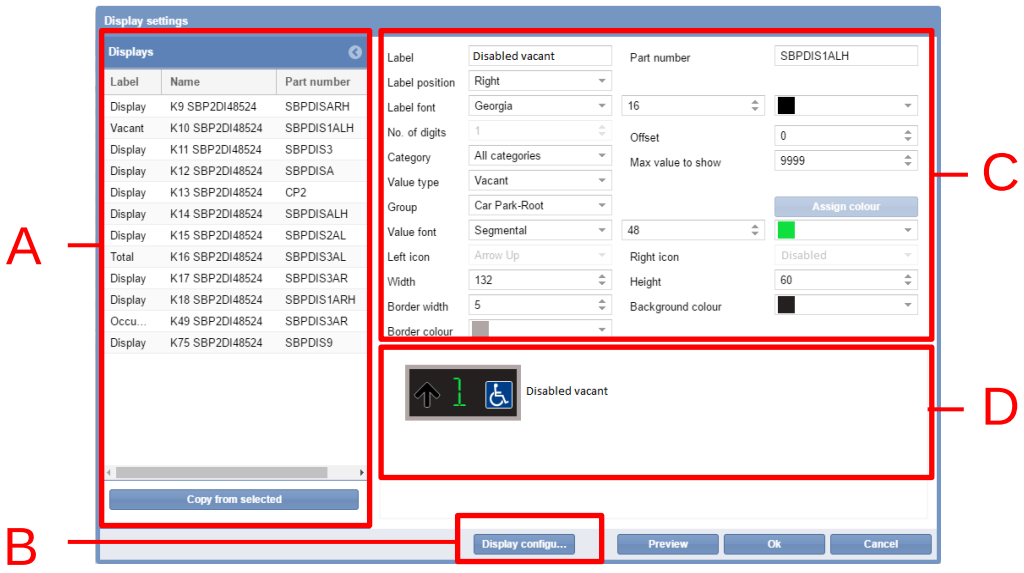
Each **software display** can be configured in terms of:

- **Appearance:** both display types can be proportionally resizable; the label, the colour of digits, etc…
- **Value:** the numeric value can be assigned to the software display, which is updated in real time with the software value. For the **Virtual type**, it has to be linked to a group of sensors and one category

20.9.2 Software display settings

By clicking on the **Display settings** button, the following window appears:

*Note: The Display settings window is accessible only in **Drawing edit mode**.*



Display settings window

The **Display settings** window is defined as follows:

Section	Description
A	The **Displays** section shows the list of displays available in terms of **Real** display and **Virtual** display
B	Display configuration window *Note: Only for **Real displays***

C The elements list of the **Display settings** window:

Field	Description
Label	Enter text that describes the display: the text will be shown in the position defined in the Label position field
Label position	Defines the position where the text Label will be shown
Label font	Defines the label font, size and colour
No. of digits	No. of digits to display value *Note: cannot be changed for real display*
Offset	Sets an offset (it can be positive or negative) to the real value
Max value to show	Sets the maximum value that will be shown
Category	Select from the categories defined in the Car Park project
Value type	Choose between the following: ▪ number of *Vacant bays* ▪ number of *Occupied bays* ▪ *Total number of bays*
Group	Select the group to represent the value in the display
Value font	Defines the Value font, size and colour
Left icon	**For real displays**: shows the real display icon (when available) **For virtual displays**: shows the available icon you can use for the left side of the display
Right icon	**For real displays**: shows the real display icon (when available) **For virtual displays**: shows the available icon you can use for the right side of the display
Width	Defines the width of the software display (in pixels)
Height	Defines the height of the software display (in pixels)
Border width	Specifies width of display border (in pixels)
Background colour	Assigns a background colour to the software display
Border colour	Defines the border colour of the software display

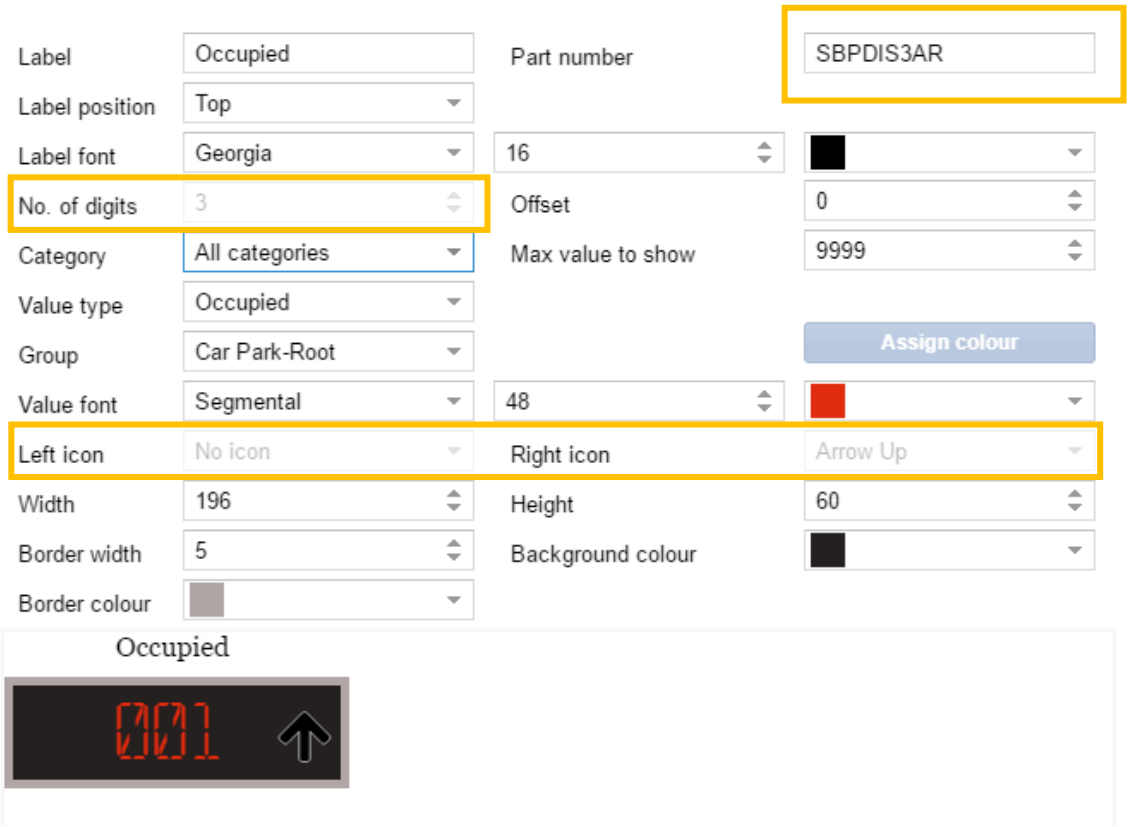
D The **preview area** shows a preview simulation of the software display

20.9.3 Virtual and Real Displays

A **Virtual display** is fully customizable since all the fields are changeable.

As concerns the software copy of a **Real display**, you can customize the appearance, the group and category of bays have to be shown. However, you cannot change the fields related to the Physical part number, such as those seen in the orange boxes below:

- Part number
- No. of digits
- Left icon
- Right icon



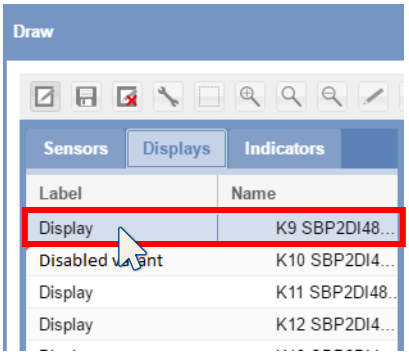
20.10 Procedures

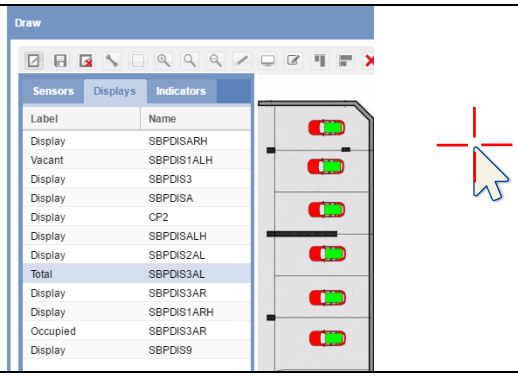
The **Displays** tab shows all the Real Displays present in the Car Park project; you can add them to a Drawing as a software copy of the real display.

The **Displays** tab also presents Virtual displays that have been created in the Car Park project: The Virtual types are shown with a small icon in the top-right corner, as shown in the example below:

20.10.1 Add a Display from the Displays tab

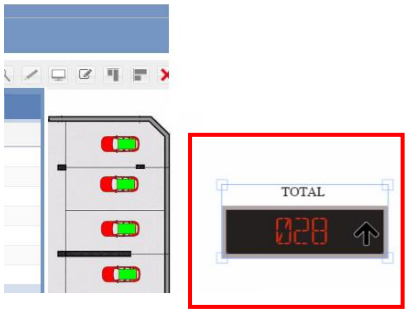
Follow this procedure to add a display in a drawing:

Step	Action
1	Open the **Drawing window** where you want to add a display
2	Click on **Edit** from the Drawing toolbar
3	Click on the **Displays** tab from the **Left Panel**
4	From the **Displays**, click on the text of the selected display  *Note: The selected display will be highlighted in light blue*
5	Click the left mouse button on the area where you want to put the software display element



The display will be added to the drawing

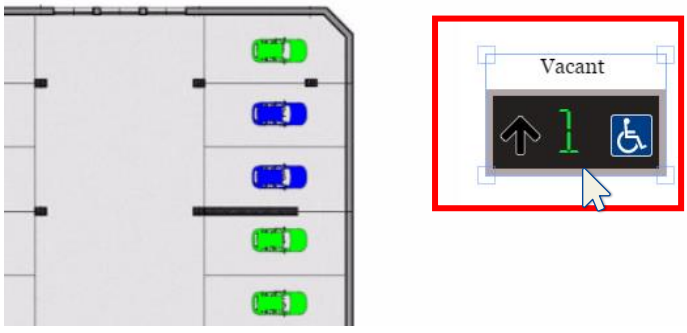
6



You can edit the software display by clicking on the **Display configuration** button. See the Edit a Software display (associated to a Real Display) procedure

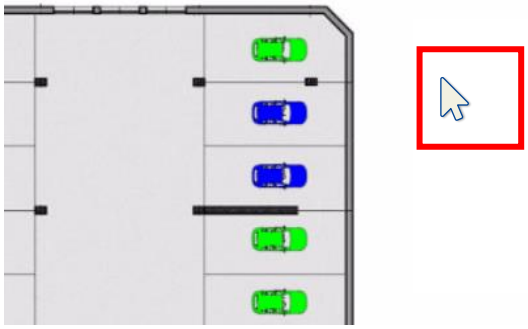
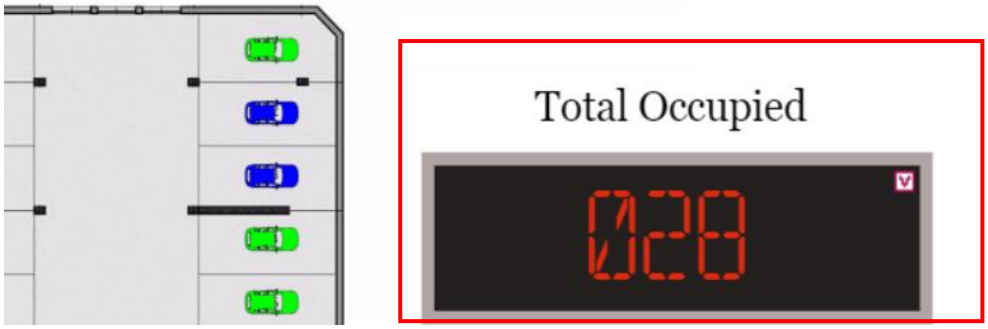
20.10.2 Edit a Software display (associated to a Real Display)

A software display can be edited by clicking on the **Display settings** window from the Drawing toolbar. Follow this procedure:

Step	Action
1	Add a Display from the Displays tab
2	Click the software display with the left mouse button to select it:  *Note: a light-blue box with the drag point appears around the selected display*
3	Click on the **Display settings** button from the command bar: The Display settings will appear

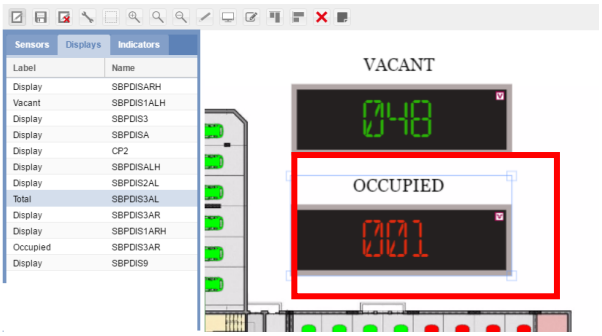
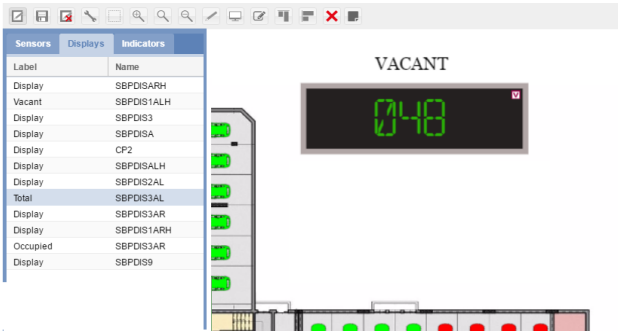
4	Edit all the fields required (see Software display settings table) *Note: you can click on the Preview button to see the appearance*
5	Click on the Display configuration button for additional settings
6	Click on the **Save** button to store the changes.

20.10.3 Create a new Virtual display

Step	Action
1	Open a **Drawing window** in edit mode
2	Click with the left mouse button in a blank area of the background where the display will be  *Note: a light-blue box with the drag point appears around the selected display*
3	Click on the **Display settings** button from the command bar: The Display settings will appear
4	Edit all the fields required (see the table for detailed information) Note: you can click on the **Preview** button to see the appearance
5	For the Virtual display, the **Display configuration** button is not clickable
6	Click on the **Save** button to store the changes. See the example below: 

20.10.4 Delete a Display

To delete a **display** from the Car Park project, follow this procedure:

Step	Action
1	Open Drawing in **edit mode**
2	Select the **display** you want to delete  *Note: the display will be highlighted with a light blue rectangle*
3	Click on the **Delete** button and click on **Save drawing** to delete it from the drawing and the Displays tab.  *Note: if you exit without clicking on Save, the Display will not be deleted*

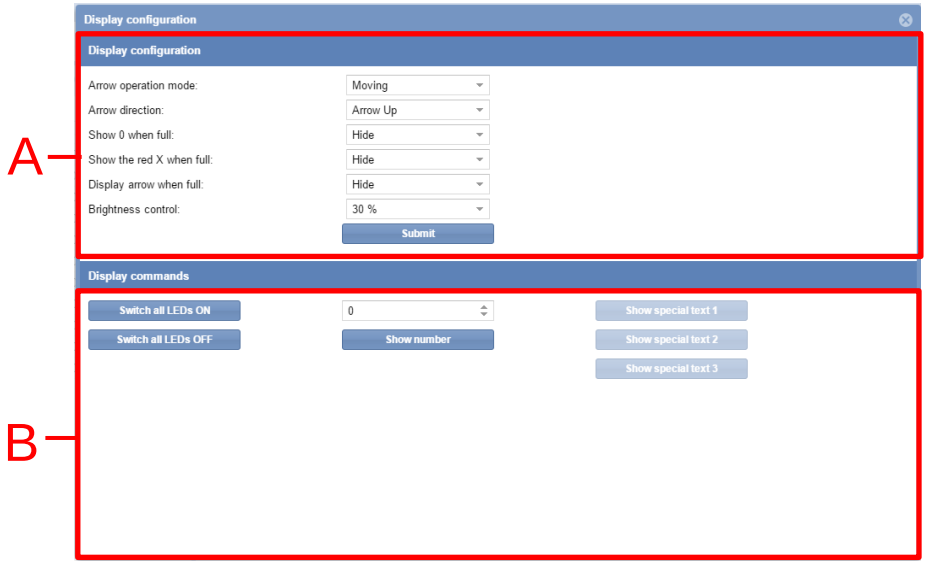
20.10.5 Display configuration and commands

20.10.5.1 Digits display with left/right icons

The **Display configuration** button opens the real configuration window, in which you can configure the following parameters.

Note: This window is available ONLY for the Software copy of the Real Display.

Please refer to the UWP 3.0 Tool for the protocol for System configuration.



Display configuration window

The **Display configuration** window includes these sections:

Section	Description
A	In the **Display configuration** section, you can configure the appearance and behaviour of the display elements.
B	In the **Display commands** section, you can perform system checks.

20.10.5.2 Display configuration

The fields are shown according to the Display Part number, as defined as follows:

Field	Description
Arrow operation mode	Defines the arrow condition in operation mode: • Static • Moving *Note: this field is available ONLY for display module with arrow*
Arrow direction	Defines the arrow orientation (if available) *Note: this field is available ONLY for display module with arrow*
Show 0 when full	The display shows **0** in FULL situation (Hide, Show)
Show the red X when full	The display shows **red X** in FULL situation (Hide, Show)
Display arrow when full	The display shows the arrow in FULL situation (Hide, Show) *Note: this field is available ONLY for display module with arrow*
Brightness control	The brightness of the real display can be set to: • 30% • 50% • 75% • Automatic: the brightness is automatically adjusted according to the internal lux-sensor

20.10.5.3 Display commands

Field	Description
Switch all LEDs ON	Sends special values to switch all the LEDs ON
Switch all LEDs OFF	Sends special values to switch all the LEDs OFF
Show number	Shows the number set in the box above the **Show number** field

20.11 Procedures

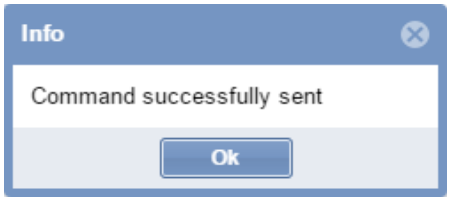
20.11.1 Configure digits display with left/right icons

To configure a *digits display* with left/right icons, follow this procedure:

Step	Action
1	Enter Drawing in **edit mode**
2	Select a *digits display* module from the **Displays** tab *Note: The selected display will be highlighted in light blue*
3	Click on the **Display configuration** button from the **Display settings** window
4	Configure the display properties in the Display configuration section
5	Click on the **Submit** button to save the changes

20.11.1 Send command to a display

To send a command to a real display, follow this procedure:

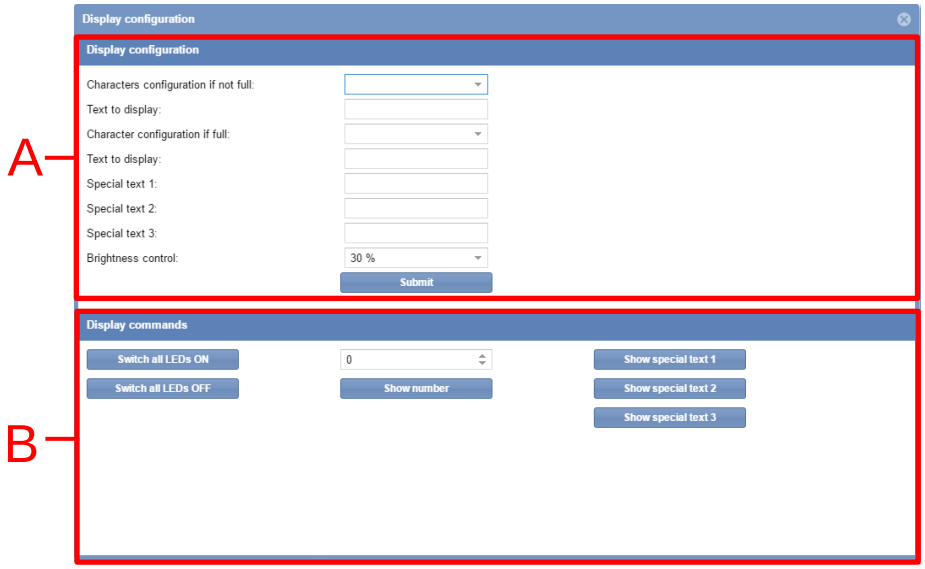
Step	Action
1	Enter Drawing in **edit mode**
2	Select a display module from the **Displays** tab**, or select it from a Drawing window where it is.** *Note: The selected display will be highlighted in light blue*
3	Click on the **Display configuration** button from the **Display settings** window
4	In the **Display command** section, click on the command you need in order to perform the test. The following message will appear to confirm the command has been sent successfully: 
5	Click on the **Submit** button to save the changes
6	*Note: When a command is sent to a display, a small red dot icon will appear in the Drawing window (see the picture below). It will remain so as long as the command is active*

7	Click again the command button sent before deactivating: the small red dot icon will disappear

20.11.2 Display configuration and commands

20.11.2.1 Alphanumeric display with 9 characters (SBPDIS9x module)

By clicking on the Display configuration button, the following window appears:



Display configuration window

The **Display configuration** window includes these sections:

Section	Description
A	In the **Display configuration** section, you can configure the appearance and behaviour of the display elements. *Note: the field changes according to the Display part number*
B	In the **Display commands** section, you can perform system checks. *Note: the available button changes according to the Display part number*

20.11.2.2 Display configuration

Field	Description
Characters configuration if not full	Defines the text to show in **not full** condition: • Text Only, up to 9 characters (AAAAAAAAA) • 6 characters and 3 digits (AAAAAAxxx) • 5 characters and 4 digits (AAAAAxxxx) • 4 characters and 5 digits (AAAAAxxxx)
Text to display	Enter the text to display for **not full condition** (number of characters, number of digits) according to the field above
Characters configuration if full	Defines the text to show in not full condition: • Text Only, up to 9 characters (AAAAAAAAA) • 6 characters and 3 digits (AAAAAAxxx) • 5 characters and 4 digits (AAAAAxxxx) • 4 characters and 5 digits (AAAAAxxxx)
Text to display	Enter the text to display for **full condition** (number of characters, number of digits) according to the field above
Special text 1	Defines the Special text to display: these Special texts can be shown with the Scheduler events
Special text 2	
Special text 3	

20.11.2.3 Display commands

Field	Description
Show special text 1	Send special values to show the text strings defined in the section above: • Special text 1 • Special text 2 • Special text 3
Show special text 2	
Show special text 3	

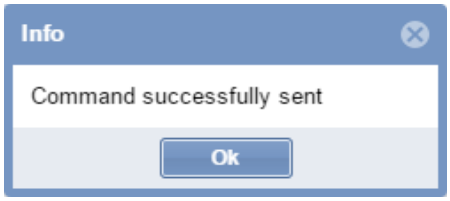
20.11.3 Configure alphanumeric display SBPDIS9x

To configure the SBPDIS9 module with 9 alphanumeric digits, follow this procedure:

Step	Action
1	Enter Drawing **edit mode**
2	Select a **SBPDIS9** display module from the **Displays** tab *Note: The selected display will be highlighted in light blue*
3	Click on the **Display configuration** button from the **Display settings** window
4	Configure the display properties in the Display configuration section
5	Click on the **Submit** button to save the changes

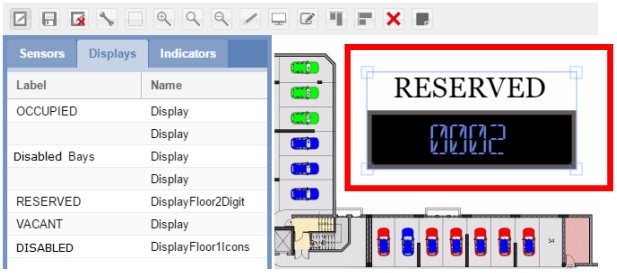
20.11.4 Send command to show a special text

To send a command to show a special text, follow this procedure:

Step	Action
1	Enter Drawing in **edit mode**
2	Select a display module from the **Displays** tab**, or select it from a Drawing window where it is.** *Note: The selected display will be highlighted in light blue*
3	Click on the **Display configuration** button from the **Display settings** window
4	In the **Display command** section, click on the **Show special text** field you want to show. The following message will appear to confirm the command has been sent successfully: 
5	Click on the **Submit** button to save the changes
6	Note: When a command is sent to a display, a small red dot icon will appear in the Drawing window. It will remain so as long as the command is active
7	Click again the command button sent before deactivating: the message will be removed from the display

20.11.5 Remove a display from a Drawing

Follow this procedure to remove the software copy of a Real Display from a drawing: the display cannot be deleted by the Displays tab (SBP2CPY project):

Step	Action
1	Open Drawing in **edit mode**
2	Select the **Real display** you want to delete  *Note: the display will be highlighted with a light blue rectangle*
3	Click on the **Delete** button and click on **Save drawing** to delete. *Note: you can add it again from the Displays tab as a new software copy*

20.12 User interface

20.12.1 Indicators

The SBPILED is an 8-colour LED indicator and it is part of the Dupline® 3 Parking Guidance System. It can be mounted outside the parking bays along the driving lane and it is used to indicate the status (e.g. vacant, occupied,) of a group of bays. A dedicated function is available in the UWP 3.0 Tool in order to define which bays have to be represented by an Indicator.

