TACS

USER MANUAL

TACS - Teleorigin Audit & Control System

ENGLISH VERSION

TELEORIGIN

UNIQUE TECHNOLOGY FOR TELEMETRY

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Teleorigin Audit & Control System

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1 Glossary

Router – an RB-MTX class device for GSM and LAN.

Customer – a company using routers and having access to a dedicated VPN network.

User – a user with an appropriate level of authorizations who can connect to a desired customer's VPN and to network routers.

TACS – a VPN, router and user monitoring and control system designed to manage multiple customers.

Authorization level – a range of activities that a user with a given level of authorizations can carry out in the system.

Webpanel – an MTX router configuration panel.

Browser – a TACS WEB-class client.

2 Introduction

Teleorigin Audit & Control System (TACS) operates in a cloud computing environment. It is designed to control, monitor and manage a network of interconnected RBMTX routers. In addition, the system can also handle various VPNs dedicated to each customer.

3 Operation

TACS consists of a few elements:

1. Monitoring (audit) and control system;
2. VPNCloud – OpenVPN-based dedicated networks;
3. RB-MTX3 routers with a suitable firmware version.

Key system elements are the routers and technicians using the routers. Downstream the routers, local networks and machines used by customers are connected.

After signing up with a local provider, the customer will receive first user (Manager level) login and password. This user can create other system user accounts, device groups, locations, etc. While creating the groups, unique authorization codes are generated that are necessary for automatic installation of a new system router.

4 Installing new routers

Once purchased, the new router should be registered in the system. To do this, you should read the "Authcode" assigned to the group in which you want to register the router. A location where the router will operate should also be created.

The first step before new router registration is to obtain from the "Manager" the authorization code of the group to which the router will be assigned. The code consists of 8 characters, digits, and upper-case letters. Next, select "Registration" from the router's "Webpanel" menu.

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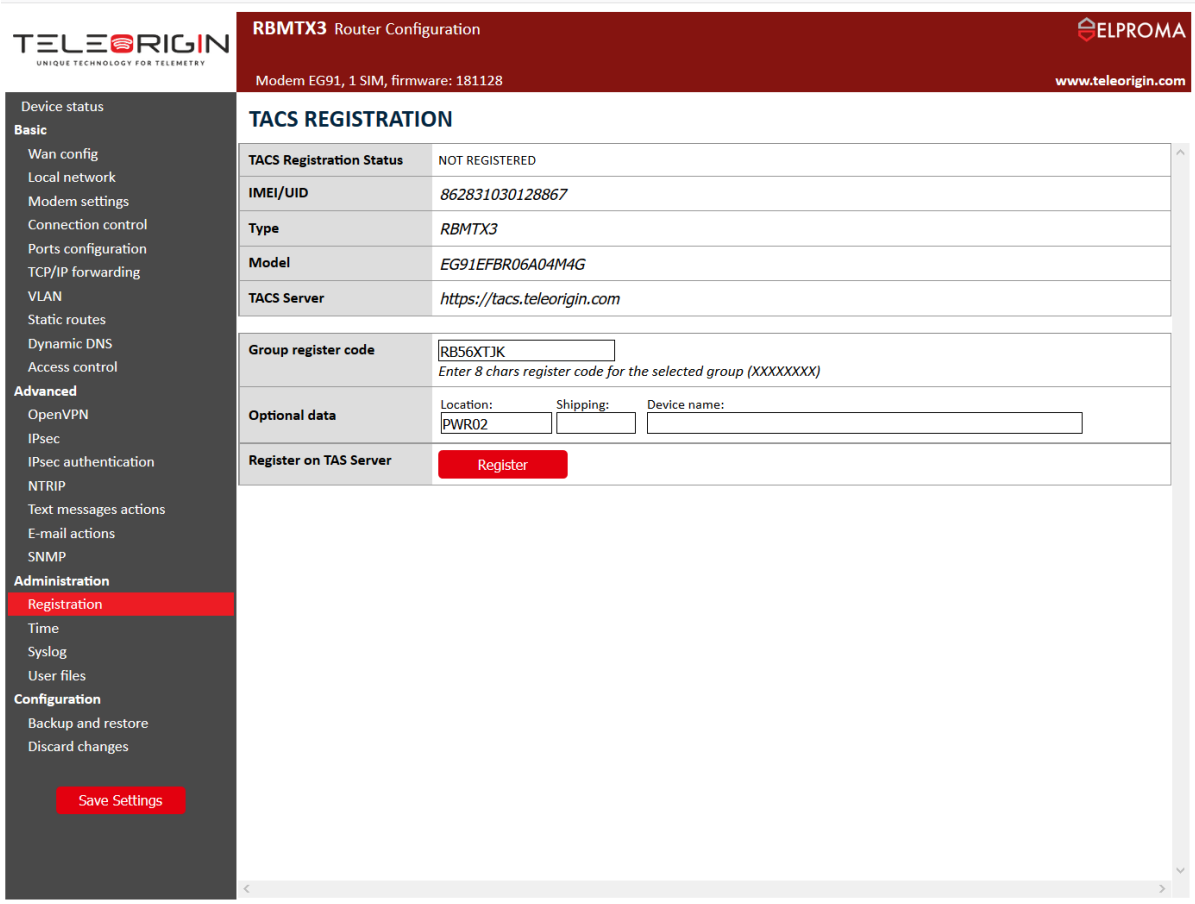

Fig. 1: Router registration screen.

In the "Group register code" field, enter the obtained TACS authorization code; the remaining fields are not required, but filling them in will facilitate the registration process:

Location – a router's location code;

Shipping – a delivery/startup date;

Device name – a router's descriptive name.

Clicking the "Register" button will cause the device to send the data to the server and to register the device. The router will display the following screen:

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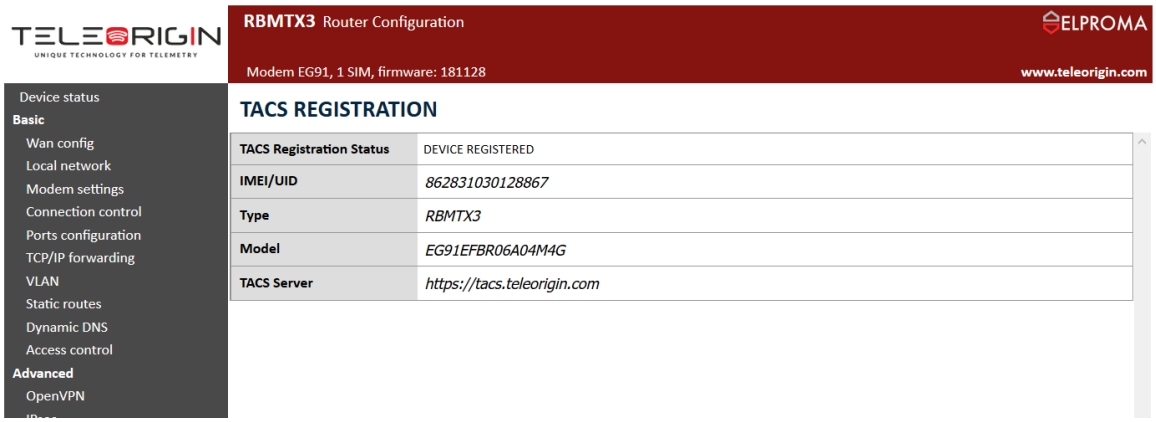

Fig. 2: Router registration status.

Following the registration process, the system will automatically generate VPN certificates. The router will automatically upload them via an encrypted https connection. Next, the router will initiate a VPNCloud connection and further communication will take place within a VPN.

The "Device Status" screen will show a VPNCLOUD interface with an IP assigned to the router. With this address, you can connect to the router within the VPN.

