



# **ActiveMap Mobile Android user manual 22.0 (5.51)**

**Activemap Computer Systems Design**

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## GENERAL INFORMATION

### 1.1 Application information

ActiveMap Mobile is a part of the ActiveMap applied software suite for automated control of field employees, as well as for performing works at service objects (hereinafter referred to as the System).

ActiveMap is an online system for organizing the interaction between field workers and the dispatcher (task coordinator). The system helps to plan and manage the production work and to operationalize quality control of field services.

Capabilities of ActiveMap:

- Flexible customization to meet the needs of the company.

You can adapt ActiveMap to any business process. A list of work types, steps, and deadlines can be set up for each organization cluster.

- Adding tasks and controlling their execution.

The system allows users to add operational and planned tasks, including scheduled tasks on a given template.

- Object inventory.

ActiveMap helps to carry out an inventory of objects: update information on the status of existing objects, identify nonexistent, and to create new ones.

- Control of field employees.

The system helps to control employees with real-time tracking of their location, viewing the history of their movement, and recording the execution of requests.

- Convenient and quick interaction between field employees and work coordinators.

ActiveMap speeds up the process of exchanging results between the field employee and the work coordinator. The coordinator can promptly update task information, which is immediately communicated to the field employee. The coordinator can also quickly return the task to the fieldworker for execution based on the results of the fieldwork.

- Using photo and video fixation materials and GPS data.

The system can verify that tasks were carried out using photos, video recordings, and location data. This avoids the necessity of field inspection of executed orders.

- User rights configuration.

The system enables the configuring of user rights. Each user is assigned a certain role. The role of the system user determines access to the list of tasks, rights to edit and manage these tasks. The roles vary from simple executors to the administrator of the entire system.

- Displaying service objects on a map.

ActiveMap allows users to create tasks based on service objects with the automatic filling out of coordinates and task fields.

- Creating electronic documents.

The system allows users to create reports on the work with tasks and user activity based on the document form of the organization, as well as invoices issued by field employees.

More information about the comprehensive capabilities of the ActiveMap system can be found on the website of the Activemap Computer Systems Design company <https://activemap.me/>.

ActiveMap Mobile is a mobile application for the Android operating system. It implements the client part of the task management module of the ActiveMap software suite. ActiveMap Mobile allows setting tasks and monitoring the status of their execution. The application helps to coordinate the work of office and field staff, which increases the efficiency of mobile workers.

ActiveMap Mobile capabilities (Fig. 1.1):

- **Real-time data collection.** Workers send photos and videos from event locations to the dispatcher. The files are georeferenced and show where the footage was taken.
- **Tasks.** Mobile workers receive tasks through the app. The dispatcher sends tasks and monitors their execution. Quick assignment of tasks increases the productivity of mobile teams.
- **Interactive maps.** ActiveMap Mobile provides access to corporate maps. The application works with data layers. Layers are georeferenced data sets. Companies mark real estate objects, clients, communications, and more on them. Everything that is outside the office and is of interest to the company is added with tags to the map.
- **Data Analysis.** ActiveMap Mobile allows generating statistics and reports on the effectiveness of employees' work.

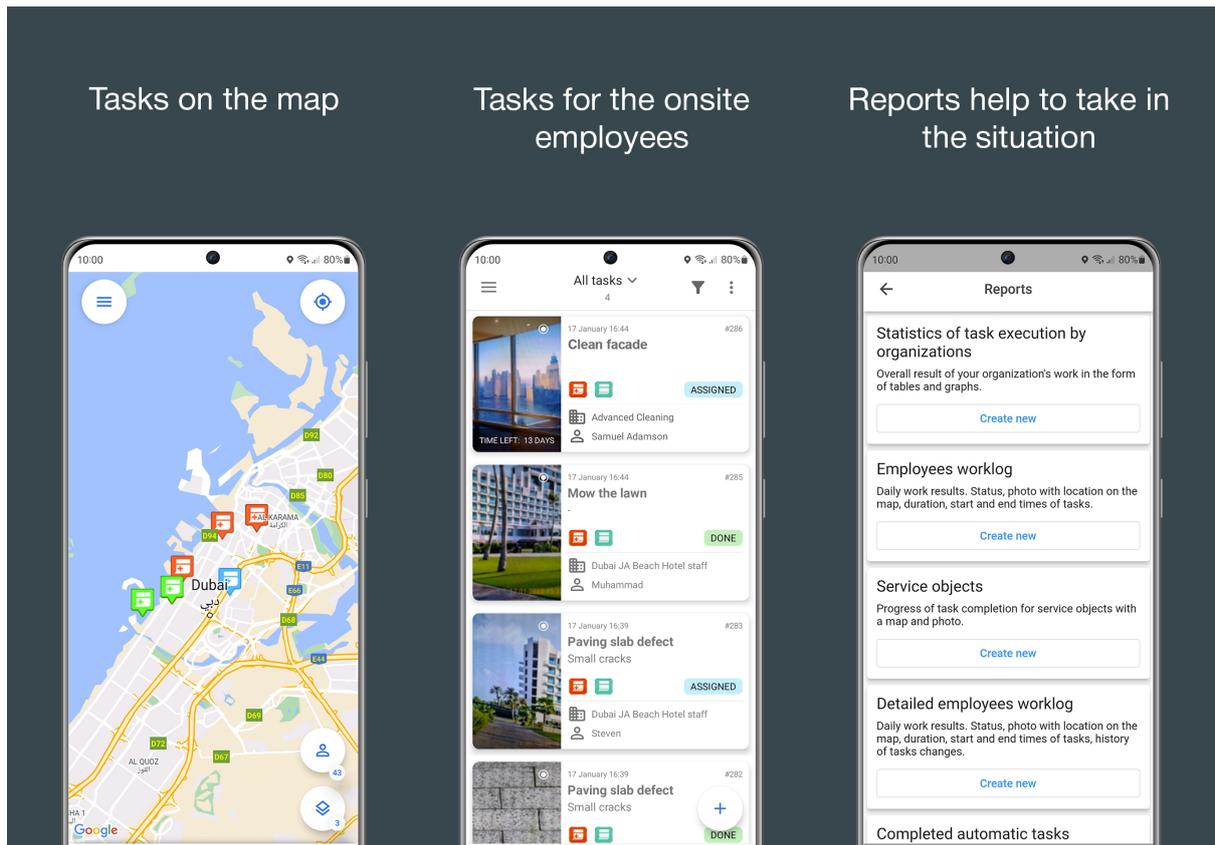


Fig. 1.1: ActiveMap Mobile capabilities

The ActiveMap Mobile application is designed to accomplish the following tasks:

- Prompt receipt and execution of tasks with the necessary information specified (location, photo angles, deadline, work description, checklist, etc.);
- Full functionality in offline mode<sup>1</sup>;
- Real-time task creation and assignment to employees;
- Control of employee location and ability to track removal from the area of responsibility in real time;
- Distribution of planned tasks among employees using schedules with the ability to make real-time changes;
- Generation of reports and invoices;
- Automated photo comparison;
- User login via invitation links;
- Creation of tasks with linkage to service objects.

<sup>1</sup> The application allows users to add and save tasks on the mobile device without access to the Internet. Sending user tasks to the server and viewing new tasks from other users is possible only when the Internet is available.

## 1.2 Software and hardware requirements

ActiveMap Mobile works on mobile devices with Google Android 11.0.0 and higher. To run the application, the following are required:

- Processor: 2000 MHz GPU or higher;
- Number of CPU cores: 8 or more;
- RAM: 16 GB or more;
- Battery: 3000 mAh Li-Pol;
- Satellite navigation: GPS/GLONASS;
- A-GPS system;
- Support for NFC and Bluetooth;
- Main camera: 12 MP or higher;
- Internet access with a minimum speed of 10 Mbps;
- Permission to access:
  - Camera and media files of the device;
  - Device location;
  - Personal information (email address, user ID, phone number);
  - Files and documents;
  - Application and performance information;
  - User device IDs.

To work with BLE-tags (beacons), a version of the Google Android operating system 12.0.0 or higher is required.

The permissions for the ActiveMap Mobile application can be expanded after each update. You can find more information about permissions in the app description in the Google Play store.

The application allows users to add and save tasks on the mobile device without access to the Internet. Sending user tasks to the server and viewing the tasks registered on the server is possible only when the Internet is available.

## 1.3 Installing the app

**Attention:** If you have a link to ActiveMap Mobile from the Administrator of your organization, you can directly access the application in Google Play store. After installation, the application opens and automatically logs in to the user account. When following a single link for all users of the same organization, you have to enter a phone number to register a new user.

To install ActiveMap Mobile on the mobile device, open Google Play store. Use the app search form to find the ActiveMap Mobile app (Fig. 1.2).

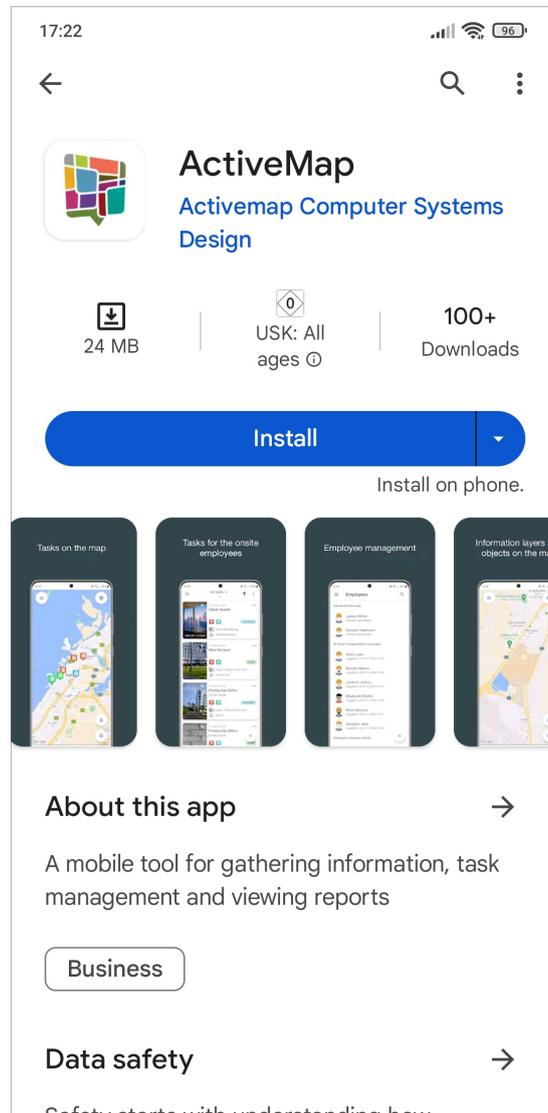


Fig. 1.2: ActiveMap Mobile app on Google Play Store

Click “Install” and accept the necessary permissions to run the application. The ActiveMap Mobile download process starts on the device. Once the download process is complete, the ActiveMap Mobile launch icon appears in the application list (Fig. 1.3).

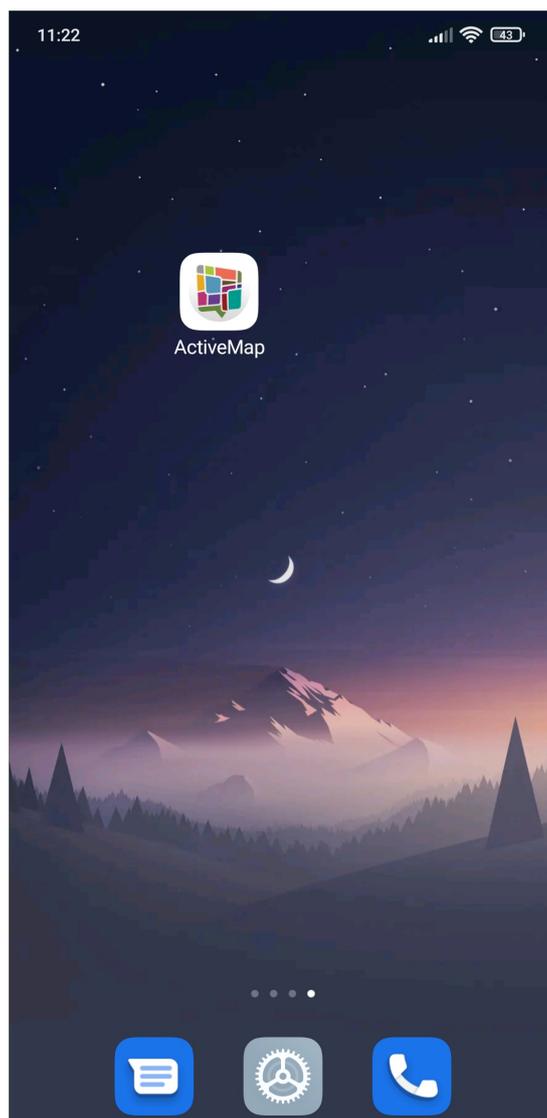


Fig. 1.3: ActiveMap Mobile launch icon in the application list

When an update is released, a message about the new version is displayed at the moment the application is launched. Click “Update” to install the new version (Fig. 1.4). This opens the application page in Google Play. You need to complete the standard steps to update applications on the device.

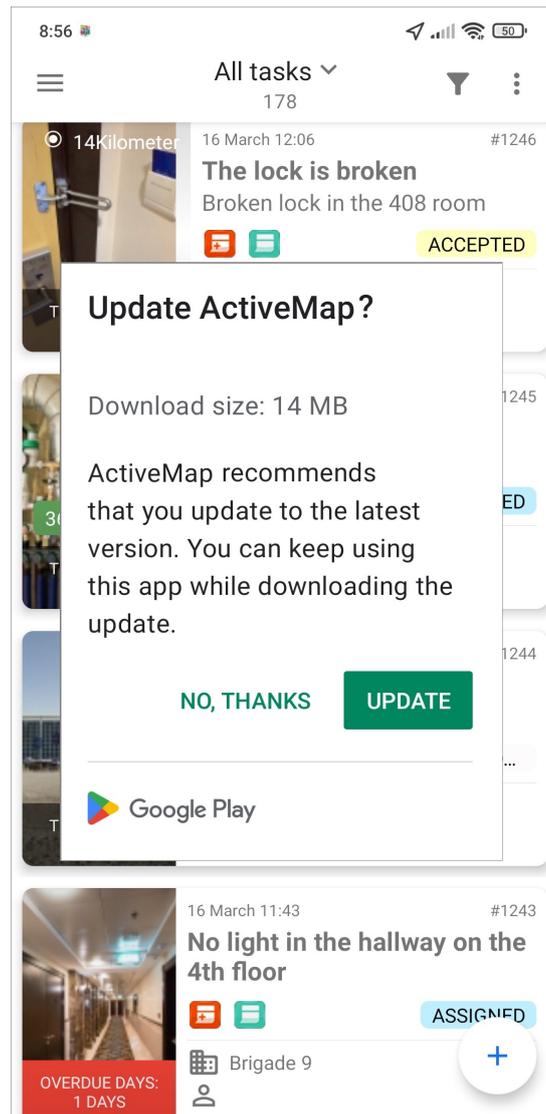


Fig. 1.4: Updating the application

## WORKING IN THE APP

### 2.1 Authorization and account management

#### 2.1.1 Getting started

To run ActiveMap Mobile, use the application shortcut located in the list of applications on the mobile device. After launching, an information window appears on the screen (Fig. 2.1).

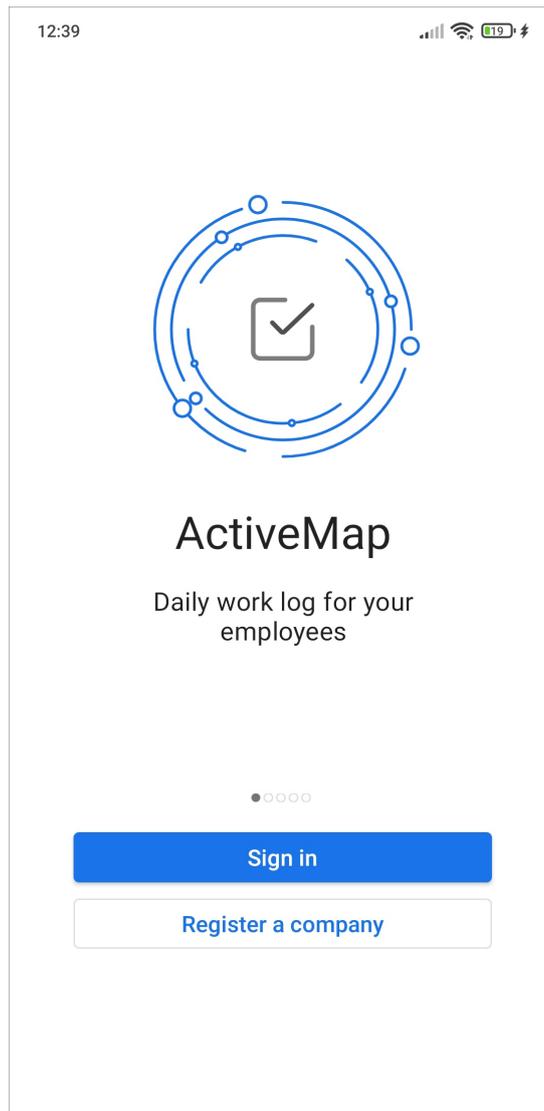


Fig. 2.1: Getting started window in ActiveMap Mobile

User registration in the application is the creation of an account or several accounts on a server. After completing the registration, follow the link received. The application automatically authorizes under the user account.

### 2.1.2 Registration of the company and employees in the application

To register, click “Register a company” when you launch the application. If the company was registered earlier, then it is possible to restore your access. Enter the company’s name, your name, phone number or e-mail (Fig. 2.2). By default, an organization is created with the following settings:

- Business area: Other services.
- Types of work: Worklog.
- I want to see location of employees on the map: Yes.
- I want tasks for employees to be created automatically according to the schedule: No.

- Accounts for colleagues will be created later.

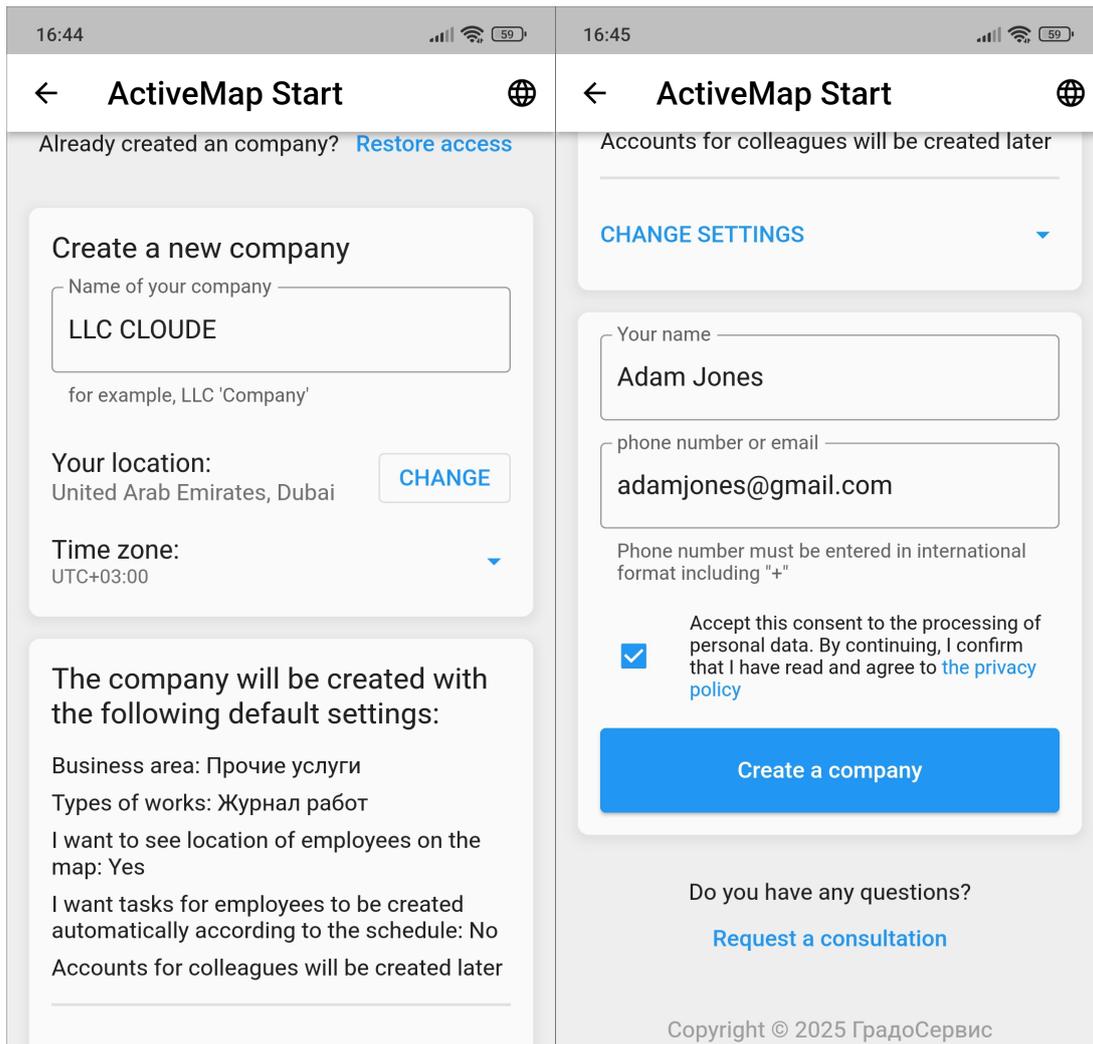


Fig. 2.2: Registration of an organization in the ActiveMap

There is also an extended version of the registration, where you can change the business area, add types of work, and create accounts for employees. You can skip the step of creating accounts for employees, as the system setup wizard opens after the organization is created in the system (Fig. 2.3).

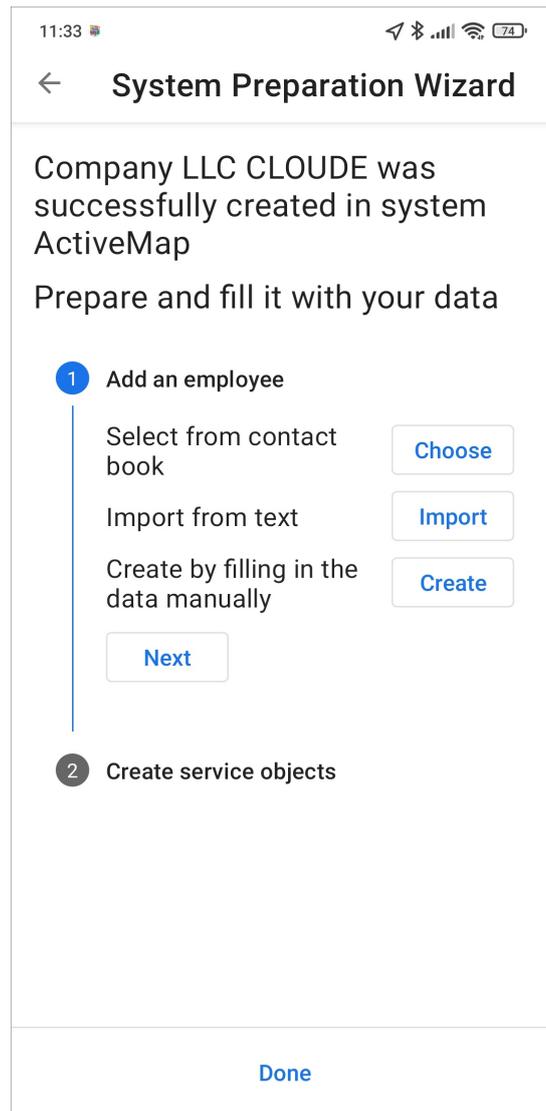


Fig. 2.3: System setup wizard

The first step is to create employees. The wizard offers three options for creating employee accounts in the system:

- Select from the user's device contact book.
- Import from text.
- Create by filling in the data manually.

Selecting from the contact book is an import from the contacts on the user's device. You must grant permission for the application once to access the contacts. In the wizard window, click "Select", then select all the contacts to import, and click "Done" (this button displays the number of contacts to import). In the import window, click "Create". You will see a message that the import is completed. The invitation links for employees will become available (Fig. 2.4). Employees can use these links to log in to the application without entering a server and login/password.

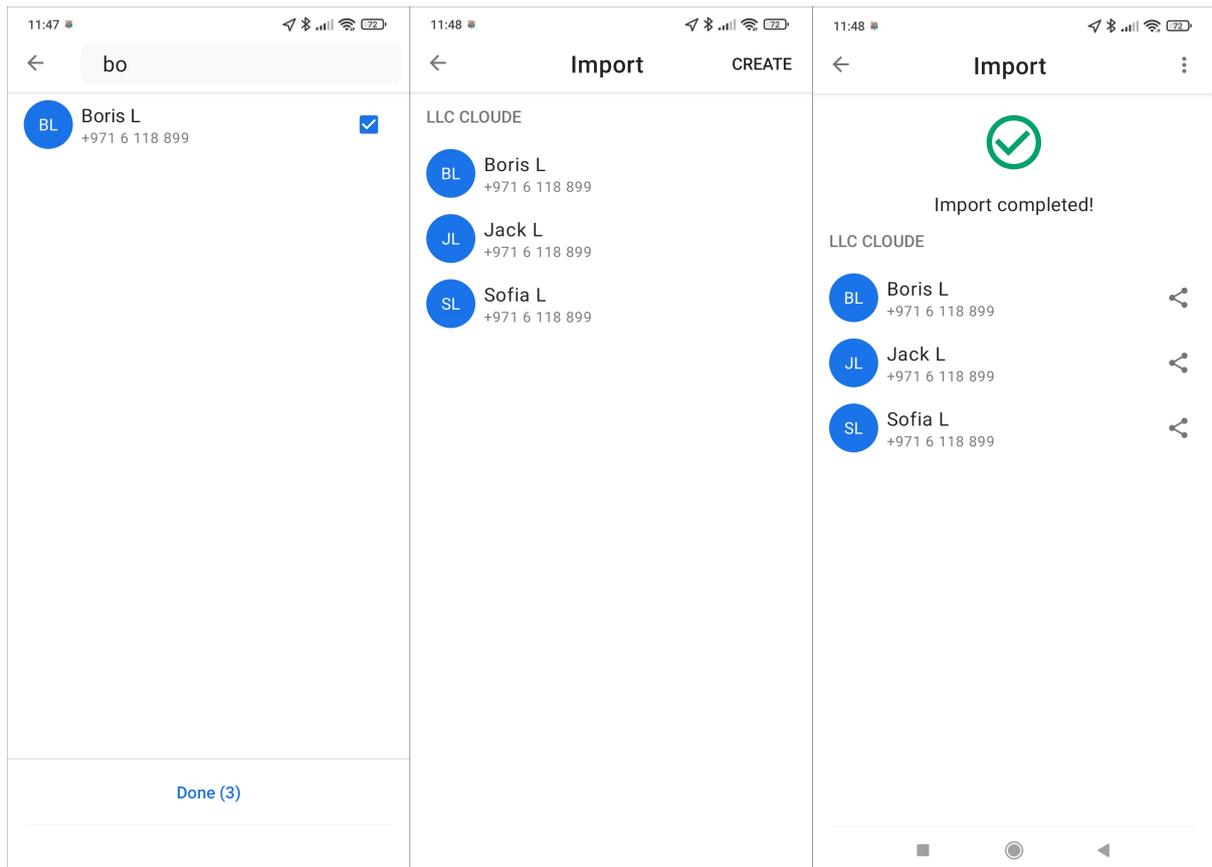


Fig. 2.4: Creating employee accounts from the phone book

Import from text is the creation of employee accounts by entering them into a text window (Fig. 2.5). The separator between employees is a line break.

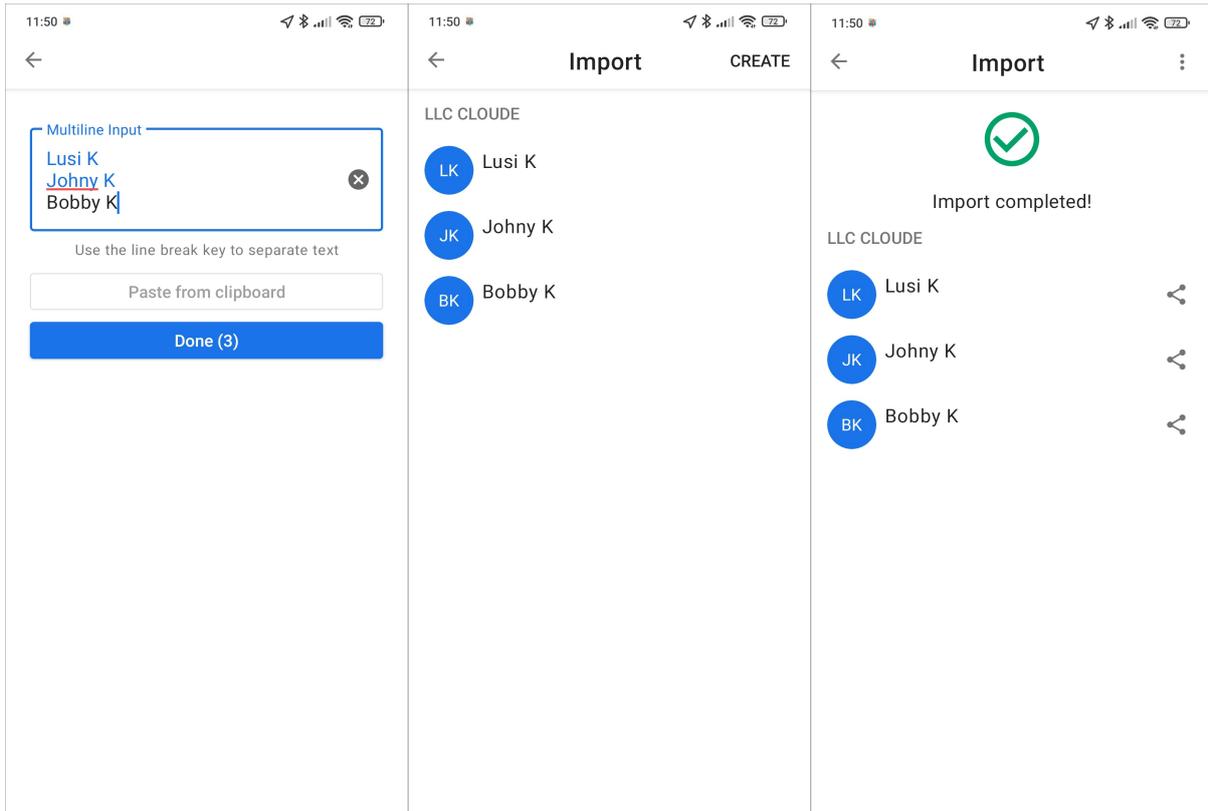


Fig. 2.5: Creating employee accounts from text

Creating accounts by filling in the data manually is the standard way of creating an account for each individual employee (Fig. 2.6).

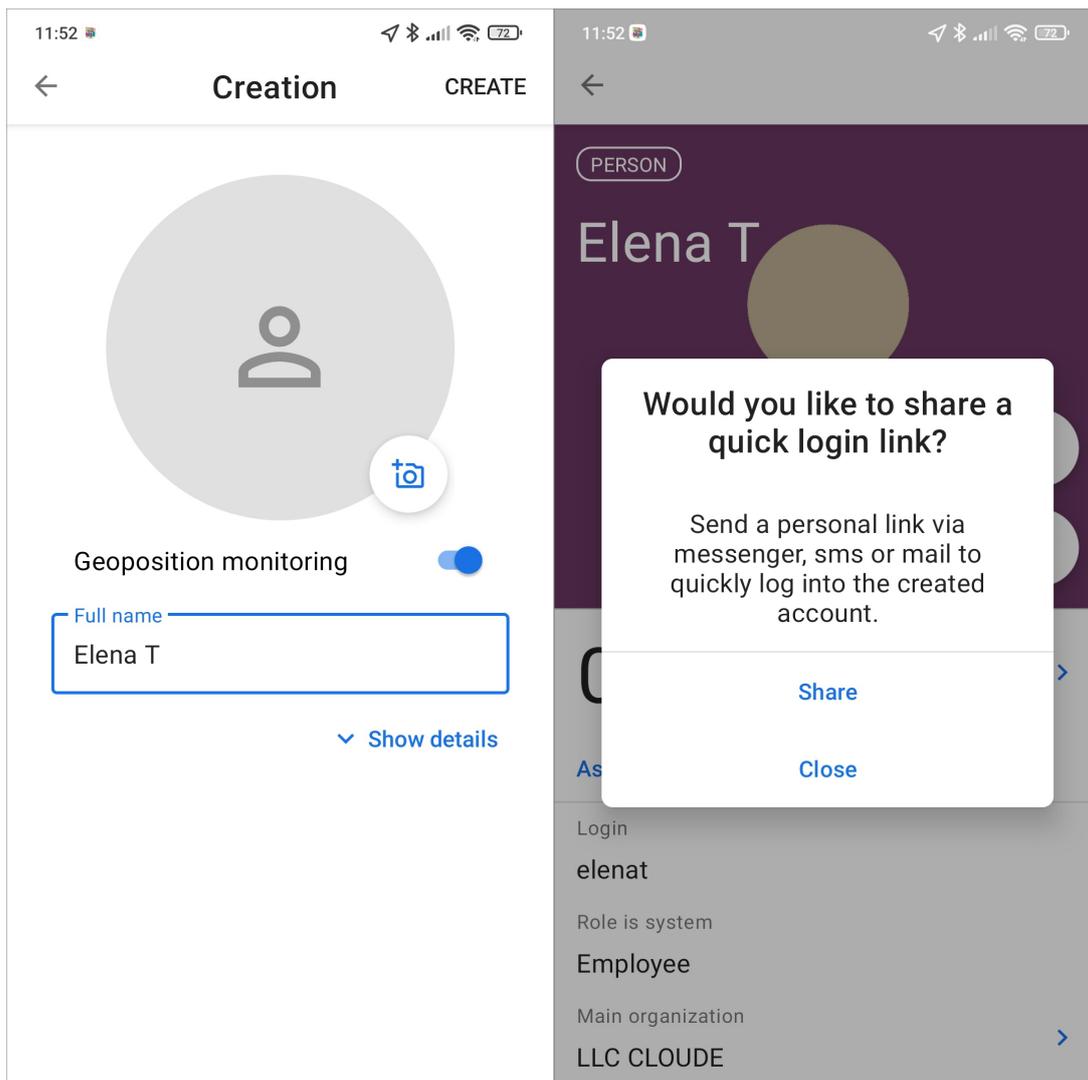


Fig. 2.6: Creating an employee account

The second step is to create service objects. To proceed to the second step, click “Next” and select the method of creating service objects: using import or creating each object individually (Fig. 2.7).

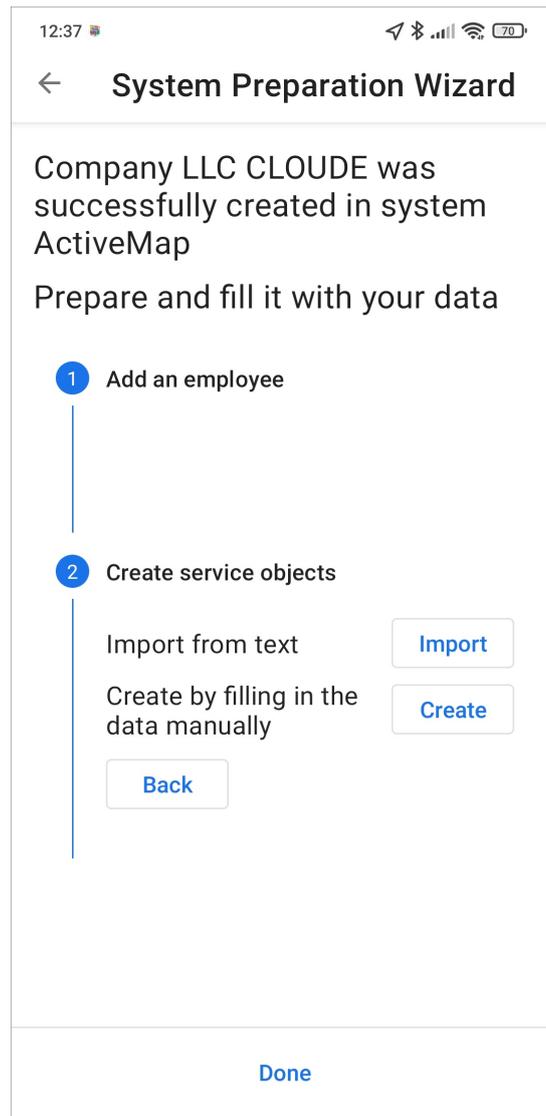


Fig. 2.7: Creating service objects

When importing service objects, a window for mass creation of objects opens. Here you specify the names of the service objects (Fig. 2.8). You can set the separator between objects by clicking on the gear. The default one is a line break.

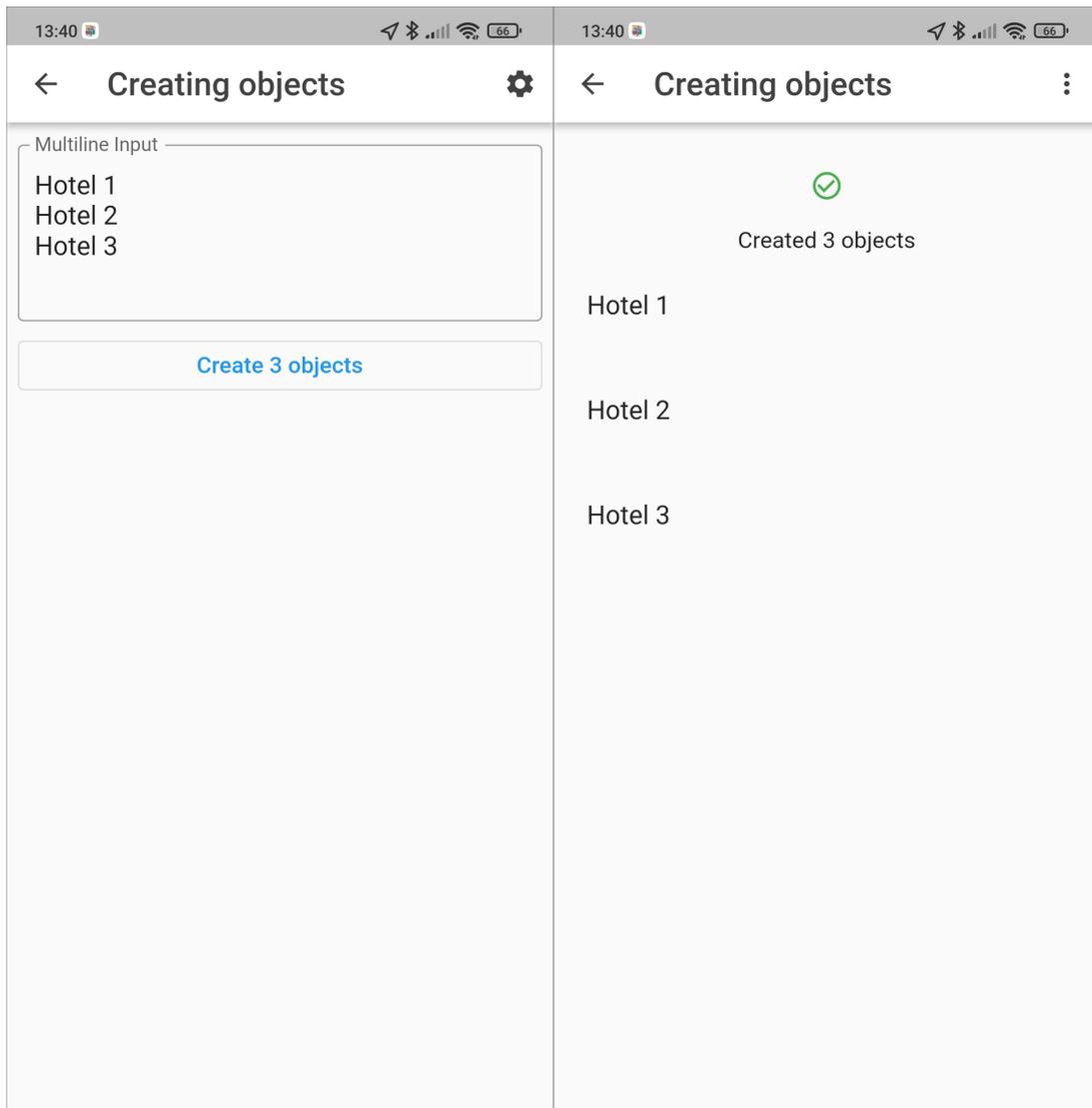


Fig. 2.8: Importing service objects

To create objects individually, click “Create”. The object creation window opens. Here you can add the location of the object in addition to the name. By default, the “Coordinates” section shows the user’s current coordinates. You can change them by specifying the exact location of the object being created (Fig. 2.9).

13:41

← Object creating

Number of photos: 0 ADD PHOTO

Name •  
Hotel 4

Description  
*No value*

Assigned organization  
*No value*

Current location  
25.205755, 55.365754 CLEAR ALL

ADD LINK

ADD A FILE

DELETE OBJECT

Fig. 2.9: Creating a service object

Click “Done” to complete the system configuration. The ActiveMap Mobile application opens with already created tasks for all created users (Fig. 2.10).

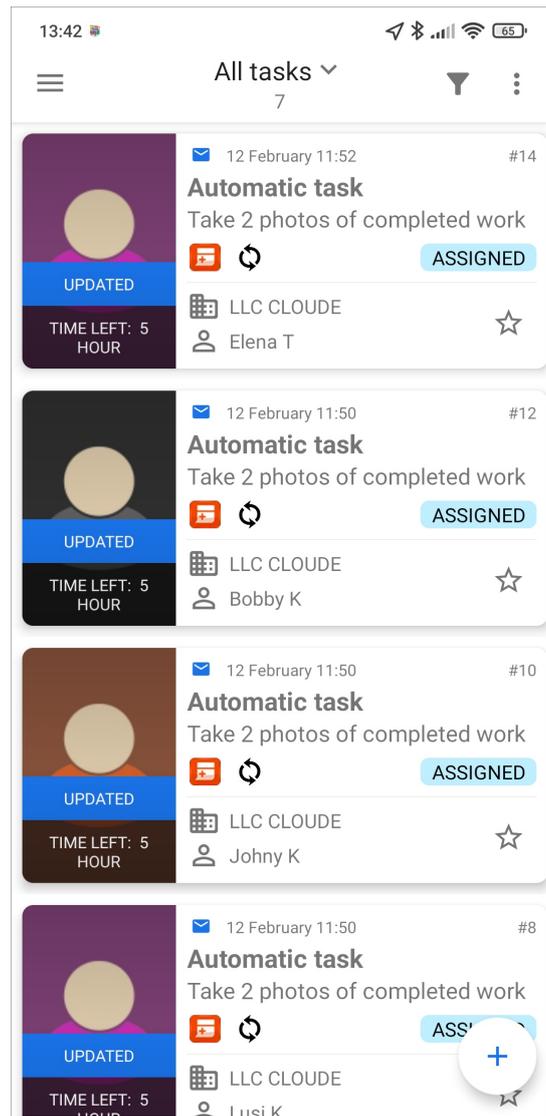


Fig. 2.10: List of tasks for employees

You can read our privacy policy in the get started window: <https://app.activemap.me/policies-privacy-en/>. Please read our privacy policy carefully to know what information we collect and for what purposes we use it.

If anything remains unclear, you can request a consultation. Our staff will do their best to assist you. To do this, click “Request a consultation”, fill in the form, and click “Send” (Fig. 2.11).

16:24

← ActiveMap Start

Request for a consultation

Your question

Tell me more about the system.

Please select your preferred consultation time:

From 14:00 Until 16:00

Your location:  
United Arab Emirates, Dubai CHANGE

Your name

Adam Jones

phone number or email

adamjones@gmail.com

Phone number must be entered in international format including "+"

Send

Fig. 2.11: Consultation request form

### 2.1.3 Authorization

To add and view tasks, log in to the ActiveMap Mobile application. Authorization is possible only for registered users. For more information about registering users in the application, see *Registration of the company and employees in the application* (page 9) .

**Attention:** Unregistered users have no access to the System.

When authorizing via a personal link, authorization in the application occurs automatically.

When following a link from an organization, registration and authorization is done by phone number. In this case, an account with the “Executor” role is created.

For standard authorization, click “Sign in” and enter the server address (Fig. 2.12):

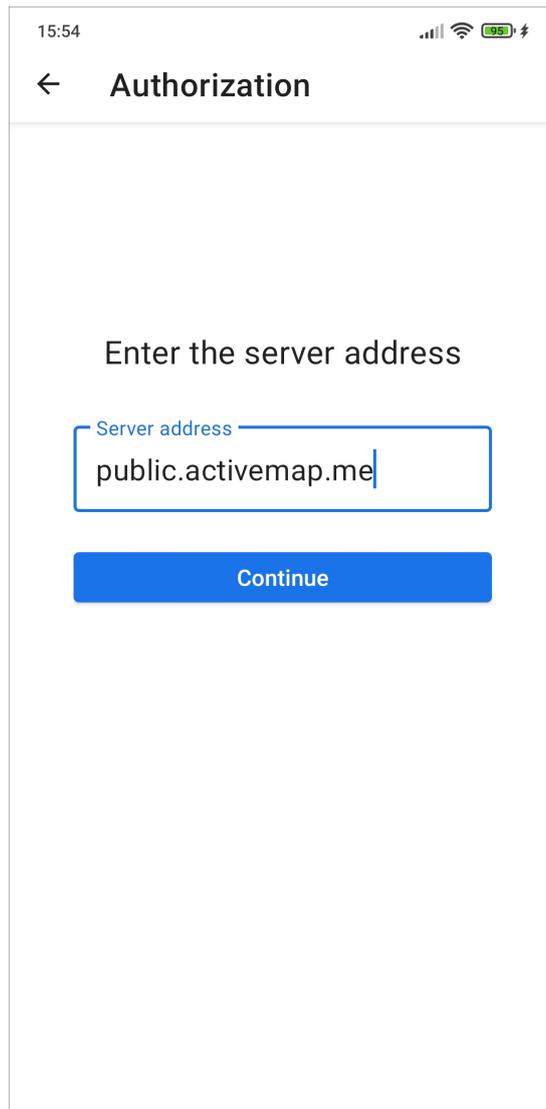
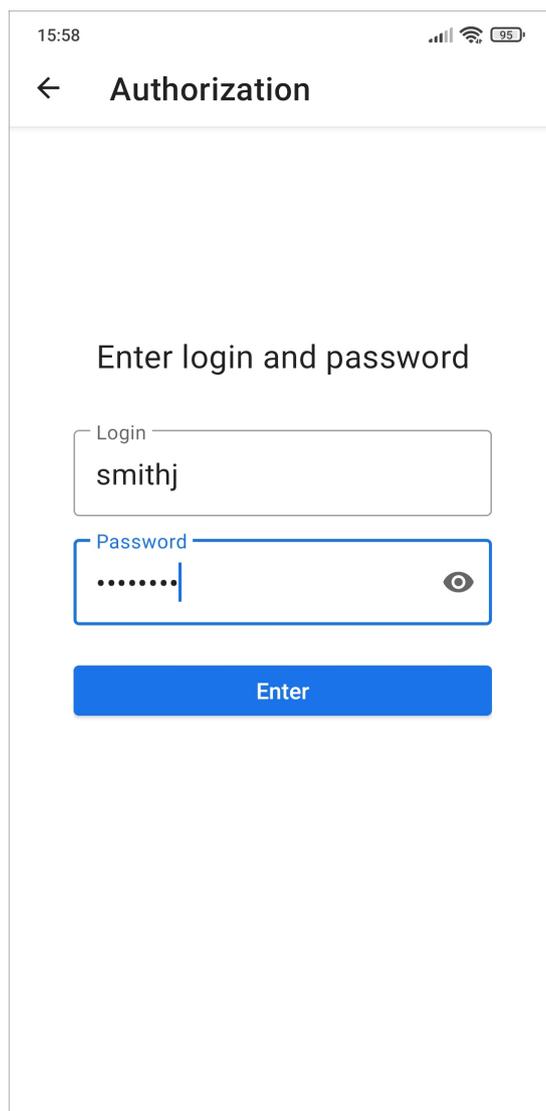


Fig. 2.12: Entering the server address

In the next window enter the user registration data (login and password) and click “Enter” at the bottom of the registration form (Fig. 2.13).



15:58

← Authorization

Enter login and password

Login  
smithj

Password  
.....

Enter

Fig. 2.13: Authorization on the server

The application uses the credentials entered the last time when you start the application. If you try to log in to ActiveMap Mobile without entering the specified parameters, the application displays the messages about the necessity of filling in the fields.

If background geolocation monitoring is enabled in the user account, allow access to the device location to work correctly at startup. To do this, click “Ok” (Fig. 2.14) in the opened window:

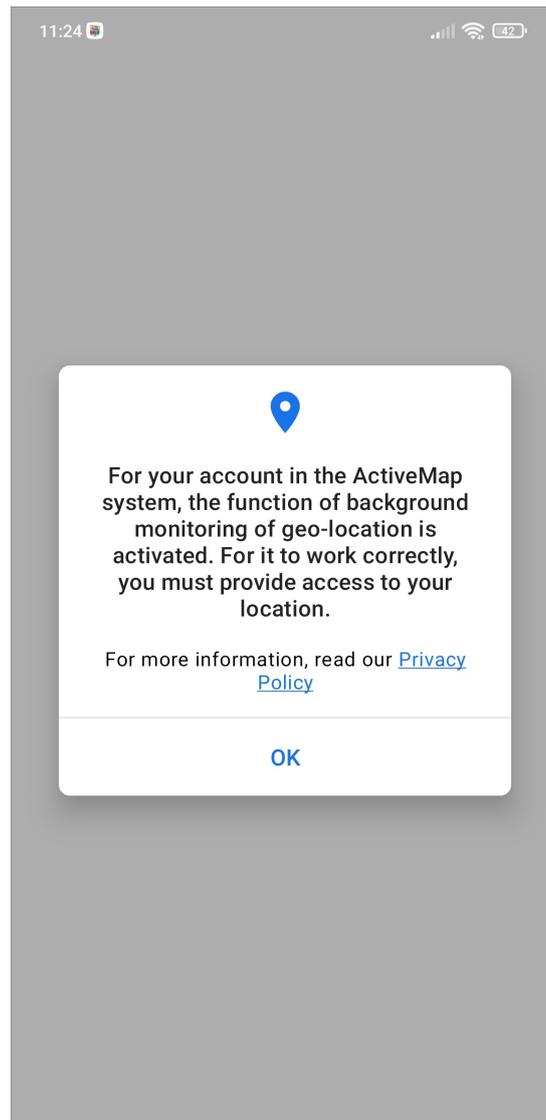


Fig. 2.14: Warning about turning on the location monitoring function

Click “While using the app” or “Only this time” in the next window (Fig. 2.15):

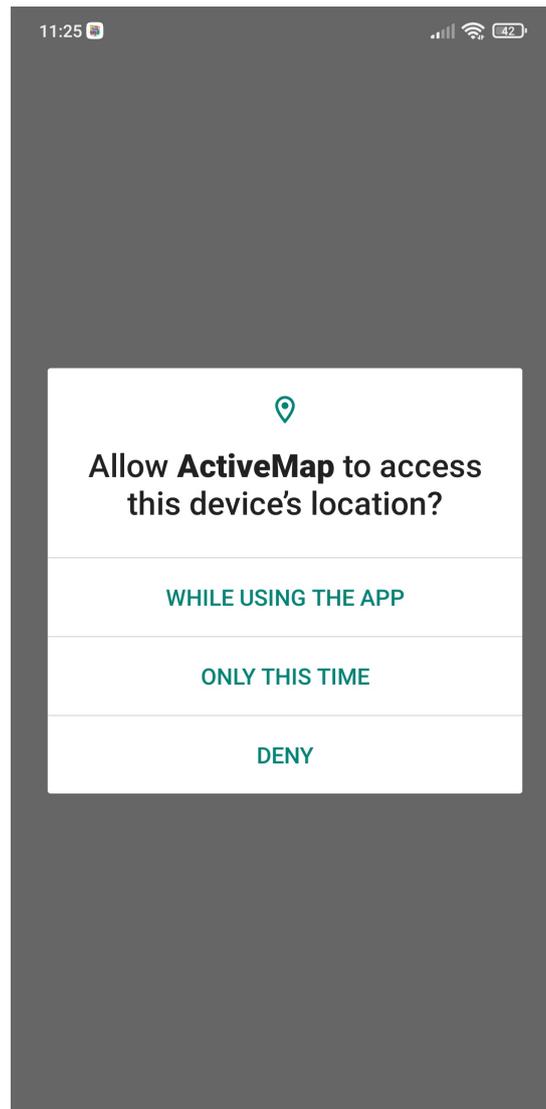


Fig. 2.15: Permission to access the user's device location

The application is ready to work. You can start executing tasks.

It is possible to authorize under more than one account on the same device. The authorization window shows lists of servers and all added accounts. To authorize in ActiveMap Mobile with saved accounts, click on the desired account. To remove an account from the list of saved accounts, click "Delete"  next to the account name.

You can change password without logging out of your account if the system forced a password change while working in the application. For further work, enter a new password and click "Confirm".

### 2.1.4 Account management and roles in the system

To get into the account of an authorized user, go to the navigation sidebar. User profile is placed at the top of the sidebar. It shows the user's photo (if any), the server on which the user works, an indicator of the geo-location monitoring, and the user's organization (Fig. 2.16).

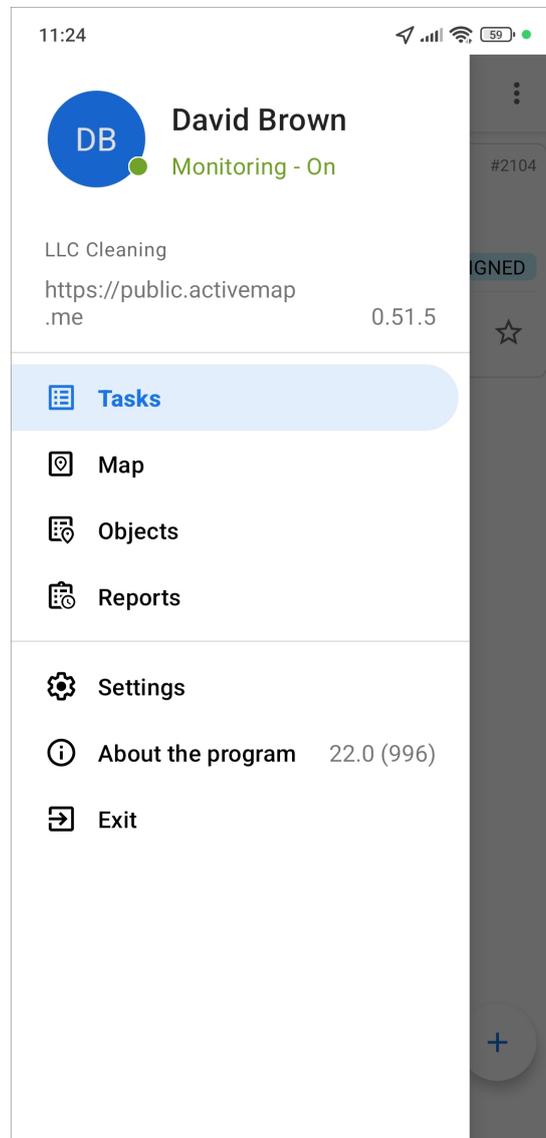


Fig. 2.16: User profile in the navigation sidebar

To see full information about a user's account, click on the profile in the navigation sidebar. "My Profile" account window opens with the user registration data (Fig. 2.17).