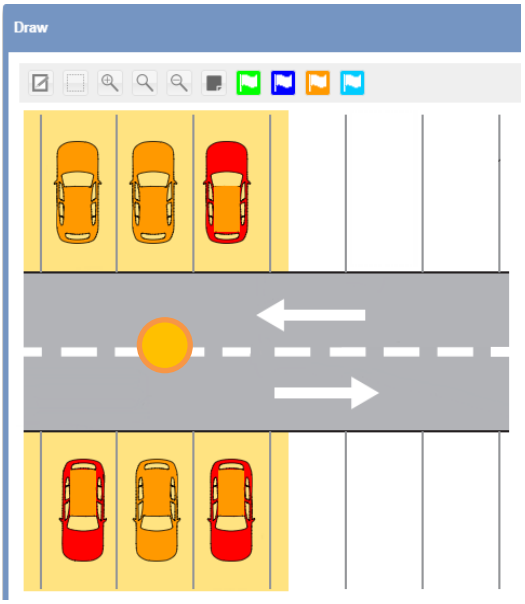
Please refer to the UWP 3.0 Tool manual for further details about configuration.

The following table shows the behaviour of the SBPILED Indicator:

Bays	SBPILED Indicator
At least one bay is vacant	The **SBPILED** LED is lit up in the default colour of the category of the bays.
All the bays are occupied	The **SBPILED** LED is lit up in RED (default colour for Occupied status)

20.13 Things to know

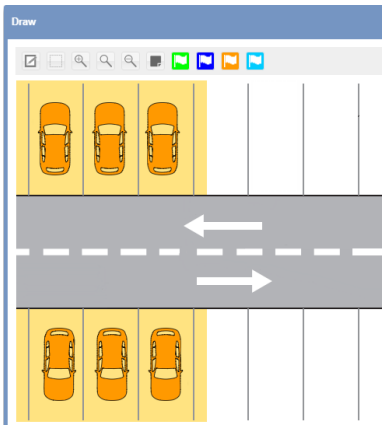
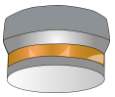
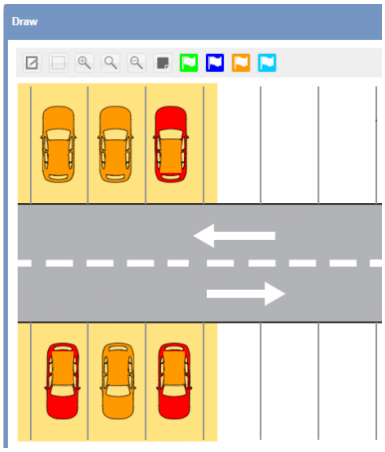
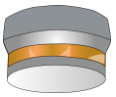
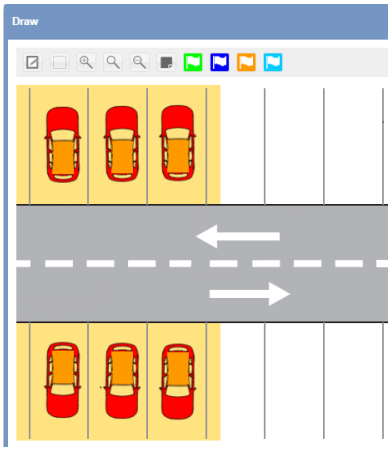
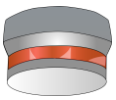
Each bay can be associated to an Indicator means the dedicated function. The picture below shows a Drawing window of a Car Park project where 6 bays are set in the **Reserved** category (orange colour), managed by an Indicator.



Software Indicator on a Drawing window

20.13.1.1 Example

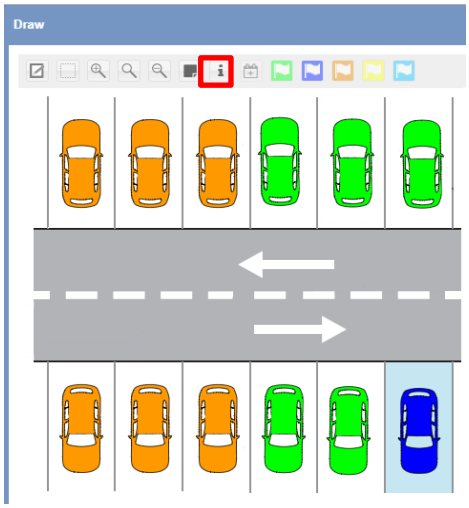
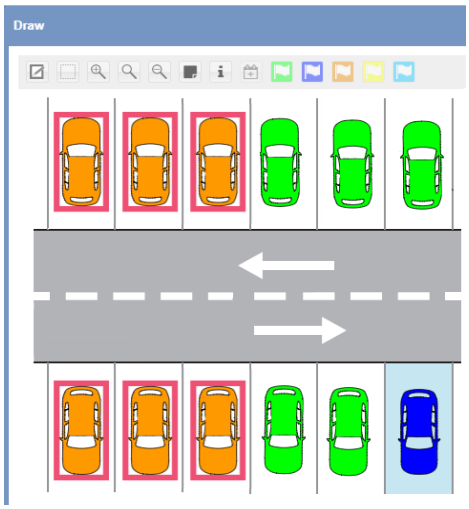
The example below shows a group of 6 bays set as **Reserved** category.
When at least one of the bays is vacant, the SBPILED is lit up in orange (default colour for **Reserved** category).

Group bays status	SBPILED status
	
	
	

20.14 Procedures

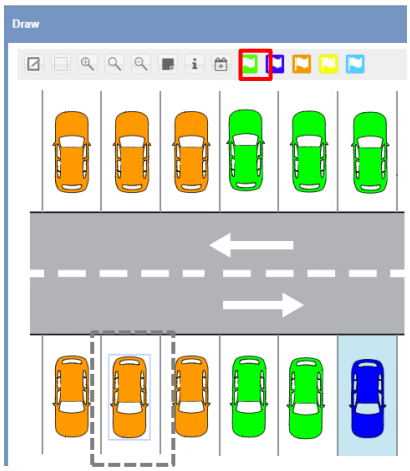
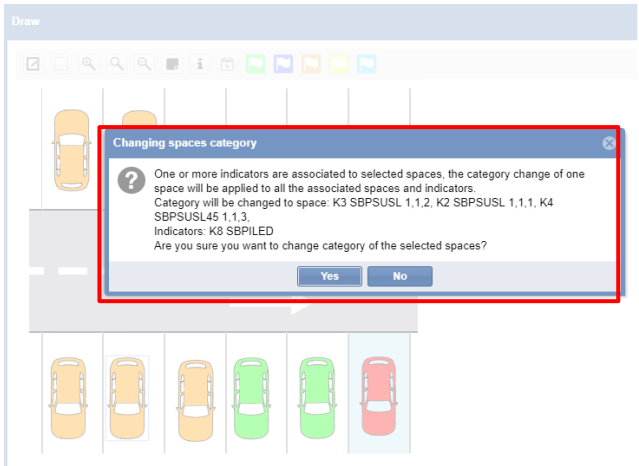
20.14.1 Verify which bays belong to an Indicator

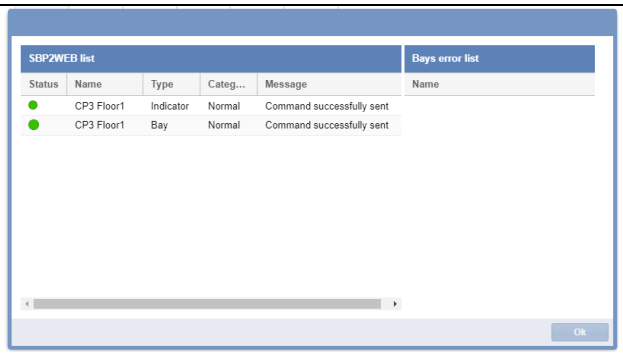
Follow this procedure to change the category of the bays associated to an Indicator: the category value is assigned to all the bays which belong to the indicator. In the command bar there is a button to show which bays belong to an Indicator: follow this procedure to check:

Step	Action
1	Enter Drawing in **edit mode** and Click on the button from the toolbar: 
2	The bays that belong to an indicator are identified by a coloured rectangle box:  *Note: if several Indicators are present, each group of bays that belong to the same indicator are shown with the same colour*

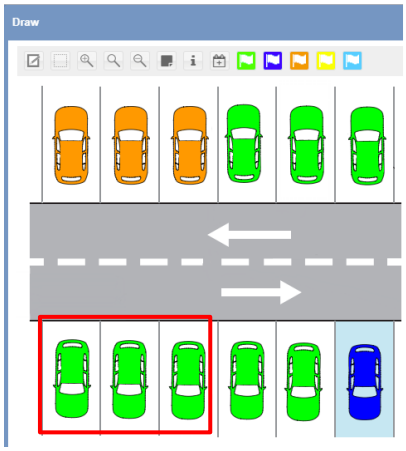
20.14.2 Change the category of the bays associated to an Indicator

Follow this procedure to change the category of the bays associated to an Indicator: the category value is assigned to all the bays which belong the indicator:

Step	Action
1	Select a bay that is part of the group Indicator and click on the flag of the desired category (e.g. **Normal** category): 
2	If one or more bays selected are associated to an Indicator, the following message appears: 
3	Click **Yes** button to change the category for all the bays
4	A dialog message shows the detailed operation

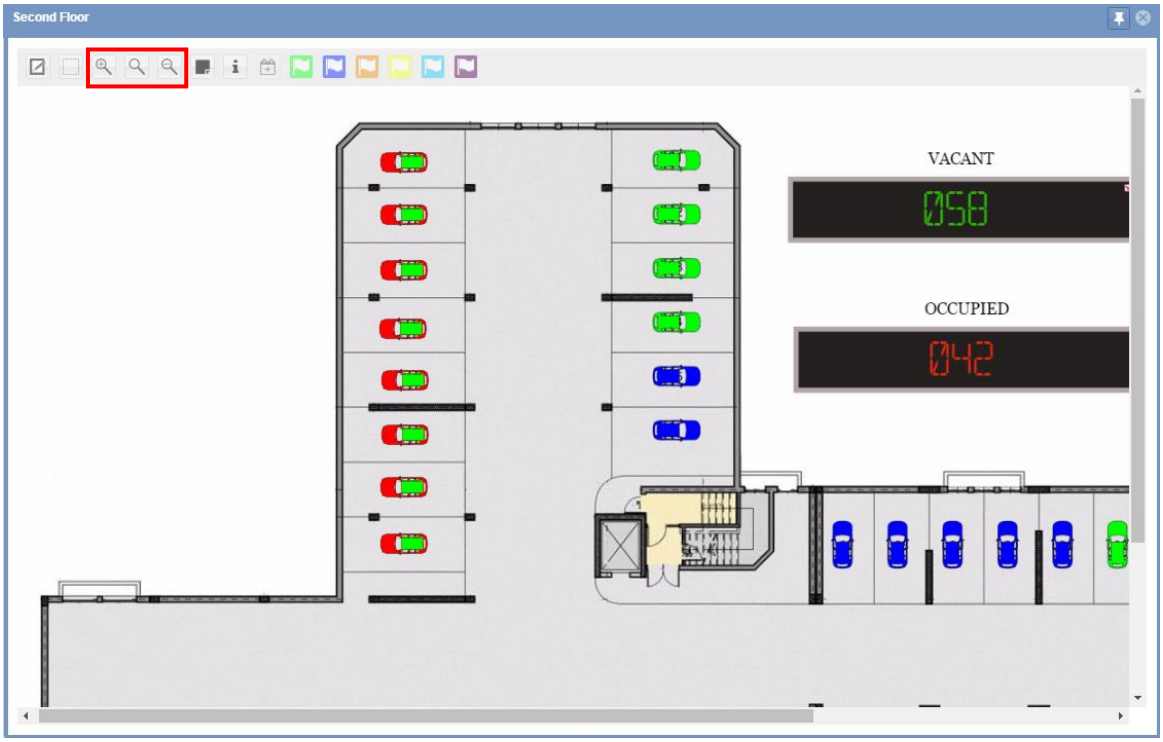


5 The example below shows the result, the 3 bays shown in the red rectangle are booked as **Normal** category



20.15 Operations with the drawings

20.15.1 Zooming the drawing

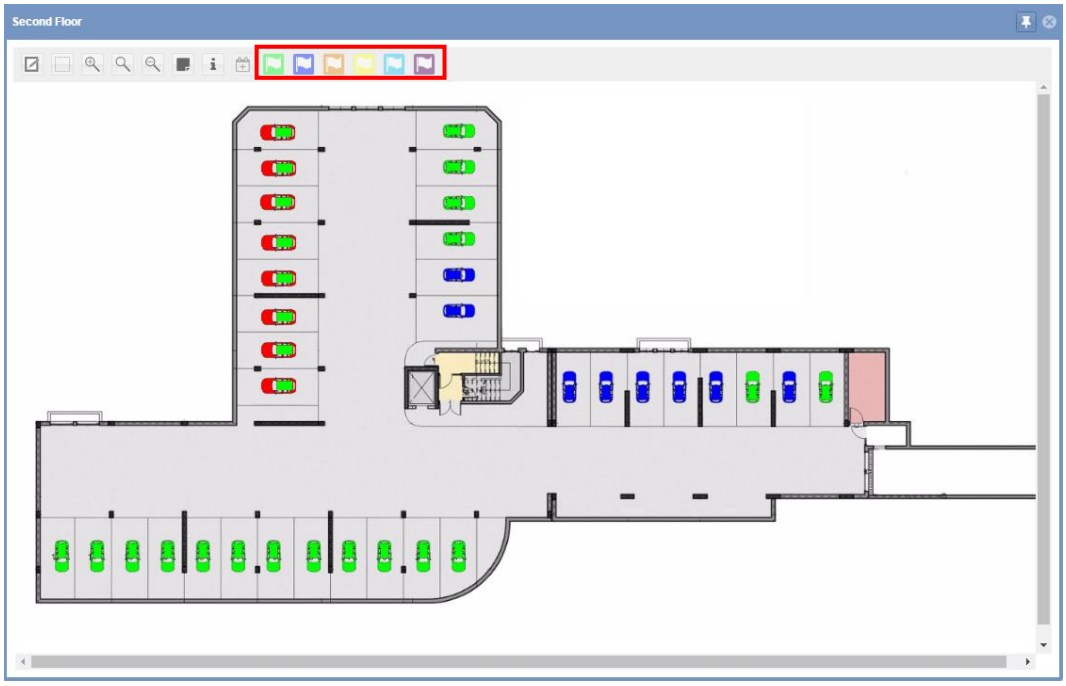


The drawing interface has three zoom options:

Command	Action
	Zoom in Enlarges the drawing
	Zoom to fit Resizes the drawing to fit the current window size
	Zoom out Shrinks the drawing

20.15.2 Change the categories (booking and unbooking) bays

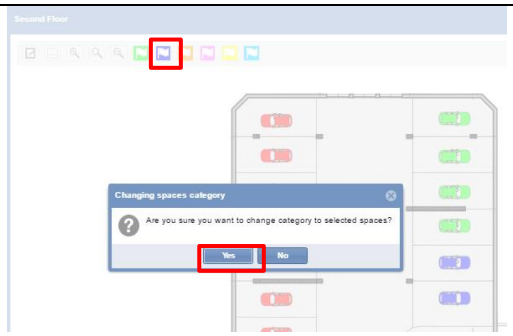
In the command bar there are the buttons related to the available categories of the Car Park project. You can enable up to 7 different categories: please refer to the Categories/Status menu



Follow this procedure to change the category of one or more bays:

The type of light used for a booking is indicated on the drawing as illustrated below:

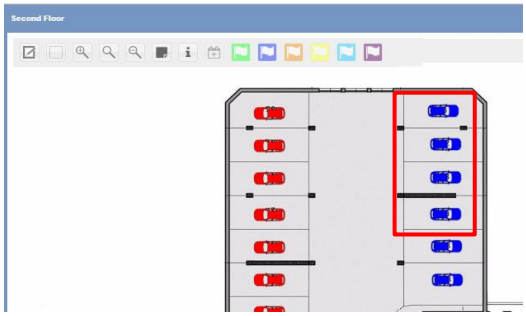
Step	Action
1	If one or more bay icons are selected when the button is clicked, these bays will become booked with their category
2	Select one or more bays *E.g. change the category for the 4 bays in the red rectangle below from **Normal** to **Reserved** category*
3	Click on the flag of the desired category (e.g. **Reserved** category)



On the Change spaces category dialog, click **Yes** button

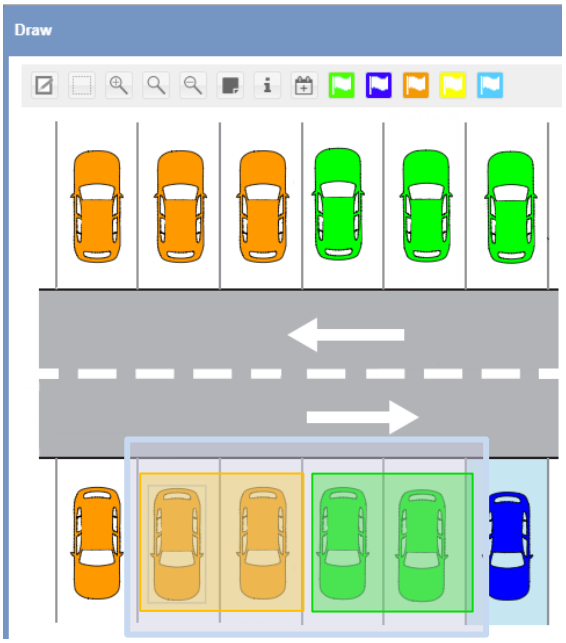
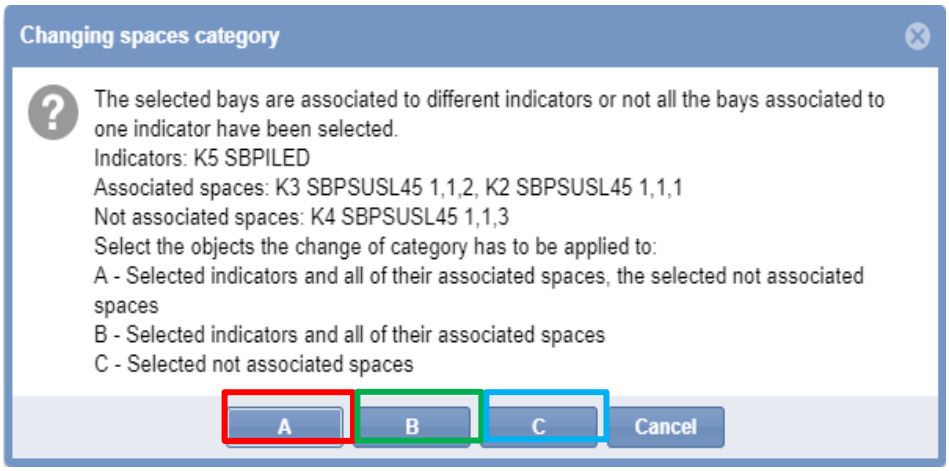
4 A dialog message shows the detailed operation