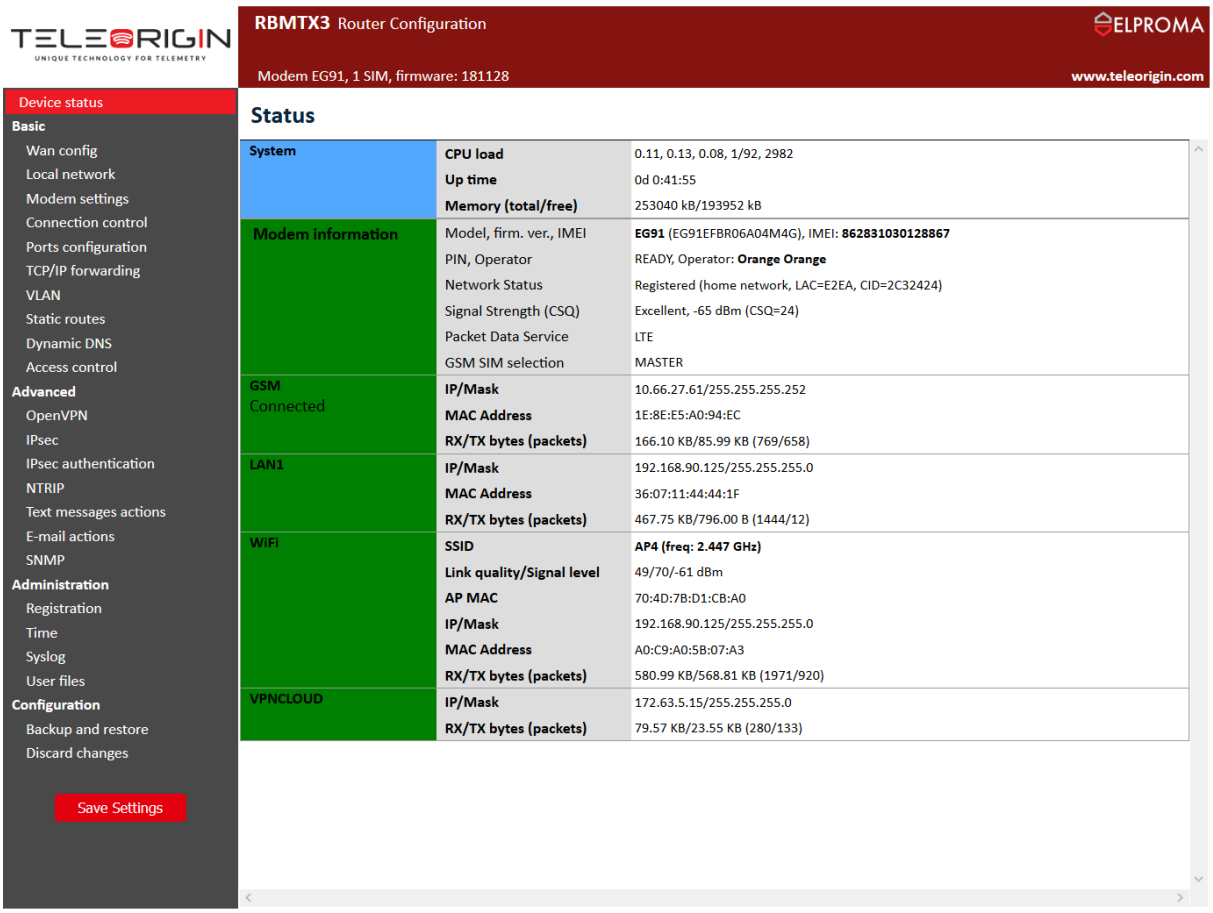

Fig. 3: Registered-router status screen with a VPNCloud section.

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5 Using the TACS

1.1 Logging to the system

After typing https://tacs.teleorigin.com in the browser, the following login page will display.

Fig. 4: TACS initial screen.

Click the "Login" button to switch to the login screen.

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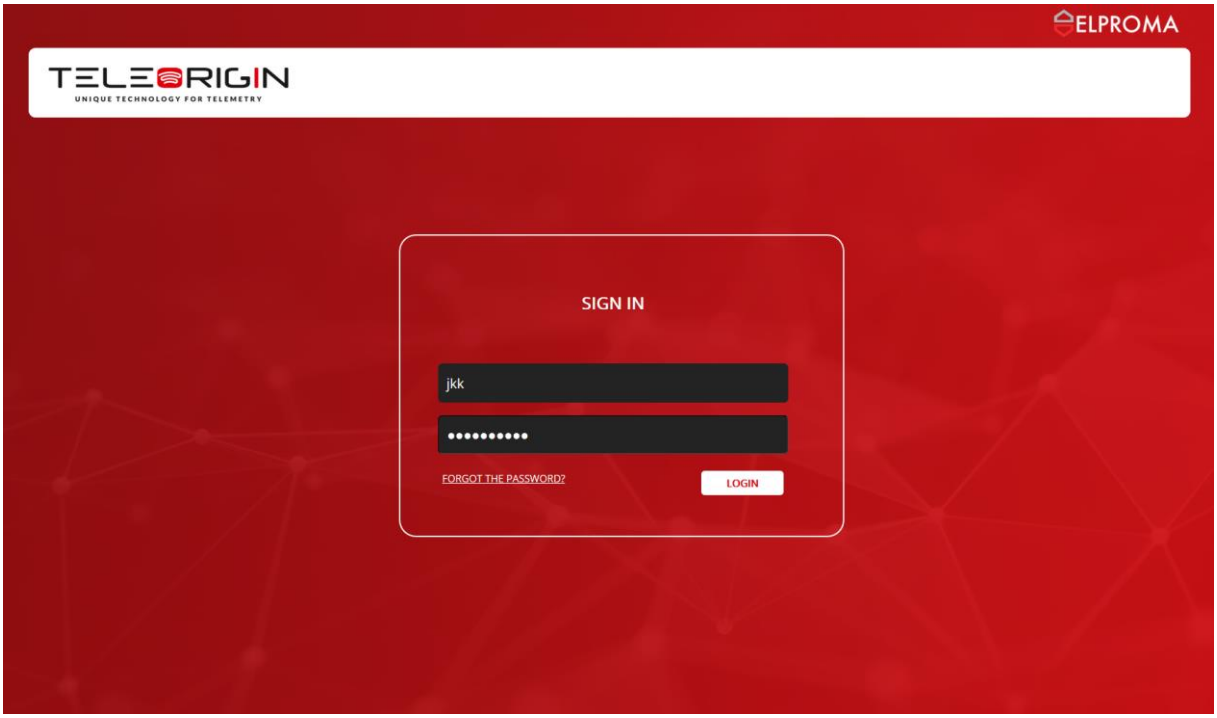

Fig. 5: System login screen.

Once you have entered the correct identifier and password and clicked the "Login" button, the system will display the startup page which will vary, depending on your authorizations. In the following sections, "Admin" authorization screens shown.

2 STATUS

First, the "Status" page showing router network status will display. This page may include device statistics in the form of "pie" graphs or locations with many devices in a specific location.

