Introduction

SkyTrack 4 Logistics

Skytrack 4 Logistics is a sophisticated and very advanced program in the SkyTrack 4 program palette. Skytrack 4 Logistics serves to optimize delivery and reduce the working time of logisticians, storekeepers and drivers. Proper use of this program reduces the number of kilometers traveled, saves fuel, and reduces the number of working hours of drivers and logisticians.

SkyTrack 4 Logistics enables:

Selection of the vehicle with which we want to make a delivery for a certain date.

Deployment of documents containing information about delivery and objects on vehicles, through automatic deployment or manually.

Overview of driving shipments by weight, volume, capacity.

An overview of the expected time of arrival at a particular object, as well as the expected time stay.

Overview of distributed and undistributed shipments by specific Distribution Centers.

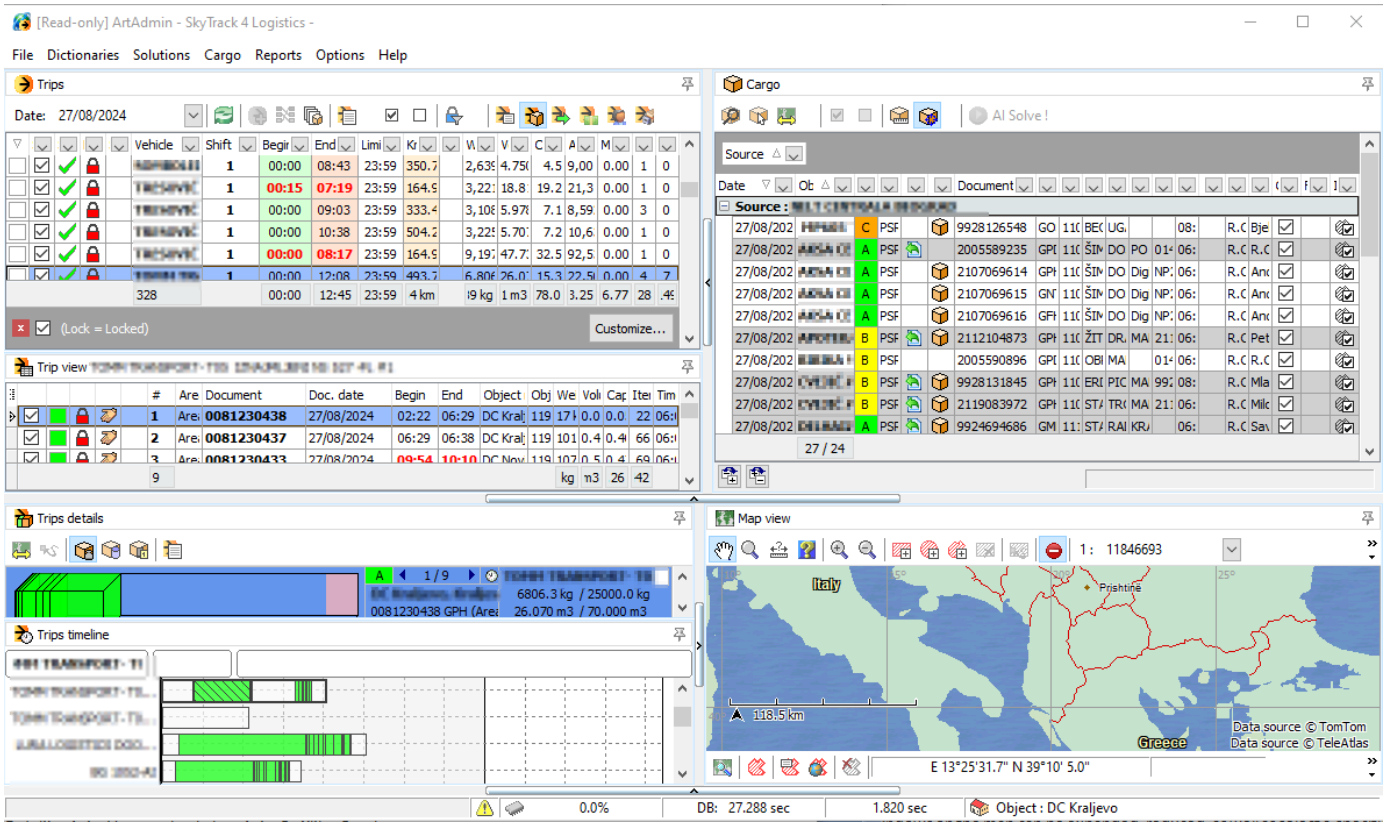
Overview of trip(s) on the map, as well as unassigned shipments on the map.

Welcome

Welcome to SkyTrack Logistics!

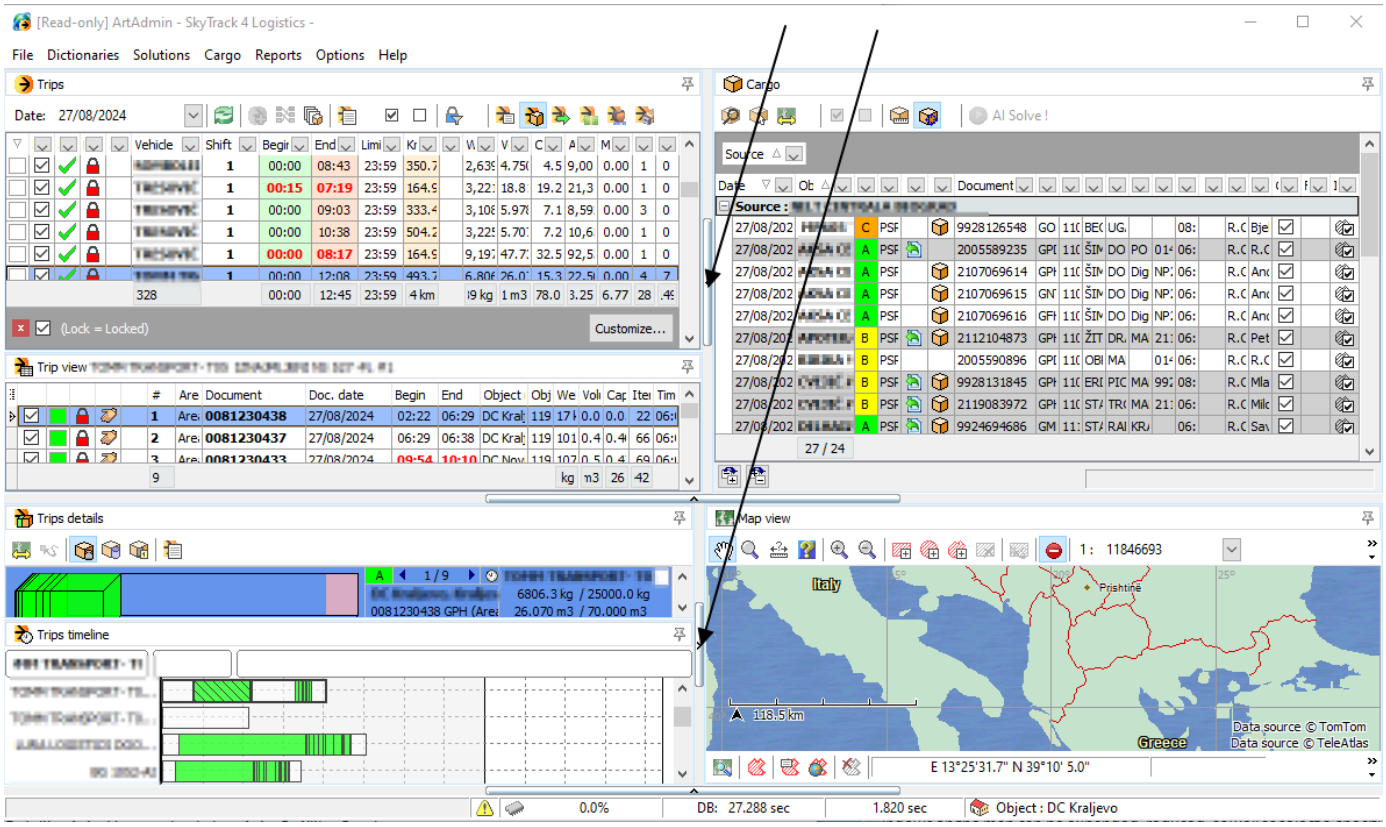
SkyTrack 4 Logistics is a software for optimization of delivery, and it is used to arrange packages by vehicles and send those vehicles to delivery points. The goods are distributed by vehicles in order to evenly distribute the load on all delivery vehicles. Advanced algorithms take into account the total mileage per individual truck and the working hours of workers, compatibility of types of goods and vehicle models are also taken into account.

Application layout

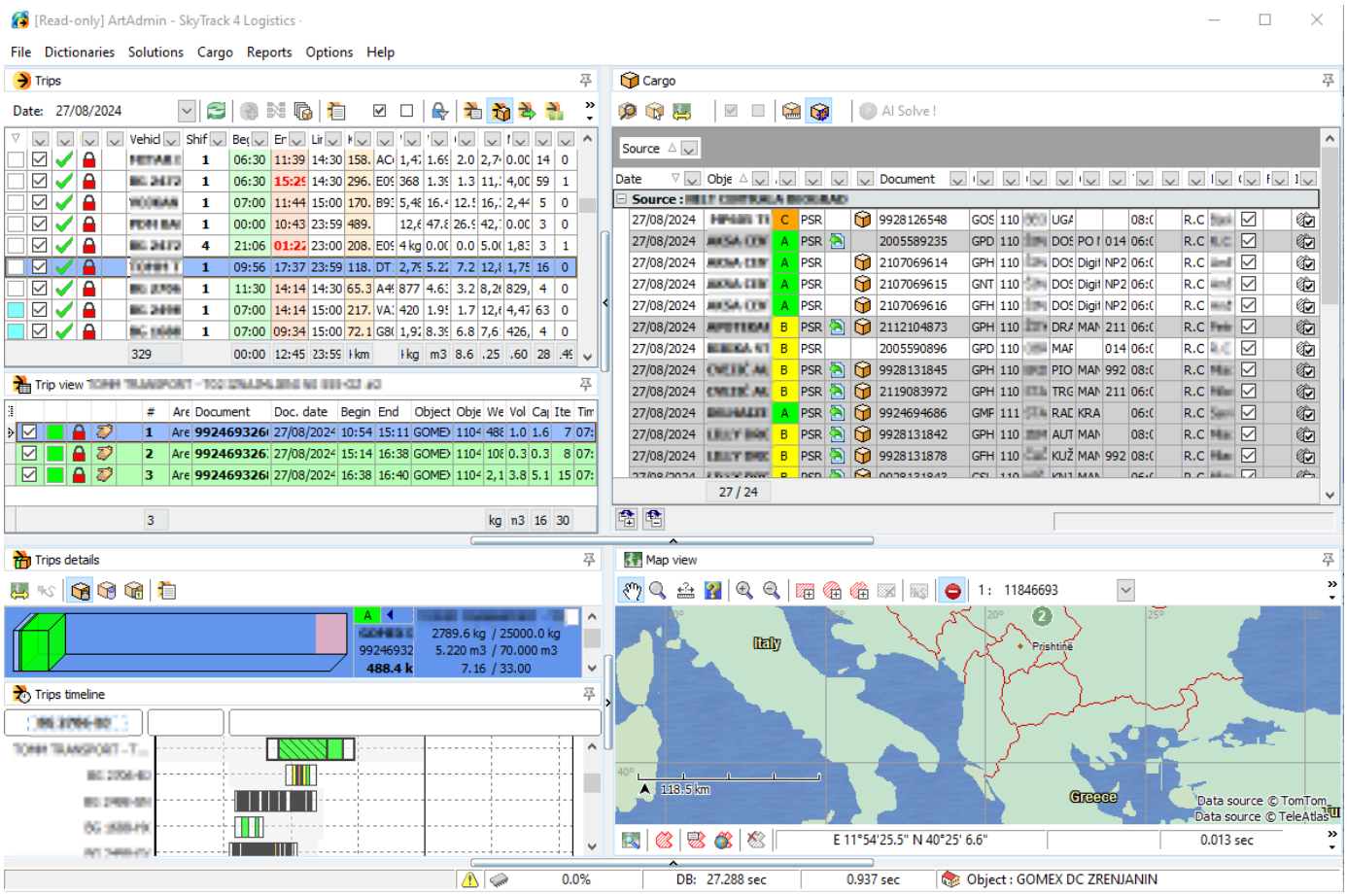


Below the application name bar is the main menu. Below the main menu are the following windows: List of trip(s), Overview of trip(s), Details of trip(s), Timescale of trip(s), Shipments, Browse maps.

Windows on the map can be expanded, reduced, as well as select a specific window and transfer it to another monitor.

