Logistics for Wialon Local 1904 and 2004

Contents

Introduction

Logistics is a multifunctional program created to implement control over all the working stages of a

courier delivery service.

Logistics consists of two applications: web and mobile one. Web application is intended to be used by an operator. The web part is developed to manage working processes such as orders creation and distribution between units, routes planning and optimization, as well as monitoring and coordination of orders delivery. Mobile application is intended to be used by couriers. It is available on both smartphones and tablets (Android, iOS). The mobile part is developed to inform a courier on job details: orders attached, their sequence, and optimized delivery routes. Moreover, using the mobile application a courier notifies an operator on a progress of orders delivery (confirmation/rejection), leaves comments regarding it, attaches photos, and uses chat to communicate with an operator.

Preparation for Work

Required Services

The application requires the **Orders** service to be activated.

For the data to be correctly passed from the web application to mobile one, it is necessary to create drivers, warehouses, and orders in the same resource. To do so, create a driver in the monitoring system and in the web application's settings on **General** tab choose a resource of the driver created.

Measurement System

The measurement system applied depends on the user settings.

History Period

The history period in Logistics depends on the one specified in the billing plan or account settings in Wialon.

Configuring Logistics in Wialon Local

If you want Logistics to work in **Wialon Local**, you need the following:

The *screen* package for Debian
It is installed using the **apt-get install screen** command.

Separate DNS
Create a separate DNS and route it to the external IP of the server. Indicate this DNS with the type Logistics in the site settings in the administration system.

The configuration of Logistics in CMS is the same as for other apps. In the URL field you need to indicate the created DNS.

Access Rights

To work with orders, it is necessary to possess the following access rights to the **resource:**

- **View orders** — to view orders;

- **View geofences** — to view geofences;

- **Create, edit, and delete orders** — to create, edit and delete orders;

- **Create, edit, and delete drivers** — to allow the driver receive notifications;

- **Edit not mentioned properties** — to create, edit and delete custom fields.

To work with orders, you must have the following rights to the **units**

- **View item and its basic properties** — to display the unit on the map and in the lists;

- **Query reports or messages** — to display tracks and query reports;

- **Use unit in jobs, notifications, routes, retranslators** — to display the unit in the list when you distribute orders and change units on the route.

Attention! If one of the last two access rights is missing, the unit becomes unavailable for use in the application.

For the correct operation of the application, the following options must be activated in the user properties:

- **Can create items** — to create orders (the **New order** and **Import orders** tabs are inactive);

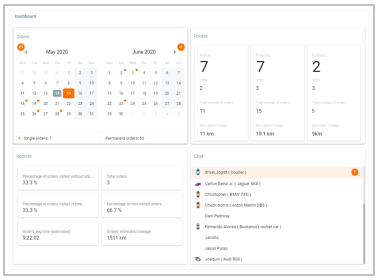
- **Can send SMS** — to edit the phone number in orders and choose the phone in the settings and orders. Moreover, if this right is not available, the field for SMS text entry is inactive;

- **Can change settings** — to edit the settings.

Web Interface

Interface of the web application is divided into 2 panels: navigation menu (on the left) and working area (on the right).

In the working area of the main page there is the Dashboard, which presents summary information and helps to quickly jump to the required tab. Dashboard consists of four sections: Orders, Routes, Reports and Chat.



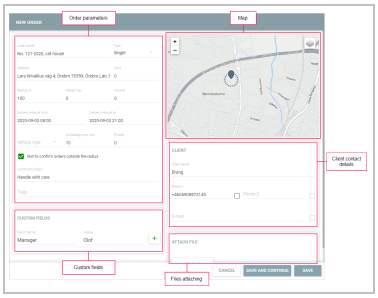
The **Orders** section contains summary information on the days in which there are undistributed orders (marked with an orange dot) and the number of single and permanent orders.

The **Routes** section contains summary information about active, planning and fulfilled routes.

The **Reports** section displays statistical information on the last executed report for the previous day (if no columns are selected for the statistics table, the **No data to display** message is displayed).

The **Chat** section shows the list of drivers. If a new message comes from a driver, the line with their name is highlighted and an orange numeric indicator at the end of it shows the number of unread messages.

Orders



To create an order, select **New Order** in the **Planning** section in the navigation panel.

New order window consists of 5 blocks: order parameters, map, custom fields, client contact details and files attaching.

Order Parameters

Order name — an arbitrary name used for order registration in the system (obligatory field).

Type — 2 types of orders (single and permanent) are supported in the system. A single type order is intended for a single use. Its delivery interval contains both date and time. Orders of such a type are moved to history after execution. A permanent type order is intended for a multiple use. Delivery interval of such an order contains no particular date, but time (hours:minutes). Permanent orders are not moved to history after execution.

Address — a customer's location address (delivery destination point). Note that before entering this field, it is recommended to choose an address provider (**Settings** section). Upon entering the first symbols of an address, a dropdown list containing the possible variants appears. Choose the necessary one from the list or type an address manually (obligatory field). Instead

of address, you can indicate the coordinates in the 'latitude, longitude' format (for example, 53.905735, 27.456773).

Cost — total cost of goods in the order. Units of measurement for the cost values are indicated in the corresponding block of the general settings.

Radius, m — the maximum distance on which a unit should come close to an indicated delivery destination point and stop there in order a point to become visited (upon delivery point visiting a courier must confirm or reject an order by setting the corresponding status in the mobile app).

Weight, kg — an overall weight of goods in the order. This value can be taken into account upon distributing orders among units.

Volume — any conventional value (for example, items). Can also be taken into account upon distributing orders among units. Units of measurement for the volume values are indicated in the corresponding block of the general settings.

Delivery interval (from – to) — date and time interval for an order to be delivered. Pick dates in the calendar. Indicate initial and final dates of an interval. If an interval consists of a single day, then indicate it as both initial and final date of an interval. To summon a calendar, click one of the fields of a delivery interval. After indicating dates, click OK. Time of a delivery is edited manually.

Vehicle type — a preferable vehicle type for order delivery. This value is taken into account upon distributing orders among units. Dropdown list contains only the vehicle types indicated for units in the monitoring system (**Profile** tab of unit properties dialog).

Unloading time, min — an approximate duration for unloading goods.

Priority — a numeric value (from 1 to 99) showing the importance of an order upon distribution if a route validation is used. Orders with higher importance are distributed first. The higher numeric value indicated, the higher the importance of an order is. Priority is taken into account only for orders with overlapping delivery intervals.

Not to confirm orders outside the radius — the option which, when activated, allows a driver to confirm the order only within the specified radius from the place of delivery.

Comment — an arbitrary comment regarding a delivery.

Tags — key words (any) on the basis of which orders can be sorted (planning section). To add a tag, click the field, enter a key word, and use Enter on your keyboard. To delete a tag, use Backspace or delete button.

Map

The address indicated in the order parameters is shown on the map by a marker. If necessary, a delivery destination address can be adjusted by dragging the marker to a corresponding point on the map. Moreover, a necessary destination address can be added directly from the map. To do so, click a corresponding destination point on the map.

Custom Fields

In this block, you can fill in the custom fields created in the settings on the same-name tab. You cannot edit the names of such fields. If you want to delete them, go to the settings.

If you fill in a custom field in the order and then delete the field in the settings, the indicated value is saved in the order. If you want to delete the value, point to the line with the field and click on the icon  .