In this window, you can enable or disable background monitoring of geolocation, mark the location, and view the user's movement history. Clicking "History of Movements" opens a window with a map, track, and a calendar for selecting the day and time interval. In addition, there is as a "Manage layers" button to enable available layers. The user's movements can be displayed as a list. For more information about working with layers and about the history of user moves, see *Working with the map* (page 115) section.

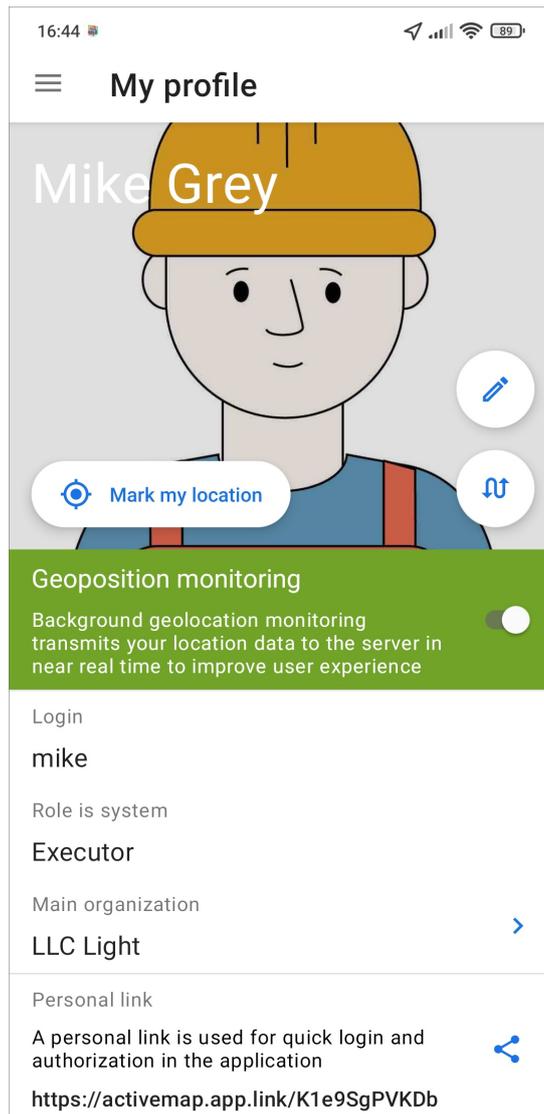


Fig. 2.17: My Profile window

To edit user's account, click "Edit"  in the upper right corner. The user can change the following information:

- Full name
- Photo
- Login
- Password
- Tags
- Telephone
- E-mail
- User type
- User role
- Main organization

- Additional organizations

After making changes, click “Apply”. Some profile data (such as login and role) remains unchanged in the interface until the next login. Editing the password, phone number, and email is available for all roles.

The ability to modify certain user data depends on the role. Users with administrator roles can add and edit tags. However, only users with the System Administrator role can create new tags. Some roles can create users in the navigation menu section: *Map* → *User Management*. For more information about creating users, see *Creating users* (page 123).

Administrators assign the roles when creating user accounts. They differ from each other in the set of actions that users can perform in the ActiveMap system components.

There are several preset user roles in the ActiveMap system:

- The “**System Administrator**” is responsible for system configuration and administration. This involves managing clusters, organizations, users of all roles, contracts, layers and tables; granting access rights to layers and reports; managing tasks. Managing includes creating, editing and deleting.
- The “**Cluster Administrator**” is responsible for administering one or more specified clusters. This involves managing organizations and users, layers and tables; granting access rights to layers and reports; managing tasks within the specified clusters. Managing includes creating, editing and deleting.
- The “**Organization Administrator**” is responsible for administering the organization. This involves managing users, layers and tables; granting access rights to layers and reports; managing tasks within the organization. Managing includes creating, editing and deleting.
- The “**System Inspector**” is responsible for managing tasks across all clusters. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.
- The “**Cluster Inspector**” is responsible for managing tasks within one or more specified clusters and can create new layers and tables, as well as edit or delete available ones. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.
- The “**Organization Inspector**” is responsible for managing tasks within the organization and can create new layers and tables, as well as edit or delete available ones. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.
- The “**Executor**” is responsible for executing assigned tasks and can create new tasks, layers, and tables, as well as edit or delete available layers and tables.

In addition to the preset roles, administrators can create custom ones. By default, newly created custom roles receive the rights of the Executor role. You can create new roles in the application. For more information about creating roles, see *Role administration* (page 132).

## 2.2 Application interface

### 2.2.1 Task management window

After successfully logging into the application, the task management window appears (Fig. 2.18).

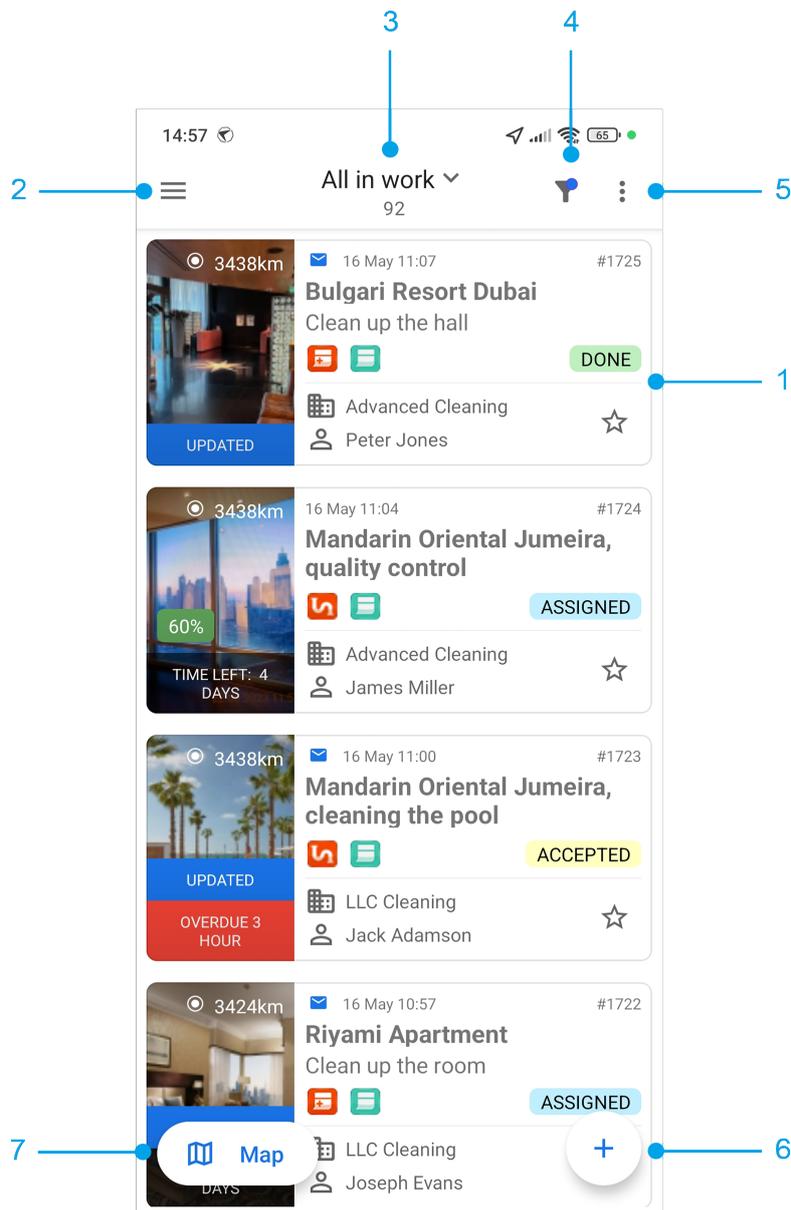


Fig. 2.18: Task management window

1 – task viewing window, 2 – navigation sidebar, 3 – task list settings, 4 – task filter and advanced sorting, 5 – window menu, 6 – adding a new task, 7 – task map.

You can perform the following actions in the task management window:

- View tasks created on the server as a list.
- View tasks created on the server on a map.

- Add new tasks and send them to the server.
- Modify tasks and send changes to the server.

## 2.2.2 Navigation sidebar

To open the navigation sidebar, click  in the upper left corner of the task management window.

Sidebar consists of the following sections:

- “My profile” – information about the user account (*Account management and roles in the system* (page 24)).
- “Tasks” – task management window opening (*Task management window* (page 27)).
- “Schedules” – creation of planned tasks according to a template. The section is available under the roles of administrators and inspectors (*Schedules* (page 129)).
- “Employees” – managing users. This section is available for the administrator roles and the System Inspector role (*User management* (page 81)).
- “Map” – working with tasks on the map and adding geometric objects (*Working with the map* (page 115)).
- “Objects” – the list of service object layers (*Objects* (page 104)).
- “Reports” – generating and viewing reports created in the ActiveMap web system. The section is available under the roles of administrators and inspectors (*Reports* (page 145)).
- “Administration” - setting up basic task parameters (*Administration* (page 131));
- “Settings” – configuring ActiveMap Mobile application parameters (*Application settings* (page 166)).
- “About” – displaying information about the ActiveMap Mobile application (*About application* (page 164)).
- “Exit” – logging out from the user account (*Exiting the application* (page 177)).
- “Link to external services” – redirecting to an external web service page (*External web services* (page 148)).

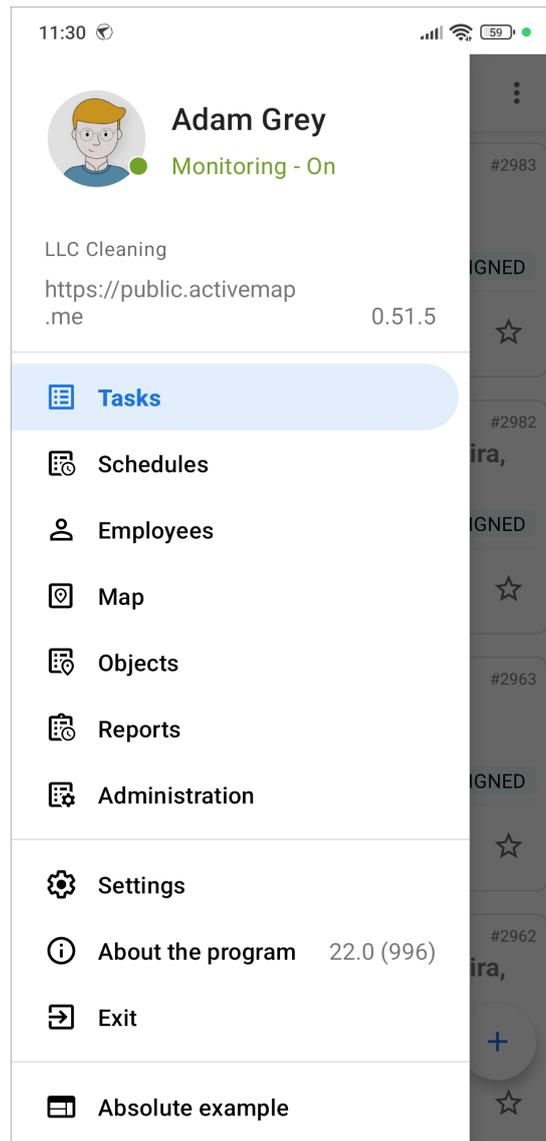


Fig. 2.19: Navigation sidebar

### 2.2.3 Quick task filters

You can set up a task list in the task management window. To do this, open the drop-down list of quick filters at the top of the window (Fig. 2.20):

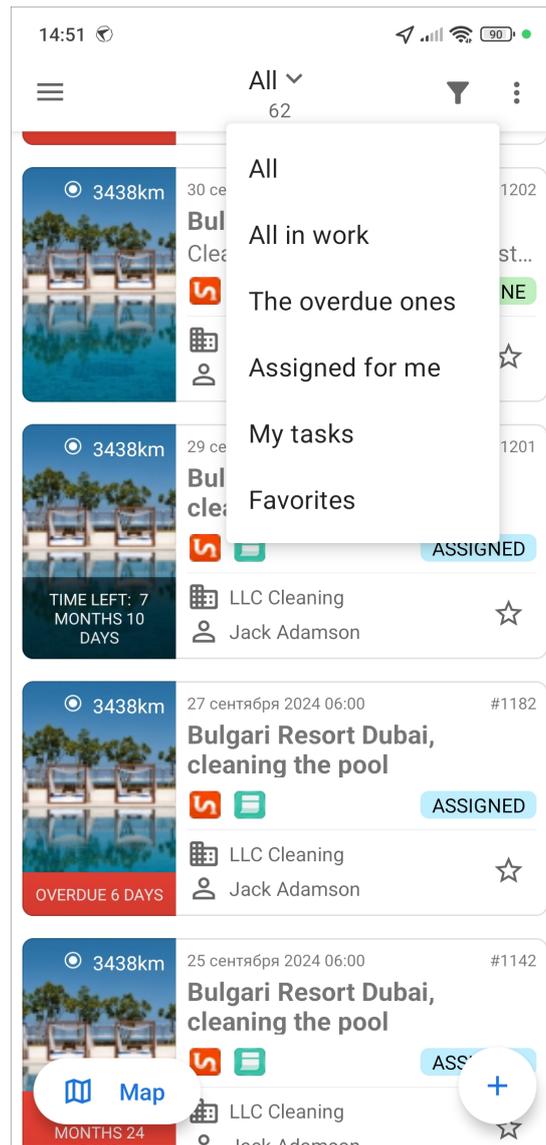


Fig. 2.20: Task list settings

The task list includes the following sections:

- “All” — tasks registered on the server and available to the user;
- “All in work” — tasks that are in the “In progress” status;
- “The overdue ones” — uncompleted tasks that have reached their due date and are in the “In progress” status;
- “Assigned to me” — tasks assigned to the current user;
- “My tasks” — tasks added by the current user, including those not sent to the server (drafts);
- “Favorites” — a list of favorite tasks of an authorized user marked with an asterisk.

The default value for the quick filter for all users is “All in progress”.

All quick filters, except the default values, are marked with a filter indicator.

The task lists in the same sections may differ for users with different roles (for more information about roles, see *Account management and roles in the system* (page 24)).

For the executors, the “All” group contains only tasks assigned to them and the tasks created themselves. Organization administrators and inspectors see all the tasks assigned to employees of their organization in this group. Cluster administrators and inspectors see the tasks of all their clusters.

Favorite tasks are different for each user. To make a task favorite, mark it with a star in the task card. To remove from favorites, remove the star from the task. Favorite tasks are displayed and synchronized for the user in the ActiveMap Desktop and ActiveMap Mobile (Fig. 2.21).

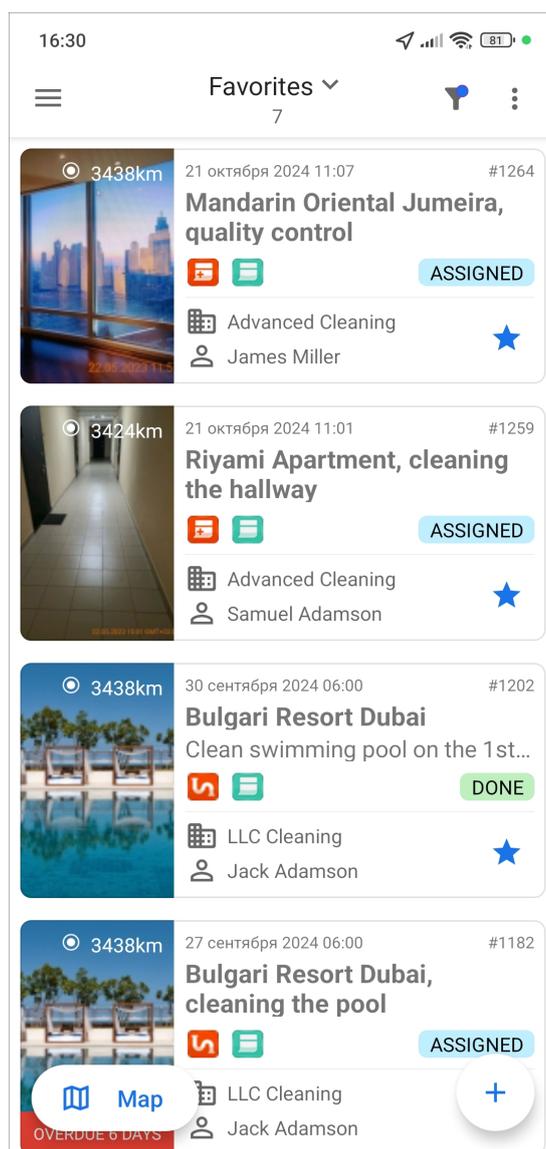


Fig. 2.21: Favorite tasks

The details of working with the specified task lists are described in the *Viewing registered tasks* (page 38) section. For each task list, the number of tasks is indicated at the top of the window.

## 2.2.4 Task filter and advanced sorting

The filter button  is used to filter tasks in the list by the following parameters (Fig. 2.22):

- ID (task number in the system) or text (searching for a task in the list by the entered text);
- Update date – start and end dates of the task update time interval;
- Due date – start and end dates of the task execution deadline time interval;
- Creation date – start and end dates of the task creation time interval;
- Additionally:
  - Only the overdue ones – overdue tasks;
  - Favorites – tasks marked by the user;
  - Drafts – tasks that have not been sent to the server yet;
  - Parent tasks only – first-level tasks that are linked to second-level (child) tasks or have no child tasks;
- Status – all possible task statuses in the system (rejected, in progress, closed, all);
- Step – all possible task steps in the system (new, assigned, accepted, completed)<sup>1</sup>;
- Priority – all possible priorities in the system (e.g. planned, unplanned, etc.);
- Work type – all types of work entered in to the system;
- Additional fields – all custom attributes added to the system (for more information, see *Working with custom fields* (page 44));
- Creator organization;
- Assigned unit;
- Author;
- Assigned executing unit.

System administrators create steps, priorities, and types of work as reference tables (dictionaries) with several possible values.

---

<sup>1</sup> reference tables (dictionaries) can be modified according to the individual requirements of the client.

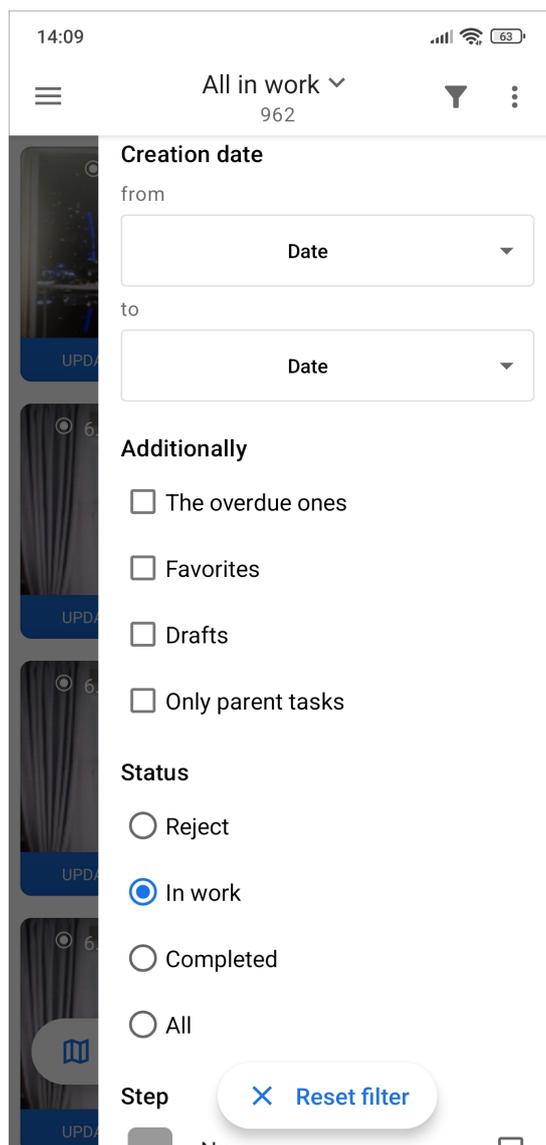


Fig. 2.22: Filter settings window

To work with filters, select the required parameters, set the parameter values corresponding to the request. The filter is applied automatically. The “Reset filter” button allows resetting all filtering parameters that have been set. When applying extended conditions, the “Filtered” label appears in the quick filters area.

In the filter window, you can set the task sorting parameters (Fig. 2.23):

- By sequence number
- In alphabetical order
- By creation date
- By update date
- By completion deadline
- By priority

- By distance<sup>2</sup>

You can also set the sort direction here:

- In ascending order
- In descending order

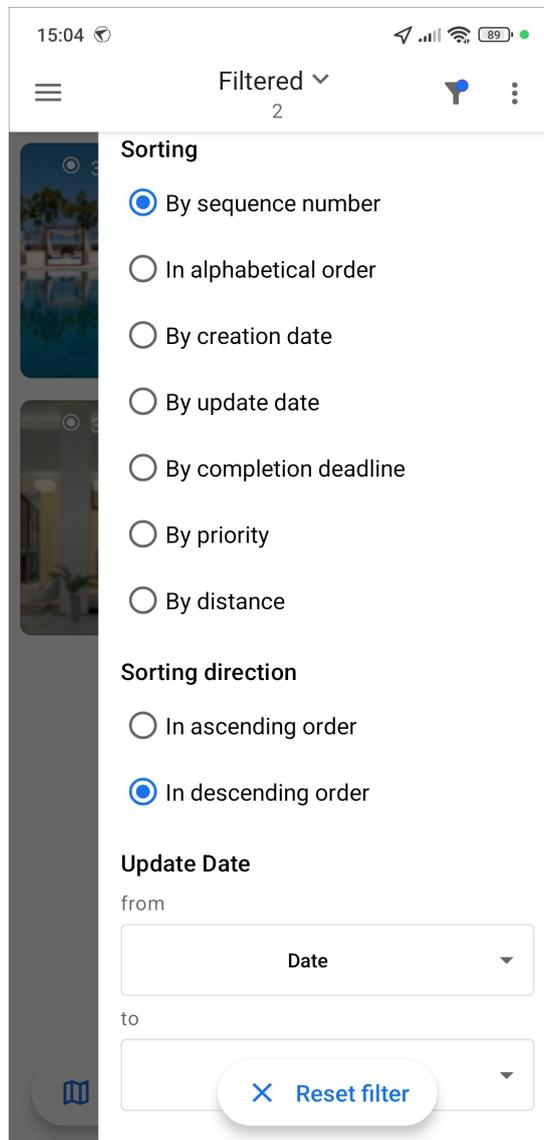


Fig. 2.23: Setting sorting parameters in the filter settings window

The system does not support sorting by logical fields or by fields linked to an array.

<sup>2</sup> in this case, it refers to the distance from the location of tasks to the user. Active – when the user's geolocation monitoring is turned on, inactive – when the geolocation monitoring is turned off".

## 2.2.5 Window menu

The “Window menu” button  is located in the upper right part of the application screen. The window menu contains the following sections (Fig. 2.24):

- “Synchronize data” – updates information on tasks by synchronizing with the server.
- “Clear the update history” – deletes the “Updated” caption from unviewed tasks modified by other users.
- “Remove drafts” – deletes all tasks with the “Draft” status from the list.
- “Send drafts” – sends all tasks with the “Draft” status to the server in bulk.
- “Send changes” – sends all changes on tasks to the server in bulk.
- “Show downloaded” – shows the list of tasks displayed offline.
- “Download tasks” – downloads tasks to the cache for offline work (including media files of tasks).

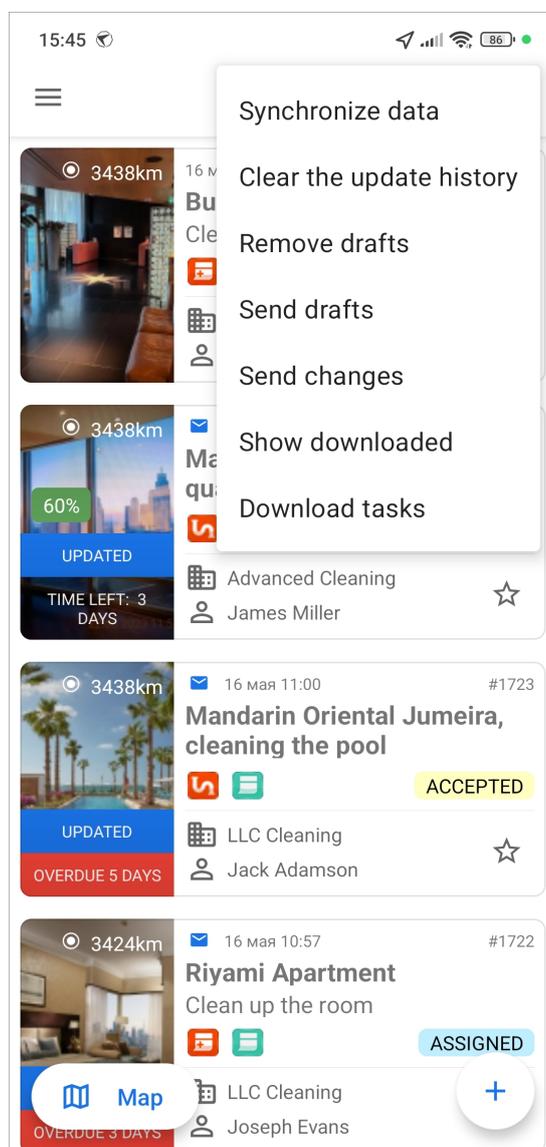


Fig. 2.24: Window menu

## 2.2.6 Tasks on the map

You can view tasks either as a list or on the map (Fig. 2.25). The filters set in the task list are

automatically applied on the map. To switch from the list to the map, click



Fig. 2.25: Task map window

Only tasks with location coordinates are displayed on the map. The number of visible tasks is shown in the bottom left corner of the map. It is automatically updated when you move the map. Clicking it opens a list of these tasks with the “Tasks in the region” quick filter applied (Fig. 2.26). You cannot change it. However, you can add an additional filter to select tasks within the presented list. Switching back to the map returns the original list of tasks.

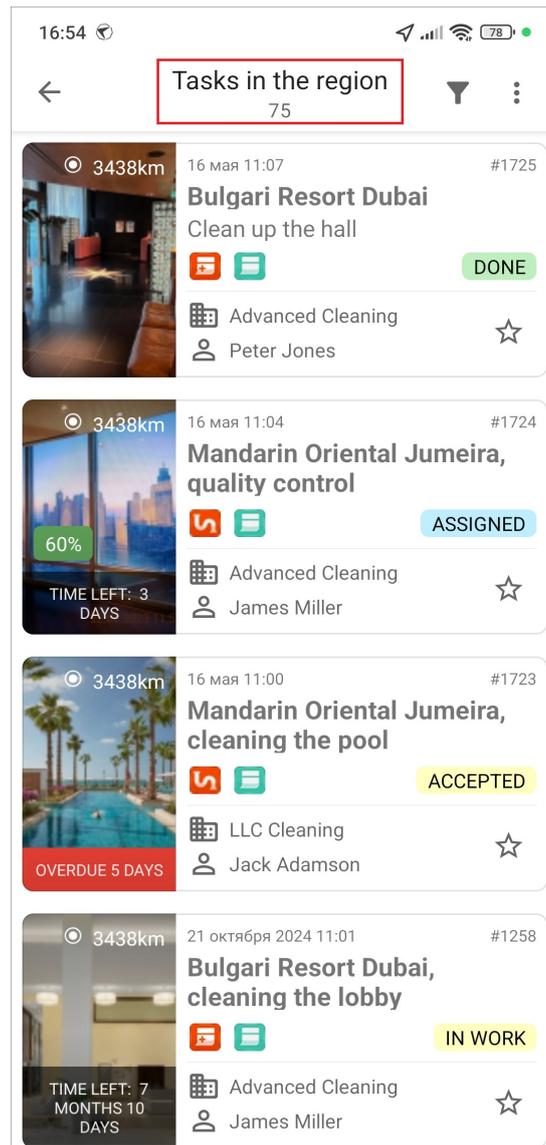


Fig. 2.26: List of tasks in the region

To return to the full task list, click  in the task map window.

You can open the particular task card by tapping its marker on the map. In the opened window, you can make changes, send them to the server, and then return to the task map to continue working.

You can also enable layers in the task map window. To do this, click  at the bottom of the window and turn on the required layer. For more information on working with layers, see [Working with the map](#) (page 115).

Viewing tasks on the map is also available offline. To do this, follow these steps online:

1. Filter the required tasks and click the “Map” button . Save the map area at the same scale as your work area. Otherwise, tasks become invisible when the

scale changes.

2. Download the selected tasks for offline access (see the instructions *Downloading tasks for offline work* (page 75)).

Working offline:

- In the task list, click “Show downloaded” to filter the tasks available offline.



- Click the “Map” button to see all downloaded tasks on the map.

## 2.2.7 Time zones

The ActiveMap system can work in several time zones. You can select the time zone when creating a cluster. All cluster schedules are created in the time zone specified in the cluster settings.

When working in the mobile application, tasks are created in the time zone selected in the device settings. To apply the updated time zone in the application, you must clear the cache (*Other settings* (page 171)).

## 2.3 Viewing registered tasks

The “All tasks” section displays a list of all registered tasks on the server available to the current user. The ability to see and edit tasks is determined by the user’s role in the ActiveMap Mobile application. Further, we use the notion of “tasks” only for the tasks available to the user according to his/her role in the system (for more information about the roles in the system, see *Account management and roles in the system* (page 24)).

Tasks in the list are arranged in descending order of their ordinal number by default. Tasks are arranged in a “tile” view. The tile for each task contains the following information (Fig. 2.27):

- The main photo of the task (if available);
- Distance to the task destination (only for tasks with geolocation);
- Unread task icon (blue envelope icon);
- Date and time of task creation;
- Task number;
- Labels:
  - “Overdue” – for overdue tasks, with the number of days overdue;
  - “Modified” – for tasks modified by the user if the changes have not yet been sent to the server or an attempt to send the changes to the server has failed;
  - “Updated” – for tasks modified by other users;
  - “Draft” – for tasks that have not been sent to the server;
  - “Remaining: number of days” – number of days left to complete the task;

– “Photo result match score” – the minimum percentage of similarity of the added photos to the photo-sample;

- Task title;
- Short summary of the task;
- Work type icon;
- Task priority icon;
- Work step;
- Assigned organization;
- Assigned executor.

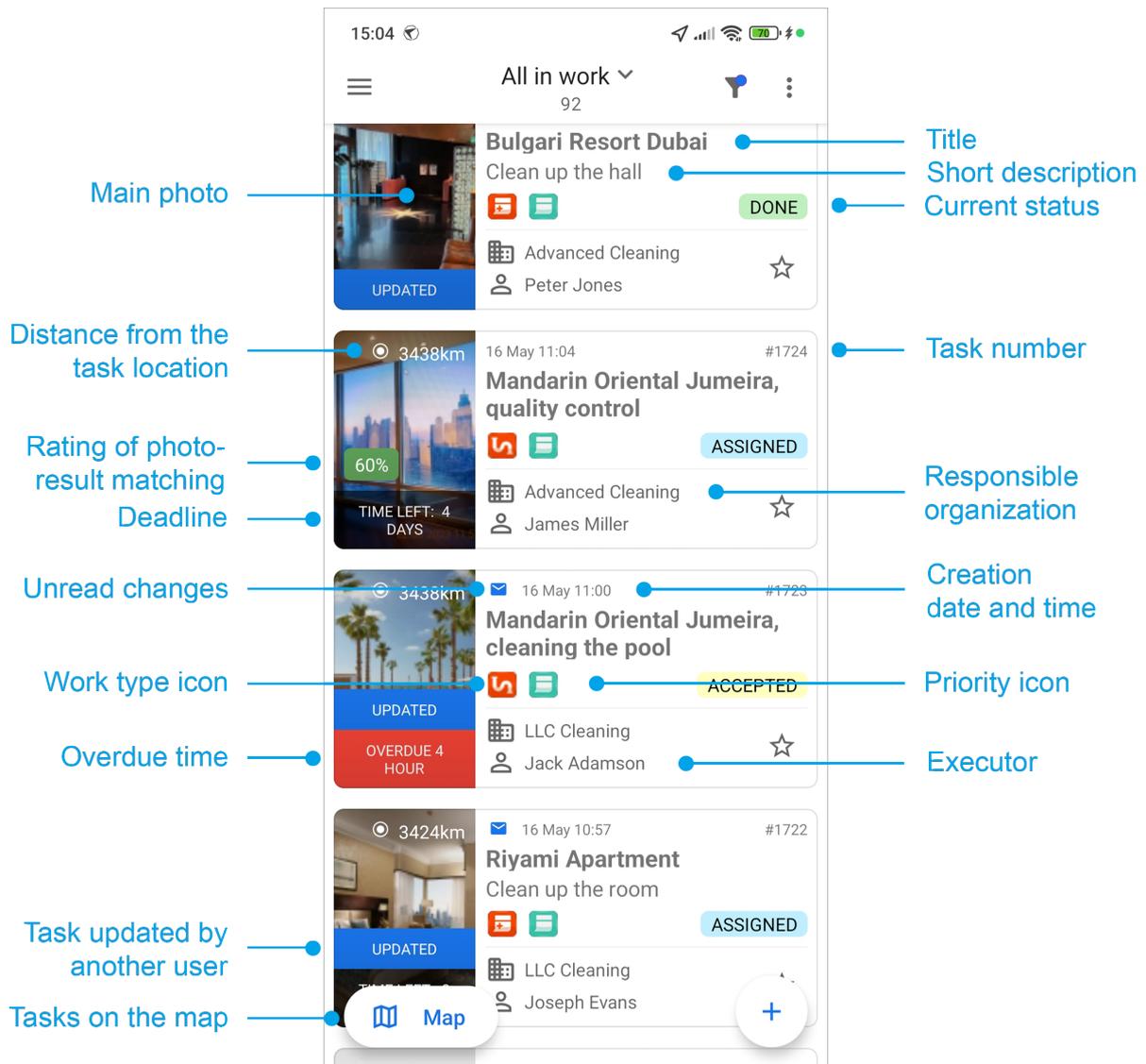


Fig. 2.27: Scheme of the task management window

You can set the task deadline manually when creating (assigning) the task. In addition, the deadline can be filled in automatically depending on the type of work. Administrator of the Organization configures these settings through the ActiveMap system’s web interface.

You can update the task list using a swipe gesture from top to bottom. Use sorting and filters to customize the display of tasks according to the user's preferences. For more information, see *Quick task filters* (page 29) and *Task filter and advanced sorting* (page 32).

## 2.4 Creating tasks

You can create new tasks using three approaches:

1. Standard – create tasks (with or without linking to an object) from the task management window (*Creating new tasks* (page 40)).
2. From layer objects – create tasks with object attachment from “Service objects” or “Map” windows (*Objects* (page 104)).
3. From user – create tasks from executor (*User management* (page 81)).

### 2.4.1 Creating new tasks



To create a new task, click  in the bottom right corner of the task management window. The “Creating task” window opens (Fig. 2.28).

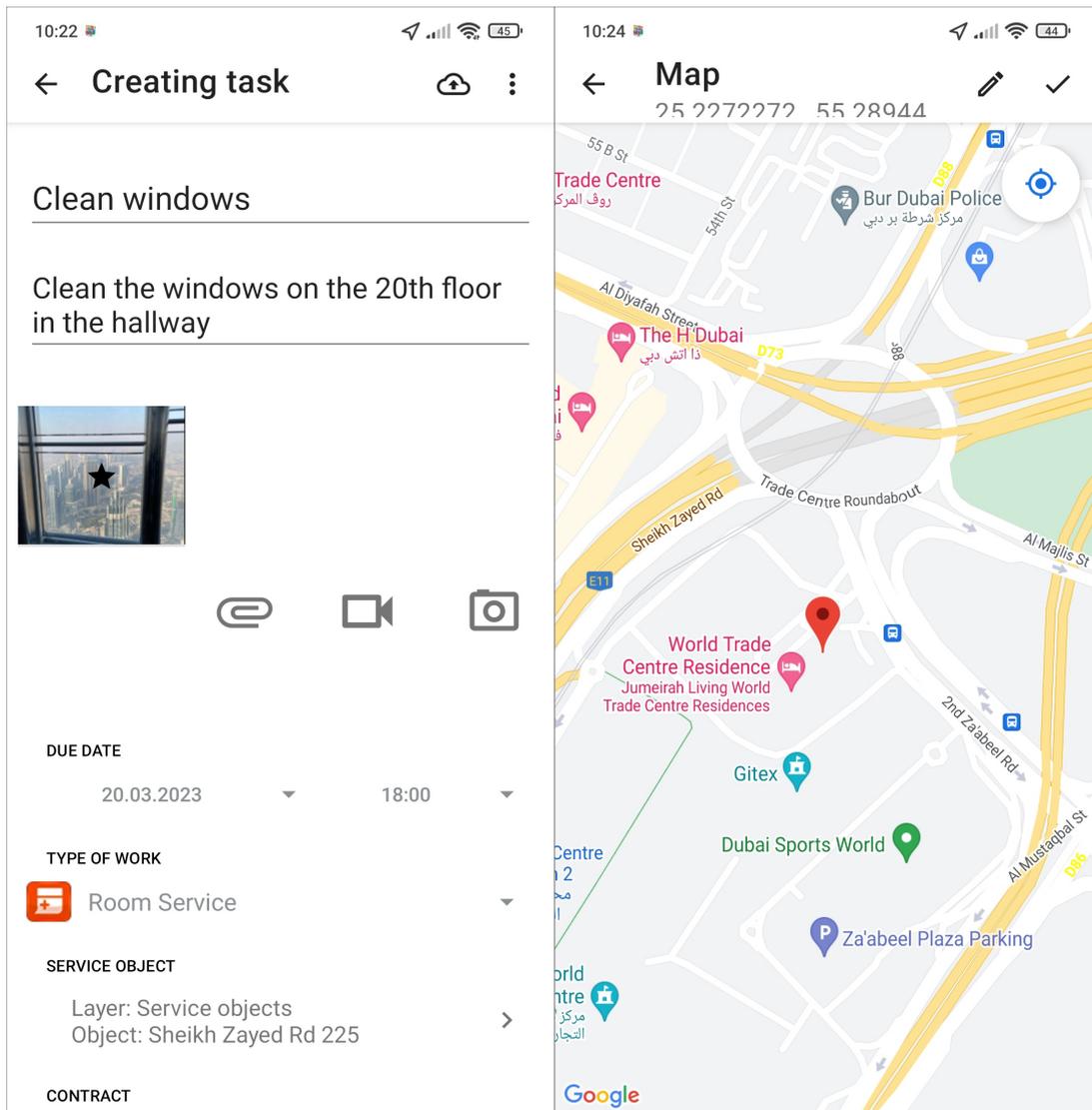


Fig. 2.28: Creating task window

A task template includes the following fields to fill in:

- Title;
- Task text;
- Deadline;
- Type of work<sup>1</sup>;
- Service object (layer name, service object name);
- Priority (e.g. planned, unplanned, etc.);
- Assigned organization (if there are rights to assign organizations for execution of tasks)<sup>2</sup>;
- Assigned executor (if there are rights to assign task executor);

<sup>1</sup> all reference tables can be changed according to individual Customer requirements.

<sup>2</sup> automatic filling of the executing organization is possible when the "Default executing organization" setting is enabled in the system.

- Attachment of media files to the task (more about working with media files: [Adding files and media](#) (page 52));
- Custom fields available for the selected work type (more about custom fields: [Working with custom fields](#) (page 44));
- Location of the task object on the map;
- Contract (if available for the current role).

To send tasks to the server, click . Tasks that have been saved but not sent to the server are marked as “Draft” and highlighted in green in “My tasks” list (Fig. 2.29). For more information about customizing lists, see [Quick task filters](#) (page 29). The application implements background sending of new and modified tasks to the server. This means that if a group submission of tasks or changes is initiated, the application is still available for work, and there is no need to wait for the upload to the server to finish.

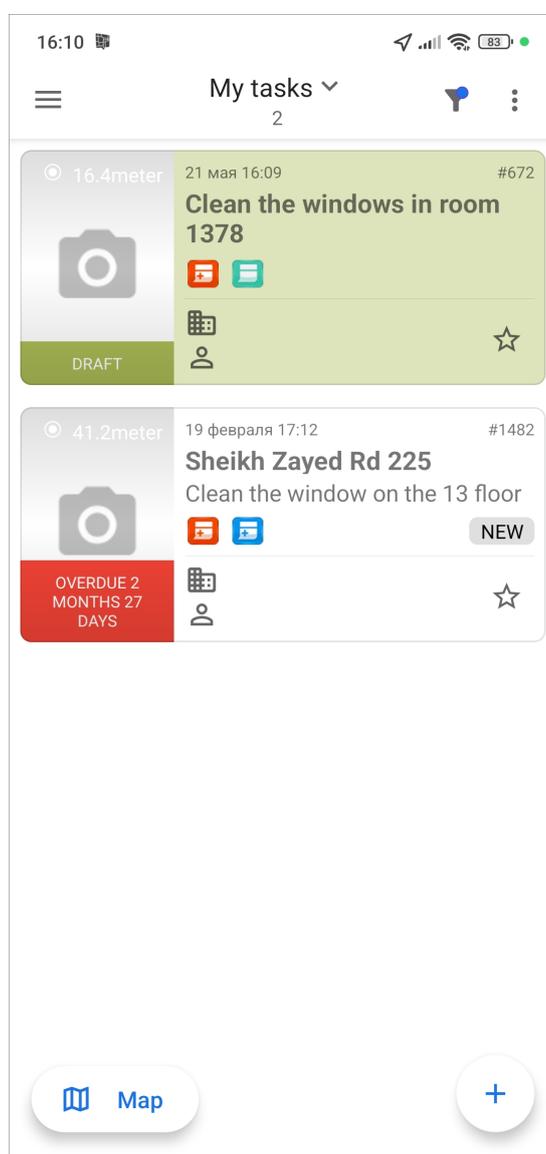


Fig. 2.29: My tasks

When you create a task, the system automatically inserts the last selected type of work. If

the “Default value” setting is configured in the system, the specified value is used instead. You can also define a default value for the task priority.

Work types can be restricted based on the user role. To do this, configure the “Binding to type of work” option in the work type settings.

Users can hide the main task fields in the system settings. The interface does not display hidden fields in the task card, but it still shows them in the list.

The access rights to fill in part of the fields depend on the role of the user. System Administrator, Cluster Administrator, and Organization Administrator can regulate the roles (for more information about user roles, see *Account management and roles in the system* (page 24)).

On tablets, the “New task” window is divided into two parts: basic information about the task is entered on the left side of the window, and additional information (due date, type of task, service object, priority, assigned organization, assigned performer, and information in custom attribute fields) is entered on the right side of the window (Fig. 2.30).

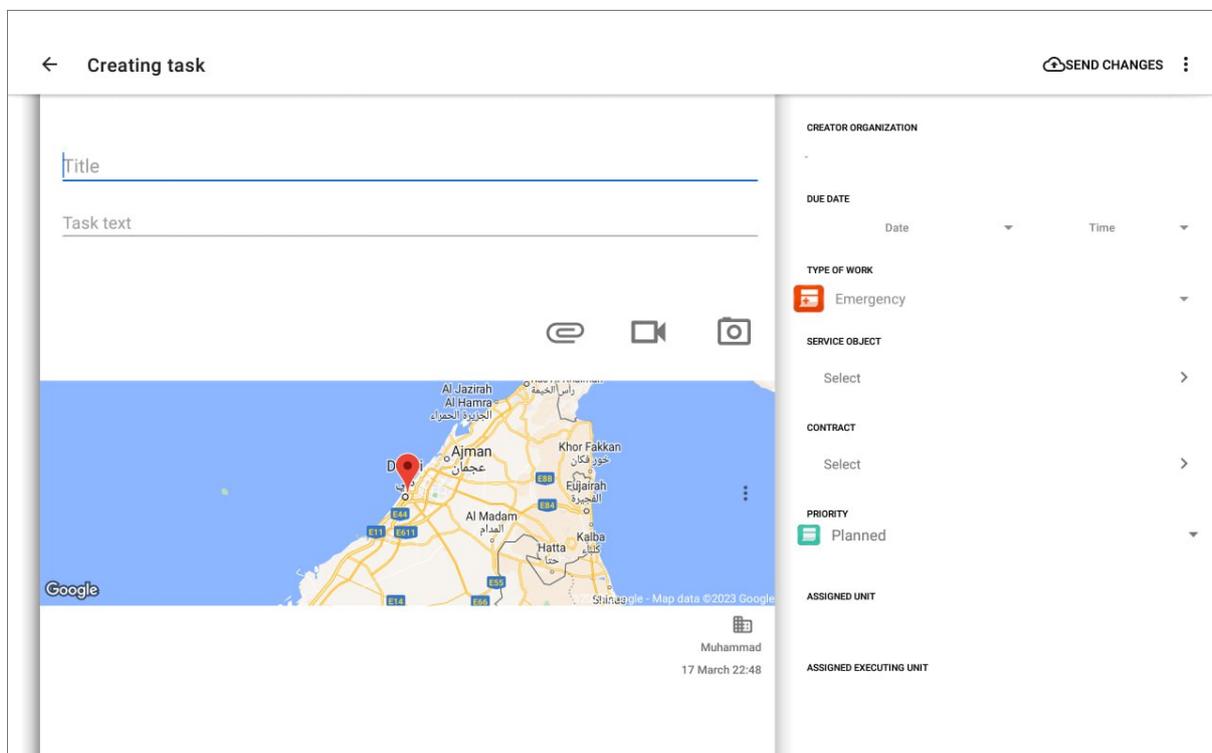


Fig. 2.30: “Creating task” window on tablets

## 2.4.2 Working with custom fields

Users with administrative access rights may add custom fields via the ActiveMap web interface in the “Administration” -> “Tasks” -> “Custom fields” tab. Custom fields can also be created directly in the application (*Custom fields* (page 138)).

The following field formats are supported:

- String
- Text
- Integer
- Float
- Date only
- Date and time
- Logical value
- Composite
- Selecting from a list
- Phone number
- Bar code
- File
- Geometry
- Data objects

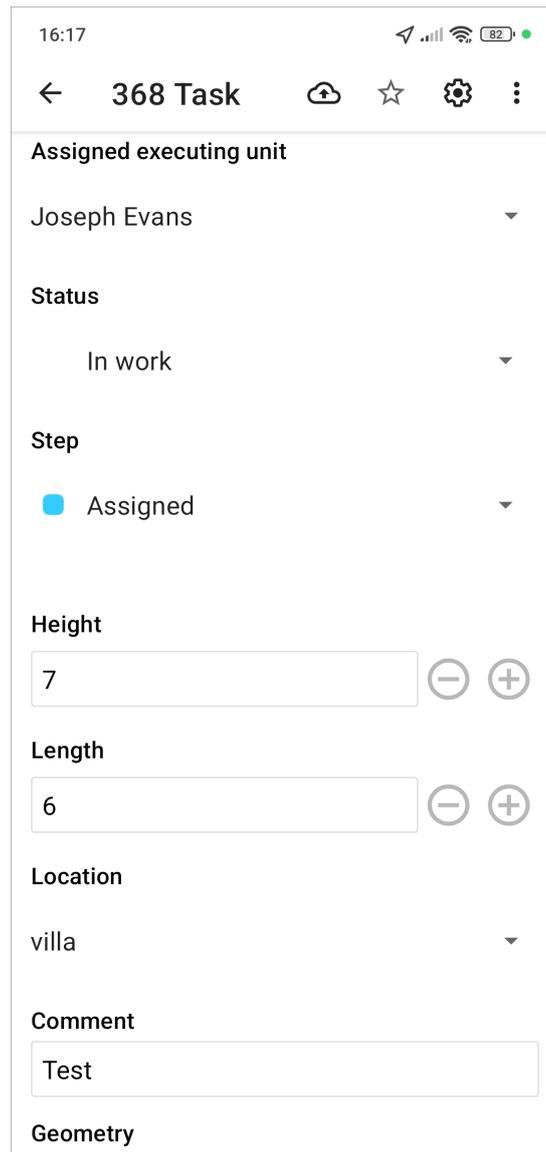
Geometry field allows you to add additional geometrical objects to the map (point, line, or polygon).

You can specify a default value or a regular expression for all custom fields (except for the “geometry”, “data objects”, “composite”, and “file” format fields). A regular expression is a pattern string that specifies a template for the custom field.

When creating a custom attribute field, you can specify the minimum and maximum length of the field. It is also possible to configure a list of tasks (by work type) for which the custom field is available. You can make the attribute field mandatory to fill in.

You can group custom attribute fields. In the application, fields that are combined into groups are highlighted in blue. Fields that are not included in any groups are placed at the beginning of the field list.

After adding new custom fields via the ActiveMap web interface under “Administration”, update the data in the task management window (“Window menu” -> “Synchronize data”). The custom fields are displayed in the “Task” and “Draft” windows. Custom fields are available for filling and editing if the user has appropriate rights ([Fig. 2.31](#)).

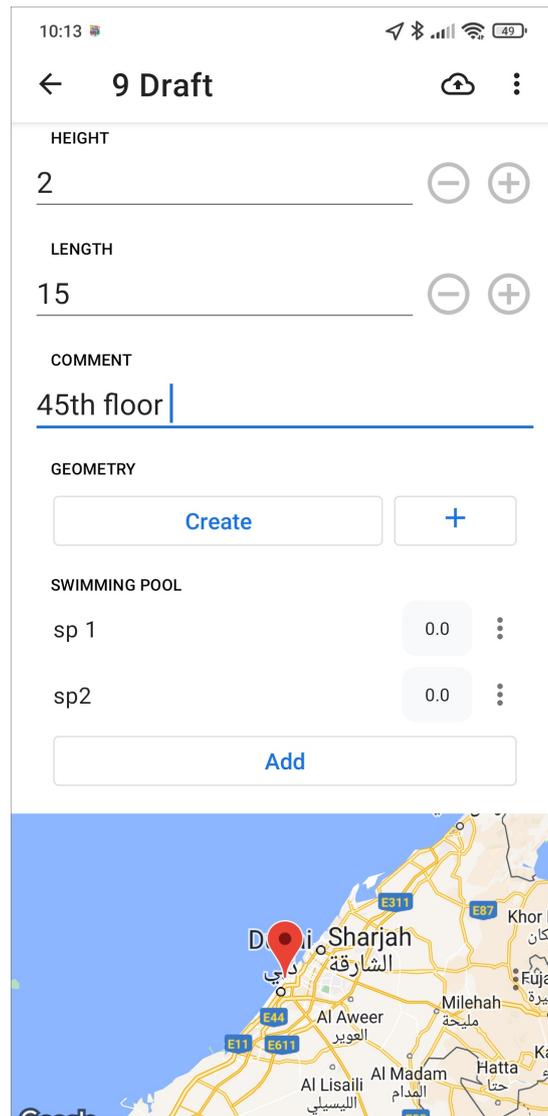


The screenshot displays the configuration interface for a task named "368 Task". The top status bar shows the time 16:17 and various system icons. Below the title bar, there are navigation icons: a back arrow, a cloud upload icon, a star, a gear, and a vertical ellipsis. The main form contains several sections:

- Assigned executing unit:** A dropdown menu with "Joseph Evans" selected.
- Status:** A dropdown menu with "In work" selected.
- Step:** A dropdown menu with "Assigned" selected, accompanied by a blue square icon.
- Height:** A numeric input field containing "7", with minus and plus buttons on the right.
- Length:** A numeric input field containing "6", with minus and plus buttons on the right.
- Location:** A dropdown menu with "villa" selected.
- Comment:** A text input field containing "Test".
- Geometry:** A section header at the bottom of the form.

Fig. 2.31: Filling the custom fields

Using a custom field of the “Data objects” format, you can add multiple objects from layers, reference tables (dictionaries), and data tables. To add objects, click “Add”, use the search if necessary, and select the object (Fig. 2.32). If the “Allow multiselect” setting is enabled in the system, repeat this action for all objects to be added.



10:13

← 9 Draft

HEIGHT

2

LENGTH

15

COMMENT

45th floor

GEOMETRY

Create +

SWIMMING POOL

sp 1 0.0

sp 2 0.0

Add

Dubai Sharjah

المشارقة

الشارقة

مليحة

العويرة

الليسيلى

المدام

حنا

هاتا

Kal

فكان

Fujair

جيرة

Khor Fa

E111

E87

E44

E11

E611

Fig. 2.32: Adding objects to a field of the “data objects” type

You can also enable the “Allow add and edit amount” setting for a custom field of the “Data objects” format. This option allows adding a quantitative characteristic to the object (Fig. 2.33).

10:13

← 9 Draft

HEIGHT

2

LENGTH

15

COMMENT

45th floor

GEOMETRY

Create +

SWIMMING POOL

sp 1 10.0

sp 2 15.0

Add

Sharjah

Fig. 2.33: Adding quantitative characteristics

The application provides the ability to add new objects to layers, dictionaries, or data tables connected to a custom field as data objects or modify the existing ones.

---

**Important:** Objects with the “Draft” status cannot be added as a “data object”.

---

A composite field is a custom field format that contains one or more nested fields and supports the creation of multiple field instances in a task card. It is used to add several similar field sets to the task, with the number of sets being unknown in advance (Fig. 2.34). For example, you can use composite fields for the task of equipment inspection on the objects. A separate task is created for each object. The number of equipment units at the object may vary. Using a composite field, you can add the required number of equipment units to the task and specify their characteristics as nested fields. To delete a composite field block, use  in the upper-right corner.

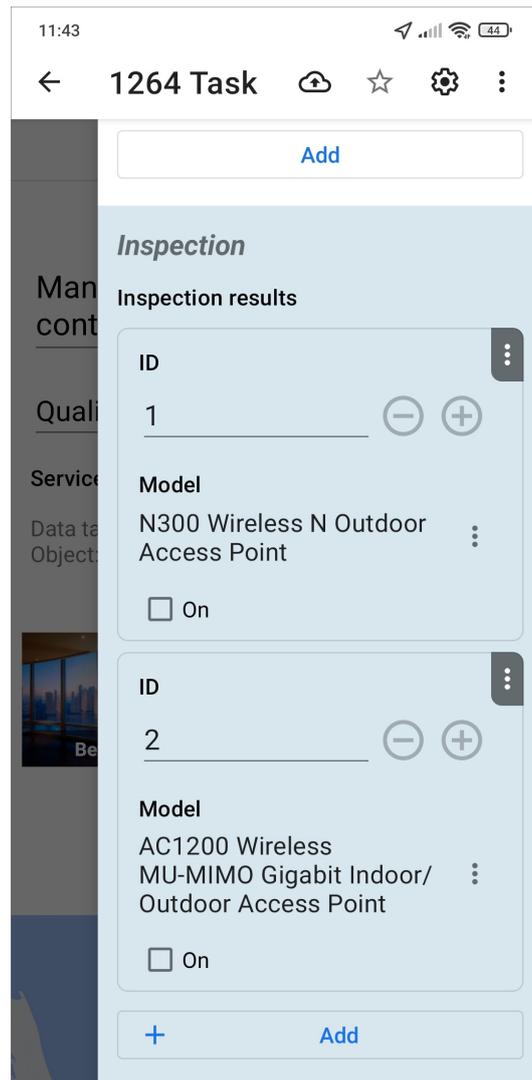


Fig. 2.34: Adding a composite field

The application supports adding second-level composite fields, i.e. a composite field within a composite field. In the task window, users can add and fill in the predefined number of second-level composite fields. When creating a task, the minimum number of second-level composite field instances is displayed by default (Fig. 2.35).