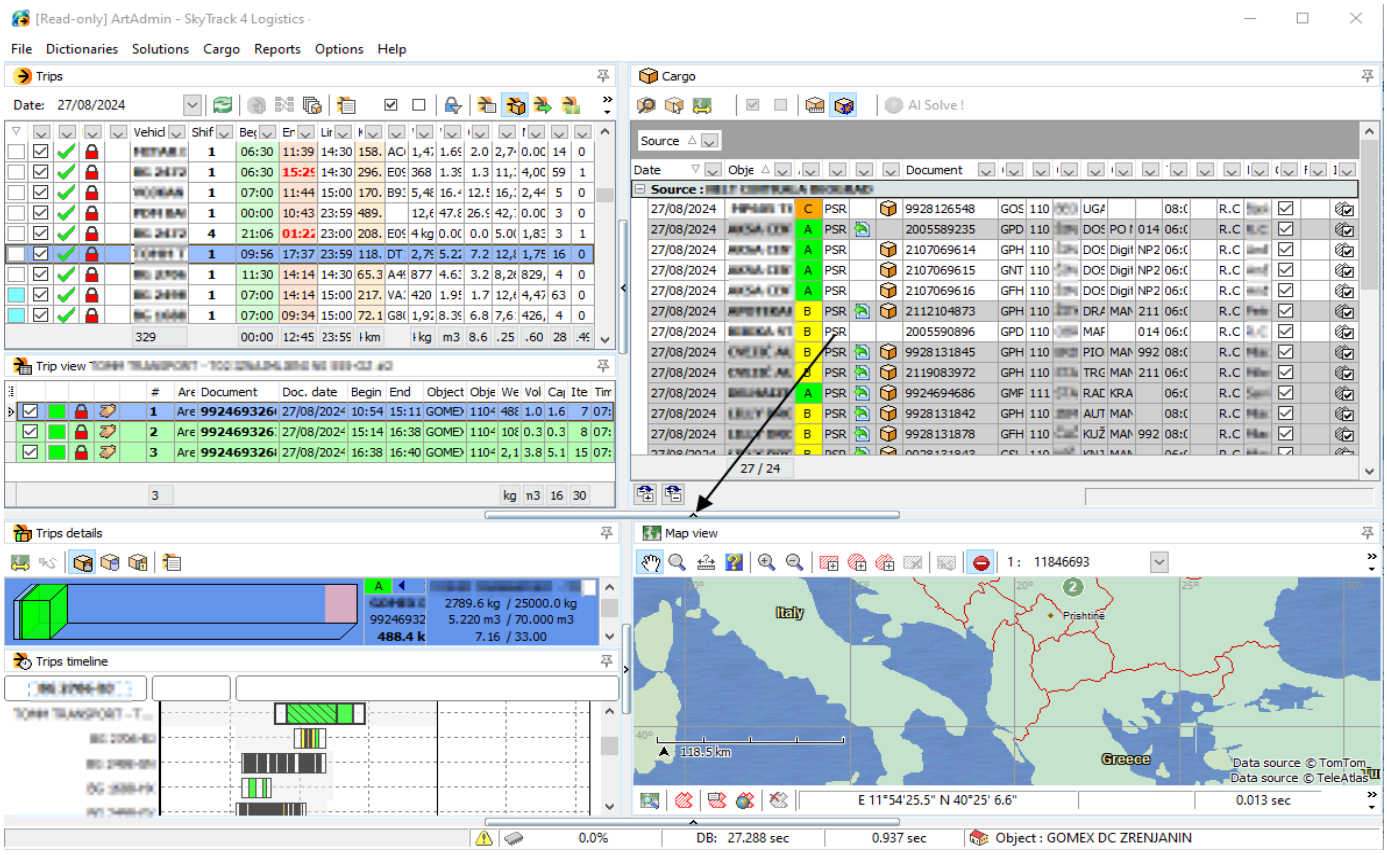


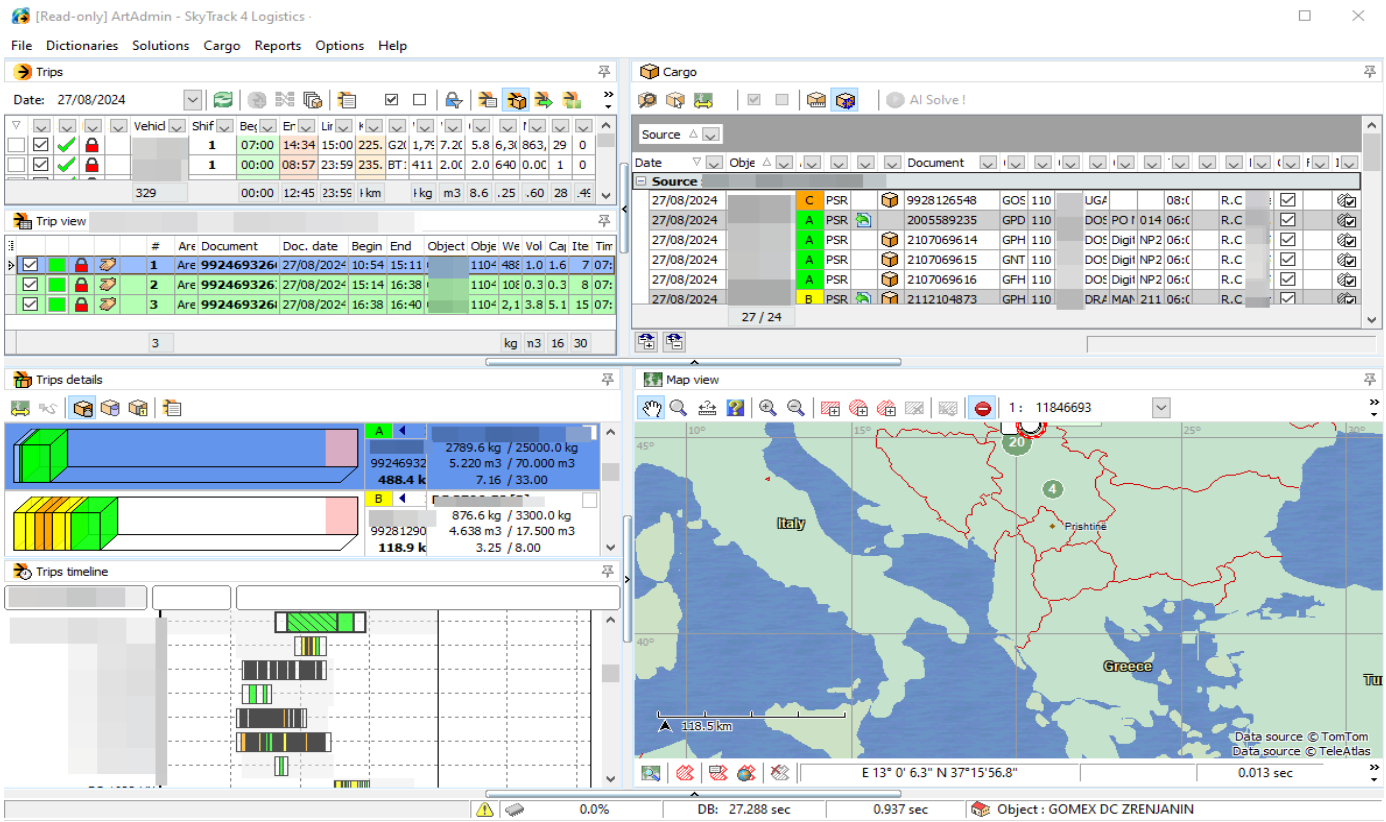
When we click on the first vertical slider as in the picture above, hold it and move it to the left, we expand the view of the Shipments window, and reduce the view of the List of trip(s) and View of trip(s) window. When we click on the second vertical slider - hold it and move it to the left, we expand the view of the Map View window, and reduce the view of the Driving Details and Driving Timescale window.



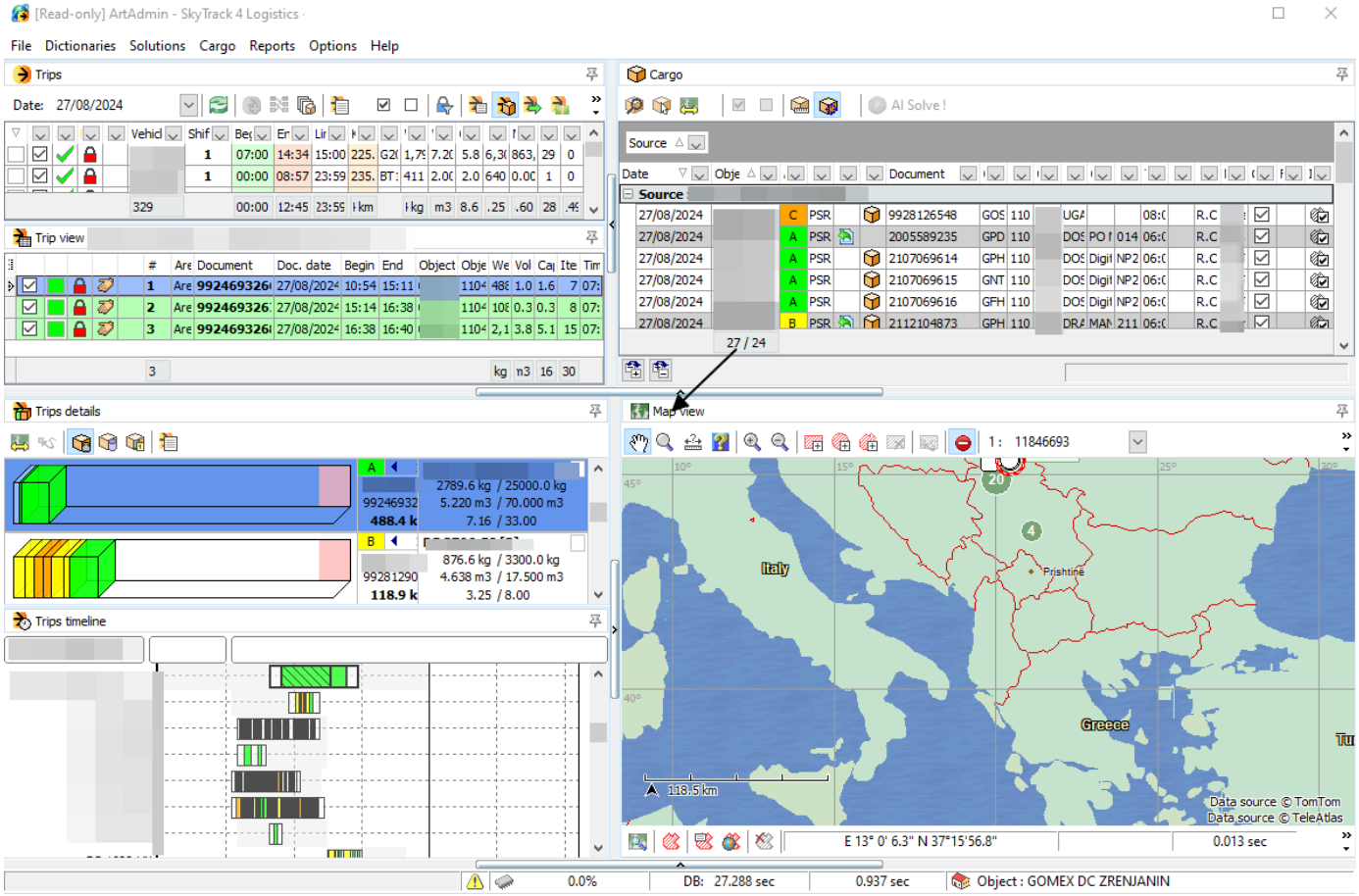
It is possible to do the opposite and move the sliders to the right and expand the view of the window List of trip(s) and View of the trip, Details of the trip and Time scale of the trip, and reduce the view of the window: Shipments and View of the map.

In addition, when we click on the horizontal slider and move for example up, we can stitch the view of the window Driving details, Driving time scale and Map overview.

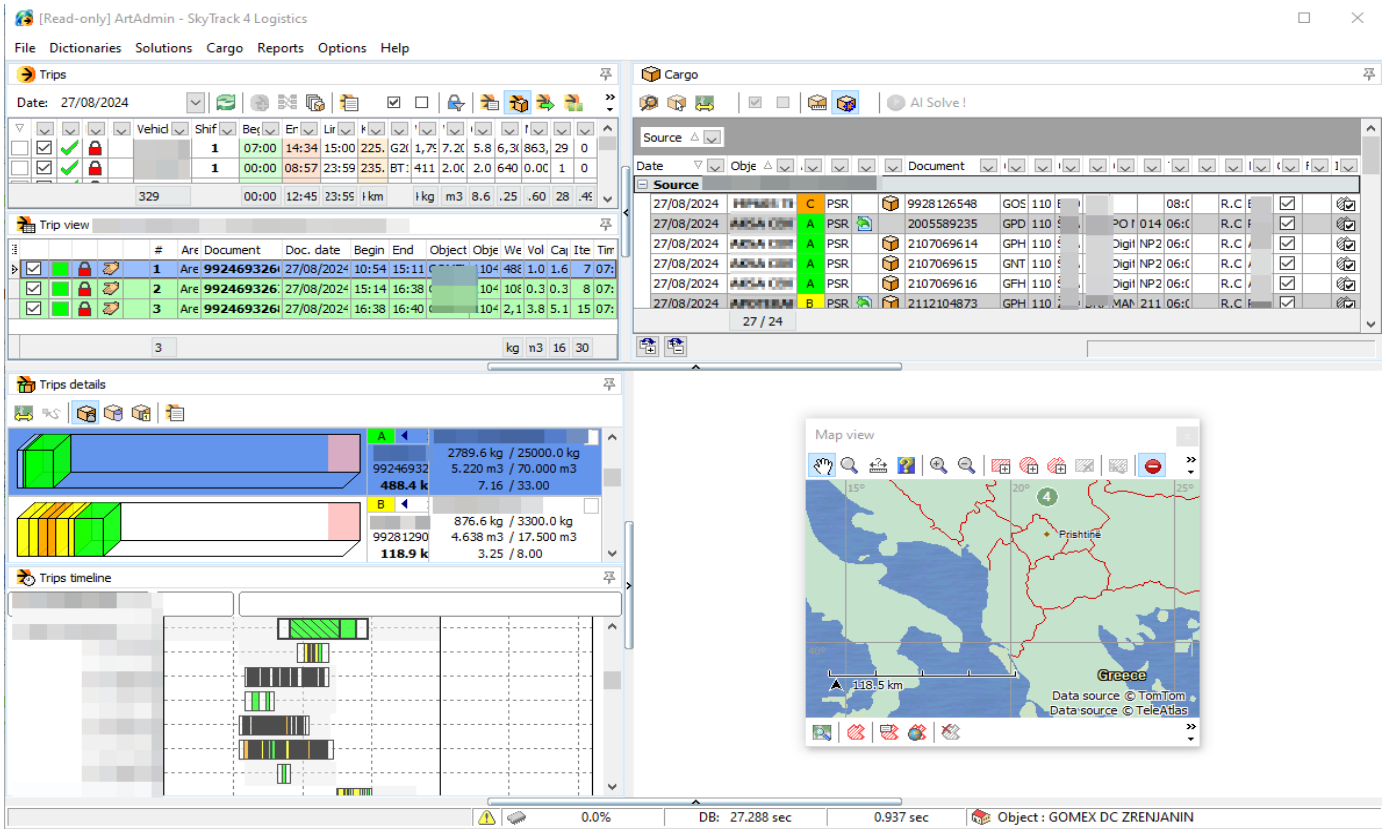




We can select the window we want by clicking on that window, holding it and moving it inward.



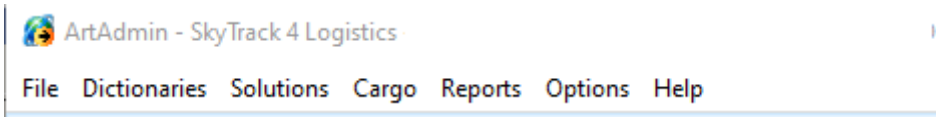
We get a look like in the picture below. The Map View window can then be switched to another monitor if we wish. If we change our mind, we can return the window to its original position by double-clicking on Map View.



Content

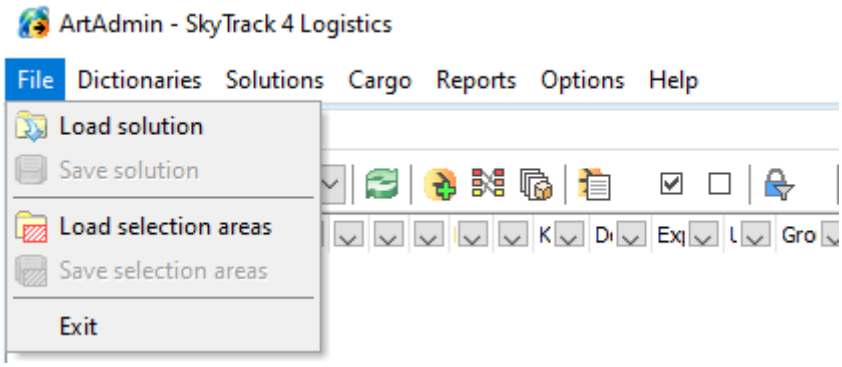
Chapter 1 - Main menu

The main menu is located at the top of the application and consists of smaller units such as: File, Dictionaries, Solutions, Cargo, Reports, Options and Help. Through the main menu, we get to various code books and program settings.

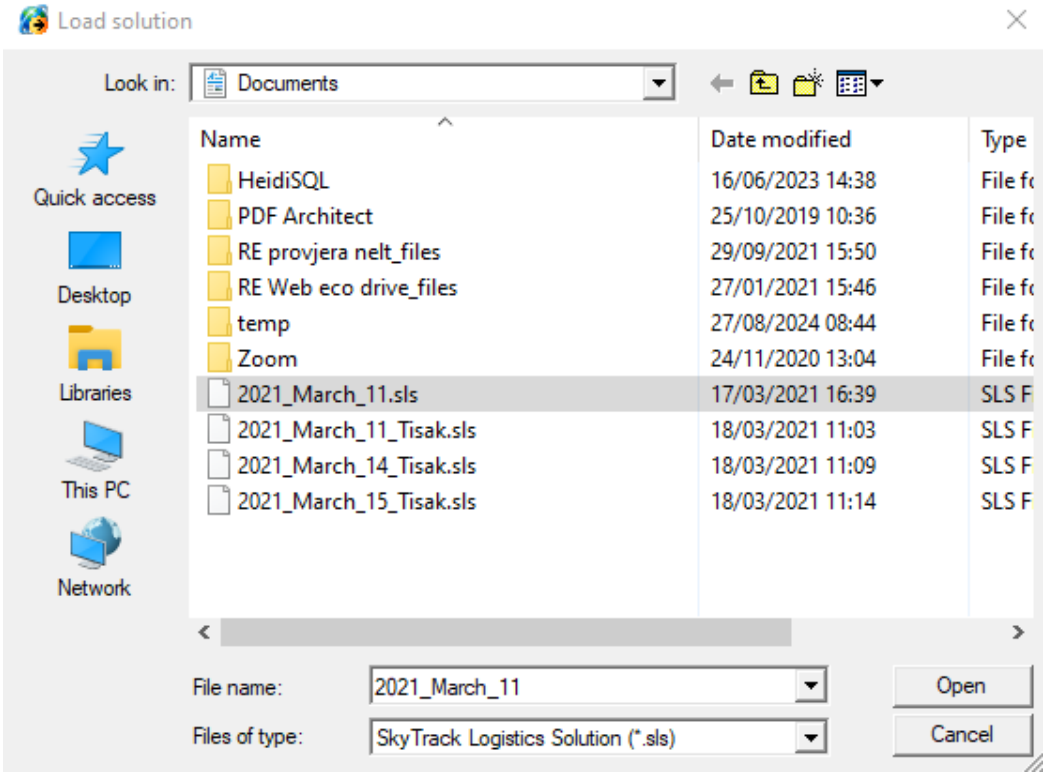


1.1 File

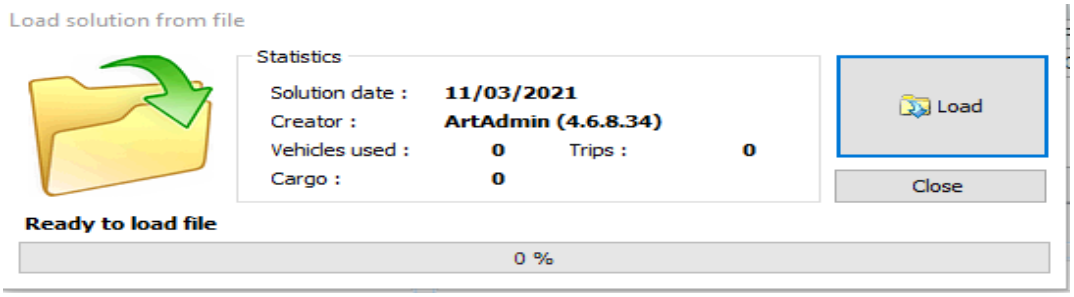
The File menu contains options: Load solution, Save solution, Load selection areas, Exit which closes the application.