The values of custom fields are displayed:

in the table on the **Planning** page;

in the report with detalization;

in the mobile application, if the corresponding option is activated in the settings.

Client Contact Details

Contact details include client name, phone number and e-mail. A phone number and an e-mail indicated by a flag are used to inform a client on a courier's arrival. Contact details are available to an operator on the stages of planning and delivery. Also, contact details are displayed for a courier in the mobile application.

Files Attaching

An order can be attached with a file (for example, a bill or consignment document). The file attached can be viewed by a courier in the mobile application. To attach a file, click the corresponding button.

Click **Save** upon the form's completion. Saved order is moved to the **Planning** section.

Import Orders

Along with the manual creation of orders, the possibility of importing orders is supported as well. Import is performed using either CSV files in UTF-8 coding or XLSX files. These types of file may contain several orders simultaneously. For an optimal system performance the amount of orders in a file should not exceed 1000. If any orders have not been imported, a corresponding notification appears.

Importing Dialog

To import orders, choose **Planning** section in the left panel and click **Import Orders** item below. Afterwards, the importing dialog appears in the right panel. This dialog provides the possibility to attach a file containing orders and create a template which can be used for this file as a header in the table of orders. For an imported file to be correctly recognized by the system, its template should possess the same sequence of parameters as an attached file. The maximum number of columns is

19. Though template creation and usage is a helpful feature, it is considered to be optional at this stage. After attaching a file, click **Import**.

The file must contain columns with the following information:

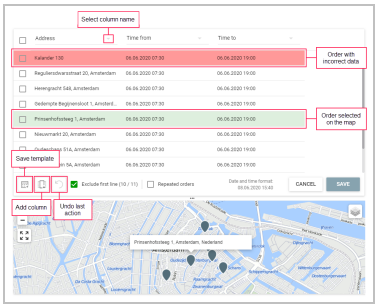
address information (the **Address** column or the **Latitude** and **Longitude** columns);

delivery interval (the **Time from** and **Time to** columns).

The **Address** column can also contain coordinates in the 'latitude, longitude' format (for example, 53.905735, 27.456773). If one or several columns are missing, the **Save** button will be inactive and the system will issue a corresponding warning.

Table of Orders

All the orders the file contains are placed in the table of orders.



If the file contains column names, they are displayed in the first line of the table. To hide the names, enable the **Exclude first line** option.

When importing for the first time (or importing without a template), you should manually select the names for the columns in the drop-down lists. You can save the selected names as a template and continue to use them when importing orders from similar files. To do this, click on the button , indicate the template name, edit the columns if necessary, and save the changes.

> If you have created custom fields in the settings, you can also select their names as column headings and save them in the template.

If the table contains orders with incorrect data, their rows are coloured red and placed at the beginning of the table after you select the **Address** column.

If the imported file does not contain a date column and the **Time from** and **Time to** names are selected for empty columns, the time specified on the **General** tab in the settings (the **Order parameters** block) is automatically indicated in these columns. For single orders, the next day is also indicated in addition to the time.

If the **Not to confirm orders outside the radius** option is activated in the **Order parameters** block on the **General** tab of the settings, it is also activated for all the imported orders.

Table Editing

To edit any field of the table, click it and make necessary changes. These changes can be saved or canceled using either a keyboard (**Enter**, **Esc**) or the corresponding buttons in the bottom of the table (right corner). Moreover, changes are saved automatically upon switching to another field.

A multiple editing feature is also supported in the table of orders. To use multiple editing, indicate flags in the lines where similar information should be provided. Afterwards, edit any field of the table. As a result, identical changes are applied to the corresponding fields of the chosen lines.

If a mistake is made upon editing the table, move a step back by clicking **Undo** in the bottom of the table (left corner). Up to 5 steps are saved in the system.

Buttons in the bottom of the table (from left to right):

Add template — to save a current header of the table as a template.

Add new column — to add new column to the table (the maximum number of columns is 19).

Undo — to move a step back in case of editing mistakes (up to 5 steps).

Cancel — to cancel orders' import.

Save — to save imported orders (saved orders are moved to the **Planning** section).

The date and time format and the separator for the imported files are indicated in the **Settings** section. In order import to be implemented correctly, the date and time format should be the same in the imported file, the application settings and the user settings in the monitoring system. The separator used in the file and in the application's settings should coincide as well. In the import window to the left of the **Cancel** button there is information about the date and time format specified in the settings.

Integration

Logistics Services is a service intended to automate the processes of import supported in Logistics program. This service provides you with a possibility for importing multiple orders or routes from both CSV and XLSX files or via JSON.

Moreover, the service provides you with a possibility to integrate Logistics program with either third-party services or ERP systems via special API for importing orders and routes.

To use Logistics Services, view its documentation first.

Planning

Delivery planning includes several steps: choosing orders (step 1), choosing transport (step 2), and routes building (step 3). The steps on delivery planning are performed using such interface elements as table (top part of the working area), map (bottom right part), and information block (bottom left part).

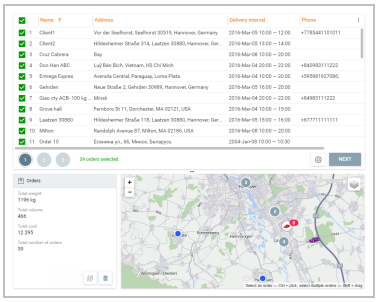
Some peculiarities of a delivery planning:

- Only those single orders, the delivery interval of which corresponds to the current date can be added to the route.
- Working with permanent orders (step 1), you should choose a delivery date (calendar in the bottom right corner of the table).

Routes building is implemented on the basis of an algorithm set on the corresponding tab of the settings. Parameters of an algorithm can be changed directly from **Planning** section (on any planning step). To do so, click the **Gear** button in the bottom right corner of the table, indicate necessary parameters, and apply or cancel implemented changes.

If a specific vehicle type is selected in the order parameters, the units of that type are displayed in the table when selecting the unit during step 2. To see other available units, use **Vehicle type** filter in the left panel and check the required types from the drop-down list. Select **Any** to display all available units, regardless of their type.

Table



Main actions on the delivery planning are performed in the table. Depending on the current planning step the table may contain created orders, available units (transport), and built routes. The planning step is shown in the lower left corner of the table. To move to the next step, first complete the previous one. At every step (until a route is saved) there is a possibility to go back to the previous one and make corrections.

You can select the columns which should be displayed in the table. To do this, click on the icon ⋮ in the upper right corner. By default, columns with custom fields are not displayed in the table. The names of such columns are marked with a number sign (**#**).

Table supports a number of additional actions with an order:

Edit — change order parameters.

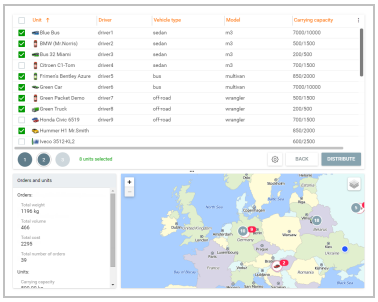
Copy — create new order with identical parameters (by default **Today** is used as delivery interval).

Delete — delete order from the system.

These actions become available upon pointing the cursor on a necessary order (buttons at the end of the line).