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2.1 Bar and pie graphs

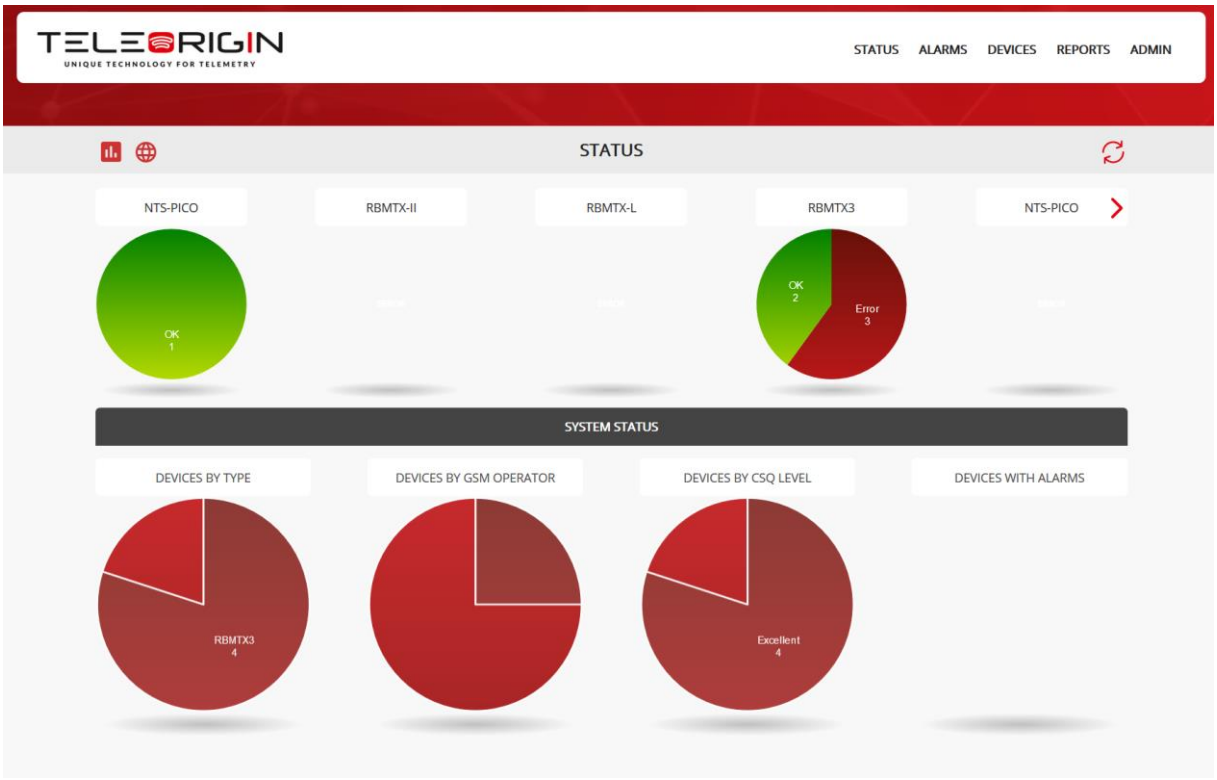

Fig. 6: System status page.

The page shows statistics of the devices registered in the system. The "STATUS" section shows the number of active and inactive devices within each type while the "SYSTEM STATUS" section provides a graphical representation of the statistics:

1. DEVICES BY TYPE – a share of specific types as a total number of devices;
2. DEVICES BY GSM OPERATOR – a total share of devices with a SIM of a given operator;
3. DEVICES BY CSQ LEVEL – devices by received GSM signal;
4. DEVICES BY ALARMS – devices by instances of alarms within the last 24 hours.

Clicking some of the pie graphs will generate a bar graph showing particular statistics in more detail.

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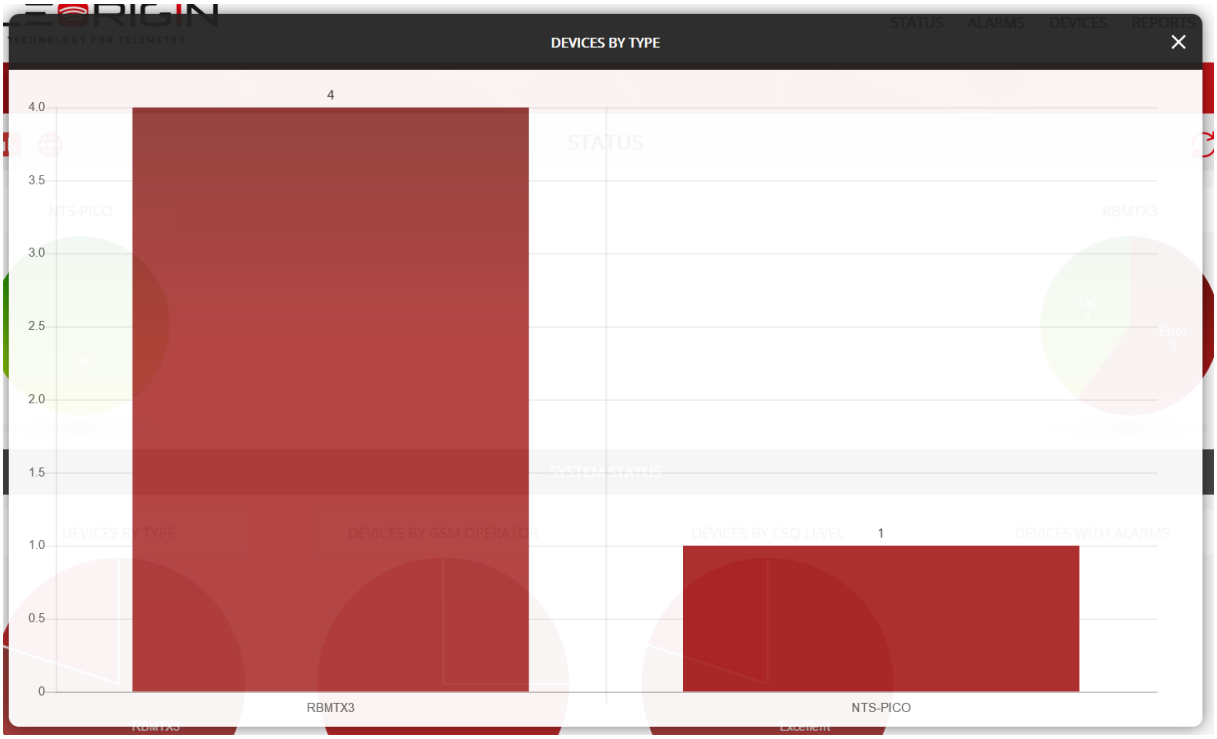

Fig. 7: Devices divided by type – a bar graph.

Clicking a selected bar will highlight the table of devices filtered with the use of an indicated parameter.

Clicking the icon will display locations with devices located on the map. The number inside the location icon indicates the number of installed devices. Click the icon to return to the graphs.

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2.2 Device location map

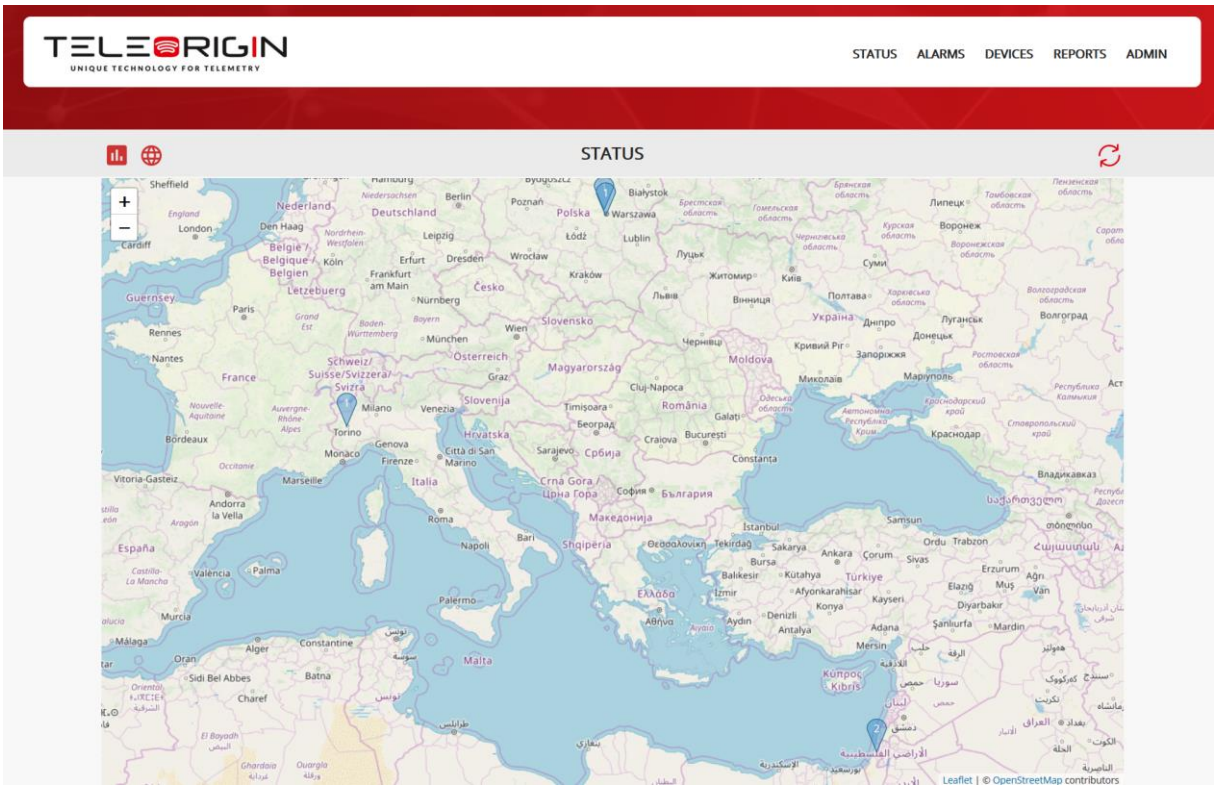

Fig. 8: Locations of routers on a map.