When we select the Load solution option, a window opens where it is possible to load a saved solution, which is a Sky Track Logistics Solution file type.

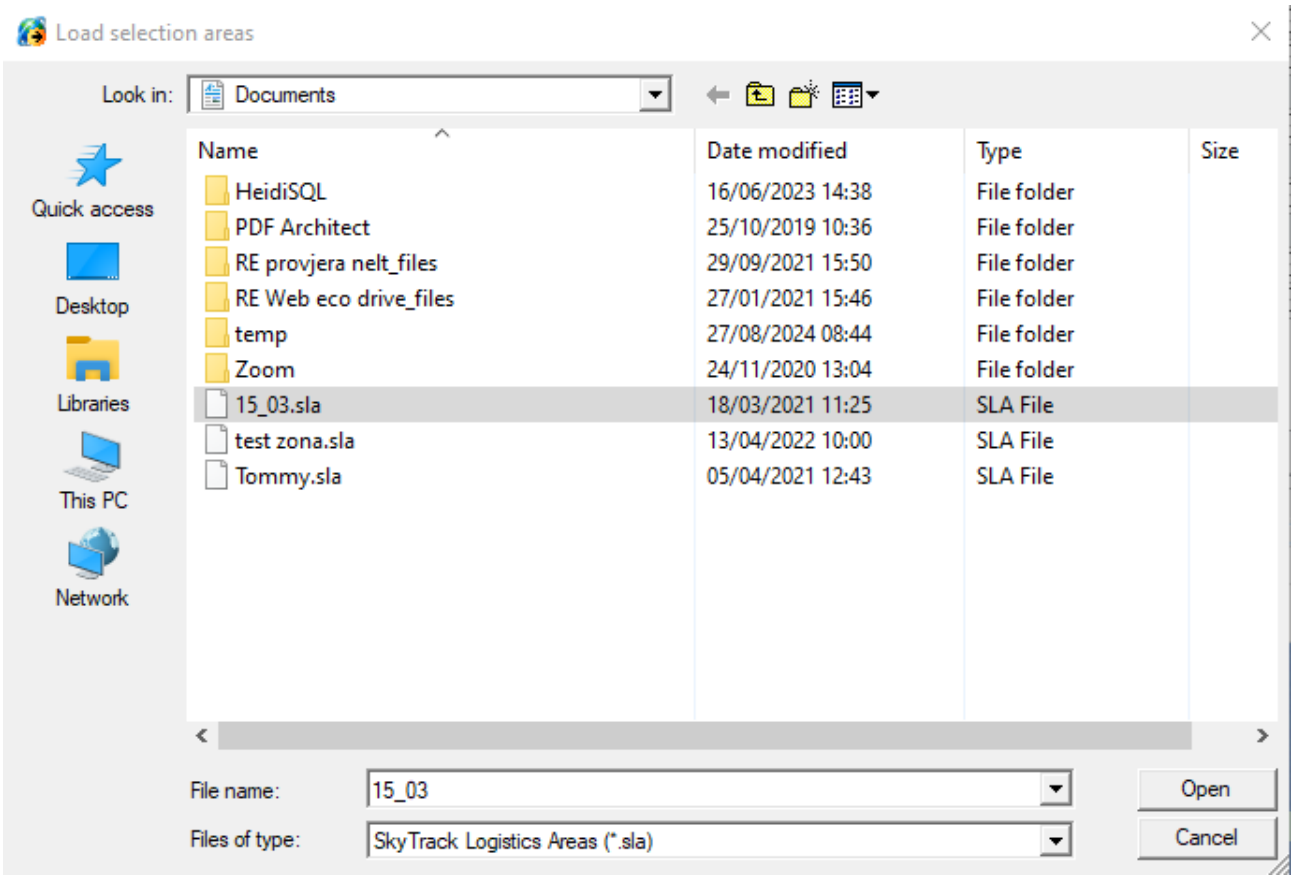


When we select the file and click Open, a window opens, as in the picture below, where it is possible to load the solution.

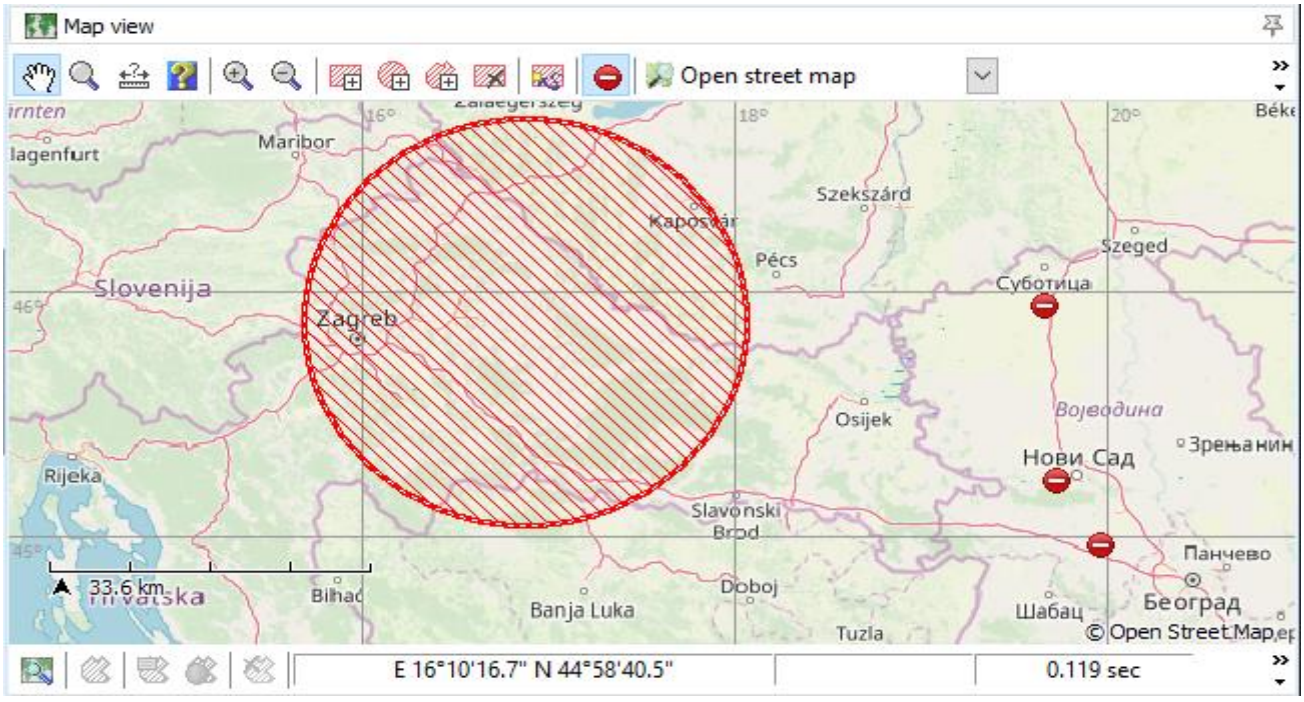


The solution is saved in a similar way. We select the Save solution option, a window opens in which it is possible to save the solution in the Sky Track Logistics Solution file type.

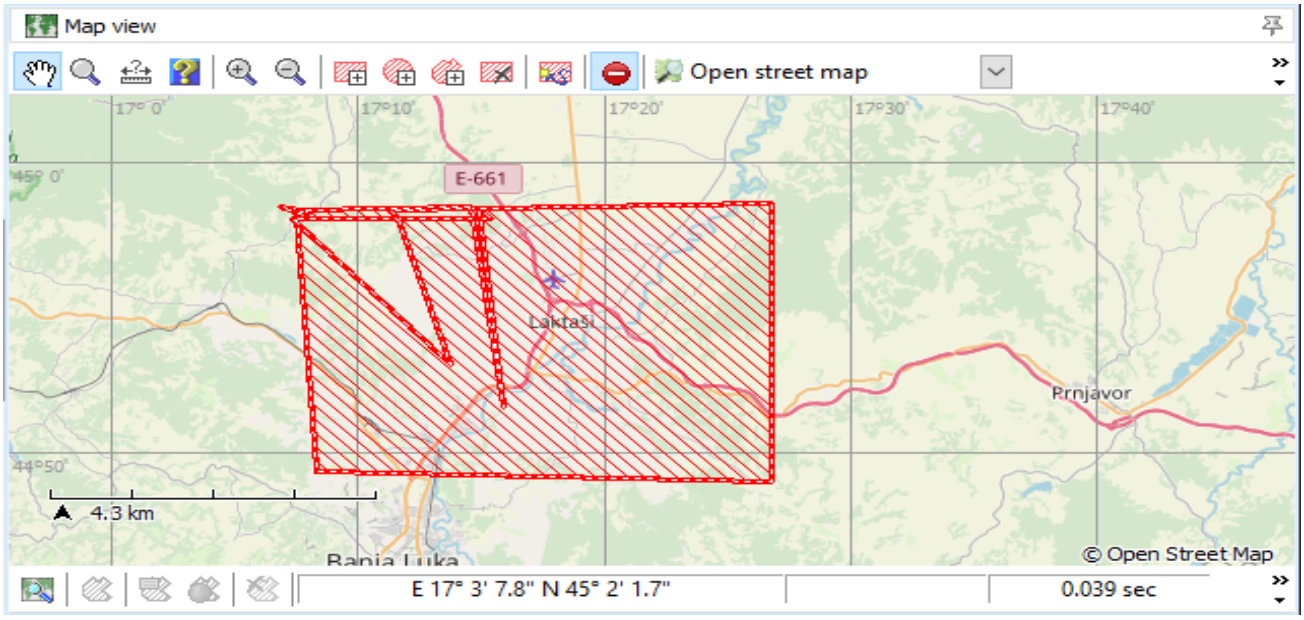
When we select the option Load selection areas, it is possible to load a saved selection area, which is a Sky Track Logistics Areas file type.

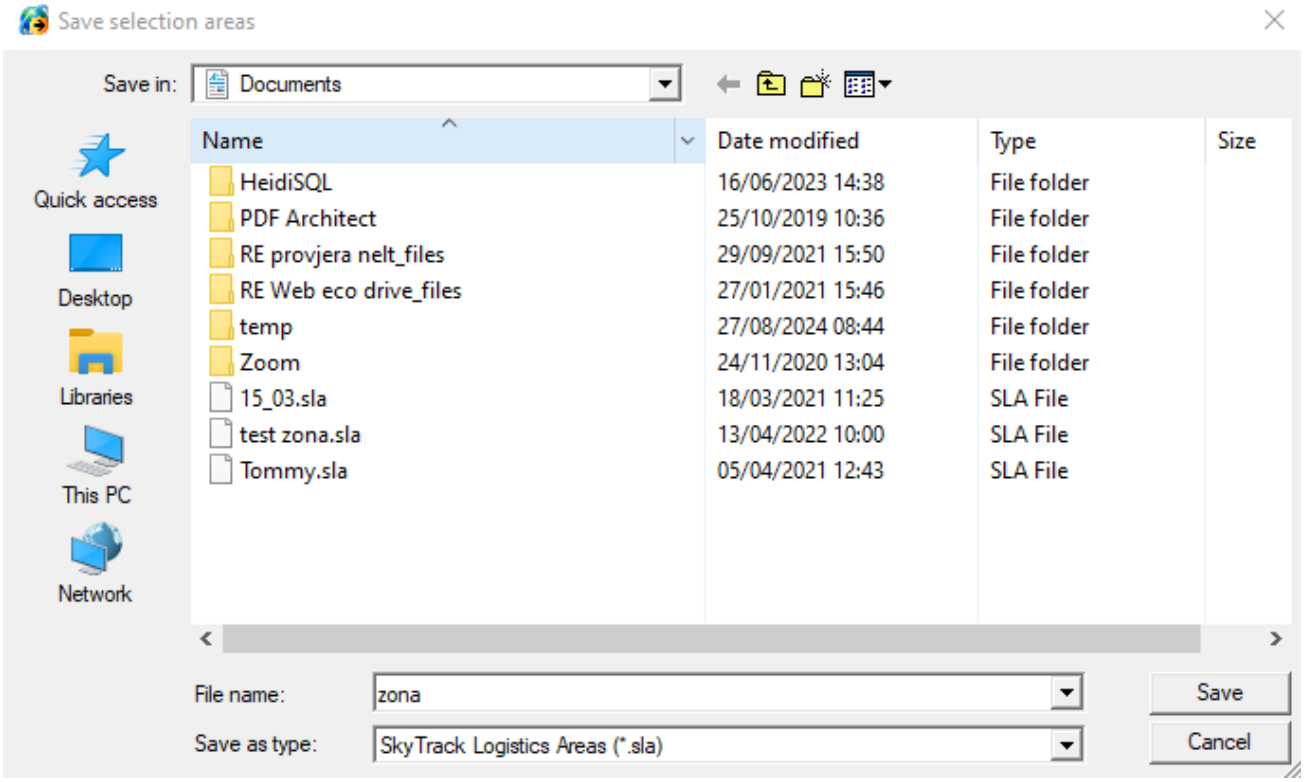


When we select a file and click Open, the selection area is loaded as shown in the image below.



When we select the option Save selection areas, in this way we can save previously drawn areas with a rectangle, a circle or a previously drawn zone (blue arrow).

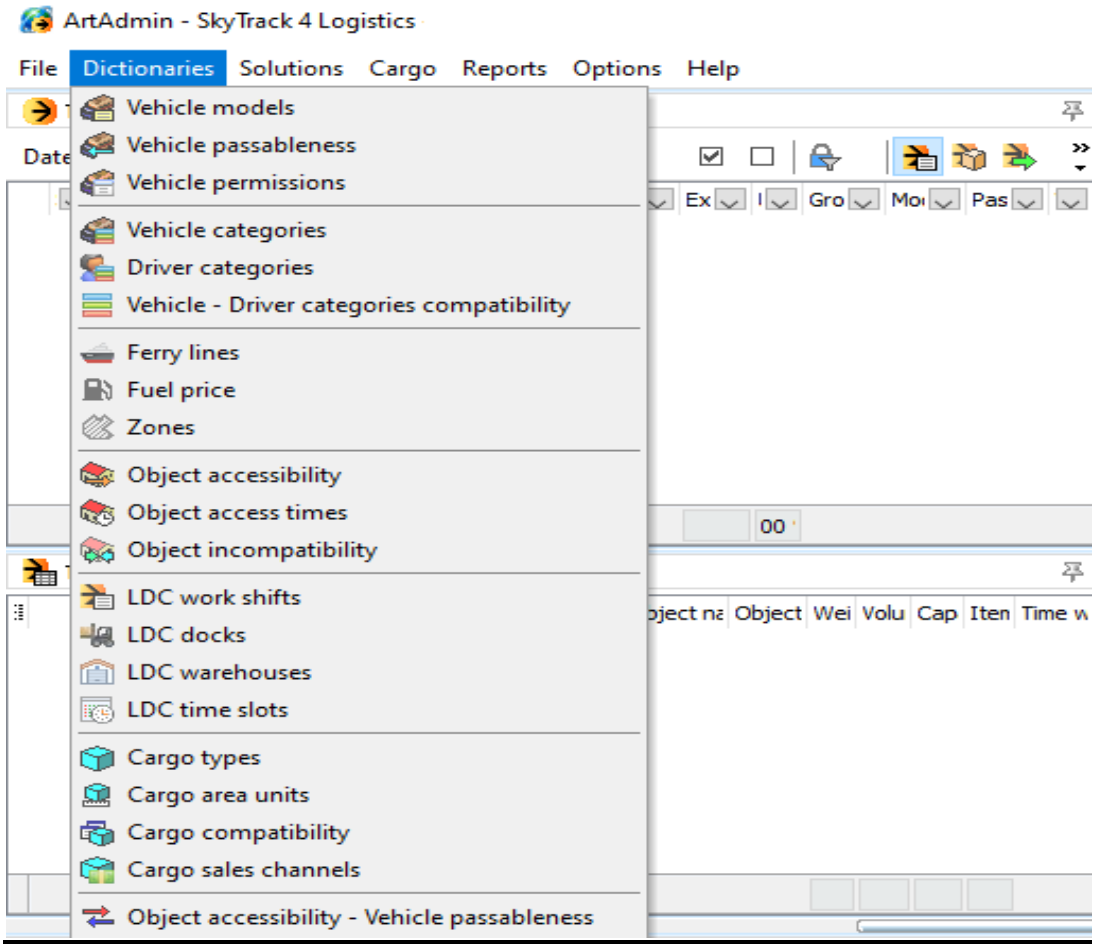




The file can be saved in the Sky Track Logistics Areas file type. When we assign a file name, say: zone, select the type of fault and click Save - the file will be saved on the disk.