You can select several orders in two ways: check the required boxes in the first column or left-click on the orders while holding the **Ctrl** key. If you need to apply changes to several orders at a time, mark them in the table and press the **Edit parameters of selected orders** button located in the lower part of the information block to the left of the **Delete** button. In the opened dialog you can modify the delivery interval (from — to), the unloading time and the orders' tags.

Map



Information presented in the table is visualized on the map (click an element's line in order for the map to be centered on the selected element; check the box in order for the map to be scaled and centered in such a way that all the elements with the checked boxes are seen on it). Press  to expand the map to the entire workspace. Clicking the  button or anywhere in the inactive area of the screen restores the original size of the map.

Information on a particular element can be viewed directly from the map. To do so, summon a tooltip by clicking a necessary element. Moreover, the map can be used as a means of choosing orders. To select elements on the map, hold the Ctrl key and click on the required element. To select several elements, hold Shift and point out the area with the necessary elements on the map.

Information Block

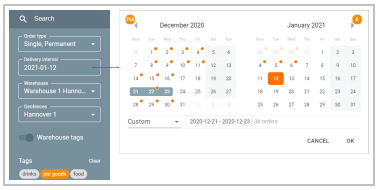
Information presented in this block can be divided into 3 categories: information on the chosen element, general information on orders, and general information on routes.

Information on a chosen element (order, unit) is shown upon clicking an element's line in the table and includes its detailed description. Order description is an information indicated upon order creation; unit description is an information indicated on **Profile** tab of a unit properties dialog in the monitoring system. In the bottom of the information block there are buttons for editing or deleting an order chosen in the table.

General information is shown upon checking an element's flag. On the 1st step of planning this piece of information includes such parameters as total weight, volume, cost, and number of orders; on the 2d step this piece of information is also accompanied by unit's data (total carrying and effective capacities). In the bottom of the information block there is a button for deleting all the orders indicated in the table by flags.

General information on routes is shown on the step of routes building. Information on orders and units engaged in a route is added by data on distribution optimization and route validity parameters used.

Filters and Dynamic Search



The items shown in the table are determined by the filters applied. The filters are used to quickly find the necessary items. They are located in the left panel. The items are filtered by the following parameters: the order type (single, permanent, single and permanent), delivery interval, warehouse, and the geofences attached to it — for orders, the vehicle type and the warehouse — for units. By default, the warehouse used as a filter is the one indicated on the corresponding settings tab as the initial warehouse, default delivery interval is **Today**, and the default vehicle type filter is **Any**.

A calendar is used to select a delivery interval. At the bottom of the calendar there is a drop-down list where you can select one of the fixed time periods (**Today**, **Tomorrow**, **Next week**, **Next month**) or **Custom** interval which allows you to set the period yourself. For the latter, you must

specify its beginning and end. If the length of the interval is one day long, double-click the required day.

The orange dots on the calendar indicate the availability of **single** orders on a certain day. Their number is displayed at the bottom of the calendar to the right of the drop-down list when selecting the delivery interval. Numeric indicators next to the month switches indicate the availability of single orders and their number in the previous and next months.

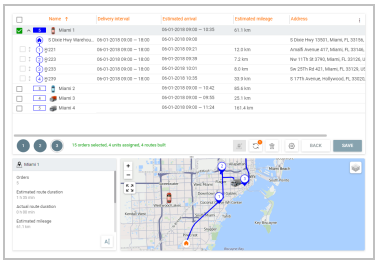
Note that a warehouse's filter value can be changed on the first planning step only.

Besides, the necessary elements can be found using dynamic search. The search field is located above the **Orders** type' filter. Search is performed by all the fields of the table.

Sorting by Tags

The orders filtered by delivery interval and warehouse can be sorted by the tags added upon the creation of orders. To do this, select the necessary key words in the tag cloud (below the filters). Moreover, orders can be sorted by warehouse tags. In this case, the table shows the orders, the tags of which coincide with the tags of the selected warehouse. To sort orders by warehouse tags, it is necessary to enable the **Warehouse tags** switch in the filter.

Routes Building (3rd step)



Select the orders (step 1) and the units for their delivery (step 2) and click the **Next** button. On the basis of the algorithm used, a route is formed and displayed on the map. You can set the colour of the route on the **General** tab of the settings section.

For the optimal route building the algorithm considers such parameters as delivery interval, weight, and volume of goods in the order (if the corresponding settings are indicated), as well as warehouse working hours and unloading time (indicated on the

Warehouses tab of the settings). Moreover, upon a route building the algorithm considers requirements on the minimization of distance and time for a delivery. Pay attention to the fact that the distributed order created more than 10 days ago are deleted from the system automatically.

To view the sequence of delivery points to be passed, expand a route (click on the icon). Note that a formed route is considered to be preliminary. In other words, the sequence of delivery points of a formed route can be reestablished either automatically or manually.

To do it automatically, click **Refresh** icon in the end of the line.

To automatically redistribute the points among the units or change their order, select the routes in which you want to make changes and click the **Optimize** again' button ( ) at the bottom of the table (the numeric indicator on the button corresponds to the number of selected routes). This will result in re-optimization of the routes.

To reestablish delivery points manually, drag and drop them in the required sequence. Note that if several routes are formed, you can drag points from one route to another even if the number of orders exceeds the number specified in the **Route validity** parameters.

At this stage, you can create a new route from the orders of the current route. To do this, select the required orders and press the button at the bottom of the table. The selected orders will be assigned to the new (*other*) route. Click the icon to the right of this route to assign the unit and complete the third step of planning.

If in the second planning step no unit was selected, it is impossible to save the created route. Click the button to the right of the route name to assign the units. In the appeared dialog box, only those units that are currently not assigned to any other routes are displayed. The table with units can be sorted by any of its columns, for instance, by distance to the first order of the route. To find

the required unit, in the search bar you can use wildcards * (replaces any number of characters) and ? (replaces one character). Click on the required unit and press **Save**.

Note that upon a route building you can receive a situation when some of the route's points cannot be visited in the indicated delivery interval. Such a point is marked in the estimated arrival column by a special marker (the marker is also duplicated beside the route name). In case such a situation emerges, delivery points can be reestablished either automatically or manually. If a delivery point is impossible to visit, it should be deleted from this route (click **Trash** icon in the end of the line).

Click on the  button located in the lower right corner of the information block to change the name of the route. To save a built and optimized route, click **Floppy disk** icon at the end of the line. To save all the built routes, click **Save** in the bottom right corner of the table. Saved routes are moved to the corresponding section.

Adding Orders to Route

It is possible to add orders to the already built route. To do this, select the necessary route and press the  button located in the lower part of the information block. In the dialog that opens, select the order type (single or permanent) and click the line with the order you want to add to the route (you can only select one). After that, a dialog with the name of the route and a list of its orders opens. The added order is placed at the end of the list. However, you can change its sequence number by dragging it to the required position. After this, the time is re-counted, that is, all the orders that follow the new one, are moved taking into account the time needed for the travel and unloading. The delta of the modified arrival time for the moved orders is shown in red when it is increased and in green when it is decreased.

To confirm the introduced changes, click **Save**. To dismiss them, press **Cancel**. To go to the previous dialog, press **Back**.

New Unit Selection

It is possible to select a new unit for the routes. To do this, hover the mouse over the name of the route and click on the button, which appears at the end of the line. In the opened window the table with the units available to the user is presented. The units that have at least one trip scheduled for a stated time are not shown in the table. To filter the table by the units selected in step 2, activate the corresponding function. The table can be sorted by any of its columns, for instance, by distance to the first order of the route. To find the required unit, in the search bar you can use wildcards ***** (replaces any number of characters) and **?** (replaces one character). Click on the required unit and press **Save**.