12:03

← 14 Draft

**Inspection**

Inspection results

ID

1

Model

AC1200 Wireless MU-MIMO  
Gigabit Indoor/Outdoor Access  
Point

On

Inspection report (0/3)

+

**Infringements**

Description

Desc1

Reference

Ref1

Fig. 2.35: Adding a second level composite field

Using a custom field of the “File” format, you can attach files to separate fields within the task. You can categorize files not only by stickers but also by individual “File” format fields. Clicking on the “+” button opens a window displaying the supported options for adding files to the selected field. To upload files, the user must have rights to edit custom fields. The maximum number of files allowed in the field is displayed in parentheses, as well as the current number of uploaded files (Fig. 2.36).

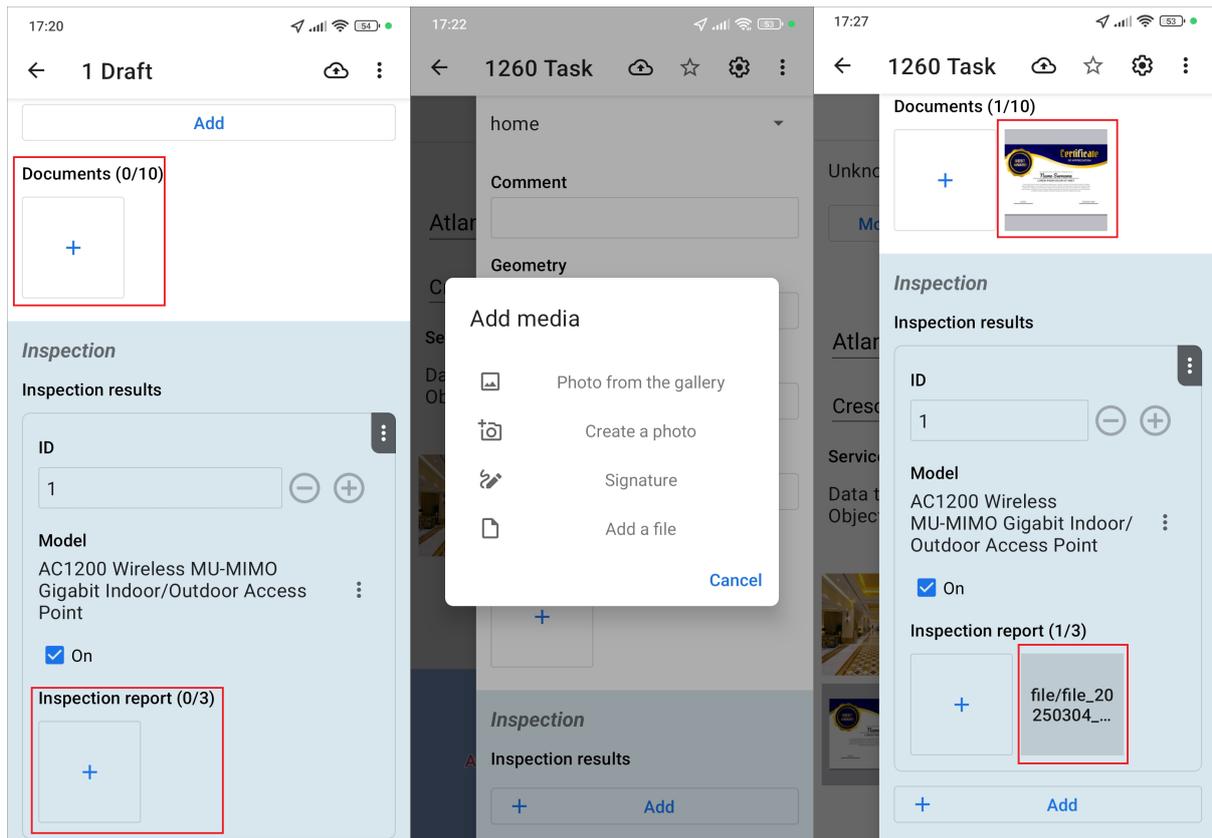


Fig. 2.36: Adding data to a custom field of the “File” format

The following file types are supported:

- photo,
- audio,
- video,
- file (document),
- signature,
- QR code.

The file types are specified in the settings of the custom field. Attachment of several types is supported. To delete a file, hold the selected file, then click “Delete” in the pop-up window, and submit the changes to the system. Uploaded files are displayed in the task’s file gallery.

To add a QR code, tap  “Create photo”. Point the camera at the QR code and take a photo. If you try to capture an image that does not contain a QR code, the application does not save it (Fig. 2.37).

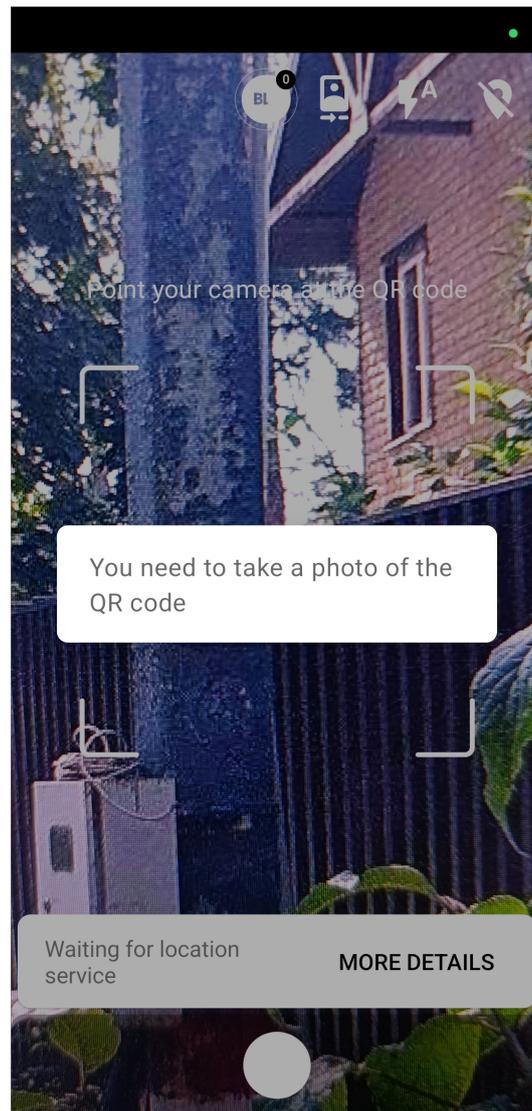


Fig. 2.37: Trying to create a QR code from an incorrect image

You can also attach stickers to files. To do this, hold the photo in the gallery and then select a sticker from the list. The list of available stickers depends on the selected type of work. Once attached, the sticker appears both in the gallery and in the custom field.

If the file field settings include only one file type, the mobile application automatically selects it when filling in the field. For example, if only the “signature” type is enabled in the settings, the device immediately switches to drawing mode.

Adding files from the gallery to the “File” format field is regulated according to the rights grid. The rights grid is configured in the database. If the user does not have the rights to add photos from the gallery, this option will not be available in the “File” format field.

To create a new geometric object and attach it to a task, click the “Create” button in the “geometry” data type field. For more information about geometric objects, see *Adding geometric objects on the map* (page 95), *Adding point objects* (page 101), *Adding linear and polygonal objects* (page 102).

### 2.4.3 Adding files and media

There are several buttons for attaching files (Fig. 2.38):

- “Add media” 
- “Add video” 
- “Add photo” 

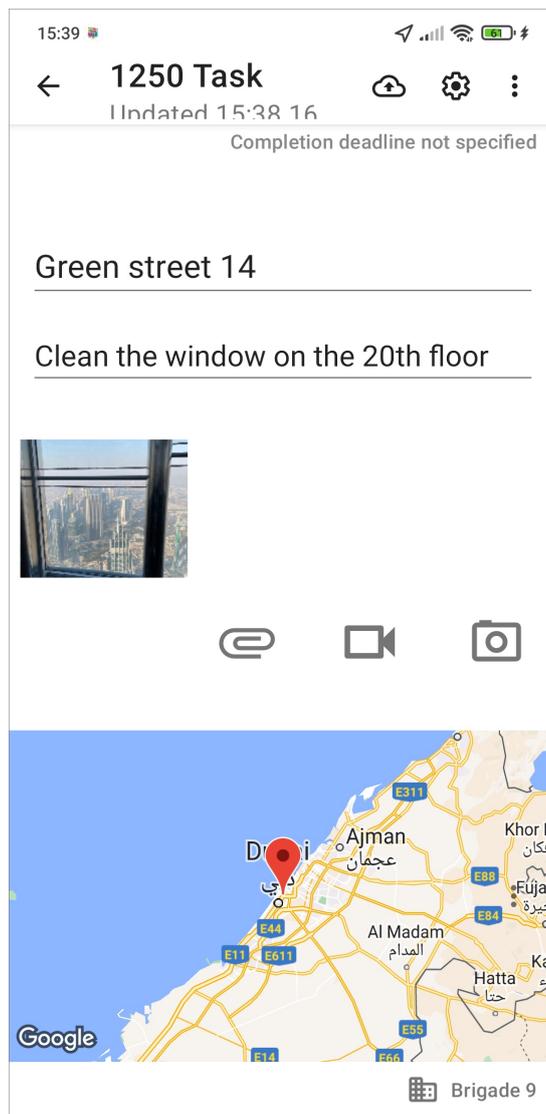


Fig. 2.38: Adding media files to a task

Clicking “Add Media” allows you to select a file from the device or to create a new one, namely:

- To add a photo from the gallery<sup>3</sup>.
- To take a photo.

<sup>3</sup> The ability to add files from the gallery is determined by user rights.

- To add a video from the gallery<sup>4</sup>.
- To record a video.
- To record a timelapse video.
- To add an audio from the collection.
- To record an audio.
- To add a signature.
- To add a file.
- To add an invoice.

When selecting the **“Photo from Gallery”**, **“Video from Gallery”**, **“Audio from Collection”** options, specify the location of the file in the gallery. The ability to add files from the gallery is determined by user rights.

When selecting the **“Record video”**, the device switches to the video recording mode using the device’s standard camera. When you click **“Save”**, the recorded video is attached to the task. When selecting the **“Record Timelapse Video”**, the device switches to the mode of recording accelerated (timelapse) video. In this mode, the geographic coordinates of the camera location are recorded simultaneously with the accelerated video. This makes it possible to create tasks from the frames of this video. You can attach the current frame as a main photo of the task and geolocation in the ActiveMap Desktop application. The user makes a record that characterizes the task. After stopping the video recording, it is attached

to the task. When you click the quick access button , the device switches to the video recording mode using the implemented camera interface.

When selecting the **“Record Audio”**, the device switches to sound recording mode. After creating a recording that characterizes the task, stop the recording by clicking the  button.

Click **“Upload”**  to attach the recording to the task.

When selecting the **“Signature”**, the device switches to drawing mode. You can add your signature by drawing it directly on the device screen. To change the brush color, click **“Man-**

**age”** , choose the desired color from the color palette by moving the slider to the left or

right, and click **“Done”** (Fig. 2.39). Click **“Save”**  to save the signature. If something goes wrong, click **“Clear”** to start again.

<sup>4</sup> The ability to add files from the gallery is determined by user rights.



Fig. 2.39: Creating media file of the “Signature” type

Selecting **“Add file”** allows you to attach documents in txt, rtf, docx, pdf, xlsx, or pptx formats to the task.

Selecting **“Take a photo”** or clicking  switches the device in the photo mode. You can attach a sticker to the photo. Sticker is a text note on the photo. Multiline display of a long sticker name on a photo is supported. You can use it in the following cases:

- To track the before and after state.
- To mark a sample for taking photos.
- To categorize photos.

When you click **“Save”**, the taken photo is attached to the task. More detailed instructions for working with the built-in camera are described in the *Using the application built-in camera* (page 58) section.

You can use the standard camera of the device to create high-resolution photos in the application. To do this, apply the appropriate settings in the ActiveMap Web. The standard

camera also has the ability to attach stickers to photos. You can add stickers directly in the application (*File labels (stickers)* (page 141)).

The “Invoice” attachment type is available for selection if you use the online work cost calculation methodology. This module requires additional settings based on the list of services and materials used by the user’s organization. More information about working with the module is described in the *Invoice module* (page 157) section.

A long press on the icon of a media file attached to a task brings up a menu bar for working with that file (Fig. 2.40).

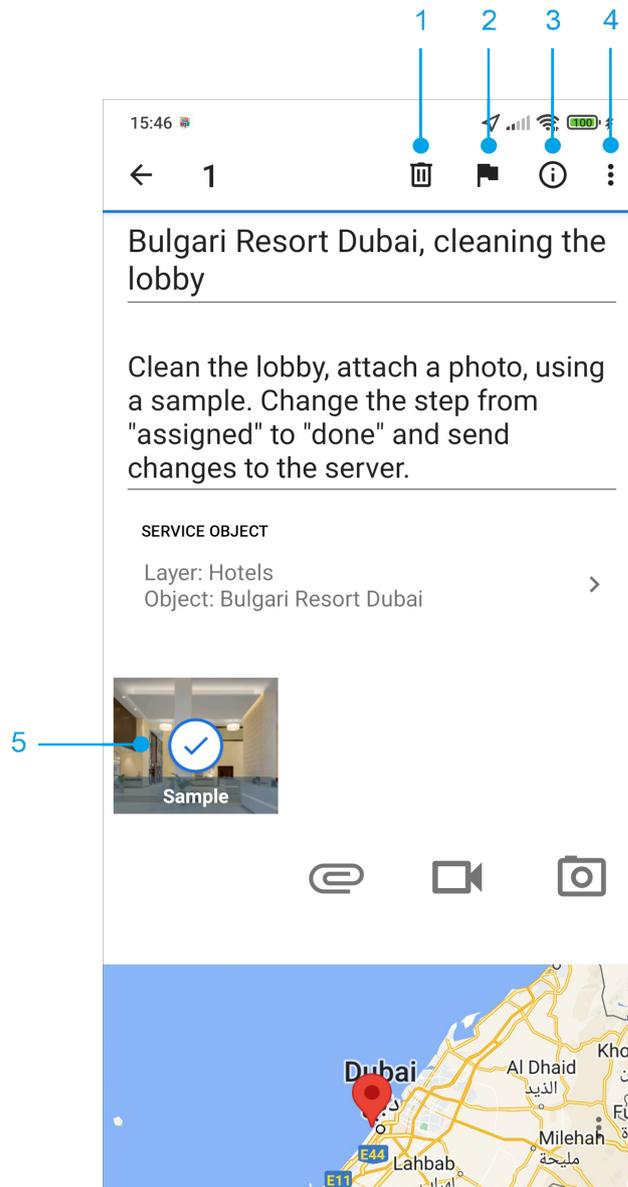


Fig. 2.40: Scheme of the “Creating task” window in the mode of working with media files (1 – delete attachment, 2 – stickers, 3 – file information, 4 – window menu, 5 – selected file)

Clicking “Window menu”  opens a list of functions (the list may vary according to user rights and file format):

- “Detach sticker” – moves the file to the “no sticker” category.

- “Select all” – selects all files attached to the current task.
- “Use coordinates” – updates the task coordinates from the added photo if the media file has geolocation.
- “Save to gallery” – saves the file to the user’s mobile device in the corresponding software folder.
- “Compare angles” – makes online comparison of photos.

Clicking the information button  opens a window with detailed information about the media file (Fig. 2.41). The information in the “Create” and “Attach” tabs is filled depending on whether the media file was created directly from the app or attached from the device’s file storage.

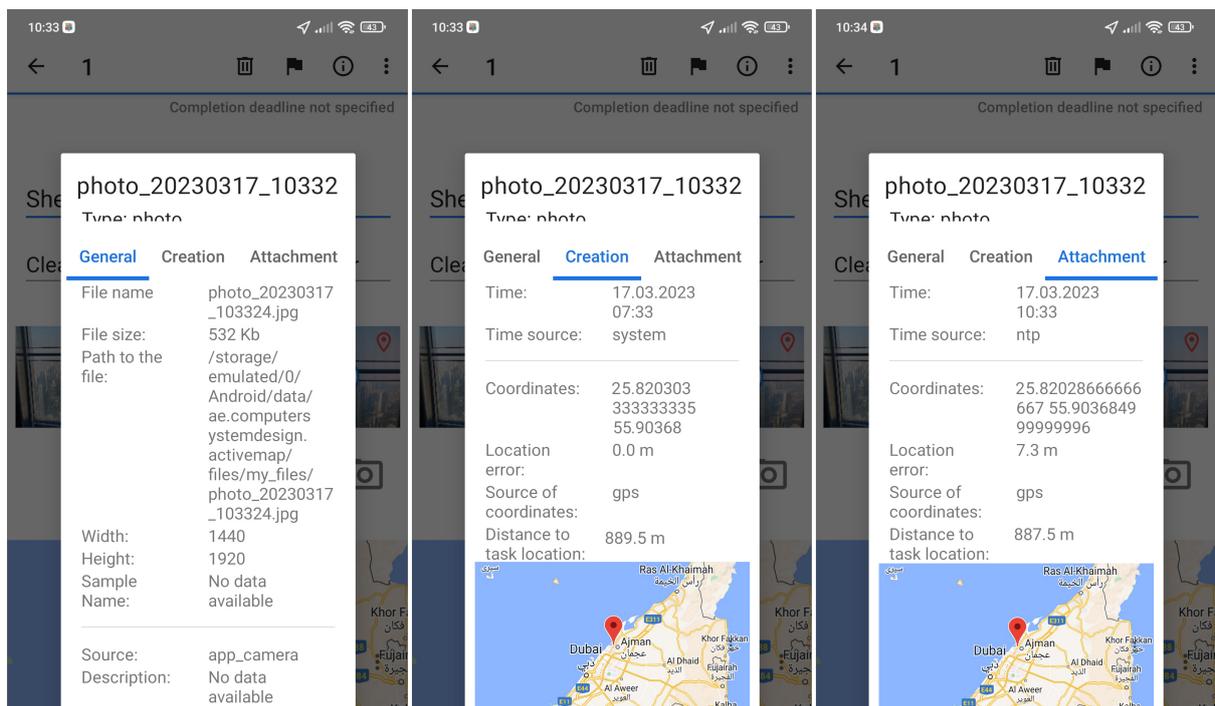


Fig. 2.41: Media file information window

In the lower part of the file information window, in the “General” tab, you can see information about BLE tags if the system is set up to work with them and a beacon was detected at the moment of photo creation (Fig. 2.42).

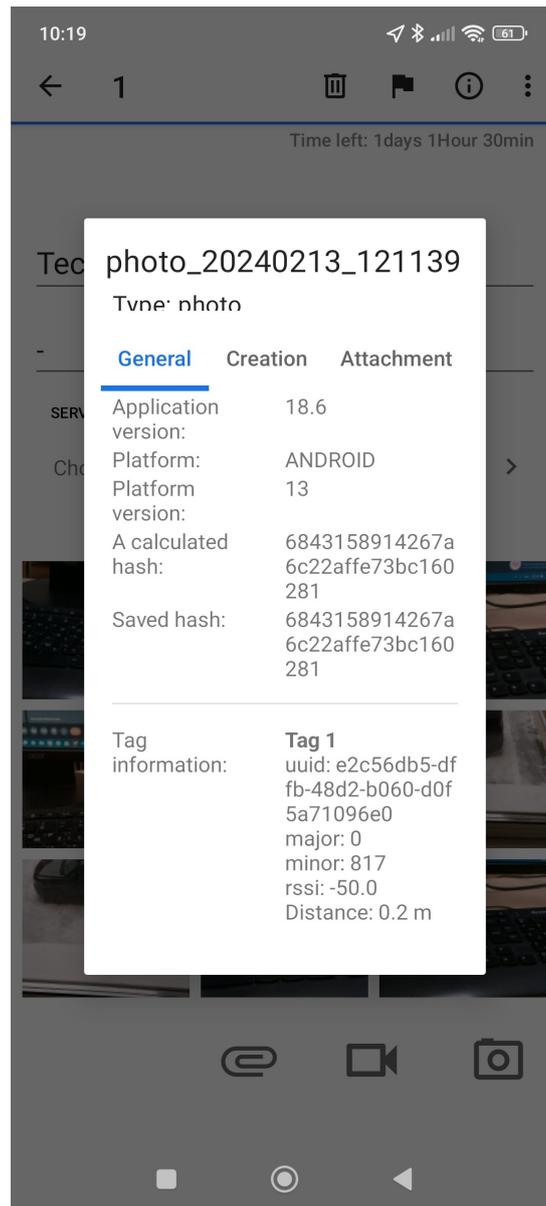


Fig. 2.42: Information about BLE tags in the photo

Click  to add a sticker to the photo (before, after, sample, and others).

You can remove added media files using the “Delete” button .

### 2.4.4 Using the application built-in camera

The built-in application camera is designed for additional control over the task execution process. When using a custom camera, application records the information about the date, time, and coordinates of the photo capture. Turn on GPS and disable fake locations.

Select “Create photo” on the media file attachment panel to switch to the camera mode (Fig. 2.43), or click the camera shortcut button .

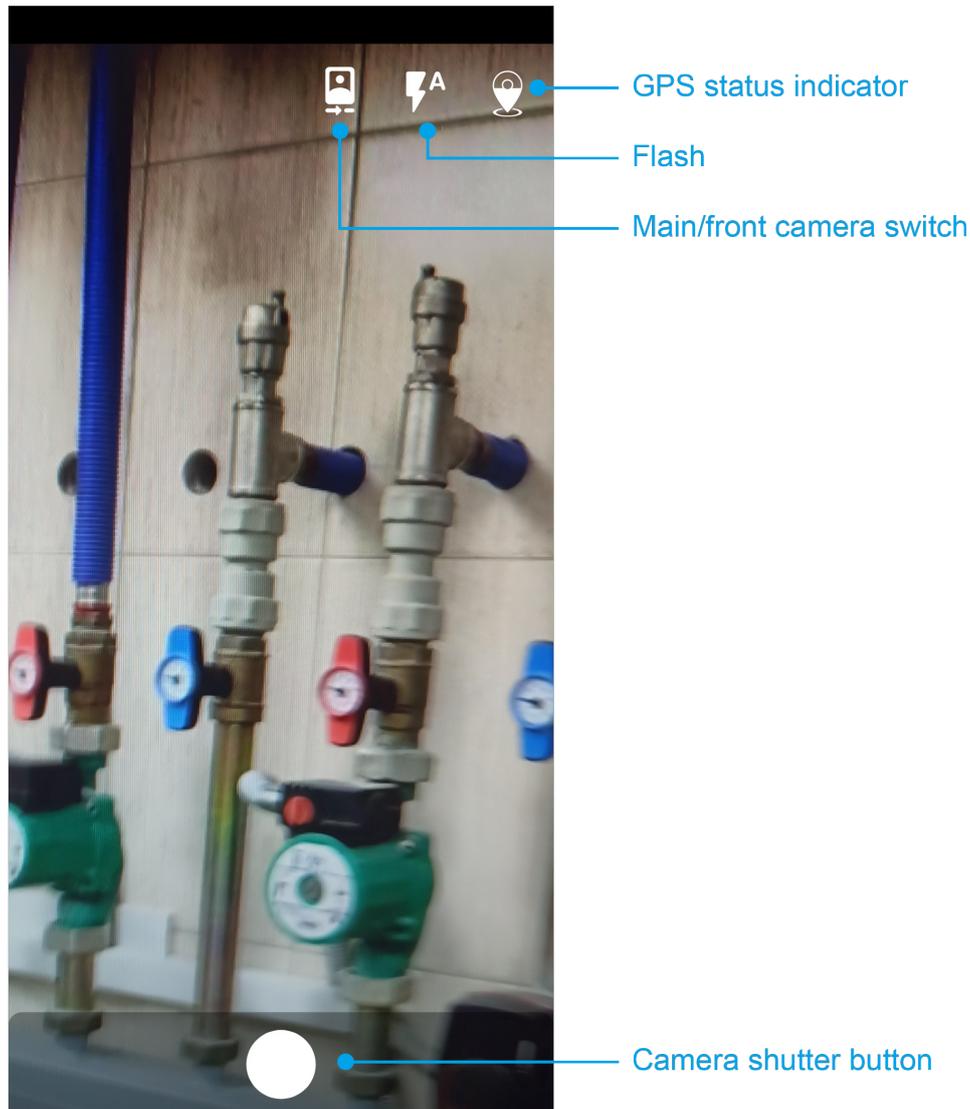


Fig. 2.43: Using the application built-in camera

There are two types of GPS status indicators:



– location monitoring is on, correct data is transmitted to the server.



– no current GPS data is available, or location monitoring on the device is disabled.

In camera mode, you can customize the flash mode and switch the camera (main/frontal). To configure the flash mode, select one of the modes (Fig. 2.44).

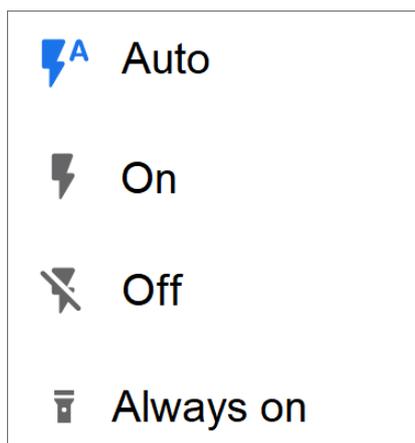


Fig. 2.44: Flash mode selection menu

Camera usage conditions are set up through the ActiveMap web system (*Settings in ActiveMap* (page 172)). The settings allow you to set various requirements for taking photos (maximum distance to the task point, stamping with the exact time, date and coordinates, etc.) and define them for specific groups or individual users. When the established requirements are violated, the application may display the following informational windows (Fig. 2.45) and stop taking pictures until the conditions are met:

- The task point is far from the photo taking point.
- Geoposition monitoring of the device does not work correctly during task execution.

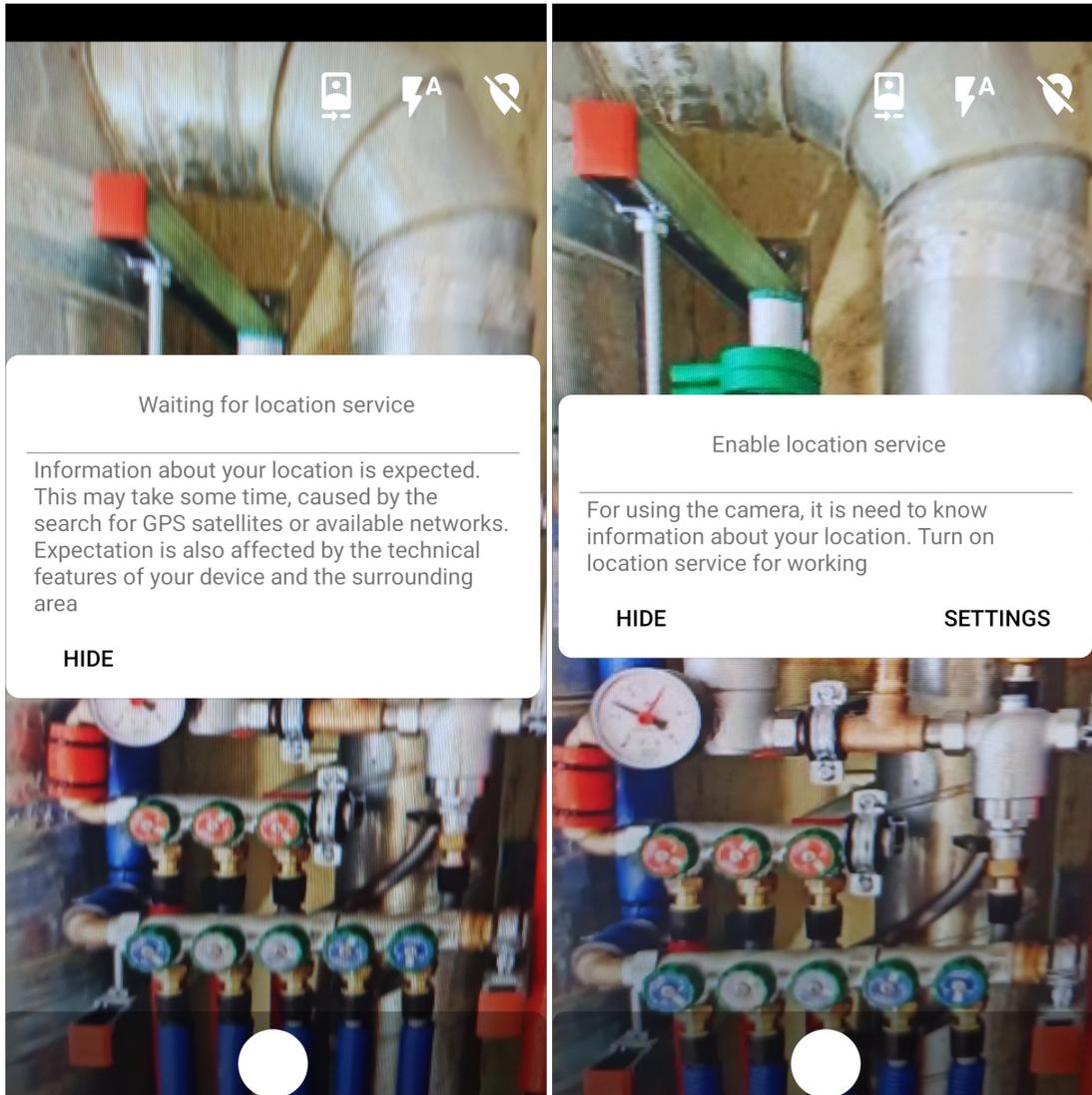


Fig. 2.45: Examples of messages about violations of the built-in camera usage restrictions

After taking a photo, the photo editing toolbar opens (Fig. 2.46).

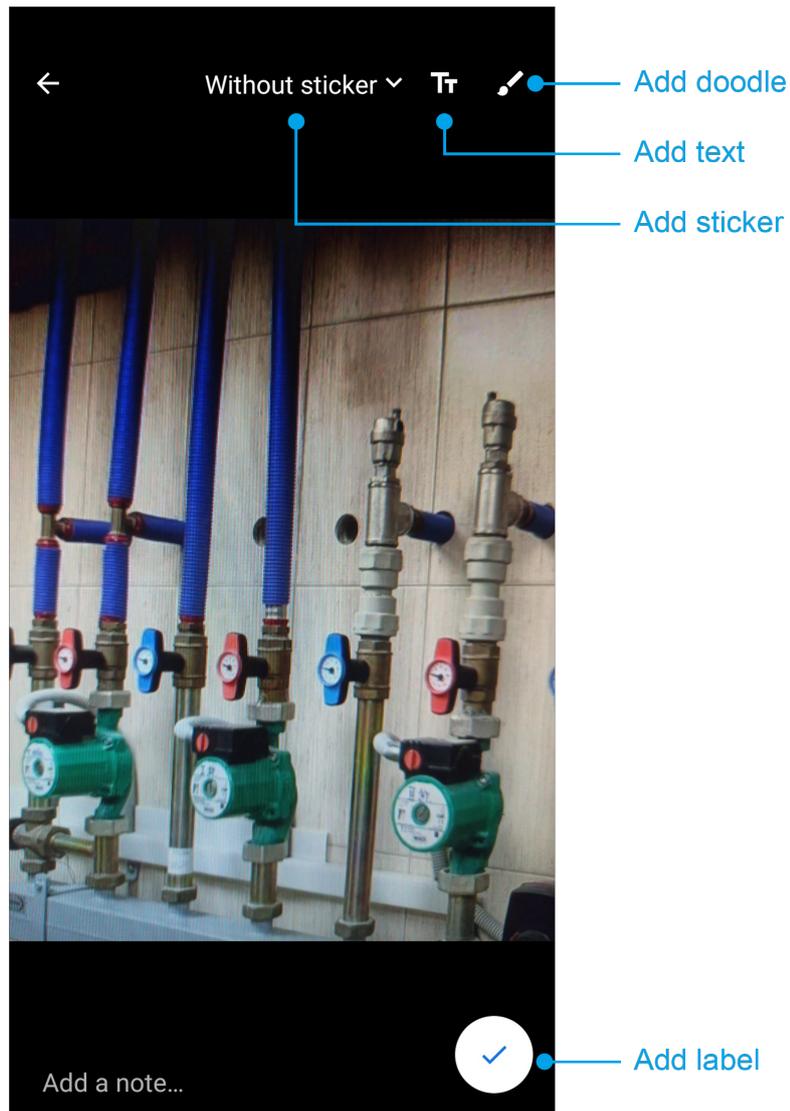


Fig. 2.46: Photo editing mode

After clicking “Save”, the photo is processed and attached to the task. The photo displays the following data recorded at the moment of shooting (Fig. 2.47):

- date and time the photo was taken when the “Stamp the date on the photo” setting is enabled.
- location coordinates when the “Stamp the coordinates on the photo” setting is enabled.

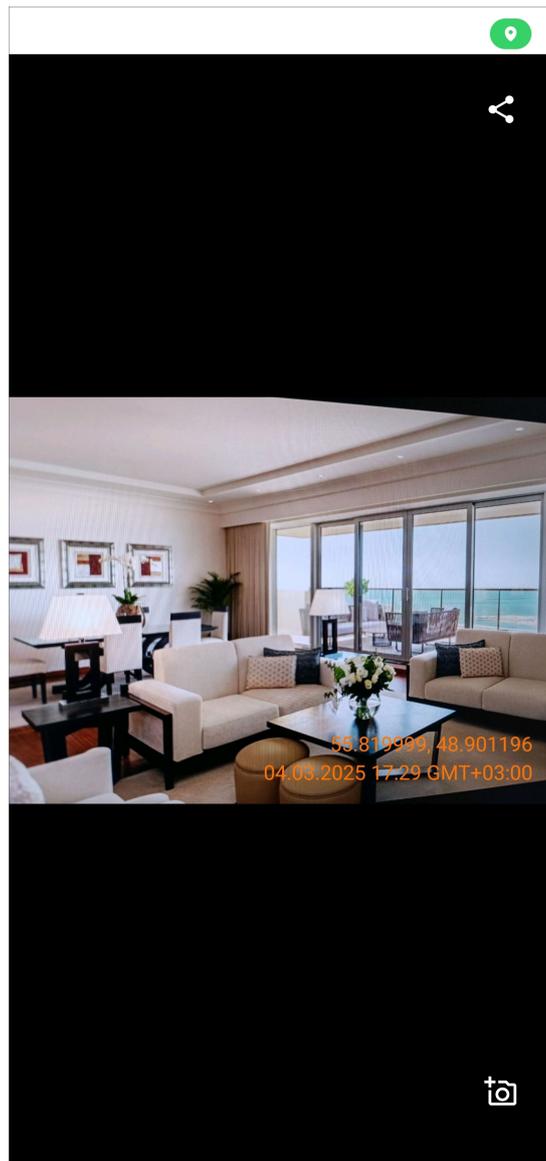


Fig. 2.47: Date, time, and coordinates stamp on a photo

### 2.4.5 Selecting service objects

You can attach the task to a service object in the application. To do this, click “Select” in the “Service object” field. If this layer is the target, select the desired object. By clicking the layer name, you can select another layer from the available ones. For convenience, there is a “Service layers only” toggle at the top of the layer selection window. When enabled, only layers with the “Service Object” status become available. After selecting a layer, you can sort, filter, or search for an object. For more details on how to use these tools, see *Objects* (page 104).

After sending the task to the server, information about the object appears in the task. This is the name of the object, which can be configured in the ActiveMap Web, and the layer name. Before sending the task, there is only identifiers of the layer and object.

To view an object in a task, a user must have access rights to the layer/table at the task object level. This access is restricted: the user can only access objects assigned to their tasks, not

all objects in the layer. Within a task, the user can open the object's attributes and display it on the map.

You can see all the tasks associated with an object. For more information about service objects, see *Objects* (page 104) section.

### 2.4.6 Attaching the contract

The list of contracts is created by the System Administrator or the Cluster Administrator, they operate within the cluster. The System Administrator, System Inspector, Cluster Inspector, and Assigned Organization Inspector have rights to view the contract. Users who see the task created under the contract, also receive minimal information (id, title). You can create a task within one contract, it is not possible to add two contracts. However, you can attach multiple tasks and schedules to one contract. When deleting a contract, operational tasks created under it are saved (the name of the contract is displayed in the task). Already created scheduled tasks are also saved, but the schedule itself is deleted.

---

**Important:** When creating a task with a contract, be sure to select the service object and type of work specified in the contract. Otherwise, a task creation error occurs.

---

To attach a contract, click "Select" in the contracts block, find and mark the required contract (Fig. 2.48). When attaching a contract, the assigned organization is automatically filled in (after sending the task to the server). If the entered data do not correspond to the contract, the application generates an error and the task is not sent until all the discrepancies are corrected. It may be necessary to correct the contract settings (service objects and work types specified in the contract) rather than the task itself.

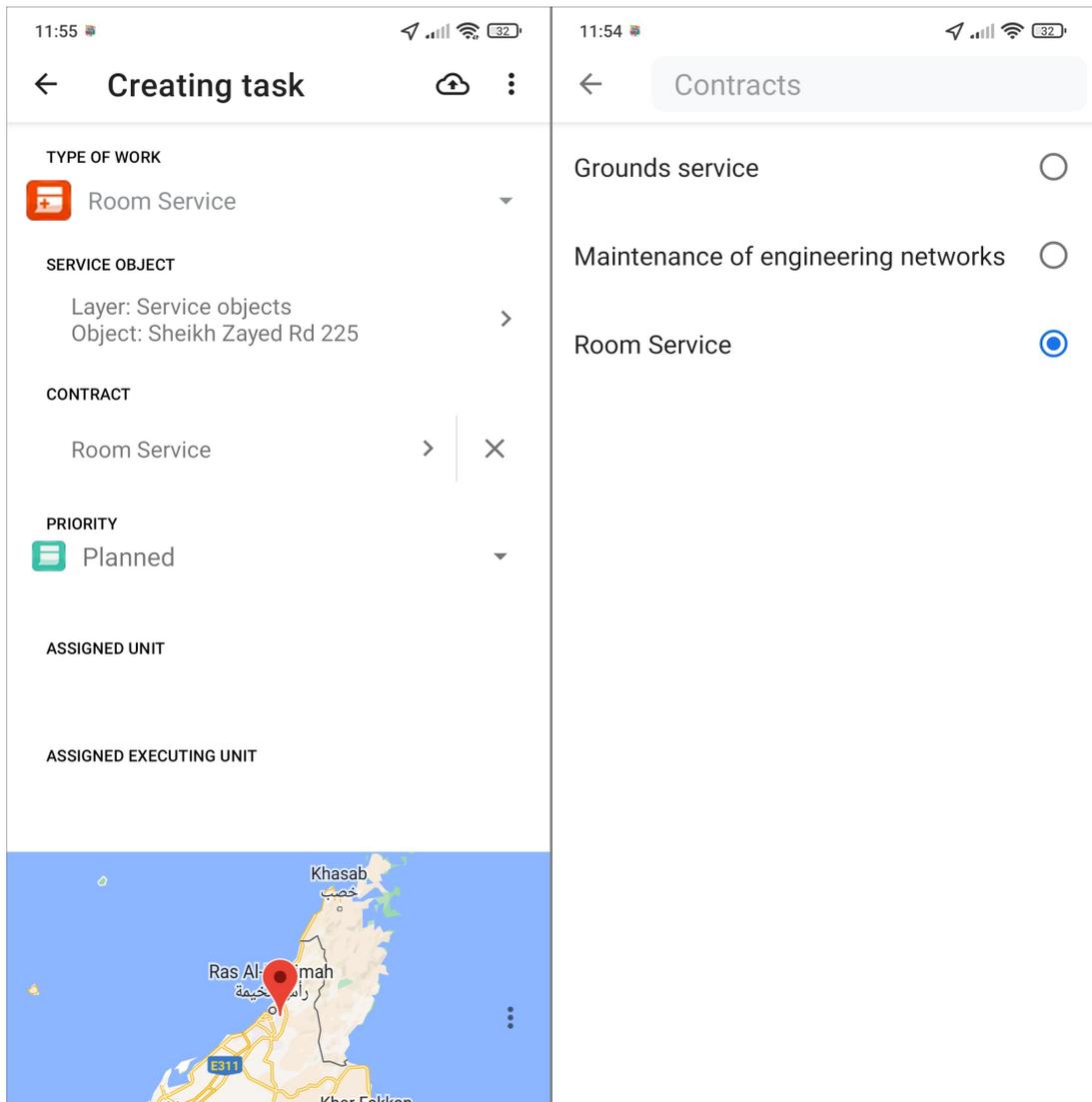


Fig. 2.48: Attaching a contract

After sending the task to the server, you can still edit or delete the contract.

### 2.4.7 Geolocation of tasks

The application provides the ability to geographically positioning the added task to the target location. If you have not previously set up location sources on the device, configure them to determine the location of the user's device. If the navigation signal receiving conditions are good, the user's location is marked with a geolocation mark on the map (Fig. 2.49) after a few seconds.

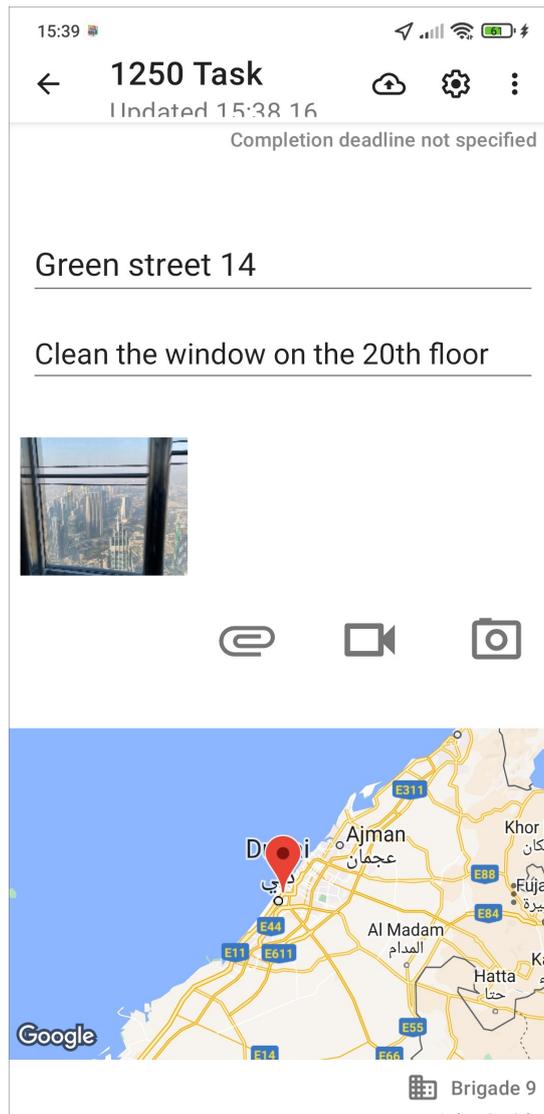


Fig. 2.49: Displaying a location in the task window

By default, the user's current location is attached to the task. To change the location, go to the "Task map" window that opens when you click on the map in the task window. Geographic coordinates are indicated in the upper part of the window (in the Longitude/Latitude coordinate system on the WGS 84 ellipsoid – EPSG:4326). To change the location on the map, mark another location by long-pressing the desired location and click the "Save" button  in the upper right corner (Fig. 2.50).

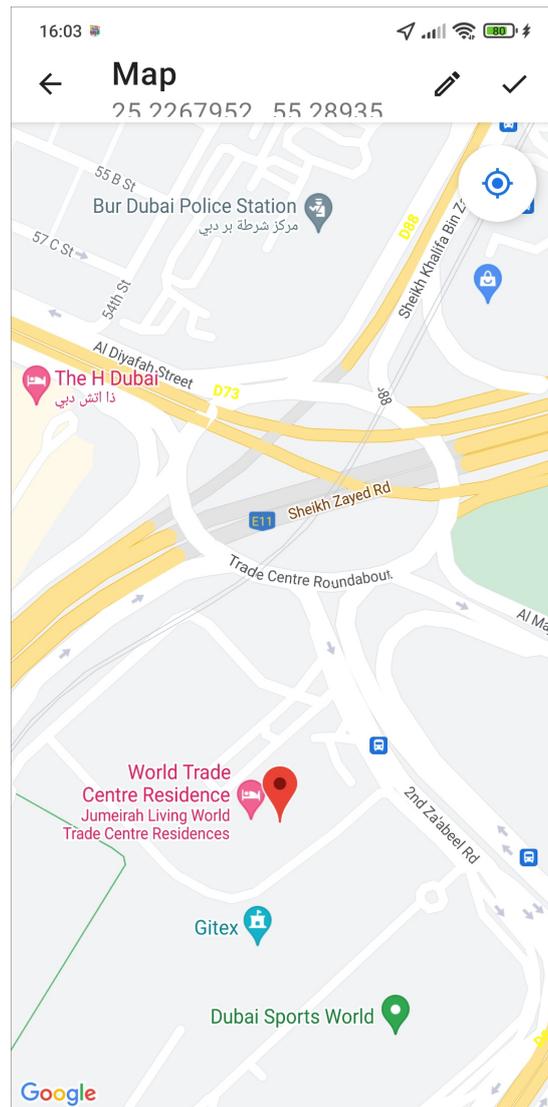


Fig. 2.50: Displaying a location in the task map window

To change the coordinates precisely, click “Change of coordinates” . In the “Change coordinates” window, you can select from a drop-down list the coordinates format. Enter/edit the exact coordinates in the selected format (Fig. 2.51) in the corresponding fields. To change the hemisphere, click on the north/south hemisphere (west/east hemisphere) image to the left of the latitude/longitude input field. After changing the hemisphere, the sign of the corresponding coordinates appears at the bottom of the window changes. Click “Edit” and save your changes .

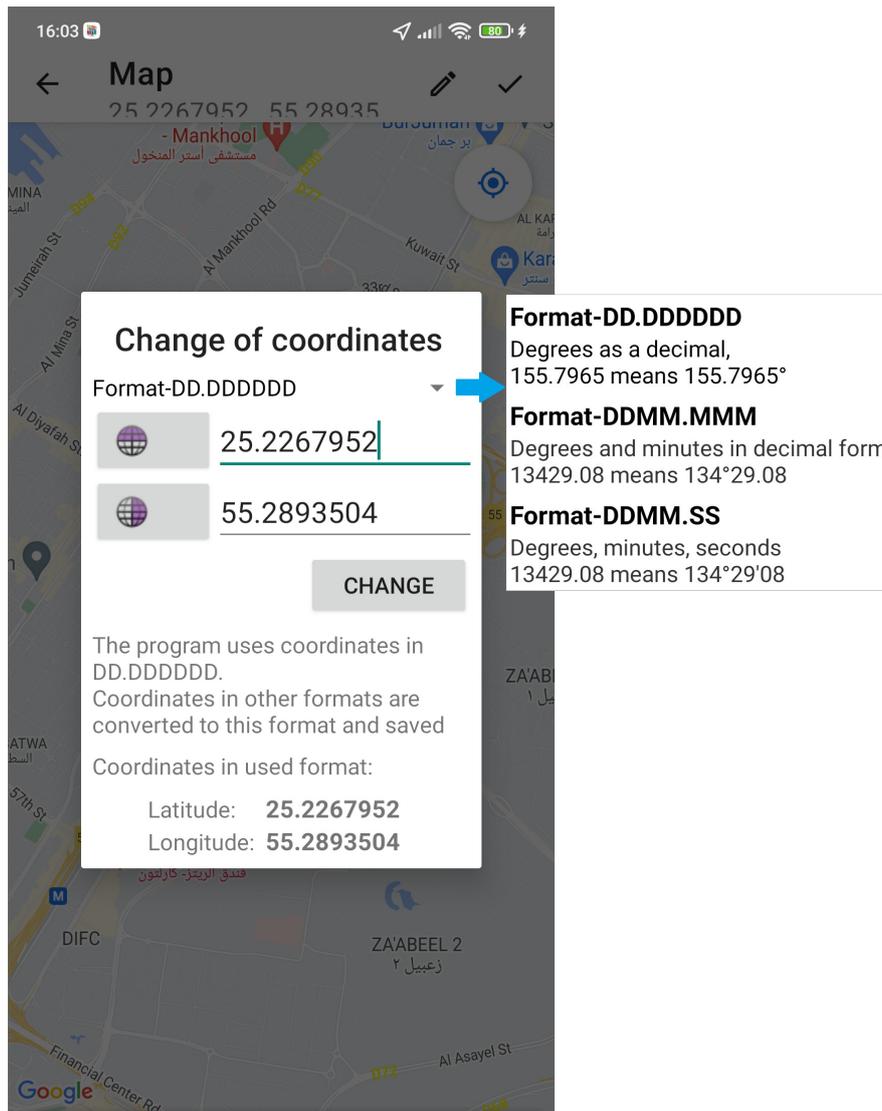


Fig. 2.51: Changing coordinates

You can save a task and send it to the server without geographic coordinates.

The application has an option of applying photo coordinates to the task. To do this, make a long press on the photo and open menu . Select "Use coordinates" and confirm the action by clicking "Use". The coordinates of the task are updated if the media file is georeferenced.

After entering information on the task, attaching files and location, the task is automatically saved and added to the list of your own tasks (drafts) in the "My tasks" section. To send tasks to the server, click the "Submit" button  at the top of the task window.

If you created tasks offline, send all drafts to the server once you have a stable network connection. To do this, open the  menu and select "Send drafts".

## 2.5 Editing and managing tasks

### 2.5.1 Viewing and editing a task

The ability to edit task fields and manage the task depends on the user's role. For more information on user roles, see *Account management and roles in the system* (page 24). To send the changes made to the task to the server, click "Submit" . Otherwise, the changes will not get into the system, but will remain only on the user's device.

To quickly find one or more tasks, you can use the search or set up a filter (*Task filter and advanced sorting* (page 32)). For example, you can create a filter based on the "Date of access" custom field. Click the filter button , select "Additional fields", and choose the field from the list. Set a value for the filter and then return to the task list.

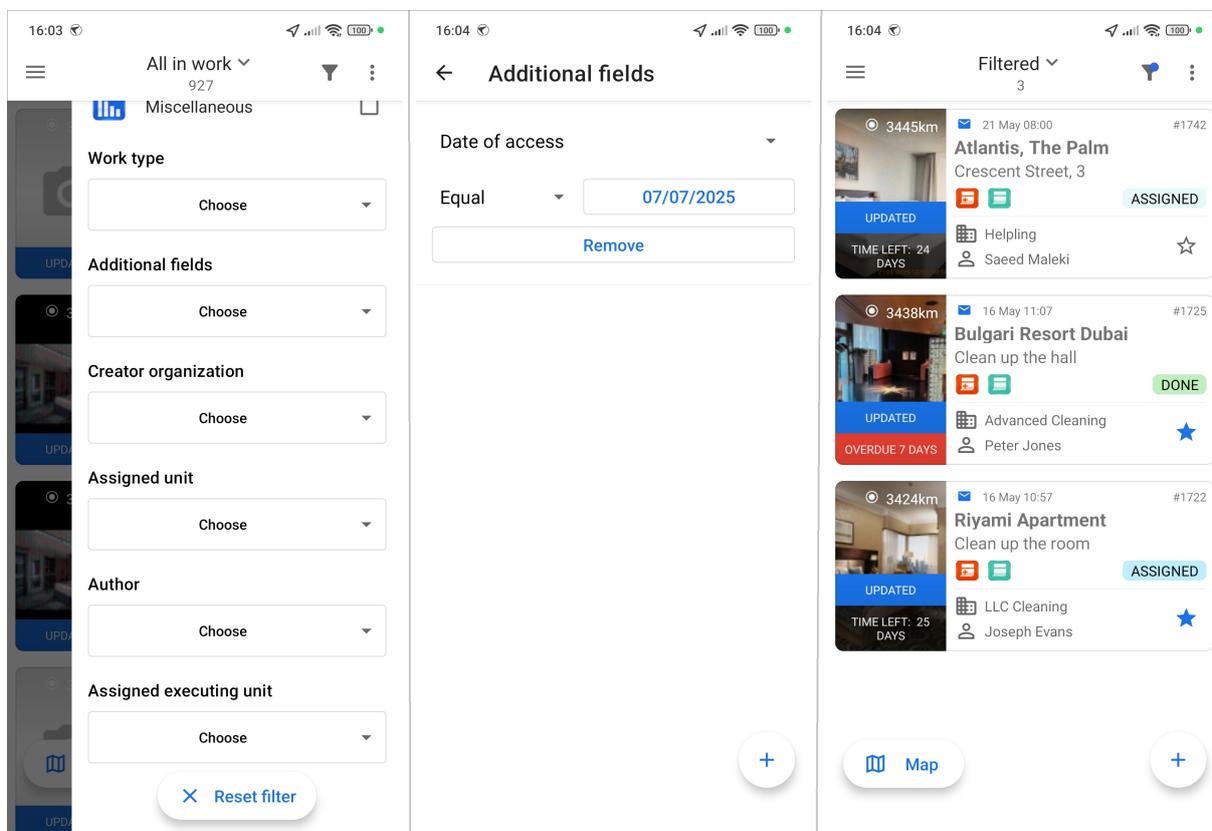


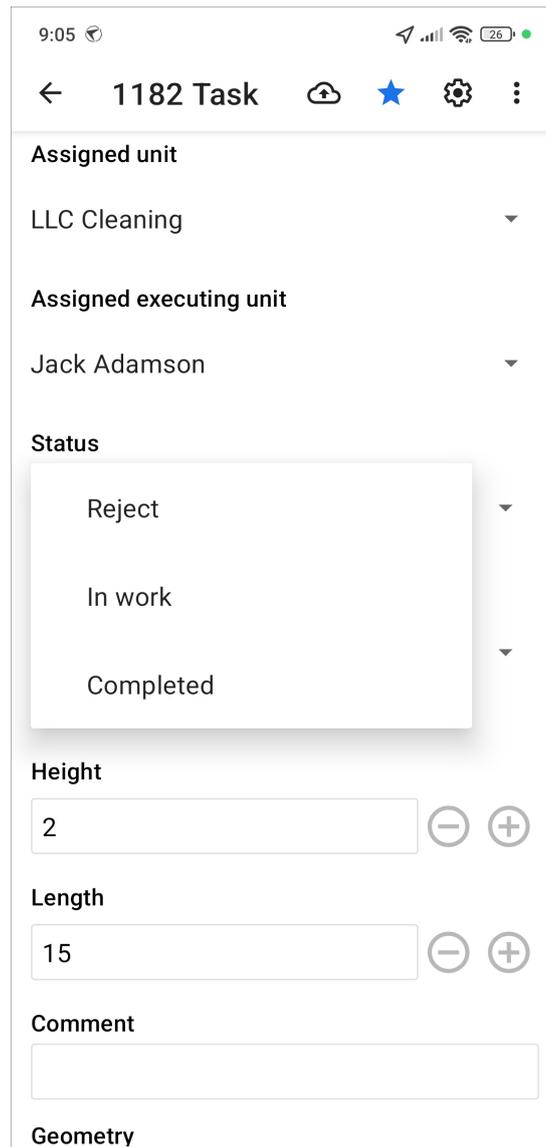
Fig. 2.52: Searching for tasks using a filter

Clicking on the task you want to edit opens the task window (Fig. 2.53). The task window is used to view, edit, and manage detailed information about the task (see details in *Viewing registered tasks* (page 38) and *Creating new tasks* (page 40)):



Fig. 2.53: The task window in view and edit mode

In the task window, you can edit the task title, text, location, and custom fields, work with media files, add a service object (if it was not previously specified), and add comments. The task window also contains the right sidebar of task information, where you can edit other fields (Fig. 2.54). You can open the sidebar by swiping to the left or by clicking .