1.2 Dictionaries

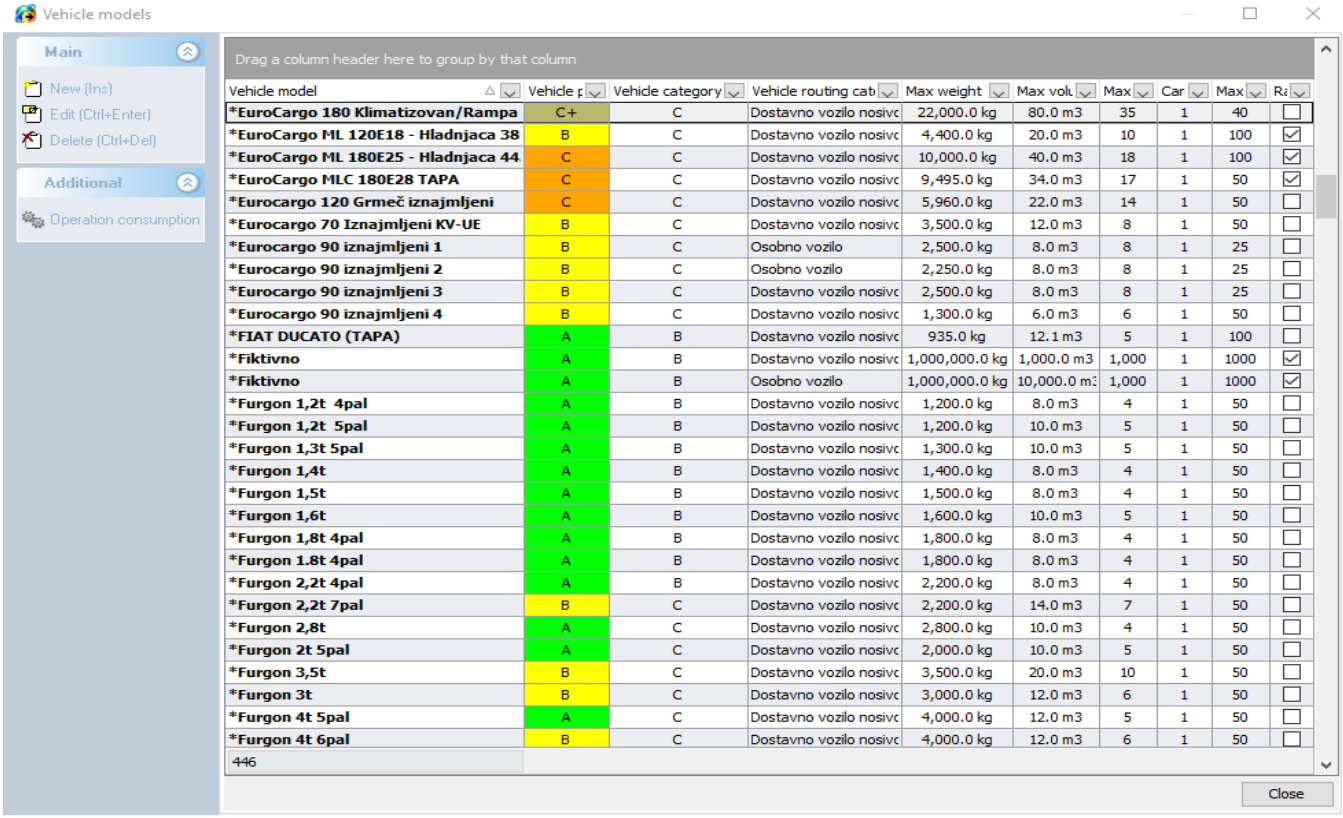
Via the Dictionaries data menu, you can access the code book in which data about the goods being transported, the vehicles carrying out the transport and the delivery points are entered. These data are crucial for the proper operation of the algorithm that distributes the goods by vehicles and sends them to delivery points.



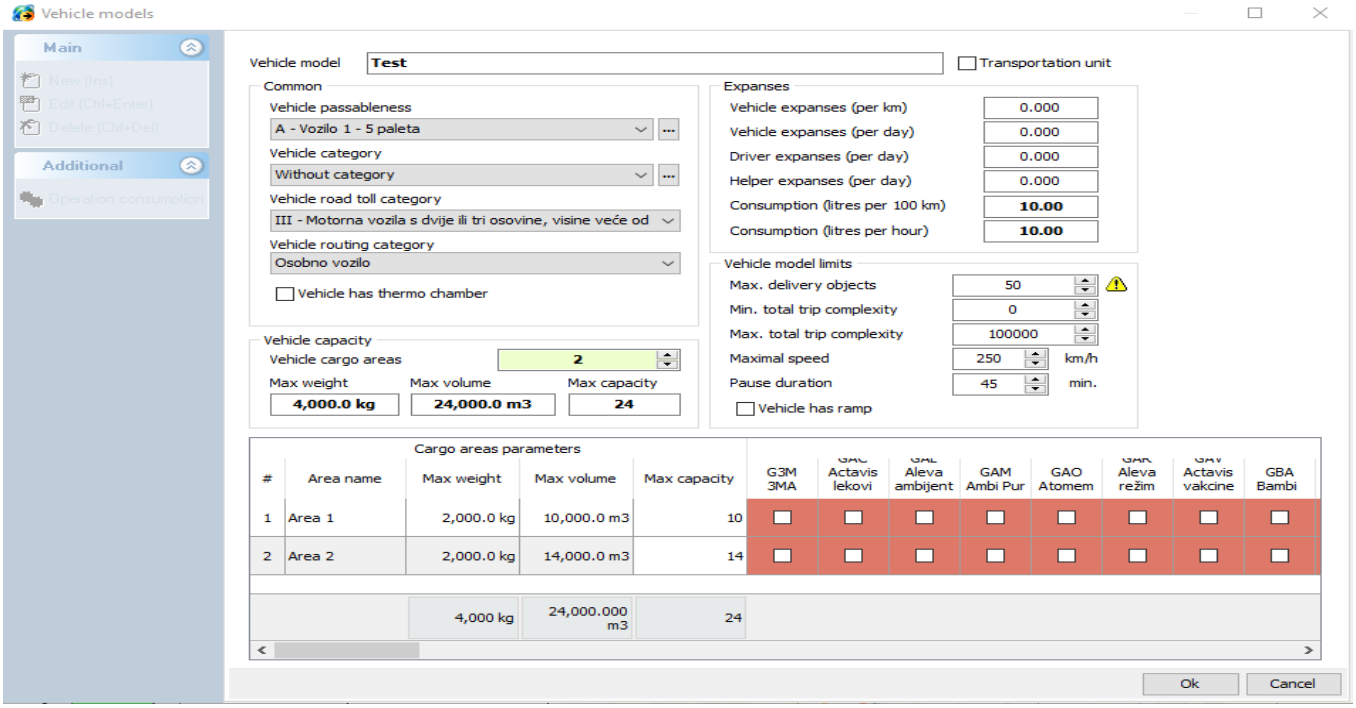
Vehicle models

Vehicle models is a code book in which data important for loading goods into that vehicle, data on the transit of the vehicle, data on the number of cargo spaces are entered for a certain model of vehicle. Data on the expenses of individual vehicle models are also entered. In addition, it is possible to define and fine-tune vehicle model limitations by maximum delivery facilities, maximum speed in km/h, duration of breaks in minutes, whether they have a ramp or not.

When we select the Vehicle models option, a window opens with the associated models as shown in the image below. Each model, in addition to the model name, contains data on vehicle passableness, vehicle routing category, weight, volume, pallet capacity, number of cargo areas, maximum delivery objects, data on whether they have a ramp or not.



When we click on New in the upper left corner of the screen, we can add a new vehicle model, if we click on Edit, we can change one of the existing vehicle models.



Vehicle model - field in which the name of the model is entered.

General data

Vehicles passableness – a drop-down list where, by selection, information is entered on the group to which the vehicle model belongs in terms of passability.

The button with three dots opens the codebook **Vehicles passableness.**

Vehicle category - a drop-down list where information about the vehicle category can be entered by selecting. The button with three dots opens a window where it is possible to add the vehicle category and the category code.
Vehicle road tool category - a drop-down list where it is possible to choose which group related to toll collection the vehicle belongs to
Vehicle routing category – a drop-down list where it is possible to choose which routing category the vehicle belongs to
Vehicle has termo chamber - an option that provides information on whether the specified vehicle has a Thermo King or not

Vehicle capacity

Vehicle cargo areas - gives information about how many cargo spaces the vehicle has, whether one or more like tow trucks.
Max Weight - the number specified by the manufacturer for that vehicle model in kg.
Max Volume - a number specified by the manufacturer for that model as volume in m3.
Max Capacity - a figure specified by the manufacturer for that model as a quantity in pallets.

Expenses

Expenses are entered in some agreed currency, ie. the figures are only generic values and the user chooses which currency it is.

Vehicle expenses (per km) – depreciation expenses per kilometer
Vehicle expenses (per day) – vehicle depreciation expenses in a certain period
Driver expenses (per day) - driver expenses
Helper expanses (per day) - the daily wage of an auxiliary worker per day
Consumption (liters per 100km) - model consumption in litres/100km
Consumption (liters per hour) - model consumption in litres/hour

Vehicle model limits

Max. delivery objects - with this option it is possible to limit the max. delivery objects by vehicle model

Min. total trip complexity – select a certain integer that represents the min.complexity of driving
Max. total trip complexity – select a certain integer that represents the max.complexity of driving
Maximal speed - enter the maximum speed limit according to the vehicle model
Pause duration - enter how long the recommended break is per vehicle model
Vehicle has ramp - this option turns on or off the fact that the vehicle has a built-in loading ramp.

Cargo areas parameters

Area name - Area 1 appears if the number of cargo spaces is one. If there are two cargo areas, Area 1 and Area 2 appear. Area 1 and Area 2 can be renamed to desired names.
Max weight - in this field it is possible to enter the Payload in kilograms, which automatically changes the Weight field in the Vehicle Capacity section.
Max Volume - in this field it is possible to enter the Volume in m3, which automatically changes the Volume field in the Vehicle Capacity section.
Max Capacity - in this field it is possible to enter the capacity in pallets, which automatically changes the Quantity field in the Vehicle Capacity section.

Types of goods

Types of goods - which are created and which can be included or excluded.

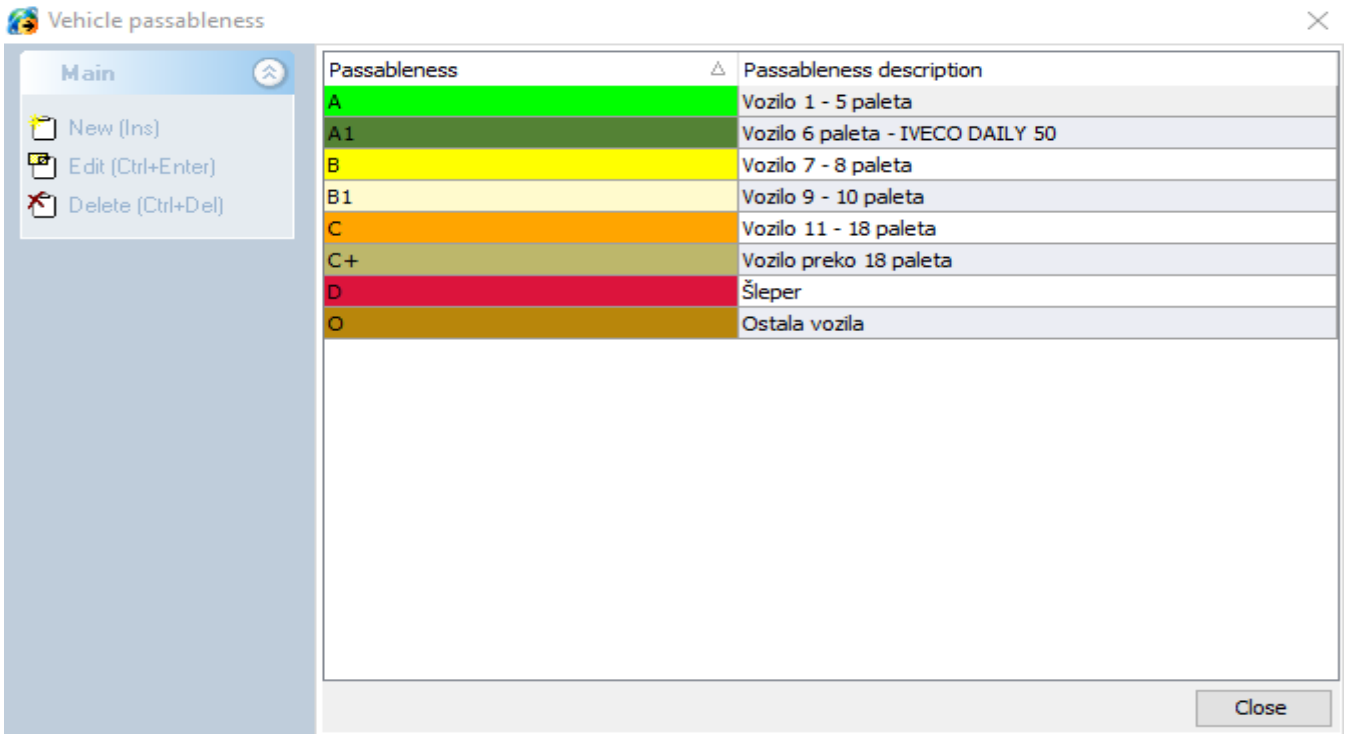
Types of capacity units – the types of pallets used and which can be selected or excluded.

At the bottom we have a display of the weight of the goods and the occupancy in the cargo area.

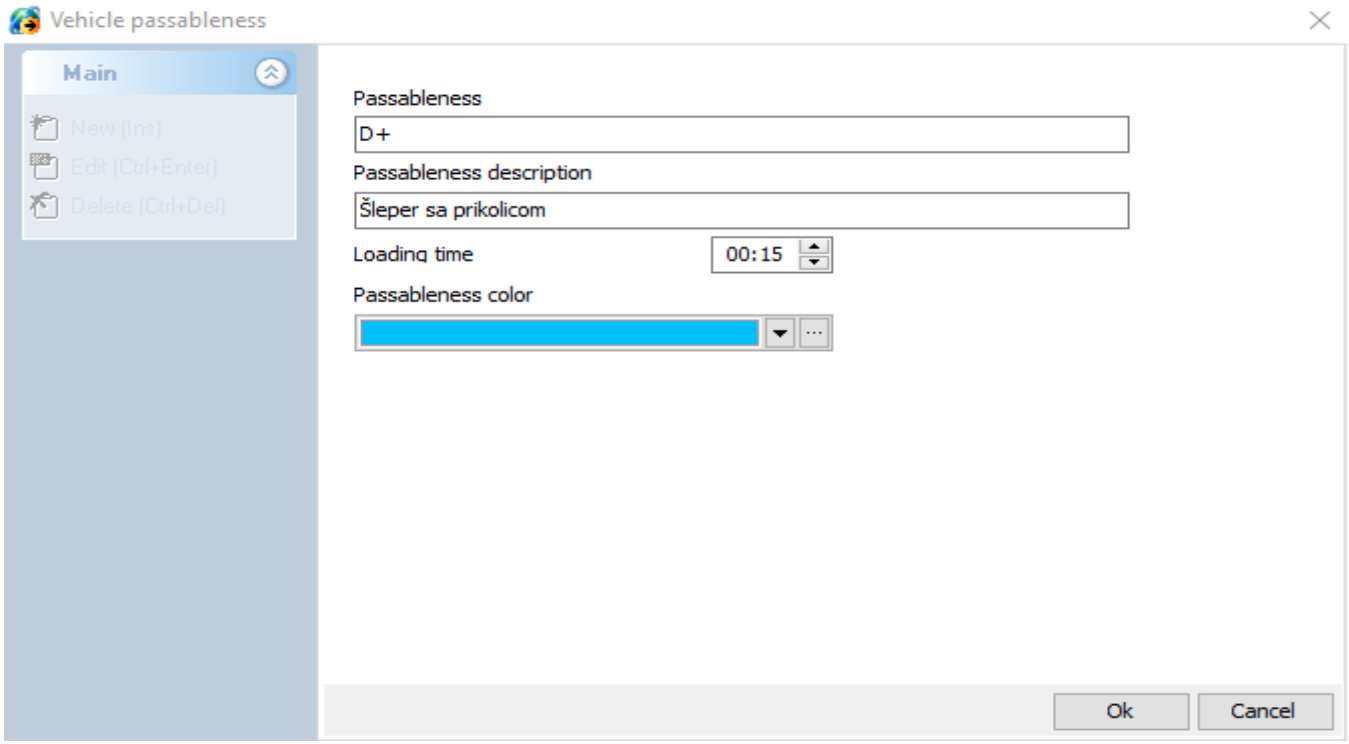
Vehicle passableness

Vehicle passableness is a code that defines classes of vehicle passability. The definition is arbitrary, so it depends on local regulations or the logistician's assessment and needs to be defined internally.