If selection of a new unit occurs when part of the orders are visited, the current route is marked as fulfilled, and the non-visited orders are transferred to the route of the newly assigned unit.

Templates

This section stores the templates for creating routes. Existence of a template makes it easier to work with routes that are created regularly based on the same points, as the there is no need to go through the same planning steps each time the route is created.

Creating a template

To create a report template, mark the required **permanent** orders and activate the **Templates creation** option in the calendar on the **Planning** tab. Click **OK** to confirm activation. In the next stage select the necessary units and click **Route templates** to save. The created template will appear on the **Templates** tab.

Working with templates

Templates can be edited, deleted, as well as new units can be assigned to them.

Press the button, located in the bottom right corner of the information block to change the name of the template.

Click to the right of the name of the template to assign a new unit to the route. The opened table with the units can be sorted by any of its columns, for instance, by distance to the first order of the route. To find the required unit, in the search bar you can use wildcards * (replaces any number of characters) and **?** (replaces one character). Click on the required unit and press **Save**.

Click on the **Pencil** icon to edit the template. Press the button at the bottom of the dialog box to add new orders to the route. To change their sequence, drag the required orders up/down. Click the **Basket** icon to the right of the point to delete it.

Press the **Basket** icon to delete the route template.

Routes

This section is intended for the monitoring of routes delivery. Routes are displayed in the table according to their filter state (active/planning/fulfilled) chosen in the navigation panel. Moreover, particular routes can be found using dynamic search (navigation panel). A search is implemented on the basis of current table data.

The **active** route is:

- the route till the first point of which remains the time indicated in the **Advance time** field;
- the route that has at least one point with the **Confirmed** status.

The **planning** route is the route, the activation time of which has not come.

Fulfilled is:

the route in which all orders are visited or the status (confirmed/rejected) is set for all orders;

the route completed according to the auto completion settings.

Information on the fulfilled routes is displayed for 24 hours, afterwards it is automatically moved to **history**. Besides, if it is necessary to send information on fulfilled routes to history without waiting 24 hours, you can do it manually (choose the corresponding route in the table and click on the button  in the information block).

On the basis of the data on fulfilled routes stored in history, you can generate reports in the corresponding section.

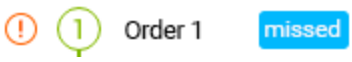
Working with Routes

Routes section consists of the same interface elements described earlier: the table, the map, the information block, and the filter.

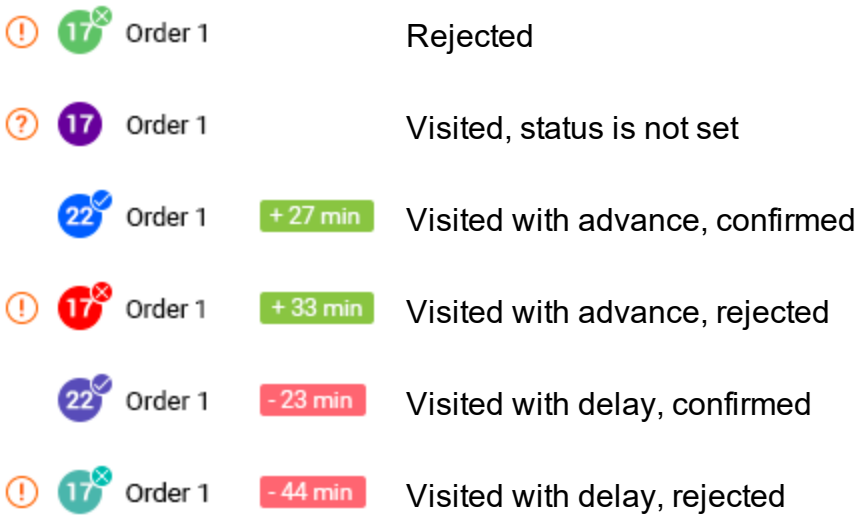
Active routes are shown in the table by default. Upon clicking the route's line, a route's fulfillment icon becomes active, a corresponding route is displayed on the map, and the map is centered and scaled in such a way that all delivery points get into vision field. Moreover, current data on the chosen route is shown in the information block.

Upon clicking the arrow (in front of the route) the list of delivery points (orders) in this route is expanded and the route is displayed on the map (route's fulfillment icon becomes active). The map is not centered and scaled. The expanded route shows all the orders arranged in the sequence of their delivery (orders = delivery points). The table contains visual elements used to determine a route's fulfillment state.

Route's point state:



Missed



The line of the point towards which a unit is moving is marked by a green dot and highlighted in green. If one unit is assigned to several routes, the nearest (timewise) point is marked.

Note that 2 types of values are shown in such columns as **Arrival time** and **Mileage**. These are estimated and actual values. Estimated values are the approximate values calculated by the system. Upon a delivery point visiting estimated values are changed for actual ones. Actual values are shown in the table by a slightly brighter color.

By default, the unit name is used as the route title. To change the route title, click on the button located in the lower right corner of the information block.

To delete a route from the table, place a cursor over a route's line and click the appeared **Trash** icon.

If during deletion or auto completion of a route the latter has single non-visited orders, they are not removed, but copied with the same date and time and can be found among single orders on the **Planning** tab.

Displaying a Route on the Map

A route chosen in the table is shown on the map. The system provides the possibility for visual comparison of planned and actual routes. Therefore, an actual route can be displayed on top of a planned one. A actual route is shown on the map by a solid line, a planned route — by a dotted one. To enable the displaying of actual routes, click the icon in the top right corner of the map (**Show/Hide actual route**). An actual route is shown on the map until its complete fulfillment or until the end of the delivery interval. Route visualization color schemes can be set on the **General** tab of the **Settings** section.

Upon choosing a route in the table, the map is centered and scaled in such a way that all delivery points of a route get into vision field. To center the map on a particular delivery point, click it in the table. A route fulfillment state can be recognized by the markers used on the map:

 Warehouse visited

 Warehouse non-visited

Delivery point (order) visited

Delivery point (order) non-visited

 Delivery point (order) visited (with delay/with advance/in time) and rejected

 Delivery point missed

Working with the map you can view information on elements (route points, units) by summoning their tooltips. To do so, click the necessary element on the map.

A double click on a unit name in the table centers the map on the route it is assigned to.

Information Block Usage

The same as in **Planning** section, the logic of the information block can be divided into two components: showing general information and showing information on a particular route.

If no routes are chosen in the table, the information block shows general data on routes presented in the table (total number of routes and total number of orders in them).

Current data on a particular route is shown in the information block upon clicking the line of a corresponding route in the table. This data includes name of a unit assigned for the route implementation, number of orders in the route, estimated and actual route duration, estimated and actual mileage, driver name, time of route auto completion, sequence in which orders should be visited, etc. From here a fast transition to the **Chat** section is available. In order to communicate with a driver, click a driver's name.

Information on a chosen route can be exported in both XLSX and PDF formats, or printed. While printing a route you can choose one of the available options: **Print unit route** (the orders are printed in direct order) or **Print load plan** (the orders are printed in reverse order). A chosen route can also be moved to history before its execution. Moreover, you can add orders to a built route. The corresponding buttons are situated in the bottom of the information block.