Clicking a router location on the map will display a list of devices for a given location.

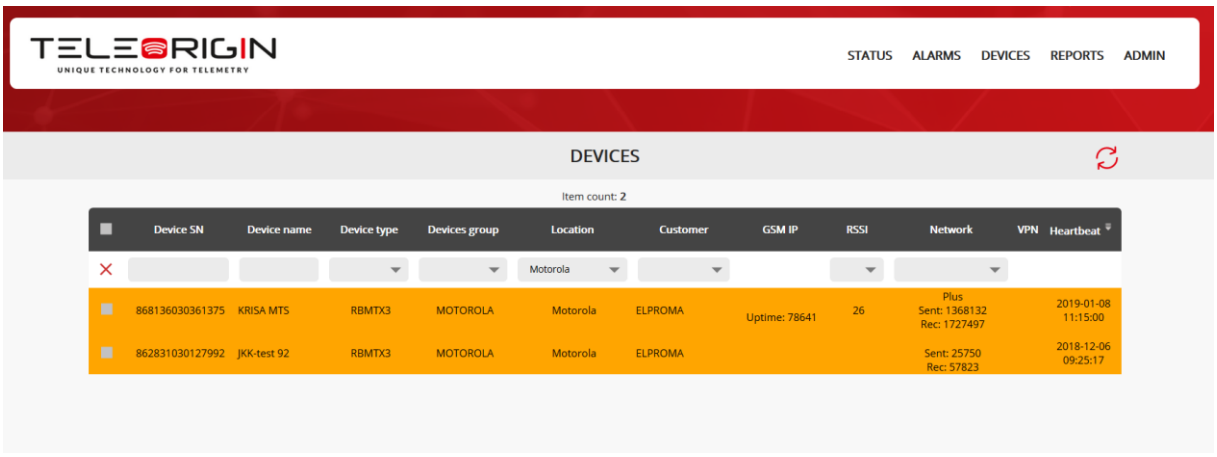

Fig. 9: A list of devices for a selected location.

3 ALARMS

This page shows a list of alarms generated by the devices. The alarms are classified into three levels:

1. Warning;
2. Error – an error distorting device operation;

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3. Critical – an error preventing the correct operation of the device.

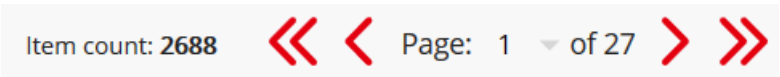
Clicking the name of the table header (e.g. "Location") will arrange the values of the column rows in the ascending order. Clicking the same header again will switch the sorting mode between descending and ascending order.

Under the header, there is a row that allows you to filter the rows displayed below. This row includes the following filtering elements:

- Fields allowing you to enter any text, e.g. under the "Device SN" heading. If the cell contains a text beginning with the entered string of characters – the row in which it is located will be visible on the screen. The entered string of characters may include the * character, which replaces any string of characters in the place it occurs (e.g. a string of "% test" characters will cause to display the rows beginning with any text, followed by the rows with the "test" string and any string of characters (including empty strings) that follows it. The size of the letters is irrelevant – the small and capital letters are treated in the same way;
- Fields allowing you to select a specific value, e.g. under the "Device type" heading. After selecting a non-empty value – only the rows with an indicated value in this column will be visible on the screen. Selecting the first (empty) item from the list will prevent the table rows from being filtered by the values in this column.

To apply the values entered in the above fields to the table rows, click the button. In this table, only the rows meeting all the conditions found in the filled elements will be displayed. The symbol is used to clear the contents of all filtering elements.

You can navigate between specific pages of the list using the navigation panel.



The icon allows you to refresh the page, e.g. after changing the filtering parameters.

Alarms are sent by compatible devices and reflect important events that occur in the devices.

4 DEVICES

The "DEVICES" page displays a list of devices with their current parameters. This is one of the basic pages showing statuses of specific devices and their current status.

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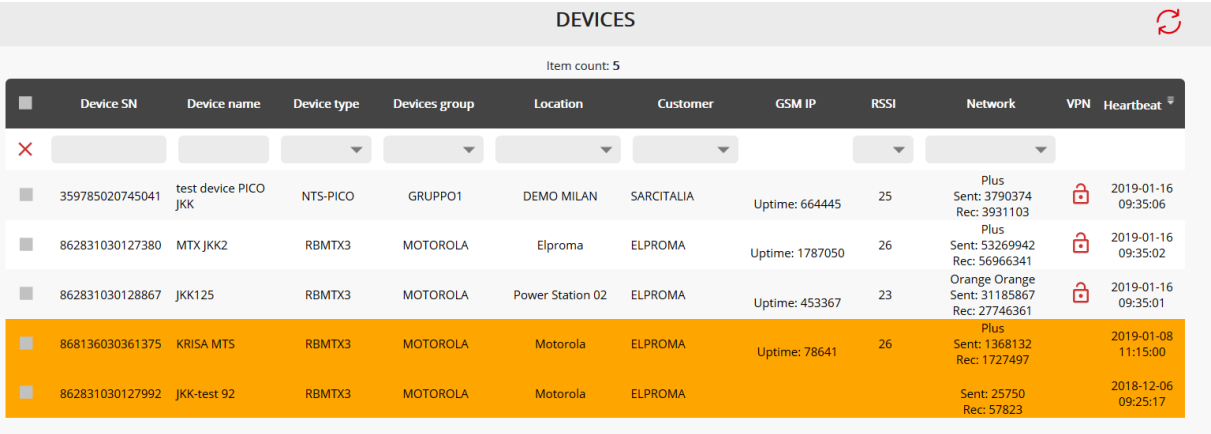

Fig. 10: A list of devices.

The table includes the following columns:

1. Device SN – a device serial number (equivalent to IMEI) used to identify a system device;
2. Device name – a name of the device defined by the user creating it in the system;
3. Device Type – a type of device;
4. Devices group – a group to which a specific device is assigned;
5. Location – a location in which a specific device is installed;
6. Customer – a customer who owns the device;
7. GSM IP – a GSM modem IP number and uptime;
8. RSSI – a GSM signal level;
9. Network – a GSM operator's name and a number of sent data;
10. VPN – the padlock icon shows whether or not the device is operating in the VPN network;
11. Heartbeat – a time of the last system device operation status call.

You can filter the table by some of the columns by entering specific values in the filter fields.

Clicking a table row will open the "SUMMARY" window showing a full view of the device operation.

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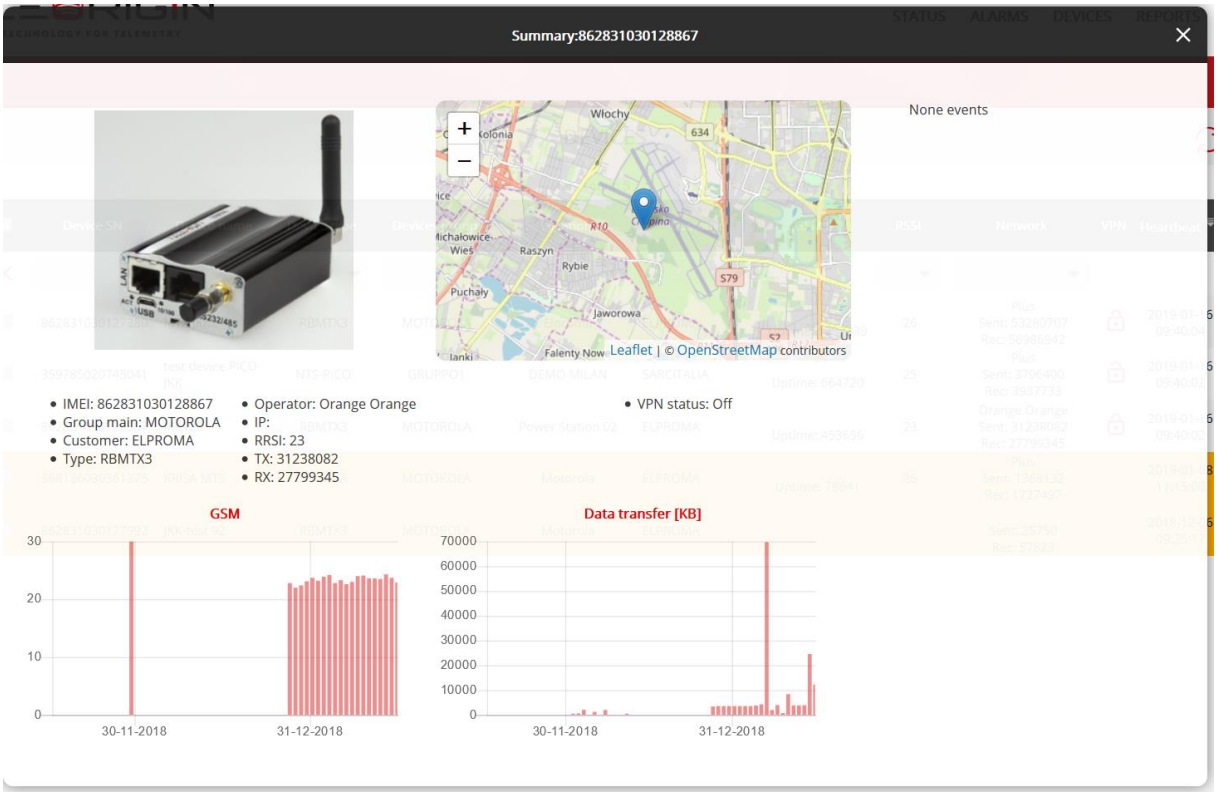