9:05

1182 Task

Assigned unit

LLC Cleaning

Assigned executing unit

Jack Adamson

Status

Reject

In work

Completed

Height

2

Length

15

Comment

Geometry

Fig. 2.54: Control panel in view and edit mode

Task parameters that the user cannot edit are highlighted and marked with a lock icon. Clicking the lock icon allows you to see the reasons for the parameter blocking (Fig. 2.55).

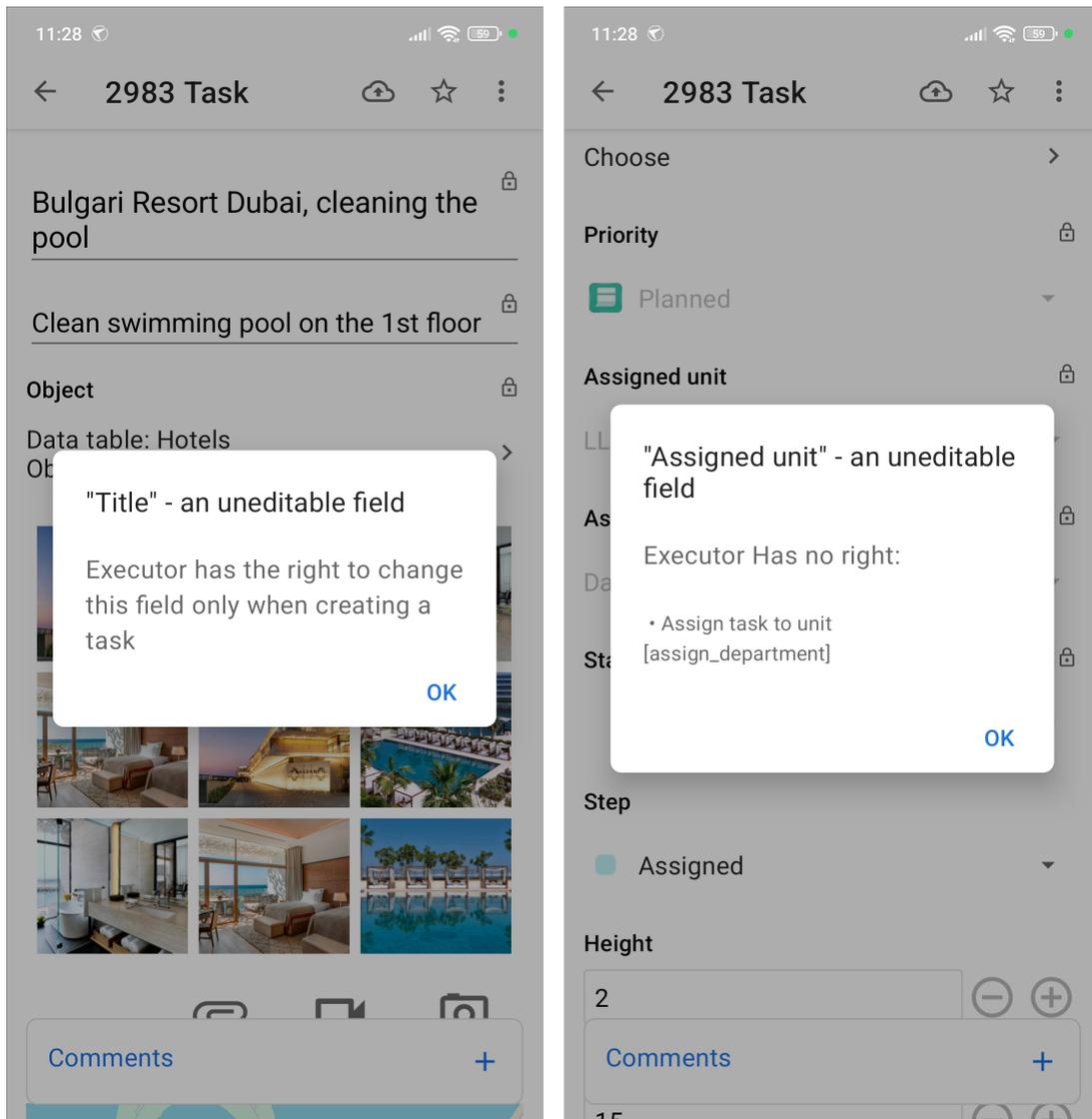


Fig. 2.55: Possible reasons for blocking field editing

You can view attached photos, videos and listen to audio recordings by clicking on the thumbnail image of the file in the task window. To add a new media file, click “Add media file” or the camera shortcut button. To save/delete and view detailed information about a file, press and hold the attached file until the menu panel appears. For more information about working with media files, see [Adding files and media](#) (page 52)).

The location point on the task map indicates the geographic reference to the task location. If a task does not have a geographical reference, the task map window displays current location, and if you try to open the map in full-screen mode, the “no point” message appears. Click the map thumbnail to expand the map to full screen, view, and edit the location.

The menu of the task map window enables selecting the mode of viewing task location using mobile map services. These services help to build a route to the desired point, calculate travel time, view street panoramas, etc.

After editing task information, the changes are automatically saved on the user’s device. Upon returning to the tasks list, such tasks are marked with the “There are changes” label. The application allows users to edit the necessary tasks separately and then send all the

changes to the server at once. This may be necessary if there is no internet connection at the task location. Field staff edits the tasks, attaches media files, and when an internet connection is established, can send all of the edited tasks to the system. To do this, click “Window menu” in the task list view window and select “Submit Changes”. For more information about the “Window menu”, see *Window menu* (page 35).

---

**Important:** To send the changes made to the task to the server, click “Send” . Unsent changes remain on the user’s device until they are deleted or sent to the server marked as “Changed”.

---

If the user does not have rights to edit the task, but the information should be transferred to the executor or Administrator of the Organization, the application provides adding comments in such cases. To create a new comment to a task, click the “Add comment” button  at the bottom of the task window in the “Comments” block. Enter the text in the “Add comment” window and click “Save” (Fig. 2.55). A new comment is displayed at the beginning of the list of comments. The comment is automatically sent to the server after saving. You can also add your own comments to the updates made by other users. To do this, click the “Add comment” button located to the right of the corresponding update (comment) in the list . The current block also displays the number of comments to the task.

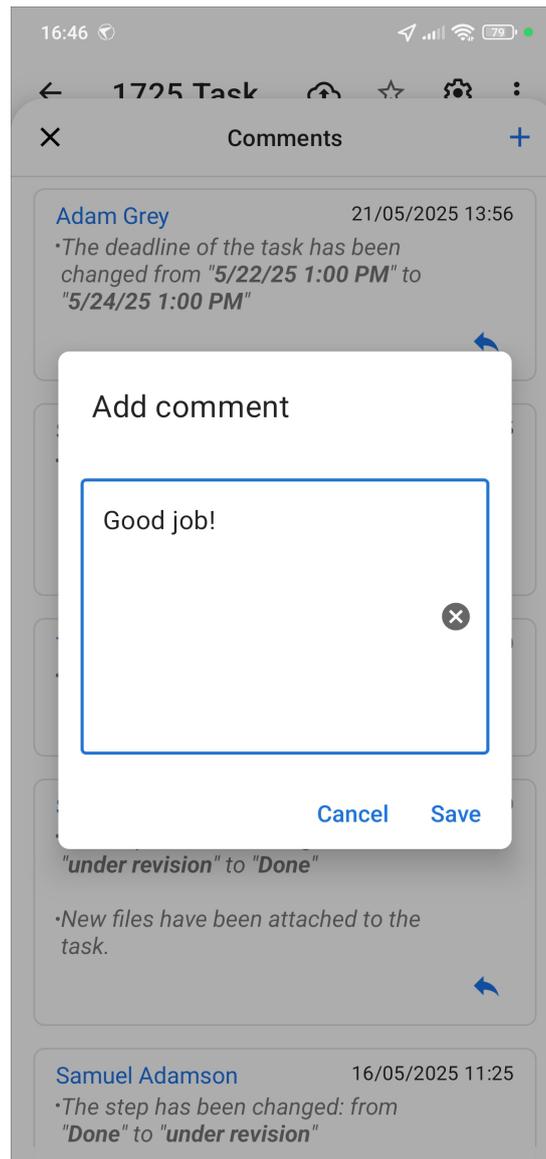


Fig. 2.56: Adding a comment to a task

## 2.5.2 Task management

The “Window menu”  is used to manage the task and contains the following items:

- **“Show changes”** – shows all changes made before they are sent to the server.
- **“Undo changes”** – returns to the original information on the task and deletes the changes made by the user.
- **“Update data”** – updates information on the task by synchronizing with the server. If other users have changed tasks, they are displayed after the update. Swipe from top to bottom on the screen to update the task list.
- **“Make a copy of the task”** – creates a copy of the task with the possibility to select the data of the original task (for more information, see [Copying a task](#) (page 79)).
- **“Show photo-links”** – detects errors in task photos. Shows the order in which pho-

tos were added and the number of the basis of which subsequent photos were taken when using the template photo mode (for more details, see *Using a template photos* (page 78)).

- **“Show subtasks”** – displays all copies of the task.
- **“Remove”** – deletes the task from the system (for more information, see *Deleting a task* (page 80)).

Tasks with the “Draft” status have an additional menu item – “Make copy of draft”. To copy a draft of the task with entered data, select “Make a draft copy” menu item in the task window. Use the counter to select the number of copies by moving the counter to the right or left (Fig. 2.57). The maximum number of copies is 100. All tasks with the “Draft” status are available in the “My Tasks” list. For more information, see *Quick task filters* (page 29) section.

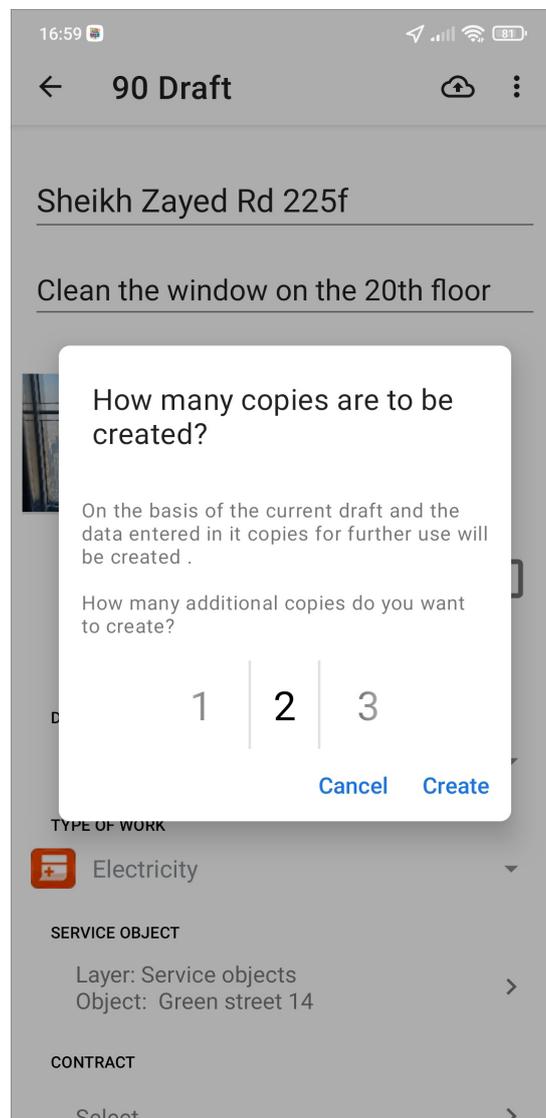


Fig. 2.57: Selecting the number of task copies

### 2.5.3 Downloading tasks for offline work

To have access to all task information in offline mode (including photos and files), the application implements mass loading of tasks. To do this, open the list of tasks for downloading.

Open the  window menu, select “Download tasks” before departure, when there is access to the Internet. A dialog box (Fig. 2.58) appears, where you can cancel or confirm the download. The application window displays the task download progress as a percentage. Wait for the download to complete. The waiting time depends on the number of tasks, the amount of information in them, and the speed of the Internet.

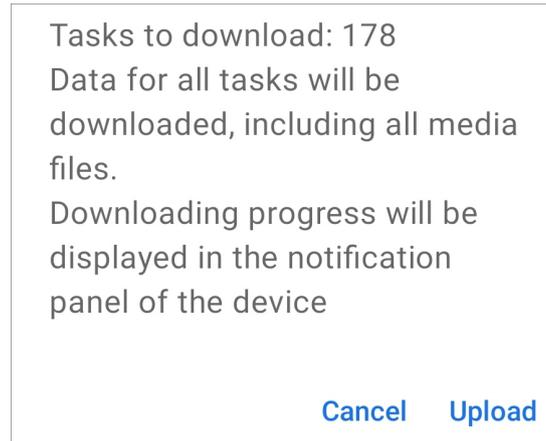


Fig. 2.58: Tasks load dialog

To check that all tasks have been loaded after the download is complete, open the window menu and select “Show downloaded”. All tasks loaded into the application cache are displayed. An information message appears at the top of the task list stating that currently downloaded tasks are displayed (Fig. 2.59).

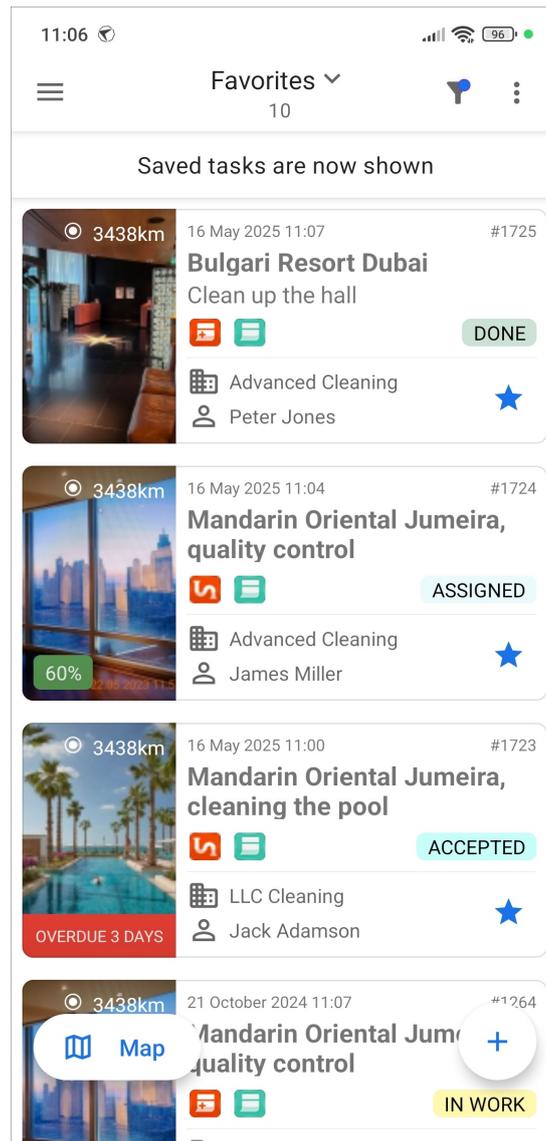


Fig. 2.59: Message about working with downloaded tasks

**Attention:** Changes to tasks made by other users will not applied to downloaded tasks. Updating tasks requires reloading tasks after making changes to the user's device.

All information on these tasks is available in offline mode. If there is no network connection, the application will notify you in its window (Fig. 2.60).

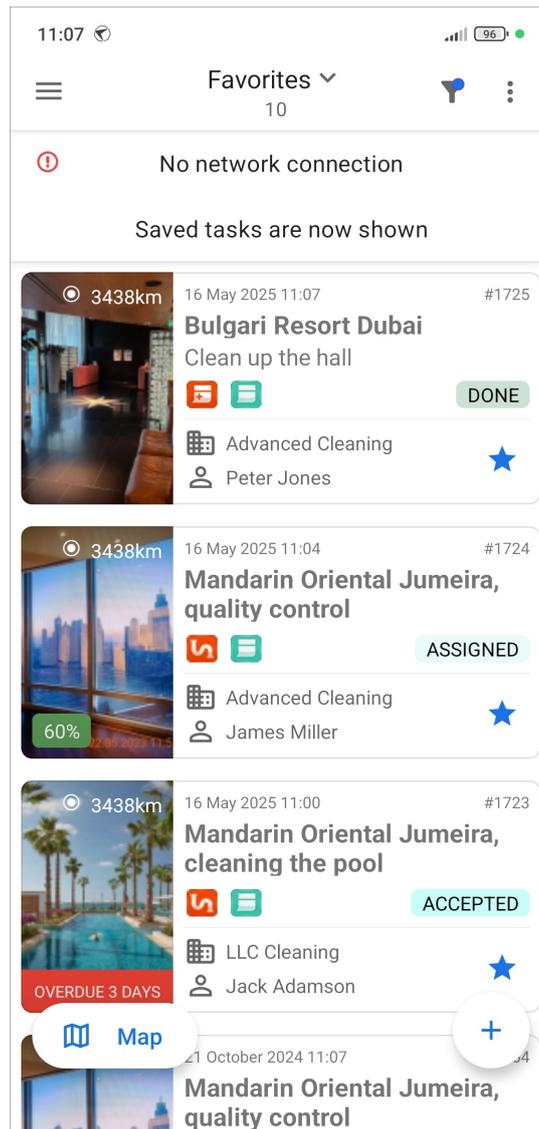


Fig. 2.60: Offline mode notification

Clear the cache to delete loaded tasks from memory (Settings/Clear cache, for more information, see *Application settings* (page 166)). Clearing the cache deletes not only the task information but also the loaded service objects.

Once you have a stable network connection, send all changes to the server. To do this, open the  menu and select “Send Changes”.

## 2.5.4 Using a template photos

To take a photo in a template photo mode open a photo from the list of attached media files (sample photo) and click  in the lower right corner. Select one of the display modes for the template photo on the bottom panel (Fig. 2.61). You can take photos in the template photo mode without a custom camera. To do this, disable the use of the built-in camera in the settings via the ActiveMap web system.

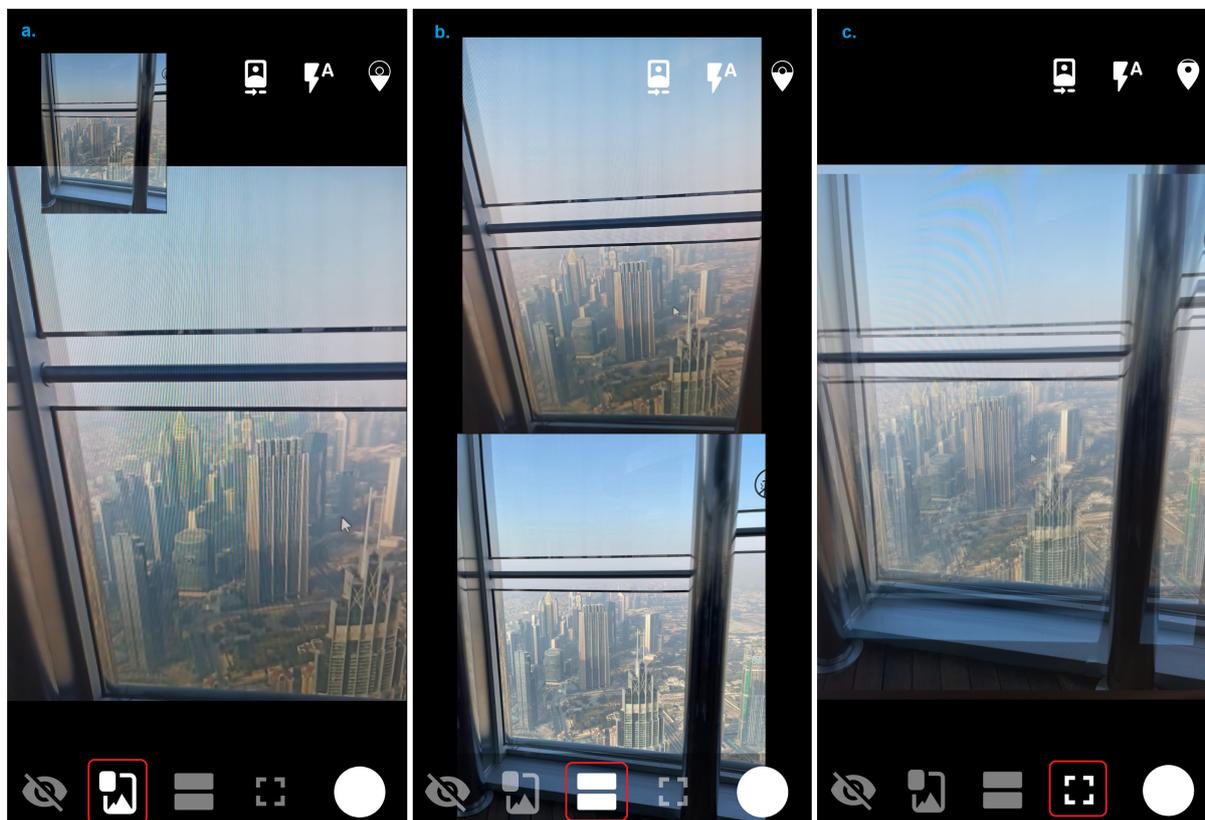


Fig. 2.61: Setting the sample photo display modes: a – sample photo in the form of a small thumbnail, b – sample photo at the top of the screen, c – template photo overlaid in full screen.

Photo links are displayed as labels on the taken photos. To see them, go to the task window menu and select “Photo links” (Fig. 2.62). Numeric labels with arrows appear on the photos. The arrow points from the sample photo to the resulting photo. There can be several photo samples. The resulting photo can also be a template photo for further work.

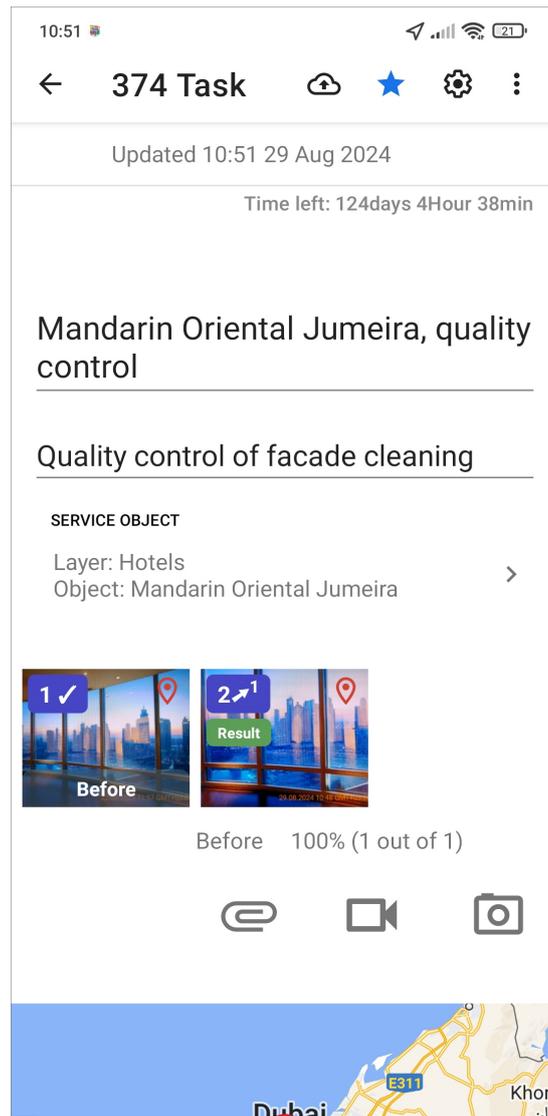


Fig. 2.62: Displaying “Photo links”

Taking photos in the template photo mode is also available for the custom field of the “File” type. To do this, open the photo in the file field, tap  in the bottom right corner of the screen, and take a photo using the template as a reference. The captured photo appears in the file field and in the gallery, marked with a “Result” sticker.

### 2.5.5 Copying a task

If you want to create new tasks of the same type and need to enter the same data, you can use task copying. To do so, create one original task, fill in the required data, and add media files. Next, open the task, click “Window menu” , select “Make a copy of the task” and information you want to copy to the new task:

- Title
- Task text
- Priority

- Work type
- Service object
- Location
- Custom fields
- Media files

Selecting the last two options copies all custom fields and media files.

After choosing the data, click “Select”. A task creation window opens with the information already filled in. You can make changes if necessary and then send the new task to the server or leave it in the draft list. To view all tasks created from a single task, open that task, click “Window menu”  and select “Show child tasks”. The application displays a list of tasks at all stages that were created by copying the original task.

---

**Note:** If the copied task uses a work type that belongs to a specific organization, it is copied to the new task even if you do not select the work type. If a work type is common for all organizations and you do not check the box for a work type when copying, the default work type is used in the child task.

---

---

**Note:** When copying a task under the role of the System Administrator or the Cluster Administrator, it is necessary to specify the creating organization. If copying is done under a user with a specific organization, then the creating organization is automatically copied to the child task.

---

### 2.5.6 Deleting a task

**Attention:** You can delete a task only while connected to the network.

“Delete” menu item in the “Task” window is not available to all users. Its availability depends on the user’s role. To delete a task, open the task window menu, select “Delete”, and confirm the action. You can also delete tasks with the “Draft” status from the task window menu. All tasks with a “Draft” status are available in “My tasks” list. For more information about setting up task lists, see [Quick task filters](#) (page 29). If necessary, you can delete all tasks with a “Draft” status at once. To do this, click  in the task list view window, select “Remove drafts”, and confirm the deletion (Fig. 2.63).

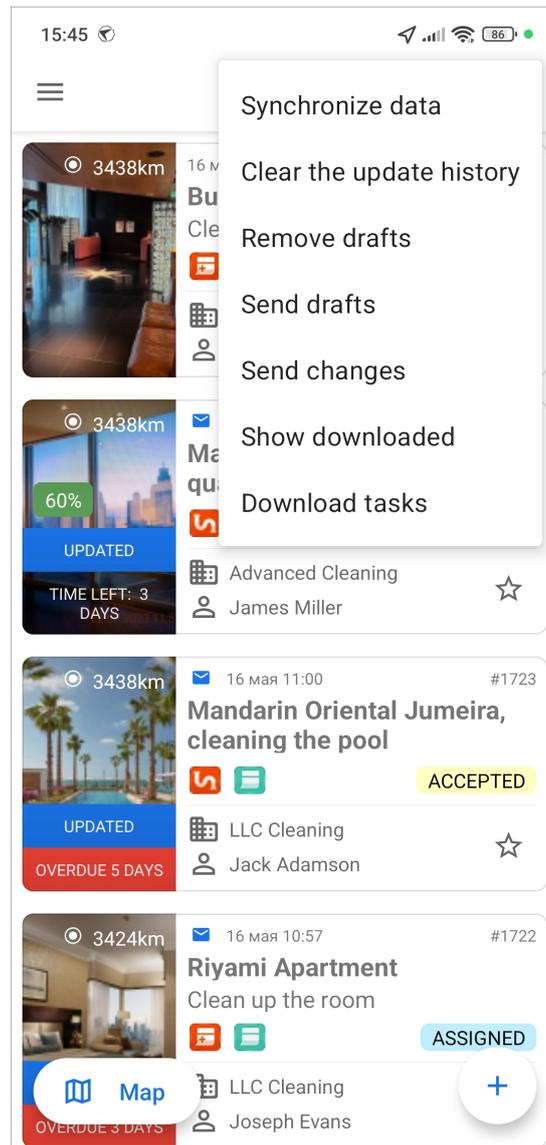


Fig. 2.63: Deleting tasks with a “Draft” status

## 2.6 User management

The section is available for the Organization and Cluster Administrator roles. There are two ways to access the list of users in the application:

1. The “Employees” section of the side menu.
2. *Map* → *User management*.

The first way is below, and the second one is in the *Users on the map* (page 120) section.

## 2.6.1 Viewing the list of users

The System Administrator can see all users of all clusters. The Cluster Administrator can see all users of all organizations in the cluster. The Organization Administrator see all users of the organization. Additional organization users are available for viewing and editing.

To see the user list, open the navigation sidebar and select the “Employees” section. A window in the form of a list opens (Fig. 2.64). You can use the search to find a specific user.

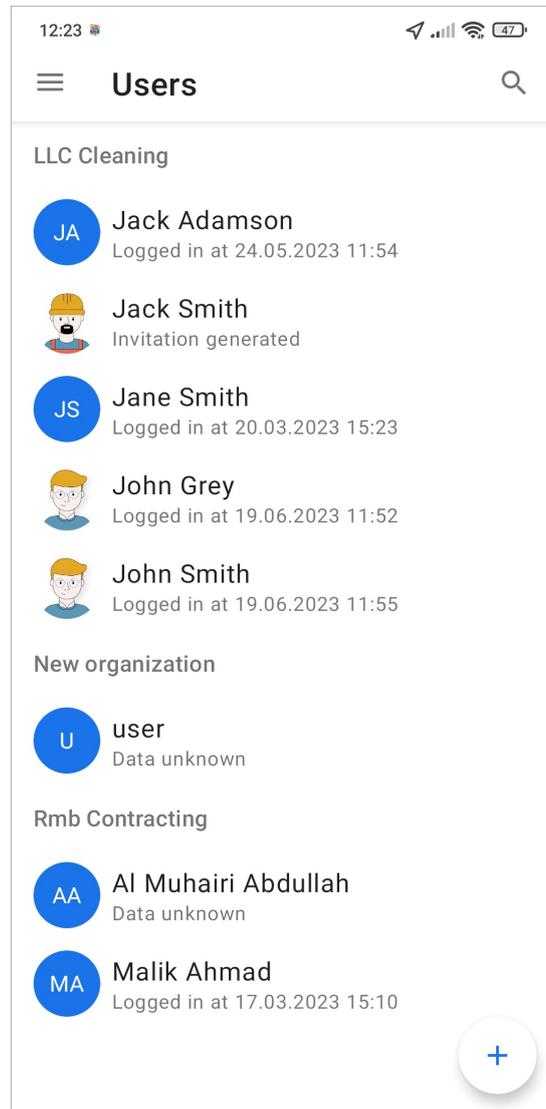


Fig. 2.64: Viewing the list of users

To get information about the user, click on the user card in the list. The profile opens with all user’s data. Here you can view the user’s track by clicking , selecting the day and time range of interest. You can move the marker of the user’s location on the track and view the information at each point of movement. The track is displayed on the map, but you can view the track points in the form of a list (Fig. 2.65). To do this, click . To update the user’s location data, click “Refresh” .

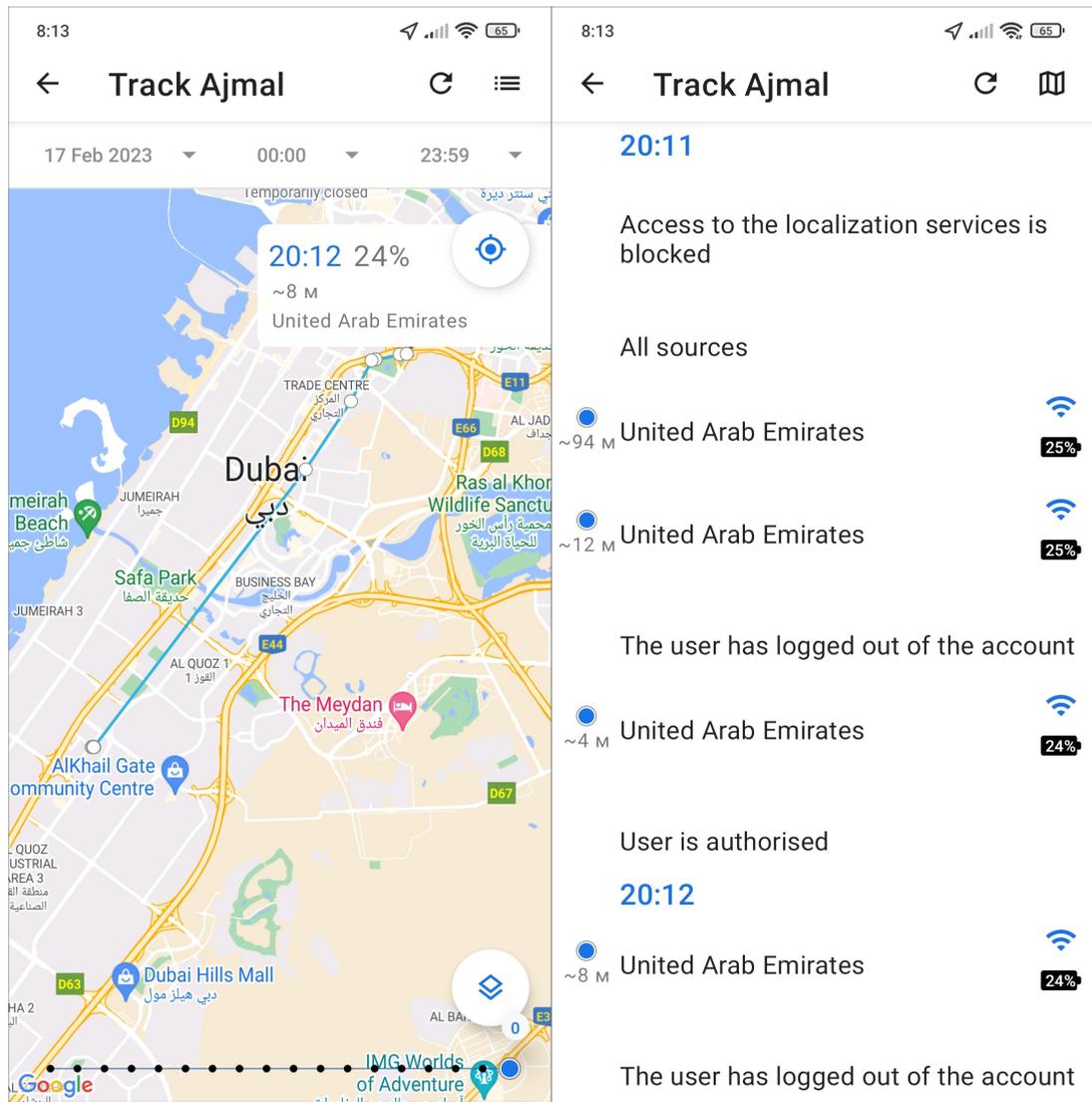


Fig. 2.65: Viewing the user track

In the user's profile, you can see the number of tasks assigned to this user with the "In progress" status (Fig. 2.66). Here you can also assign an already created task to this user. To do this, click "Assign task", then select the necessary task. To create a new task, click "Create" and follow the steps of creating the task. The "Assigned organization" and "Assigned executor" fields are filled in automatically.

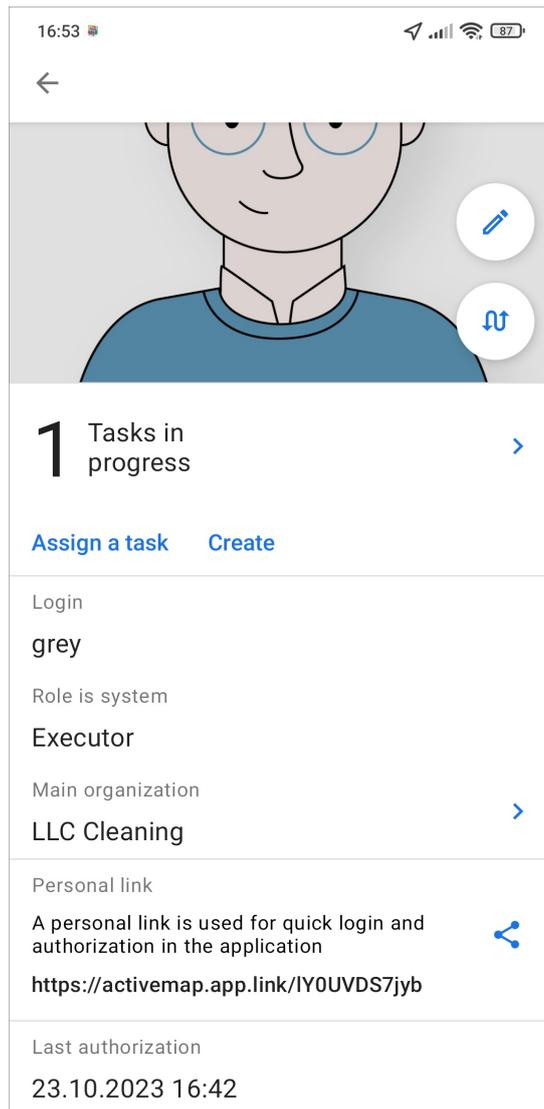


Fig. 2.66: User profile

## 2.6.2 Creating users

To create new users, go to the “Employees” section of the navigation menu and click  to create a new user. This feature is not available to all user roles.

**System Administrator** can create users with the following roles:

- System Administrator
- System Inspector
- Cluster Administrator
- Cluster Inspector
- Organization Administrator
- Organization Inspector

- Executor

**Cluster Administrator** can create users with the following roles:

- Cluster Administrator
- Cluster Inspector
- Organization Administrator
- Organization Inspector
- Executor

**Organization Administrator** can create users with the following roles:

- Organization Administrator
- Organization Inspector
- Executor

Fill in the data in the opened window and click “Create” (Fig. 2.67). To create a user it is enough to enter data in the “Full name” field and click “Create”. A user with the “Executor” role is created. To enter detailed information about the user, click “Show details” and fill in the required fields. In this window, you can enable/disable geolocation monitoring.

12:08

← Creation CREATE

Geoposition monitoring

Full name  
Jack Smith

^ Hide details

Login  
jacksmith

Password  
.....

Tags

iPhone 13 pro max ✕

+ Add

Phone  
+9716118899

E-mail  
jacksmith@gmail.com

Fig. 2.67: Filling in data for a new user

A new user appears in the system. The application immediately offers to send a link for downloading the application and authorization of the new user.

The user, upon receiving the link, opens it and immediately logs in to the app if the application is installed on the device (Fig. 2.68). If the application is not installed, the link opens in the GooglePlay store. The authorization occurs after the app is installed.

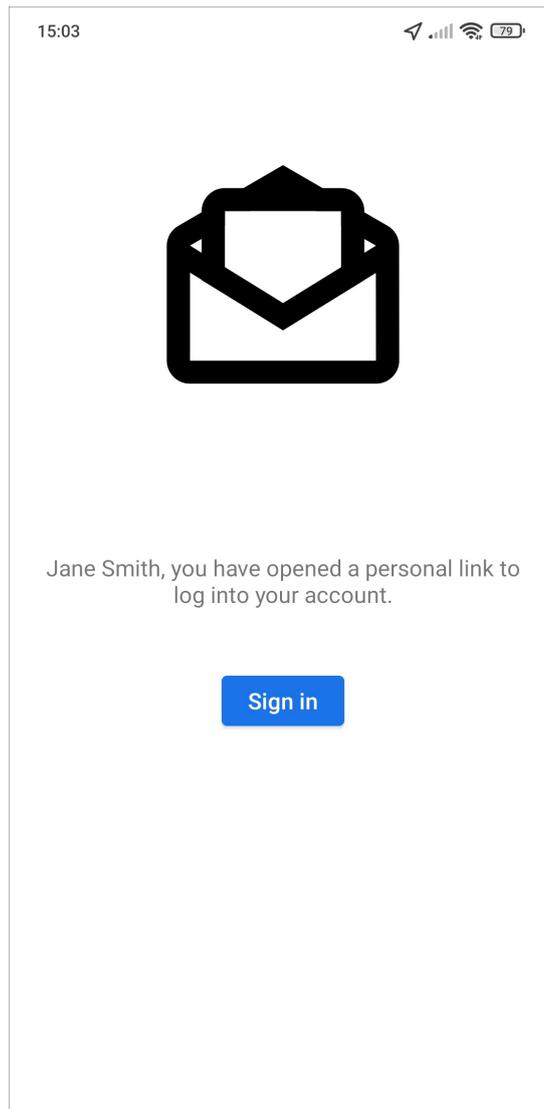


Fig. 2.68: User authorization via link

### 2.6.3 Importing users

New users can be uploaded from the smartphone's contact book or by manually entering the full names of employees with a line break. This feature is available for the roles of Cluster Administrator and Organization Administrator. The System Administrator cannot import users.

**Attention:** User import works only with Internet access.

Go to the “Employees” tab and click  to import users. Next, select the desired upload option:

- Import from contacts.
- Import from text.

Selecting “Import from contacts” opens a list of contacts on the user’s device (you need to provide the requested permissions first). Use the search bar to find the desired contact. Then select it and click “Done”. You can select multiple contacts. If necessary, select a contact and open the window for editing the future user profile. Click “Done” to quickly import the contacts. An account with the “Executor” role and the “Person” type is created in the system by default. Login and password are generated automatically. The created user is displayed in the opened window. Click “Share” to send a link to the employee for authorization in the application (Fig. 2.69).

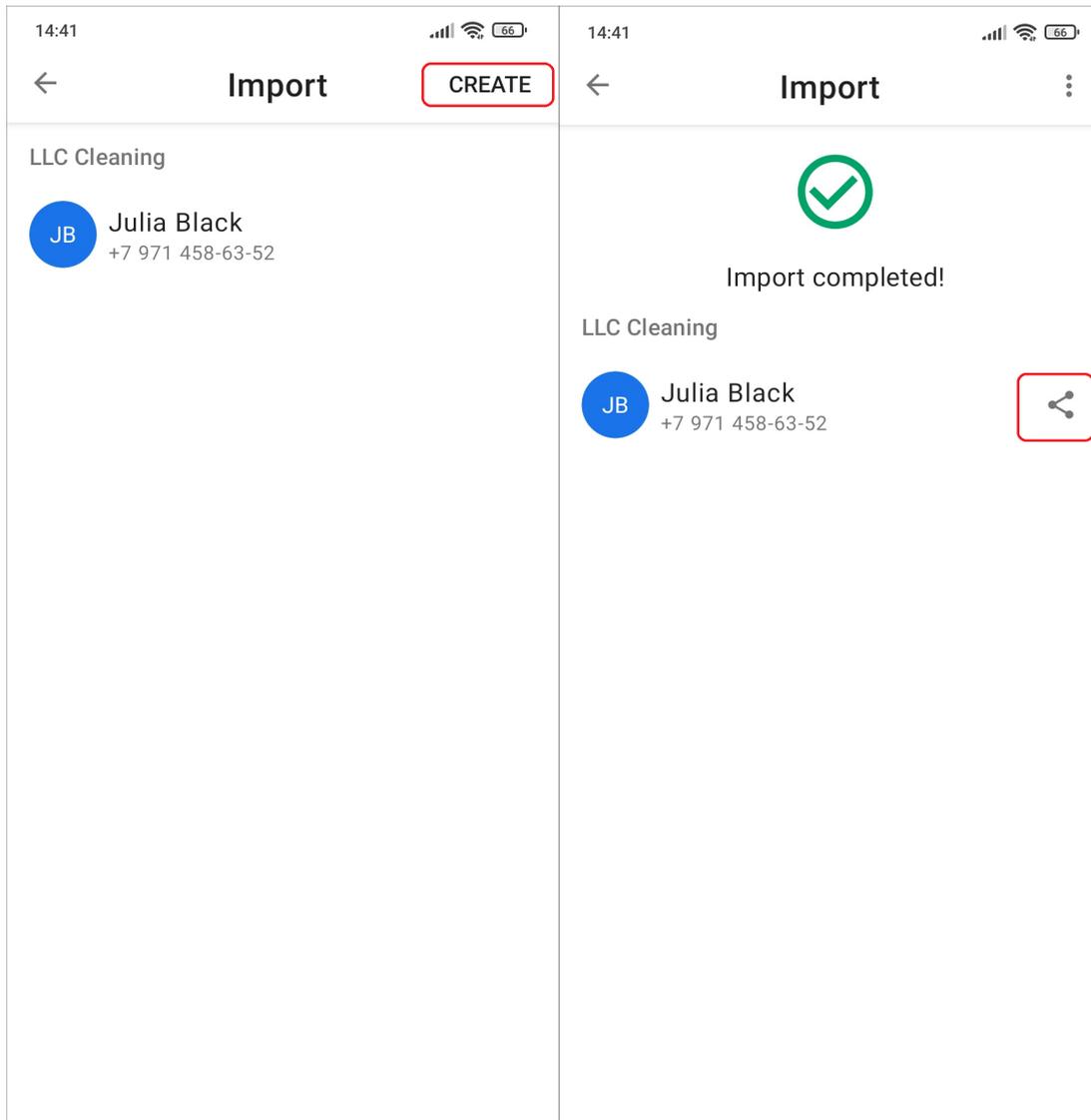


Fig. 2.69: Importing users from contacts

Selecting “Import from text” opens a window where you have to specify the users’ full names. You can do it using a line break (Enter) or paste the prepared and copied list of users’ full names from the clipboard. Then click “Done”. If necessary, select a contact and open the window for editing the future user profile. Click “Done” to quickly import contacts from the text. An account with the “Executor” role and the “Person” type is created in the system by default. Login and password are generated automatically. The created user is displayed in the opened window. Click “Share” to send a link to the employee for authorization in the application (Fig. 2.70).

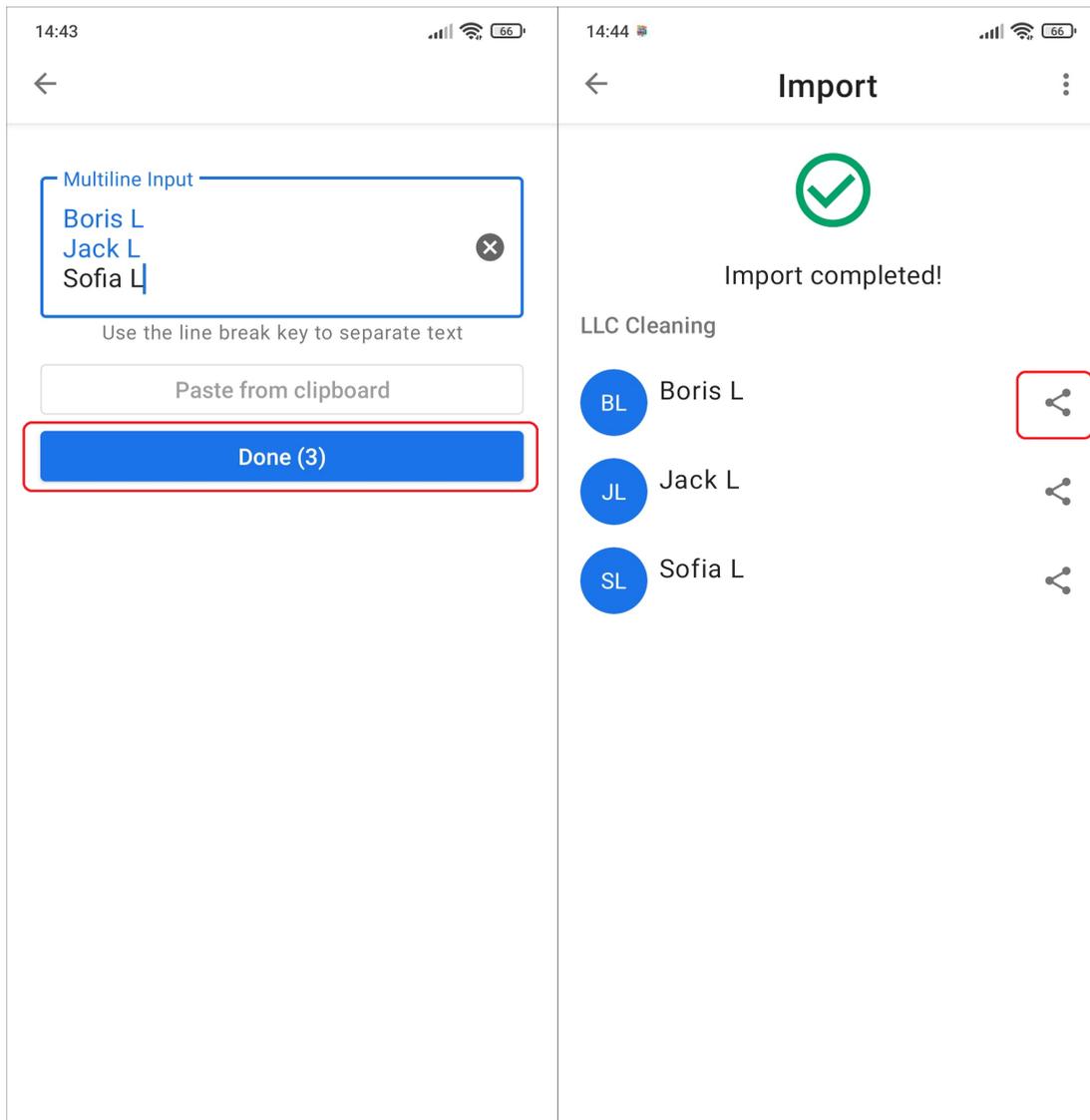


Fig. 2.70: Importing users from text

Importing users is also available at the bottom of the “Employees” page.

### 2.6.4 Managing user accounts

To make changes to a user’s profile (not the current one), find the user in the “Users” section of the navigation sidebar. You can use the search to find a specific user. Clicking the user name opens the account card. Next, click , make changes, and click “Apply”. To access the current user’s profile, go to the navigation sidebar (*Account management and roles in the system* (page 24)).

The application provides the functions of blocking and deleting users. These functions are not available to all user roles. To block a user, find the user in the “Users” section of the navigation sidebar. Use the search to find a specific user. Clicking the user name opens the account card. Click , scroll down, click “Block”, and confirm your action (Fig. 2.71). The user disappears from the list of users in the application. Blocked user cannot log in to the application. You can unblock the user only in ActiveMap Web.

16:56

Editing APPLY

iPhone 13 pro max

+ Add

Phone  
+971 6 118 899

E-mail  
jacksmith@gmail.com

Employee type  
Person

Role  
Executor

Main organization  
LLC Cleaning

Included in additional organizations

+ Add

Block Remove

Fig. 2.71: Editing user profile

To delete a user, find the user in the “Users” section of the navigation sidebar. Use the search to find a specific user. Clicking the user name opens the account card. Click , scroll down, click “Remove”, and confirm your action (Fig. 2.71). You cannot delete the account under which you are currently authorized.

## 2.7 Organization management

### 2.7.1 Creating an organization

Organization creation is available to the System Administrator and the Cluster Administrator. To create an organization, go to the “Employees” section of the navigation sidebar or to the profile of the current user. Then open any user card, click , scroll to the “Main organization” block, and click on it (Fig. 2.72). In the opened window, click  to create a new organization.

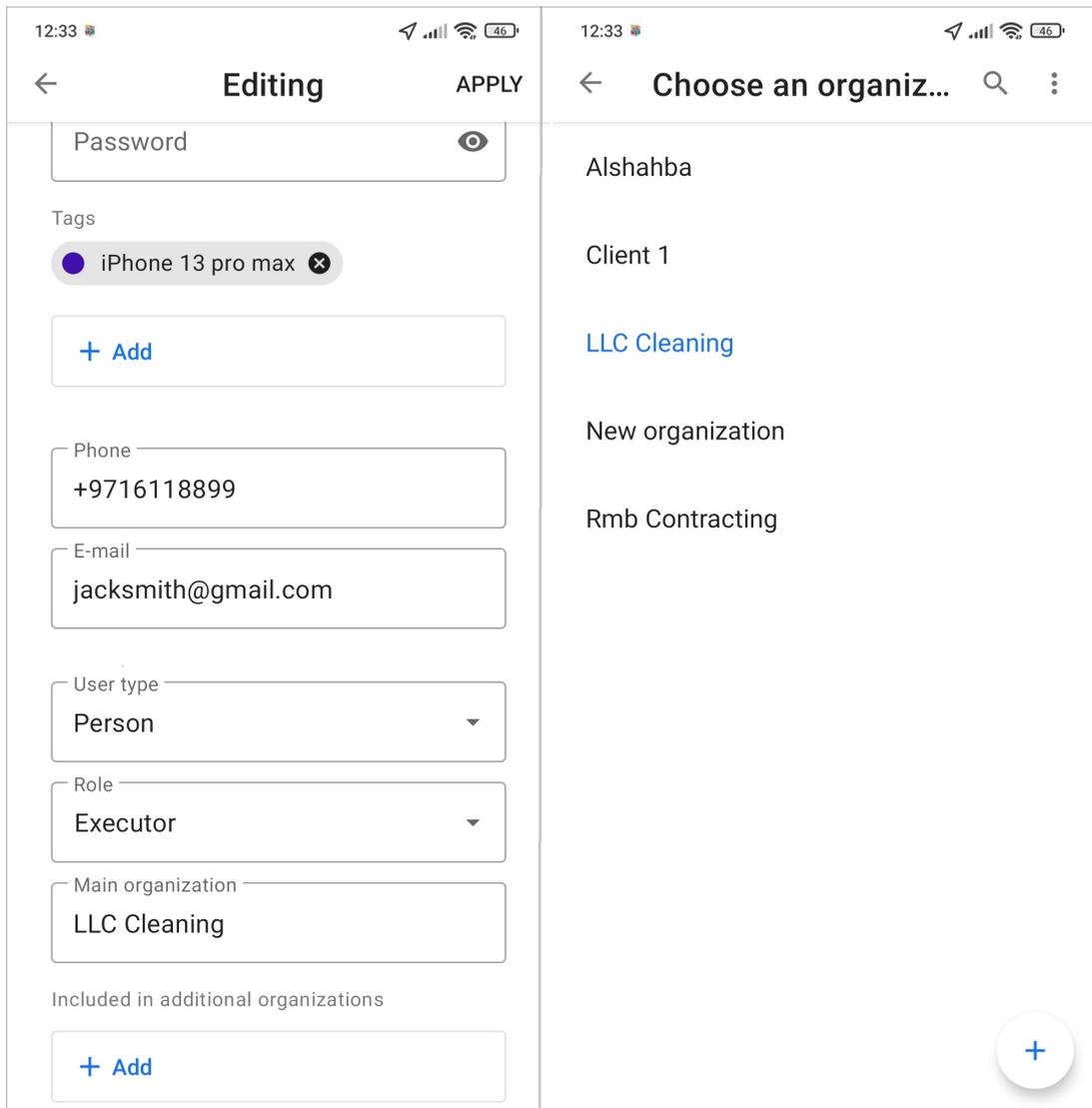


Fig. 2.72: Creating an organization

Fill in only the full name or click “Show details” and fill in all the suggested fields, then click “Create” (Fig. 2.73). The organization appears in the list of organizations. It is automatically inserted into the value of the “Main organization” field. To change the user organization to a new one, click “Apply”, to cancel - exit the user profile without saving changes. The created organization automatically has rights to those types of work (global or this organization’s cluster) for which the “For all organizations” option is activated.