Information block supports the possibility of working with route's delivery points (orders). Delivery point's data includes its address, estimated and actual arrival time, estimated and actual mileage. Some order values (name, cost, radius) can be edited. To do so, click **Edit** button in the bottom of the information block. Note that using the information block an operator can set delivery points' statuses (corresponding buttons in the bottom of the information block).

Multiple operations with routes

To select routes, use the  button in the left corner of the table header. Mark necessary routes by checking the boxes in front of their names. To select all the routes in the list, hold the Ctrl key and click on any unmarked check box. To deselect all routes, do the opposite. For all the selected routes you can see their ways on the map, the orders that form them and the assigned units (icon and name).

After clicking on the arrow in front of the name of any marked route, a list of orders of all marked routes is opened and they are shown on the map.

If more than one route are selected in the table, in the information block you can see the sum of data on them: the quantity of units, of selected routes, of orders; the overall estimated mileage; the total cost, weight and volume. In the lower part of the information block there are buttons for **printing** (routes or road plans) and **deleting** that apply to all the routes selected in the table at once.

Unit Changing on the Route

It is possible to change the unit for the routes in the **planning** and **active** states. To do this, hover the mouse over the name of the route and click on the button, which appears at the end of the line. In the opened window the table with the units available to the user is presented. The units that have at least one trip scheduled for a stated time are not shown in the table. The table can be sorted by any of its columns, for instance, by distance to the first order of the route. To find the required unit, in the search bar you can use wildcards ***** (replaces any number of characters) and **?** (replaces one character). Click on the required unit and press **Save**.

For **active** routes, you can change a unit only if they and their delivery intervals are not overdue.

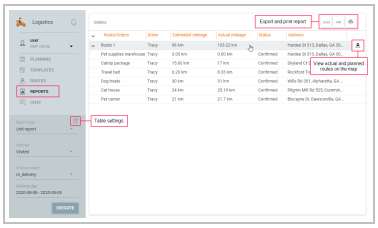
If the unit is replaced on the route that has rejected orders, the latter are marked as **missed**. If necessary, it is recommended to reject them again.

Attached Files

Upon setting an order's status (in Logistics Mobile), a courier has a possibility to supply a comment with an electronic signature or a file. An electronic signature is transferred to the web-version as a photo and shown along with other attached files by **Paper clip** icon in the table, information block, and order's tooltip on the map.

To see a list of files attached, click the **Paper clip** icon. The list contains names of files and download buttons. To preview a file, click its name; to download it, click the corresponding button.

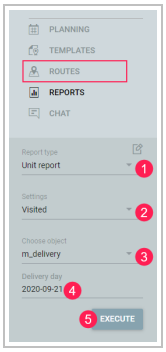
Reports



In this section, you can get information about active, planned and fulfilled routes in the form of reports. Reports are necessary for analyzing key parameters and optimizing driver's work.

Report Execution

To execute a report, specify its parameters in the navigation menu. To do this, follow the steps described below.



1. In the **Report type** field, select the object on the basis of which the report should be executed: unit, driver, unit group, or driver group.
2. In the **Settings** field, select which orders should be included in the report: all, visited, visited late, fulfilled, rejected, visited without status, non-visited.
3. In the **Choose object** field, select the object for which the report should be executed. If there are more than 10 objects, you can use a dynamic filter to search for them quickly.
4. In the **Delivery day** filed, indicate the period for which the report should be generated. You can set the reporting period using a **quick interval** (yesterday, today, last week, last month,

last 7 days, last 30 days) or the **calendar**. In the calendar, select the beginning and the end of the interval. If the duration is 1 day, this day is indicated as the beginning and the end.

5. Click **OK**.

Table Settings

In the table settings, you can select the columns which should be included in the report. To go to the settings, click on the icon  to the right of the **Report type** field.

Reports of all types can be **detailed**, that is, they can contain detailed information about orders in the form of a nested list and additional columns.

Basic report

Basic reports show only information about routes. The available columns are listed below.

Driver. The name of the driver.

Delivery interval from/to. The beginning and end of the interval within which the driver should fulfil the delivery.

Estimated arrival time. The estimated time of arrival at the delivery point (system calculation).

Actual arrival time. The time of arrival at the delivery point.

Deviation. The difference between the estimated arrival time and the actual arrival time.

Estimated departure time. The time when the driver should leave the delivery point (system calculation).

Actual departure time. The time of the driver’s departure from the route point.

Estimated service time. The time that the driver should spend at the delivery point, including time for unloading goods, charging the client, and so on (system calculation).

Actual service time. The actual time that the driver spent at the delivery point.

Confirmation/Rejection time. The time the order was confirmed or rejected by the operator or the courier.

Estimated mileage. The estimated mileage to the delivery point (system calculation).

Actual mileage. The actual mileage to the delivery point.

Estimated time to point. The time from the previous delivery point to the point the unit is heading for (system calculation).

Actual time to point. The actual time spent by the driver going from the previous to the next point.

Consumed fuel. The amount of fuel consumed during the delivery.

Weight. The weight of goods in the order.

Volume. The volume of goods in the order.

Cost. The total cost of goods in the order.

Avg temperature. The average temperature value during the delivery period.

Min temperature. The minimum temperature value during the delivery period.

Max temperature. The maximum temperature value during the delivery period.

Initial temperature. The temperature value at the beginning of the delivery.

Final temperature. The temperature value at the end of the delivery.

Detailed report

Besides the columns listed above, additional columns with information about orders are available in detailed reports.

Client. The name of the client.

Comment (order). The comment added to the order.

Comment (confirmation). The comment added when specifying the status.

Tags. The keywords added to the order.

Status. The status of the order (confirmed, rejected, or the status is not specified).

Address. The address of the delivery point.

Custom fields. The custom fields created on the same-name tab of the settings. In reports, the names of such columns are marked with a number sign (#).

Files. The files attached by the courier when specifying the status in the mobile version or by the operator when creating or deleting the order in the web version. Click on the icon  to view the list of files. Click on the name of the file to open it, or click on the icon  to the left of the name to download the file.

> If you delete a custom field in the settings, it is deleted from the reports as well.

If you want certain columns to be included in the report, move them from the list on the left (**Available columns**) to the list on the right (**Table**). You can do this in the following ways:

double-click on the row with the name of the required column;

click on the → arrow that appears when you pause on a row with a column name;

drag the required line to the right while holding the left mouse button;

click **Add all** to move all columns to the right.

In the **Table** list (the right one), you can change the position of the selected columns (holding the left mouse button down, drag the row up or down) and delete them (click the cross at the end of the row). Click **Clear** to remove all columns from the list on the right.

For the report on the unit, in addition to the table, the summary of statistical data is available. The selection of columns for the **Statistics** table is done in the same window as for the **Orders** table and based on the same principle.

> The statistical data is available only for detailed reports.

In the upper right corner of the report there are buttons that can be used to export the report to a file in XLSX format ( ) or PDF ( ) or print ( ).

Planned and Actual Routes

For routes stored in the history, there is a function allowing you to compare the planned and actual routes on the map. To use it, point to the route line in the table and click on the icon .

The window that opens next consists of two parts: the route information and the map. The window header shows the route name and the name of the unit that has fulfilled this route.