Adding a new pass can be done by clicking New in the upper left corner of the window. If we want to change the existing passes, it is done by clicking on Change, or by double-clicking on the selected pass. By clicking on delete, it is possible to delete some of the existing vehicle accesses, only logisticians in the company should have that right.



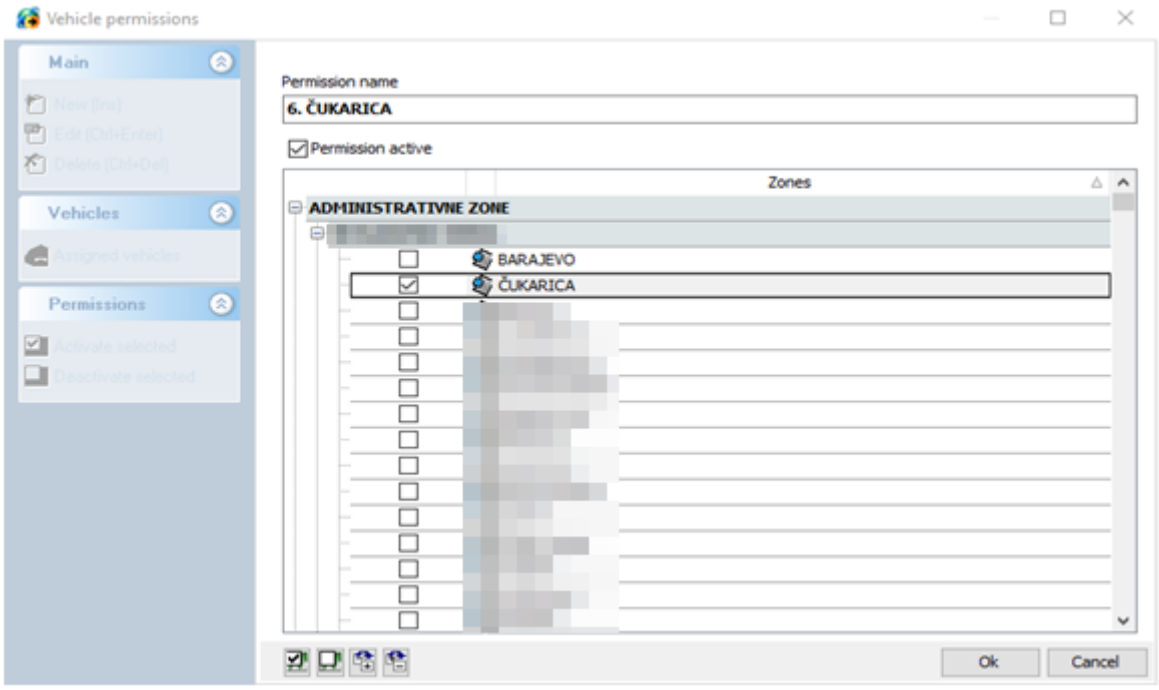
When we click on New, we get a window where we enter the name of the passage, the description of the passage and the color for the class of passage of the vehicle, as well as the loading time in minutes.



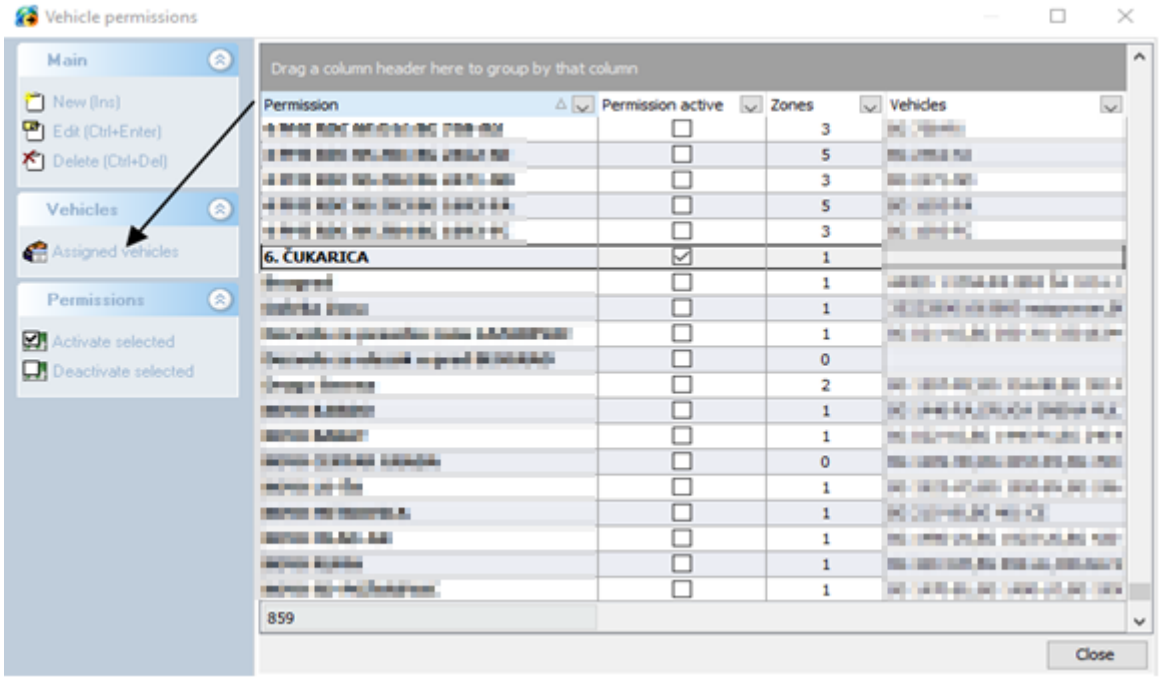
Vehicle permissions

By selecting the Vehicle permissions option, it is possible to allow certain vehicles to enter only a certain zone or zones, previously defined.

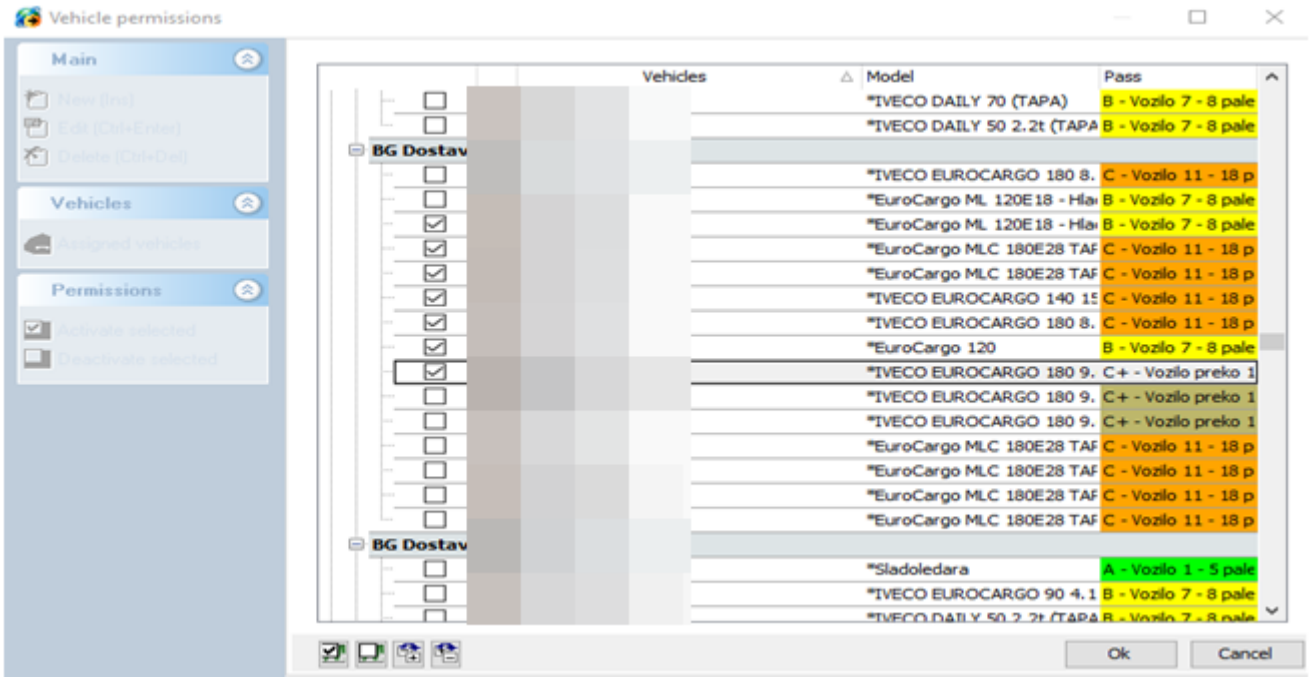
When we click on New in the upper left corner of the window, it is possible to enter the permission title, select a zone or several zones and click on Ok. This adds a new vehicle license.



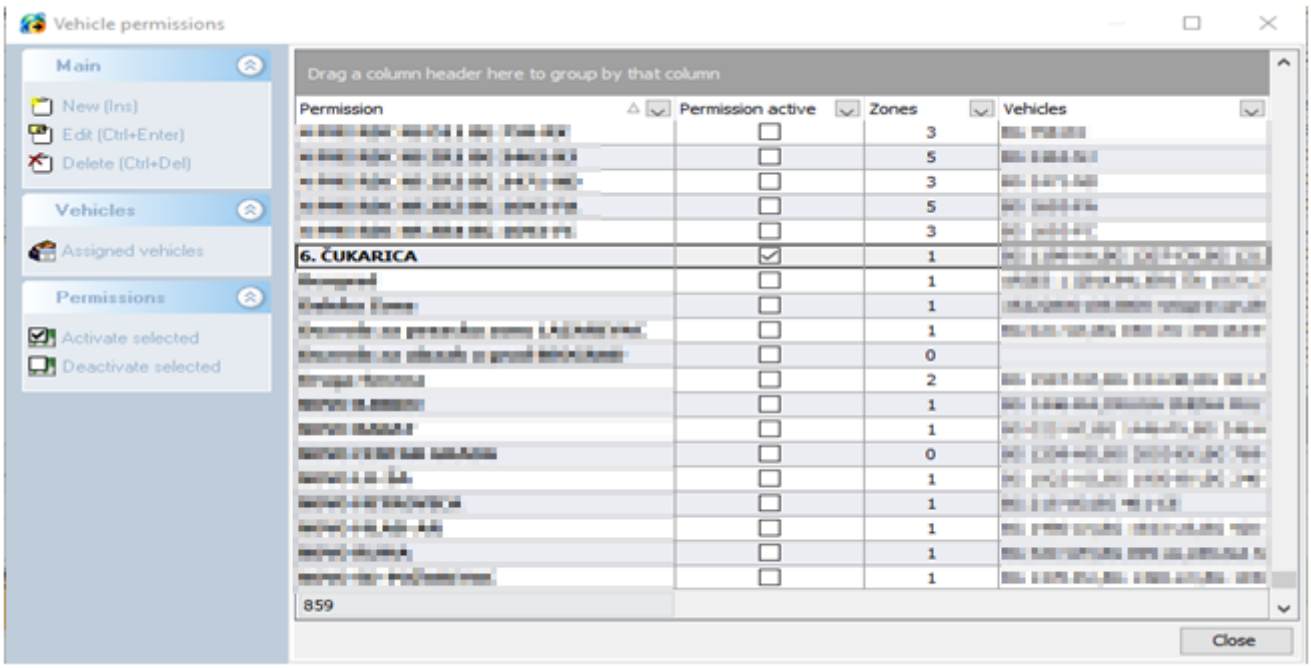
After that it is possible to include which vehicles can enter that zone or zones. This is done by clicking on the Included vehicles option, which is on the left.



After that, the vehicles that we want to give permission to enter our zone are selected.



When we click on Ok, we get a window like the picture below. It shows that 7 vehicles have a permit for the Čukarica zone.



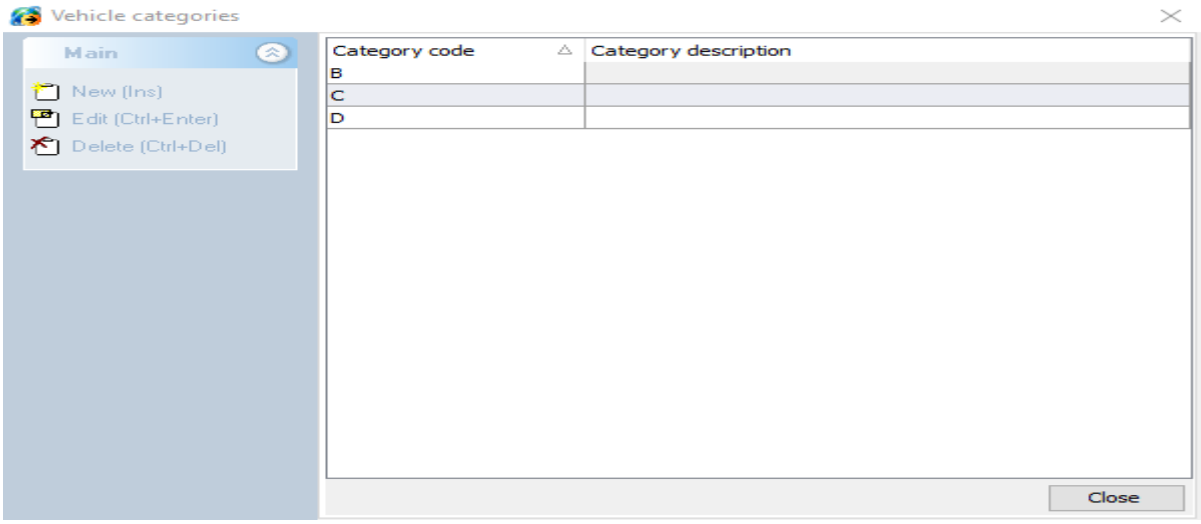
If we want, we can deactivate the specified permission. We select the specified permission, click in the upper left corner of the Change window. A window like the one below appears.

When we uncheck the Permission active option and click OK, the specified permission will not be used.

Vehicle categories

By selecting the Vehicle categories option, it is possible to assign certain vehicle categories with the corresponding category codes.

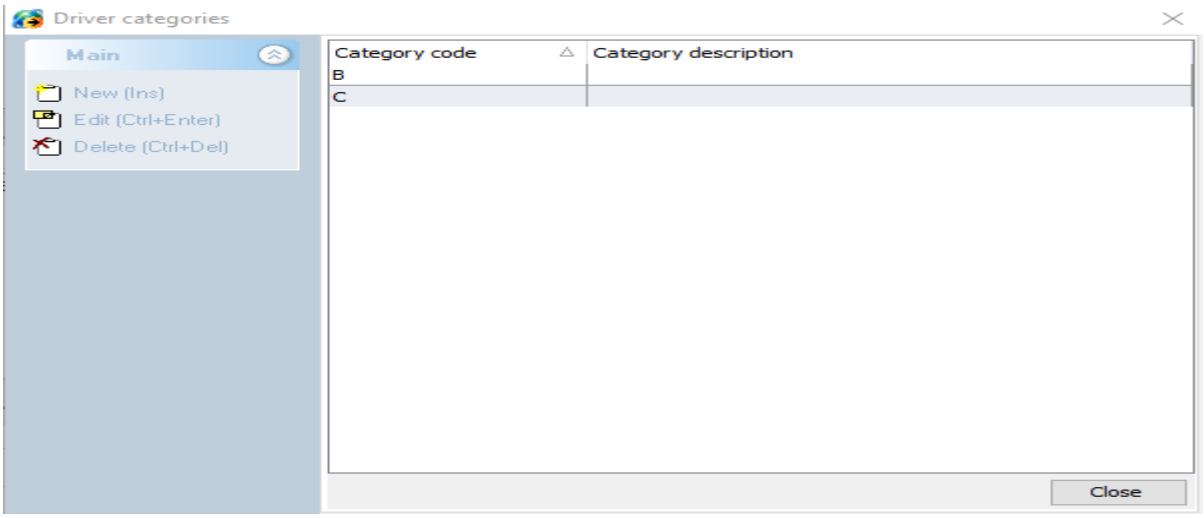
In our example, these are the categories as in the picture below:



By clicking on New it is possible to add a vehicle category, by clicking on Change it is possible to change one of the existing categories B, C, or D. Category B is for vehicles that require a category B driver's license. Category C is for vehicles that require a category C driver's license. Category D is for vehicles that have more than 8 seats in addition to the driver's seat. By clicking on Delete, it is possible to delete one of the listed categories, it would be best if the logisticians in the company have the rights for something like this.