Fig. 11: Device summary screen.

This screen shows a picture of a device type, a map location, a short list of last week alarms/events, data relating to the device and its status, graphs presenting the history of GSM signal level and forwarded data.

5 Administration

Further on, descriptions of options available to the user with administrative rights are presented. Specific menu options are accessible after clicking the "ADMIN" link shown in the figure below.

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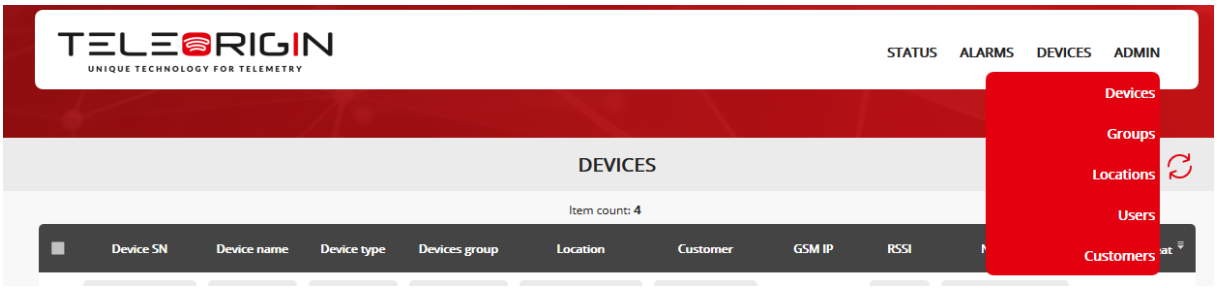

Fig. 12, Administration menu.

1.1 ADMIN - DEVICES

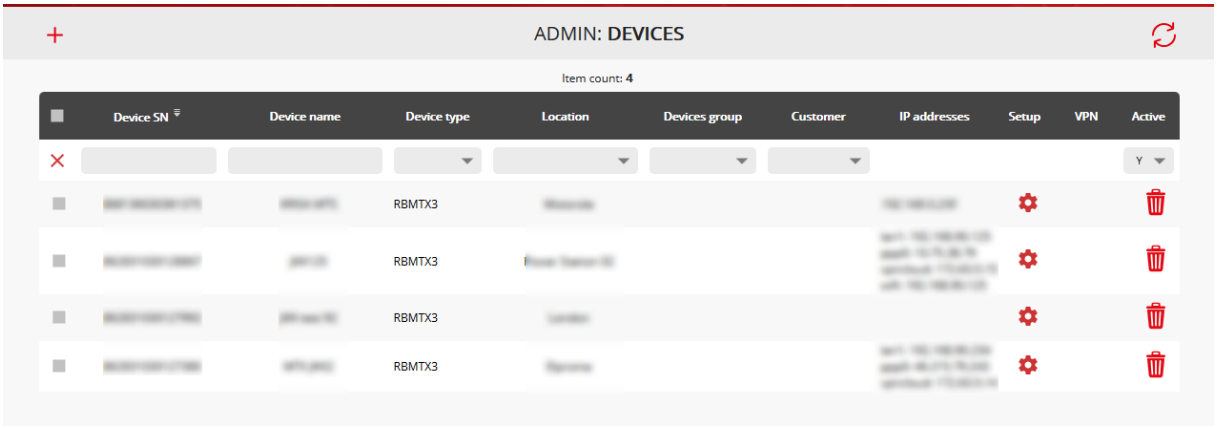

Fig. 13: A list of devices.

This page shows a list of devices available in the system.

The table includes the following columns:

1. Device SN – a device serial number (equivalent to IMEI) used to identify a system device;
2. Device name – a name of the device defined by the user creating it in the system;
3. Device Type – a type of device;
4. Location – a location in which a specific device is installed;
5. Devices group – a group to which a specific device is assigned;
6. Customer – a customer who owns the device;
7. IP address – IP numbers assigned to the device – if the first number in the list is displayed in italics, it means that admin set the address permanently;
8. Setup – clicking starts the setup of the selected router, hovering over this item with the cursor will display the VPNColud IP address;
9. VPN – the padlock icon shows whether or not the device is operating in the VPN network;
10. Wastebasket – clicking this icon will remove a device displayed in the row.

You can filter the table by some of the columns by entering specific values in the filter fields.

Clicking a table row will open the device edit window filled with its data. The same edit window (with empty fields) is displayed after clicking the + icon, allowing you to add a new device.

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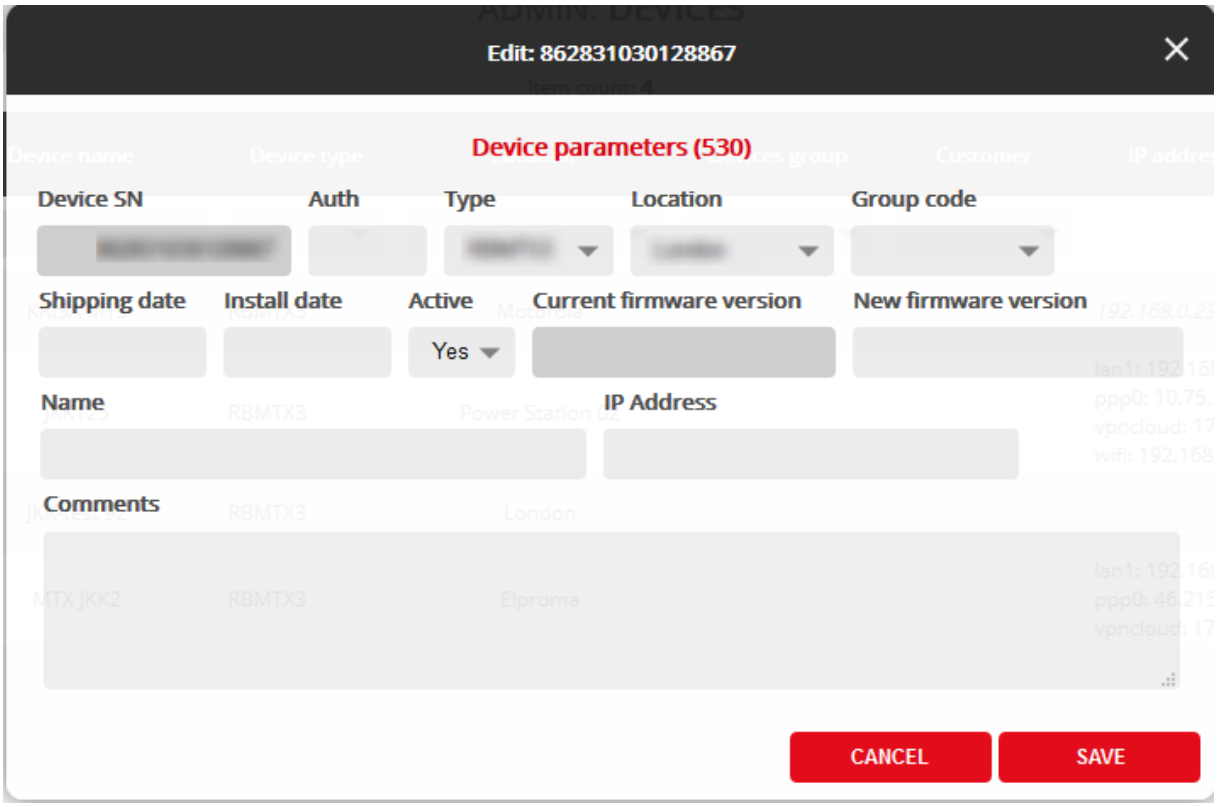

Fig. 14: Device parameter edit screen.