The **route information** displays the following:

unit name;

number of orders in the route;

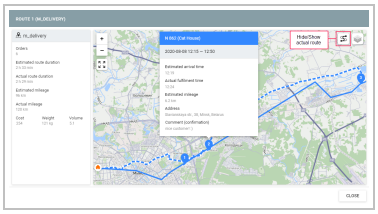
estimated and actual route duration;

estimated and actual mileage of the unit after visiting all points of the route;

cost, weight, and volume of goods in all orders of the route.

The planned route is displayed as a dotted line **on the map** by default. Click on the icon to add the actual route which will be displayed as a solid line on the map.

The numbers of the route points on the map correspond to the order in which they are visited. Markers that can be used to indicate these points are described in the **Displaying a route on the map** section.



If you click on a **route point** (warehouse or order), you will open a window with the following lines:

warehouse or order name;

warehouse working hours or delivery interval in the case of an order;

estimated arrival time;

actual fulfillment time;

estimated mileage;

warehouse or order address;

comments left by the courier when visiting the warehouse or confirming the order.

If data is not displayed in any of the rows, you should add a column with the same name in the report settings.

Chat

This section is designed to communicate with drivers. Moreover, the chat supports viewing photos received from the mobile application.

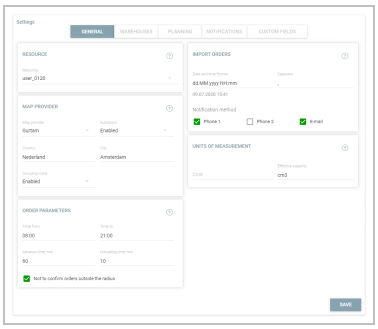
Arrival of a new message is accompanied by a beep (click on the button in the upper right corner of the chat to disable the sound). The numeric indicator in the left panel and next to the driver name in the chat indicates the number of unread messages.

Settings

This section is designed to work with general settings as well as settings of warehouses and planning. To open the **Settings** section, summon a user menu (click a user name) and choose the corresponding item. Afterwards, choose a tab to work with.

The section is not available for modification to the users that do not have the option Can change settings activated in their properties in the monitoring system.

General



On the **General** tab you can find the parameters used upon orders creation, their distribution, and routes displaying. Values indicated here are used on the corresponding stages as the default ones.

Resource

The resource chosen here is the one where orders are created. By default, the resource created by the user is selected. If there is no such resource — the first one in the list of available.

Map Provider

By choosing address provider (Gurtam, Google) you define a source of address information which is used upon manual order creation, import, or warehouse creation. Enable autozoom if you want the map to change the focus and scale when you click on the order during planning. If Gurtam maps are selected as address provider, in the fields that appear below, it is possible to specify the country and city within which the search is performed.

By default, the **Grouping icons** option is enabled, that is, overlapping icons are replaced by an icon with a numerical indicator.

Order Parameters

Time from — the start time of the delivery interval.

Time to — the end time of the delivery interval.

Advance time, min — the amount of time that a delivery can be advanced (a route becomes active when the indicated time value remains before the visit of its first delivery point).

Unloading time, min — an approximate duration for unloading goods.

Radius, m — the maximum distance on which a unit should come close to an indicated delivery destination point and stop there in order a point to become visited.

Weight, kg — an overall weight of goods in an order.

Volume — any conventional value (for example, items). You can specify its unit of measurement in the Units of measurement block of the general settings.

Route color — the color of the route line. Depending on the selected option, it can either be taken from the unit properties (corresponds to the track color) or be random.

Not to confirm orders outside the radius — the option which, when activated, allows drivers to confirm orders only within the specified radius from the place of delivery.

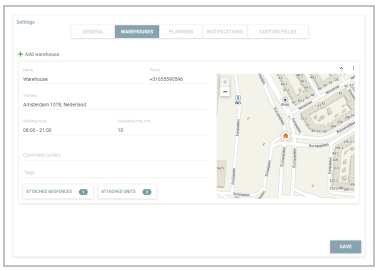
Import Orders

The **Import orders** block serves for setting the parameters (date format, separator) used in imported files. Besides, here you can indicate a notification method used for orders' import.

Units of Measurement

The **Units of measurement** block serves for indicating corresponding units for the cost and effective capacity values.

Warehouses



To create a warehouse, click **Add warehouse** button. Afterwards, a corresponding form appears. Obligatory fields of the form are warehouse's name and address (note that before entering this field, it is recommended to choose an address provider on **General** tab of **Settings** section). Upon completion of the address field, a warehouse is shown on the map. Additional fields of the form are telephone number, warehouse working hours, unloading time, comment, and tags.

Special attention should be paid to the tags. These are custom key words intended for sorting orders at the stage of planning. There are two types of tags used in the system: order tags and warehouse ones. The warehouse tags show that orders with such tags are attached to a particular warehouse. At the first stage of planning, sorting by warehouse tags can be applied by enabling the **Warehouse tags** switch. If you activate it, the table shows the orders, the tags of which coincide with the tags of the warehouse used.

To add a tag, click the field, enter a key word, and use Enter on your keyboard. To delete a tag, use Backspace or delete button.

Attaching Geofences to Warehouses

The geofences created in the monitoring system can be attached to warehouses. This attachment is used for filtering orders at the first stage of planning. If you select a warehouse and geofences in the filter, the table contains only those orders that are located within the attached geofences.

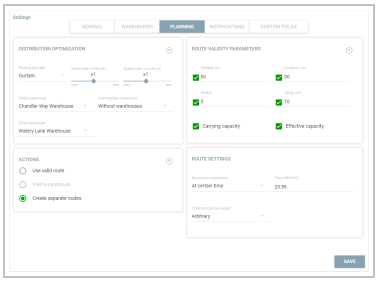
Attaching Units to Warehouses

The units created in the monitoring system can be attached to warehouses. This attachment is used for filtering units at the second stage of planning. If you activate the **Attached units** switch, the table contains only those units that are attached to the selected warehouse.

Deleting/Editing Warehouse

To delete or edit a warehouse, click the icon in the end of the field (3 dots) and choose the necessary action.

Planning



On this tab you should indicate a set of parameters to be used as default algorithm upon building a route in **Planning** section.

Distribution Optimization

First of all indicate if you are going to utilize routing in the route building algorithm. The usage of routing allows calculating estimated arrival time considering road speed limits. Besides, upon routing usage the system provides the possibility to increase an estimated arrival calculation's accuracy by means of implementing speed coefficients for both inside and outside a city. Let's use an example. A supposed route is laid both through a city and outside it. You know for sure that at specified delivery interval there is the highest city traffic that results in decreasing an average speed in half. Moreover, you have an information

that there is a road work on your route outside the city that will also lead to decreasing an average speed by one third. These issues may result in considerable differences between estimated and actual arrival times. To avoid such an inaccuracy, the coefficients are used. You need to decrease average speed coefficients inside and outside a city by half and third, correspondingly. Therefore, time for overcoming the obstacles will be considered in the route building algorithm.

If no routing is chosen to be used in the route building algorithm, then the system provides the possibility to indicate a vehicle's average speed.

Moreover, choose warehouses to be used upon route building. Three types of warehouses can be utilized for this purpose: initial, intermediate, and final.

Initial warehouse is the one a courier starts a route from.

Intermediate warehouse is the one to be visited by a courier in case of applying the corresponding action.

Final warehouse is the one at which a courier should finish a route.