Driver categories

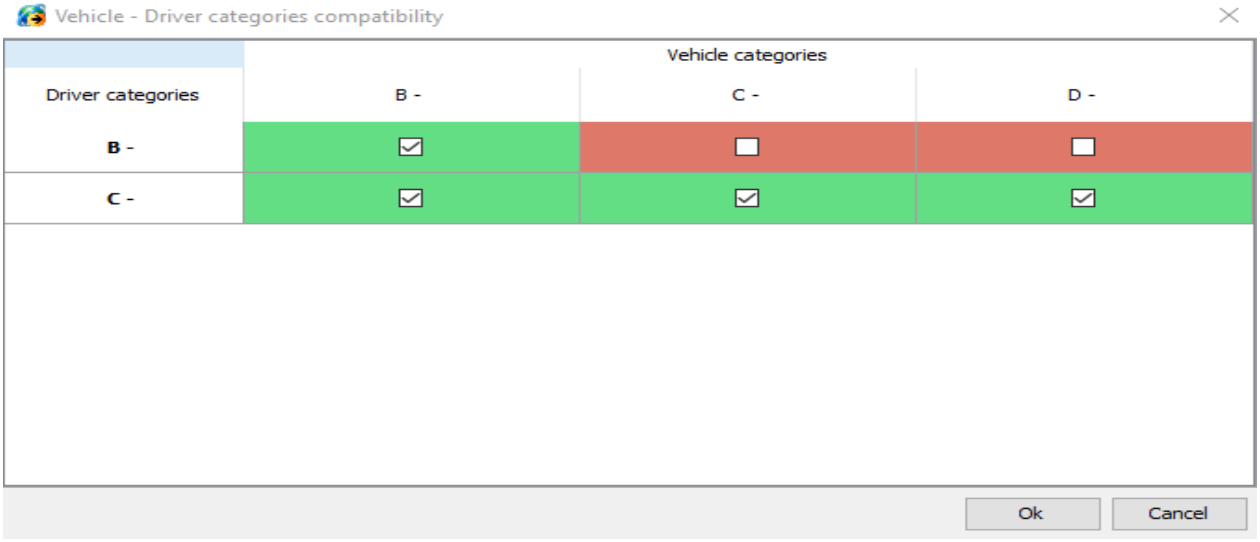
By selecting the **Driver Categories option**, it is possible to assign certain categories of drivers with the corresponding category codes.



In our example, driver categories B and C were created, because they are used.

By clicking on New it is possible to add a new driver category, by clicking on Change to change one of the existing categories, by clicking on Delete it is possible to delete one of the categories - these rights are best reserved for logisticians.

Compatibility of vehicle and driver categories



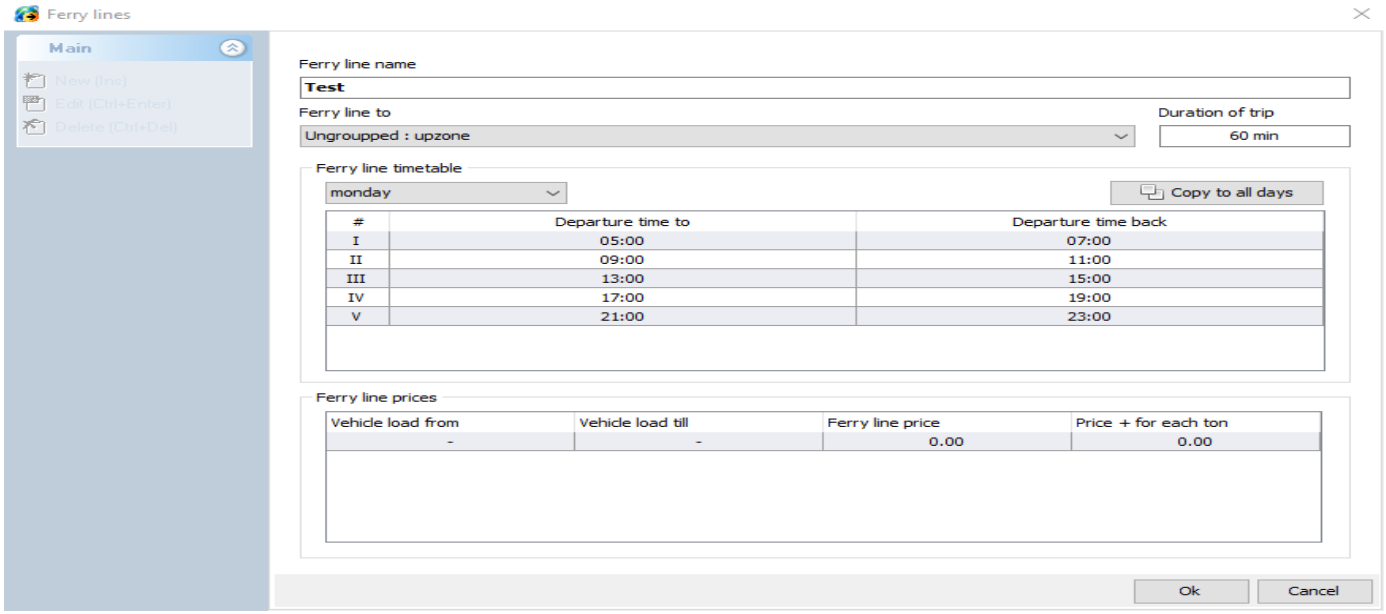
By selecting the Vehicle Compatibility and driver categories option, we see a clear correlation between driver categories and vehicle categories. Thus, a category B driver can only drive a vehicle that requires a category B driver's license, while a category C driver can drive all vehicle categories.

Ferry lines

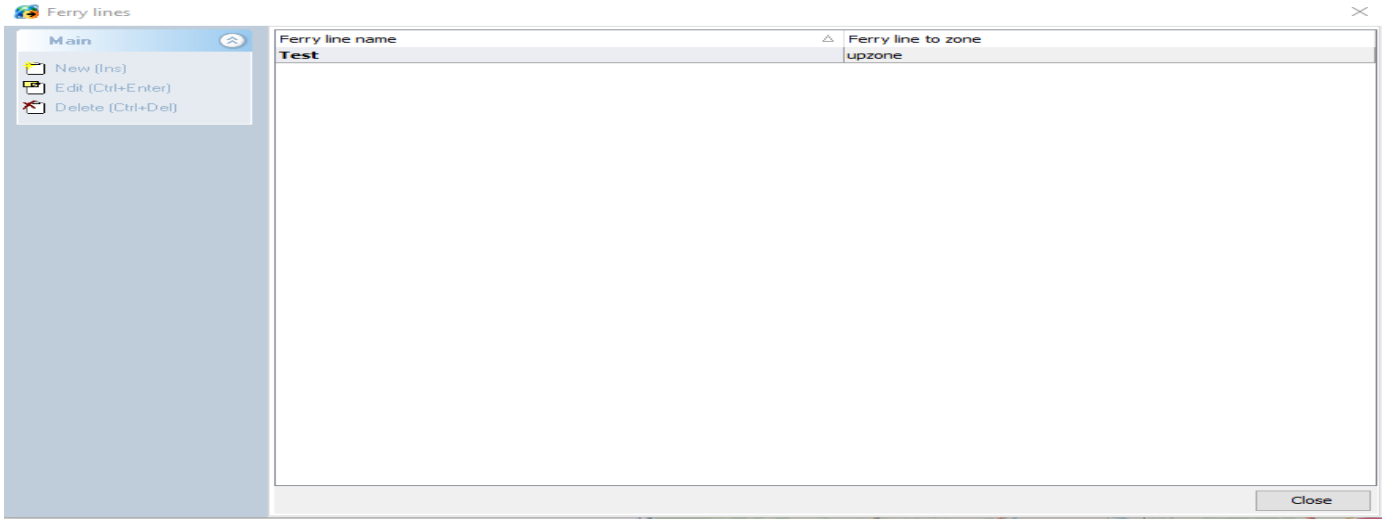
By selecting the option Ferry Lines, it is possible to add a Ferry Line for transporting vehicles by clicking on New in the upper left corner of the screen.

After that, the name of the ferry line is entered, the ferry line is selected according to the previously defined zone. Then enter the duration of the voyage in minutes. After that, the order of departure and return under the anima is defined.

Then enter the carrying capacity of vehicles that can be transported on the ferry line in the fields vehicle carrying capacity from and vehicle carrying capacity to. After that, the transportation price per vehicle and price + per each ton is defined.

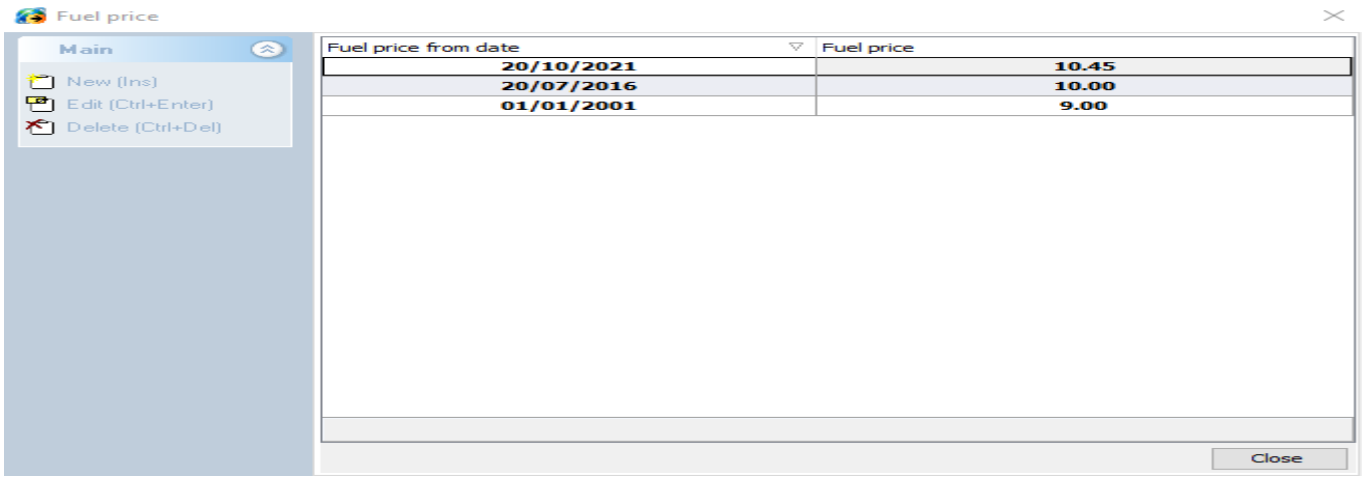


When we click OK after that, we get the ferry line as in the window below.



Fuel price

When we select the **Fuel price option**, we get the option of entering the fuel price, the change of which has occurred since a certain date.



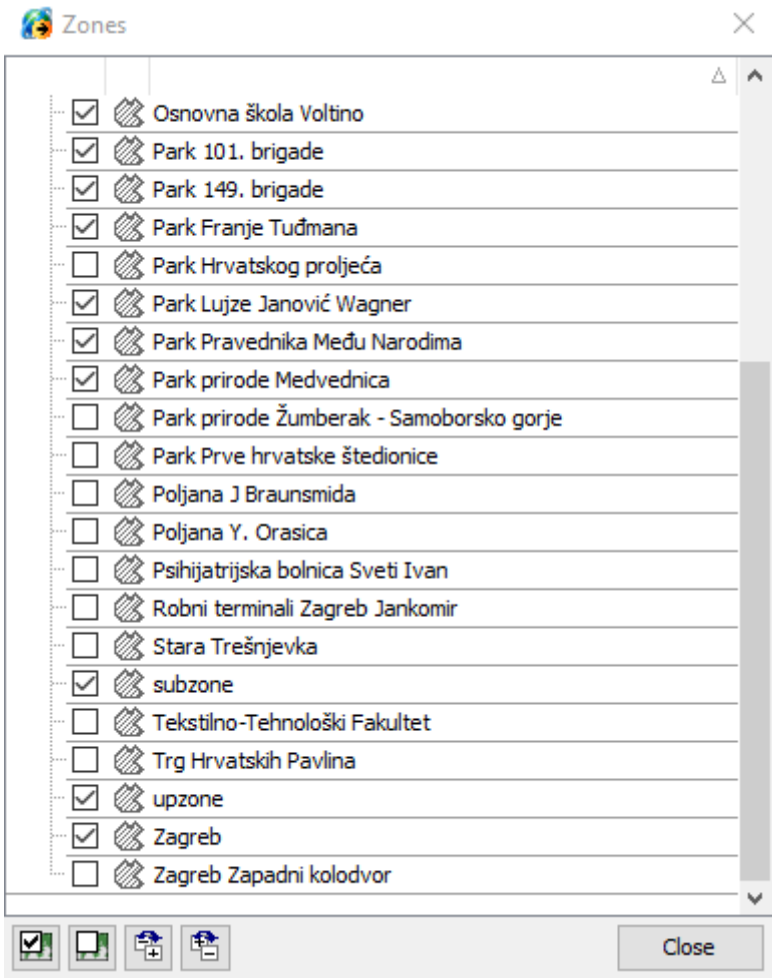
When we click on New in the lower left corner, the window below appears where it is possible to select the date from which the fuel price change occurred and enter the fuel price in any currency.

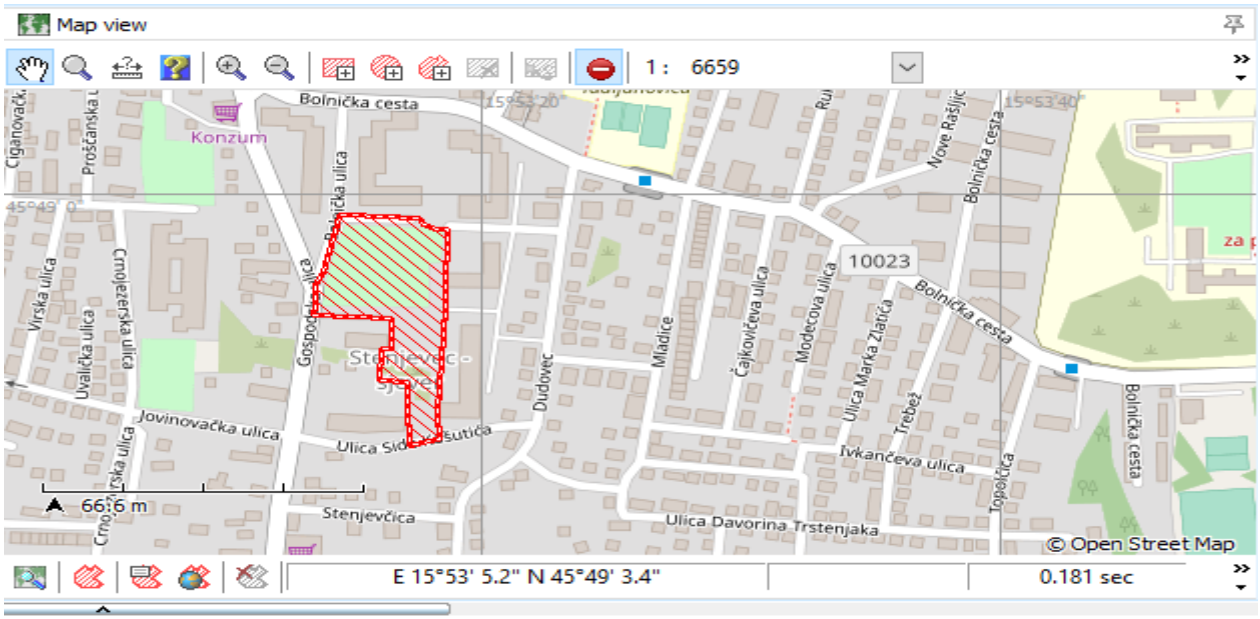
By clicking on Ok, the specified price is added.

Zones

By selecting the **Zone option**, it is possible to review previously created zones, change zone properties and groups to which the zones belong.

When we select the Zones option, then double-click on a specific zone - it appears in the Map View window.