5 The example below shows the booking result, the 4 bays shown in the red rectangle are booked as **Reserved** category

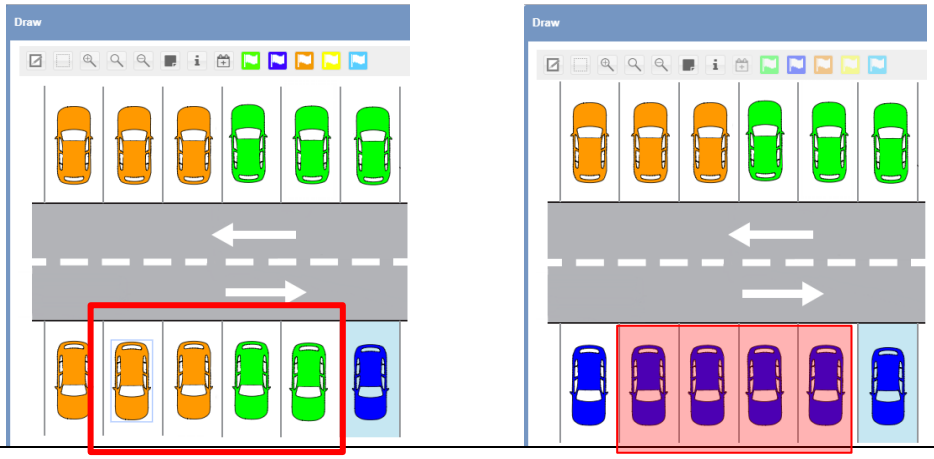


20.15.2.1 Change the category of mixed groups of bays associated or not to indicators

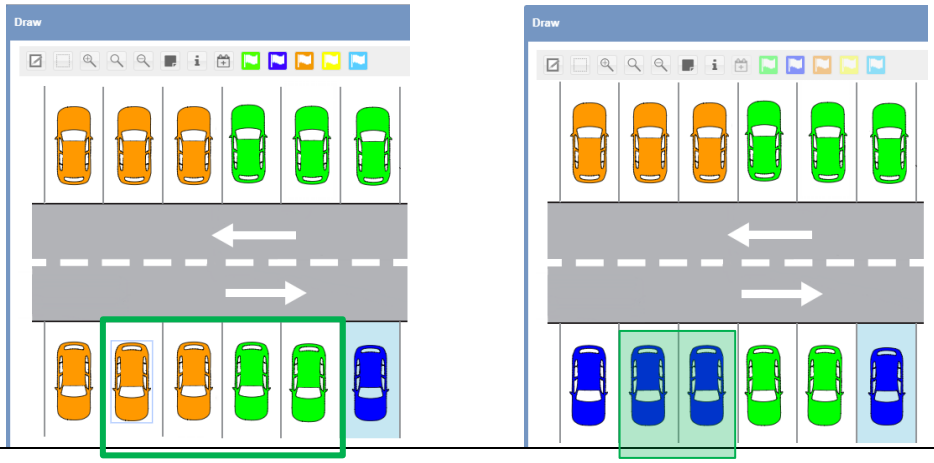
The example below shows a drawing with a group of bays that belong to an Indicator together with single sensor bays. If the selected bays are associated to different indicators or not all the bays are associated to one indicator, a message is displayed with different options, as described below:

Step	Action
1	In the example shown below the selected bays in orange colour belong to an indicator, while the selected bays in green color do not belong to any indicator. 
2	Click on a flag to change the category, the following message is displayed: This message is shown whenever the selected bays are associated to different indicators or not all the bays associated to one indicator have been selected: 

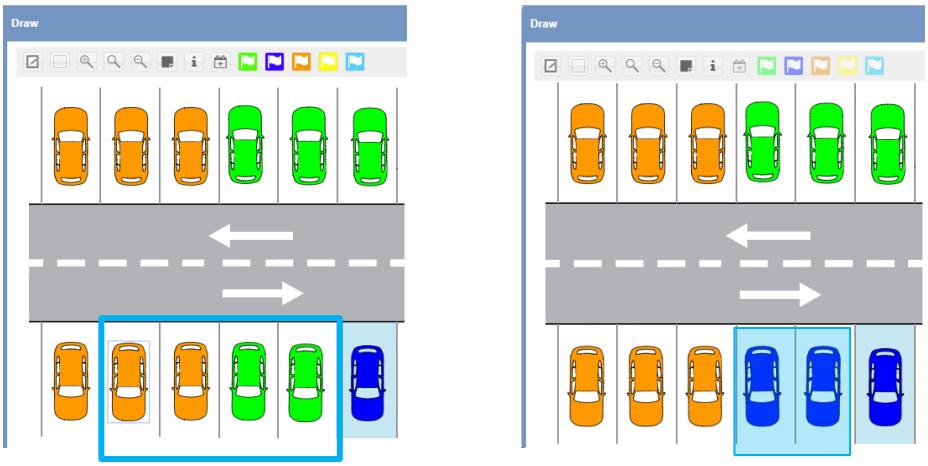
3 Click on option **A** to change the category ONLY for the bays that belong to an Indicator: Only the select left bays will be booked with the new category:



4 Click on option **B** to change the category for BOTH the bays that belong to an Indicator and the bays that are not associated to any indicator:

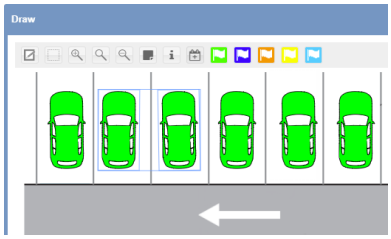
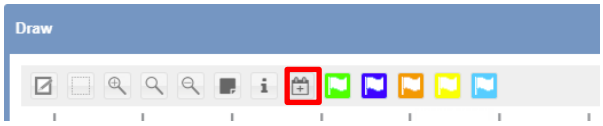
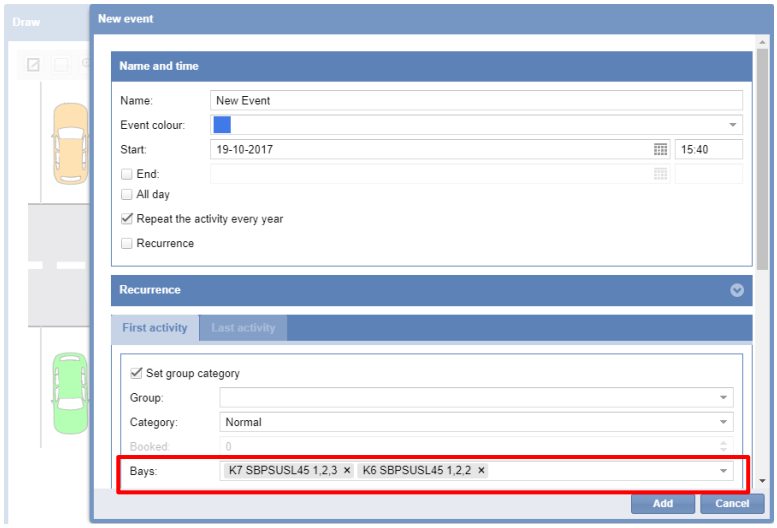


5 Clicking on option **C** to change the category ONLY for the bays that are not associated to any Indicator; the category will not be changed for the bays that belong to an Indicator:



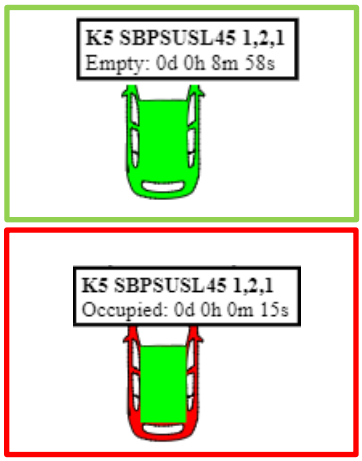
20.15.3 Create a new event directly from a drawing

In the command bar you can create a quick booking activity directly from the drawing, for the selected bays. Follow this procedure to add a new booking activity for one or more bays:

Step	Action
1	Enter Drawing in **view mode** and select the bays want to create a booking activity: 
2	Click on the button from the command bar: 
3	The New event window is opened with the selected bays automatically set in the Bay field:  *Note: you can add/remove additional bays different that the selected ones, clicking on the small v icon on Bays field.*
4	See Create a new event procedures to create the new booking activity.

20.15.4 Tooltip overview (bay icon)

By hovering over a bay icon with the mouse, the tooltip dialog appears with the bay sensor information such as:



Bay Icon

- **K*xx* - Sensor Part Number - Lane Line Position**
- **Empty /Occupied:** how long the bay is empty or occupied
- **Indicator:** (only for bays that belong to an Indicator) show the related Indicator
- **Diagnostic info:** e.g. error condition, Cross Talk

20.15.5 Tooltip overview (Display)

By hovering over a Display with the mouse, the tooltip dialog appears with the Display information such as:

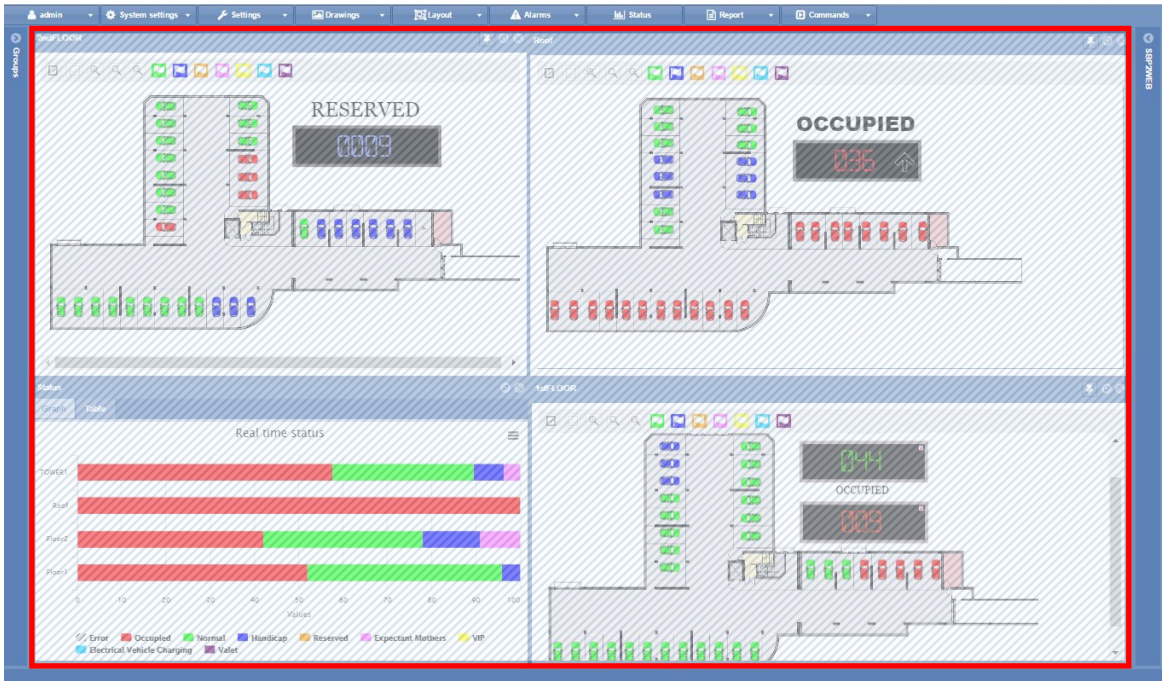
Display Icon

- **K*xx* - Display Part Number**
- **Disconnect time:** how long the display is disconnected
- **Diagnostic info:** e.g. Hardware error

21 LAYOUTS

21.1 User Interface

Layout describes the positioning of the constituent parts, such as the **Drawing** and **Status** windows, on the dashboard area. See the highlighted area below:



By using the Layout, you can create different views of your parking lot in order to see the occupancy status, depending on the selected node, and considering the size of the parking lot.

21.2 Things to know

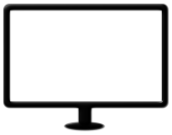
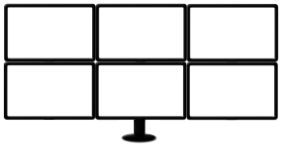
21.2.1 The Basics of Layout

A Layout can be created for a tree node, optimized for a device or for a specific user. The Layout is a combination of three conditions:

- **Client-PC (browser)**: the CPY runs as a webserver in a browser: it could be that the Layout must be created according to the screen size of the PC or the number of screens if a multiple screen solution is used.
- **User:** you can create several Layouts and assign each one to a dedicated user.
- **Rules:** A rule defines how to arrange the elements on the screen when a node is selected. There are different level priorities which help you to define the best view for each level node.

21.2.2 Single screen or Multi screen

The most important choice is the type of Device, **Single screen** or **Multi screen.** This depends on the size of the **parking lot** (number of floors, or number of parking bays).

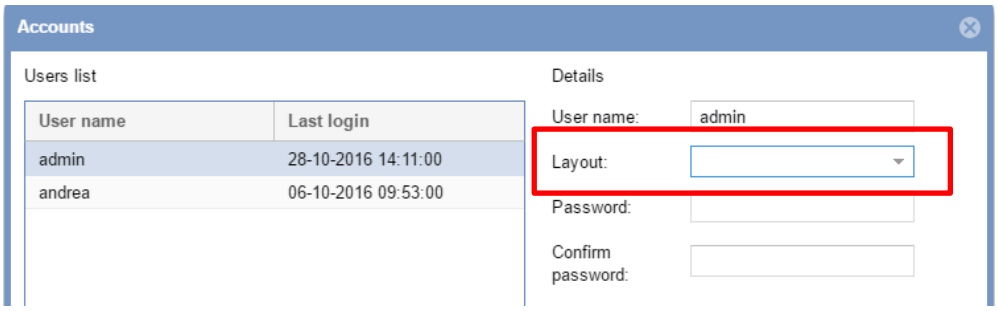
Device type	Indications
Single screen 	If you have to manage a small parking lot with 3 floors, you can optimize the Layout on a single screen. You can adjust the zoom factor of the browser to obtain the best distribution of your elements
Multi-screen 	This solution is suggested for a large parking lot, for example where thousands of parking bays are distributed on several floors. *Note: when the Multi screen Device is selected, all the screens must have the same screen resolution and screen size, also the browser.*

The Layout must be designed using the same screen configuration as that used by the operator:
When the SB2CPY is started, the system reads the Layout set for the user and places the elements exactly as they are defined during the Layout editing.

N.B: A Layout created for a Multi-screen device may not work correctly for a Single screen, also vice versa.

21.2.3 User and Layout assignment

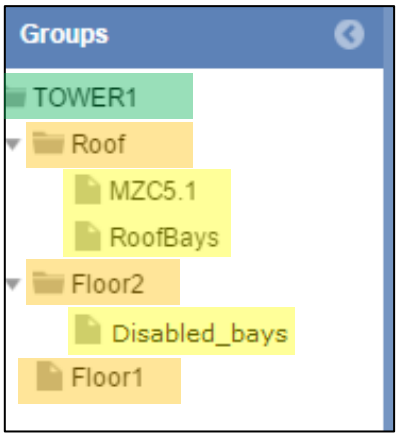
To assign a template to a specific user, the user account has to be edited. There is a field in the Accounts window labelled **Layout** where you can set the specific Layout from the combo-box.



Note: When a user logs into the CPY webserver, the system loads the Layout assigned: if the Layout does not exist (e.g. the Layout has been deleted), the default Layout system is applied.

21.2.4 Rules

The Layout is the set of rules that lays out the view of all the tree nodes, representing a particular group of the parking lot. See the example below of the node hierarchy of a project.



In the figure on the left, the parent-child relationship within the tree is as follows:

TOWER1 is the root and parent of **Roof**, **Floor1** and **Floor2**.

MZC5.1 and **Roof Bays** are the children of Roof;

Disabled_bays is the child of Floor2;

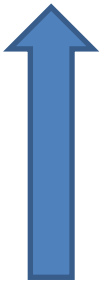
Floor1 has no child

Each one is a node: the children of the root (highlighted in orange) are nodes at the same level, as well as their children (the nodes highlighted in yellow are at the same level).

21.2.4.1 Priority order of rules

When you select a tree node, the system checks if a rule for the selected node exists, then checks if a rule for that level exists, then checks if a rule for all nodes exists. If not, no windows are displayed.

The rules have to be applied to the node: the system asks you where you want to apply them:

Priority level	Node type
Highest priority  **Lower priority**	**Node** A rule applied to a specific node has the highest priority: the other rules applied to the level's node will be ignored.
	Level
	All nodes

21.2.4.2 Priority example

The following example explains how the rules work, in particular how the nodes priority works.

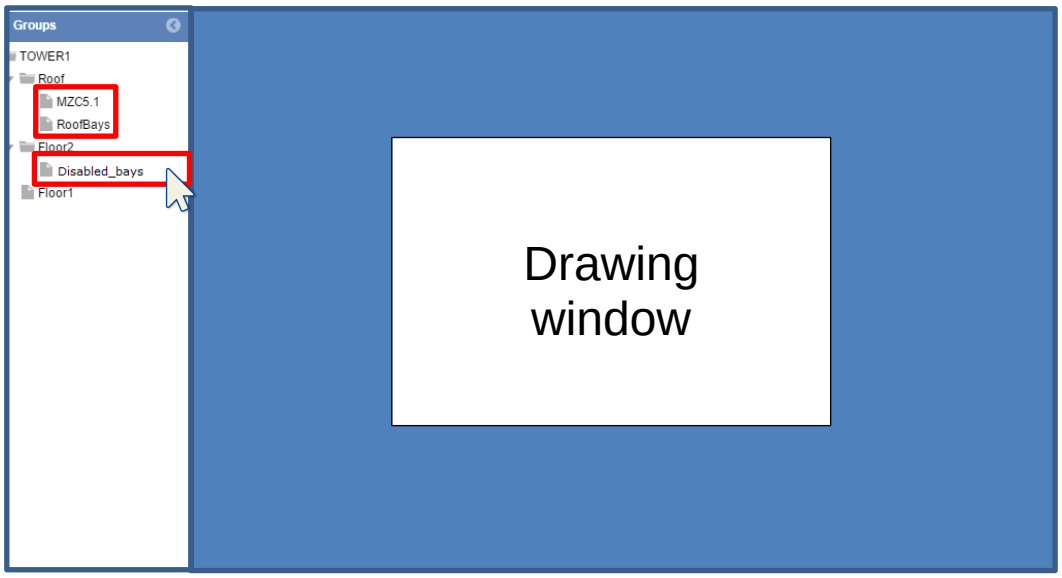
By clicking on a **floor level node** (e.g. Floor1, Floor2, Roof) you can choose a different view, for example to display the **drawing** and **status** window for each of them.

All nodes priority

You can start from the lower level, in order to apply the rule with the lower priority:

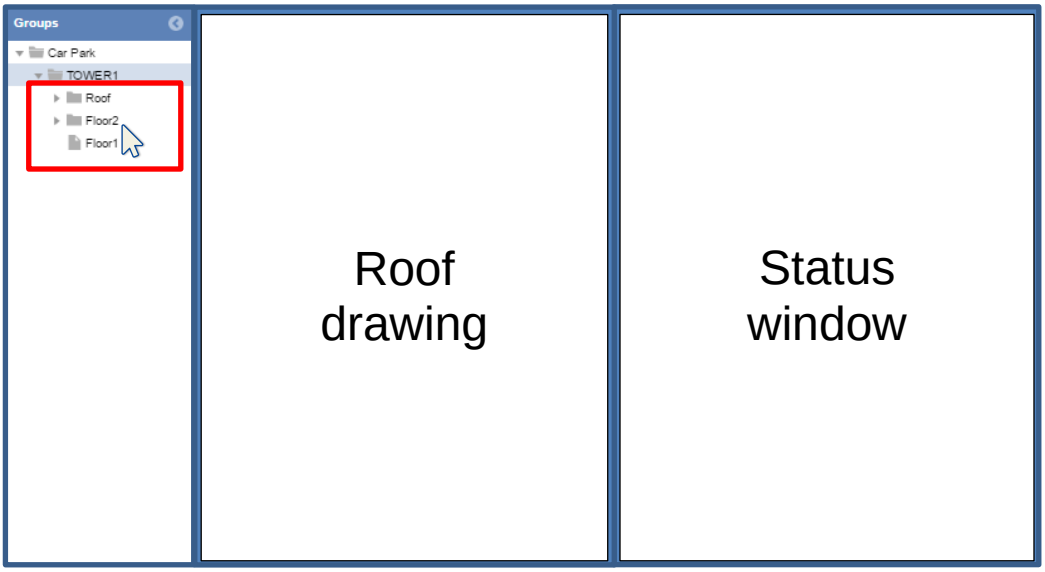
When *All nodes* rule is applied, this ensures that any existing rule defined for **Current level** or **Current node** will not be overridden.

By clicking on one of the children of the floors (**MZC5.1, RoofBays or Disabled_bays**) the rule will be applied for all nodes, for example if you want to place the drawing window in the centre of the screen. See the figure below:



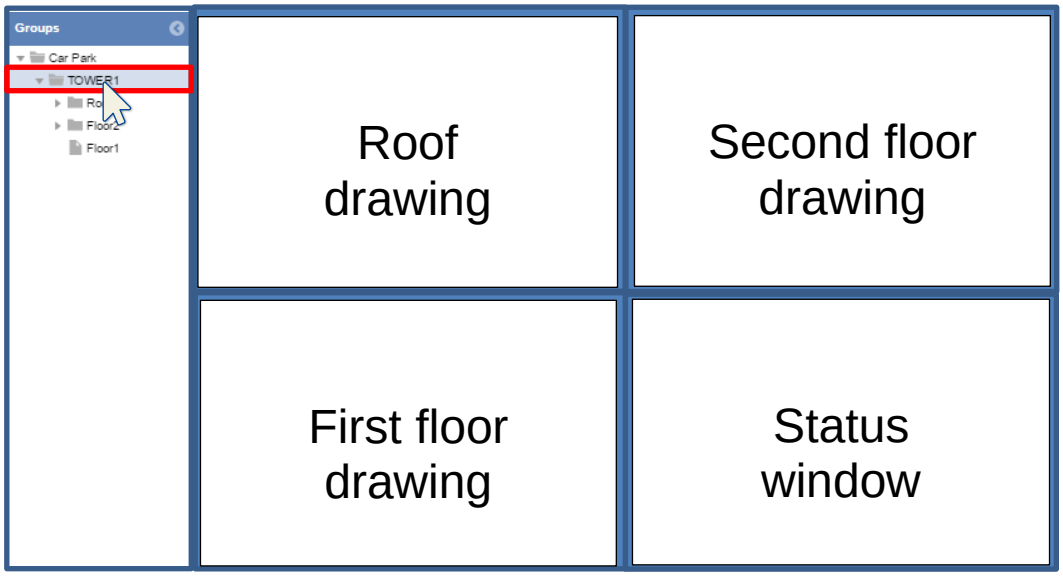
N.B: when **All nodes** is selected, the same rule will be applied for all the nodes.

Current level priority
You can set the Current level rule in order to assign the same Layout to all the nodes at the same level: the priority is higher than All Nodes, so the level rule will be applied to all the floor levels. By clicking one of the floors level node (e.g. **Floor1, Floor2, Roof**) the rule will be applied for all nodes at the same level, in this case Floor1, Floor2 and Roof. For example, if you want to place the **drawing** and **status** window together in the screen. See the figure below:



Tips: Applying this rule will avoid having to adjust the view for each tree node: the rule will be propagated to all the nodes at the same level.