The following fields are available for editing:

1. Device SN – a device serial number;
2. Auth – a device web-panel password;
3. Type – a type of device;
4. Location – a location in which a specific device is installed;
5. Group code – a group to which a specific device is assigned;
6. Shipping date – a date of shipping to the customer;
7. Install date – an installation date;
8. Active – shows whether or not the device is active;
9. Current firmware version – a current version of firmware obtained from the device;
10. New firmware version – a new, target version of firmware for automatic updates;
11. Name – a device name used by technicians for distinguishing purposes;
12. IP Address – when a device fails to automatically send the data;
13. Comments – administrator's comments.

Clicking the "CANCEL" button will close the device edit/add window without saving the entered information. Clicking "SAVE" will save the entered data.

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5.1 ADMIN - GROUPS

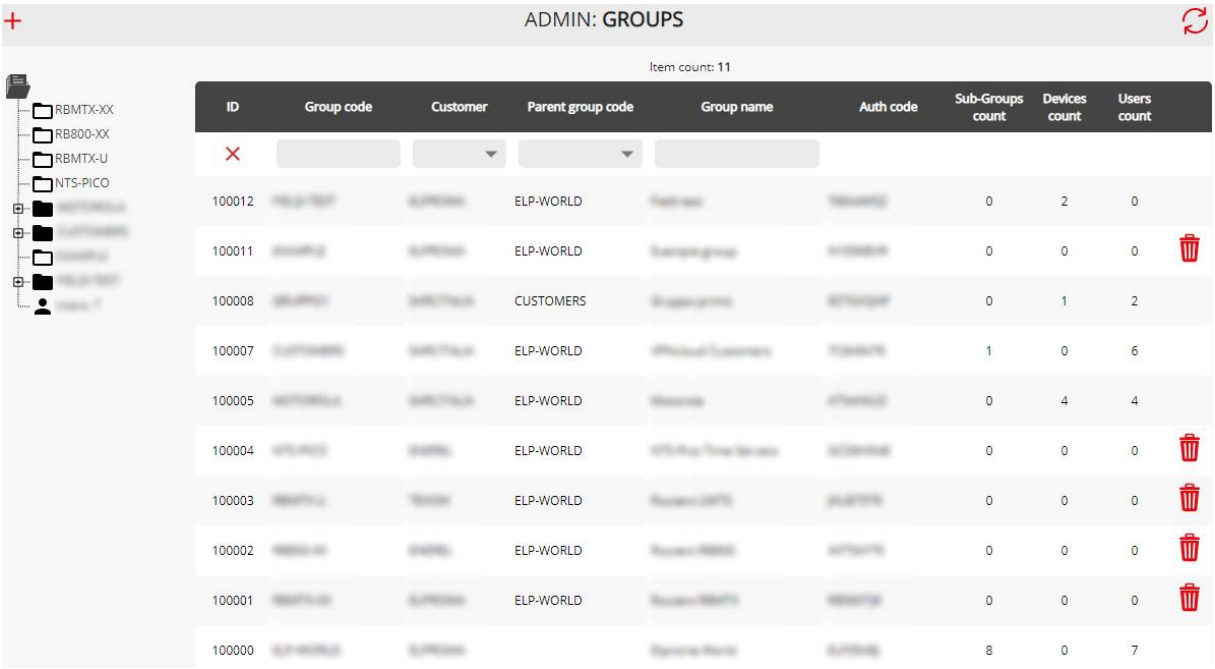


Fig. 15: A list of groups.

This page displays a list of groups accessible in the system. The groups are intended to organize devices and users in a tree structure. It is a useful method for users to handle and to display only those devices that exist in the user's group and itemized in the tree structure.

The table includes the following columns:

1. Group code (up to 8 characters);
2. Customer – a customer who owns the group;
3. Parent group code;
4. Group name – a descriptive name of a group;
5. Auth code – an authorization code for registered devices;
6. Sub-Groups count – a number of subgroups;
7. Devices count – a number of devices in a group;
8. Users count – a number of users in a group;
9. Delete – an icon allowing you to delete a group (only when it is empty).

On the left side of the table, a graphical representation of group hierarchy is shown. When clicked, the squares marked with "+" will open lower levels, while those marked with "-" will roll up. Next, to the nodes, information about the number of devices and users assigned to the indicated group is shown.

You can filter the table by some columns by entering appropriate values in the filter fields.

Clicking a table row will open the group edit window filled with its data. The same edit window (with empty fields) is displayed after clicking the + icon, allowing you to add a new group.

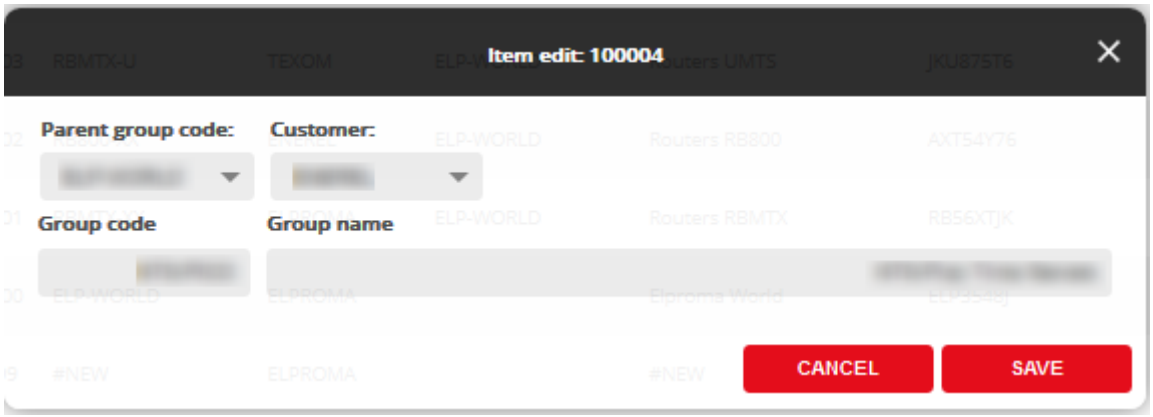


Fig. 16: Device/user groups edit screen.

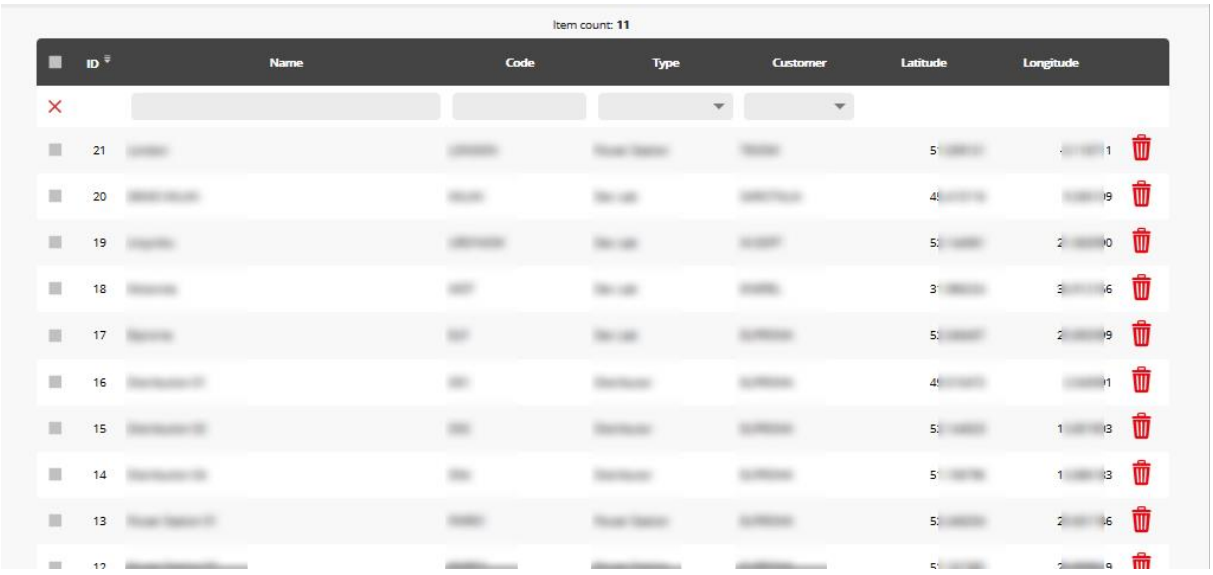
The following fields are available for editing:

1. Parent group code;
2. Customer – a customer who owns the group;
3. Group code (up to 8 characters);
4. Group name – a descriptive name of group.