Route Validity Parameters

In this block, you can select the parameters to which a route or a unit following this route should correspond. If it is not possible to plan the route without exceeding any of the indicated parameters, then an action described in the next block is added to the planning algorithm.

The available parameters are enumerated below.

Mileage. The maximum number of kilometers in the route.

Duration. The maximum duration of the route in minutes.

Orders. The maximum number of orders in the route.

Idling. The maximum waiting time between the orders.

Carrying capacity. The weight capacity of the unit.

Effective capacity. The volume capacity of the unit.

You should indicate the values of carrying and effective capacity on the **Profile** tab of the unit properties in the monitoring system.

Activate the **Use optimal number of units** option if you want all the units selected in the second step of planning to be used when distributing orders and planning the route.

Actions

Choose an action to be used by the program in case of a failure to build a route according to the route validity parameters indicated. The following variants are available:

Use valid route — in this case a distribution of orders on units is made in such a way that route validity parameters not to be exceeded. For example, 5 is indicated as a number of orders in the route validity parameters block, but you would like to distribute 10 orders on 1 unit. As a result, a route is formed. It contains 5 orders (delivery points) chosen by their priority. The rest orders are not distributed at all.

Visit intermediate warehouse — in this case the indicated parameter value can be exceeded only by adding a visit to an intermediate warehouse. Let's use the above mentioned example. A distribution results in the following route: 5 orders (delivery points), intermediate warehouse, 5 orders (delivery points). Orders are chosen by their priority.

Create separate routes — in this case the indicated parameter value can be exceeded only by creating a separate route. Let's use the same example. As a result we receive 2 routes with 5 orders (delivery points) each. Orders are chosen by their priority.

Route Settings

Here you can indicate the time of route auto completion and specify the sequence of visiting orders.

Route auto completion — the time when the route should disappear from the list on the **Routes** tab. In the drop-down list, select one of the options:

At certain time — the route disappears from the list in the period indicated in the **Time (HH:MM)** field. If the last order is visited after the specified time, the validity of the route is set for the next day.

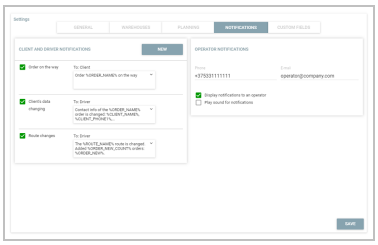
Last order + — the route disappears from the list in the time period specified in the **Time (HH:MM)** field after the last order is completed.

Orders should be visited — a sequence in which the orders of the route should be visited.

Arbitrary — orders are visited in a free sequence. However, if the initial warehouse is specified in the **Distribution optimization** section, it should be visited first. Otherwise, the orders will not be considered visited.

Strict (one by one) — orders are visited strictly in due course.

Notifications



On this tab, you can configure notifications sent to the client, driver, and operator.

Client and driver notifications

In the **Client and driver notifications** section, you can create notification templates for the client and the driver and configure their sending.

There are five types of notifications **for a client**: **Order fulfilled**, **Order rejected**, **Time left until the delivery**, **Order on the way**, and **Distance to the delivery point**. Notifications are sent automatically to the phone number and/or e-mail specified when creating an order. To create a template, click on the **New** button, select the required notification type, specify additional parameters (if applic-

able) and, if necessary, edit the text of the letter or SMS message. By default, each notification has a special text template that you can use or edit.

When editing e-mail text, the **HTML** and **Text** tabs are available, where you can enter the text of the message in HTML or text format. You can use the **Text** tab to preview the message entered in HTML format.

> To correctly display the e-mail notification, the recipient should enable the HTML viewer function.

When importing orders, make sure to specify the notification method on the **General** tab of the settings in the **Import orders** section.

For a driver you can configure automatic sending of push-notifications. They allow you to inform the driver in advance about such events as creating or deleting a route, changing client's data, attaching files to the order and deleting them, changing the order parameters, exceeding the delivery or unloading time, deviating from a route, missing the order or order status, and entering the route changes.

To create a template, click on the **New** button, select the type of notification, specify additional parameters (if applicable), and edit its text. By default, each notification has a special text template that you can use or edit.

> In the text fields of this tab, you can add **tags** that can be used in the message: the name of the order and driver, the time of planned arrival, cost, current location, etc. These tags are then converted to real values. Note that a notification with the **Current location** tag contains a link to the locator map (active for 60 minutes) which indicates the location of the courier, and for time and route deviation alerts you must specify numeric values.

To receive push notifications, activate the **Notifications** option in the Logistics Mobile settings, and verify that the **Create, edit, and delete drivers** access right for the resource to which the driver belongs is activated.

Operator notifications

Notifications automatically sent to the driver or client can be duplicated for the operator.

Notifications for the driver can be sent to the operator in the form of push notifications in the application. Notifications for the client can be sent in the form of push notifications, SMS and email notifications.

In the **Operator notifications** section of the settings, you can enable or disable notifications for the operator, as well as a sound signal about their reception.

In order for the operator to receive notifications not only in the application, but also on the phone and/or email, fill in the **Phone** and **E-mail** fields respectively.

In the application, notifications for the operator are displayed in a pop-up window in the upper right corner of the working area. The pop-up window is active for 15 seconds (5 seconds for standard browser notifications), after which it disappears. For a more thorough view of the list of sent push notifications, click on the indicator of incoming notifications (**bell**), located in the upper right corner of the left panel (the last 5 are shown). To the right of the magnifying glass icon is a search bar that helps filter notifications. Click **Show all** to expand the list of notifications. To delete all notifications, click **Clear list**. A digital indicator that appears in the left panel at the place of the **bell** signals the presence of unread notifications.

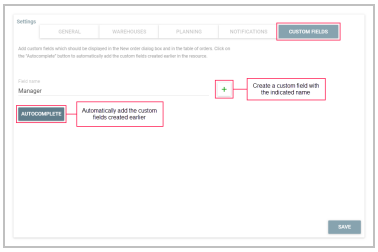
Custom fields

This tab is designed to create and delete the custom fields which should be displayed by default in **all** created orders. You can indicate the value of the created field later when creating or editing the order.

The custom fields created on this tab are displayed:

- in the window of order creation or editing;
- in a separate column of the order table on the **Planning** page;
- in the table of order import and in the import template as column names;
- in a separate column in reports with detalization.

Autocomplete Option

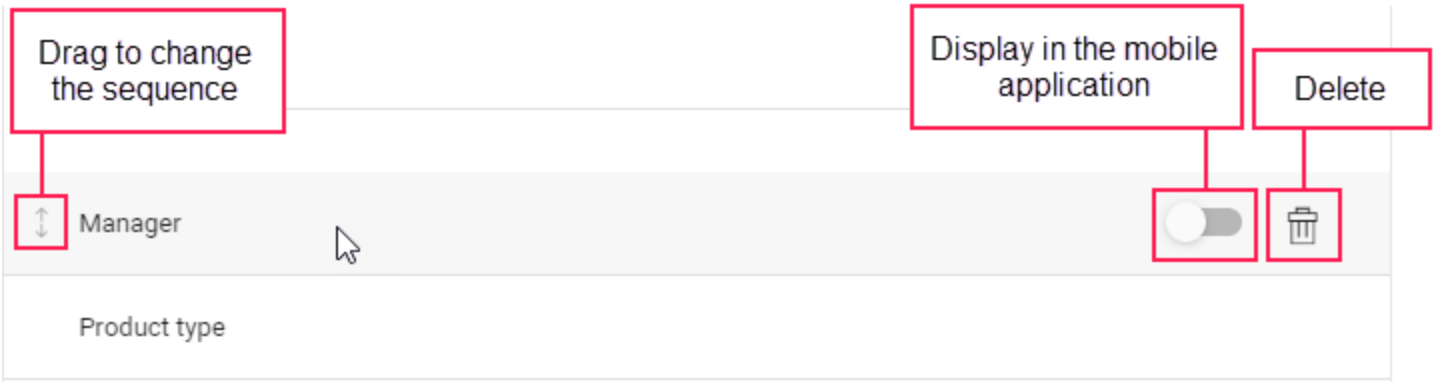


The **Autocomplete** button is used to automatically add all the custom fields created manually in the resource earlier. This option is available if there are no created fields on the tab.