Current node priority
The Current node rule can be used when you want to assign a view for a selected node. By clicking on the root node (e.g. TOWER1) the rule will be applied only for the node selected, and will override any existing rule created at level node or all nodes. In this case, you can choose to display all the drawings of your parking lot when TOWER1 node is selected. See the figure below:

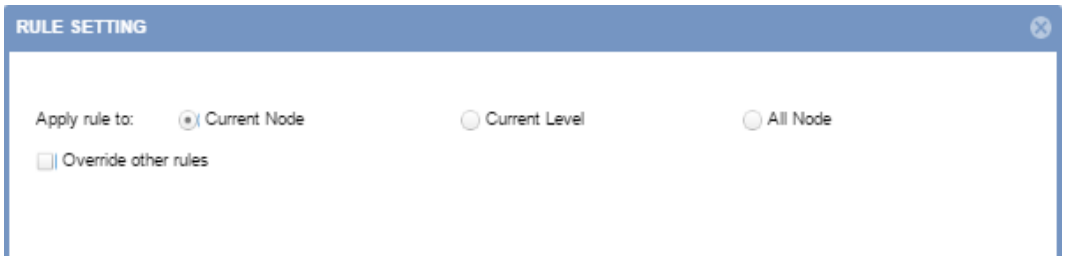


21.3 User interface

21.3.1 Rule setting window

In the Rules setting window you have to define the rule priority every time a node is edited. The priority has to be set individually, according to the indications explained above.

By clicking on **Save rule** from the **Layout** tab, the following window will appear:



The behaviour of the different options works as follows:

Rule	Behaviour
Current node	The rule will be applied **only** for the selected node
Current Level	The rule will be applied to **all the nodes at the same level** (e.g. Root, Floor1and Floor2) *Note: the system applies the same rule for all the levels, also if new nodes are added later*
All Nodes	The rule will be applied to all the nodes in the project.

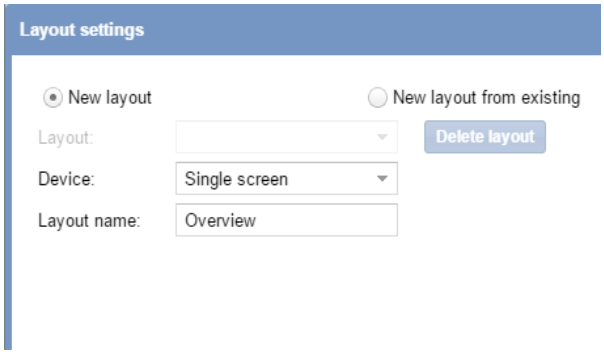
Override option	Priority type
Override other rules	When this option is checked, any old rules created in the past will be deleted and replaced with the new ones. **Current Level:** If you select “override other rules”, the rule will be applied to the node selected in the tree and every other rule for that node will be ignored

21.4Procedures

21.4.1 Create a new Layout

Before starting with Layout editing, the drawings must be already done (see Drawing).

To create a new Layout, follow this procedure:

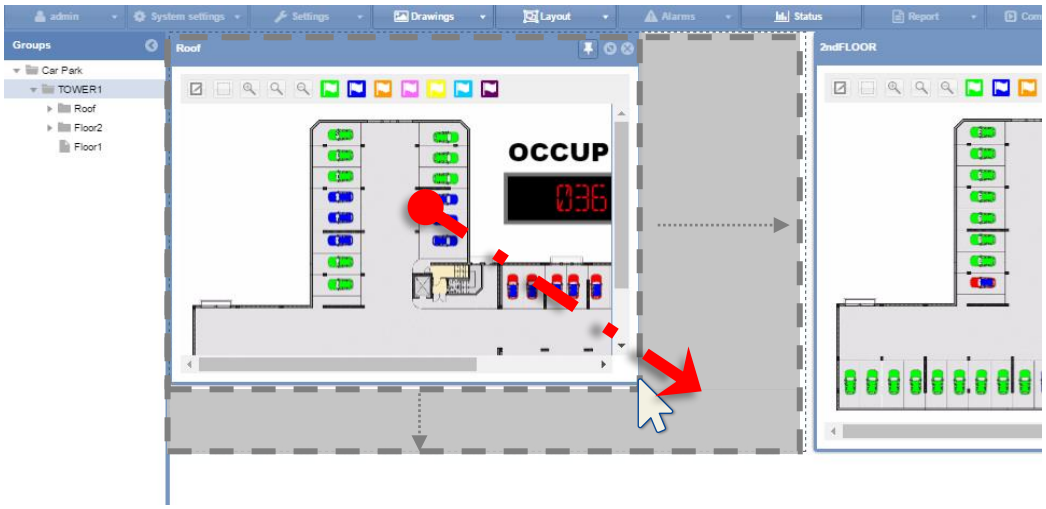
Step	Action
1	Click on the **Edit layout** tab from **Layout** tab
2	Click on **New layout** in the **Layout settings** window 
3	Select the type of **Device** that the current Layout is associated to: • Single monitor • Multi monitor *Note: see* Single screen or Multi screen
4	Enter a description in the **Layout name** field
5	Click **OK** button to close the window. Now you are in ***edit layout*** *mode*
6	Choose an element from the Groups tree, such as a node in which there is one or more Drawings you want to rearrange (e.g. adjust their sizes) *e.g. By clicking on TOWER1, the drawing for the sub-nodes, such as Floor1, Floor2, Roof, will be shown.*

7 For each element (such as **Drawing** or **Status** window) you want to add:

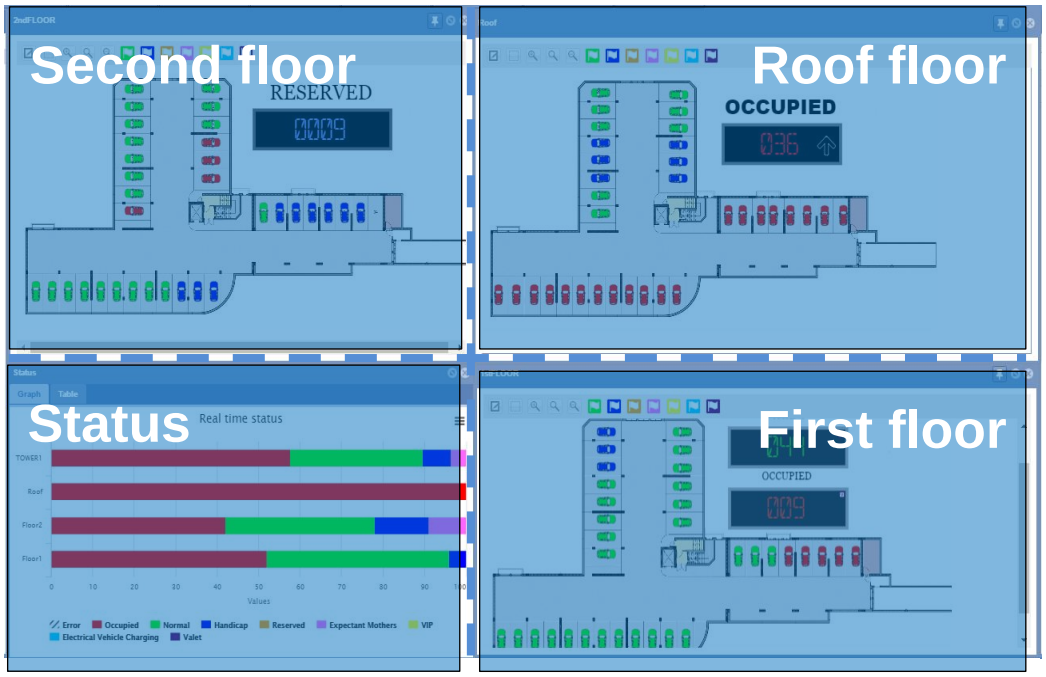
a. Click and drag across the dashboard area to form a square or rectangle

b. Resize element by clicking on a border and dragging it to a new position

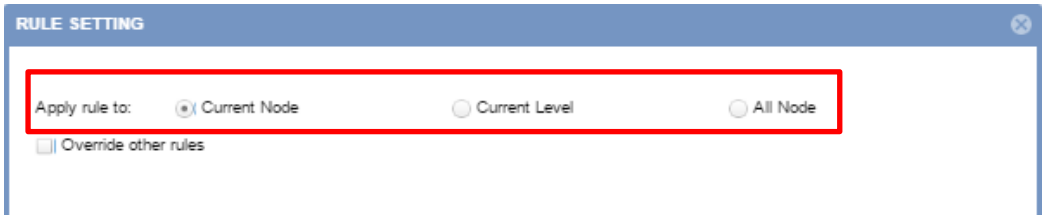
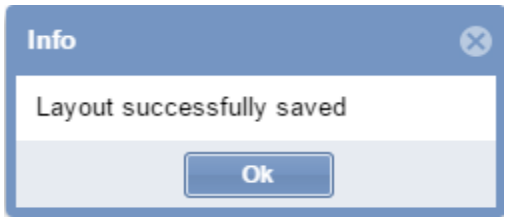
c. Move the element by clicking and dragging.



8 When you are ready to apply changes to your elements, click on **Save rules** from the **Layout** tab.



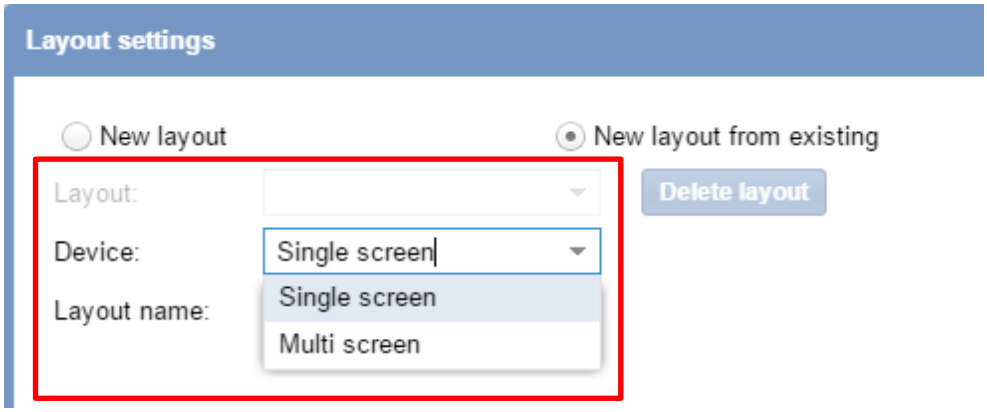
This is an example of the final positioning of the elements

9	In the **Rule settings** window select the node level where the rule has to be applied:  The options are: • Current node (default) • Current Level • All Nodes
10	After the Node level has been selected, check Override other rules if you want to delete any rules that have been previously created. *Note: See* Priority order of rules *for more information* Press the **OK** button to save the rule
11	Click on **Save Layout** from the **Layout** tab: a confirm dialog will appear. 
12	Click **Exit layout editing** from the **Layout** tab to exit editing

Note: The Layout must be assigned to the user who accesses the CPY webserver.

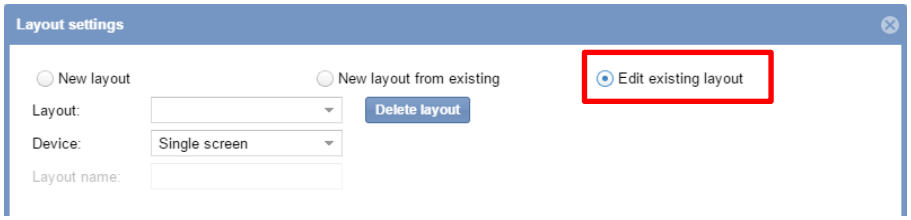
21.4.2 Create a new Layout from an existing Layout.

You can create a new Layout starting from an existing Layout. Follow this procedure:

Step	Action
1	Click on **Edit layout** from the **Layout** tab
2	Click on **New layout from the existing** selector in the **Layout settings** window 
3	From the **Layout** combo-box select the Layout you want to use as a Template *Note: The Device type cannot be changed*
4	Select the type of **Device** that the current Layout is associated to: • Single monitor • Multi monitor *Note: see* Single screen or Multi screen
5	Enter a name for the one newly copied in the **Layout name** field
6	Click the **OK** button to close the window. Now you are in ***edit layout*** *mode*
7	Follow **steps 6-12** of Create a new Layout procedure

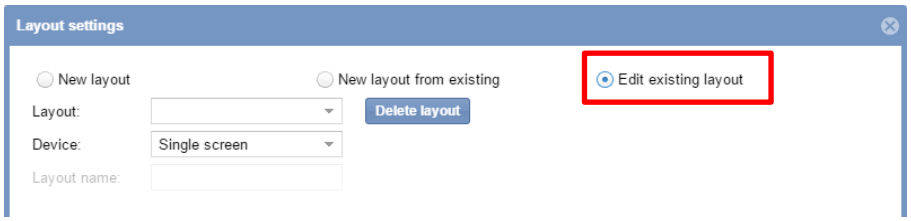
21.4.3 Edit an existing Layout

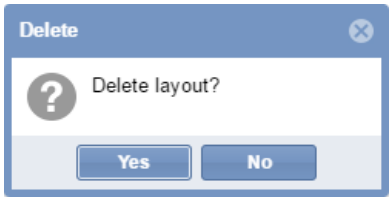
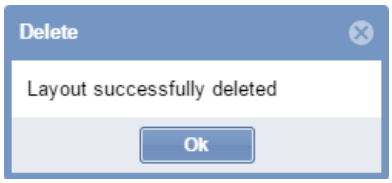
You can modify an existing Layout, for example to make some changes after the Layout creation. Follow this procedure:

Step	Action
1	Click on the **Edit layout** tab from the **Layout** tab
2	Click on the **Edit existing layout** selector in the **Layout settings** window 
3	From the **Layout** combo-box select the Layout you want to modify *Note: The Device type and the Layout name cannot be changed*
4	Click the **OK** button to close the window. Now you are in ***edit layout*** *mode*
5	Follow **steps 6-12** of Create a new Layout procedure

21.4.4 Delete a Layout

To delete a Layout, follow this procedure:

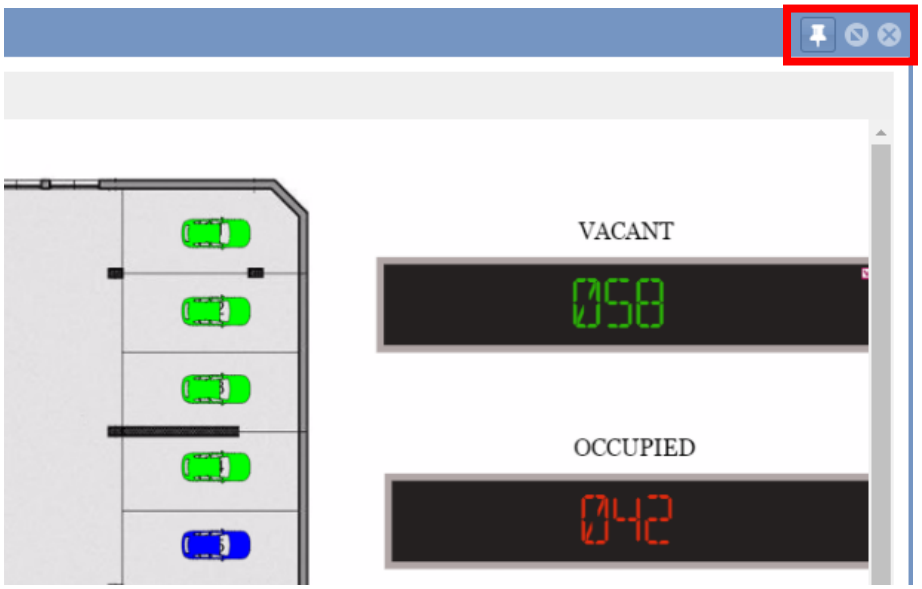
Step	Action
1	Click on the **Edit layout** tab from the **Layout** tab
2	Click on the **Edit existing layout** selector in the **Layout settings** window 
3	From the **Layout** combo-box select the Layout you want to delete

4	Click on the **Delete layout** button: the following dialog will appear  Click on the **Yes** button to delete the selected Layout. Click on the **No** button to go back to the **Layout setting** window.
5	The following dialog confirms that the operation has been completed successfully. 

21.5 Operations with the Layout

21.5.1 Pin the window

In the top-right corner of the drawing window there are three buttons:



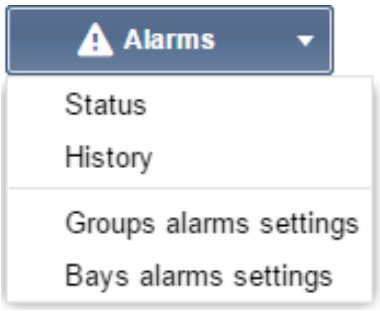
Normally if you click on a node, the previous element (drawing window) will be hidden and the new elements of the selected node will be shown in the dashboard area.

You can make the window always-on-top by clicking on the **pin icon**: the window will also be shown if you change the node selection, until you are logged-in.

22 ALARMS

22.1User interface

By clicking on ⚠ **Alarms** tab from the navigation bar, the following menu will appear:



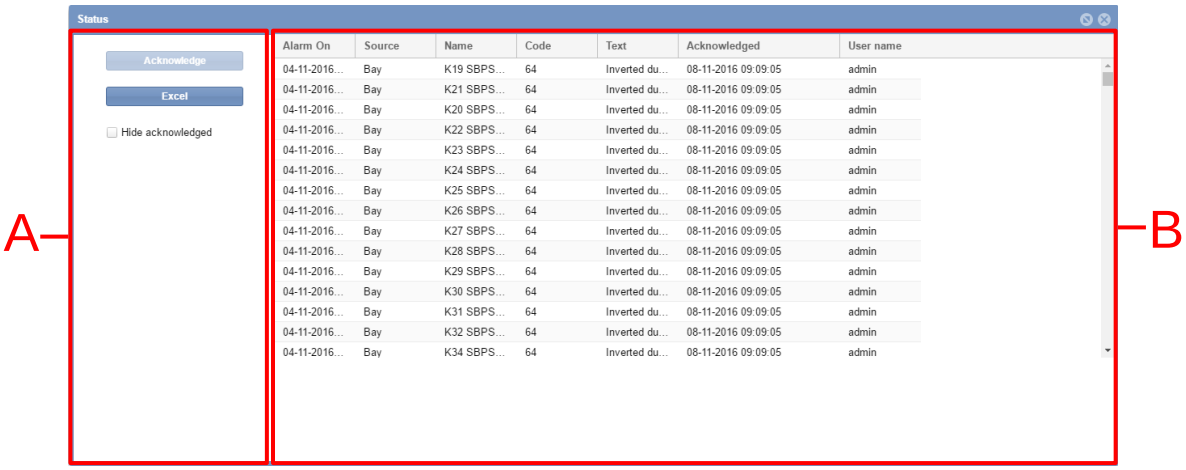
The **Alarms** menu allows you to set time and utilization limits for the bays and groups of the Car Park project. It will inform you if Car Park activity goes beyond these limits, as well as if technical problems should arise. The alarm system is invaluable in maintaining an overview of the parking lot. This is especially true for large scale Carparks.

Section	Features
Alarms status	Shows the current active alarms
Alarms history	Shows the alarms that occurred in a selected period
Groups alarms settings	Defines the minimum percentage of bays that should be vacant in a selected group
Bays alarms settings	Defines the maximum time that a bay should be occupied

Note: Whenever an alarm is active, the Alarm tab will change to a warning sign, and the ⚠ icon will blink.

22.1.1 Status tab

The **Alarms status** window shows the alarms that are currently active:



The window has the following elements:

Area	Description
A	**Button** — **Action** **Acknowledge** — This button allows the acknowledge action for a selected alarm *Note: your user account must have the right permissions to acknowledge an alarm for this button to be enabled. See the account section* **Excel** — This button allows the export of the current alarms to an Excel file **Hide acknowledged** — This check-box hides the alarms that have been acknowledged

B

The **Active Alarms** section shows the active alarms:

Field	Description
Alarm On	The point in time when the alarm was registered
Source	The source of the alarm: this can be a specific bay, a group or a UWP 3.0 controller
Name	The name of the specific Group/Bay/MCG network that set off the alarm
Code	The alarm code, a unique identifier of the type of alarm shown
Text	A brief description of the alarm type
Acknowledged	The point in time when the alarm was acknowledged. If the alarm has not been acknowledged this field will be blank
User name	The user who acknowledged the alarm. If the alarm has not been acknowledged this field will be blank

22.2 Procedures

22.2.1 Acknowledge an alarm

This will not clear the alarm. It simply announces to other users that you have seen the alarm and presumably plan to take action to rectify the problem. This way, other users know that they do not need to take action.

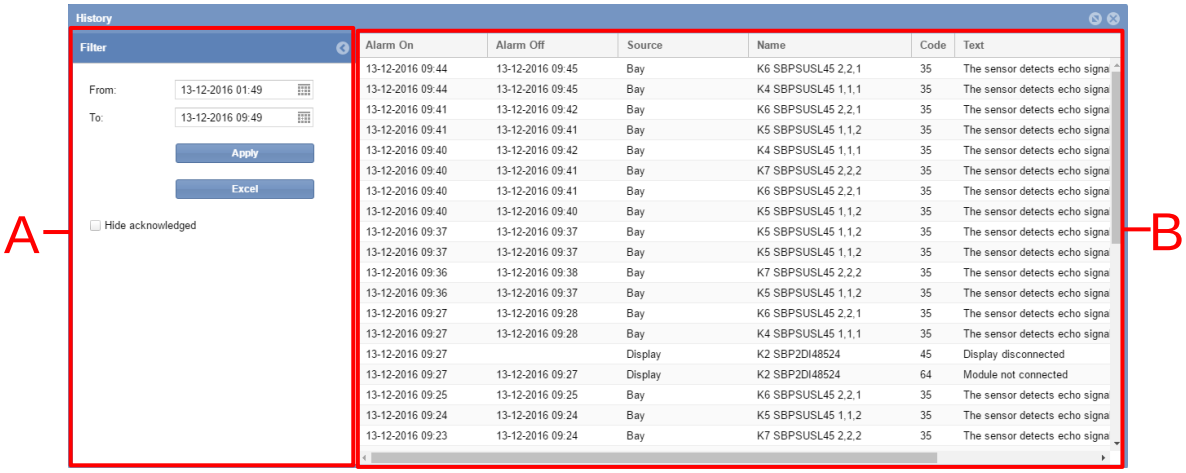
Follow this procedure to acknowledge an alarm:

Step	Action
1	Click on **Alarms status** from **Alarms** menu
2	Select an active alarm from the table (**B area**) *Note: you can check **Hide acknowledge** option to hide the alarms that have been acknowledged.*
3	Press **Acknowledge** button

22.3User interface

22.3.1 Alarms History tab

The **Alarms History** window lets you view alarms from a selected period; that is, alarms which have occurred and disappeared (no longer active). This feature is particularly useful when you are identifying re-occurring issues in your current carpark configuration.