Clicking the "CANCEL" button will close the group edit/add window without saving the entered information. Clicking "SAVE" will save the entered data.

5.2 ADMIN - LOCATIONS

This page shows a list of locations (where devices are installed) accessible in the system.



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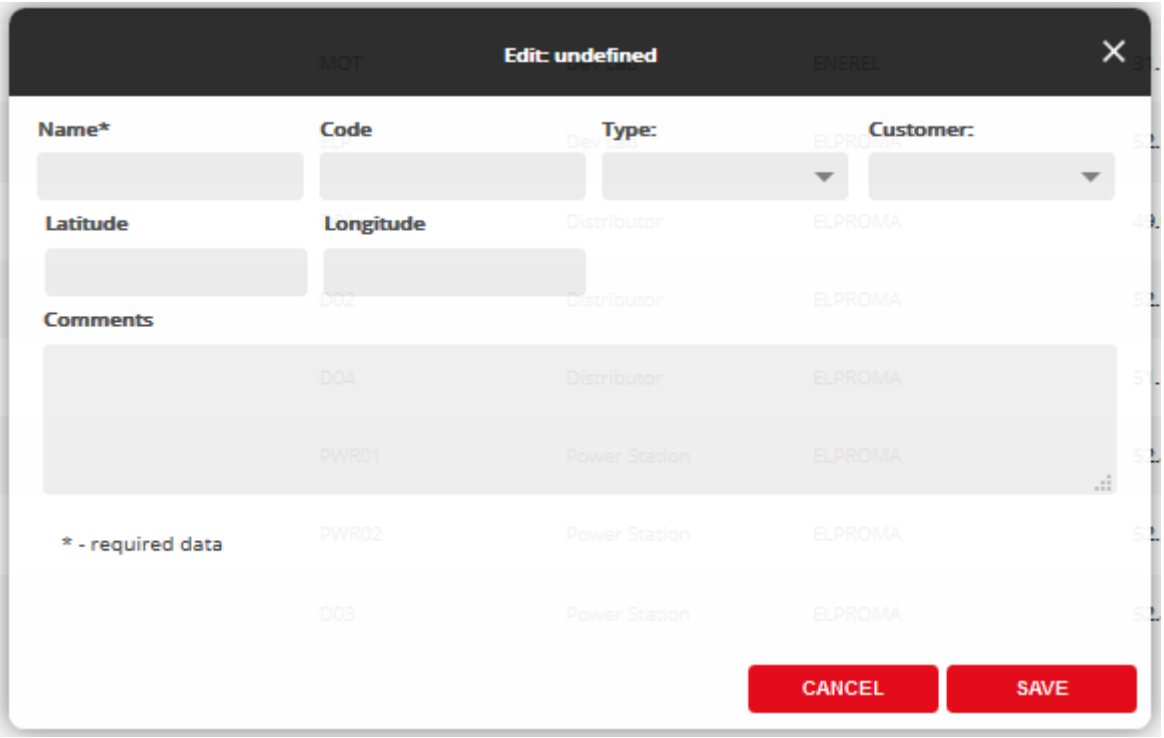
The table includes the following columns:

1. Name – a descriptive name of location;
2. Code – a location code;
3. Type – a location type;
4. Customer – a customer who owns the location;
5. Latitude – a latitude of a location;
6. Longitude – a longitude of location;
7. Delete – an icon allowing the user to delete a location.

You can filter the table by some columns by entering appropriate values in the filter fields.

Clicking a table row will open the location edit window filled with its data. The same edit window (with empty fields) is displayed after clicking the + icon, allowing you to add a new location.



The following fields are available for editing:

1. Name – a descriptive name of location;
2. Code – a code of location;
3. Type – a type of location;
4. Customer – a customer who owns the location;
5. Latitude – a latitude of the location;

Fig. 17: Defining a new location for devices.

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6. Longitude – a longitude of the location;
7. Comments – administrator's comments / additional information about the location.

Clicking the "CANCEL" button will close the location edit/add window without saving the entered information. Clicking "SAVE" will save the entered data.

5.3 ADMIN - USERS

This pages shows a list of system users.

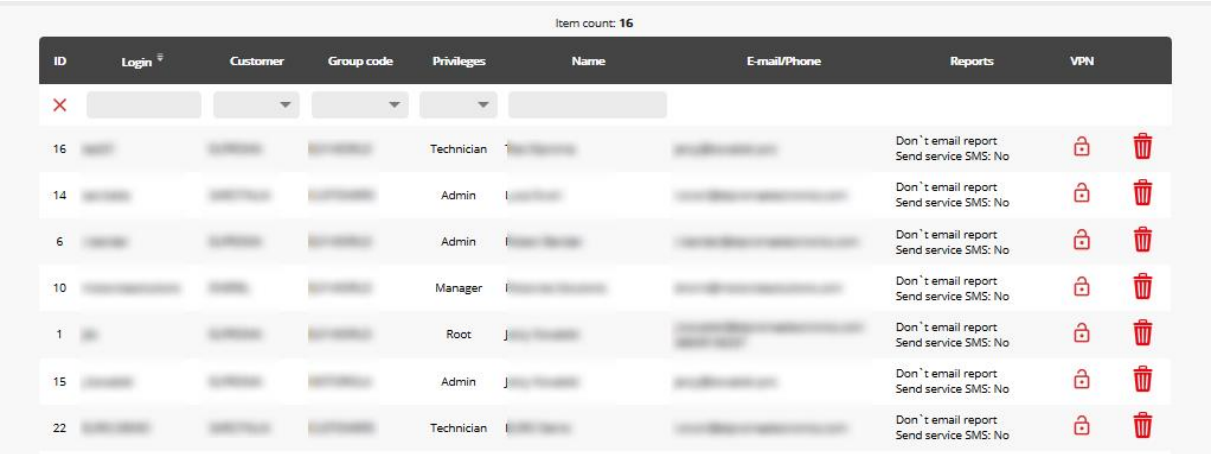

Fig. 18: A list of system users.

The table includes the following columns:

1. Login – a user login (username);
2. Customer – a customer to whom the user belongs;
3. Group code – a group to which the user belongs;
4. Privileges – user's authorizations;
5. Name – user's first name and last name;
6. E-mail/Phone – user's email and phone (if provided);
7. Reports – report notification settings;
8. VPN – an icon visible only if the user has configured VPN access settings;
9. Delete – an icon allowing you to delete a user.

You can filter the table by some columns by entering appropriate values in the filter fields.

Clicking a table row will open the user edit window filled with its data. The same edit window (with empty fields) is displayed after clicking the + icon, allowing you to add a new user.