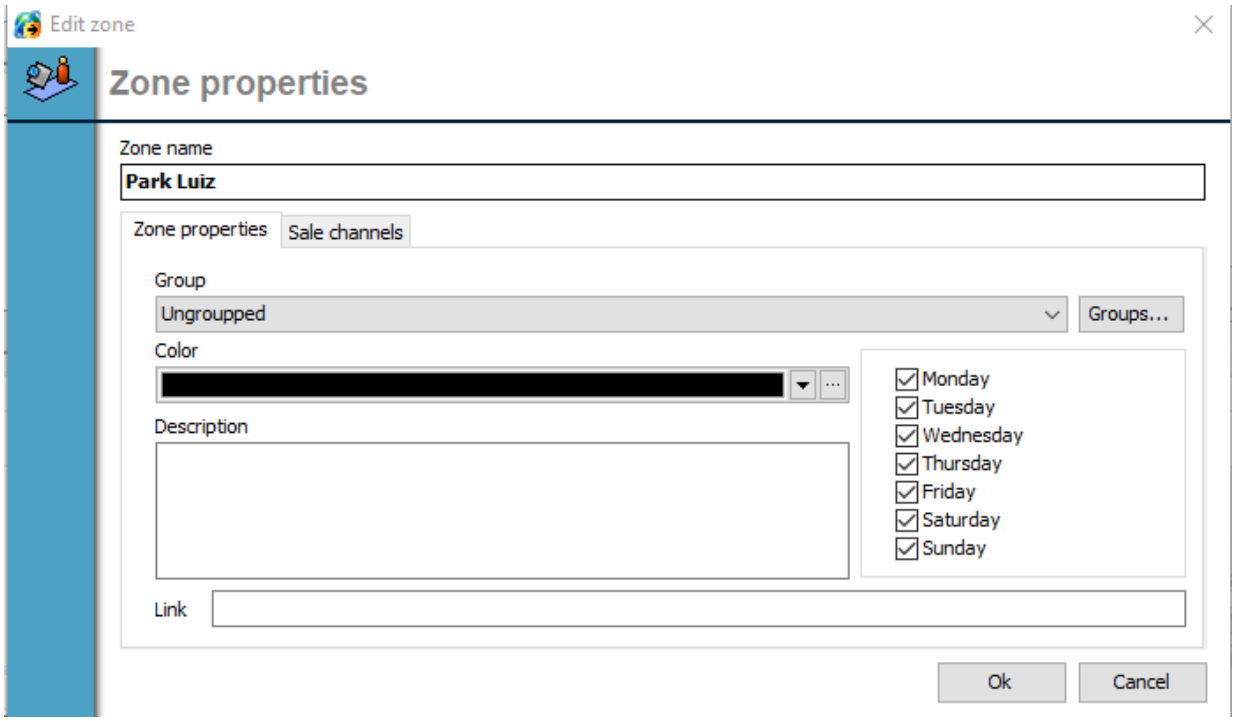


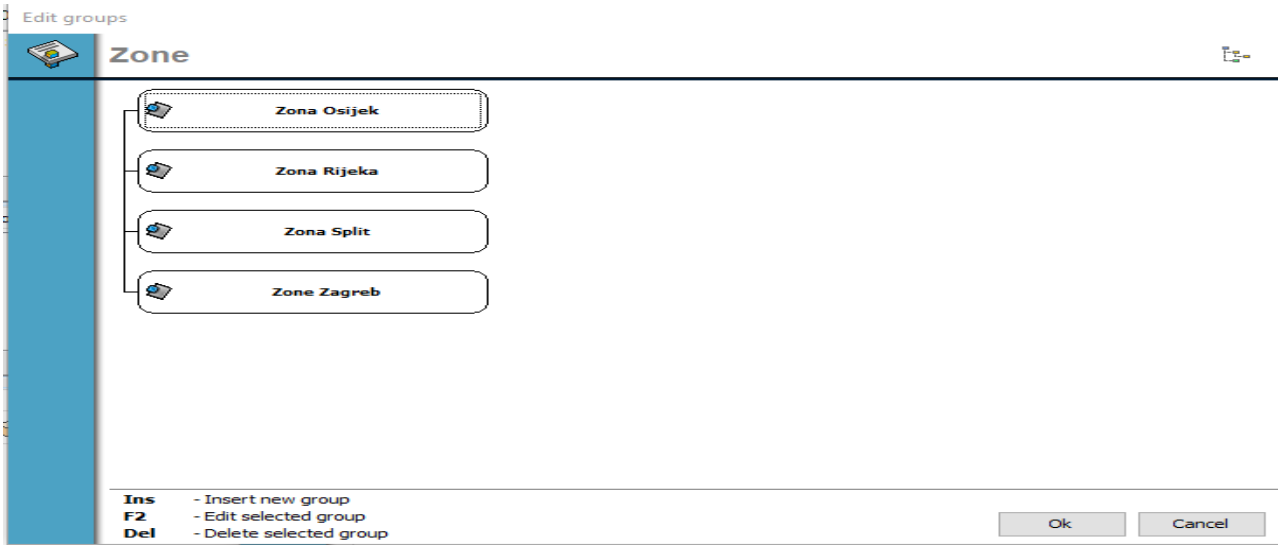


When we right-click on the same zone, then Zone Properties, a window appears as in the image below:

On the Zone Settings tab, it is possible to change the affiliation of the group to which the Zone belongs, by selecting it from the Group drop-down menu.

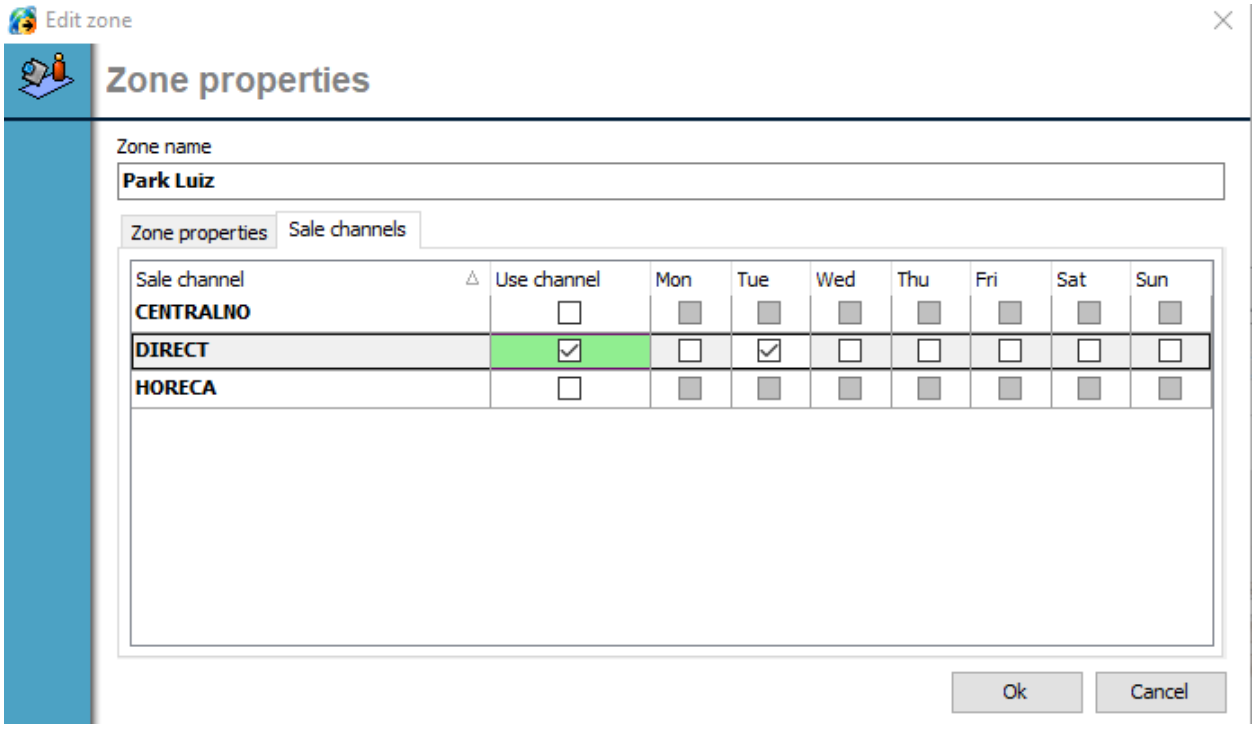
In addition, by clicking on the Groups option, it is possible to edit the groups to which the zones belong, add a group, delete a group.





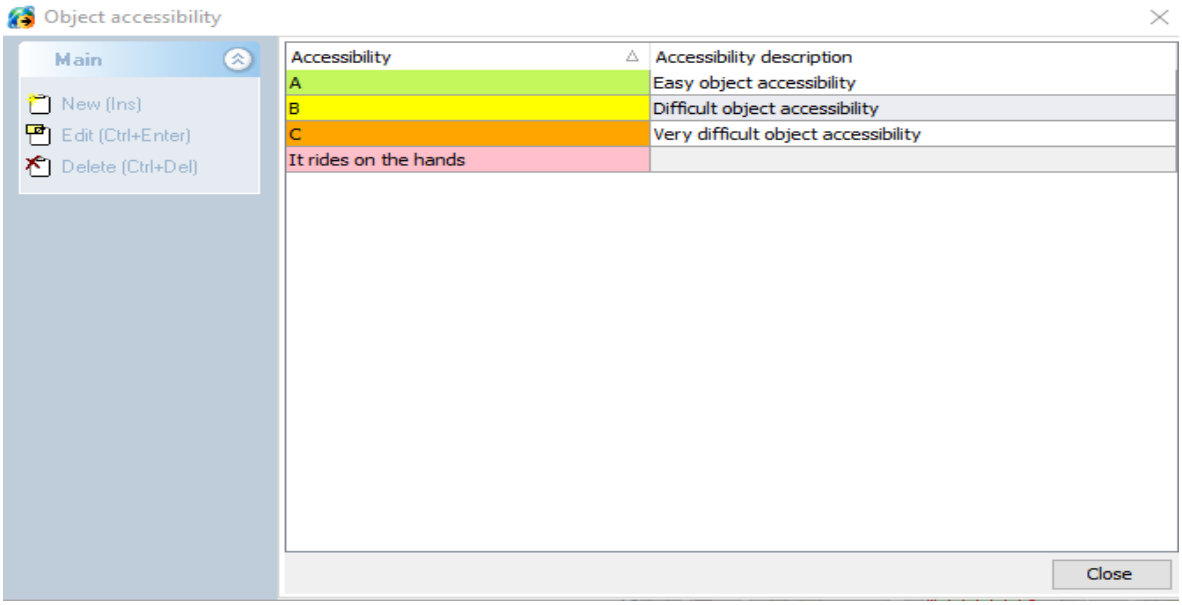
By clicking on Ins on the keyboard, we add a new group, which we click on Ok to add, and which can then be assigned to a specific zone.
By clicking on F2 on the keyboard, it is possible to change the name of a specific group, and then by clicking on Ok, we confirm the change.
By clicking on Del on the keyboard, it is possible to delete a certain group and then by clicking on Ok to confirm the changes. If we change our mind, we can click Cancel.

After that, on the Sales channels tab, it is possible to set which sales channel is used on which day of the week.



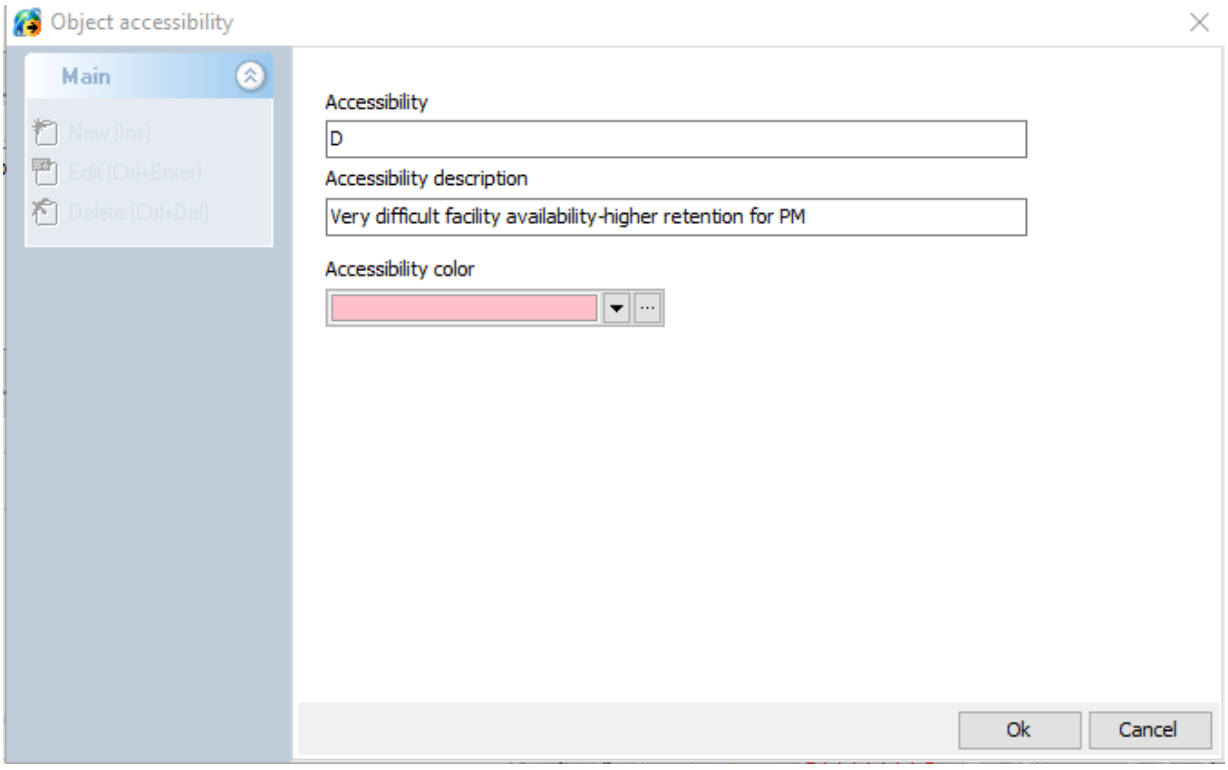
Object accessibility

Object accessibility is a codebook that defines object availability classes. The definition is arbitrary and depends on the judgment of the driver or logistician, so it is necessary for the logistics service to define it itself.



It is possible to add new object accessibility by clicking on New in the upper left corner of the window. By clicking on edit, we change the selected object accessibility. By clicking on delete, some accessibility of the object is deleted, only logisticians in the company should have that right.

When we click on New, a window opens in which it is possible to enter the name of the object's new availability, description and color of the accessibility. By clicking on OK, we add new object accessibility.



Changing the existing object availability is done by clicking on Edit in the upper left corner of the window.

The right to delete the availability of the object would be best if only the logisticians in the company have it, and it is done by clicking on Delete in the upper left corner of the window.

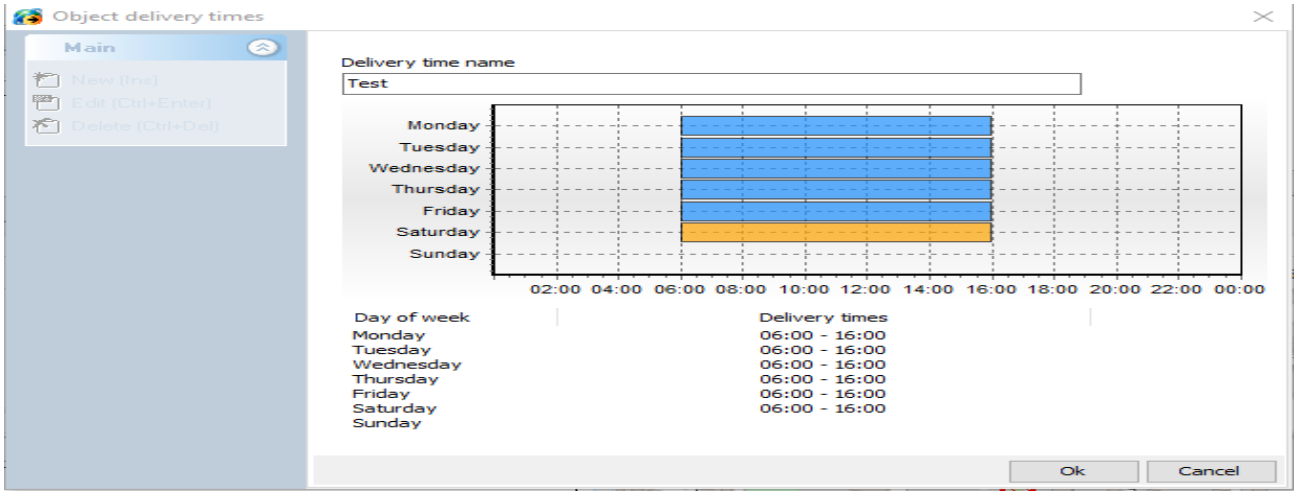
Object delivery time

Object access times is a codebook in which data is entered about the time when a particular object or a group of facilities receives goods for each day of the week.