Area	Description
A	**Filter** options allow you to select the required period from which you wish to view historical alarms. The filter has these fields:

Field	Description
From	This field defines the earliest point in time when an alarm could have occurred to be included in the results
To	This field specifies the filter ending point in time when an alarm could have occurred to be included in the results
Excel	This button allows for the export of all displayed historical alarms to an Excel *.xlsx* file
Hide acknowledged	This check-box, when selected, hides the alarms that have been acknowledged

Note: This window can be hidden with the button ❮

B

The **Alarms** table shows the historical alarms that occurred in the selected period. It has the following fields:

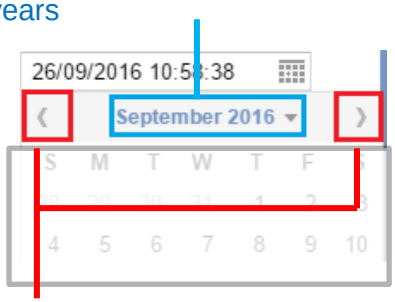
Field	Description
Alarm On	The point in time when the alarm was registered
Alarm Off	The point in time when the alarm stopped being active
Source	The source of the alarm: this can be a specific bay, a group or a UWP 3.0
Name	The name of the specific Group/Bay/Network that set off the alarm
Code	The alarm code, a unique identifier of the type of alarm shown
Text	A brief description of the alarm type
Acknowledged	The point in time when the alarm was acknowledged. If the alarm has not been acknowledged this field will be blank
User name	The user who acknowledged the alarm. If the alarm has not been acknowledged this field will be blank

22.4Procedures

22.4.1 Show the alarms which occurred in a selected period

Follow this procedure to show the alarms that occurred in a selected period:

Step	Action
1	Click on **Alarm history** from **Alarms** menu
2	In the **From** field, click on the icon

3	From the **popup calendar** select the **start** date Click on the month to select the year through years  Click on the arrows to select the month through months The hour can be edited by clicking on it and entering the time desired.
4	In the **To** field, click on the icon
5	In the **popup calendar** select the **end** date to define the **filter end point**. *Note: the current time is selected as the predefined end point*
6	Once the filter has been adjusted to match your criteria, press the **Apply** button to update the query with the new preferences
7	*Optional step:* you can press the **Excel** button to save all the historical alarms to an *.xlsx* file

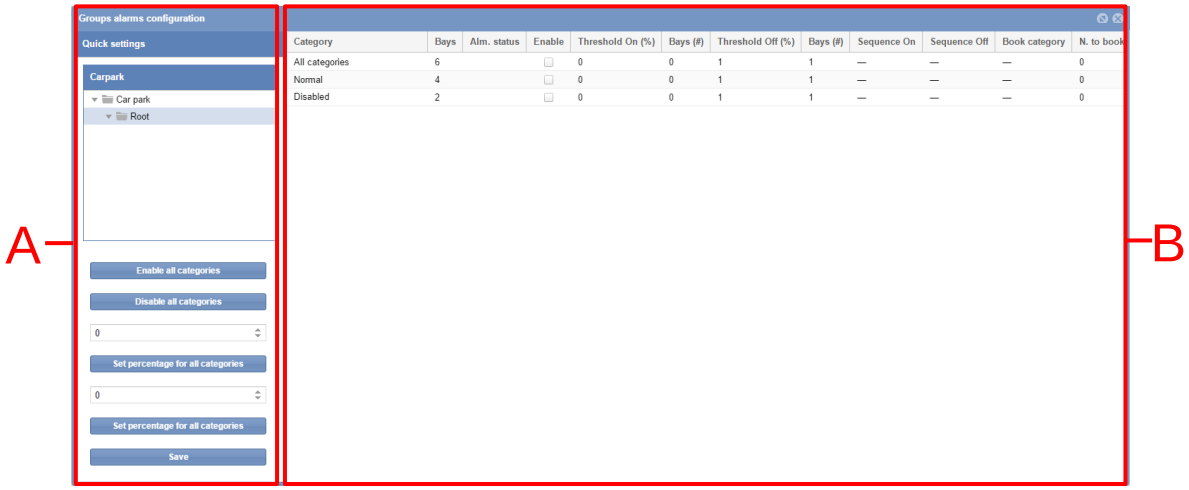
*Note: to hide the alarms that have been acknowledged, check the **Hide acknowledged** checkbox*

22.5User interface

22.5.1 Groups alarms settings

The **Groups alarms settings** window lets you define the minimum percentage of bays that should be vacant in a group at any given point in time. The percentage can also be set for specific categories of bays, such as **Disabled**, **Reserved**, etc…

Note: ONLY the users that have the permission can view these settings.



Area	Description
A	In the **Quick settings** section, you can define global rules for all the categories of the group selected in the Carpark section.

Option	Description
Carpark (groups structure)	This field enables you to choose the group from which the displayed data should originate
Enable all categories	This button enables all the categories of the selected group
Disable all categories	This button disables all the categories of the selected group
Set percentage for all categories	This field sets a threshold On value for all the categories of the Car Park project
Set percentage for all categories	This field sets a threshold Off value for all the categories of the Car Park project

B

The table for these settings has a row for each enabled category of the selected group. The fields are as follows:

Field	Description
Category	The name of the category *Note: All categories row defines whether a minimum free bays limit is enabled for all categories of the selected group.*
Bays	The total number of bays for each selected category
Alm. status	The Alarm status for each threshold rule *Note: an active alarm cannot be deactivated*
Enable	This defines if a category is eligible for the threshold rule
Threshold On (%)	When the percentage of vacant bays of the selected category falls below this value, the alarm goes On for this category
Bays(#)	The number of bays corresponding to the *Threshold On (%)* value
Threshold Off (%)	When the percentage of vacant bays of the selected category rises above this value, the alarm goes Off for this category
Bays(#)	The number of bays corresponding to the Threshold Off (%) value
Sequence On	The sequence will be activated when the alarm goes On
Sequence Off	The sequence will be activated when the alarm goes Off
Book category	The category in which the bays will be occupied
N. to book	The number of bays to be reserved, picked up by the category set in *Book category* combo-box

22.6 Things to know

22.6.1 About the threshold rule

The **Groups alarms configuration** window provides a feature used to specify rising or falling threshold rules based on the vacant/occupied status of the bays in the Car Park project. When the threshold is reached, depending on the defined limit, a set of actions can be performed, as follows:

- Book a specific *number* of bays from a specific category.
- Run a sequence

22.6.1.1 Example - Book *n* bays

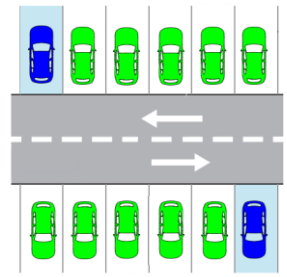
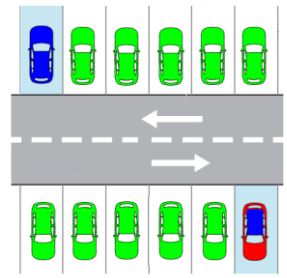
For the **Disabled** category, a rule is defined to book 1 bay from the **Normal** category, when the number of vacant bays for Disabled goes below a specific value. The available categories are defined as follows:

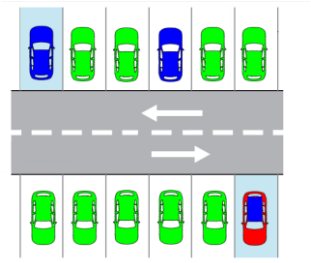
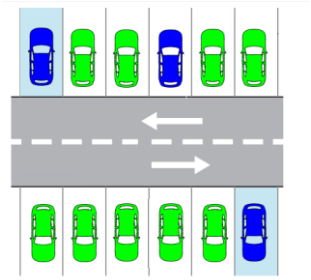
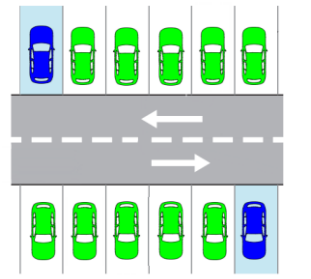
Category	N° of bays
Normal	10
Disabled	2

The threshold rule is set in the **Group alams configuration** window as follows:

Category	Bays	Alm. status	Enable	Threshold On (%)	Bays (#)	Threshold Off (%)	Bays (#)	Sequence On	Sequence Off	Book category	N. to book
All categories	6		☐	0	0	1	1	—	—	—	0
Normal	4		☐	0	0	1	1	—	—	—	0
Handicap	2		☑	50	1	51	3	—	—	Normal	1
Reserved	0		☐	0	0	1	1	—	—	—	0
Electrical Vehicle Charging	0		☐	0	0	1	1	—	—	—	0

The table below shows an events example:

Status	Alarm status	Disabled Vacant / Total	Total Normal
The system is in a normal condition 	INACTIVE	2/2 (100%)	10
When less than 50% of Disabled bays are vacant, the Alarm condition will be activated 	ACTIVE	1/2 (50%)	10

As a result of the Alarm condition a bay has been booked from **Normal** category 	ACTIVE	2/3 (<50%)	9
The Alarm condition is still active till the number of disabled bays goes above 3 	ACTIVE	3/3 (>51%)	9
The Alarm condition will be deactivated and the booked bays will be reassigned to the **Normal** category 	INACTIVE	2/2	10

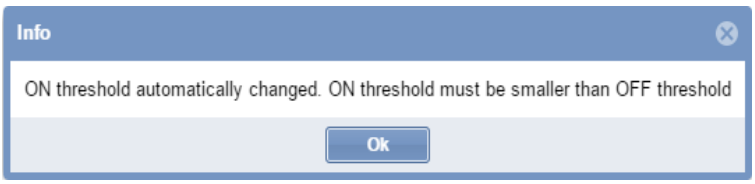
Note: The CPY calculates the number of bays from the set percentage.

Note: The Alm. status field shows the alarm status condition.

22.7 Procedures

22.7.1 Book bays with a threshold rule

To define a new rule, e.g. as shown above, follow this procedure:

Step	Action
1	Click on **Groups alarms settings** from the **Alarms** menu
2	In the **Carpark** tree view select a group (node): the relevant bays will be shown in the table on the right
3	In the **Enable** column select the ☑ check box to enable the required categories
4	In the **Threshold On (%)** insert the percentage value and press **ENTER** *Note: in the **Bays(#)** field, the system shows the number of bays* *e.g. Category has 50 bays -> **Threshold On (%)**: 20% -> Bays(#): 10 bays* *Note2: The Threshold ON value must be smaller than Threshold OFF*
5	In the **Threshold Off (%)** insert the percentage value and press **ENTER** *Note: in the Bays(#) column the system shows the number of bays* *e.g. Category has 50 bays -> **Threshold Off (%)**: 22% -> Bays(#): 11 bays* *Note2: The Threshold OFF value must be greater than Threshold ON* 
6	In the **Sequence On** you can set a sequence that will be executed when the alarm goes On *Note: The Sequences have to be defined in the UWP 3.0 Tool*
7	In the **Sequence Off** you can set a sequence that will be executed when the alarm goes Off *Note: The Sequences have to be defined in the UWP 3.0 Tool*
8	In the **Book category combo-box** select the category into which the bays will be occupied
9	In the **N. to book** field enter the number of bays to be occupied

10	In the **Quick settings** section click the **Save** button to save the changes

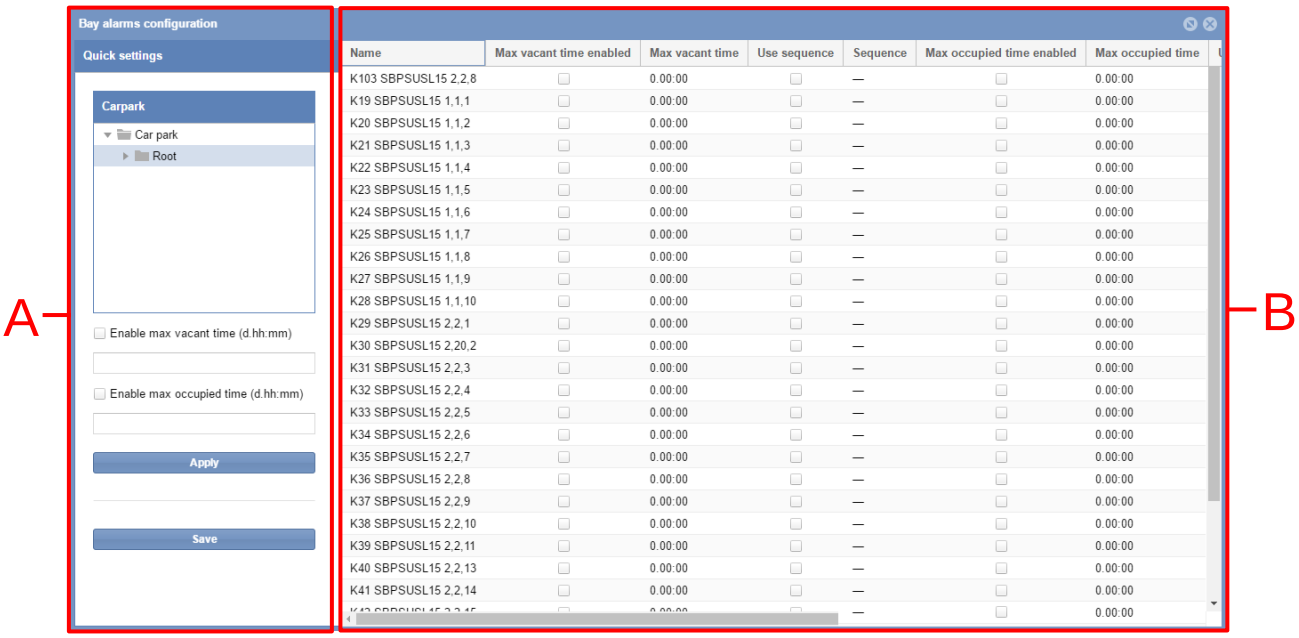
22.7.2 Book bays with a global threshold rule

All category rows, available for each virtual group of the Car Park project, can be used to set global rules for all the categories. The procedure is the same as for the individual rules.

22.8 User interface

22.8.1 Bay alarms settings

The **Bay alarms settings** window allows you to set time limits on occupation periods, as well as vacant periods, for each individual bay in a group.



***Note**: All users can view the **Bay alarms settings**, although your user account must have special permission to modify them.*

Area	Description
A	In the **Quick settings** section, you can define global rules for all the bays in the group selected in the **Carpark** tree view. The fields are as follows:

Option	Description
Carpark (Groups tree view)	This field lets you choose the group that the data shown should originate from
Enable max vacant time (d.hh:mm)	This option lets you assign the Max vacant time for all bays in the selected virtual group *Note: The times in this field have the following format: [days].[hours]:[minutes]*
Enable max occupied time (d.hh:mm)	This option let you assign the Max occupied time for all bays in the selected virtual group *Note: The times in this field have the following format: [days].[hours]:[minutes]*

B The **table** for these settings shows a row for each bay present in the selected Virtual group. The fields are as follows:

Field	Description
Name	This defines the name of the bay the alarm settings belong to
Max vacant time enabled	This indicates whether or not the maximum limit for how long a bay can be vacant is enabled
Max vacant time	The amount of time that the bay in question can be vacant before an alarm is triggered. This requires the **Max vacant time enabled** checkbox to be checked
Use sequence	When the **Max vacant time** is reached, a sequence can be activated
Sequence	The sequence will be activated when the **Max vacant** time is reached
Max occupied time enabled	This indicates whether or not the maximum limit for how long a bay can be occupied is enabled
Max occupied time	The amount of time that the bay in question can be occupied before an alarm is triggered. This requires the **Max occupied time enabled** checkbox to be checked
Use sequence	When the **Max occupied time** is reached, a sequence can be activated
Sequence	The sequence will be activated when the **Max occupied time** is reached
Set event based category	In the **Set event based category** column select the ☑ check box to enable for the selected bay
Event based category	In the **Event based categories combo-box** select the category into which the bays will be occupied

22.9 Things to know

22.9.1 About the threshold rule

By setting an alarm to go ON when an occupation period exceeds the maximum occupation time, you can ensure that the users are not staying longer than they are permitted. Meanwhile, a limitation on the amount of time a bay can be vacant is a good way to ensure that your Car Park project is being fully utilized.

22.10 Procedures

22.10.1 Set a Max vacant time / Max occupied time

Follow this procedure to set a max vacant and/or Max occupied time for the bays of a virtual group, individually:

Step	Action
1	Click on **Bays alarms settings** from the **Alarms** menu
2	In the **Carpark** tree view select a virtual group: the relevant bays will be shown in the table on the right
3	In the **Max vacant time enabled** column select the ☑ check box to enable the required bays
4	In the **Max vacant time** insert the value and press **ENTER** Note: if the time you have entered does not match the format *[days].[hours]:[minutes]*, you will be unable to deselect the field until this is corrected
5	In the **Use sequence** column select the ☑ check box to enable the required bays
6	In the **Sequence** you can set a sequence that will be executed when the **Max vacant time** value is reached Note: The Sequences have to be defined in the UWP 3.0 Tool
7	In the **Max occupied time enabled** column select the ☑ check box to enable the required bays
8	In the **Max occupied time** insert the value and press **ENTER** Note: if the time you have entered does not match the format *[days].[hours]:[minutes]*, you will be unable to deselect the field until this is corrected
9	In the **Use sequence** column select the ☑ check box to enable the required bays
10	In the **Sequence** you can set a sequence that will be executed when the **Max occupied time** value is reached Note: The Sequences have to be defined in the UWP 3.0 Tool
11	In the **Set event based category** column select the ☑ check box to enable the required bays: the selected bays
12	In the **Event based categories combo-box** you can select an event based category that will be set when the **Max vacant time** / **Max occupied time** value is reached This functionality permits to change the colour to a bay sensor to distinguish from the standard colour for occupy status
13	In the **Quick settings** section click the **Save** button to save the changes

22.10.2 Book bays with a global threshold rule

When a time checkbox is checked and the time field has been filled out:

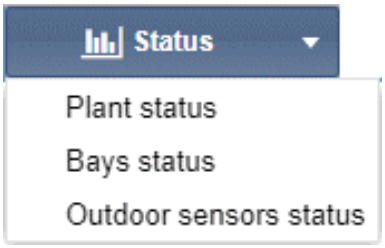
Step	Action
1	Click on **Bays alarms settings** from the **Alarms** menu
2	In the **Carpark** tree view select a virtual group: the relevant bays will be shown in the table on the right
3	In the **Enable max vacant time (d.hh:mm)** field select ☑ the check box
4	In the box below insert the value and press **ENTER** Note: if the time you have entered does not match the format *[days].[hours]:[minutes]*, you will be unable to deselect the field until this is corrected
5	In the **Enable max occupied time (d.hh:mm)** field select ☑the check box
6	In the box below insert the value and press **ENTER** Note: if the time you have entered does not match the format *[days].[hours]:[minutes]*, you will be unable to deselect the field until this is corrected
7	In the **Set event based category** field select ☑ the check box
8	In the combo-box below select the **event based category** will be applied to all corresponding bays in the selected virtual group.
9	In the **Quick settings** section click **Apply**: the changes will be applied to all corresponding bays in the selected virtual group. *Note: If a time checkbox is unchecked and **Apply** is clicked, all the corresponding time limits will be disabled*

*Note: changes made to the field will become permanent when the **Save** button is clicked. If at any point (before clicking **Save**) you regret any changes made, click the* *icon to close the window without saving any changes.*

23 STATUS

23.1 User interface

By clicking on **Status** tab from the navigation bar, the following menu will appear:

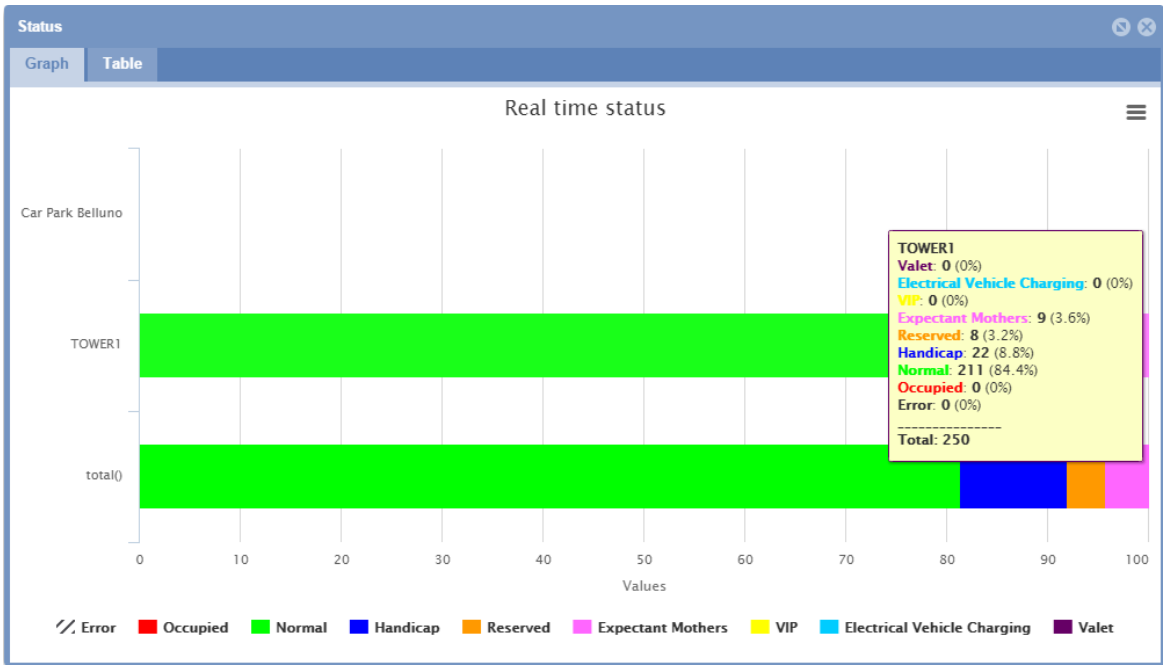


The **Status** menu allows you to set time and utilization limits for the bays and groups of the Car Park project. It will inform you if Car Park activity goes beyond these limits, as well as if technical problems should arise. The alarm system is invaluable in maintaining an overview of the parking lot. This is especially true for large scale Carparks.

Section	Features
Plant status	Shows the current active alarms
Bays status	Shows the alarms that occurred in a selected period

23.2User interface

By clicking on **Plant status** tab from the navigation bar, the Rea time status window will appear:



The **Real time status** window shows the live occupation status of the various groups of the Car Park project, as they are defined in the UWP 3.0 Tool. The status is live in the sense that it is continuously monitored by the software.