12:37

← Creation CREATE

Organization name  
LLC Light

^ Hide details

Maximum number of users  
10

Phone  
98564251806

E-mail  
lightllc@gmail.com

Address  
Green Street 16

Fig. 2.73: Creating an organization

## 2.7.2 Editing an organization

Organization editing is available to the System Administrator and the Cluster Administrator. To edit an organization, go to the “Users” section of the navigation sidebar or go to the profile of the current user. Then open any user card, click , scroll to the “Main organization” block, and click on it. Open the window menu and select “Edit” . The list of organizations opens in the edit mode (Fig. 2.74).

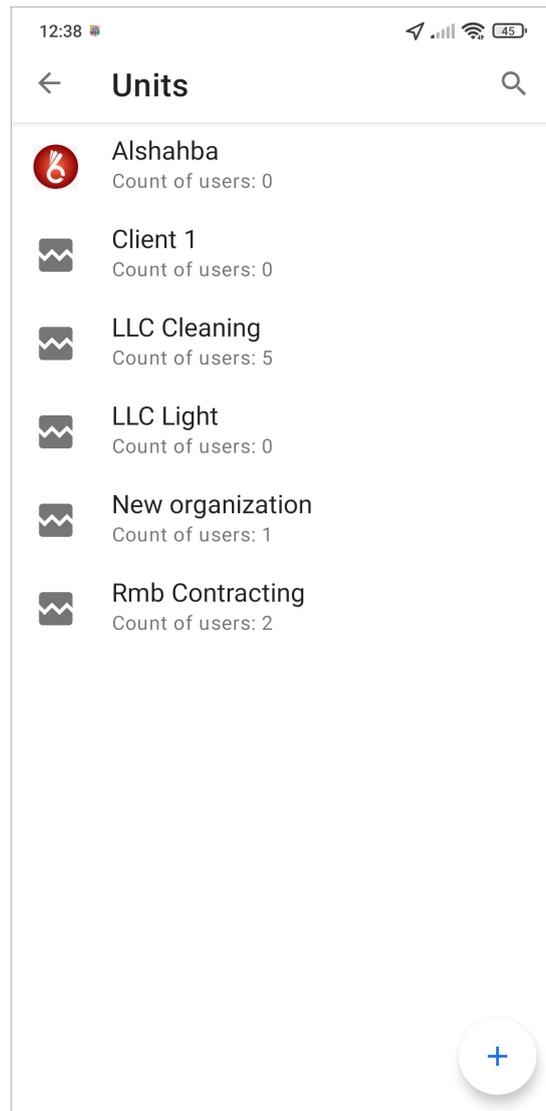
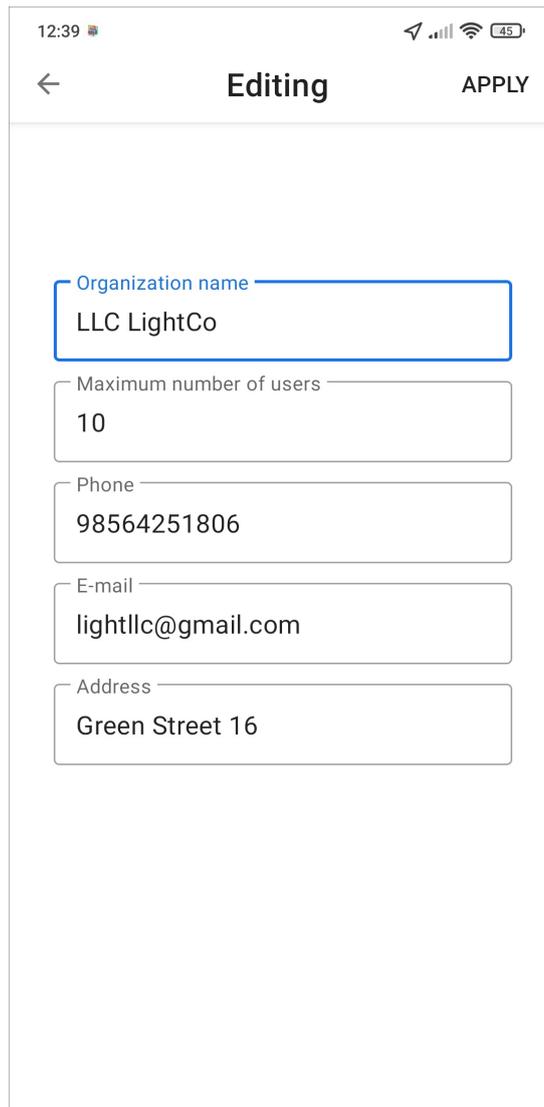


Fig. 2.74: Organization editing window

Next, select the organization, make changes in the editing window, and click “Apply” (Fig. 2.75).



12:39

← Editing APPLY

Organization name  
LLC LightCo

Maximum number of users  
10

Phone  
98564251806

E-mail  
lightllc@gmail.com

Address  
Green Street 16

Fig. 2.75: Editing an organization

The last selected organization is automatically inserted into the main organization. To undo changes, exit the user profile without saving the changes.

## 2.8 Updating reference tables and settings

The ActiveMap system has a number of reference data:

- Organizations and users;
- Types of work, groups of types of work, steps, priorities, custom fields;
- System component settings;
- Service objects (layers, reference tables, and data tables).

When reference tables change, the system quickly delivers them to client applications. You can enter new values into reference tables in the ActiveMap Web. After adding, you have to

refresh the data in the ActiveMap Mobile application manually in the “Settings” section of the side menu.

Updating data in ActiveMap Mobile occurs during any access to the server (for example, when the user updates the task list or opens the task card). When the application starts, some reference data, such as information about organizations and users, is automatically updated. Data on types of work, groups of types of work, steps, priorities, and custom fields is also updated automatically.

If the data remains the same, force it to update (for more information, see *Other settings* (page 171)). Data is updated within a minute from the last data addition on the ActiveMap Web. If there were several actions at once to add new values to ActiveMap Web, then the application is updated no earlier than one minute after the last change to ActiveMap Web.

If users change layers, basemaps, or reports, the mobile application automatically displays the updates after the time specified in the settings. No manual data refresh is required.

Some roles can edit types of work, steps, priorities, data tables, and reference tables directly in the mobile application (for more details, see *Administration* (page 131)).

If you are creating or editing a task or a layer object in the ActiveMap Mobile application at the time the reference tables are being updated on ActiveMap Web, the reference tables will not be updated in the application. This is because the application do not send requests to the server during creation or editing. In this case, exit the task creation/editing mode (all changes are saved) and update the task list. Then return to the task draft (set “My tasks” filter) or edited task and continue filling it with updated reference tables. The delivery time of reference tables updates is about a minute.

To apply updated system component settings, you must also force a data update.

## **2.9 Using additional data formats in the application**

### **2.9.1 Adding geometric objects on the map**

You can add point (multi-point), linear, and polygonal objects to the map in the application. You can create objects using the current location, by explicitly specifying coordinates on the map, or by recording a route track. Geometric objects can be attached to the tasks that have a custom field of the “geometry” type (for more information, see *Working with custom fields* (page 44)). You can add geometric objects during adding a task as well as independently of tasks.

To add an object in the custom field of “Geometry” type, click the “Create” button. In the opened window, there is a map, window menu, and buttons for adding objects of different geometry types (Fig. 2.76):

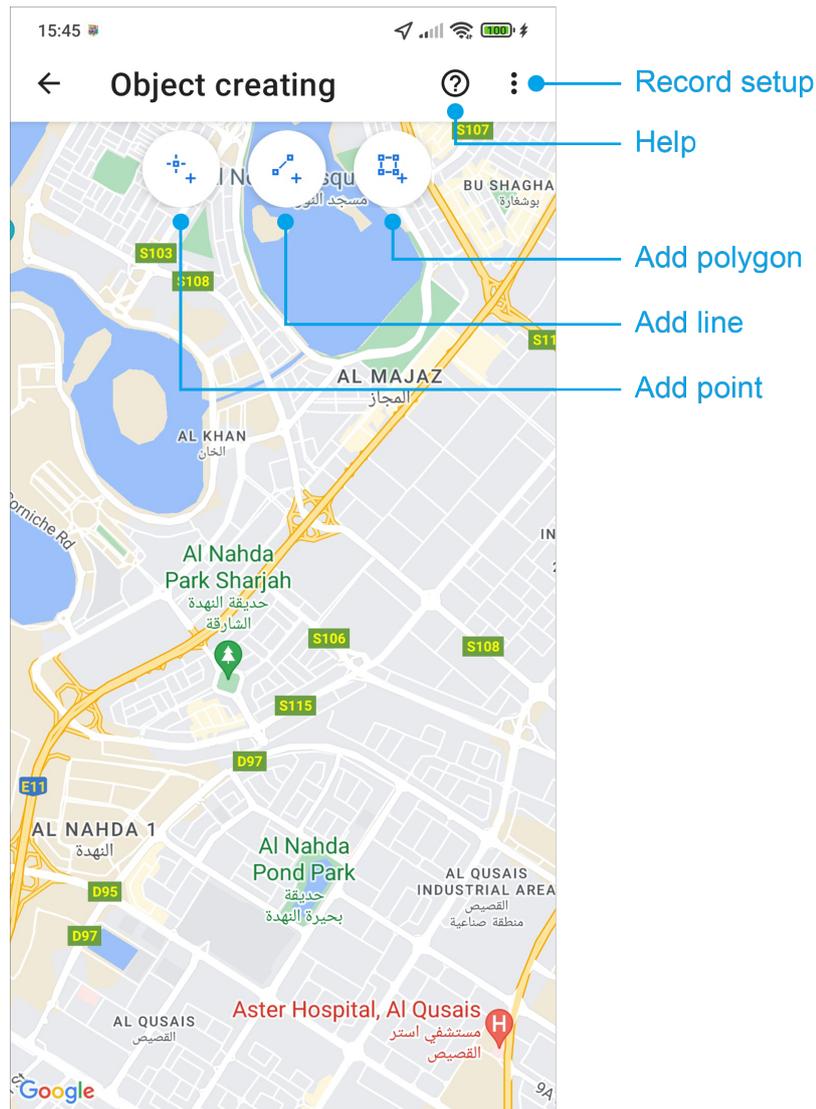


Fig. 2.76: Geometric object creation window

After selecting the geometry type and clicking the corresponding button (“Add Points”, “Add Line”, or “Add Polygon”) you are switched to the object adding mode.

In the “Create object” window there is a “Record settings” section for setting the minimum distance and time between adjacent points during route track recording. To use the current location and record the track, it is necessary to connect the location sources of the device and provide good conditions for receiving the navigation signal (Fig. 2.77). Being in buildings greatly reduces the accuracy of the navigation signal.

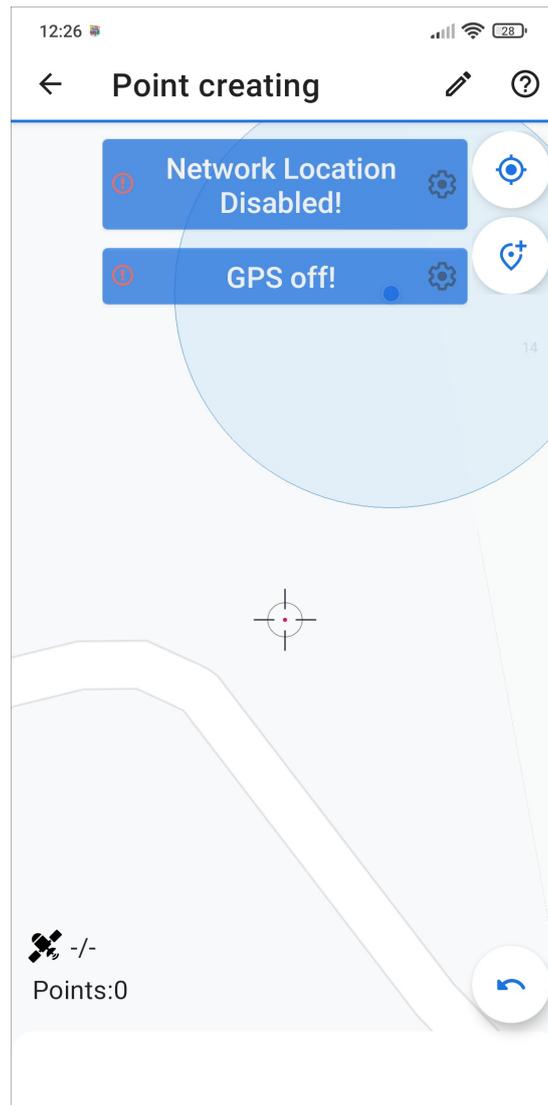


Fig. 2.77: Messages about location settings

“Network location disabled!”, “GPS off!” messages notify that not all positioning settings have been configured. To configure location sources, go to the “Location” window by tapping “Location settings”  Points 0. Here you can set up the GPS receiver, enable Wi-Fi and mobile data transmission. The more sources are included, the more accurately the location is determined. After enabling the required sources, return to the location window (Fig. 2.78). Determine the current location by built-in means of the device or enter coordinates manually (enter exact coordinate values or specify location on the map).

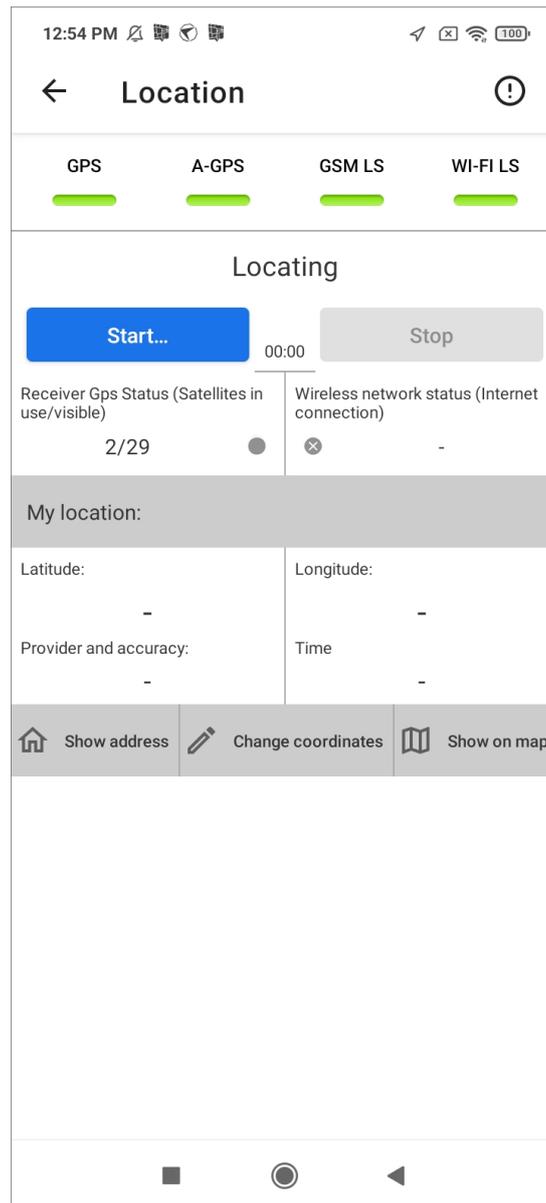


Fig. 2.78: Location window

In the upper part of the window, there is a status bar for location sources (GPS, A-GPS, GSM LS, WI-FI LS). It contains status indicators for location sources and a button to update the panel data. The indicator panel allows you to change the status of sources. Clicking on the selected indicator opens the extended panel with a list of system settings and permissions for source operation (Fig. 2.79). The controls allow you to change system settings and permissions by navigating to the appropriate settings windows.

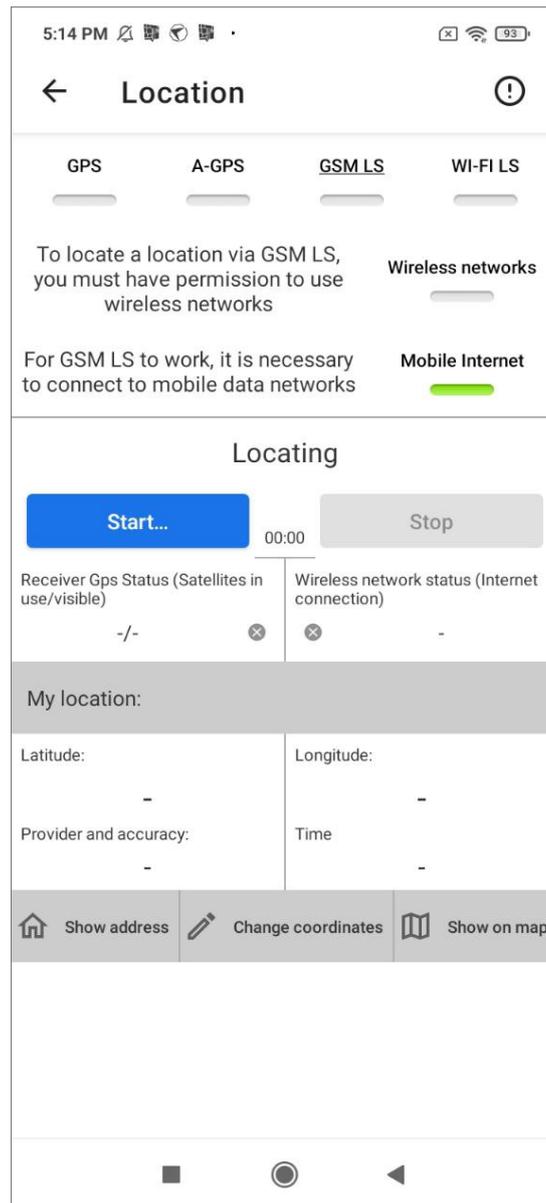


Fig. 2.79: Changing system settings for selected positioning source

To determine the location using the selected sources, click “Start”. The device’s location detection process begins, a timer starts. The number of used and visible GPS satellites is displayed in the “GPS receiver status” field (Fig. 2.80). When the position has been determined, an appropriate message is displayed. The process of determining (refining) the position continues. “My Location” field displays the coordinates found (in the WGS 84 ellipsoid coordinate system – Latitude/Longitude – EPSG:4326) and the accuracy of the found coordinates in meters. To stop the positioning process and refine the position, click “Stop”. Click “Use” to apply the found coordinates with the obtained accuracy.

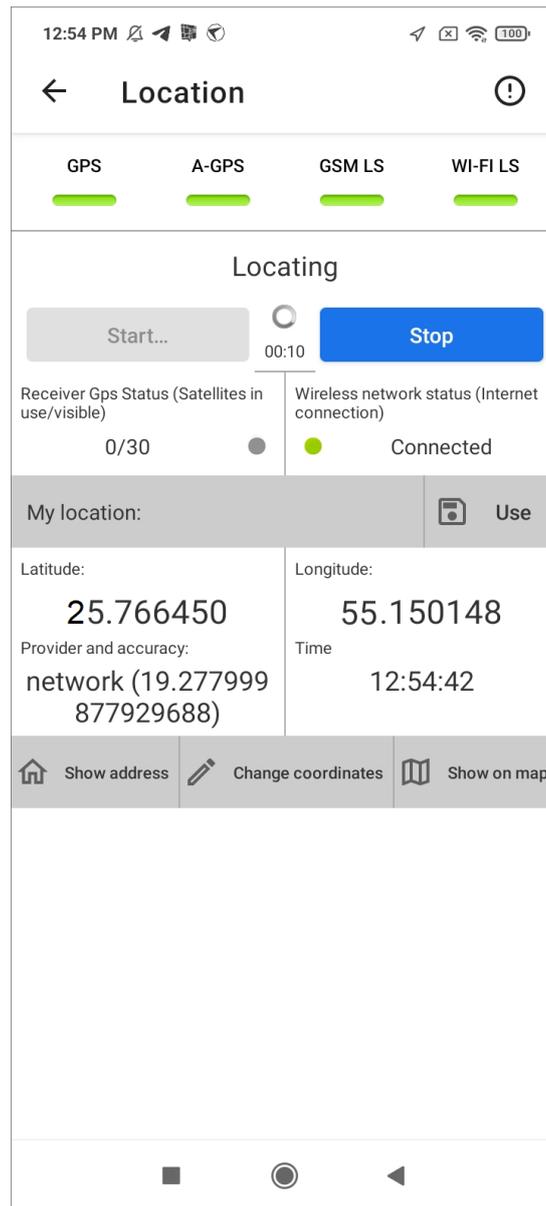


Fig. 2.80: Determining the location using selected sources

“Show address” button displays the address according to the found coordinates. “Show on map” button allows displaying and editing the found coordinates on the map. The attached location is marked with a red label. You can move the label by dragging it to the desired location. The exact changed coordinates are displayed at the bottom of the window. Use the “Change coordinates” button  in the “Location” window for manual input/editing of coordinates. You can do it similarly to changing task coordinates (*Geolocation of tasks* (page 64) section).

To edit an object, click the “geometry” task field. The “View Object” window opens, where you can edit the object positions (like when adding objects). To remove an object from the list, click “Delete”  in the object view window. When deleting, confirmation of the action is always requested.

## 2.9.2 Adding point objects

You can add a point (multi-point) object using the current location or by explicitly specifying coordinates on the map. After clicking “Add points”, the “Create a point” window opens (Fig. 2.81). The menu of this window contains a “Help” button for calling up help on adding points to the map. At the bottom of the window there is a “Location settings” button  for switching to the current location source settings window (for more information, see [Adding geometric objects on the map](#) (page 95)).

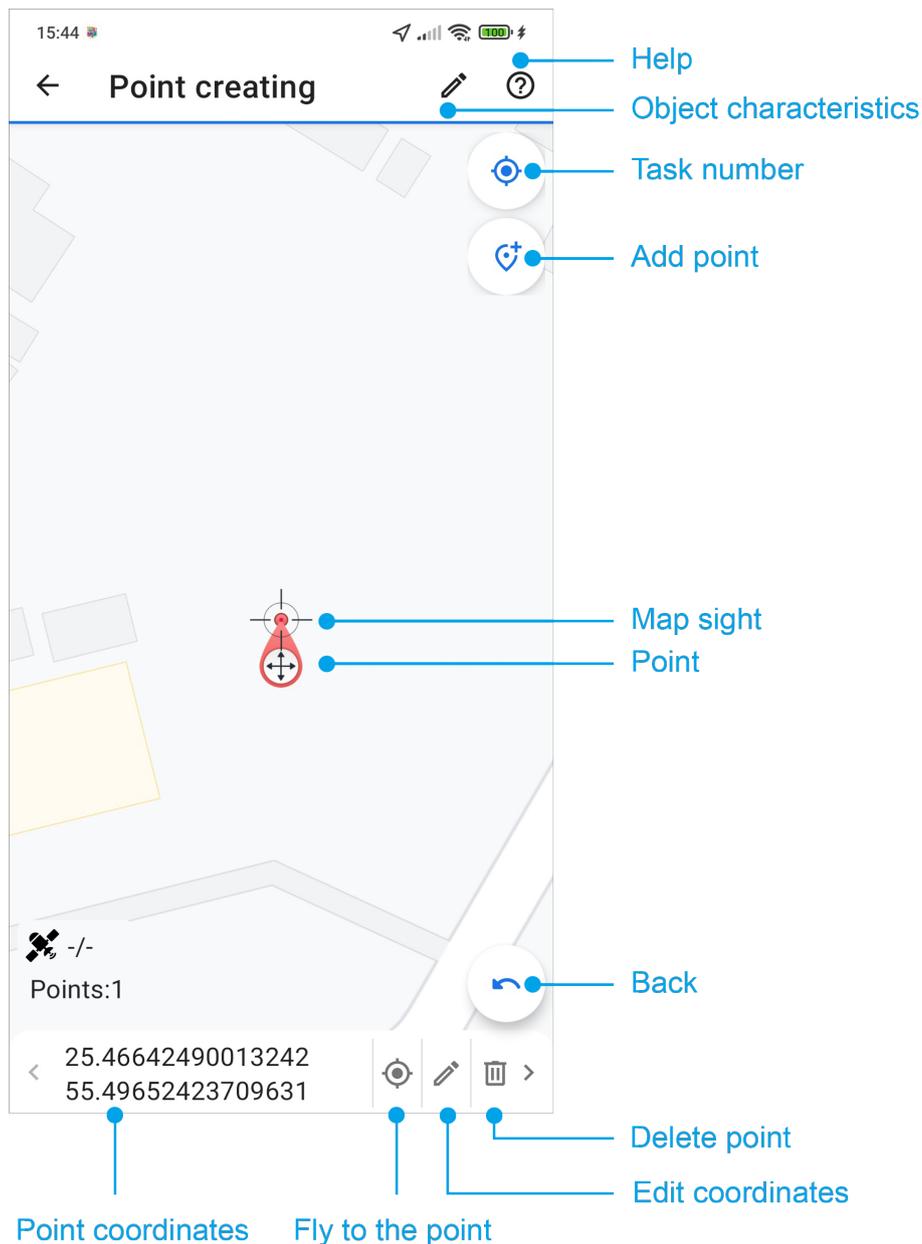


Fig. 2.81: Window for adding point objects

To add points on the map, do the following:

1. Place the map cursor at the desired position on the map and click “Add point”.

2. Mark the point with a long press.

During the process of adding points, use the “Back” button to delete the last point added. The number of points and their exact coordinates are displayed at the bottom of the window. Added points are available for editing. You can change point position in two ways:

- Select a point on the map by short pressing on it (the map cursor is placed on the point).
- Scroll through the list of points at the bottom of the window (from left to right or right to left). During the scrolling process the map cursor is placed in the current point.

To edit the coordinates of the selected point, you can move it. To do this, make a long press on the point and move it to another location, or click “Edit” and correct the coordinates of the point in the opened window. To remove a point, click “Delete”. After adding and editing points, you can add the name and description of the point by clicking “Edit” . You should fill in the information in the opened window. The point is saved automatically. When you leave the point creation window, the “Object properties” window appears. You can do the same actions to create a multipoint object (consisting of several points). In the point creation window the desired number of points is added instead of just one point.

### 2.9.3 Adding linear and polygonal objects

You can construct linear and polygonal objects using the current location, by explicitly specifying coordinates on the map, or by recording a route track. To add an object, click “Add Line” or “Add Polygon”. To record a route track, click “REC”  (Fig. 2.82). During the route track recording you can use the “Pause”  and “Stop”  buttons to control the recording process. During the recording, the following parameters are displayed in the map window: number of visible GPS satellites from the number of available GPS satellites, track recording time, and number of found points.

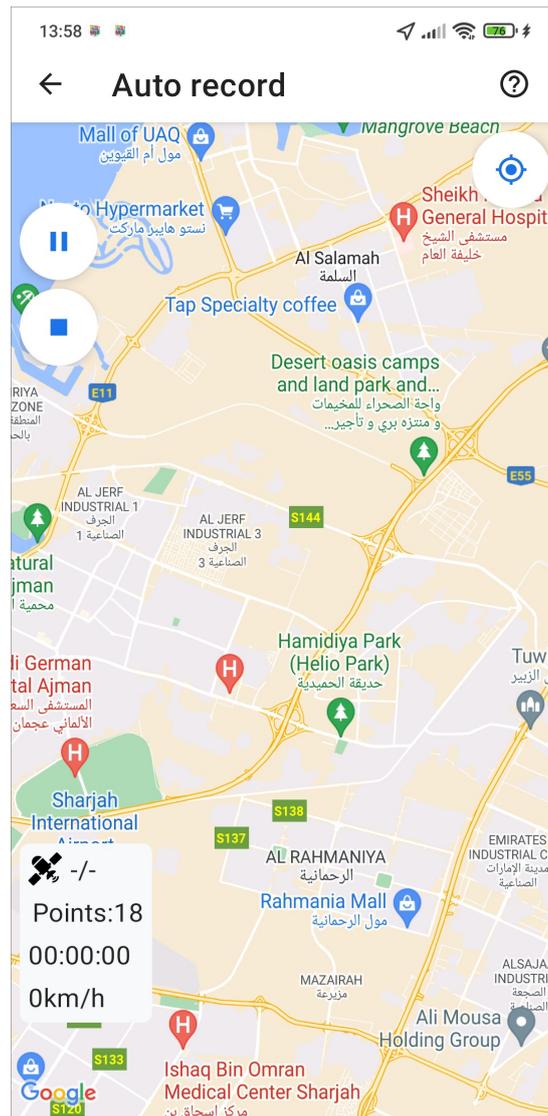


Fig. 2.82: Creating objects using route tracking

To add an object manually, mark the line vertices by long pressing on the map or place the map cursor in the desired location on the map and click “Add Point”. The fixed (specified) points are connected by a line. The line is closed into a polygon in case of creating a polygonal object. During the process of adding points, you can use “Back” button, which deletes the last added point. The number of points and their exact coordinates is displayed at the bottom of the window. Added vertices of the object are available for editing. You can change point position in two ways:

- Select a vertex on the map by short pressing on it (the map cursor is placed on the point).
- Scroll through the list of vertices at the bottom of the window from left to right or from right to left (map cursor is placed at the current vertex during the scrolling process).

To edit coordinates of the selected vertex you can move it. To do this, make a long press on the point and move it to another place or click “Edit” and correct the coordinates of the vertex in the opened window. To remove a vertex, click “Delete”. You can add the name and description of the object after adding and editing it. Click the “Edit” button  in the

upper part of the object creation window to do it. The “Object properties” window opens. Objects are automatically saved. If you leave the object creation window, the “Object View” window appears. Object can be saved without filling characteristics, then the date and time of creation is written in the object name.

## 2.10 Objects

### 2.10.1 Creating and managing objects

The “Objects” section is located on the navigation sidebar. The “Objects” window is intended for viewing the objects of interest of the organization, creating tasks to these objects, and viewing all existing tasks by objects. Objects of interest are represented as layers (Fig. 2.83). By default, the objects of the “Service objects” layer are displayed. When you click on the “Service Objects” line, a search box appears where you can select another layer.

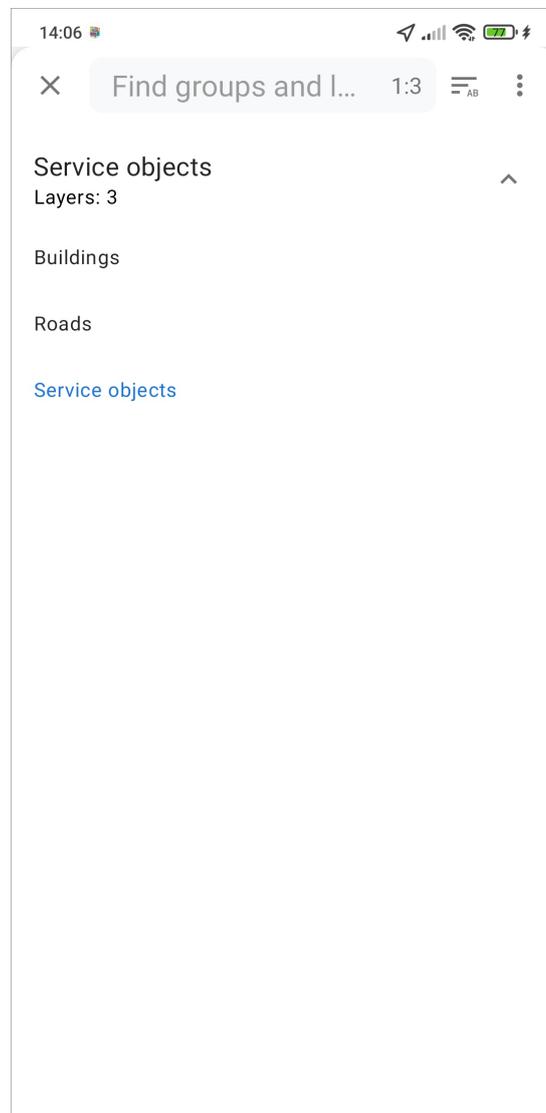


Fig. 2.83: Selecting a layer from the “Objects” list

Clicking  opens menu, where you can select the following actions for the layers:

- Update data.
- Expand groups.
- Collapse groups.

After selecting a layer, a window with a list of layer objects opens. To find an object quickly, use the sort and filter buttons at the top of the window (Fig. 2.84).



Fig. 2.84: Sorting and filtering objects

The sort button shows the attribute by which objects are sorted by default (object title). The default sort direction is ascending. You can also search by attributes in the sorting window (Fig. 2.85).

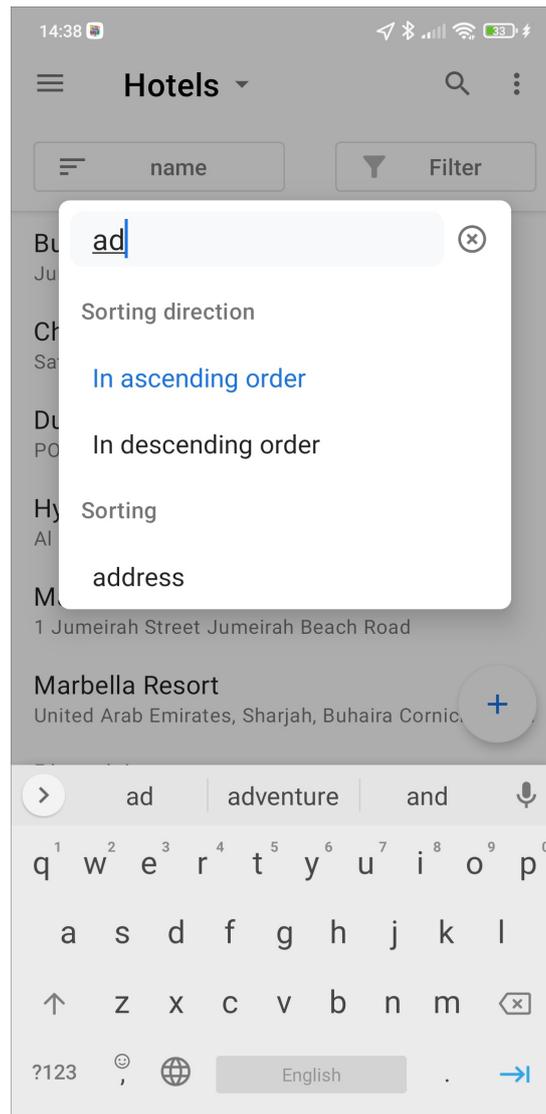


Fig. 2.85: Object sorting window

In the filter window, you can set the necessary conditions for displaying the list of objects (Fig. 2.86). It is possible to use logical AND/OR operators depending on the user's request.

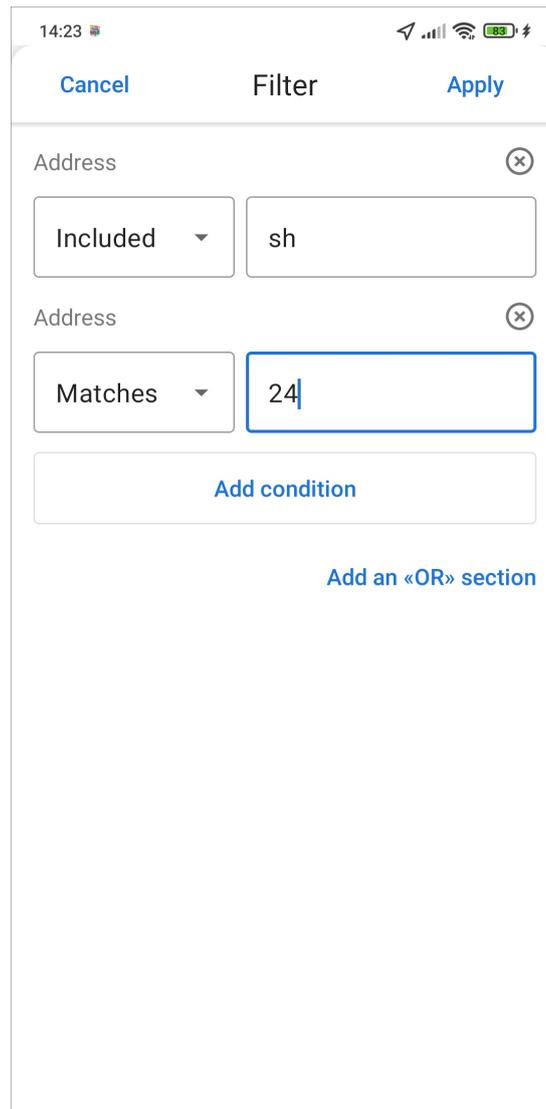


Fig. 2.86: Object filter window

You can search objects by their attribute fields, including those downloaded for offline use. The search only works on fields with the “For search” toggle turned on. It does not work on “Date”, “Date and time”, “Boolean”, “List,” nor on system fields of the “Linking to ...” type. You can also search objects using a QR code.



You can add new objects to layers by clicking , filling in attributes and coordinates, adding files and links if necessary. The “Current Location” block is automatically filled if geolocation is enabled on the phone and the application is given permission to determine the geolocation. If geolocation is inactive, it remains blank. You can stop auto-detection of the current location and delete existing coordinates of the object. To do this, go to the “Current location” block and click “Clear”. The coordinates are deleted and the “Not filled” message appears. When you select the block again, the map opens, where you can place the object in the desired location (Fig. 2.87). You can repeat the operation if necessary.

16:59

Object creating

Number of photos: 0 ADD PHOTO

name •  
Motel Qweens

address •  
Rd Street 345

organization •  
LLC Cleaning

material •  
asphalt

object •  
DoubleTree by Hilton Sharjah Waterfront  
Hotel & Residences

responsible employee •  
Butler Jacob

Current location  
25.45429, 55.78 CLEAR ALL

ADD LINK

ADD A FILE

Fig. 2.87: Changing object coordinates

The “Date” and “Date+Time” fields support manual data entry and date selection from the built-in calendar, time selection from the built-in clock. After filling in all the data for the object, send all changes to the server by clicking . The object name should be filled in. If the title is not filled in, id is specified as the name of the object.

To make a change, first select a layer, then use the text search or the search by QR code to find the object of interest, and click on it. In the opened “Service Object” window, click , make changes, and send them to the server by clicking . If you exit the service object edit window before the changes are sent to the server, the application specifies if the changes should be sent or deleted (Fig. 2.88). The time for which the object is up-to-date is indicated under the title in the “Service Object” window. This is important for working with loaded objects. If you forget to clear the cache, the up-to-date time will be different from the current time, the time of uploading to the cache will be indicated there.

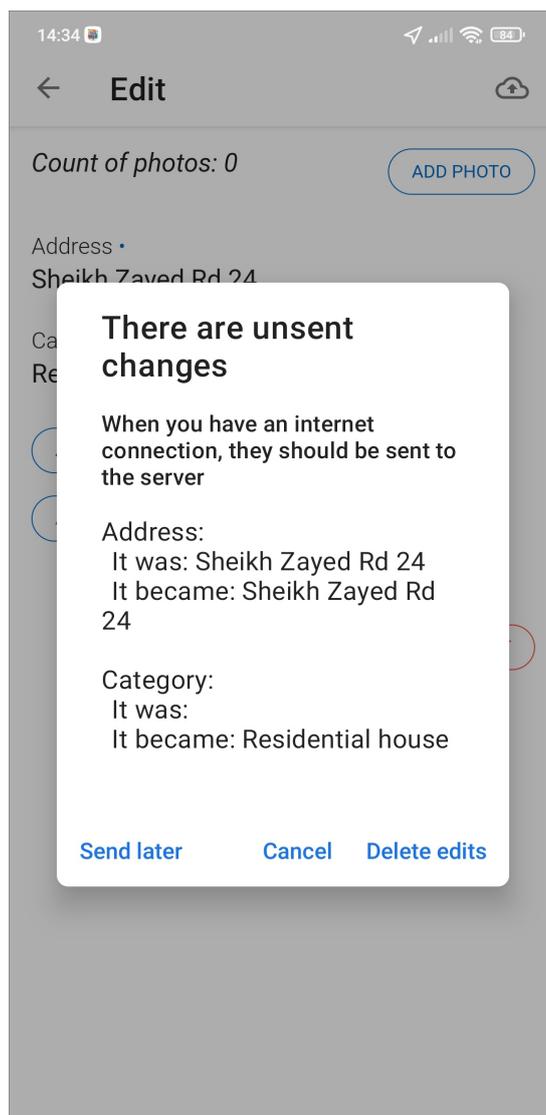


Fig. 2.88: Submit or discard changes

When you select “Send later”, the application saves the new object in the cache and assigns it the “Draft” status. You can create a draft service object online and offline. The created draft appears in the “Drafts” subsection of the Service objects list interface (Fig. 2.89).



Fig. 2.89: “Object drafts” subsection.

Next to the draft, there is a  button for sending a draft to the server from the object list interface. To send all new objects or changes to objects at once, click  and select the desired item. The window menu contains the following items (Fig. 2.90):

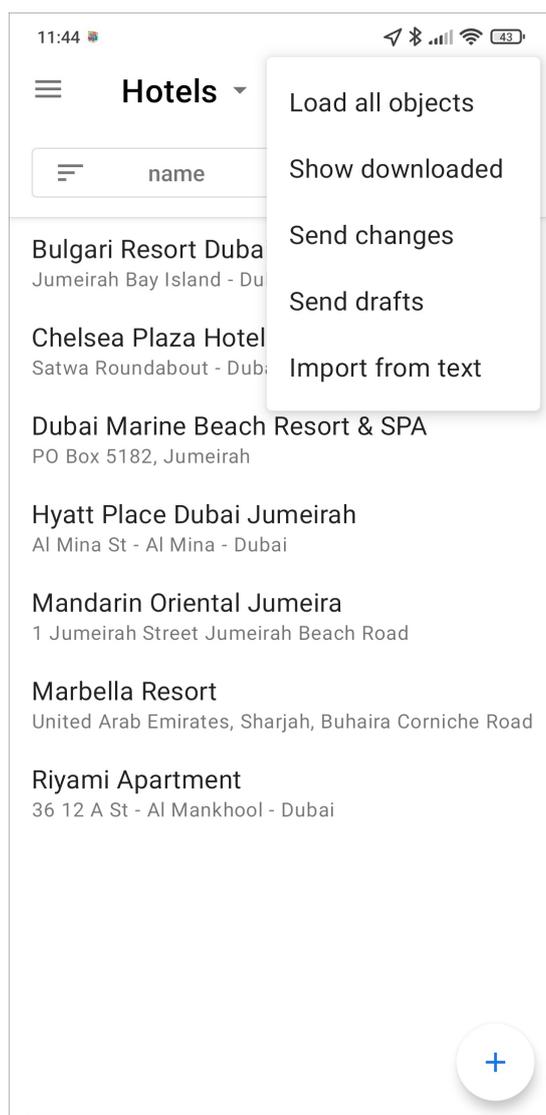


Fig. 2.90: Service objects list interface window menu

- Load all objects – loads all layer objects in the cache to work with them offline.
- Show downloaded – shows the object list that displayed in offline mode.
- Send changes – sends changes of objects to the server.
- Send drafts – sends all new objects to the server.
- Import from text – uploads new objects into the layer from the text.

In layers and tables, you can use fields that support single or multiple selection of clusters, organizations, users, roles, types of work, and priorities. To do this, add a field of the corresponding type in the system. For example, to add an organization to an object, create a field of the “Organization connection” type (`sys_org_id`) in the appropriate layer or table. After that, you can select value in the application from a dropdown list. If you need to specify multiple users, create a field of the “User connection (array)” type (`sys_usr_ids`) and fill it in the application (Fig. 2.91).

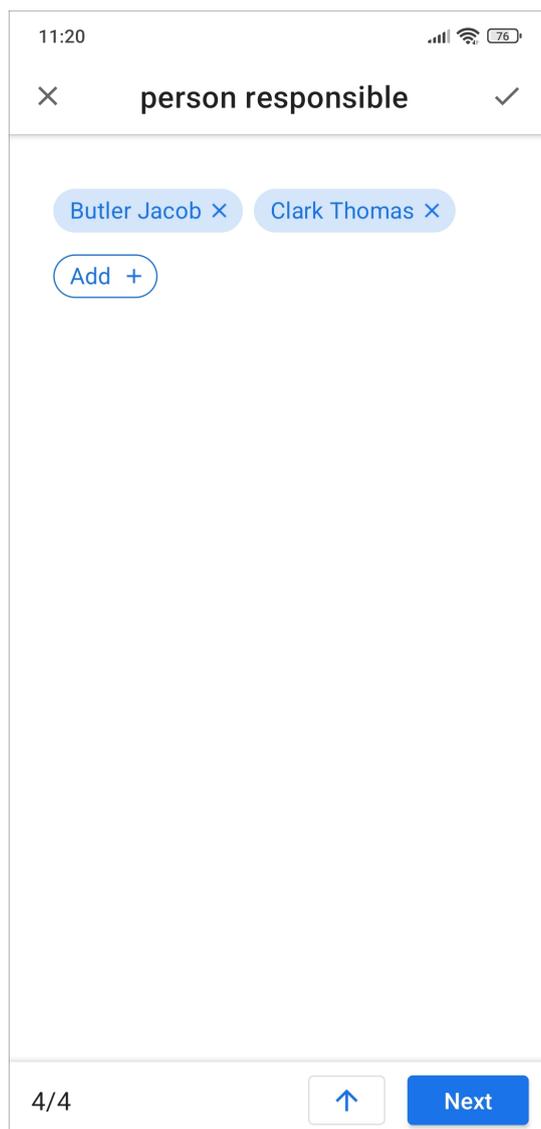


Fig. 2.91: Adding users to a layer/table field

**Attention:** Regardless of the presence of an Internet connection, downloaded service objects remain in the state at the time of download until the user updates the data. It is necessary to update the data and download the objects again before starting to work with them.

To work with the service objects in offline mode, load all the layer objects into the application cache. Open the layer objects list, click  and select the “Load all objects” item. You can also do this from the “Create task” window when you select a service object. The “Downloading started” information message appears at the bottom of the screen. After completing the download, the “Saved objects are currently loaded” message appears at the top of the list of objects.

If service objects are loaded and there is an Internet connection, objects are searched only by the data in the internal storage until the user updates the loaded data.

To remove loaded service objects from memory, clear the cache (Settings/Clear cache, for

more information, see [Application settings](#) (page 166)). When clearing the cache, information about service objects and loaded tasks is deleted.

**Attention:** You can delete an object only while connected to the network.

You can also delete the object in the window for editing the service object. Click “Delete object” to do this. To see the object on the map, click . The map window with the object’s point opens.

To see all the tasks related to the selected object, click “Related tasks” (Fig. 2.92). A list of all tasks attached to the object opens, displaying the total number of tasks attached to the object. To create a new task with a link to the selected object, click “Create task” in the “Service object” window. For more information, see [Creating new tasks](#) (page 40).

Layer name and name of the object are displayed in the task. The object name format is configured in the ActiveMap Web.

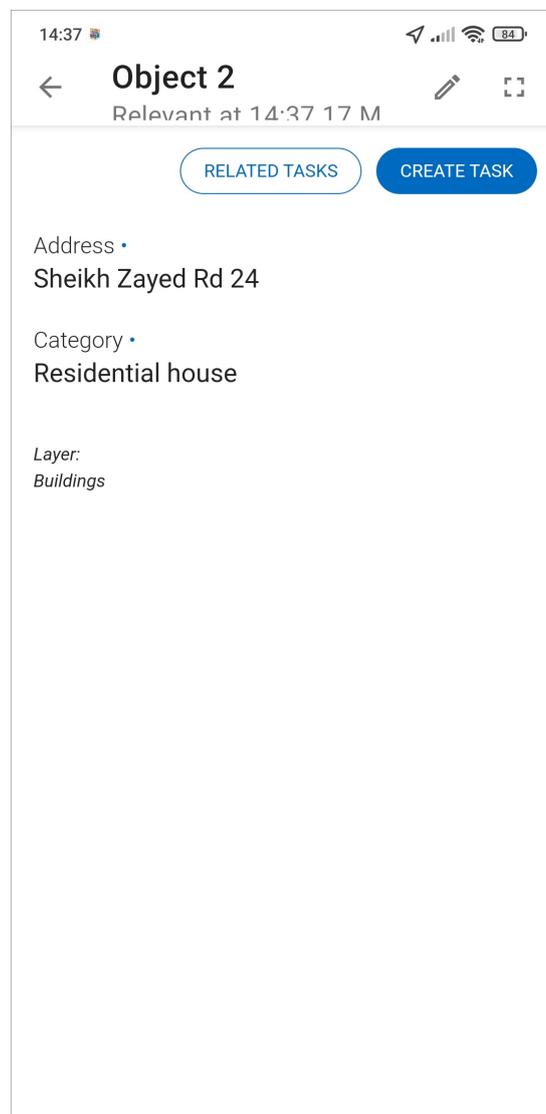


Fig. 2.92: “Service object” window

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**Hint:** Similarly, you can create a task for any object in any available layer in the “Map” section.

---

## 2.10.2 Importing service objects

**Attention:** The import of service objects is possible only with Internet access.

You can use bulk import to add new objects. For correct import, consider the following:

- You must have rights to edit the layer.
- The layer must have a title with the “text” field type for loading the imported information to (if there are several fields, the first one should be of the text type).
- Empty lines, as well as spaces at the beginning and the end of a line are not taken into account during import.
- The total limit for uploading objects via import must be more than 0.
- You cannot create a new layer in this way.
- The objects will not have geometry.
- You cannot add any other attributes except the name.

First, prepare a text for import with object names separated by commas, or a text list with one object name on each line. To start the upload, go to the “Objects” section. Select the layer and click . Next, select “Import from text”. A window for mass object creation opens.

Clicking  opens a window where you can choose the separator between the objects. Then click “Paste from clipboard”. If necessary, you can add objects manually. After all objects are specified, click “Create” (Fig. 2.93).

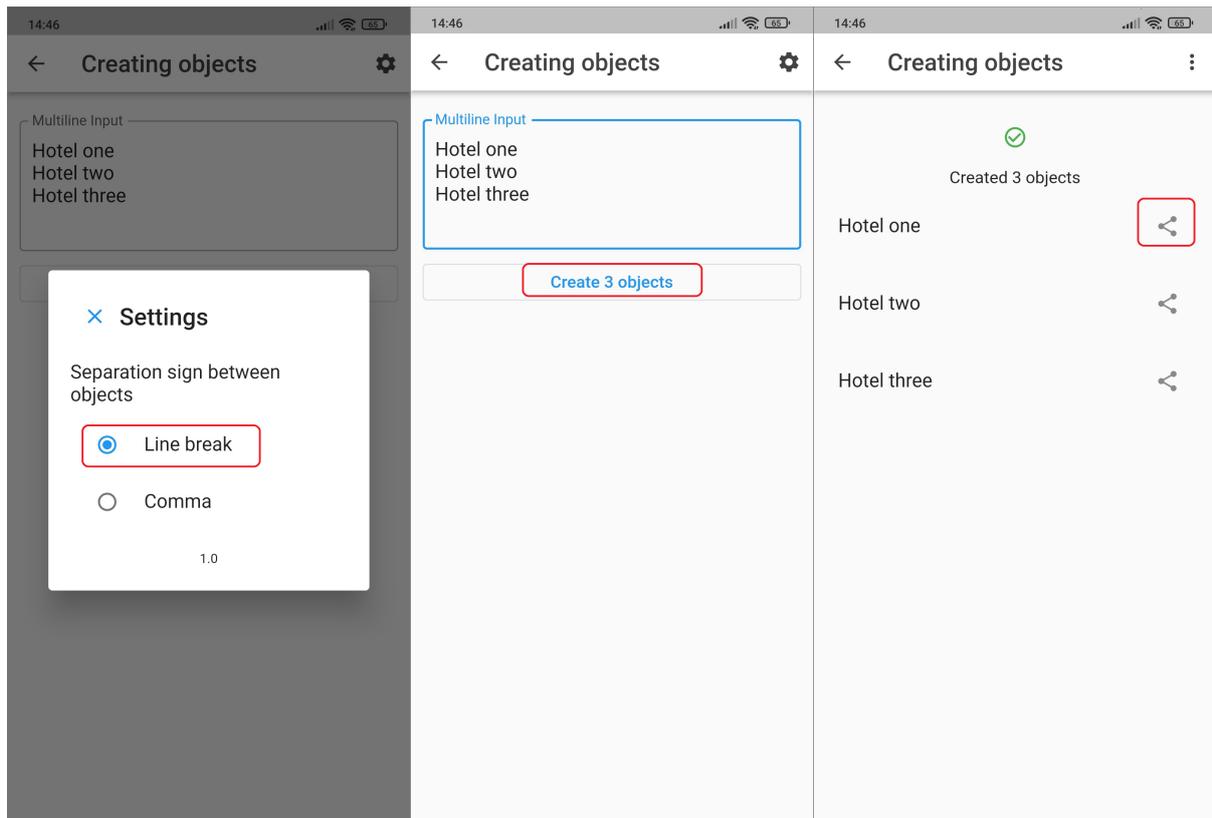


Fig. 2.93: “Import service objects” window

A list of created service objects appears on the screen. If needed, you can share the links to the objects with other users.

**Attention:** If you try to upload already imported objects into a layer, the system generates an error.

## 2.11 Working with the map

### 2.11.1 Managing layers

In addition to georeferencing of tasks, the application offers the following features for working with geospatial data:

- Online visualization of georeferenced data (location of users, tasks by steps of work, service objects, information layers);
- Search in the list of information layer objects;
- Obtaining cartographic information (list of layers, objects, their attribute data and attached media files at a selected point on the map);
- Viewing tracks of user movement for the selected day;
- Creation of tasks from a layer of service objects;

- Creation and assignment of tasks from the user’s monitoring window.

These features are available in the “Map” section on the navigation sidebar. The “Map” window displays an electronic map of the world. You can change the scale of the map with pinch and spread motions. To navigate, move the map to the desired area.