Creating Custom Fields

To create a custom field, enter its name in the line and click on the icon +. If you want to change the sequence of custom fields, point to the line with the field and drag it by the icon ↕ to the required place.

To display the custom field in orders in the mobile application, point to the line with the field and activate the switch.



Deleting Custom Fields

To delete a custom field, point to the line with it and click on the icon .

Mobile Application

The Logistics Mobile application helps to organize the work of a driver or courier to complete the routes created in the Logistics application. You can install the application on your smartphone or tablet.

Logistics Mobile allows you:

- to monitor route completion and track it on the map;
- to have access to information about orders including attachments and comments;
- to change the statuses of orders and send comments and photos;
- to receive notifications about the creation of orders, changes in orders, etc.;
- to send the location data of a courier;
- to contact a client via calls;
- to contact an operator via the chat.

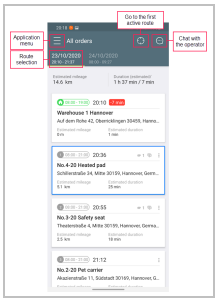
Getting started

To **get started** with the Logistics Mobile application, follow the steps described below.

1. In the monitoring system, create a driver and assign them to a unit.
2. In the driver properties, fill in the **Phone number** and **Mobile key** fields.
3. When signing in to the mobile application, indicate the telephone number and the mobile key from the driver properties in the **Phone number** and **Password fields** respectively.
4. Tap **Start**.

> If the user-creator of the resourse to which a driver belongs is blocked, the driver does not have access to the application.

Settings



In the application menu (the icon ☰), you can configure the map and photos, enable notifications and the tracker mode, etc.

Tracker mode. Activation and deactivation of the tracker in the mobile application. To use the tracker mode, you should select the **WiaTag** device type and indicate the **unique ID** (custom value) in the unit properties in the monitoring system. After that, the tracker switch becomes available in the mobile application settings.

Map layer. Selection of a map from the list of available ones: Gurtam Maps, OpenStreetMap, Google Roadmap, Google Satellite, Google Terrain, Google Hybrid.

Photo quality. Selection of the image quality which should be used when sending a photo. The available options are described below.

Low. The original image is compressed to 1 megapixel (no more than 100 kb).

Medium. The original image is compressed to 2 megapixels (no more than 300 kb).

High. The original image is compressed to 3 megapixels (no more than 600 kb).

Original. The original image without quality loss.

Notifications. Activation and deactivation of push notifications about relevant events regarding orders, routes, and the delivery process; selection of a notification signal.

Admin password. Creation and activation of a password for working with the mobile application settings.

Help. Link to the user manual.

Working with Logistics Mobile

The list of all points of active and planned routes is displayed in the application window. Every route has a separate tab.

Information on Routes and Warehouses

In the cards of the route points without a status (confirmed/rejected), the following information is displayed:

order sequence number or warehouse icon;

delivery interval or warehouse working hours;

estimated time of arrival;

indicators of attachments and comments, if any;

name and address of the order or warehouse;

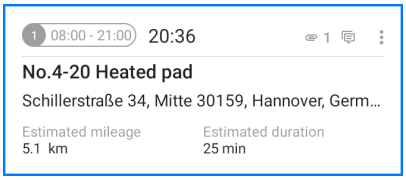
estimated time and estimated mileage between the route points.

After indicating the status, advance or delay time is also displayed in orders, that is how much the actual time of arrival differs from the estimated one.

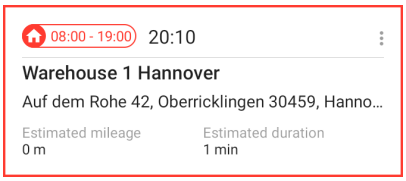
Tap the order twice to open the window of detailed information where you can also see the comments and attachments.

Indicators of Route Points (Orders and Warehouses)

1 08:00 - 21:00	Upcoming route point
3 08:00 - 21:00	Missed route point
3 08:00 - 21:00	The order is visited, the status in not indicated
08:00 - 21:00	The warehouse is visited or the visit is confirmed
08:00 - 21:00	The order is confirmed
08:00 - 21:00	The order is rejected
08:00 - 21:00	The warehouse visit is rejected

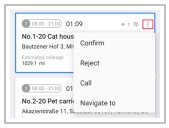


The next route point for which a driver is heading



The route point is not yet visited, although it is time for estimated arrival

Indicating Order Status

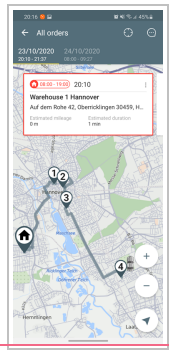


Tap the icon ⋮ in the upper right corner to open a menu with the help of which you can indicate the order status (tap **Confirm** or **Reject**) or contact the client (tap **Call**). You can also indicate the order status in the window of detailed order information.

When indicating the order status, the courier can leave a comment (optional upon confirmation; obligatory upon rejection), identify themselves with an electronic signature, and attach a file. These steps allow the operator to monitor the delivery process and resolve controversies, if any.

> When the operator and the courier are working with an order simultaneously (for example, change the route or the order status), the actions of the operator have priority.

Map



Tap an order to go to the **map** which is scaled and centered on the selected order. On the map, you can go from one order to another by moving the order blocks to the left or right in the upper part of the screen.

The button in the lower right corner of the map has several states. By tapping it, you can perform the following actions:

: track your own location;

: center the map on your location (tapping it again turns off the tracking mode);

: show the whole route.

> Devices on the Android and iOS platforms find the location differently: Android devices show the location of the unit to which the driver is bound, while the iOS ones display the location of the device from which you have signed in to the application.

You can use other applications to **map a route** to a delivery point. Tap and hold the point to open the menu where you can select applications, if any. You can also do this from the list of orders by tapping the icon ⋮ in the upper right corner of the order card.

From the map, you can go to the **detailed order information**. To do this, find the required order in the upper part of the screen and tap it. In the window that opens you can also indicate the order status, contact the client, see the attachments and comments.

Tracker Mode

The mobile application is provided with the **tracker mode** which allows you to determine the courier location if no personal or vehicle tracker is available. When the mode is enabled, the application is constantly collecting and sending the location data to the server (in the iOS version only when detecting the movement).

To enable the tracker mode, go to the application menu and activate the switch in the **Tracker mode** section.

Logistics Mobile on Tablets

Logistics Mobile is also available on tablets. In this version the general list of orders is not hidden when displaying the detailed order information.