You can choose to have the collected data illustrated either by:

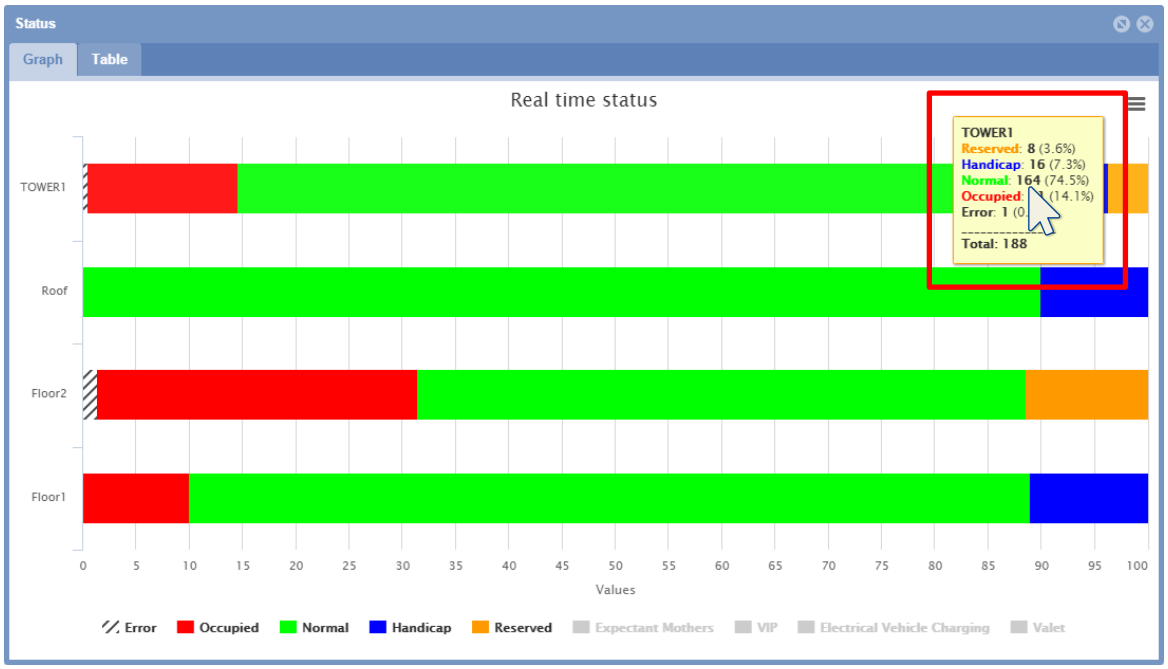
Section	Features
Graph tab	Shows a graphical report of the live occupation
Table tab	Shows a textual report of the live occupation

23.2.1 Graph tab

The **Graph** tab shows a graphical representation of percentage of bay sensors registered as occupied in each group and percentage in the available categories.

23.2.1.1 Hovering (Show detailed information)

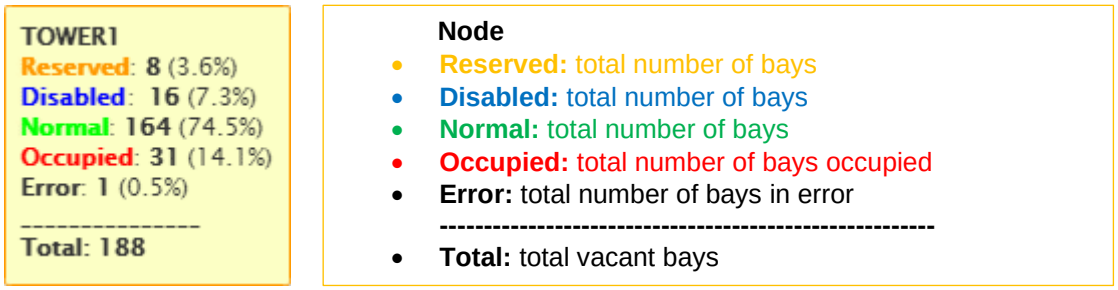
In the **Graph** tab, by hovering a coloured section of a group's bar with the mouse, a tooltip will appear with the live occupation details:



23.3 Things to know

23.3.1 Categories

The *Group Status window* status bar quantifies the categories of bay sensors. In the example above the categories managed are:



It divides these quantities of bay sensors according to their status. This is done to provide a better overview of the state occupancy of the parking lot.

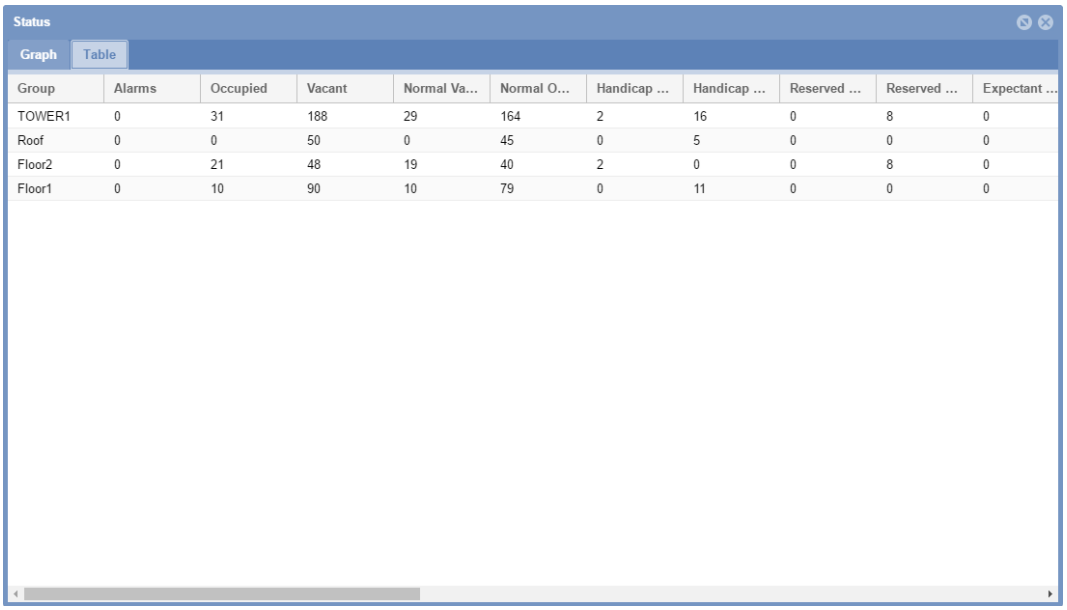
23.3.2 Unknown status

When the Car Park project is first configured and started by the UWP 3.0 Tool, it is normal for some (if not all) of the sensors to be categorized under the **Unknown status** for a short period of time. This is because the sensors are still being detected and the aforementioned sensor occupied delay has not yet elapsed for all of them. However, if the Unknown status persists, consult the **Alarm > Status** section and see if any of the UWP 3.0 masters are experiencing a communication error. If so, check the hardware and software configuration in the UWP 3.0 Tool.

23.4User interface

23.4.1 Table tab

The **Table** tab presents the same data as the **Graph** tab, but in plain text form.



In the Table tab you can see a row for each group of the Car Park project. The fields are as follows:

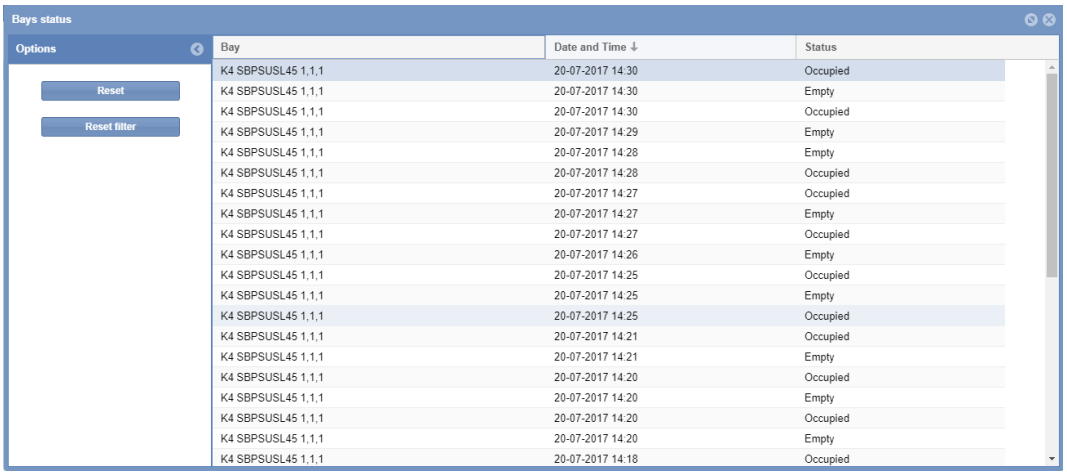
Field	Description
Group	Shows the group's name
Alarms	Shows the current active alarm count for the group. See the Alarms chapter for more details on this
Occupied	Shows the total number of bays that are occupied in the current group
Vacant	Shows the total number of vacant bays available
***[Category 1]* Vacant**	Shows the vacant bays for category 1 (Default "Normal")
***[Category 1]* Occupied**	Shows the occupied bays for category 1 (Default "Normal")
***[Category 2]* Vacant**	Shows the vacant bays for category 2 (Default "Disabled")
***[Category 2]* Occupied**	Shows the occupied bays for category 2 (Default "Disabled")
***[Category n]* Vacant**	Shows the vacant bays for category *n*
***[Category n]* Occupied**	Shows the occupied bays for category *n*
Bays	Shows the total number of bays for this Group (node)

***[Category 1]* Total**	Shows the total number of bays (vacant and occupied) for category 1
***[Category 2]* Total**	Shows the total number of bays (vacant and occupied) for category 2
***[Category n]* Total**	Shows the total number of bays (vacant and occupied) for category *n*
Error!	Shows the total number of bays in Error for the selected group

23.5User interface

23.5.1 Bays status

The **Bays status** window presents the same data as the **Graph** tab, but in plain text form.



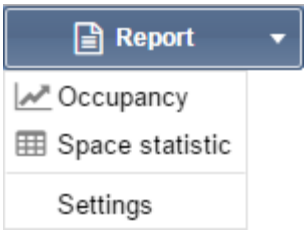
In the Bays status tab you can see a row for each group of the Car Park project. The fields are as follows:

Field	Description
Bay	Shows the bay's name
Date and Time	Shows the date and time when the event has occurred
Status	Shows the current status of the bay

24 REPORT

24.1 User interface

The **Report** menu contains two of the key analysis functions of the CPY webserver. By clicking on the **Report** tab from the navigation bar, the following menu will appear:

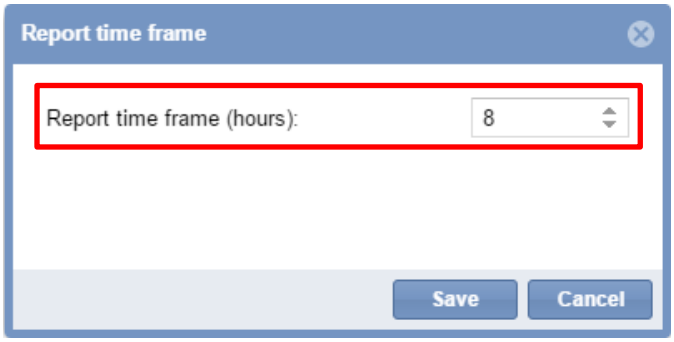


These reports provide an overview of Car Park usage patterns, on a scale varying from a single parking bay, to the entire Car Park project (parking lot).

Section	Features
Occupancy	Shows a history report about the occupied/vacant status of a selected group of Car Park project
Space statistic	Shows a detailed report about status of each bay of a selected group of Car Park project
Settings	Set the delta period for the report time interval

24.1.1 Report time frame window

In the **Setting** tab of the **Report** menu, you can set the difference between the **Start date** and the **End date** used by default from the Report functions.



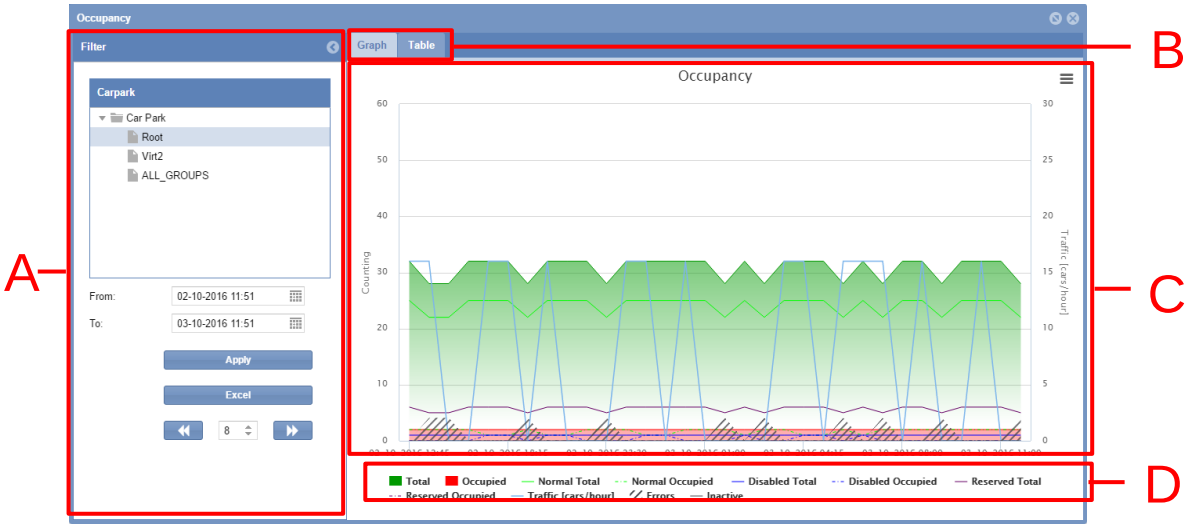
24.1.2 Occupancy

The **Occupancy** function takes a virtual snapshot of the state of occupancy in each group of the Car Park, every fifteen minutes (UTC time). You can choose to have the collected data illustrated either:

- Graphically in the **Graph** tab
- Textually in the **Table** tab

24.1.3 Graph tab

The **Graph** tab contains a chart which illustrates the Car Park occupancy history.



Graph tab of Occupancy window

<table>
<tr><th>Area</th><th>Description</th></tr>
<tr><td>A</td><td>The filter is used to specify the period of time, as well as the group of the carpark where the data shown should stem from. This allows you to specify which part of the occupation history you're interested in. By limiting the scope of the data, it becomes easier to interpret. The filter has three fields:

<table><tr><th>Filter</th><th>Description</th></tr><tr><td>Groups</td><td>This field lets you choose the group (real or virtual) where the data shown should originate</td></tr><tr><td>From</td><td>This field specifies the filter starting point. All occupation history data that occurred between this point in time and the filter end point will be shown</td></tr><tr><td>To</td><td>This field specifies the filter ending point</td></tr></table>
Note: The window can be hidden with the button</td></tr>
<tr><td>B</td><td>You can switch from Graph tab to Table tab</td></tr>
<tr><td>C</td><td>This shows the graph based on the filter set. The graph axes adjust automatically to the data requested, in order to present in the most interpretable manner possible. The time (horizontal) axis resolution will change in accordance with the length of the selected filter period. The longer the period, the lower the resolution.

By clicking on the icon you can export the report (see <a>Export the graph in different formats)</td></tr>
<tr><td>D</td><td>You can enable or disable the showing of specific statistics by clicking the labels of the available categories (C area).

Note: only the Graph tab shows the group categories</td></tr>
</table>

24.1.4 Table tab

The **Table** tab shows the same data as the **Graph** tab. By clicking on **Table** tab from the **Occupancy** window, the following interface will appear:

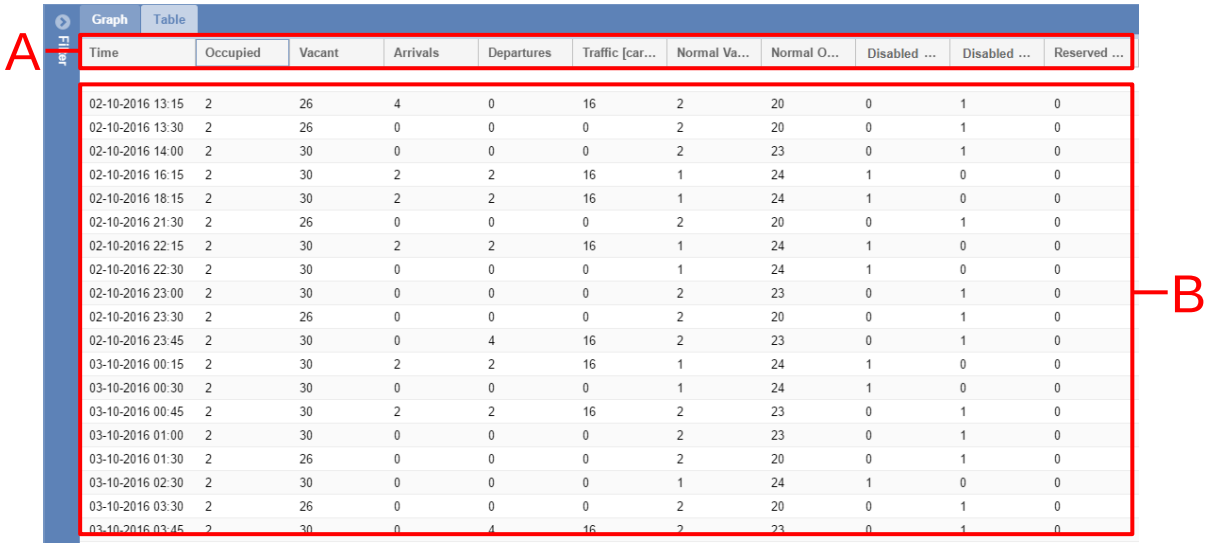


Table tab of Occupancy window

Area	Description
A	The header row shows the columns of the table
B	The table reports the results of the chart as text

*Note: Like the **Graph** tab, this will adjust its time resolution in accordance with the selected filter period.*

24.2 Things to know

24.2.1 Customizable items of a report

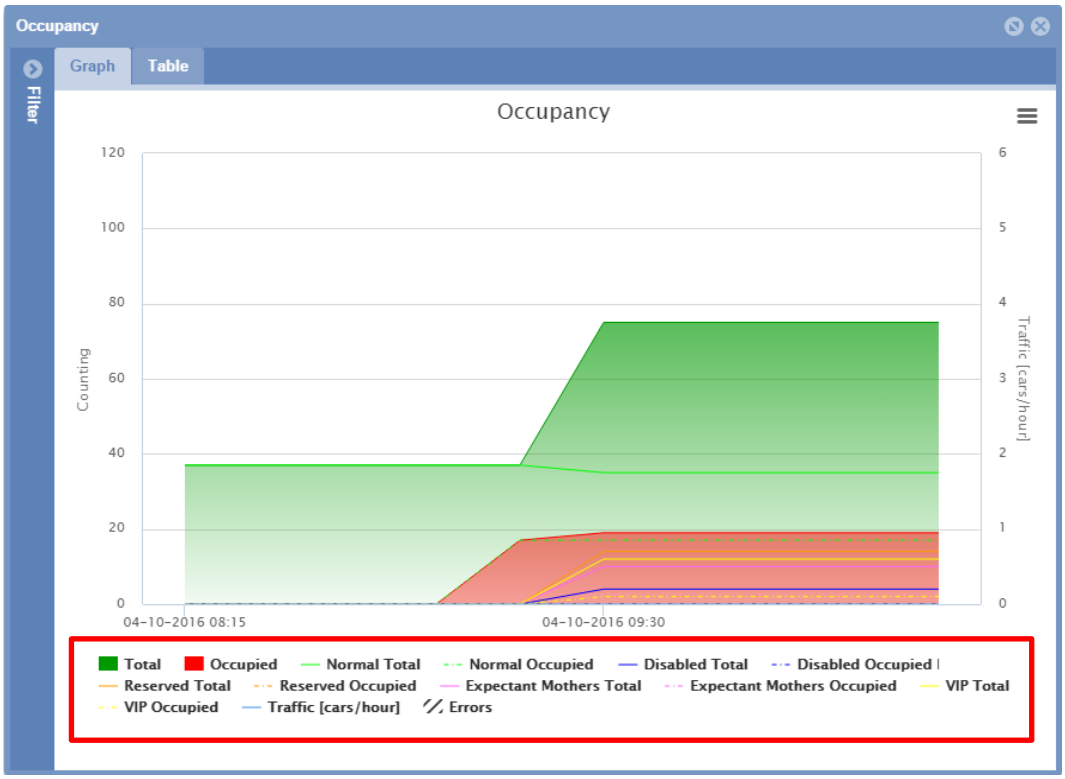
You can customize the following report items:

Tab	Items
Graph	• Show / hide categories • Show / hide statuses
Table	• Column position • Sort the data into Ascending/Descending order by column

24.2.2 Elements in the graph

As well as showing which of the total parking spaces are occupied/vacant, the chart also shows detailed data for all the categories managed in the Car Park project. See Status/Categories setup.

In addition to the occupied/vacant statuses, the chart also shows how many of the total disabled bays are occupied, as well as which spaces are booked and how many of these are occupied. The chart goes on to illustrate traffic patterns and, if an error should occur, it will illustrate this too.



All the categories and statuses managed by the Car Park project are reported below the current graph (see the red rectangle in the picture above) with a label for each category (occupied/vacant)

After you create a report, you can select which elements you want to show in a chart.