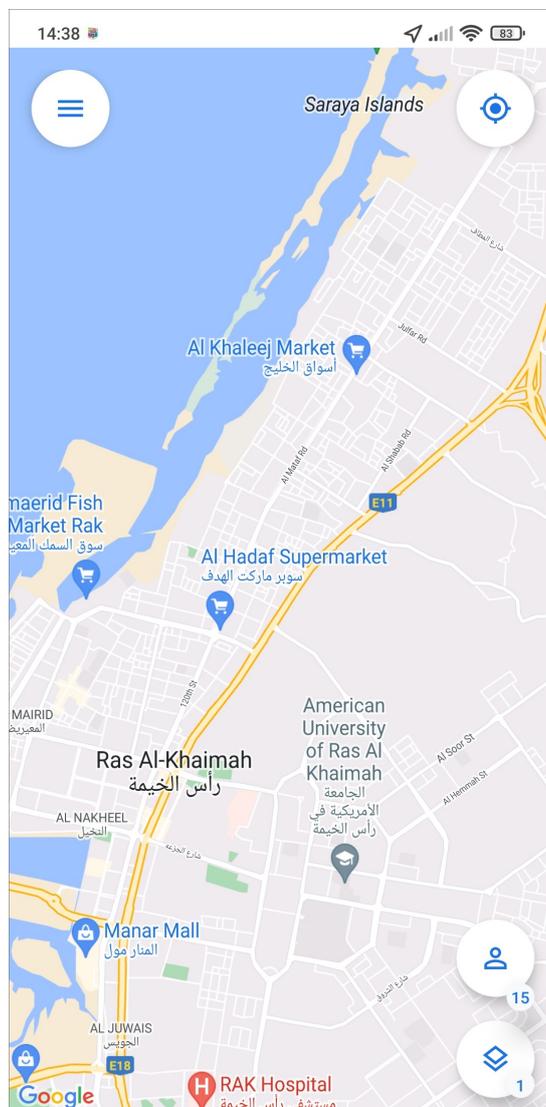


Fig. 2.94: Map window

The “Map” window displays (Fig. 2.94):

- Enabled layers on the map, including tasks;
- Location of users – users are displayed as icons of different colors, depending on their last activity;
- Status of the last user geoposition monitoring data transfer;
- “My location” button;
- “User management” button with the number of connected users;
- “Manage layers” button with the number of enabled layers;

- Navigation sidebar button .

The Layers control panel is designed to work with layers and view georeferenced tasks on

the map. The panel opens by clicking the Layer control button  at the bottom of the window. The Layer control panel displays groups of layers available to the user, including the “Tasks” group (Fig. 2.95).

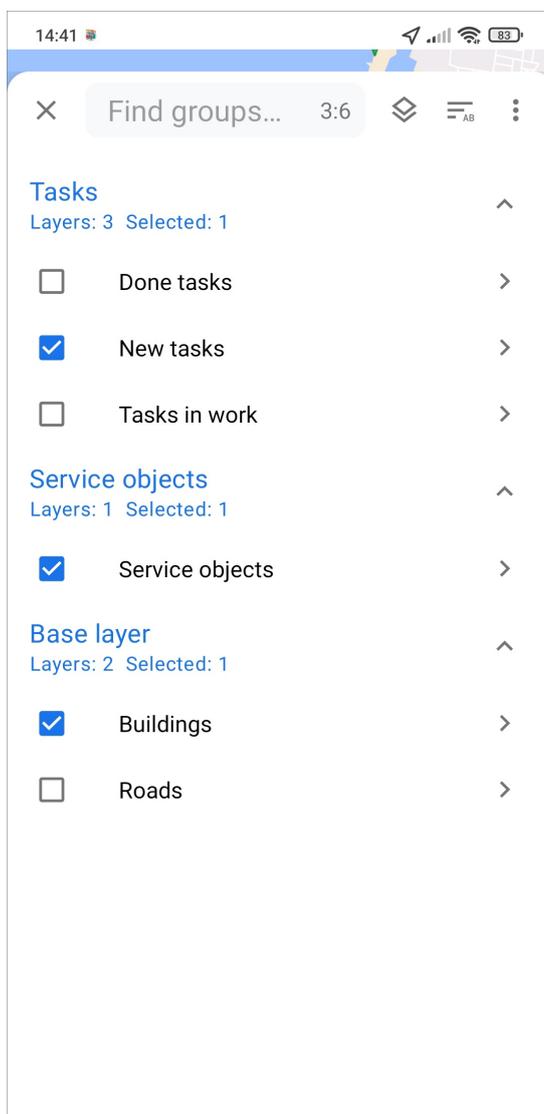


Fig. 2.95: Layer control panel

To display layers on the map, check the visibility control located on the left of the layer name. Objects of the selected layers are displayed on the map. To make it easier, there is a search function in the Layer Management window to sort the layers in alphabetical order or by the sequence number. Clicking  in the upper right corner opens the window menu with the following items:

- “Refresh data” – updates the data of layers and groups of layers.
- “Turn off all” – disables the visibility of all enabled layers on the map.

- “Expand groups” – expands all available layers in groups.
- “Collapse groups” – hides layer names (makes visible only layer groups).

If you click on the “Tasks” group, a list of layers is displayed according to the steps of task completion. If you put a tick in the layer visibility control field, the tasks are displayed on the map with geographical reference to the area. The number of groups and layers is displayed to the right of the search field. If the search field is empty, the total number of groups and layers is displayed on the right. When you enter values in the search field, the number of groups and layers satisfying the search conditions is displayed on the right.

Clicking on the selected layer opens a list of layer objects. To move to the entire layer on the map, click  and select “Fly to Layer”. Other items are also available in the menu:

- “Load all objects” – loads all objects of the layer into the cache for working with them offline.
- “Show downloaded” – shows the list of objects to be displayed offline.
- “Send changes” – sends object changes to the server.
- “Send drafts” – sends all new objects to the server.

To find the required object in the list, the application implements a search for objects by title (Fig. 2.96). The title is configured in the ActiveMap Web web system.



Fig. 2.96: Search in the object list

To get attributive information, find the required object in the list of layer objects and select it. The “View object” window opens, containing attributive information on the selected object (Fig. 2.97). Click “View attached files” to view media files attached to the object. To navigate

to an object on the map, click . To get attribute information (list of layers, objects, their attribute data, and media files) at the selected point on the map, mark a point on the map by tapping. The “View objects” information window with the list of layers and objects that are located in the marked point of the map appears. This window also contains information about the number of layer objects at the selected point. To get detailed information about an object, select the object in the list by touching the screen. The “View object” window opens. The application also allows adding, editing, and deleting layer objects if the user is granted the proper access rights (for more information, see *Objects* (page 104)). To edit or delete an object, click  and perform the necessary actions on the object in the opened window.

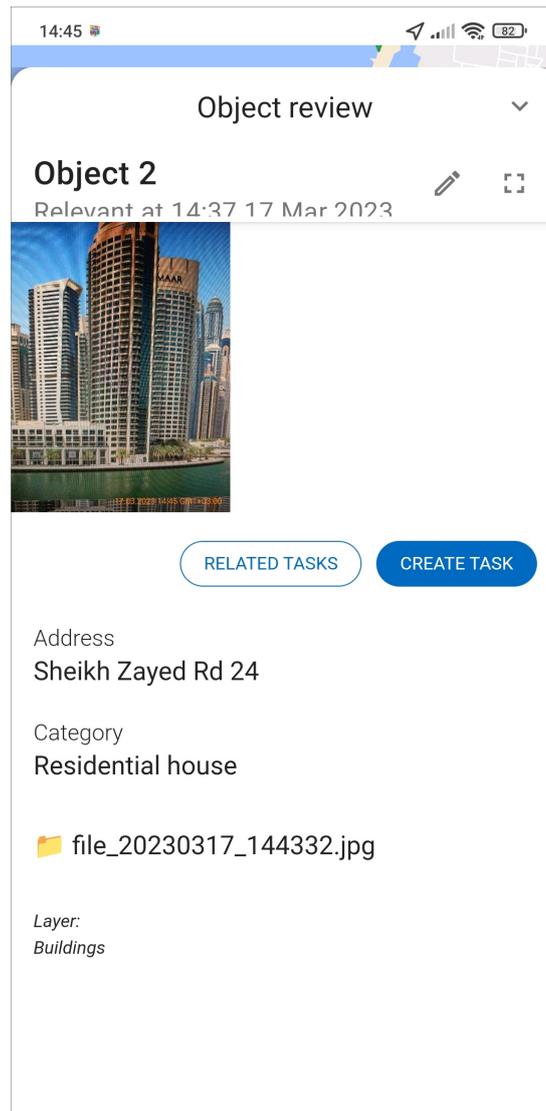


Fig. 2.97: “Object review” window

## 2.11.2 Users on the map

### Viewing users and their movements

The “Map” section provides the ability to track user locations. This function is available for inspectors and administrators. Users with other roles can only track their own movements. This feature allows monitoring the movement of executors in real-time and viewing their movement history. In addition, it allows obtaining the following information about the user: movement speed, battery level, last data transfer time, distance, number of assigned tasks in work, membership in organizations, role in the system, account information, and network connection status.

To get information about users, click “Manage users”  in the “Map” window. The button also displays the total number of users authorized on the server. The opened window displays a list of users formed according to activity data (Fig. 2.98). By default, users are

sorted by the time of the last data transfer.

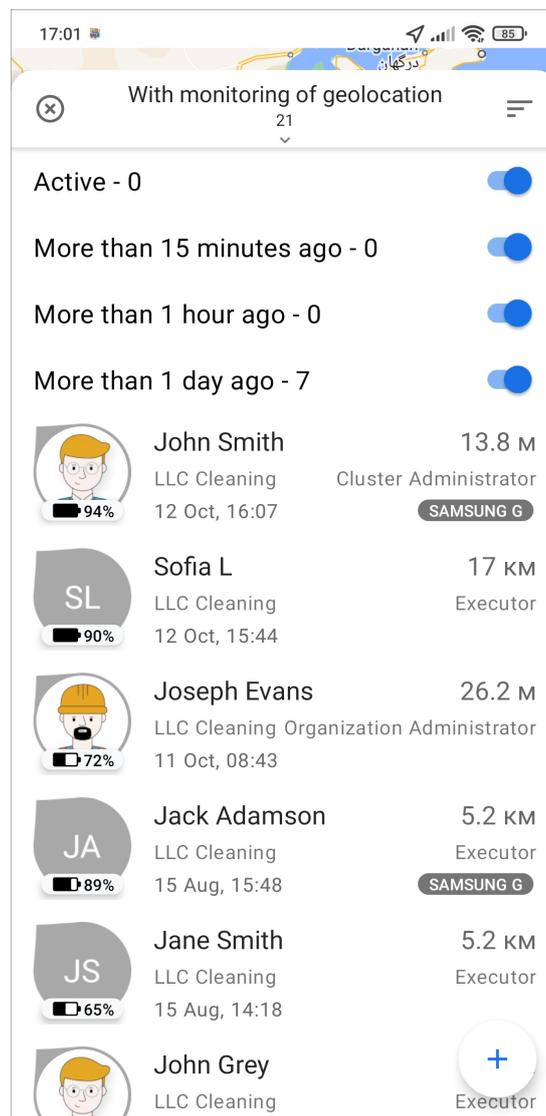


Fig. 2.98: “Users” window

User icons on the map change color depending on when the coordinates data was last transmitted to the server. You can change the intervals for the activity of the latest data transmission in the settings of the “Users” system layer in the ActiveMap Web. By default, the following activity intervals of the last transmitted coordinates by users are set:

- Green color – coordinates sent to the server less than 15 minutes ago.
- Orange color – coordinates sent to the server less than 60 minutes ago.
- Red color – coordinates sent to the server less than 24 hours ago.
- Grey color – coordinates are missing for more than 24 hours.

Using the switches located to the right of the categories, you can filter users according to their activity. You can change user display order using quick filters  in the top right corner (by name, time, and distance from the user). Also you can use the advanced filtering

With monitoring of geolocation  
16

, which displays a list of possible characteristics (Fig. 2.99). By default,

the filter displays all users whose geolocation tracking is enabled.

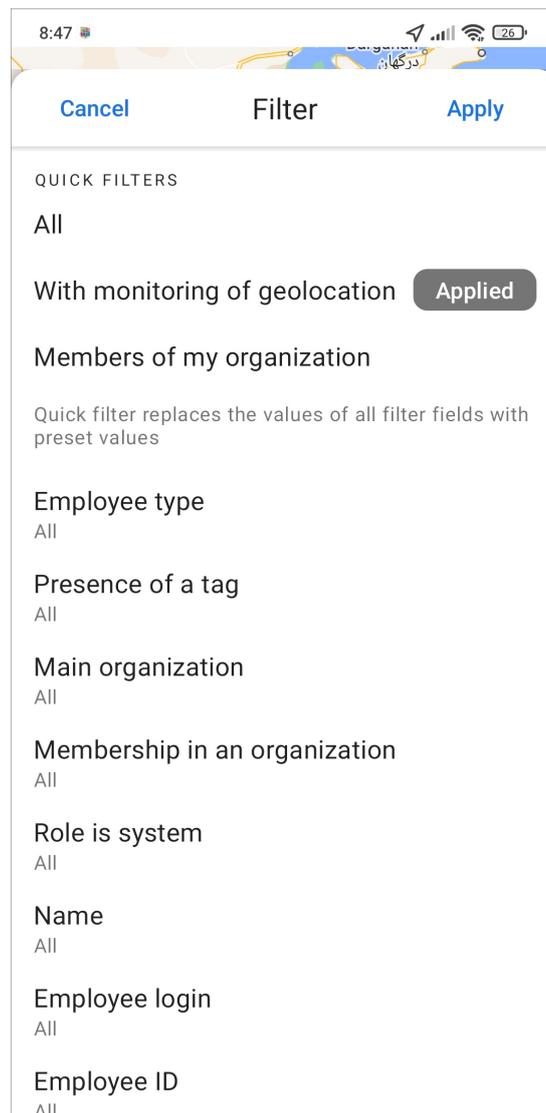


Fig. 2.99: Advanced user filter window

To get information about the user, click on the user card in the list or on the map. The system displays the user's position on the map and information about the movement speed, battery level, time of last activity, and distance to the user (if set correctly). In addition, you can see the user's track. To do this, click , select the day and time interval. The track is displayed, where you can move the user's location marker and view information at each point of movement. The track appears on the map, but you can view the track points as a list (Fig. 2.100). To do this, click . To update the user's location data, click .

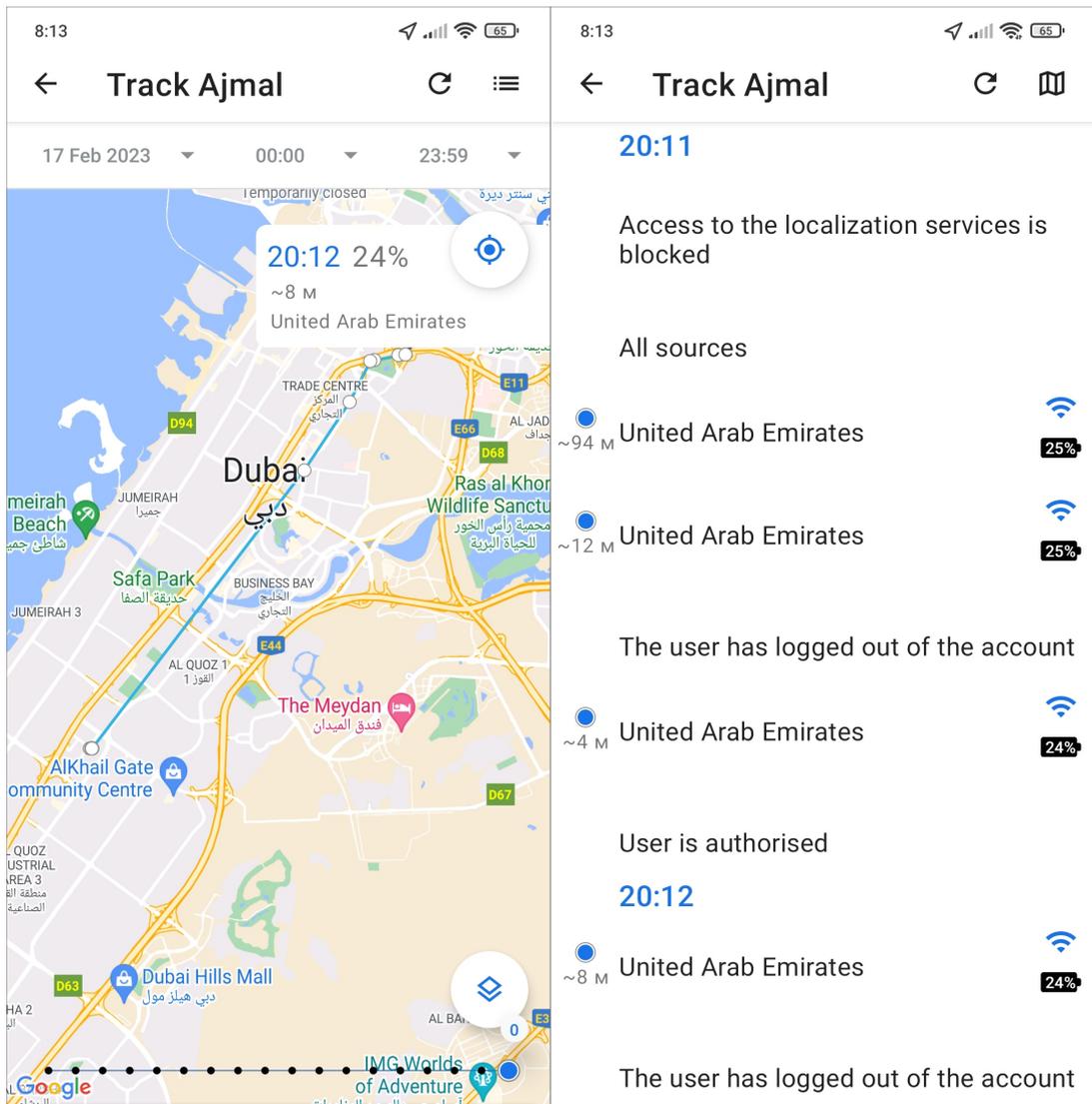


Fig. 2.100: Viewing the user's track

## Creating users

To create new users, go to the navigation menu section *Map* → *Manage Users*  and click  (Fig. 2.101). This functionality is not available to all user roles.

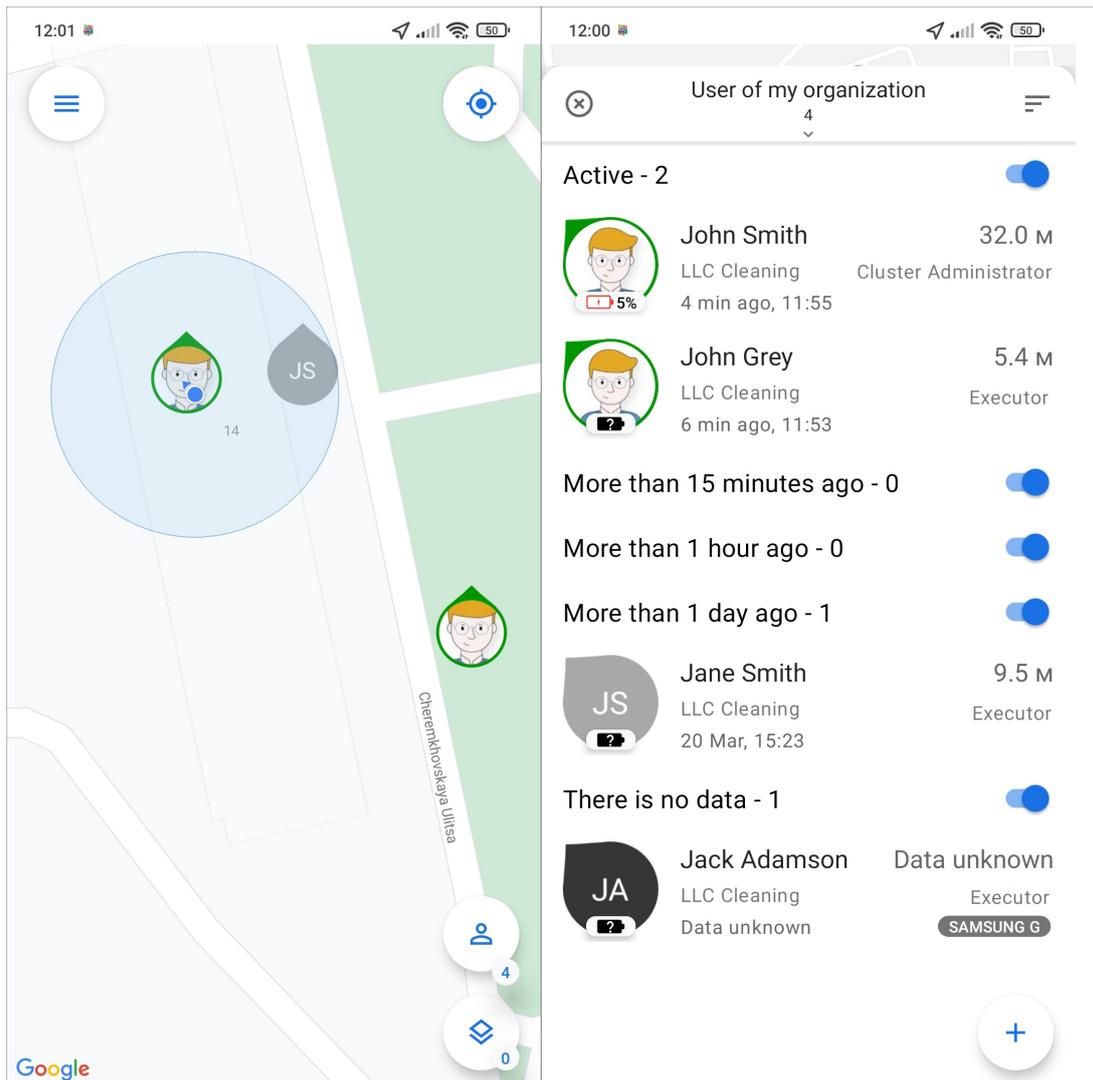
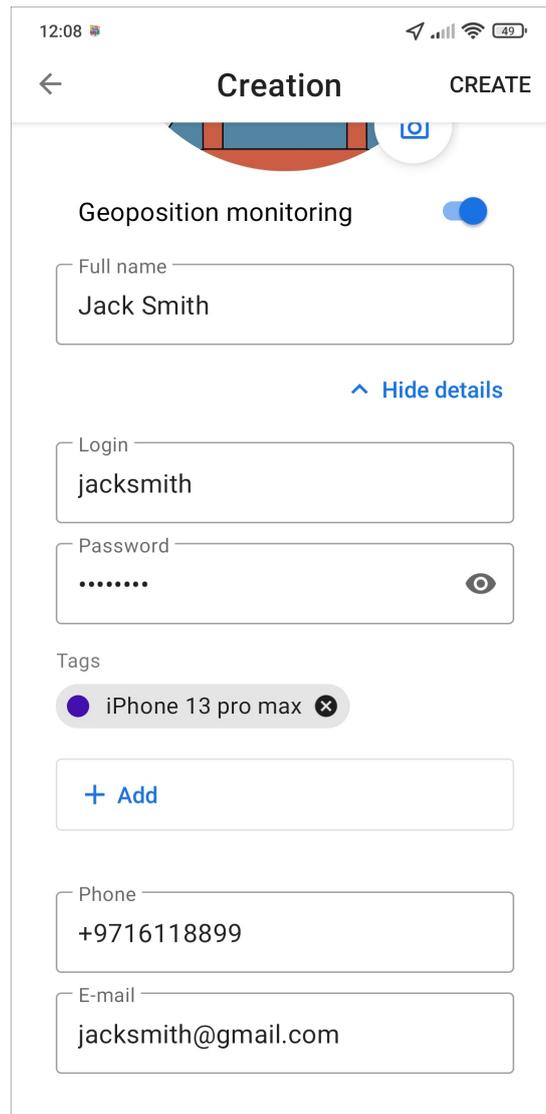


Fig. 2.101: Adding a new user

In the opened window, fill in the data and click “Apply” (Fig. 2.102). In this window, you can enable/disable geolocation monitoring.



12:08

← Creation CREATE

Geoposition monitoring

Full name  
Jack Smith

^ Hide details

Login  
jacksmith

Password  
.....

Tags

iPhone 13 pro max

+ Add

Phone  
+9716118899

E-mail  
jacksmith@gmail.com

Fig. 2.102: Filling in the data for the new user

A new user appears in the system. To send a link to an employee, go to the profile of the user, generate a personal link, and send it via any convenient messenger (Fig. 2.103). You can create the link an unlimited number of times for any registered user.

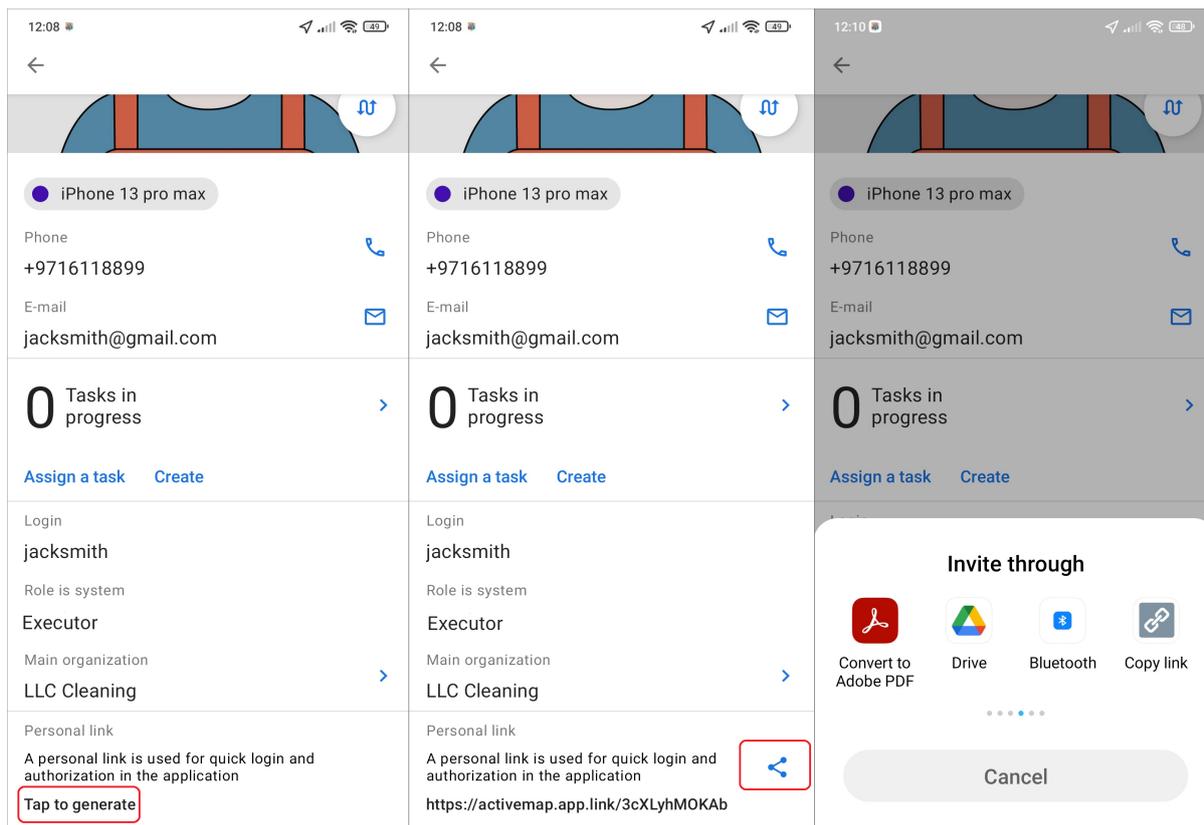


Fig. 2.103: Generating and sending a link for a new user

The employee who receives the link opens it and immediately logs in if the application is installed on the device (Fig. 2.104). If the application is not installed, the link opens in the Google Play store, and authorization appears after the application is installed.

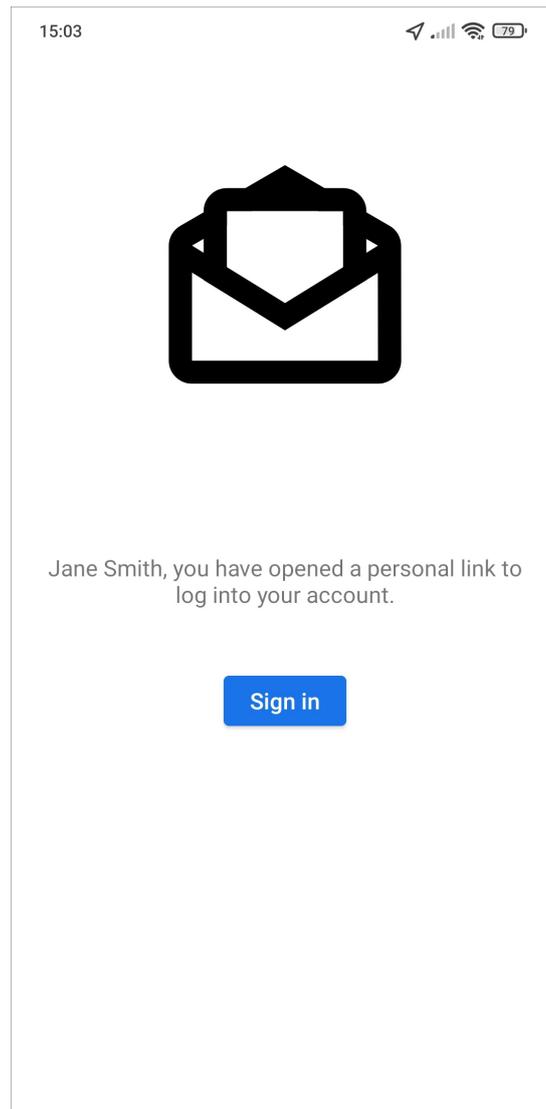


Fig. 2.104: User authorization via link

## Managing user accounts

To make changes to a user profile (not the current one), find the user in the navigation sidebar

*Map* → *Manage Users* . You can use the filter options . Click on

the user and open the account card. Then click on edit profile , make changes, and click “Apply”. You can access the current user’s profile from the navigation sidebar (*Account management and roles in the system* (page 24)).

The application has functions for blocking and deleting users. These functions are not available to all roles. To block a user, find the user in the navigation sidebar *Map* → *Manage*

*Users* . You can use the filter options . Click on the user and open

the account card. Then click on edit profile , scroll down, click “Block”, and confirm

your action (Fig. 2.105). The user disappears from the list of users in the application and will not be able to authorize in the application. A user can be unblocked only in ActiveMap Web.

Fig. 2.105: Editing user profile

To delete a user, find the user in the navigation sidebar *Map* → *Manage Users*  using the filter parameters . Click on the user and open the account card. Then

click , scroll down, click “Remove”, and confirm your action (Fig. 2.105). The users cannot delete the account under which they are currently authorized.

## 2.12 Schedules

The application allows creating, editing, and deleting schedules. This section is available for administrator and inspector roles. Administrators can edit, whereas inspectors can only view. Schedules becomes necessary when there is a large number of planned tasks of a similar type, that is, for tasks that should be performed constantly at certain time intervals.

When you select the “Schedule” section of the side navigation menu, the list of existing

schedules opens. To create a schedule, click “Add”  in the lower right corner. Specify the name of the schedule, select the creating organization, and click “OK” in the opened window. Leave the organization blank for using the schedule by multiple organizations. After that the “Schedule” window opens, where the author, title, organization, and due date are indicated. Add existing task templates or create new ones, specify the start time (it can be deleted/disabled) and dates for creating the tasks (Fig. 2.106). The schedule is created according to the time zone specified in the cluster (if available) or according to the system’s time zone.

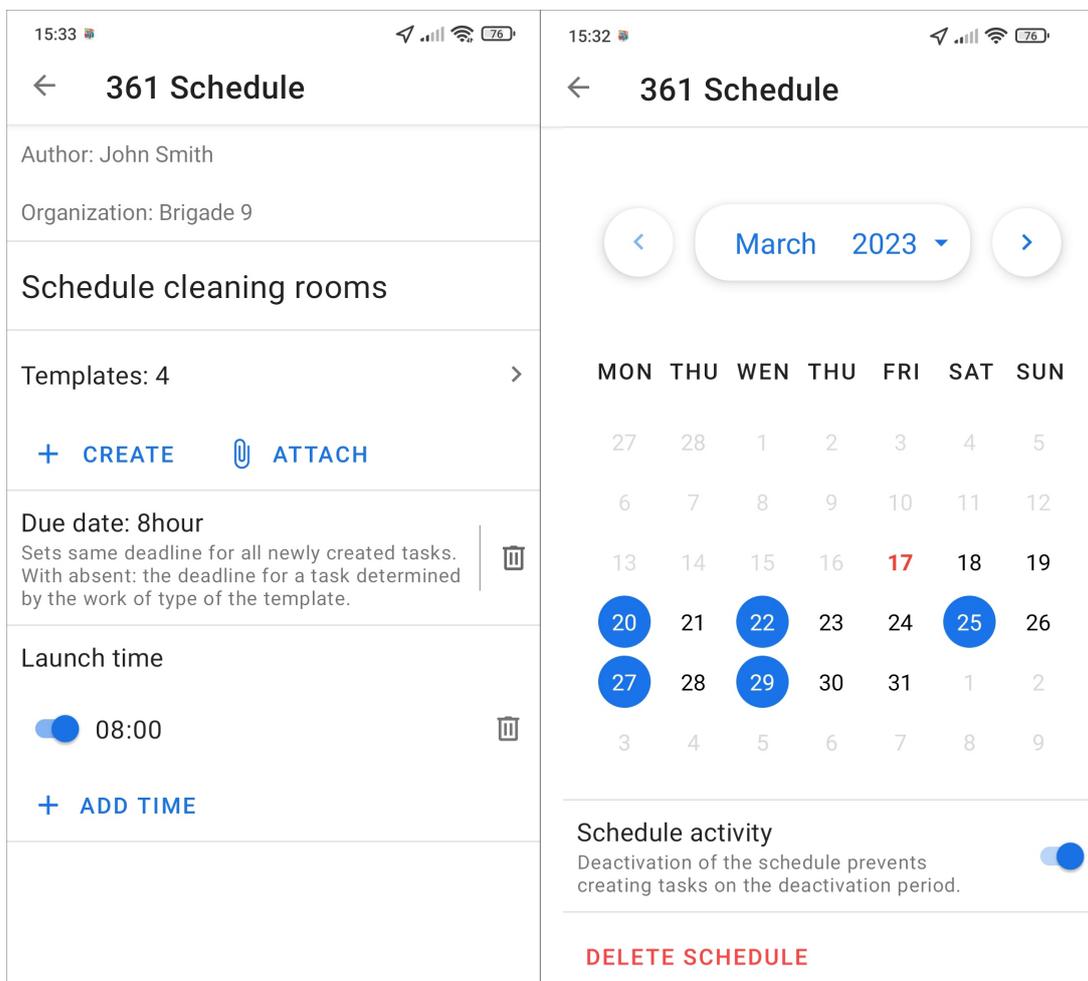


Fig. 2.106: Creating a schedule

You can also disable the schedule in this window to stop creating new tasks based on templates and remove the schedule from the system. To disable and enable the schedule, use the switch located to the right of the “Schedule Activity” block.

To create a new template task, click **+ CREATE**. Fill in the form for creating a task template (similar to creating an operational task *Creating new tasks* (page 40)). If the organization that created the template differs from the organization that created the schedule, the system does not allow attaching the task template to the schedule and gives an error. To attach a previously created template, click **📎 ATTACH** and select the required task template from the list. If the task template is not displayed in the list, clear the filter (for more information, see *Task filter and advanced sorting* (page 32)).

The schedule is created online. To exit the schedule creation mode, click “Back” arrow in the upper left corner. To edit the schedule, find the necessary one in the list of schedules and click “Edit” (Fig. 2.107). This window also shows the total number of schedules in the system and the number of template tasks in each schedule. The schedule editing window is identical to its creation window.

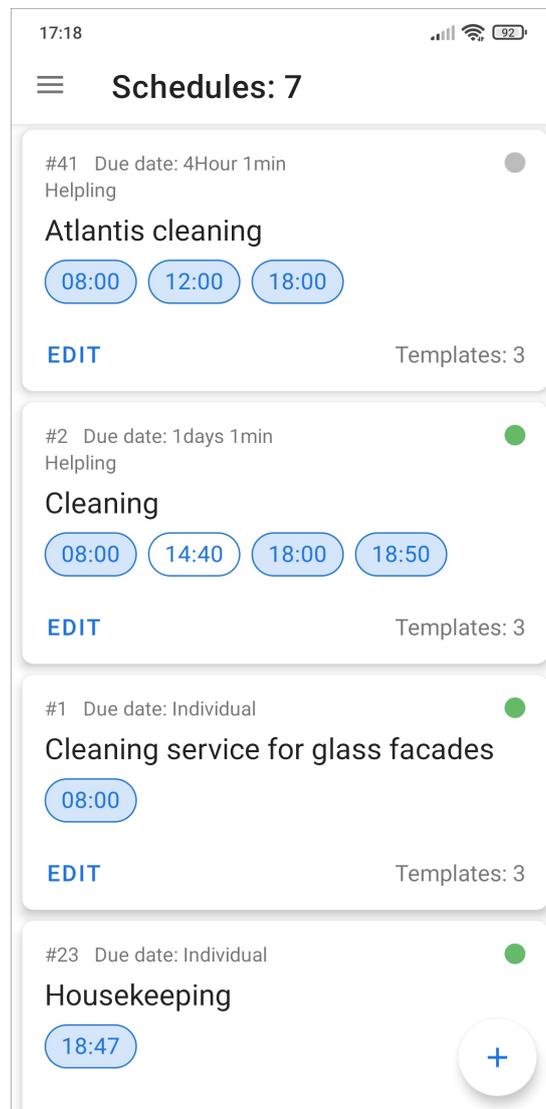


Fig. 2.107: List of schedules

You can delete the schedule in the editing window by clicking “Delete schedule” at the bottom of the window.

To detach a task template from a schedule or delete a task template from the system, click

on the field with task templates in the schedule editing window. Press and hold on the task template until the toolbar appears. Then confirm the selected action.

**Attention:** If you delete a task template, it is removed from the system. To remove a template from the schedule while keeping the template task in the system, you need to detach the task template.

## 2.13 Administration

The section is available to users with the Organization Administrator, Cluster Administrator, and System Administrator roles according to their rights. It allows managing roles and certain task parameters, as well as the editing data tables and dictionaries (Fig. 2.108).

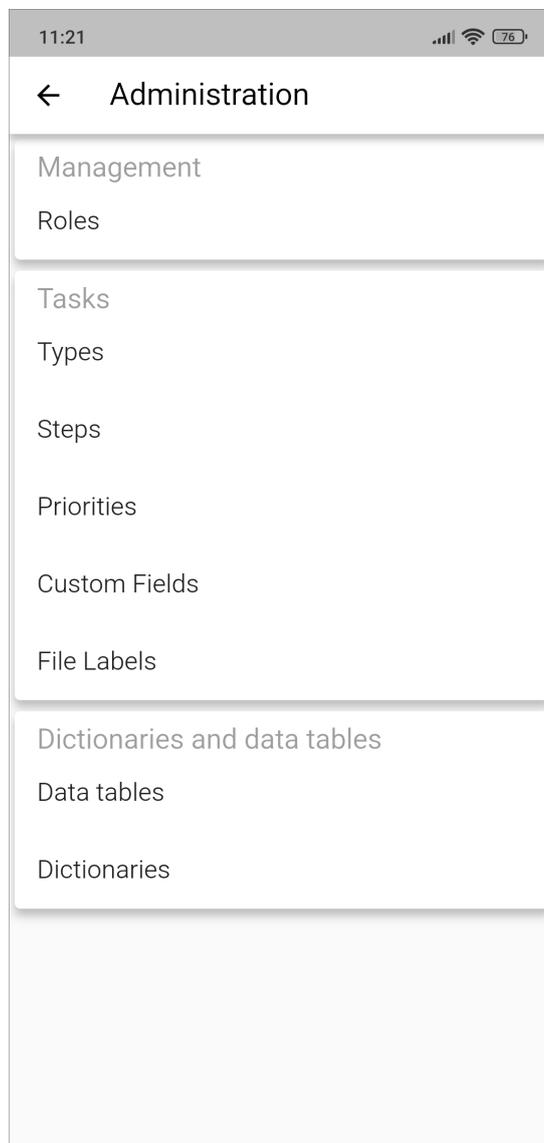
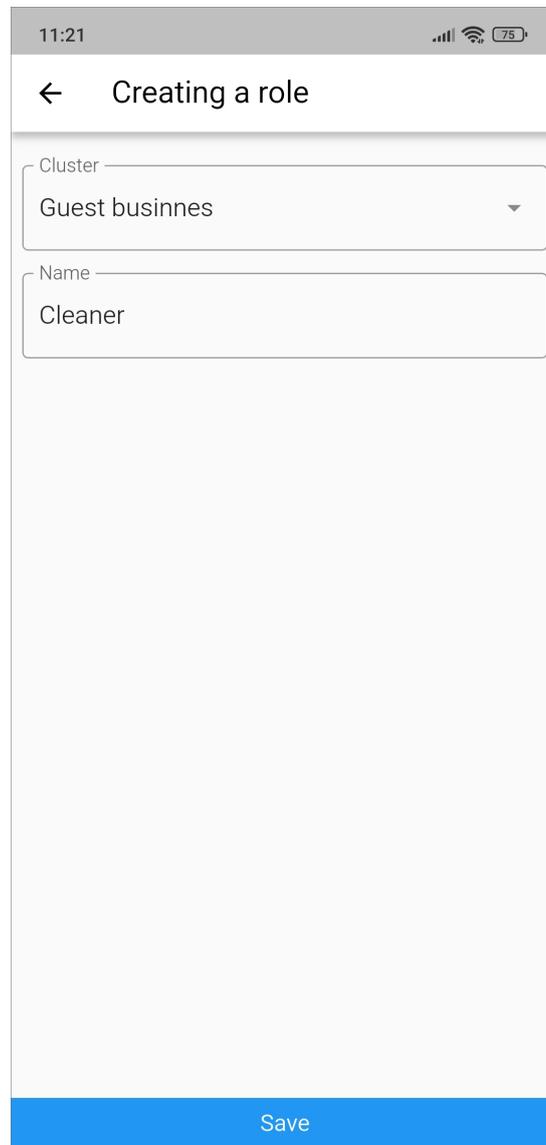


Fig. 2.108: “Administration” section

### 2.13.1 Role administration

This section displays a list of roles available in the system. Click the  button to add a new role (Fig. 2.109). It will have the same rights as the Executor role. Roles can be either global or assigned to a specific cluster.



The screenshot shows a mobile application interface for creating a new role. At the top, the status bar displays the time 11:21, signal strength, Wi-Fi, and battery level at 75%. Below the status bar is a white header with a back arrow and the text 'Creating a role'. The main content area contains two input fields: a 'Cluster' dropdown menu with 'Guest businnes' selected, and a 'Name' text input field with 'Cleaner' entered. At the bottom of the screen is a blue bar with the text 'Save'.

Fig. 2.109: Adding a new role

To make changes, find the role, open it, and enter a name. Then, save the changes. You can modify only the role name. To delete a role, first find it using the search bar or cluster filter. Then, select the role, click  in the upper right corner, and confirm the deletion. You cannot modify or delete system roles.

## 2.13.2 Task administration

This section enables the management of the following task parameters:

- types of work,
- steps of work,
- priorities,
- custom fields,
- file labels (stickers).

The section is available for the roles of the Organization Administrator, Cluster Administrator, and System Administrator according to their rights.

### Types of work

This section displays a list of types of work available to an authorized user. Users with the Cluster Administrator and System Administrator roles can create, edit, and delete types of work. The Organization administrators can only view them.

To create a new type of work, click . Fill in all the fields, select the organizations where the work type will be available, and save. You can set a different icon by clicking “Change icon” (Fig. 2.110). The maximum size is 256x256. The new type of work is ready for use.

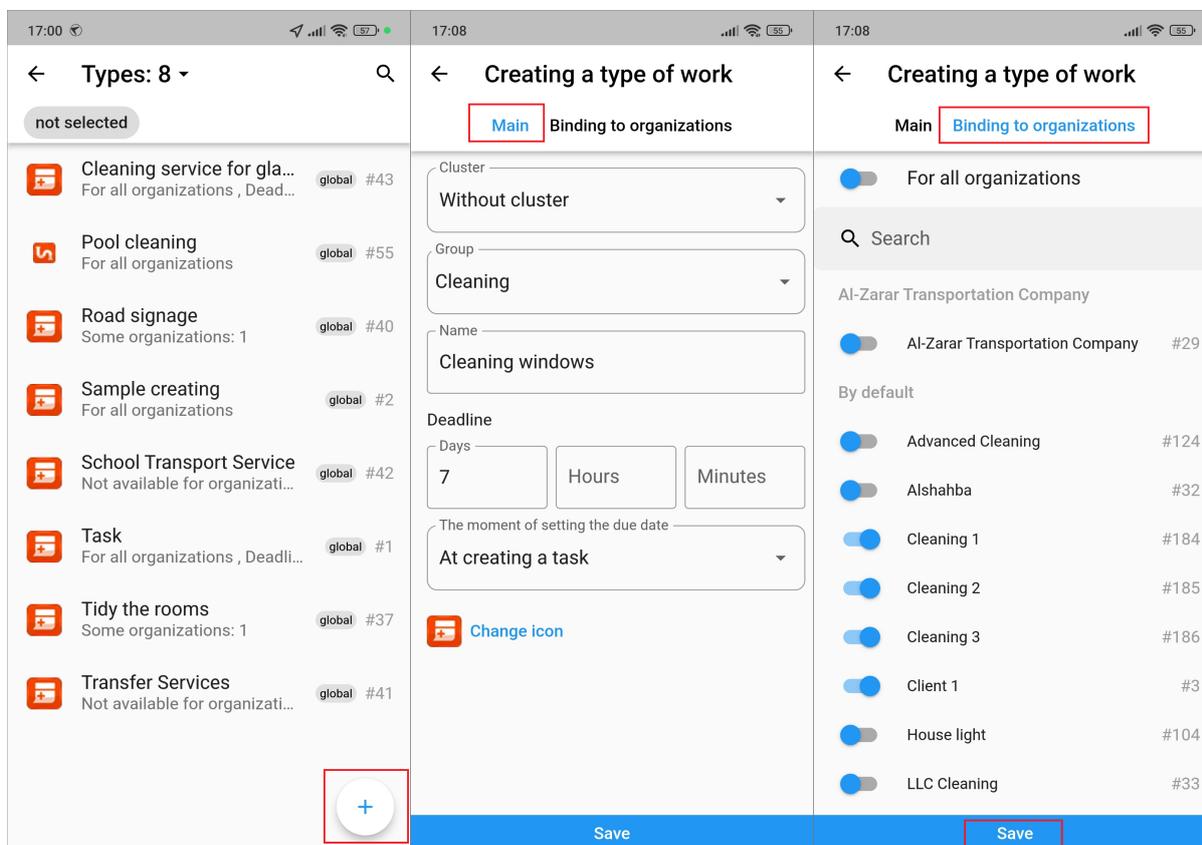


Fig. 2.110: Creating a work type

To edit a work type, use the search bar or the cluster/organization filter, select the required work type, make the changes, and save. To delete a work type, find it using the search bar

or filter, select the work type, click  in the upper right corner, and confirm deletion.

You can proceed to configuring work steps and priorities without returning to the previous page. Expand the dropdown list under “Types” and select the required parameter.

## Steps

This section displays a list of work steps available to an authorized user. Steps are displayed in the order set in the web component. Cluster and System administrators can create, edit, and delete work steps, while Organization administrators can only view them.

To create a new step, first, decide whether the step belongs to a specific cluster or is available in all clusters:

- Global – does not belong to the cluster, everyone can see it.
- Isolated – belongs to a specific cluster.

If it is global, select “Without cluster” in the filter. If it belongs to a specific cluster, find and select the required cluster in the filter ([Fig. 2.111](#)).

---

**Important:** Select a cluster before creating a new step. Further cluster selection is not available.

---

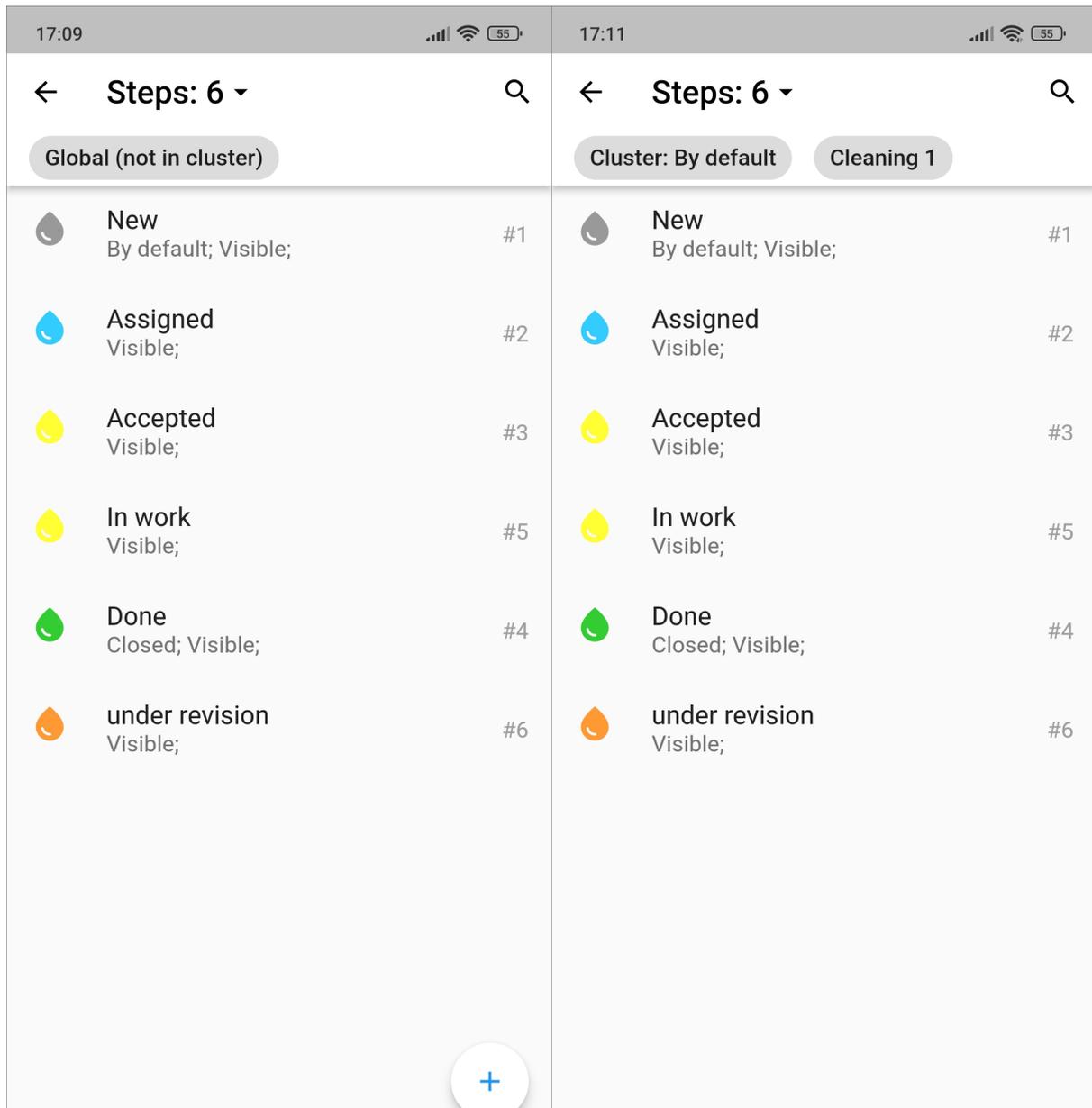


Fig. 2.111: Cluster filter

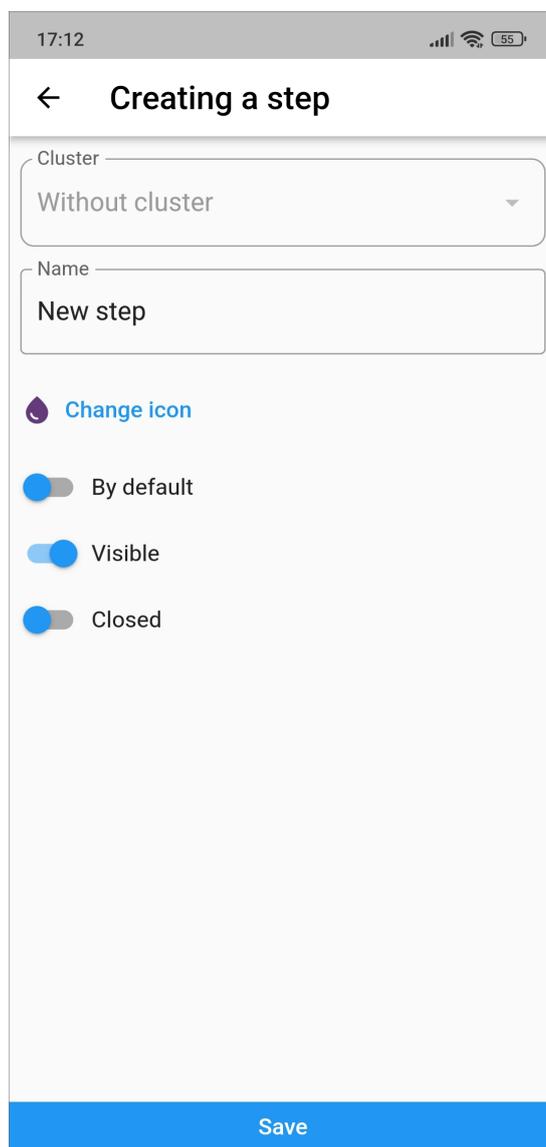
After selecting the cluster, click  and fill in all the available fields and settings:

- “Name” field – the name of the step to be created.
- “Default” toggle – setting the step automatically when creating a task.
- “Visible” toggle – making the step available to users.
- “Closed” toggle – marking the task as completed after transition to this step.

If needed, change the icon color by clicking “Change icon”. Once everything is filled in, save the changes (Fig. 2.112). The new work step is ready for use now.

If a cluster has no steps and the first one is created, it is automatically set as default. You cannot delete or uncheck the “By default” step. If you mark another step as default, the

previous step is automatically deselected. The “Assigned” step is the first non-default and non-closing step. If no such step exists, the step will not change when assigning an executor.



17:12

← Creating a step

Cluster

Without cluster

Name

New step

Change icon

By default

Visible

Closed

Save

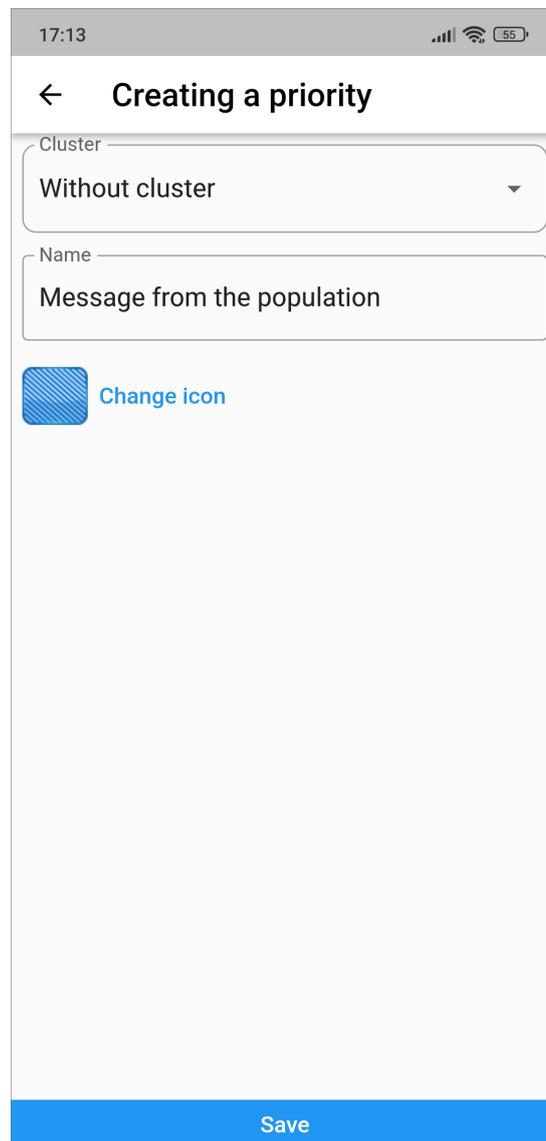
Fig. 2.112: Creating a step

To edit a step, first use the search bar or cluster filter to find it. Then select the step, make changes, and save them. To delete a step, find it using the search bar or filter, select the step, click  in the upper right corner, and confirm deletion.