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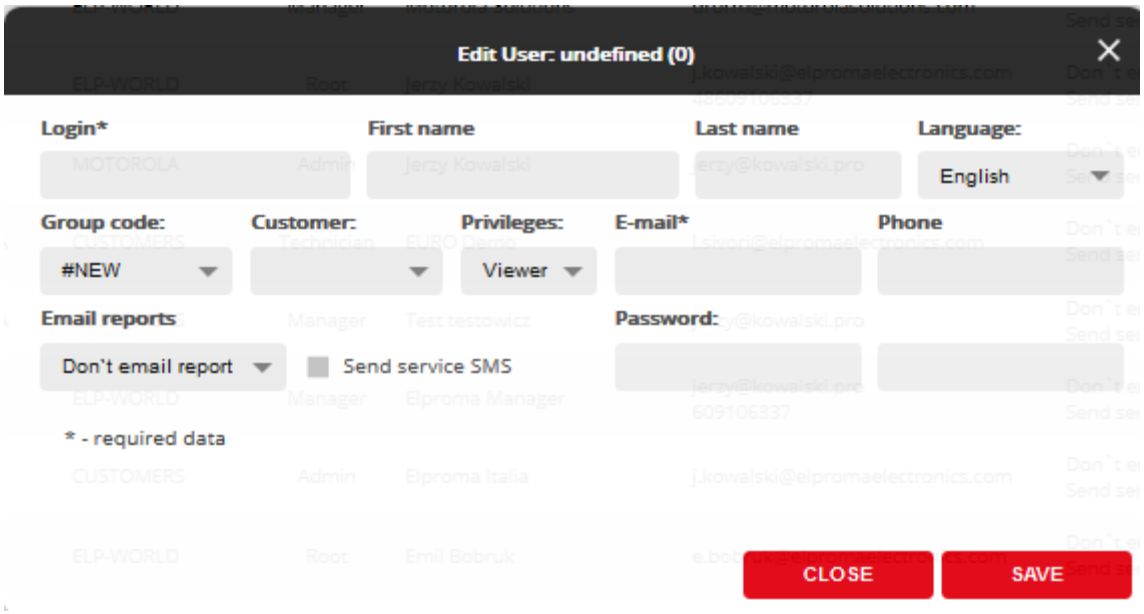

Fig. 19: Defining a new user.

The following fields are available for editing:

1. Login – a username;
2. First name – a user's first name;
3. Last name – a user's last name;
4. Language – a language in which the service page is displayed;
5. Group code – a code of the group to which the user belongs;
6. Customer – a customer to which the user is assigned;
7. Privileges – user authorizations (Viewer, Technician, Manager, Admin);
8. E-mail – a user's email address;
9. Phone – a user's contact telephone number;
10. Email reports – states whether or not e-mail messages with reports should be sent to the user;
11. Send service SMS – states whether or not SMSs with notifications should be sent to the user;
12. Password – a user password (the second field for verification purposes) – min. 8 characters.

Clicking the "CANCEL" button will close the location edit/add window without saving the entered information. Clicking "SAVE" will save the entered data.

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5.4 ADMIN – CUSTOMERS

This pages shows a list of system customers.

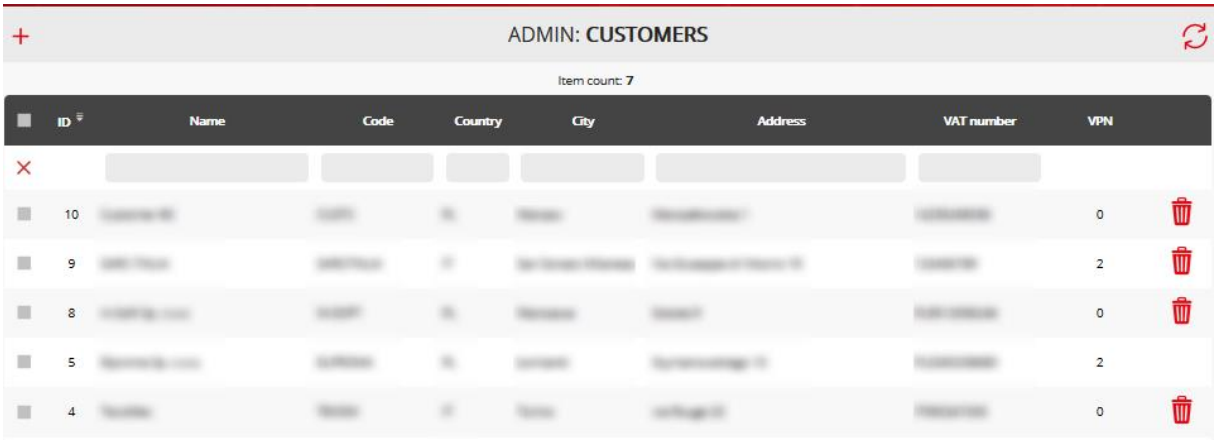

Fig. 20: A list of customers.

The table includes the following columns:

1. Name – a customer's full name;
2. Code – a customer's code (short name);
3. Country – a customer's country of origin;
4. City – a town of customer's headquarters;
5. Address – a customer's headquarters address;
6. VAT number – a customer's tax ID number;
7. VPN – a customer's VPN network status: 0 – none, 1 – under configuration, 2 – configured;
8. Delete – an icon allowing you to delete a customer.

You can filter the table by some columns by entering appropriate values in the filter fields.

Clicking a table row will open the customer edit window filled with its data. The same edit window (with empty fields) is displayed after clicking the + icon, allowing you to add a new customer.

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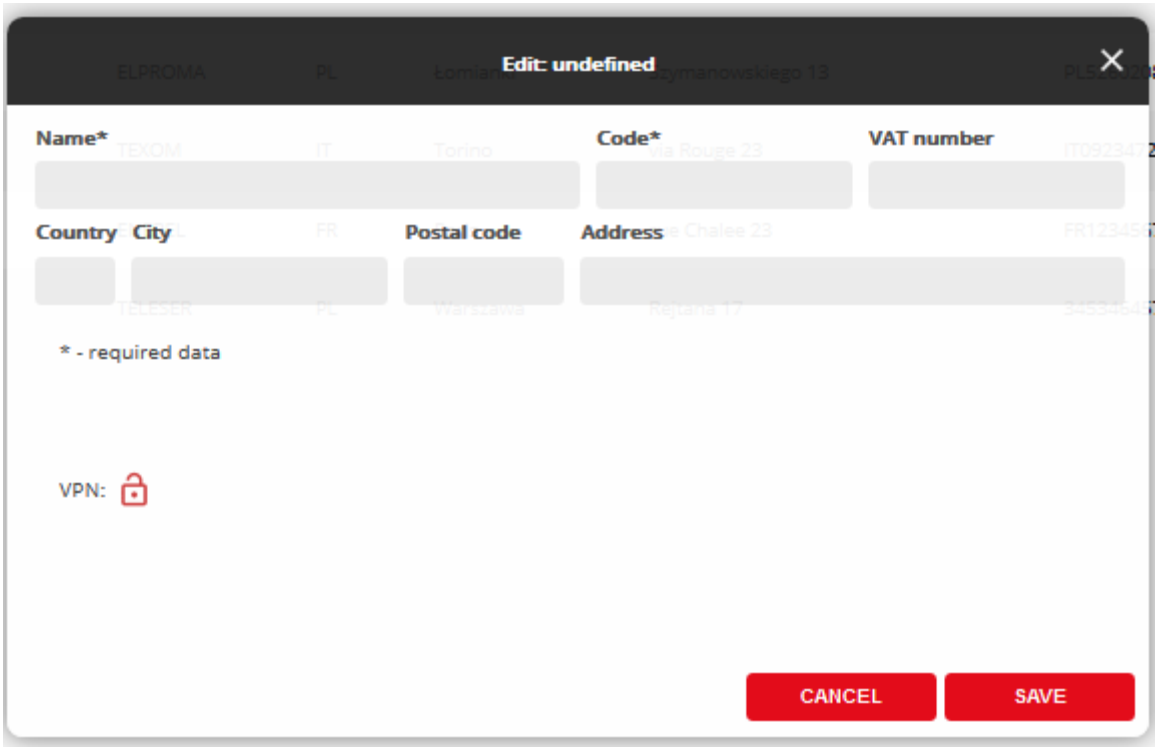

Fig. 21: A new customer definition form.

The following fields are available for editing:

1. Name – a customer's full name;
2. Code – a customer's code (short name);
3. VAT number – a customers' tax ID number;
4. Country – a customer's country of origin;
5. City – a town of customer's headquarters
6. Postal code – a postal code of customer's headquarters;
7. Address – a detailed address (street name, number, etc.).

Depending on whether the customer already has a configured VPN access, the section below will include:

- icon (if a VPN is not created). Clicking the icon will send a request to create a VPN network for the customer. The time of waiting is approx. 5 -10 min. At the same time, certificates for the user and registered devices will be created.
- A VPN IP address and a number of the remaining customer credits (if a VPN has already been created).

Clicking the "CANCEL" button will close the location edit/add window without saving the entered information. Clicking "SAVE" will save the entered data.

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