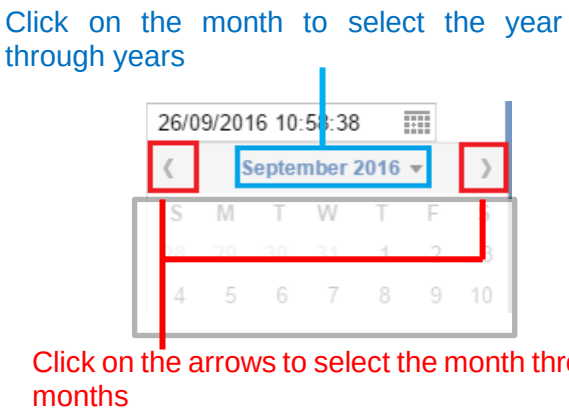
The elements which can be shown in the chart are:

- **Category** (Disabled, VIP etc..)
- **Bay status** (e.g. if the real bay sensor is in **Error** condition)
- **Traffic [cars/hour]**

24.3 Procedures

24.3.1 Create a new report (Graph/Table)

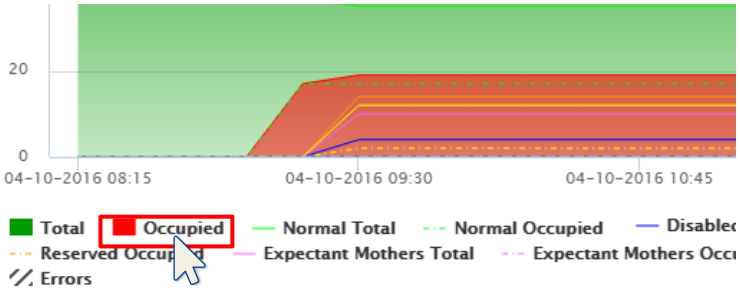
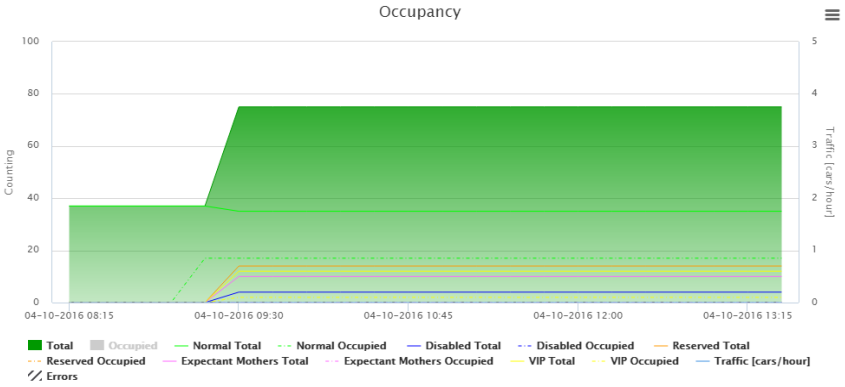
Follow this procedure to create a new report:

Step	Action
1	Click on **Occupancy** from the **Report** menu
2	In the **Filter** section → **Groups**, select the desired group
3	In the **From** field, click on the icon
4	In the **popup calendar** select the s**tart** date  The hour can be edited by clicking on it and entering the desired time. ***Note: The start date must be before the end date***
5	In the **To** field, click on the icon
6	In the **popup calendar** select the **end** date to define the **filter end point**. *Note: the current time is set as the predefined end point*

7	Once the filter has been adjusted to match your criteria, press the **Apply** button to update with the new preference. *Note: If you change the current group (the node on the tree), the graph/table will be generated automatically without pressing the Apply button*

24.3.2 Show / hide elements in the graph

In order to show/hide the different elements, follow this procedure:

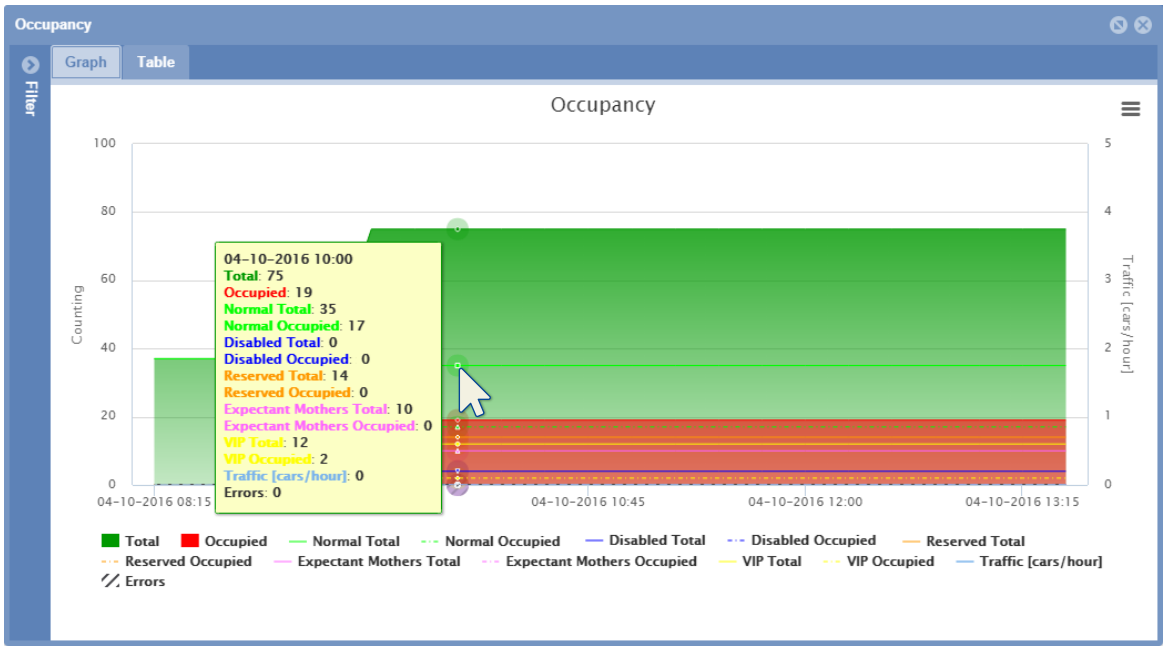
Step	Action
1	Create a new report if you don't have an already existing one
2	At the bottom of the chart, click on one or more **text labels of** the categories, in order to hide/show from current view: 
3	In the example below, the **Occupied** category has been hidden 

*Note: This selection does not affect the data in the **Table** tab, but it affects the list shown in the tooltip and reports that can be saved from the graph.*

24.3.3 Show the status in the tooltip

The tooltip is a little box that pops up when you hover the mouse over the chart area. The tooltip content is automatically generated based on the elements available for the chart.

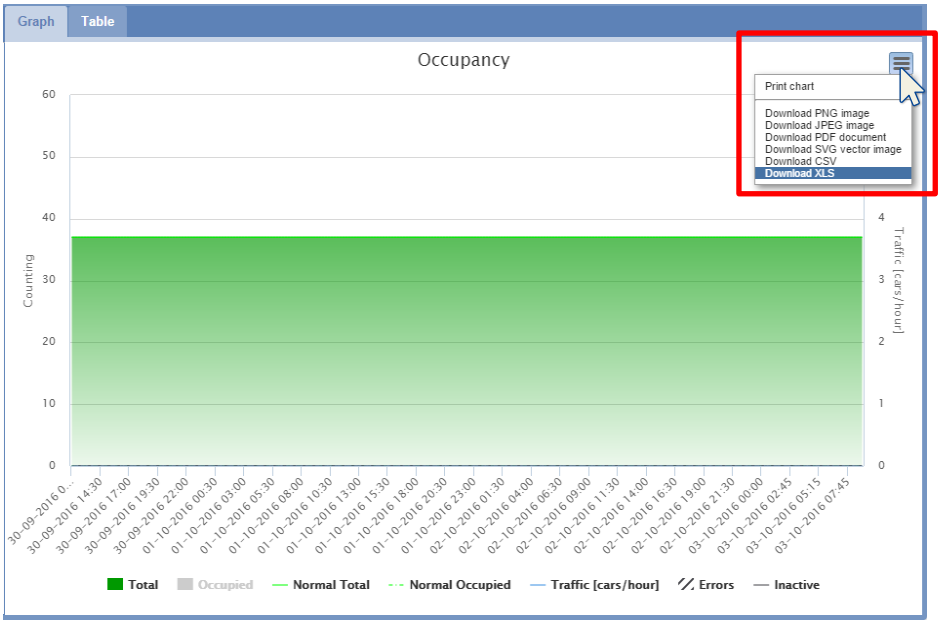
You can see the tooltip by hovering your mouse over any part of the chart area. It shows, in text format, the status of the Car Park at the exact moment the mouse pointer is placed.



Note: the data represented in the tooltip popup based on the label selected at the bottom part of the chart

24.3.4 Export the graph in different formats

You can export the generated report into one of the available file formats, e.g. a CSV file or an XLS table. There are also different image formats available to save it as a graph.

Step	Action
1	Create a new report if you don't have an already existing one
2	In the top-right part of the chart area (see the red rectangle below), click on the ☰ icon: 
3	Select one of the format files to save it. *Note: Depending on your browser settings, there are different ways to download files: please refer to the download setting of the browser used.*

24.3.5 Sort the contents of a table report

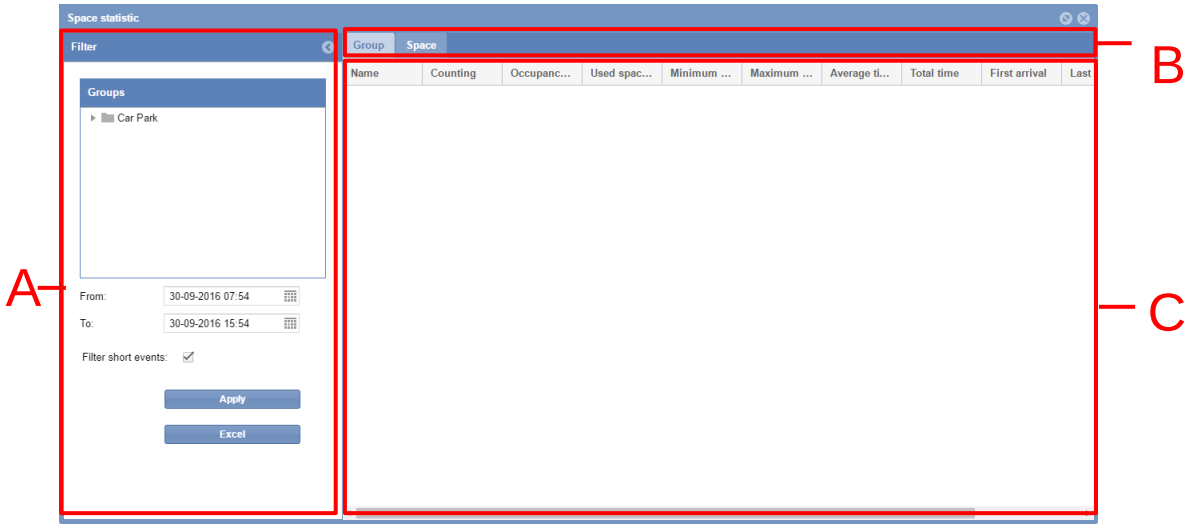
Step	Action
1	Create a new report if you don't have an already existing one
2	Select Table tab from the Occupancy window
3	From the header row, click the ▼ icon next to the required box, then: • click ↑ to sort in ascending alphanumeric order (Sort A to Z) • click ↓ to sort in descending alphanumeric order (Sort Z to A)

24.4User interface

24.4.1 Space statistic

The space statistic function focuses on the analysis of parking bay utilization. It does so by looking at the time intervals during which spaces have been occupied and generating statistics by comparing these intervals to each other in the context of the period selected by the user.

- **Group** tab: the statistics can be viewed for the selected group;
- **Space** tab: the statistics can be viewed for individual spaces;



Space statistic window

Area	Description
A	The filter is used to specify the period of time, as well as the group of the carpark, where the data shown should stem from. This allows you to specify which part of the occupation history you're interested in. By limiting the scope of the data, it becomes easier to interpret. The filter has three fields:

Filter	Description
Groups structure	This field lets you choose the group (real or virtual) that the data shown should originate from.
From	This field specifies the filter starting point. All occupation history data that occurred between this point in time and the filter end point will be shown.
To	This field specifies the filter ending point
Filter short events	If this field is enabled, all the events of the sensors that last less than 30 seconds are hidden

Note: The window can be hidden with the button

B	You can switch from **Group** tab to **Space** tab
C	This section shows the data table based on the group selection Refer to the table below for more info about the fields available for **Group** tab and **Space** tab

24.5 Things to know

24.5.1 Group tab

The table found under the **Group** tab shows the group statistics for all the space sensors assigned to the group that the user has selected. If the selected group is subdivided into smaller groups, the statistics for these smaller groups will be shown.

The fields of the **Group** table show the following data:

Permission	Description
Name	The group name, as defined in the **Configuration of the SBP2CPY**
Counting	The number of times a bay has been newly occupied in the group during the selected period (the filter period)
Occupancy time %	The percentage of time the group is occupied. Calculated by: **([The sum of the group's bay occupancy time] / ([The selected period (filter period)] * [number of bays]))** * 100
Used space %	The percentage of the parking bays in the selected group that were occupied during the selected period

Minimum time	The shortest time interval in which a car was parked in a bay during the selected period
Maximum time	The longest time interval in which a car was parked in a bay during the selected period
Average time	The average length of the occupation times that occurred in the selected period
Total time	The sum of each parking bay's total occupation time during the selected period
First arrival	The starting point of the first occupation time found in the selected period
Last departure	The ending point of the last occupation time found in the selected period. Note: be aware that if this is equal to the selected *From time*, all the occupation intervals in the selected period are currently active. This means all bays in the group are currently occupied.

24.5.2 Space tab

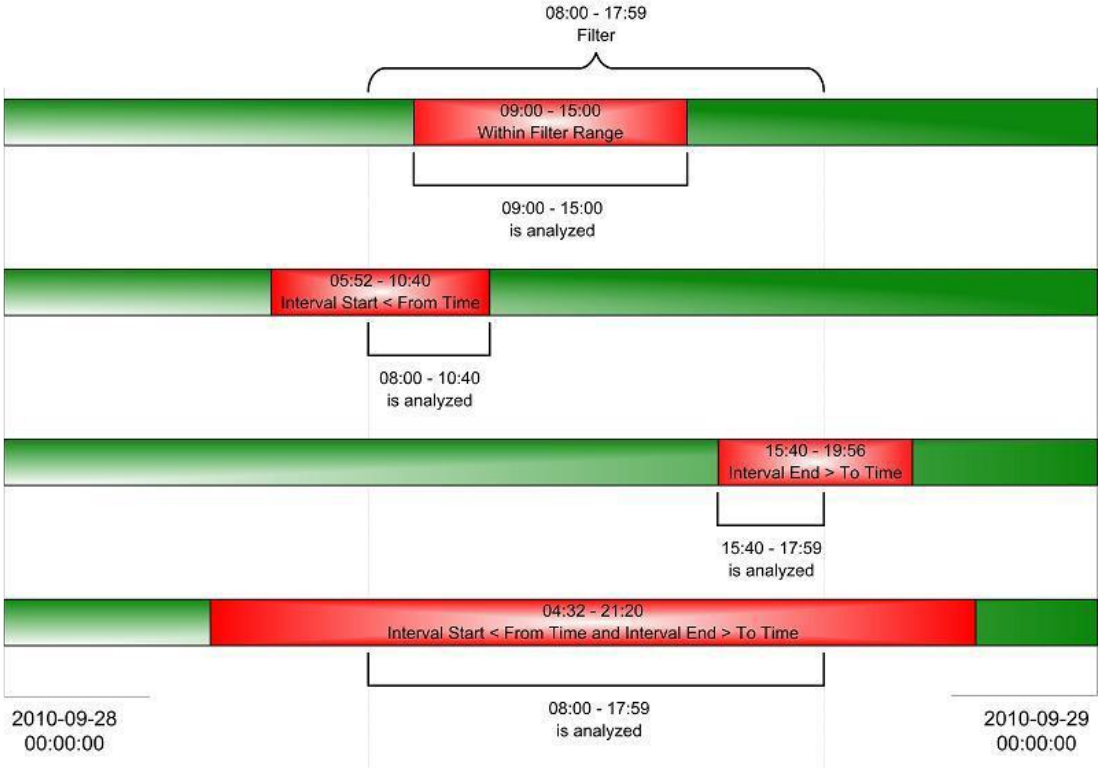
The table found under the **Space** tab shows the statistics of each individual bay sensor in the area that the user has selected. The fields of the table show the following data:

Permission	Description
Name	The sensor's name, as defined in the UWP 3.0 Tool
Counting	The number of times the bay was occupied during the selected period (the filter period)
Occupancy time %	The percentage of time in the selected period that the bay was occupied
Minimum time	The shortest time interval in which a car was parked in the bay during the selected period
Maximum time	The longest time interval in which a car was parked in the bay during the selected period
Average time	The bay's average occupation time during the selected period
Total time	The bay's total occupation time in the selected period
First arrival	The starting point of the first occupation interval found in the selected period
Last departure	The ending point of the last occupation interval found in the selected period. Be aware that if this is equal to the selected *From time*, the selected period only contains an active occupation interval. This means that the bay is currently occupied

Note: If a bay associated with the selected group does not appear in the table, it is because it has not been occupied during the selected period.

24.5.3 Example

While the filter has the function of narrowing down the data the software should display, it also functions as a cut off point for the occupation intervals being analyzed.



The above diagram shows four different scenarios where an occupation interval for a single parking bay is filtered. As can be seen in the first scenario (TOP), when the interval starts and ends within the filter period, the full interval is analyzed by the software. However, as can be seen in the other three scenarios, if any part of an interval lies outside the filter period, it will be disregarded by the software.

An example: there are 10 parking bays in a group. Each of these has been occupied during the hour between 9 and 10 in the morning. In the filter you select the group and set *From time* to 09:11:00 and *To time* to 09:12:59. The resulting output will show that the minimum, maximum and average time for all the bays in the group will be 01:59. This is correct, seen in the context of the selected filter period, but it can be misleading.

Note: In order to avoid confusion it is recommended that you:

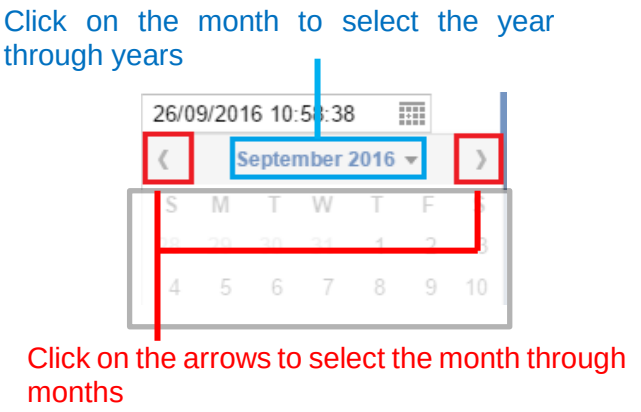
1. *Avoid making your filter periods too short. If this advice had been followed in the example above, useable statistics would have been acquired.*

2. *Look at the First Arrival/ Last Departure times. If they fall outside the filter period, then part of an interval has been disregarded.*

24.6 Procedures

24.6.1 Create a new report (Space statistics)

Follow this procedure to create a new report:

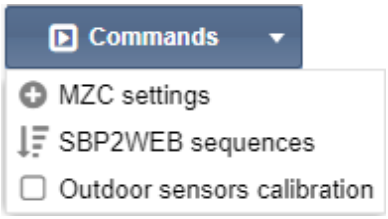
Step	Action
1	Click on **Space statistics** from **Report** menu
2	In the **Filter** section → **Groups**, select the desired group
3	In the **From** field, click on the icon
4	In the **pop-up calendar** select the **start** date  The hour can be edited by clicking on it and entering the time required. ***Note: The start date must be before the end date***
5	In the **To** field, click on the icon
6	In the **pop-up calendar** select the **end** date to define the **filter end point**. *Note: the current time is set as the predefined end point*
7	Once the filter has been adjusted to match your criteria, press the **Apply** button to update the selection with the new preference. *Note: If you change the current the node in the tree (the group level you want shown), the graph will be generated automatically without pressing the Apply button*

24.6.2 Sort the contents of a table

Step	Action
1	Create a new report if you don't have an already existing one
2	From the **Space statistics** tab in the Occupancy window select: • **Group** tab • **Space** tab
3	From the **header row**, click the ▼ icon next to the box required, then: • click ↑ to sort in ascending alphanumeric order (Sort A to Z) • click ↓ to sort in descending alphanumeric order (Sort Z to A)

Commands

If you click on the **Commands** tab from the navigation bar, the following menu will appear:



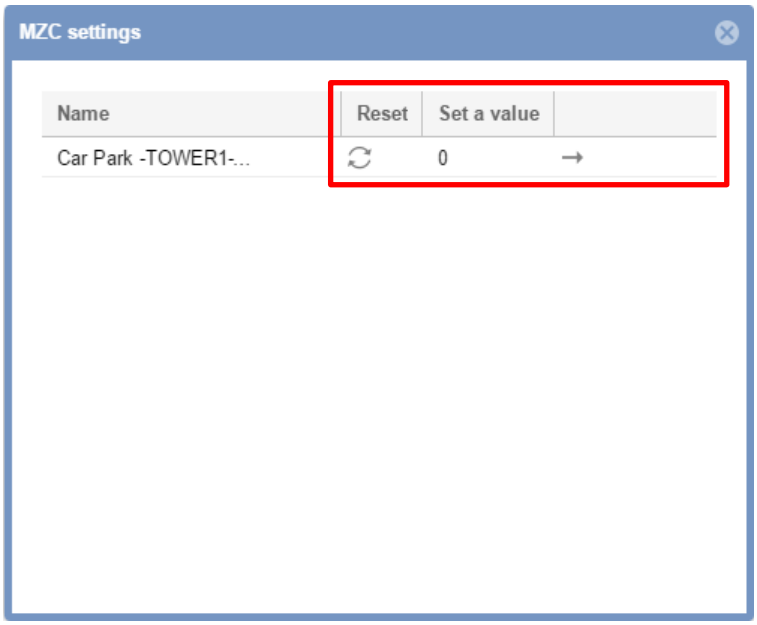
The **Commands** menu includes the following options, as shown below:

Option	Features
MZC settings	▪ Reset the value for a MZC group ▪ Send a numeric value for a MZC group
SBP2WEB/UWP3.0 sequences	Execute UWP 3.0 sequences *Note: the sequences shown are configured from the UWP 3.0 Tool*

25 MZC SETTINGS

25.1 User interface

If you click on the **Commands** tab from the navigation bar, then **MZC settings**, the following window will appear:



MZCsettings window

You can Reset or send a specific numeric value to the Master Zone Counter of your Car Park project

25.2 Procedures

25.2.1 Reset MZC group

To reset a Master Zone Counter group, follow this procedure:

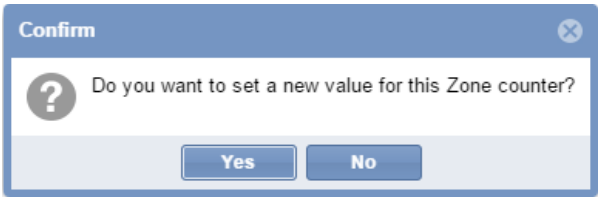
Step	Action
1	Click on **Commands** from the navigation menu, then click the **MZC settings** tab
2	Click the ↻ **Reset** button next to the **MZC group** selected
3	On the **Confirm** popup, click the **Yes** button
4	If there is a problem, the system will show the following popup: *Note: please repeat the procedure above; if the problem continues, contact technical support*

25.2.2 Set a value to a MZC group

To set a value to a Master Zone Counter, follow this procedure:

Step	Action
1	Click on **Commands** from the navigation menu, then click the **MZC settings** tab
2	Enter a numeric value in the **Set a value** box next to the **MZC group** selected
3	Click on the → **Send** button to send the new value to the MZC group

4 On the **Confirm** popup, click the **Yes** button



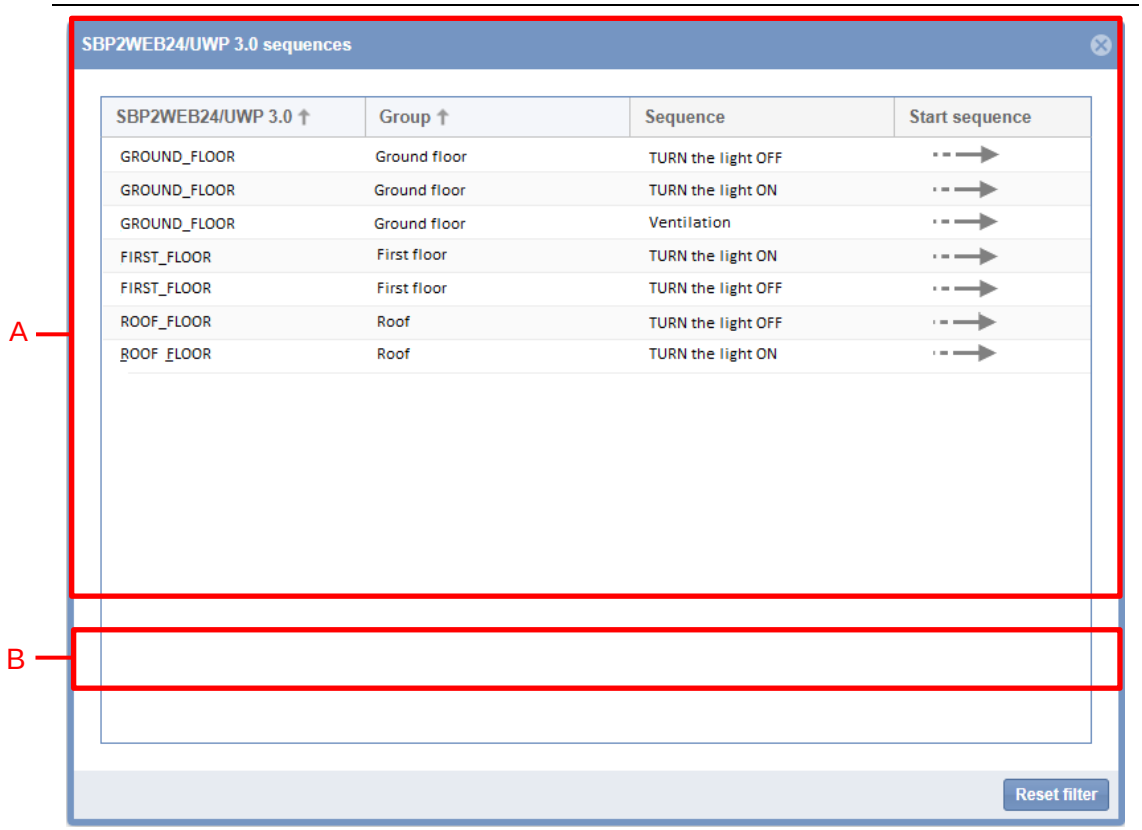
5 If there is a problem, the system will show the following popup:

Note: please repeat the procedure above; if the problem continues, contact technical support

26 UWP 3.0 SEQUENCES

26.1 User interface

If you click on the **Commands** tab from the navigation bar, then **SBP2WEB/UWP 3.0 sequence**, the following window will appear:



UWP 3.0 sequences window

The **UWP 3.0 sequences** window includes two sections, as shown below:

Section	Description
A	Shows the list of the sequences of all the UWP 3.0s managed in the current Car Park project
B	▪ Execute selected sequence ▪ Reset filter

26.2 Things to know

26.2.1 Sequences

The sequences that can be executed from the SBP2CPY can be created from the UWP 3.0 Tool. The sequences can be related to lights, roller blinds, intruder alarm, sirens, timers and zone temperature functions. The sequences must be synchronized with the UWP 3.0 Tool to the SBP2CPY: please refer to the UWP 3.0 Tool manual.