## Priorities

This section displays a list of priorities available to an authorized user. Cluster and System Administrators can create, edit, and delete priorities, while Organization Administrators can only view them. Filtering by clusters is available. By default, all priorities are displayed: both global and isolated. Clicking “All” opens a window with a list of clusters. Using the search bar, you can select a cluster and view priorities available within it. Within a cluster, you can set a filter by organizations.

To create a new priority, click , fill in all the fields, and save. You can set a different icon by clicking “Change icon” (Fig. 2.113). The maximum size is 256×256. The new priority is ready for use now.



The screenshot shows a mobile application interface for creating a priority. At the top, the status bar displays the time 17:13, signal strength, Wi-Fi, and 55% battery. The app title is "Creating a priority" with a back arrow. Below the title is a "Cluster" dropdown menu with "Without cluster" selected. Underneath is a "Name" text field containing "Message from the population". A "Change icon" button with a blue square icon is visible. At the bottom, there is a blue "Save" button.

Fig. 2.113: Creating a priority

To edit a priority, first use the search bar or cluster filter to find it. Then select the priority, make changes, and save them. To delete a priority, find it using the search bar or filter, select,

click  in the upper right corner, and confirm deletion.

### Custom fields

This section displays a list of custom fields in the system.

Several filtering options are available to facilitate searching and management:

- Cluster selection (all, global, default, etc.);
- Showing/hiding global custom fields;
- Work type selection (all or specific work type);
- Visibility filter (all, visible, hidden).

You can also use a standart search by the custom field name.

To create a new field, click  and fill in all the required fields in the “Main” tab (Fig. 2.114).

11:23

← Creating a custom field

Main Binding to type of work

Cluster  
Guest businnes

Name  
Description

Format  
String

Required custom field

Visible custom field

Fields group  
General

Default value  
Object

Regular expression

Save

Fig. 2.114: Creating a custom field, “Main” tab

Carry out the following steps in the “Binding to type of work” tab (Fig. 2.115):

1. Select the work types for the field.
2. If needed, configure field visibility by roles for each type of work. To do this, expand the type of work and select the roles that should see the field. By default, the field is visible to all roles.

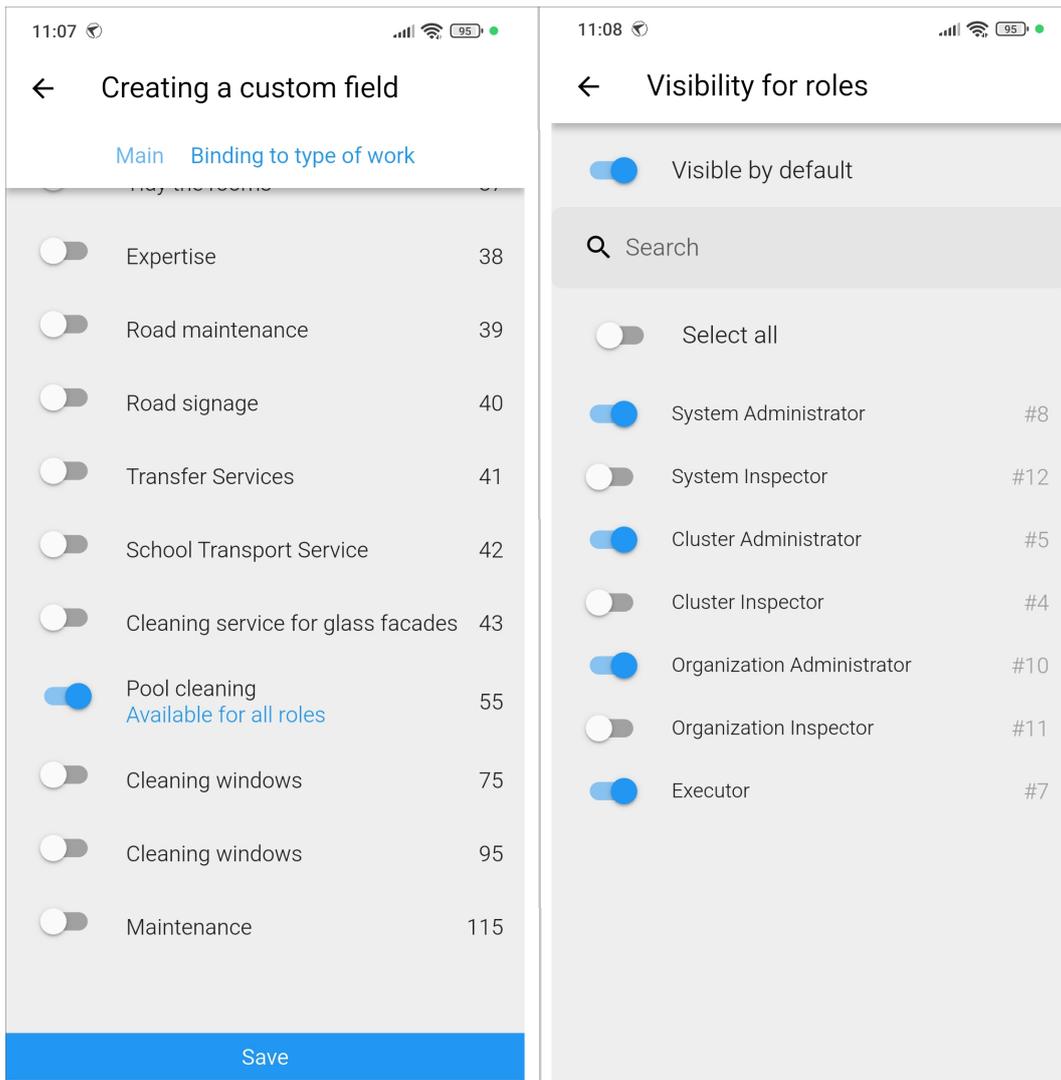


Fig. 2.115: Creating a custom field, “Binding to type of work” tab

For the “Composite field” format, there is an additional “Nested Fields” tab where you can add or remove nested fields. After filling in all the required fields, save the changes.

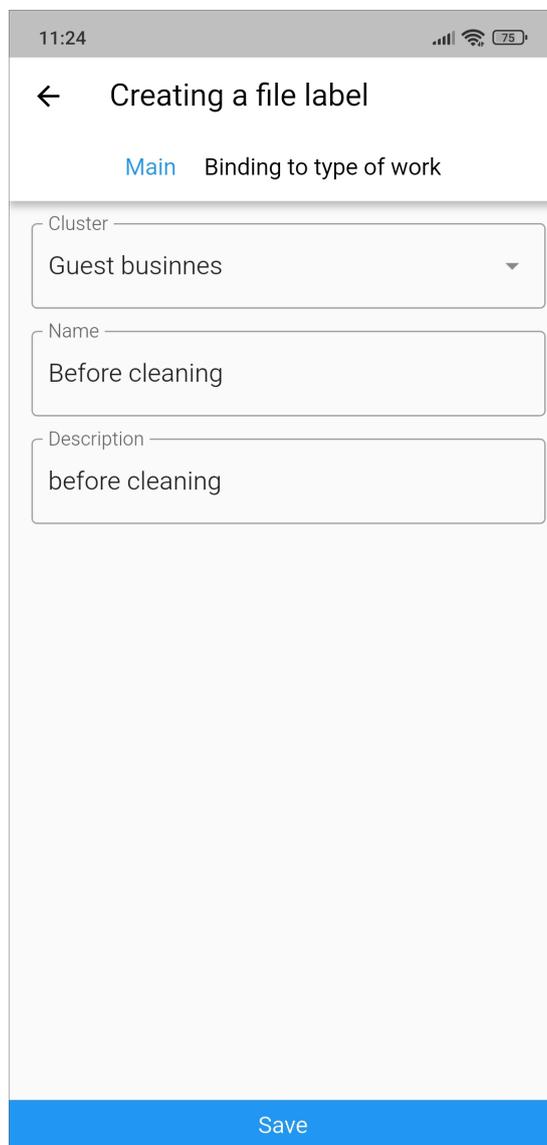
To edit a custom field, open it, make changes in the “Main” or “Binding to type of work” tabs, and save them.

To delete a field, first find it using the search bar or the cluster filter. Select the custom field, click  in the top-right corner, and confirm the deletion.

## File labels (stickers)

This section displays a list of stickers in the system. To edit a sticker, open it, make changes,

and save them. To create a new sticker, click , fill in all the required fields in tabs and click “Save” (Fig. 2.116).



11:24

← Creating a file label

Main Binding to type of work

Cluster  
Guest businnes

Name  
Before cleaning

Description  
before cleaning

Save

Fig. 2.116: Creating a sticker

To delete a sticker, first find it using the search bar or the cluster filter. Then select the sticker,

click  in the top-right corner, and confirm the deletion. You cannot create, modify, or delete global stickers in the application.

### 2.13.3 Dictionaries and data tables

This section contains data tables and dictionaries (reference tables). The section is available to Organization administrators, Cluster administrators, and System administrators according to their rights. Users can create new objects in tables and dictionaries, as well as edit and delete existing ones. The workflow is similar to working with service objects.

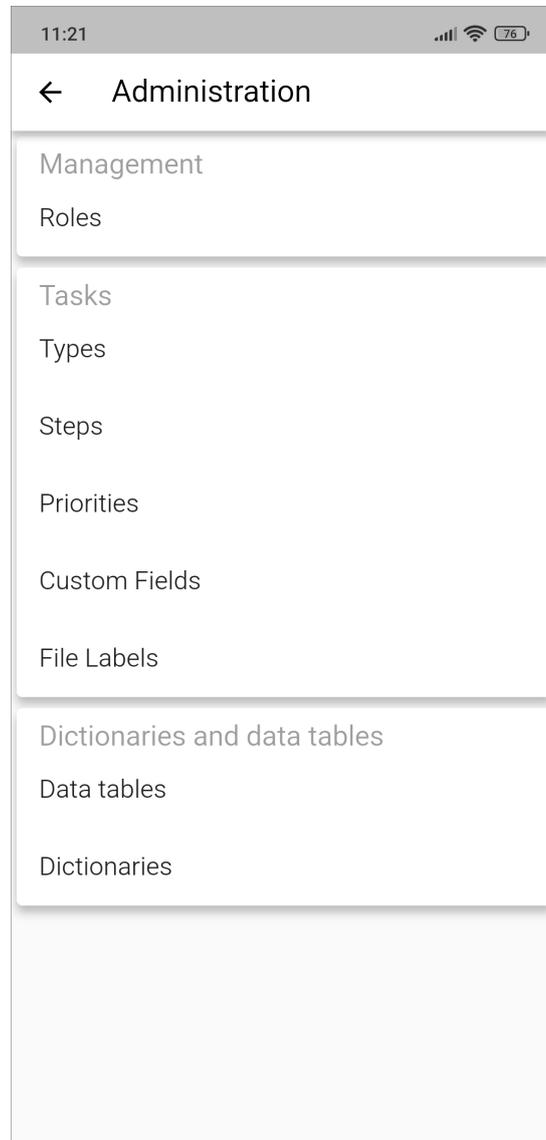


Fig. 2.117: Block of dictionaries and data tables

To create a new object, find the necessary table and click . Then, fill in the fields and submit the data to the server by clicking .

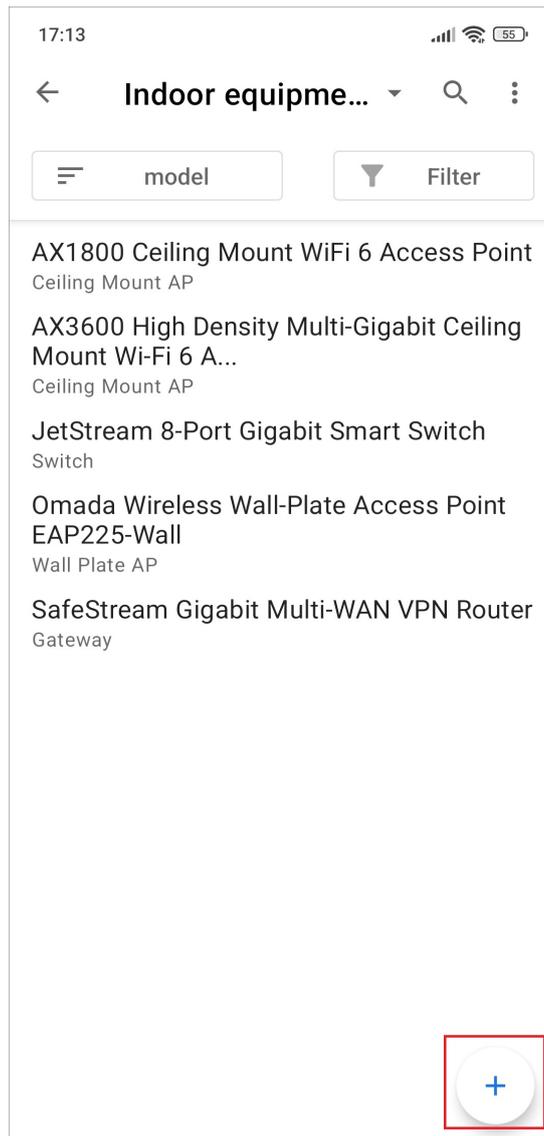


Fig. 2.118: Creating a new object in a table

To edit an object, find the required table, then find the object. Make changes and submit the data to the server by clicking .



Fig. 2.119: Editing an object in a table

To delete an object, find the required table, then find the object. Open the editing window by clicking , scroll to the end of the attributes, and click “Delete object”.

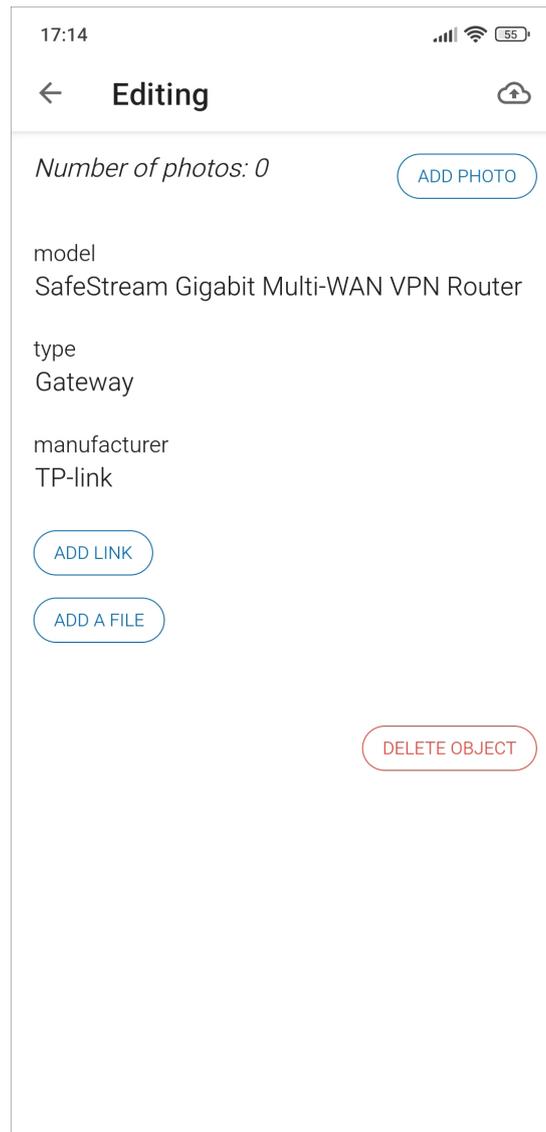


Fig. 2.120: Deleting an object in a table

**Attention:** You can delete objects in data tables and dictionaries only while connected to the network.

## 2.14 Reports

This section is available for administrator and inspector roles. To generate reports, select the “Reports” section from the navigation sidebar. The list of available reports opens. Select the desired report and click “Create new”. A window with the input of additional parameters (Fig. 2.121) opens. By default, this is a date and time range, output file format, but the list can be extended depending on the reports in the system.

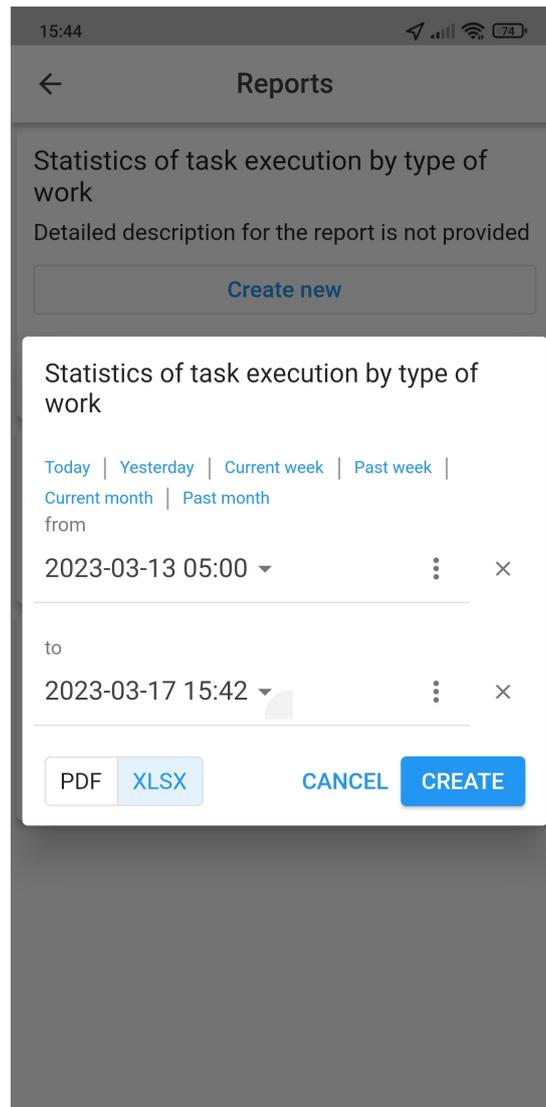


Fig. 2.121: Parameter input window

The report generation window includes a search bar within dropdown lists if the list contains more than 20 items (Fig. 2.122).

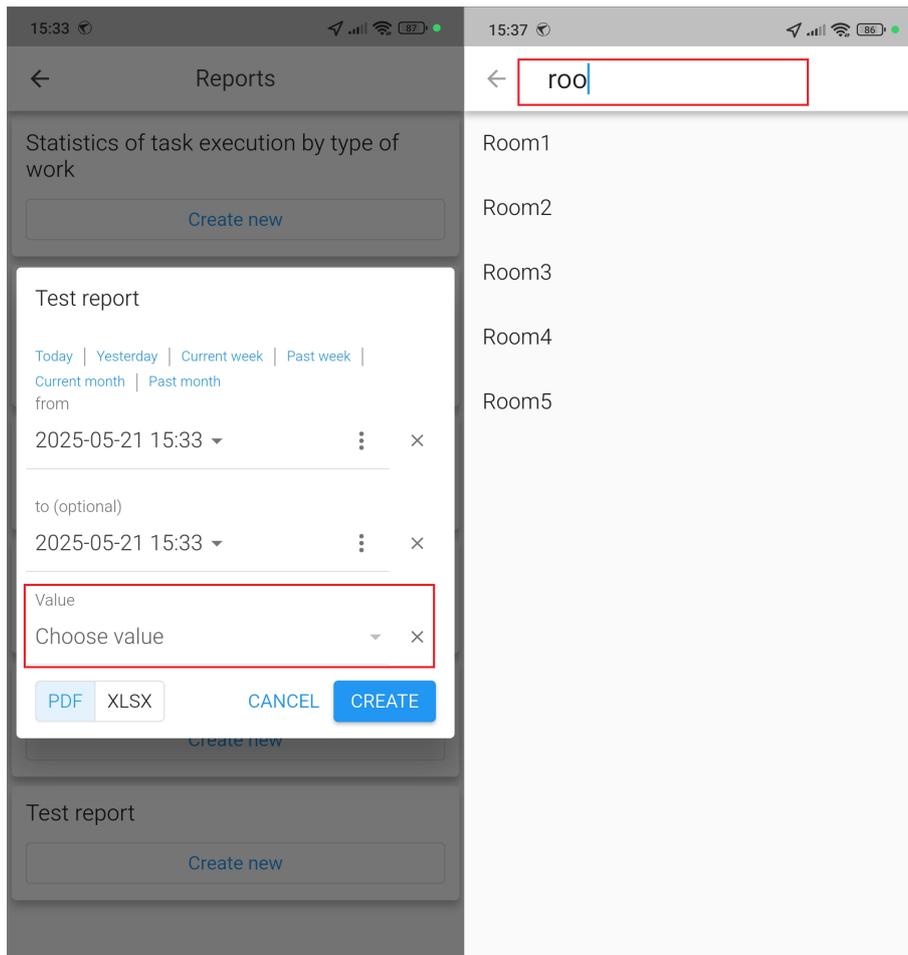


Fig. 2.122: Searching among parameter values

Click “Create” after entering the parameters. You can open the generated report file (Fig. 2.123) on the device with the appropriate applications for viewing the required formats.

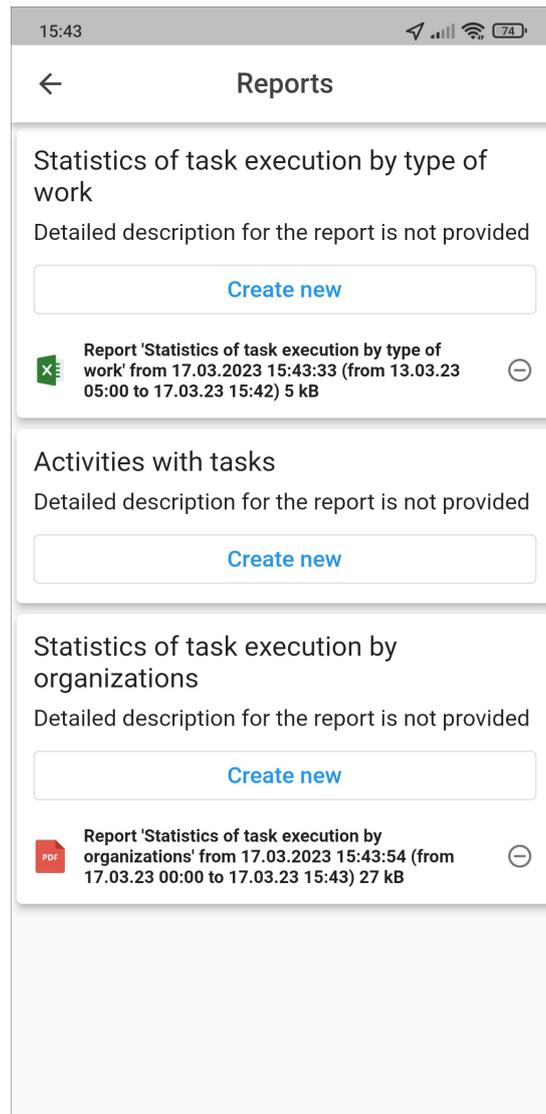


Fig. 2.123: Reports window

Non-standard reports are created upon request to Technical Support. Access to reports is granted in the ActiveMap Web web system.

## 2.15 External web services

The default search engine is specified. You can change the web service in the system settings.

### 2.15.1 Downloading files

To download a file from a connected third-party web service, open the service tab from the navigation sidebar. Find and download the file.

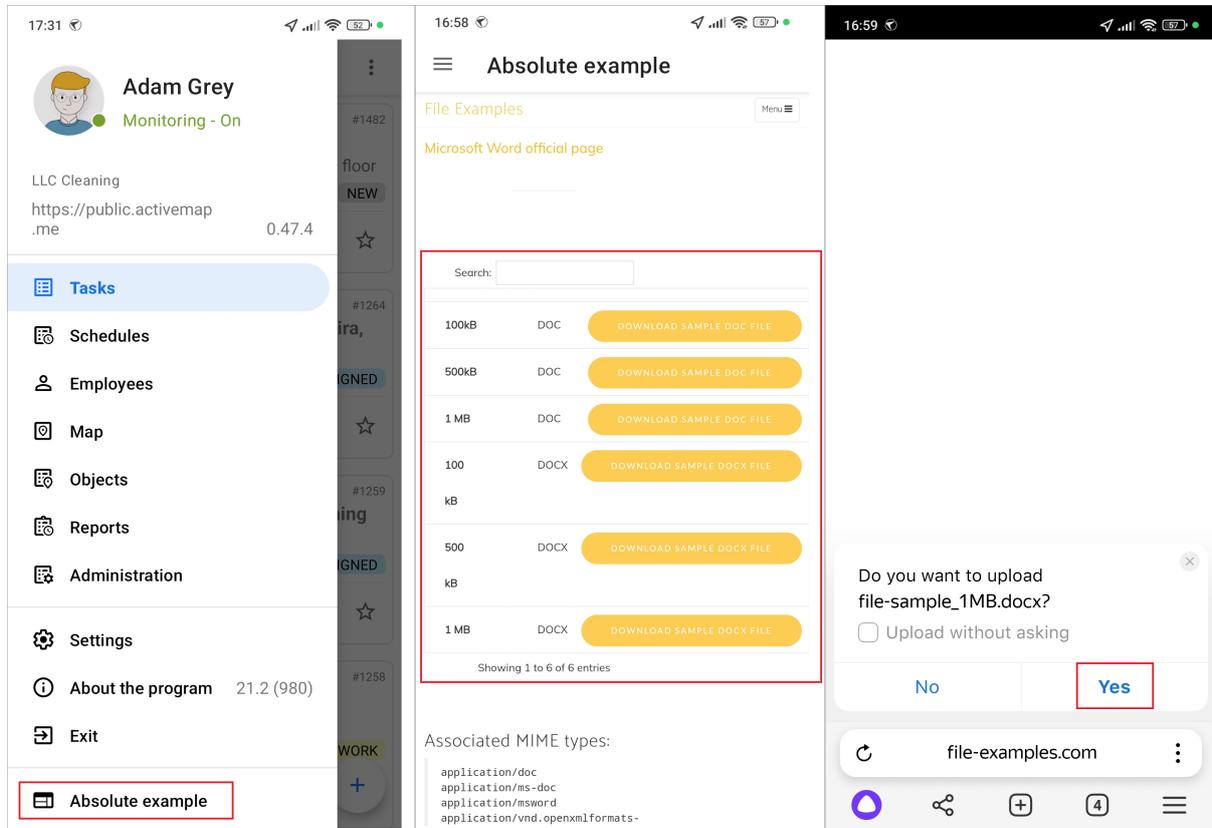


Fig. 2.124: Downloading files from a connected web service

## 2.16 BLE tags (beacons)

**Attention:** To work with beacons, Google Android operating system version 12.0.0 and higher is required.

GPS location accuracy is high enough when we consider service objects at large distances from each other in open areas. However, such accuracy is insufficient when the service objects are close to each other, for example, rooms inside buildings or even under them. For such cases, the ActiveMap system incorporates a Bluetooth Low Energy (BLE) service. BLE is a wireless solution that combines location accuracy, efficient battery use, and overall economic efficiency. BLE devices are commonly used to transmit data over short distances and are ideal for location tracking and object monitoring.

The BLE service involves installing a number of beacons. They are attached to a stationary surface and transmit nothing but their characteristics (identifier and signal strength). To achieve the best result, several beacons should be installed throughout the room in such a way as to provide the greatest coverage. Each registered signal indicates the real-time

location within the building. The radar receives signals from BLE devices and, based on the analysis of distance from different BLE beacons, provides an accurate location.

When using the built-in camera of the mobile application, the system records the date and time of the photo, and the coordinates of the mobile device at the time of shooting. When you activate the “Collect tag readings” setting, the system begins working with beacons. This means that when a photo is taken, the system records information about beacons if there are any in the immediate vicinity of the shooting location. Each tag has unique characteristics: UUID (identifier) + major (first-level object class) + minor (second-level object class). It also automatically calculates the distance from the user’s device to the beacon and transmits the signal strength (rssi), which directly depends on the distance to the beacon.

When adding a photo using the built-in camera, you must provide the requested Bluetooth access (Fig. 2.125):

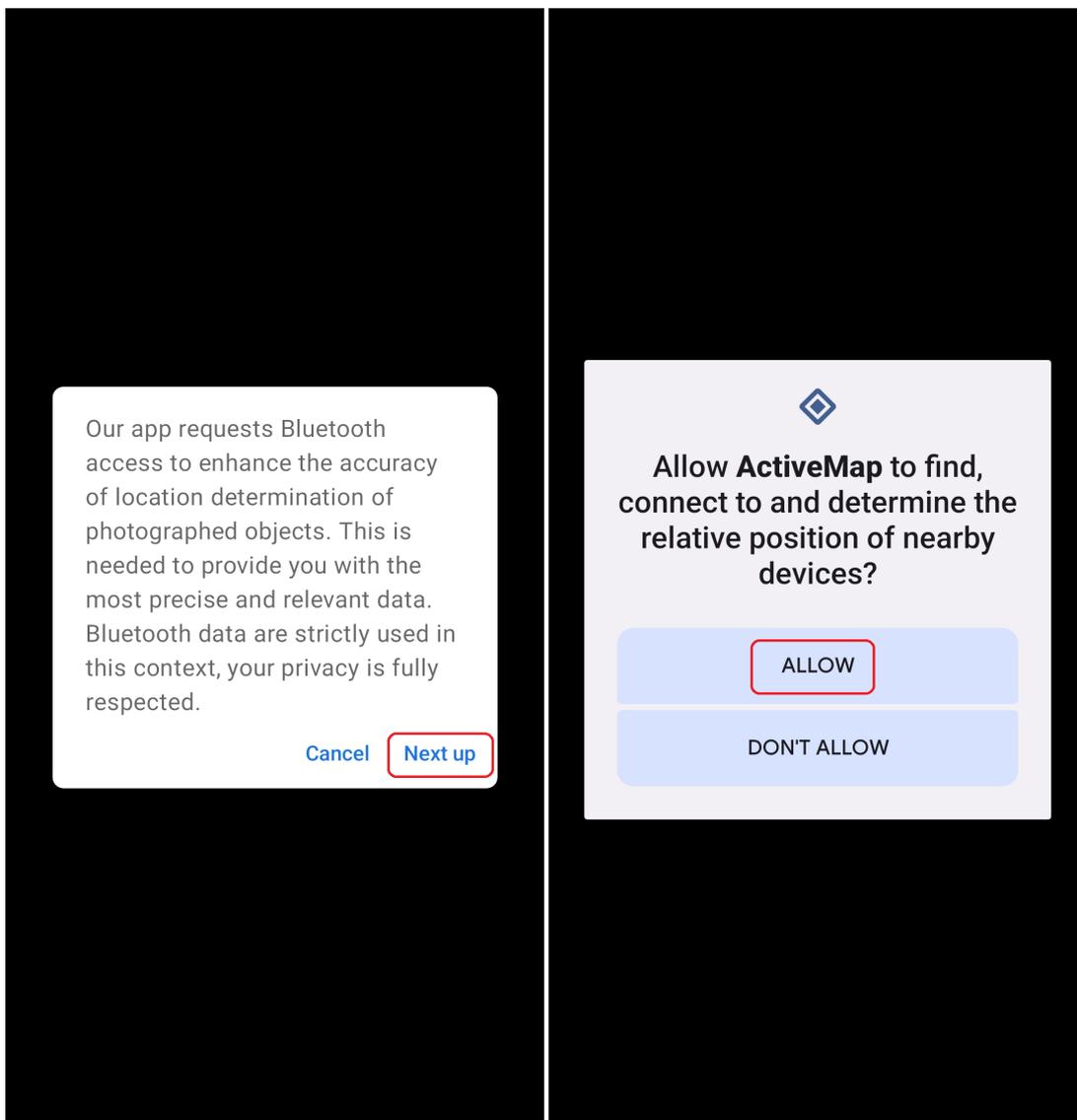


Fig. 2.125: Granting Bluetooth permissions

When taking a photo, the number of beacons detected is displayed in the device’s camera window, in a circle at the top of the screen (Fig. 2.126).

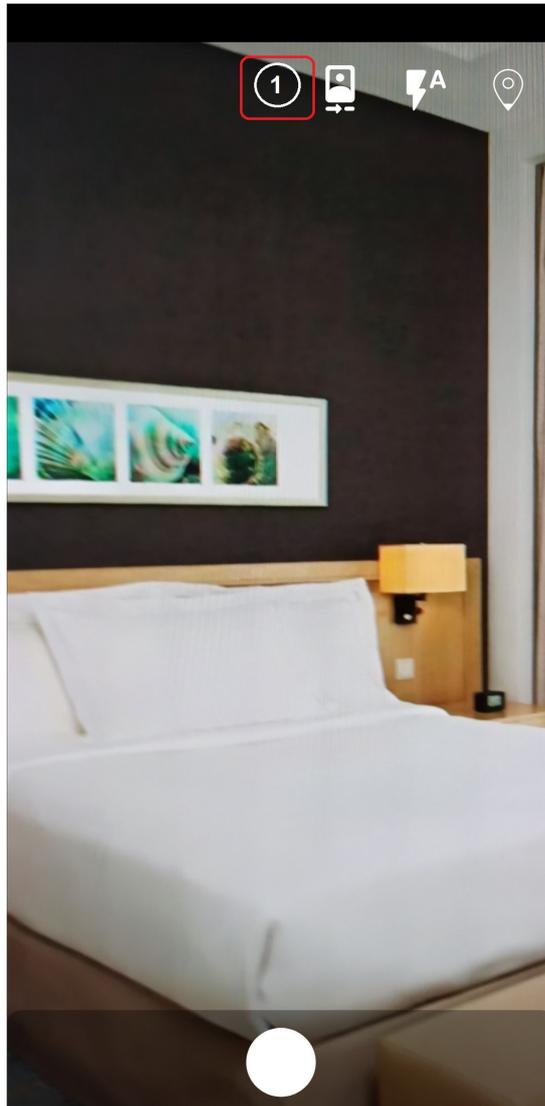


Fig. 2.126: Detection of beacons

BLE tag information is displayed in the file information window (*Adding files and media* (page 52)).

In this way, sample photos are taken for all service objects. Then, tasks are created where these photos are specified as samples. When executing such tasks, the employee takes a new photo, which is compared with the sample. You can view the comparison result later in the ActiveMap Desktop desktop application:

- Green color – the tag with this UUID exists in both the sample and the current photo.
- White color – the tag with this UUID is missing in the sample, but exists in the current photo.
- Red color – the tag with this UUID exists in the sample, but is missing in the current photo.

This way you can find out whether a photo is taken in a given room or not.

## 2.17 RFID tags

**Attention:** To work with RFID tags, devices with specialized equipment (RFID module) are required.

RFID is a method of automatic object identification where data stored in RFID tags is read or written using radio signals.

The application allows you to assign RFID tags to object attributes and then search for objects in the application by scanning and detecting the RFID tags. The attribute in the layer must be in the “RFID tag” format. You can fill it in manually.

To assign the necessary tag to an attribute, go to the “Service Objects” section in the side navigation menu, open the desired layer, and find the object of interest. Then, switch to the object editing mode. Next to the attribute field of “RFID tag” type there is a “Scan” button. Once scanning begins, it searches for nearby tags. Position the user’s device so that only one tag is within the scanning area. Click “Attach” after finding it (Fig. 2.127):

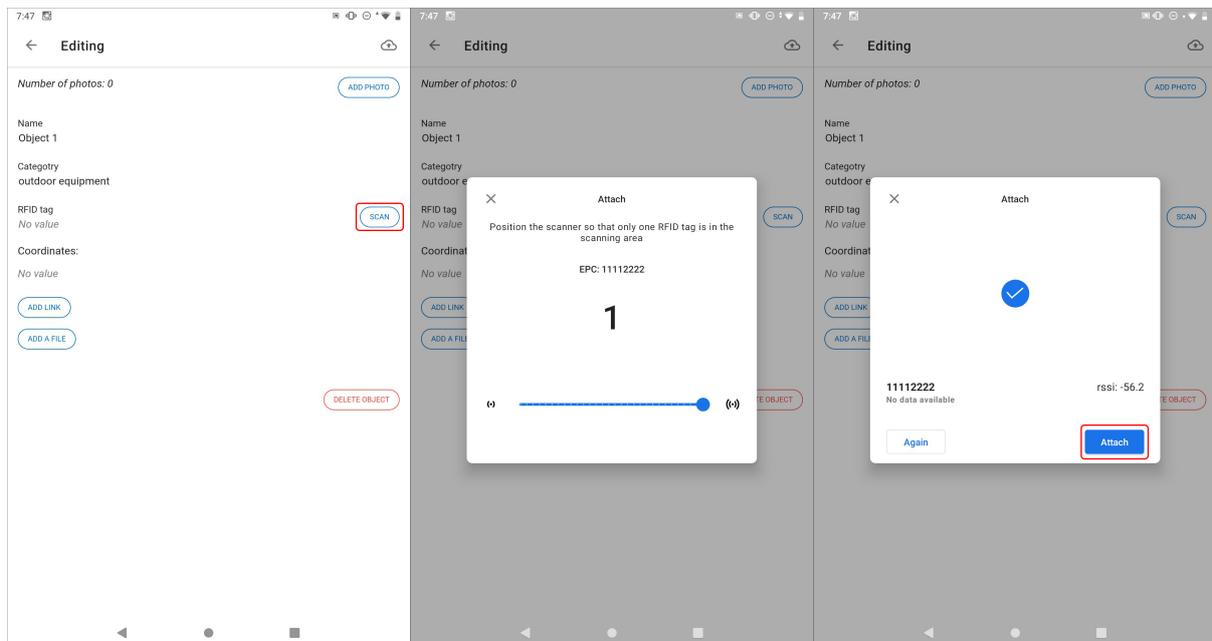


Fig. 2.127: Scanning an RFID tag

If the tag has already been attached to another service object, a message appears: “Tag is already linked to an object”.

Clicking on the “RFID tag” type field opens an attribute editing window where you can enter the RFID tag identifier manually or start scanning (Fig. 2.128).

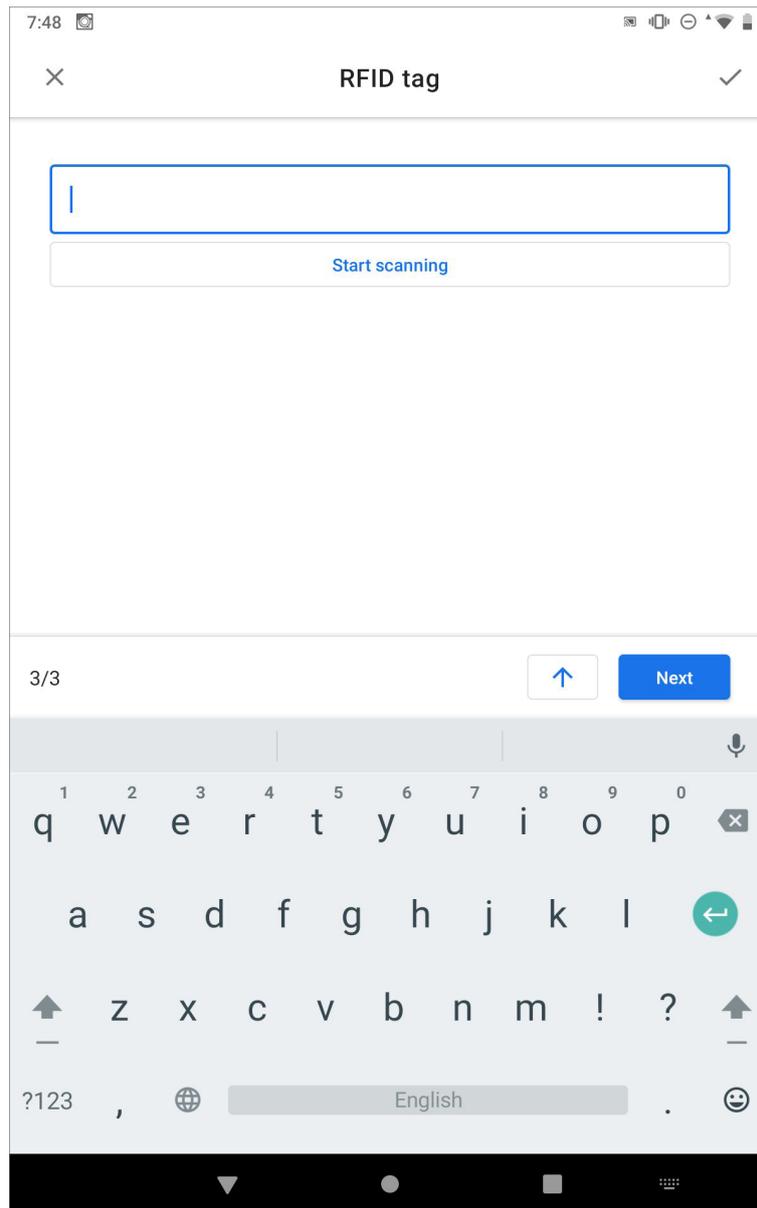


Fig. 2.128: RFID tag editing window

To find a service object in the field using an RFID tag, select it from the object table and click “Find”. The object must have an attribute with the “RFID tag” type filled in beforehand (Fig. 2.129).

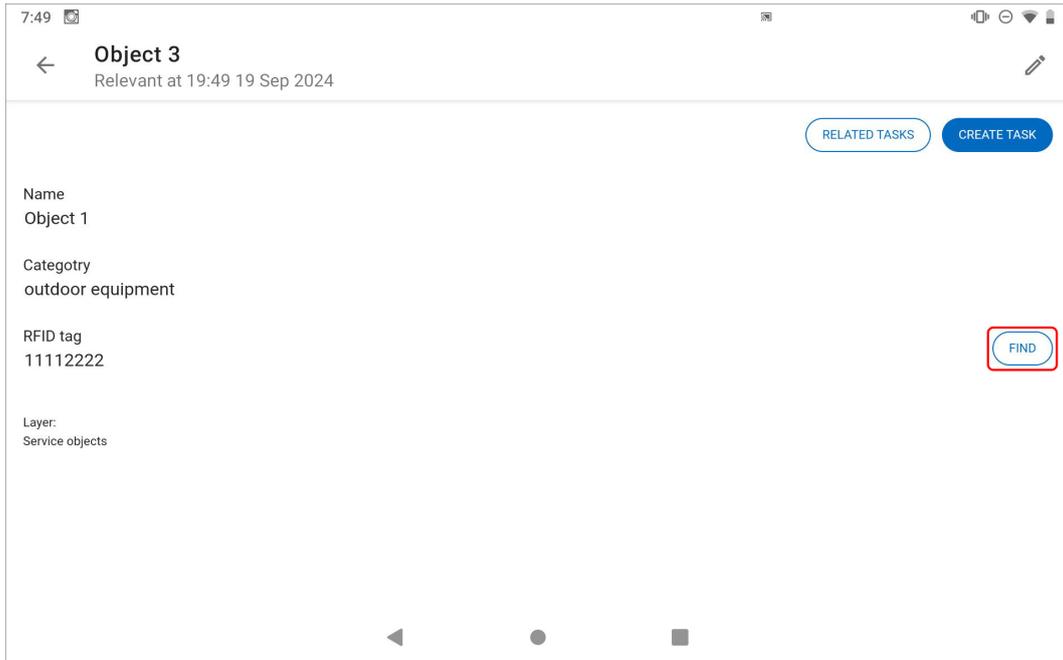


Fig. 2.129: Service object viewing window

A tag search window opens with a tag proximity color scale (Fig. 2.130):

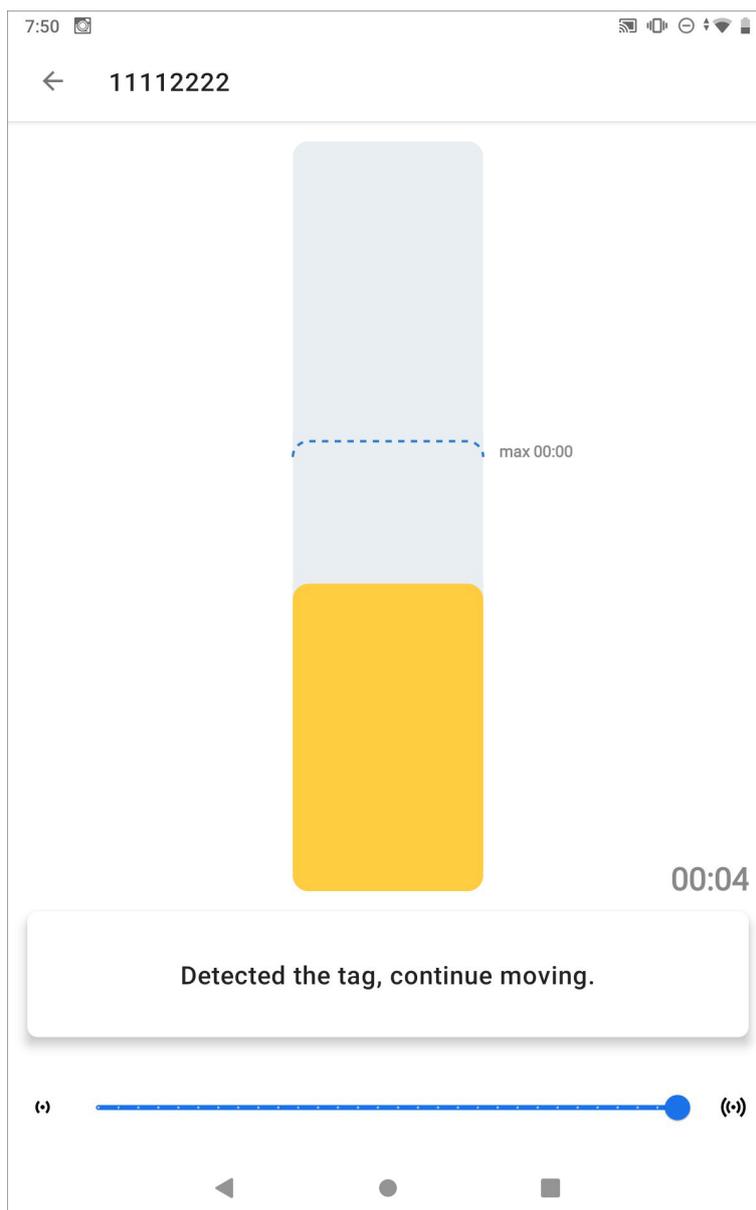


Fig. 2.130: RFID tag search window

Possible results for RFID tag search by color (by signal strength):

- Red — no tag is detected.
- Yellow — detected the tag, continue moving.
- Green — the tag is very close, keep heading.

The tag is considered found if the maximum mark has disappeared from the scale (Fig. 2.131).

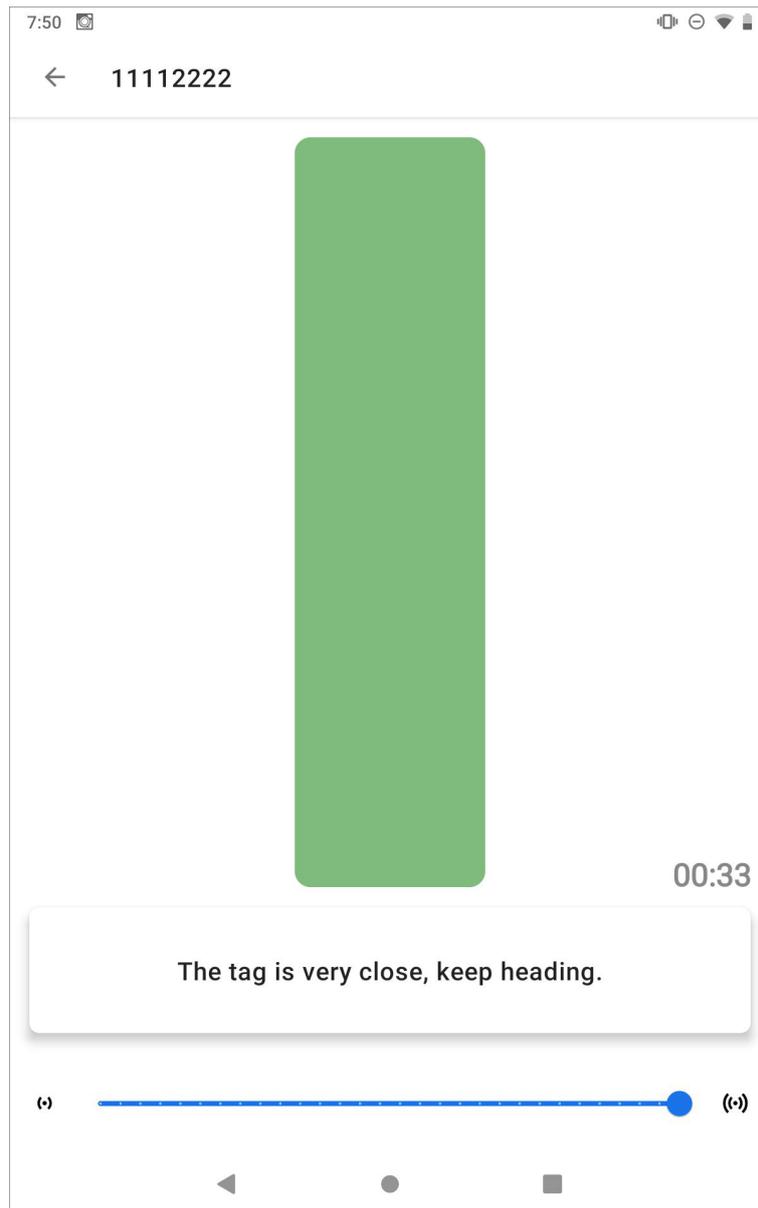


Fig. 2.131: RFID tag search window

To find an object of interest in the field from the list of service objects, open the layer, click on object search, and select the “Find nearest object related with RFID” section. Scanning of tags and determining their association with an object begins. The distance depends on the settings of the power slider (Fig. 2.132).

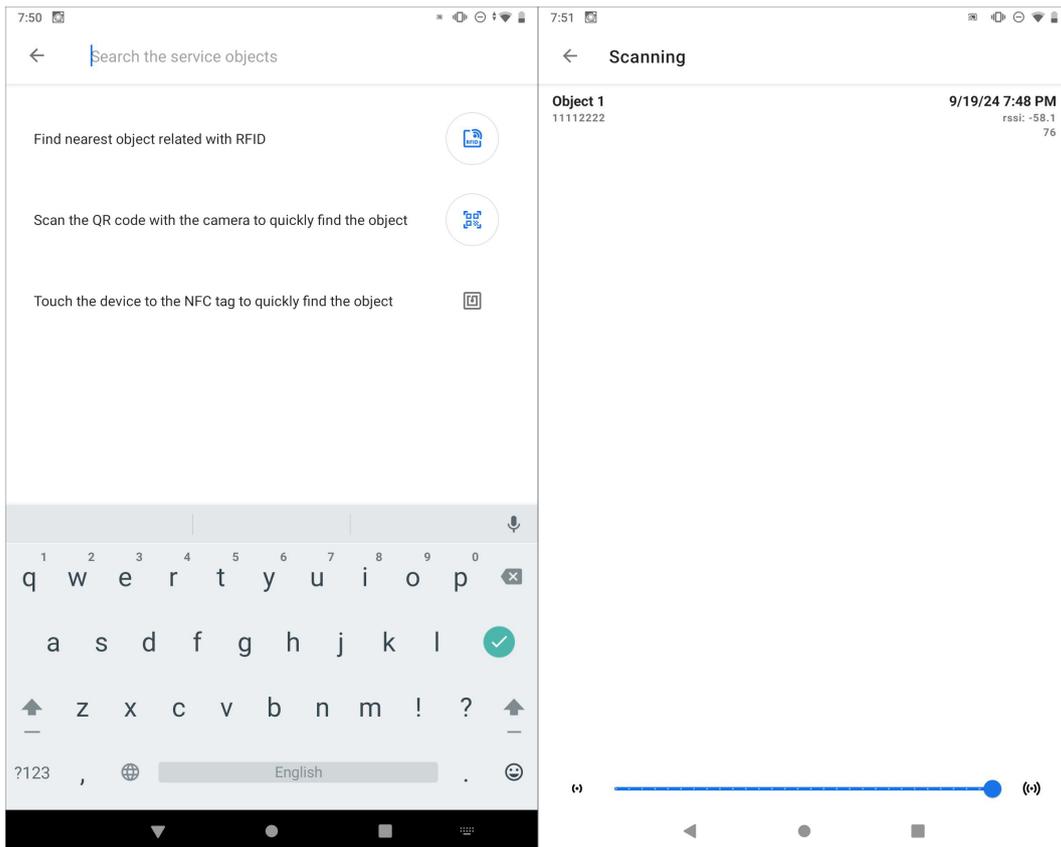


Fig. 2.132: Searching for objects associated with RFID

## 2.18 Invoice module

The **“Invoice”** module is used to calculate the cost of work online. This module requires customization based on the list of services and materials used by the organization.

To generate an invoice, enable the “Invoice” module in the settings of the ActiveMap Mobile mobile application in the ActiveMap Web. Fill in information about organizations – the customer and the executor (legal name, account details, logos, signatures, seals, and other necessary information for display on invoices). All fields of the “Materials and Services” table should be filled in based on the data of the list of services and materials used by the organization. The “Materials and Services” table is filled in the desktop component of ActiveMap system. After filling in the table, proceed to generate an invoice. To do this, click “Add Media” and select “Invoice” while creating or executing the task. The “Invoice” window opens (Fig. 2.133). You can add the entire list of required materials and services by clicking the “Add position”, set the quantity of provided materials and services in the given units.

15:55

← Invoice DONE

**Task No. 1261**

**Client:**  
Brigade 9 (John Smith)

**Description:**  
Sheikh Zayed Rd 225

**Executor:**  
Brigade 9 (John Smith)

**Materials and services**

**ADD POSITION** +

**shampoo, units** ✕

20 currency -  +

**TOTAL:** 40.00 currency

Save Generate invoice

Fig. 2.133: Forming an invoice

In the materials and services selecting window, you can use the search, which provides suitable results when you enter the text (Fig. 2.134). To add a material or service to the invoice, click on it.

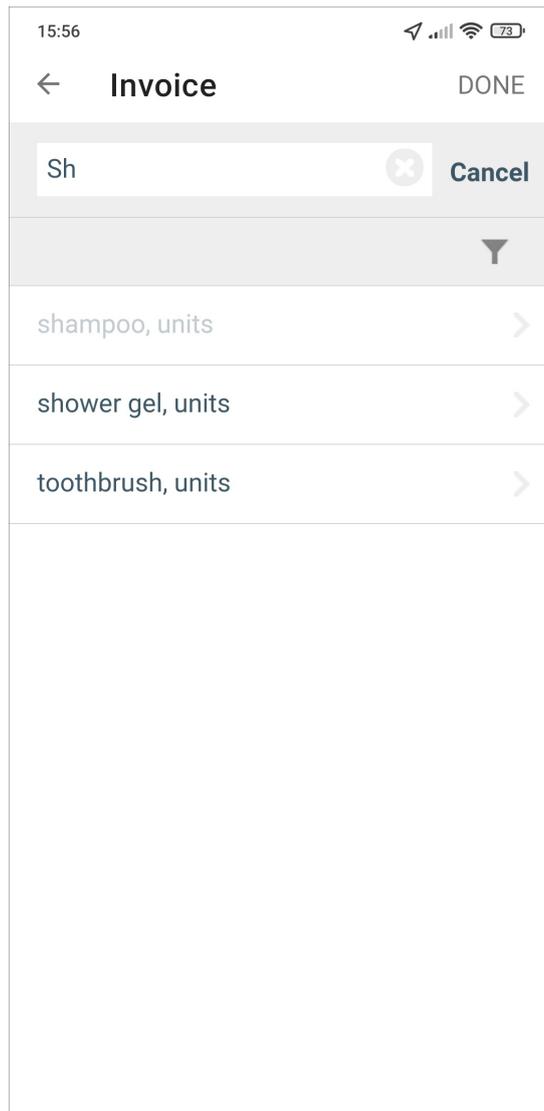


Fig. 2.134: Searching for materials and services

If the server is configured to use material and service groups, you can use the filter by clicking . On the left you see a field for selecting material groups and services, click on it. A list of groups of materials and services appears. Select the desired one. After making your selection, click the plus sign to the right of the selected group name and click “Apply”. A filtered list is displayed, from which you should select the desired materials or services (Fig. 2.135).

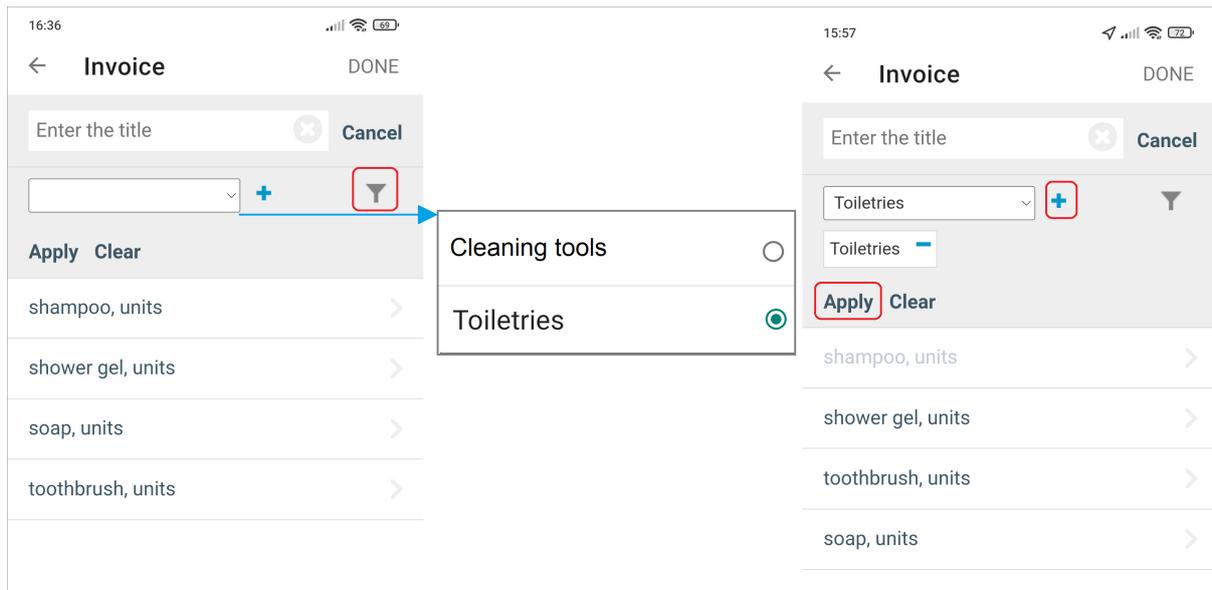


Fig. 2.135: Filter by material and service groups

To add other items to the invoice, repeat the above steps. To change the amount of materials and services, use the buttons to increase/decrease the quantity in the area of added materials and services. To remove an item from the invoice, click on the cross in the block with the item. After adding all the items, start creating an invoice by clicking “Generate invoice”. Upon successful creation of the invoice, a message appears: “The invoice has been created and attached to the task”. To return to creating/editing the task, click “Done”. You can save changes in the invoice. If there are unsaved changes in the calculations, the application shows a warning when exiting the “Invoice” window.

The invoice is automatically attached to the task in pdf format. Other users (with have access to the task) are able to see it immediately after it is generated (Fig. 2.136).

**Invoice 1261-13-17-15-58 Date 17.03.2023**

---

Purveyor  
(Executor): LLC Cleaning

Buyer (client): LLC  
Welcome Hotels

Base: Invoice 1261-13-17-15-58 Date 17.03.2023

Nº	Product (service)	Number	Qty	Price	Amount
1.	shampoo	2.0	units	20,00	40,00
2.	shower gel	2.0	units	20,00	40,00
3.	soap	1.0	units	10,00	10,00
4.	toothbrush	2.0	units	50,00	100,00

Fig. 2.136: Invoice

## 2.19 Automated photo comparison

If you need to compare photos with some sample and get a quantitative result of the comparison, use the automated comparison of photos. The application has a mode of comparing photos without annotation, in which the entire image is compared. There are two comparison options: local (works when there is no internet connection) and online. The added photo is compared with the already attached sample. After the comparison the application gives the result in the range from 0 to 100. These are not the usual percentages, but calculated on the basis of the similarity threshold. The similarity threshold is set empirically for the group of photos being analyzed (e.g., 40 or 50). You can enable and configure the automated photo comparison function in the ActiveMap Web component.

A sample photo is required for comparison. For more information about photo links, see *Using a template photos* (page 78). Immediately after taking a photo in the template photo mode, a local comparison takes place. Its result appears in the right corner. If it exceeds the set similarity threshold, the result is highlighted in green and the photo can be saved. If it is below the threshold, it is highlighted in red. Try to take another photo for a more accurate result (Fig. 2.137). If the similarity threshold is not specified in the settings, the background of the result is white. The local comparison result data is saved in the system.

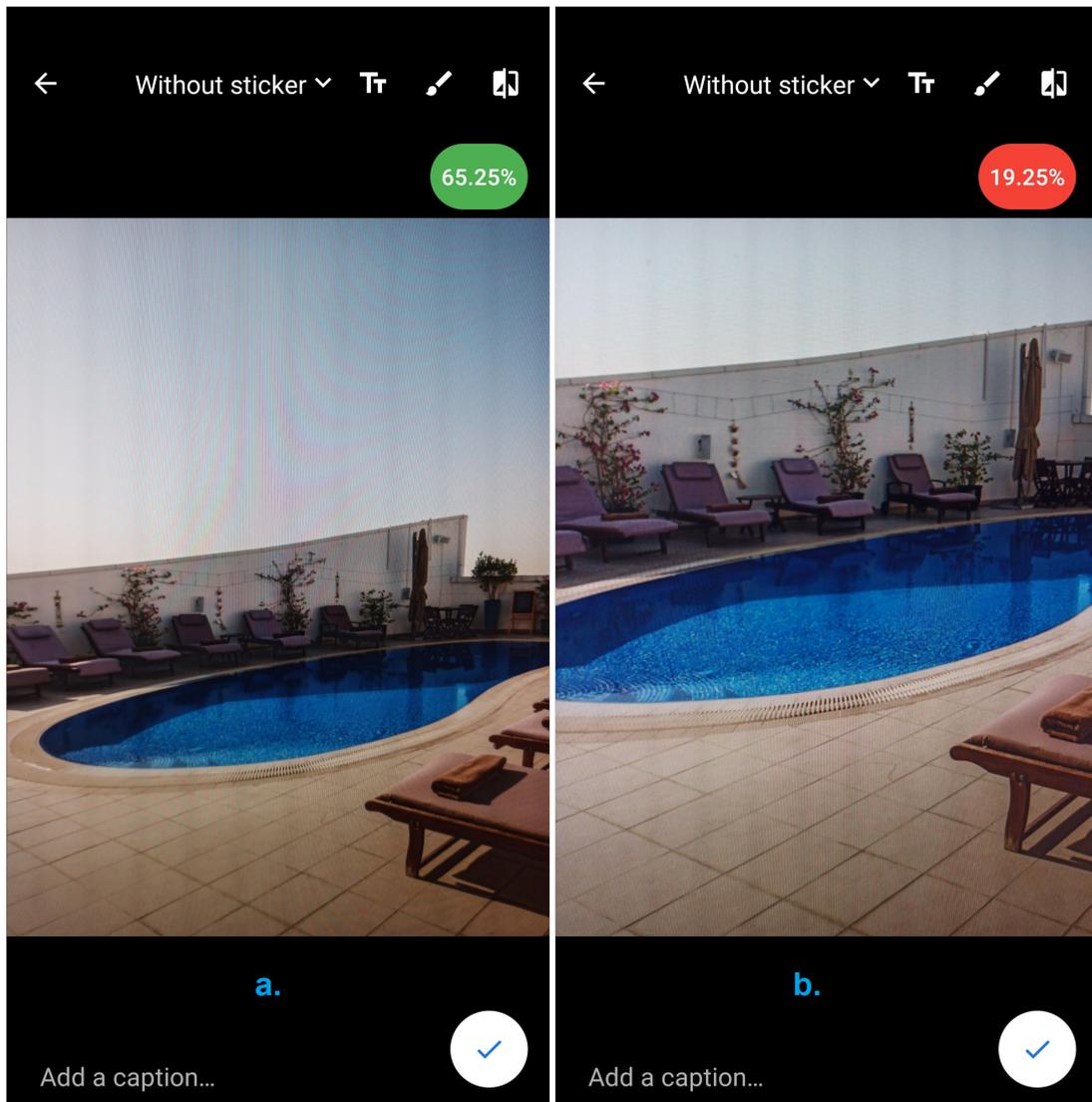


Fig. 2.137: Image comparison: a – similarity found, b – no similarity found

The minimum value of the similarity percentage from all results of automated local photo comparison with their photo sample is displayed in the task list view (Fig. 2.138).

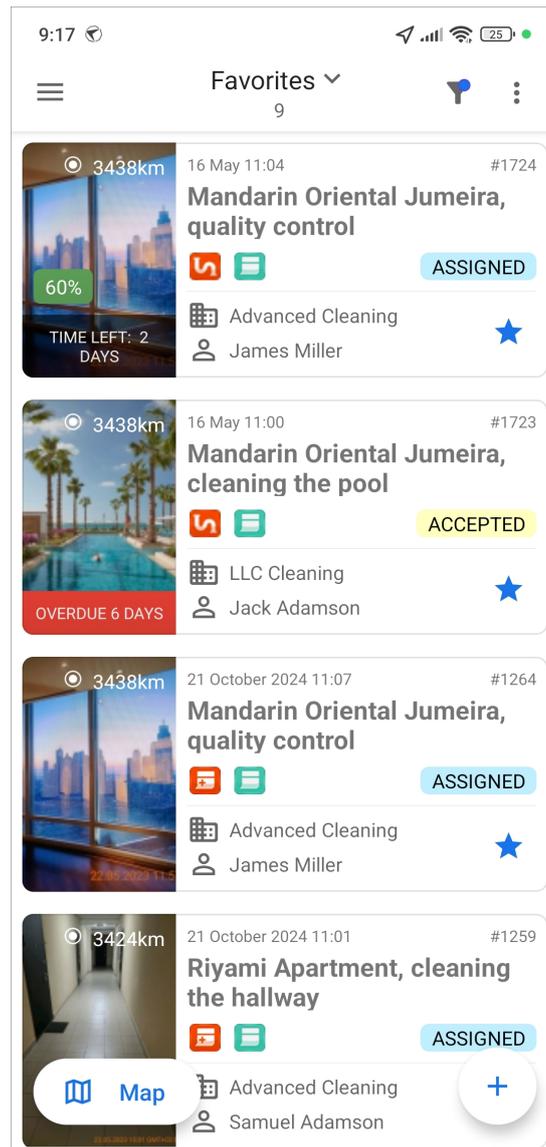


Fig. 2.138: Displaying the results of local photo comparison

If an online comparison result is required, you can use the  button in the top right corner of the photo editing window. Different models are used for comparison, so the comparison results differ. Online comparison results can be accessed using the “Compare angles” option in the media file editing menu (for more information, see [Adding files and media](#) (page 52)).

## ABOUT APPLICATION

To get detailed information about the application, select the “About” section from the navigation sidebar. A window opens containing the following sections (Fig. 3.1):

- About the company
- About the software
- History of changes
- Privacy Policy

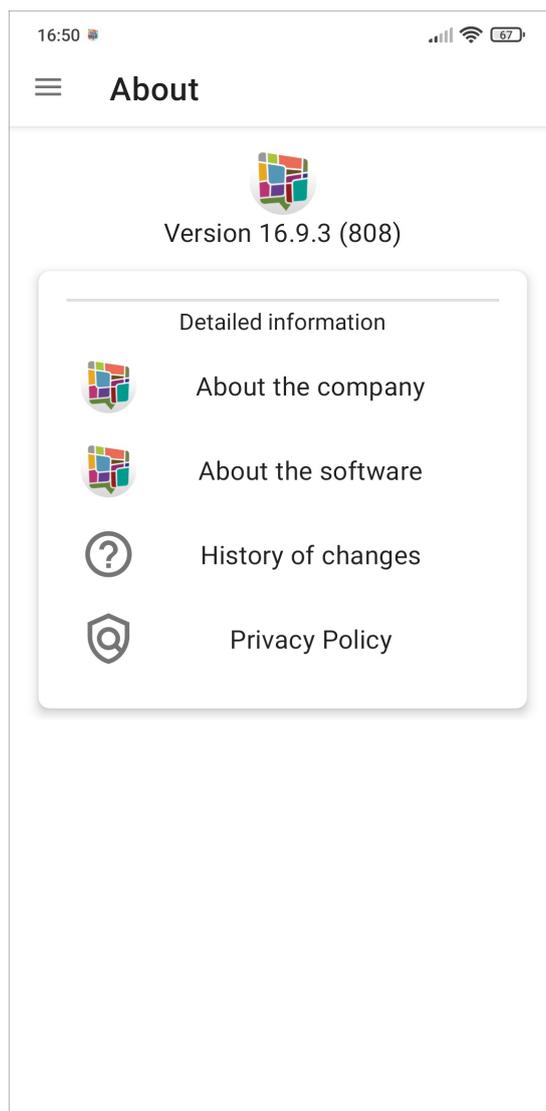


Fig. 3.1: “About” window

The “About” window contains information about the current version of the application installed on the user’s device. In addition, you can see the version on the navigation sidebar to the right of the “About” section.

“**About the company**” section shows brief information about the Activemap Computer Systems Design company. The “Details about the company” button at the bottom of the window contains a link to the website: <https://activemap.me/>.

“**About the software**” section displays information about the functions and features of the application. In the lower part of the window there is the “Details about the ActiveMap complex” button with the link to the company’s website (<https://activemap.me/>). Here you can view detailed information about the ActiveMap software package, which includes this application.

“**History of changes**” section displays information about the improvements and changes in functionality in the application versions.

“**Privacy Policy**” section opens a link to the privacy policy information.

## SETTINGS

### 4.1 Application settings

To access the application settings, select “Settings” on the navigation sidebar (Fig. 4.1). Calling the navigation sidebar is described in *Navigation sidebar* (page 28).

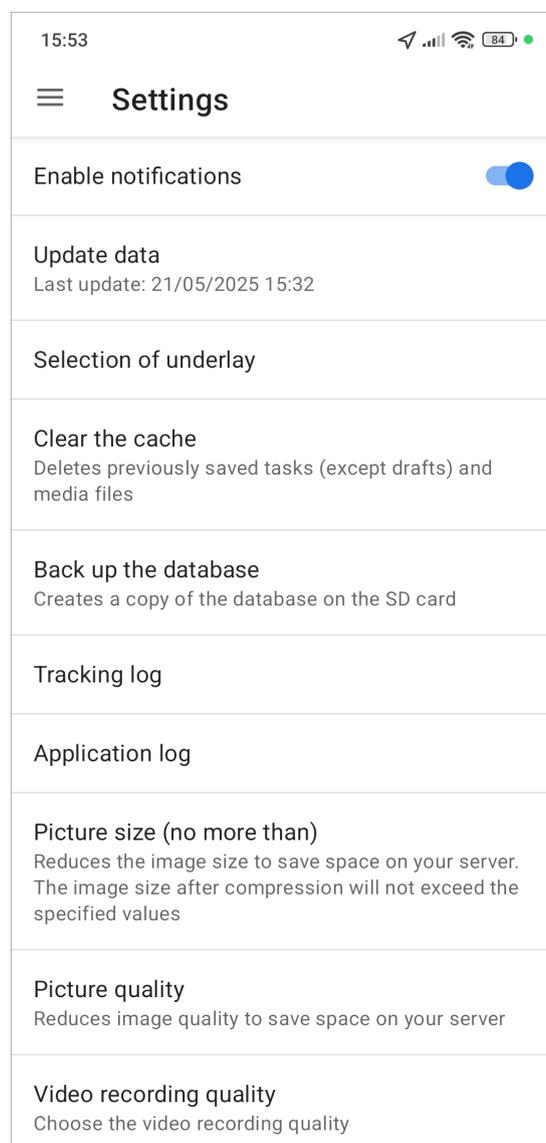


Fig. 4.1: “Settings” window

### 4.1.1 Enabling notifications

“Enable notifications” toggle switch allows you to enable the PUSH notification mechanism. PUSH notifications are displayed in the notification bar of the user’s device (Fig. 4.2).

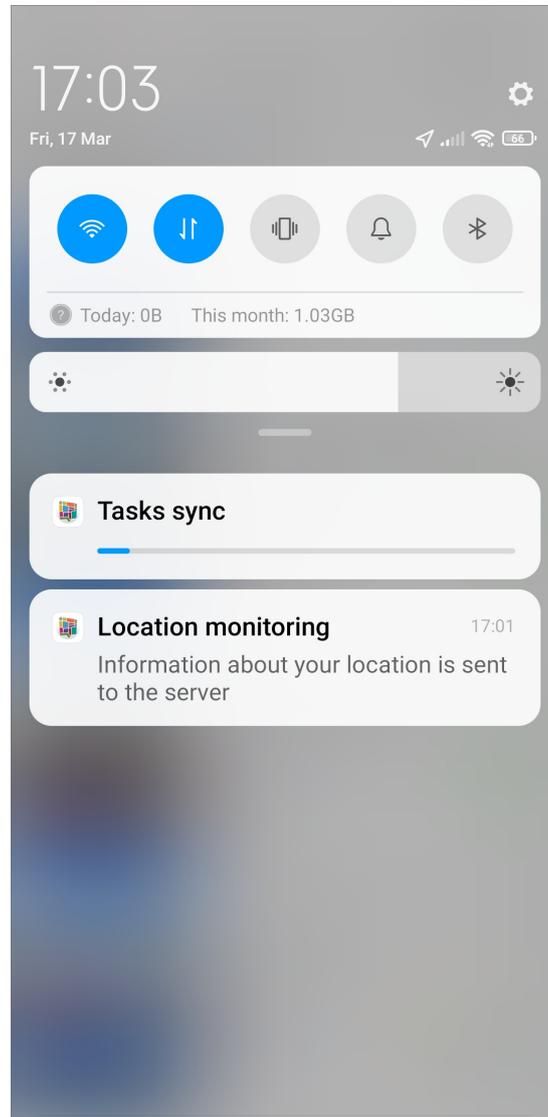


Fig. 4.2: Viewing application notifications on the device notification panel

Clicking on a PUSH notification takes you to the updated task (if the notification contains information about a single task) or to the list of tasks (if the notification contains information about updating several tasks).

### 4.1.2 Selection of underlay

This section allows you to change the map background. The list of basemaps includes maps to choose from (Fig. 4.3). The list of available basemaps can be adjusted during system configuration.

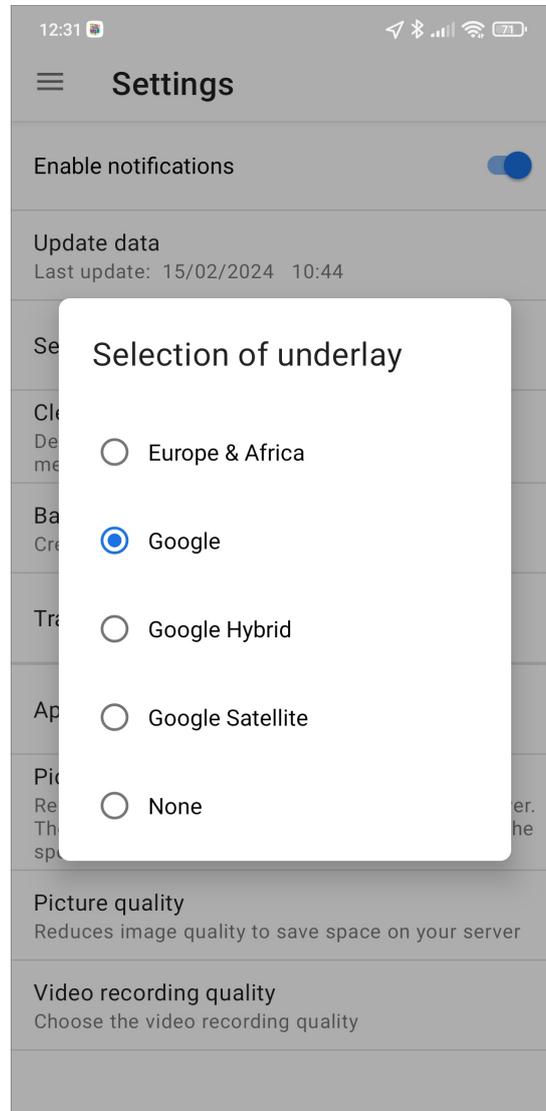


Fig. 4.3: Selecting a basemap

### 4.1.3 Media files settings

These settings are available in the following sections of the navigation menu:

**“Picture size (no more than)”** – sets the image size to save space on the server. Image size after compression does not exceed the specified values in pixels (Fig. 4.4).

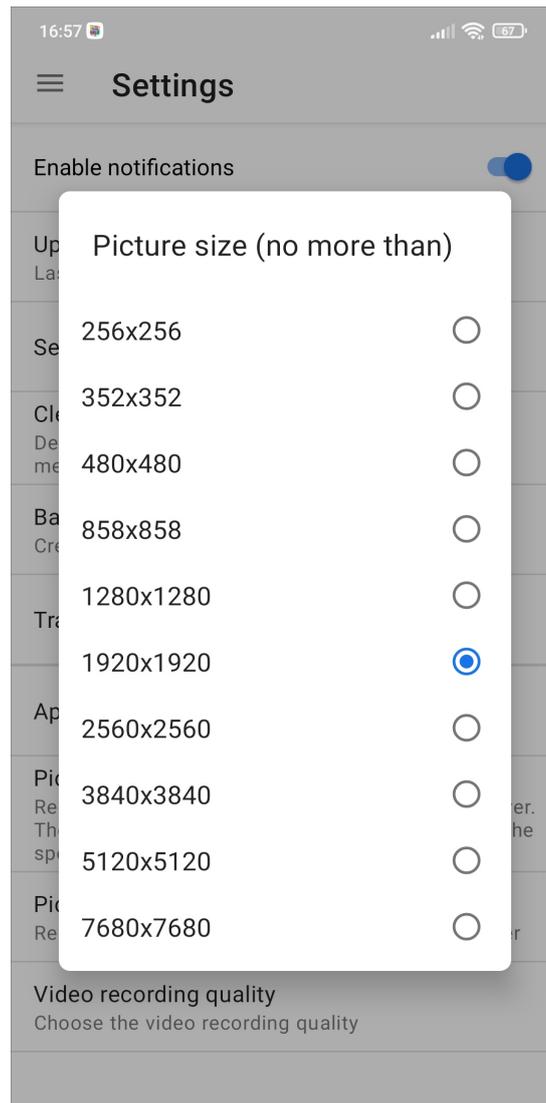


Fig. 4.4: Setting the image size

**“Picture quality”** – sets the image quality to save space on the server (Fig. 4.5).

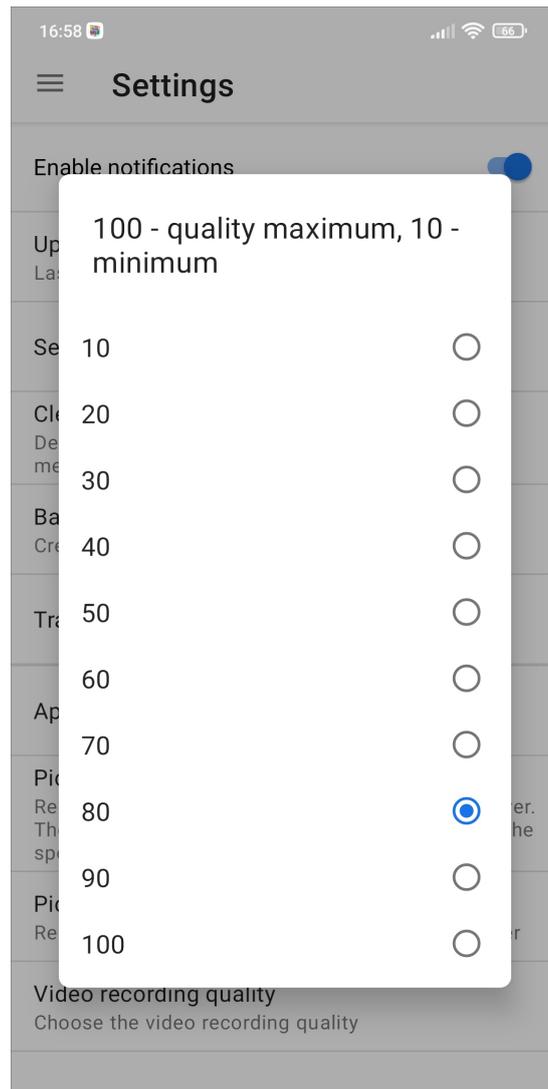


Fig. 4.5: Setting the image quality

“**Video recording quality**” – sets the quality of recorded video files (Fig. 4.6).

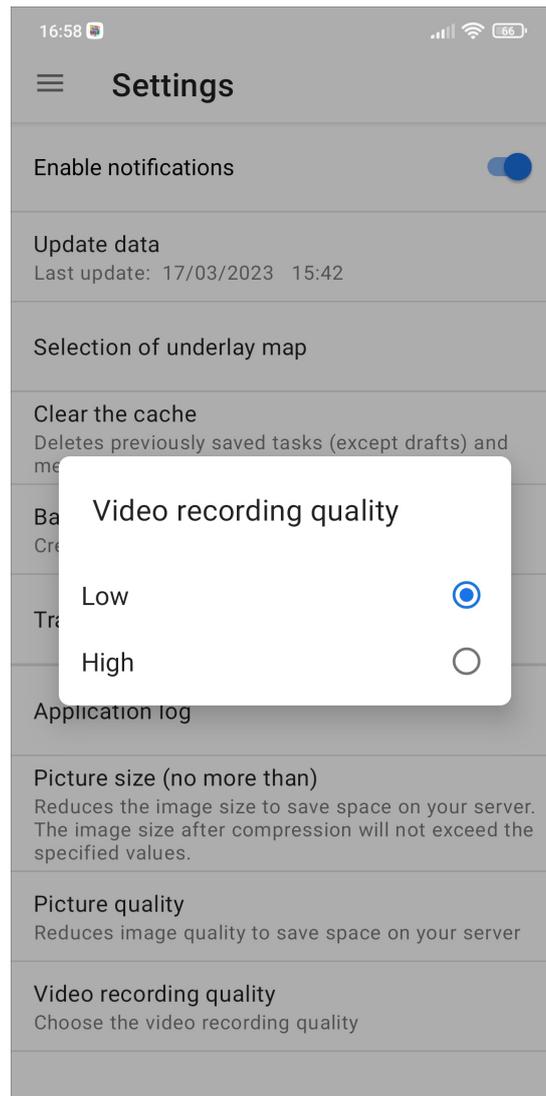


Fig. 4.6: Setting the recording quality

#### 4.1.4 Other settings

Navigation sidebar has the sections of general application settings:

- **“Update data”** – updates all reference data by synchronizing with the server (required when updating data or settings on the server). For more details, see *Updating reference tables and settings* (page 94).
- **“Clear the cache”** – deletes temporary files. When cleaning is completed, the “Cache cleared successfully” message appears on the screen.
- **“Back up the database”** – creates a copy of the database on the memory card of user’s device with the possibility of further use on the computer. When copying is completed, the “Backup is successfully created” message and the path to the saved copy appear on the screen.
- **“Tracking log”** – exports logs of the mobile device movement into a txt file. You can send this file for the user in any convenient way.

- **“Application log”** – exports application logs to an archive. You can send this file for the user in any convenient way.

## 4.2 Settings in ActiveMap

**Danger:** Changes in this block may cause system failure or termination of its functionality.

Only the System Administrator has access to the ActiveMap system component settings. However, in this section, you can find out what other settings are available for a convenient and efficient work in the application. The settings are made in the ActiveMap Web, in the “Management” block, “Settings” -> “Mobile application” and “Interface” sections.

Fig. 4.7: Mobile application settings

**Attention:** The settings are applied to Android and iOS applications.

Settings can be applied to specific users, individual roles, organizations, or all users in the system. You can also configure task state parameters under which the selected setting is working.

## 4.2.1 Mobile application

### Ability to attach an estimate to the task to account for consumables

This feature allows users to generate an invoice for the services and materials on site or to calculate the balance of provided materials. The balance of provided materials represents how much material is distributed and how much is used during the execution of tasks. It requires the creation of reports and additional settings in the work organization. Here you can also change the header text of the output file (“Invoice” by default).

### Camera

In this folder, you can configure individual parameters for the standard or custom camera in the application.

- **Consider the distance from the task point** – together with the “Prohibit photographing” setting allows displaying a message about the impossibility of taking a photo due to a large location error. If the “Prohibit photographing” setting is turned off, the geolocation icon turns red to indicate location error. Disabled by default.
- **GPS Only** – sets the source for determining location to GPS only. If this setting is disabled, coordinates can also be determined using A-GPS. Disabled by default.
- **Geolocation control when using a camera** – prevents taking a photo until the user’s location is determined. Enabled by default. If disabled, the application does not prevent taking photos even if coordinates have not been determined yet.
- **Is caption to the photo obligatory?** – makes it mandatory to add a caption to the attached photo. A user cannot attach the photo to the task without adding a caption. Disabled by default.
- **Maximum distance from the task point** – sets the maximum distance (in meters) from the task point at which users can take a photo. The default is 150 m.
- **Maximum location delay** – sets the time (in milliseconds) of device geolocation validity after losing the GPS signal when using the built-in camera. By default, it is 10000 ms. If the location is received after the specified time and the “Prohibit photography” setting is enabled, the application does not allow taking a photo until it receives a point that meets the requirements.
- **Maximum location error** – sets the acceptable error (in meters) for determining the device’s geolocation when using the built-in camera. The default is 50 m. If the obtained location has a larger error and the “Prohibit photographing” setting is enabled, the application does not allow taking a photo until it receives a point that meets the requirements.
- **Necessity of exact time** – prevents taking a photo until the time is synchronized with the exact time (from the Internet or GPS). Synchronization is required once and saved until the device is switched off. If the setting is disabled, synchronization is still performed, but it does not interfere with taking a photo. This results in the time of the device being attached to the photo. Disabled by default.
- **Prohibit photographing** – prevents taking a photo if the user is outside of the task zone, if the geolocation function on the device is turned off, or if geolocation services cannot determine the location of the device with the specified accuracy. Disabled by default.
- **Select a sticker after taking a picture** – does not allow attaching a photo to the task without first specifying a sticker. Disabled by default.

- **Select a sticker before starting the camera** – does not allow taking a photo without first specifying a sticker. Disabled by default.
- **Show photo editing window** – opens the photo preview and editing window immediately after taking a photo. Enabled by default.
- **Stamp coordinates on the photo** – allows adding a stamp with longitude and latitude coordinates to the photo. The setting is non-standard and needs to be added separately. Enabled by default.
- **Stamp the date on the photo** – allows adding a date and time stamp to the photo. Enabled by default.
- **The presence of a field for adding a caption to the photo** – allows adding descriptions to a photo in the photo editor. Enabled by default.
- **Use of custom camera** – prohibits using of the device's standard camera when working with a mobile application. Enabled by default.

### Integration with webView pages

This setting allows adding sections of third-party web applications and services to the navigation menu of the ActiveMap Mobile mobile application. By default, this setting is disabled. You can give your own name to the added section.

### Time-lapse video setup

A timelapse is a set of photos captured at a specific interval between shots that are combined into a single video clip. The result is an accelerated video showing what happens to objects over a long period of time or distance. Each photo retains its coordinates. This allows users to create tasks from video frames attaching the current frame (as a task photo) and geoposition in the ActiveMap Desktop application.

This folder includes the following settings:

- **Allow location recording** – recording the device's movement track and location while recording the current frame. You can view it in the ActiveMap Desktop desktop application. Disabled by default.
- **FPS (View)** – the number of frames per second for video viewing. The default is 5.
- **Maximum error in meters** – allowable coordinate error when recording a timelapse-video. If the coordinate exceeds this error, it is not taken into account during recording. By default, the allowable error is 100 meters.
- **Minimum change in distance in meters** – the minimum distance between location updates when recording video. The default is 5 meters.
- **Quality** – the quality of recorded frames. The default is 480 pixels.
- **FPS (Recording)** – the number of frames per second for video recording. The default is 2.

## Photo comparison

It is often necessary to return an object to its original state – the sample state. For example, to clean a bus stop and bring it to a certain appearance. If you have a sample photo, you can enable photo comparison of the sample and the completed work photo with the calculation of the similarity percentage in the following settings:

- **Allowable percentage comparison of two photos** – a number of the threshold percentage value, after which the photo is considered similar to the sample. If the photo percentage is above the threshold, the percentage information background is colored in green. If the photo percentage is below the threshold, it turns red. If the field is not filled, the background is not colored. It is usually 40 or 50.
- **Offline (URL to file)** – the URL to the file that is loaded with the reference tables (dictionaries). Once the file is successfully uploaded, the photo editing window displays the percentage of similarity with the sample. If you enter the photo result editing window during the file upload, a loading pictogram is displayed instead of the percentage. After the download is complete, the pictogram disappears, and the percentage of similarity between the two photos is shown.
- **Online (URL to service)** – the URL to the service that implements the comparison of the sample photo and the result. If this field is not filled in the photo result editing window, the photo comparison button is not available.

## Login with username and password

The setting activates user authorization in the ActiveMap Mobile mobile application using a login and password instead of a phone number. By default, this setting is disabled.

## Map is available in the application tasks

This setting allows to enable or hide the map window in tasks in mobile applications. By default, this setting is enabled.

### 4.2.2 Interface

The “Interface” section contains visibility settings for certain elements in the mobile application interface.

This settings allows hiding the following task blocks:

- main fields,
- file gallery,
- task rating.

You can hide the following main fields:

- Assigned executing unit,
- Assigned unit,
- Contract,
- Date,
- Description,

- Due date,
- Priority,
- Service object,
- Status,
- Step,
- Title,
- Type of work,
- Unit,
- Update date,
- User.

Parameter options:

- Visible (for all blocks) — hides the field or makes it visible. Possible values: True/False for organizations, users, roles, and task statuses.
- Default value (for fields with type of work and priority) — automatically fills in the main task fields with a default value.
- Read-only (for File gallery only) — enables the ability to view and add photos. Possible values: True/False for organizations, users, roles, and task statuses.

Additional settings for task rating:

- Scale.
- Simulate the presence of an evaluation when it is absent.
- Use emotion.

## EXITING THE APPLICATION

You can close the app on your device to terminate. However, if geolocation monitoring is enabled, the location data is still sending to the server in the background. To stop sending data, disable location monitoring in the user account (for more information, see *Account management and roles in the system* (page 24)). After that, you can close the application. It is also possible to exit the user account without disabling the monitoring settings. To do this, click “Logout” on the navigation sidebar and close the application.

## FREQUENTLY ASKED QUESTIONS

### 6.1 How to contact Technical Support?

There are two ways to contact Technical Support:

1. Call the hotline. To do this in the app, open the navigation sidebar (*Navigation sidebar* (page 28)), find the “About the program” section, open it, and select “Call the hotline”. The device enters phone dialing mode. Click the call button and contact the employee of the Activemap Computer Systems Design company. Technical support experts are ready and pleased to offer you all-encompassing help and support.
2. Write an e-mail. To do this in the app, open the navigation sidebar (*Navigation sidebar* (page 28)), find the “About the program” section, open it and select “Write to technical support”. Select the available email service on your device in the opened window. Selected email service opens with a pre-filled sending address, information about the user’s device, and the server to which the ActiveMap Mobile app is connected. Describe the issue in detail and send the email. After sending, you receive an email confirming the submission of the request and the assigned request number. When contacting Technical Support again, please provide the request number. Technical support staff helps to resolve the issue as soon as possible.

If these ways of communication do not work, check the contacts on the company’s website: <https://activemap.me/>. Technical Support email – [support@activemap.me](mailto:support@activemap.me).

### 6.2 What should I do if I don’t receive notifications from the app?

If you do not receive notifications from the application, check if they are enabled in the application settings. This is described in the *Enabling notifications* (page 167) section. If you still do not receive notifications, check the notification settings on the device. For most smartphones running Android, the path to notification settings is the same: Settings -> Applications -> ActiveMap Mobile -> Notifications or Settings -> Notifications -> Application Notifications -> ActiveMap Mobile. Here you need to enable, if disabled, the display of notifications. Also, you can configure other notification options: allow pop-up notifications, enable lock screen notifications, and others, depending on the user’s device model. You can customize the display of specific categories of app notifications. If the notifications still do not appear, please contact Technical Support.

## 6.3 How to filter tasks by custom (additional) field?

To filter tasks by custom (additional) field, follow these steps:

1. Open the application and go to the tasks list.
2. Open the filter .
3. In the “Custom fields - Select” block, select an appropriate attribute from the drop-down list in the “Custom fields” window.
4. Below, select the comparison operator and choose or enter a value as per customized field format.
5. If necessary, add other filters by clicking .
6. Go back to the list of tasks. They are filtered as per your input now.

## 6.4 What to do if changes in service objects are not sent to the server?

If there is an error sending changes to service objects, update the layer settings in ActiveMap Web. Disable layer search, save the layer. Then open the settings again, enable layer search, and click “Index”.

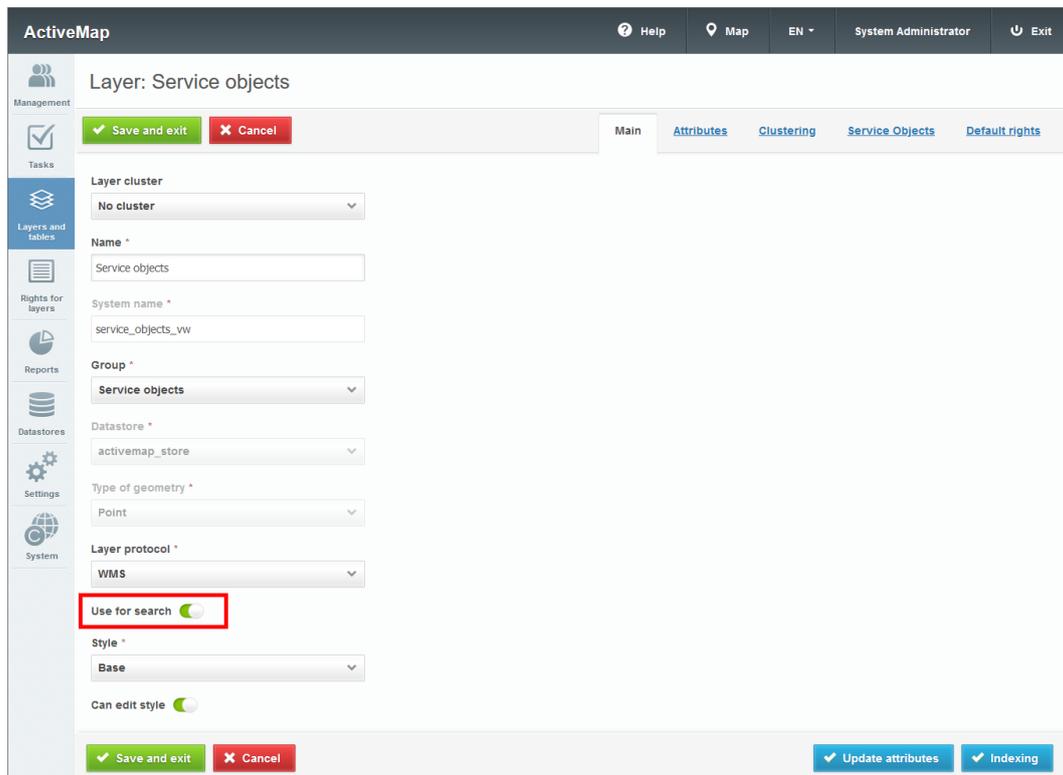
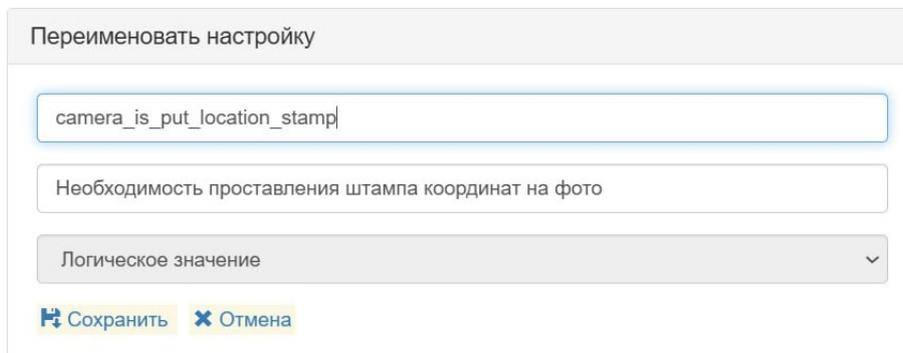


Fig. 6.1: Layer settings window

## 6.5 How to add a location coordinates stamp to a photo?

To do this, add the corresponding setting to the system. The ActiveMap system component settings are available only to the System Administrator. They are configured in the ActiveMap Web, under the management module, in the “Settings” block and the “Camera” folder of the “Mobile application” section. Click “+ Setting” and enter the required data.



Переименовать настройку

camera\_is\_put\_location\_stamp

Необходимость проставления штампа координат на фото

Логическое значение

Сохранить Отмена

Fig. 6.2: Window for adding coordinates to photos

## GLOSSARY

**Account** is a set of data about a user stored in the system, necessary for the authentication and providing access to personal data and settings.

**Activation code** is a file containing an encrypted hardware code, information about the number of users, and the license period.

**Applied software suite** is a set of interconnected programs designed to solve problems of a certain class of a particular subject area and interact with the user.

**Attribute data** are values describing features of the objects. Attribute data types are: integer, real, text, date, date and time, geometry.

**Band** is an object that is placed directly on the report page. It is a container for the other objects, such as “Text”, “Picture”, etc.

**Basemap** is the dominant or underlying layer in a given map that provides geographical context to the map and other dataset layers above it. Users visualize tasks, objects, and thematic layers above the basemap. They use it for navigation through a map and for getting general information about the area of interest.

**Bluetooth Low Energy (BLE) tags**, also known as beacons, is a class of Bluetooth Low Energy (LE) devices that broadcast their identifier to nearby portable electronic devices. The identifier and several bytes sent with it can be used to determine the device’s physical location, track customers, or trigger a location-based action on the device.

**Centroid** is the center of a geographical object on a map. For most objects, the centroid coincides with the center of the rectangle described around the object.

**Client organization** is an association of users who make their requests via the mobile application, monitor their status, who are capable of evaluating the work performed. User rights for operating the System are restricted.

**Cluster** is an association of several organizations for the purpose of enabling the in-process control of the performance of departments.

**Cluster Administrator** is a user role in the System responsible for administering one or more specified clusters, namely: managing organizations and users, layers and tables; granting access rights to layers and reports; managing tasks within the specified clusters. Managing includes creating, editing and deleting.

**Cluster Inspector** is a user role in the System responsible for managing tasks within one or more specified clusters and having rights to create new layers and tables, as well as edit or delete available ones. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.

**Clusterization** is the representation of raster layer objects located nearby by a single label on a map.

**Composite field** is a custom field format that contains one or more nested fields and supports the creation of multiple field instances in a task card. It is used to add several similar field sets to the task, with the number of sets being unknown in advance.

**Contract** is an entity for accounting and planning the task to be performed by organizations under contractual obligations.

**Custom fields** are attribute fields, which can be customized in the system versus features of a project underway, and be referenced to the certain work items.

**Data export** is a data loading from the Program database to an external file.

**Data table** is a set of the related data stored in a structured format in a database.

**DBF data format** is a data storage format used as one of the standard ways of storing and transmitting information by database management systems, spreadsheets, etc.

**Drag and Drop** is a way to manipulate interface elements using a mouse or a touch screen. The method is implemented by “grabbing” (pressing and holding the left mouse button) the object displayed on the screen, which is available for such operation, and then moving it to another place (to change its location) or “dropping” it to another element (to call the corresponding action in the program).

**Executor** is a user role in the System responsible for executing assigned tasks and having the rights to create new tasks, layers, and tables, as well as edit or delete available layers and tables.

**GDAL** (Geospatial Data Abstraction Library) is a translator library for raster and vector geospatial data formats. As a library, it presents a single raster abstract data model and a single vector abstract data model to the calling application for all supported formats.

**Geographic coordinates** are the mathematical values that designate a position on the earth relative to a given reference system.

**GeoJSON data format** (Geographic JavaScript Object Notation) is a format for representing various geographic data structures. A GeoJSON object can be represented by a geometry, a feature, or a feature collection. GeoJSON supports the following geometry types: Point, LineString, Polygon, MultiPoint, MultiLineString, MultiPolygon and GeometryCollection. A feature in GeoJSON consists of geometry and additional properties. Feature collection consists of a set of features.

**Geographic Information System (GIS)** is an information system designed to collect, store, analyze, and display spatial data and related information about presented GIS objects.

**GPS** is a satellite navigation system that measures distance, time and determines the location in the WGS 84 world coordinate system. It can accurately determine the three-dimensional coordinates of an object equipped with a GPS receiver: latitude, longitude, height above sea level, as well as its speed, direction of movement, and current time.

**File label (sticker)** is a textual mark in a picture.

**Hardware code** is a file that contains encrypted information about the server characteristics and the license key.

**Hatching** is a set of drawings and colors used to fill polygonal objects.

**Image sticker (file label)** is a text mark on the photo.

**Information display panel** is a panel designed to display specific information related to user actions, as well as messages that correct user actions (warning messages, tips).

**Installer** is a program that installs files on the end user’s computer.

**Interval** is a data table that is used to configure the display styles of layer objects on the map depending on their specific numerical characteristics. The Program uses intervals of (a, b) type.

**Invitation (an invite link)** is a link containing information on the server address, login, and password of a user to simplify the process of authorization in the mobile application.

**Layer** is a visual representation of geographical data in the environment of any digital map.

**Layer group** is a set of layers grouped according to thematic or other specified criteria.

**Layer object visibility on the map** is a displaying the layer object on the map as a certain symbol, line, or polygon.

**Layer visibility on the map** is a displaying of all layer objects on the map as a group of symbols, lines, or polygons.

**LDAP (Lightweight Directory Access Protocol)** is an open, vendor-neutral, industry standard application protocol for accessing and maintaining distributed directory information services over an Internet Protocol (IP) network.

**Legend** is a set of symbols and explanations on a map.

**License** is a file containing information on the acceptable quantity of users and validity period, allowing to link the server software of the System to the equipment.

**License key** is a character string provided to the customer by the software vendor after purchasing the license, used to activate the product and obtain a digital license for a fixed server. Contains the maximum number of users and the license period in an encrypted form.

**Linear object** is an object on a digital map that represents a place or item that has length but no area at a given scale.

**Managing map layers** is the set of actions for managing layer visibility, creating and editing the geometry of layer objects on the map.

**Map scale** is the ratio of a distance on a map to the corresponding distance on the ground. A scale of 1:100,000 means that one unit on the map corresponds to 100,000 of the same units of measurement on the ground.

**Mapping** is a correspondence between a layer attribute and a task field.

**MapInfo Interchange Format (MIF)** is a MapInfo text data format that includes geographic data (objects) and a description of the data table containing attribute information related to objects.

**Metadata** is the information that describes the characteristics and properties of a particular layer.

**Multi-object** is a combination of several objects. Multi-objects can be of point, line, and polygon geometric types.

**Node** is the point representing the beginning or ending of an edge of a linear or polygonal object, topologically linked to all the edges that meet there.

**Object attributes (attribute data)** are values describing the object properties. Attribute data types are: integer, real, text, date and time, geometry.

**Object geometry** is the measurements and properties of points, lines and surfaces. In GIS, geometry represents spatial components of geographic objects.

**Object import** is a data loading from external files into the Program database.

**One-to-many relationship** is a relation between two sets of data where one record in a parent table can be associated with one or more records in another table (child data table).

**Operational tasks** are the tasks created to solve current issues.

**Organization Administrator** is a user role in the System responsible for administering the organization, namely: managing users, layers and tables; granting access rights to layers and reports; managing tasks within the organization. Managing includes creating, editing and deleting.

**Organization Inspector** is a user role in the System responsible for managing tasks within the organization and having rights to create new layers and tables, as well as edit or delete available ones. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.

**Parent tasks** are first-level tasks. They can be linked to child tasks (second-level tasks) or have no child tasks.

**Photo sample** is a reference photo used as the basis for assessing similarity with a photo uploaded by the user to confirm the completion of work on the service object.

**Photo response** is a photo uploaded by the executor to the task as a response to the attached photo sample to confirm the completed work on the service object.

**Point object** is a cartographic object that does not have length or area in the accepted scale.

**Polygonal (area) object** is a cartographic object that bounds the area at a given scale.

**Program user (User)** is a person (employee) or organization that uses the current Program to perform a specific function.

**Raster layer** represents data in the form of geographically-referenced images as well as fragments of raster images displayed in the same projection and prepared for each level of map detail.

**Reference table (dictionary)** is a table with systematically organized data intended to help users to handle attribute information on objects.

**Schedule** is a tool that allow users to automatically create and assign template tasks at a certain time with a specified periodicity.

**SHP data format** is a vector format of geographic files. It allows users to store the following types of geometric objects: points (polypoints), lines (polylines), polygons, and other objects. A file can contain only one object type. Each entry in the SHP file can have multiple attributes to describe its geometry.

**Scheduled tasks** are the tasks created at a specified date and time according to a template.

**Spatial database** is a database optimized to store and access spatial data or data that defines a geometric space.

**SQLite** is an in-process library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine.

**SQLite Data Format** is the SQLite relational database file format.

**Sub-object** is an object included in the multi-object.

**Symbol** is a graphical representation of a geographic object or a class of spatial objects, which helps to identify and distinguish them from other spatial objects on the map.

**System Administrator** is a user role in the System with the maximum rights responsible for its configuration and administration, including managing clusters, organizations, users of all roles, contracts, layers and tables; granting access rights to layers and reports; managing tasks. Managing includes creating, editing and deleting.

**System Inspector** is a user role in the System responsible for managing tasks across all clusters. Managing includes creating and editing tasks, except for changing the title, organization, type of work, priority, description, deadline, and location.

**System reference table** is a reference table generated automatically based on data entered into the system. System reference tables include tables of system users, priorities and types of work.

**TAB data format** is the format of MapInfo vector spatial data files (MapInfo files).

**Task** is a system entity containing information about the type of work, creation date, deadline, priority, execution step, contract, object, as well as instructions for execution. It is possible to attach photo samples, photo responses, and other auxiliary files (documents, photos, and videos) to the task.

**Task priority** is a characteristic of the urgency of the task.

**Task status** is a characteristic of the completion degree of work on the task, determined by the dispatcher or administrator when accepting the task.

**Task step** is a stage in the sequence of actions for completing a task changed by the task executor, dispatcher, or automatically by the system according to the set algorithm.

**Task objects (service objects)** are the layer and table objects associated with tasks and containing information useful for their execution. They can be used to automatically fill in task fields according to the configured mapping (correspondence between a layer or table attribute and a task field).

**Thematic layer** is a spatial data bank layer which objects are interrelated by the same topic.

**Tile (map tile)** is one of many images that a map is divided into. Most map services use square tiles of 256x256 pixels.

**Timelapse-video** is a video file comprising a series of pictures taken via a video camera during a long time period.

**Tile Map Service (TMS)** is a specification for storing and retrieving cartographic data that provides access to the map tiles rendered at a specific scale level. These resources are accessed via the “REST” interface.

**Toolbar** is a graphical user interface with buttons for performing Program commands.

**Tiled Web Map Service (TWMS)** is a specification for storing and retrieving map data that provides pre-built georeferenced map images. TWMS relies on technologies for building and transmitting large images to the Internet using tiles – small, standard-sized image fragments. A TWMS service may also include one or more styles, dimensions, or tiling schemes to define how the TWMS layer is displayed. Accessing data via the TWMS protocol requires preprocessing of the source cartographic data by creating tiles for the full range of scales, over the entire area. This technology allows locally caching an image by building a tile grid.

**User profile** is a characteristic of an individual system user, represented by a set of attributes, such as full name, email, phone number, etc.

**User rights management** is a set of actions for registering and managing user rights in the Program.

**User tags** is an entity allowing to group users against a specified attribute (e.g., the phone model).

**User type** is a user characteristic (a human being or a vehicle) to determine the user mapping settings versus the type selected.

**Vector image** is a representation of graphical objects and images based on the use of geometric primitives such as points, lines, and polygons.

**Webhook** is an automated launching of http requests in response to operations on entities (comments and tasks).

**Web Feature Service (WFS)** is a web service for querying spatial data that includes a standardized API. Unlike the Web Map Service (WMS), which returns a map image (rendered data), the WFS service returns actual objects with geometry and attributes that can be used in any type of geospatial analysis. WFS services also support filters that allow users to perform spatial and attribute queries on the data.

**Web Map Service (WMS)** is a standard protocol for serving geographically referenced images over the Internet, generated by a cartographic server based on data from the GIS database. The WMS service may also include a Styled Layer Descriptor (SLD) to define how the WMS layer should be displayed. The WMS service layer consists of three elements arranged hierarchically in the table of contents. At the top is the name of the WMS service, which contains all the layers of the WMS map. The next level down contains the WMS composite layers whose only function is to organize the WMS sublayers into appropriate groups. There is at least one WMS composite layer, but there can be any number of composite WMS layers (and even nested groups within groups). WMS composite layers do not contain map layers. This is the third group, WMS sublayers that actually contain map layers.

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