26.3 Procedures

The list of available sequences is shown in the **UWP 3.0 sequences** window. You can adjust it by using the filter options available in the header bar**.**

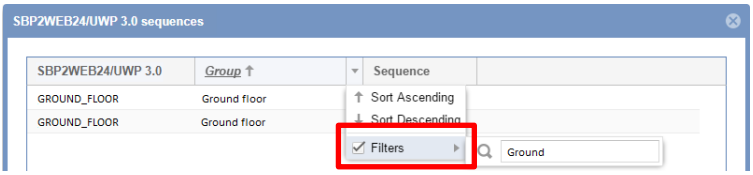
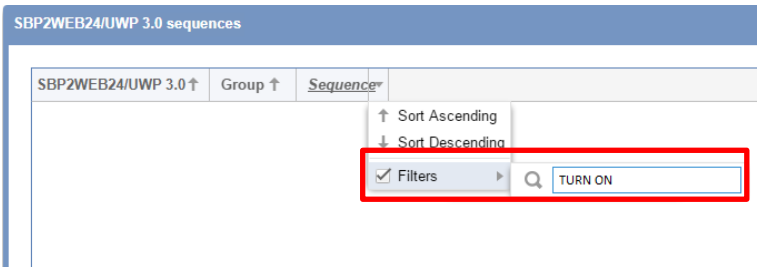
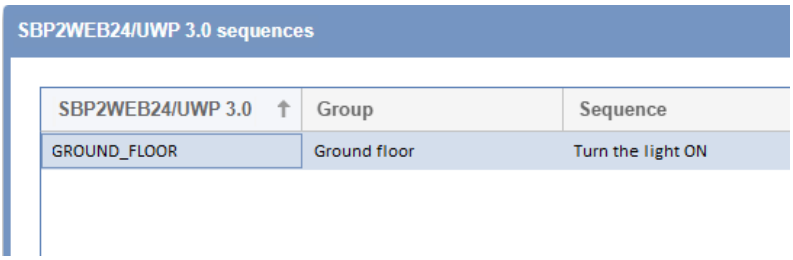
26.3.1 Sort the sequences

Carry out the following procedure in order to sort the sequences into ascending/descending order by column:

Step	Action
1	Click the arrow in the column you want to sort: *Note: each column presents the same filter options, as indicated above.*
2	▪ Click ↑ to sort in ascending alphanumeric order (Sort A to Z) ▪ Click ↓ to sort in descending alphanumeric order (Sort Z to A)
3	You can remove the filter selection by clicking on the **Reset filter** button

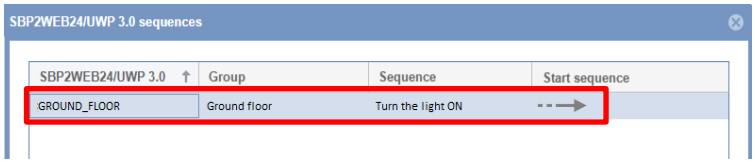
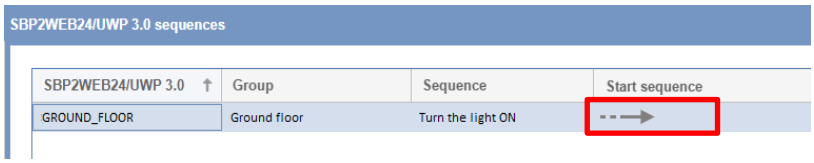
26.3.2 Filter by specific text

Carry out the following procedure in order to filter the sequences by specific text:

Step	Action
1	Click the arrow in the table header of the column you want to filter 
2	Tick the Filters check-box
3	Enter the text criteria you require in the adjacent box: for example, to show a sequence that contains a specific text string, (*e.g. TURN ON)* 
4	The system will provide all the sequences that satisfy the search criteria.  The filter name in the table header changes with underline to indicate a filter is applied, as shown in the picture above for the UWP 3.0 column.
5	You can remove the filter selection by clicking on the **Reset filter** button

26.3.3 Execute an SBP2WEB24/UWP 3.0 sequence

To execute a sequence, follow this procedure:

Step	Action
1	Click on **Commands** from the navigation menu, then click the **24/UWP3.0 sequences** tab
2	Click the **sequence** record you want to execute with the left mouse: it will be highlighted in light-blue: 
3	Click on --→ to start the sequence 

27 APPENDIX

27.1 Procedures

27.1.1 Install SH2DSP24 adapter

To connect the 3G modem adapter, the SH2DSP24 module, you will have to go through the following steps:

- Make sure the SBP2CPY24 and the SH2DSP24 are not powered.
- Connect the SH2DSP24 to the SBP2CPY through the auxiliary bus on the left side of the SBP2CPY24.
- Make sure the **SIM is not protected by a PIN code** (should that be the case, disable the protection).
- Insert the SIM into the dongle modem through the special slot.
- Restore the power supply of both devices (SBP2CPY and SH2DSP24).
- Make sure that both devices are located in a dry place, protected against rain and dust.

On the front of the SH2DSP24 there are two LEDs, which indicate the following:

1) Green LED: *Steadily on* => the equipment is powered.
2) Blue LED: *Off* => no power supply. *Fast blinking* => searching for the cover signal / not registered / switching off. *Slow blinking* => Service is registered and signal is available. *Steadily on* => communication under way.

27.2 Things to know

27.2.1 TCP/IP networking

27.2.1.1 Inbound TCP/IP communication

TCP/IP port number	TCP/IP port description	Purpose
80	HTTP	Access to the internal web-server
52325	SSH	Remote tunnelling feature; connection from UWP 3.0 to SBP2CPY24

27.2.1.2 Outbound TCP/IP communication

TCP/IP port number	TCP/IP port description	Purpose
53	DNS	Domain name resolution
37	NTP	Network time services access

27.2.2 SMS commands list

The following commands are available by sending an SMS to the SH2DSP24 SIM number:

Command	Syntax	Notes
CPY Reboot	REBOOT *password* (e.g. REBOOT 1234)	Password defined by the user in the relevant section in the page above; the system sends an acknowledgement to the calling phone (REBOOT OK)
Data communication ON	DATA MODEM ON *password* (e.g. DATA MODEM ON 1234)	Password defined by the user in the relevant section in the page above; the system sends an acknowledgement to the calling phone (DATA MODEM ON OK)
Data communication OFF	DATA MODEM OFF *password* (e.g. DATA MODEM OFF 1234)	Password defined by the user in the relevant section in the page above; the system sends an acknowledgement to the calling phone (DATA MODEM OFF OK)
Public IP inquiry	IP *password* (e.g. IP 1234)	Password defined by the user in the relevant section in the page above; the system sends the IP address by SMS to the calling phone

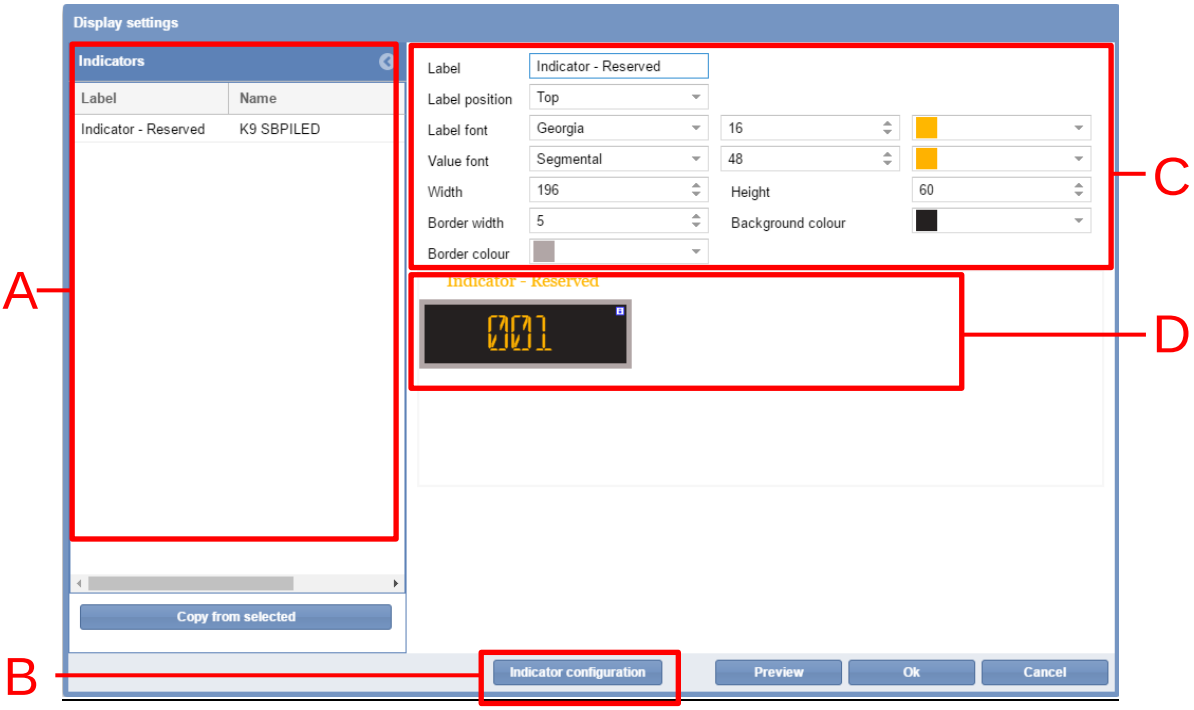
27.2.3 Indicator settings

Each SBPILED indicator configured in a Car Park project has its own Software version, called Software Indicator, and can be added to a Drawing. Each **Software Indicator** can be configured in terms of:

- **Appearance: The Software Indicator c**an be customised in terms of size, label, colour of digits, etc…
- **Change category:** the category can be assigned to all the bays which are part of the Indicator function.

By clicking on the button the following window appears:

*Note: The Indicator settings window is accessible only in **Drawing edit mode**.*



Indicator configuration window

The **Indicator settings** window is defined as follows:

Section	Description
A	The **Indicators** tab section shows the list of indicators available
B	Indicator configuration window
C	The elements list of the **Indicator settings** window:

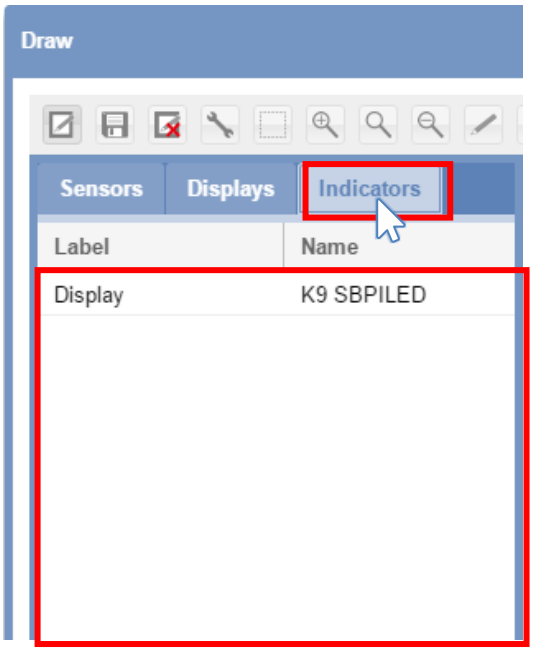
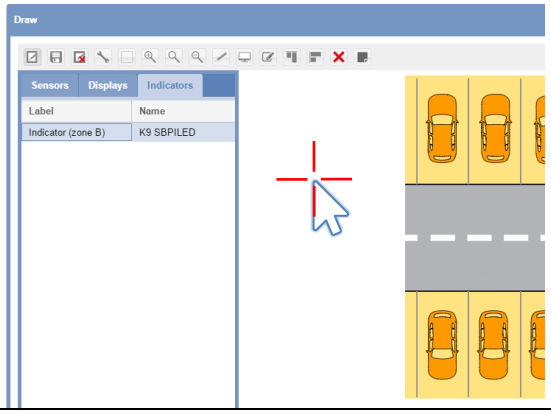
Field	Description
Label	Enter text that describes the display: the text will be shown in the position defined in the Label position field
Label position	Defines the position where the Label text will be shown
Label font	Defines the label font, size and colour
Value font	Defines the Value font, size and colour
Width	Defines the width of the software display (in pixels)
Height	Defines the height of the software display (in pixels)
Border width	Specifies the width of the display border (in pixels)
Background colour	Assigns a background colour to the software display
Border colour	Defines the border colour of the software display

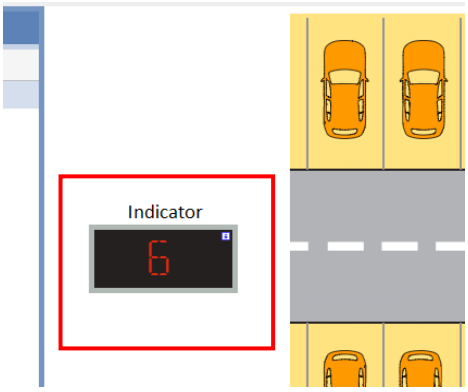
D	The **preview area** shows a preview simulation of the indicator element shown in the drawing

27.3 Procedures

27.3.1 Add an Indicator from the Indicator tab

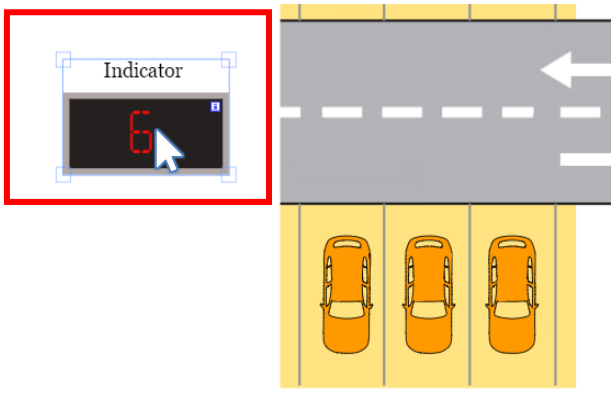
Follow this procedure to add a **Software Indicator** in a drawing:

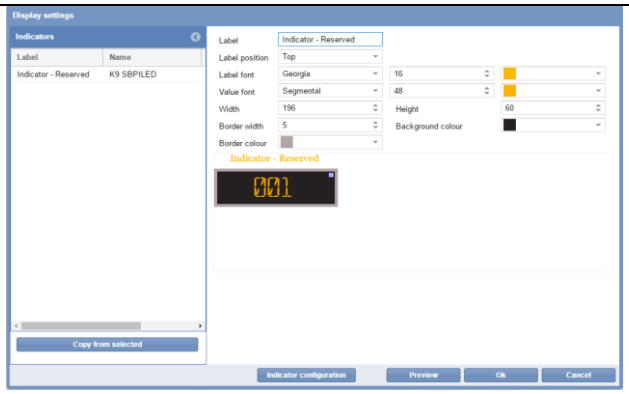
Step	Action
1	Open the **Drawing window** where you want to add a Software Indicator
2	Click on **Edit** from the Drawing toolbar
3	Click on the **Indicators** tab from the **Left Panel** 
4	From the **Indicators** tab click on the text of the selected Indicator *Note: The selected indicator will be highlighted in light blue*
5	Click the left mouse button on the area where you want to put the Software Indicator element 

	The indicator will be added to the drawing
6	
	You can edit the indicator by clicking on the **Display configuration** button. See the procedure Edit a Software Indicator

27.3.2 Edit a Software Indicator

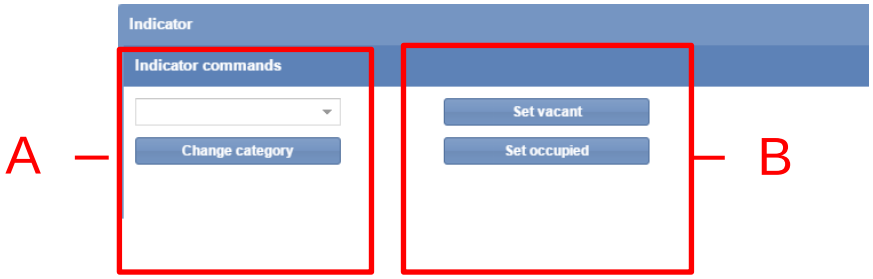
A Software indicator can be edited by clicking on the icon from the Drawing toolbar. Follow this procedure:

Step	Action
1	Adding a Software Indicator to a drawing
2	Click the Software Indicator with the left mouse button to select it:  *Note: a light-blue box with the drag point appears around the selected Software indicator*
3	Click on the **Display settings** button from the command bar: The *Indicator settings* window will appear:

	
4	Edit all the fields required *(see* Indicator settings *for detailed information)* *Note: you can click on the Preview button to see the appearance*
5	Click on the Indicator configuration button for additional settings
6	Click on the **Save** button to save the changes.

27.3.3 Indicator configuration and commands

The **Indicator configuration** button opens the configuration window, in which you can configure the following parameters:



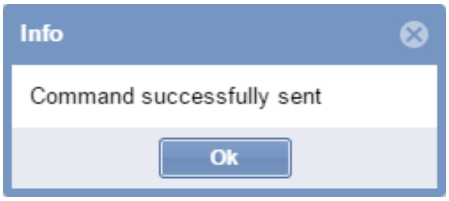
Indicator configuration window

The **Indicator configuration** window includes these sections:

Section	Description
A	**Change category** You can set the category to which the bays belong
B	**Set Vacant** The SBPILED LED is lit up in [*default colour for set category*] **Set Occupied** The SBPILED LED is lit up in RED [*default colour for **Occupied** status*]

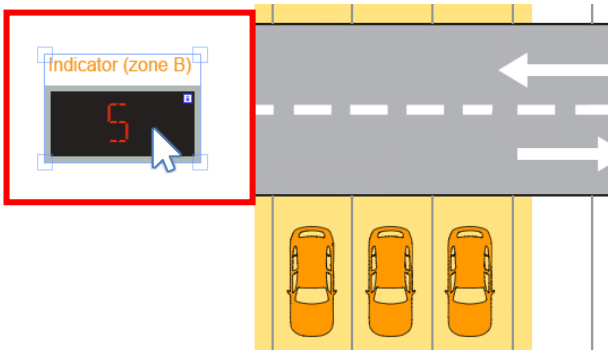
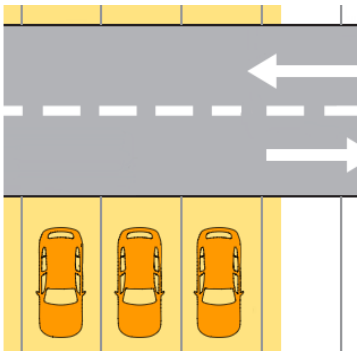
27.3.4 Send command to an Indicator

To send a command to an Indicator, follow this procedure:

Step	Action
1	Enter Drawing in **edit mode**
2	Select a Software Indicator from the drawing
3	Click on the **Indicator configuration** button from the **Indicator settings** window
4	In the **Indicator command** section, click on the command you need in order to perform the test. The following message will appear to confirm the command has been sent successfully: 
5	Click on the **X** button to close the Indicator configuration window
	Note: When a command is sent to an Indicator, a small red dot icon will appear in the Drawing window (see below). It will remain for as long as the command is active
6	

27.3.5 Delete an Indicator

To delete an Indicator from a drawing, follow this procedure:

Step	Action
1	Open Drawing in **edit mode**
2	Select the I**ndicator** you want to delete  *Note: The Indicator will be highlighted with a light blue rectangle*
3	Click on the **Delete** button and click on **Save drawing** to delete the Indicator from the drawing  *Note: If you exit without clicking on Save, the Indicator will not be deleted* *Note 2: Although the indicator is deleted, the association of the bays to it will not. To dissociate it, the configuration on the UWP 3.0 Tool must be changed.*