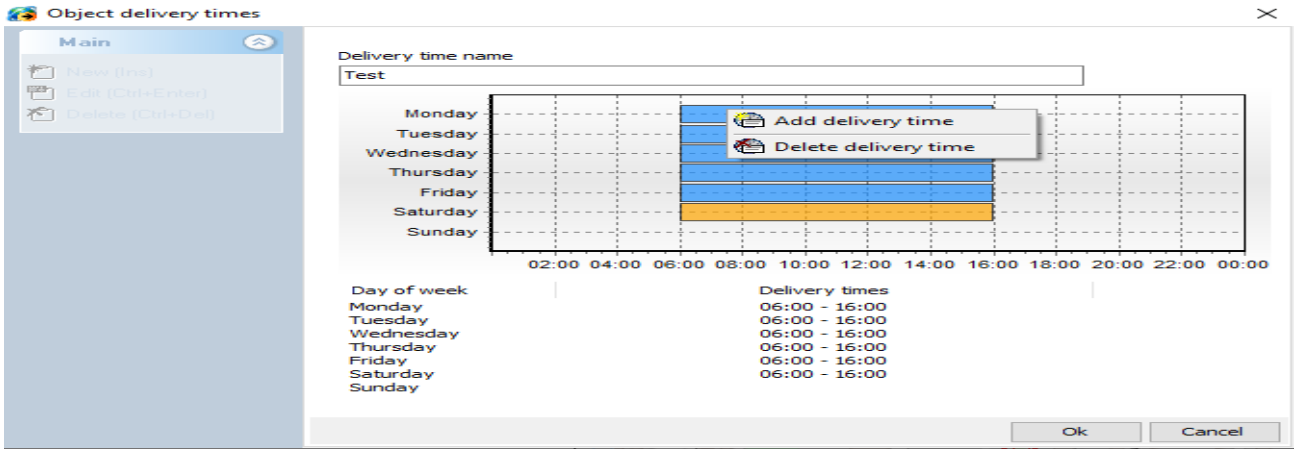
By selecting the option **Object delivery time**, it is possible to add a new time of receipt of the object's goods, modify the existing ones, and delete some time of the object's goods receipt.

When we click on New in the upper left corner of the window, a window opens as in the picture below.

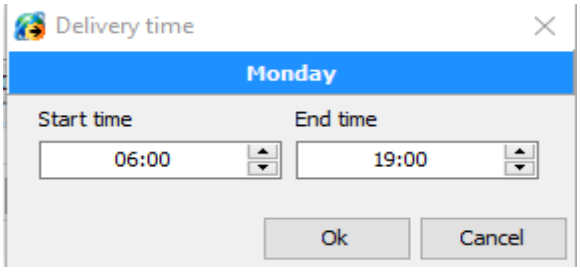
The time of receipt of goods is entered for each day separately by clicking with the right mouse button on the graph in the plane of the day for which we want to enter the time of receipt of goods. By clicking on Ok, we confirm the addition of the object's goods receipt time. After that, in a later phase, it is possible to choose the time of receipt of goods by name for an individual object.



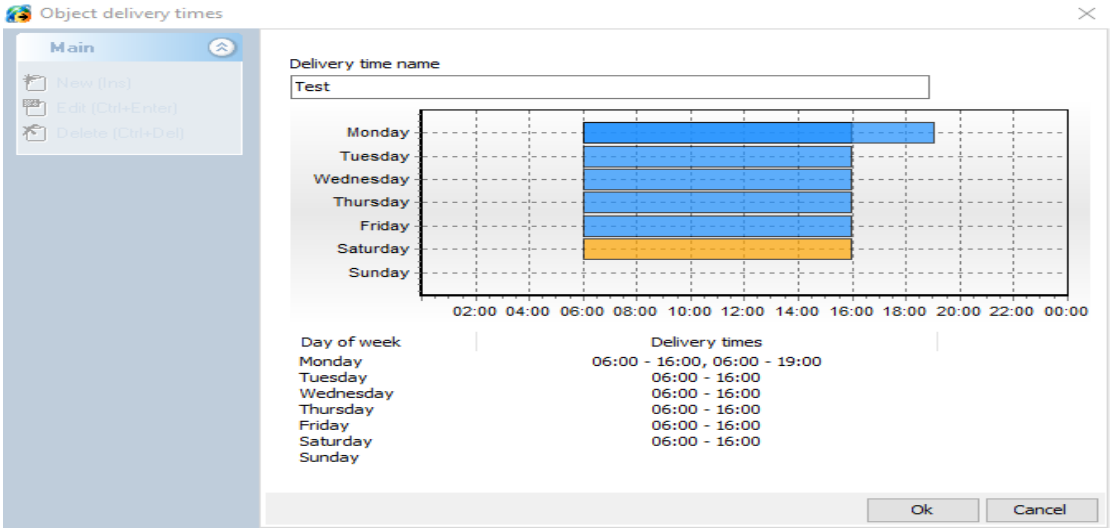
After that, if we want to change some of the object's goods receipt time, we select the specified goods receipt time, click on Edit in the upper left corner of the window, and a window opens as shown in the picture below.



If we want to change the working hours of the object for a specific day, we click with the right mouse button on the day for which we want to change, after that we click on Delete goods receipt time and the working hours for that day will be deleted. After that, we click on Add goods receipt time for that day and the window below opens where we can enter a new goods receipt time.



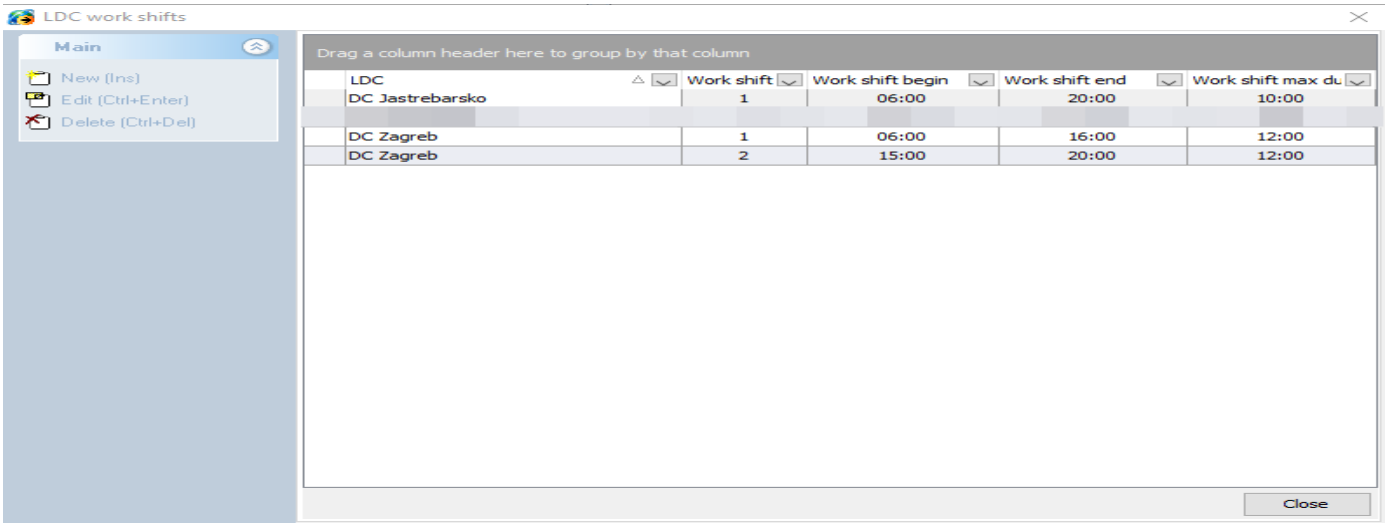
When we click on OK, we confirm the addition of the new goods receipt term, which can be seen in the image below.



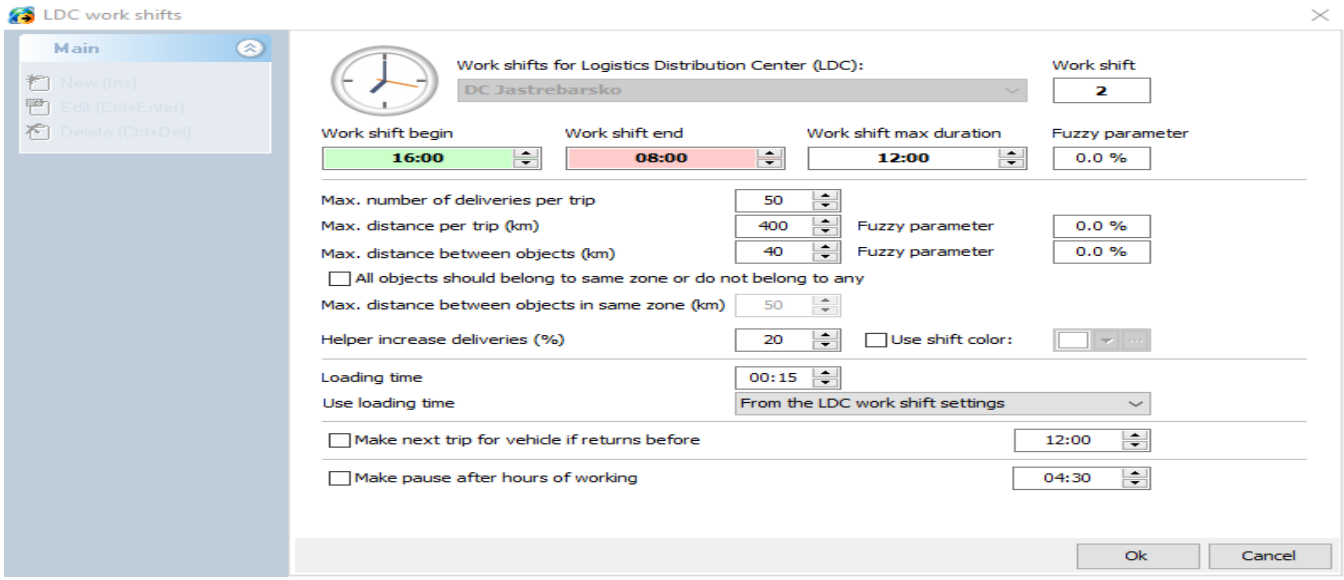
In the picture you can see that the time for receiving goods for Monday is now from 06:00 to 19:00.
If we click on Ok again, the change will be prevented for the specified name of the time of receiving the goods.

LDC work shifts

In this section, we can add and change the parameters of the Distribution Centers.



If we click on New, it is possible to add a new shift for the selected DC, add a work shift in this case 2 shifts, change the start and end of the DC shift, the maximum duration of the shift, the maximum number of delivery objects per drive, the maximum distance traveled per drive, as well as maximum distance between objects, loading time and other parameters.



From the drop-down list, select the DC for which we want to add a new shift. If there was only 1 shift for a certain DC, the program automatically adds a 2nd shift. After that, the start of the work shift and the end of the work shift, the maximum duration of the shift, are set.

In the fuzzy parameter field, the permitted deviation of the duration of the work shift, which is taken into account during routing, is entered.

Maximum number of delivery facilities per drive - in the specified field, enter how many delivery facilities the vehicle can drive around.
The maximum distance traveled per drive - in the given field, enter the maximum number of kilometers per drive the vehicle can travel. The fuzzy parameter determines how much deviation is allowed in percentages from the maximum distance traveled per drive.
Maximum distance between objects - in the specified field, information about how many kilometers can be the distance between two objects can be entered, and this information can be used during routing. The Fuzzy parameter determines how much is allowed to deviate in percentage from the maximum.

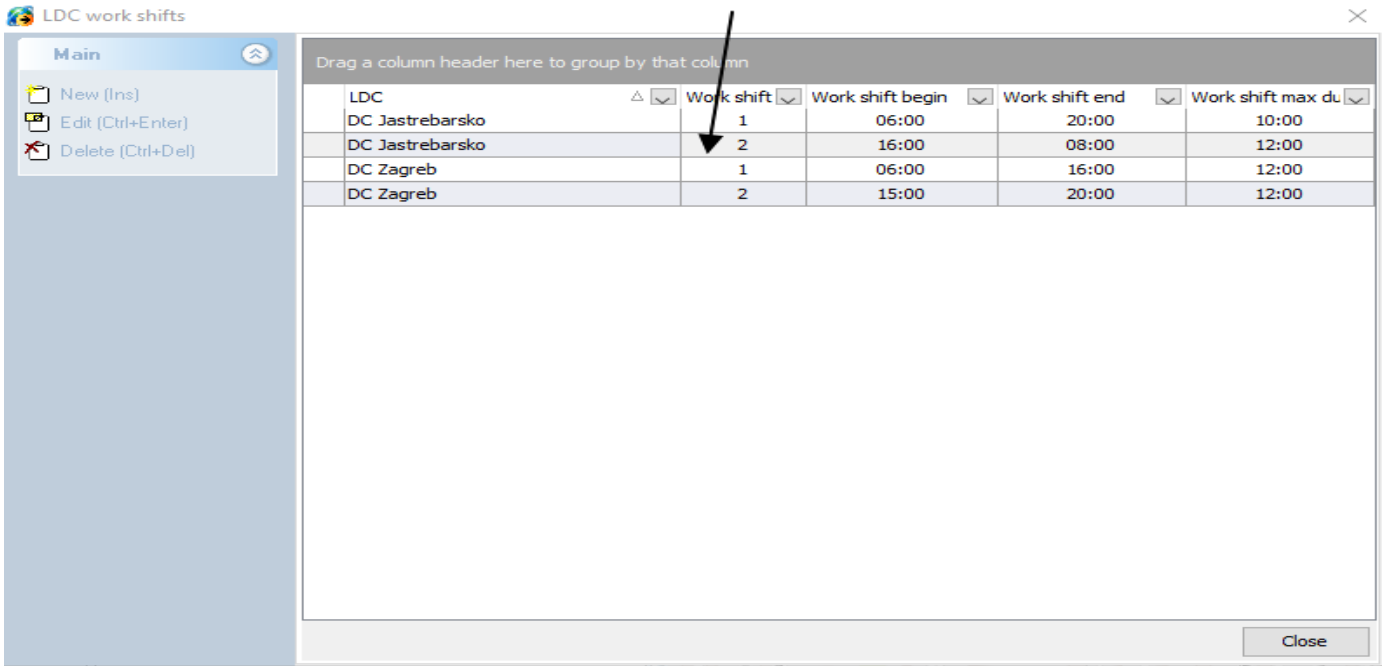
All objects must belong to the same zone or not belong to any - zone grouping for a specific DC is enabled.
Checking this option brings up the option below about the maximum distance between objects in the same zone.
Maximum distance between objects in the same zone - in this field it is possible to determine the maximum distance between two objects in the same zone.

Auxiliary worker increases (%) - in this field, enter the percentage by which the auxiliary worker increases the realization.

Loading time - this field defines how many minutes are needed for loading in a certain DC.
Use loading time - in this field it is possible to choose whether the time is used according to the LDC work shift settings or according to the vehicle transit settings.

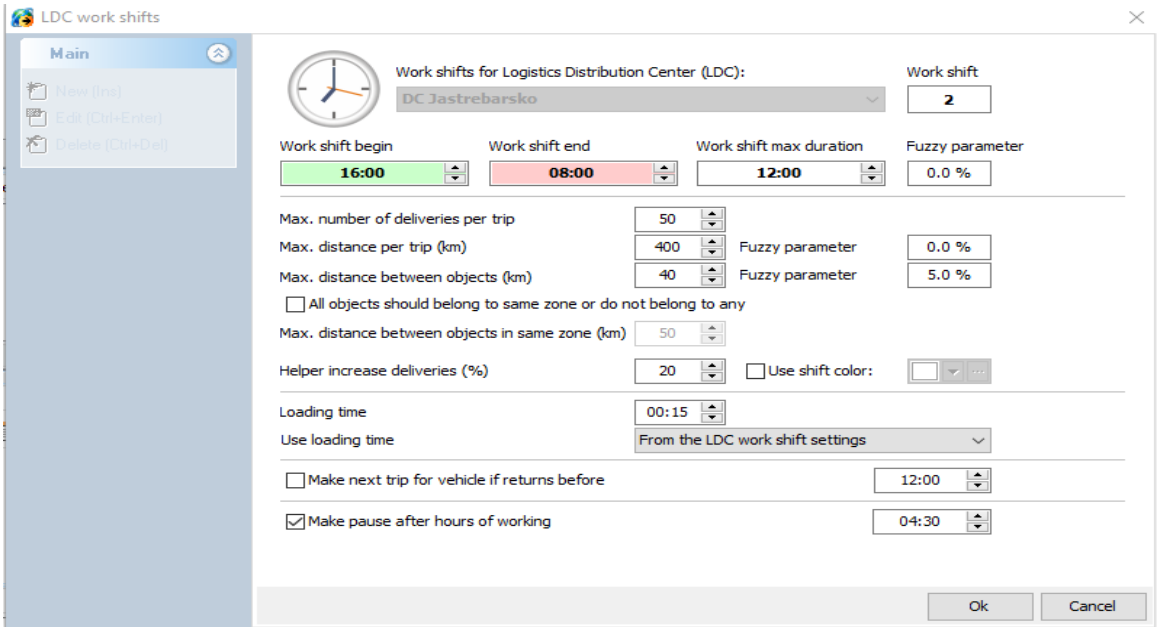
Creates the following trips for vehicles that return before: 12:00 - by checking this option, a new trip is created for vehicles that return before 12:00 from delivery.
Take a break after working more than (hours) - by checking this option, taking a break after working more than the entered number of hours is enabled.

By clicking on Ok, the specified parameters are added.

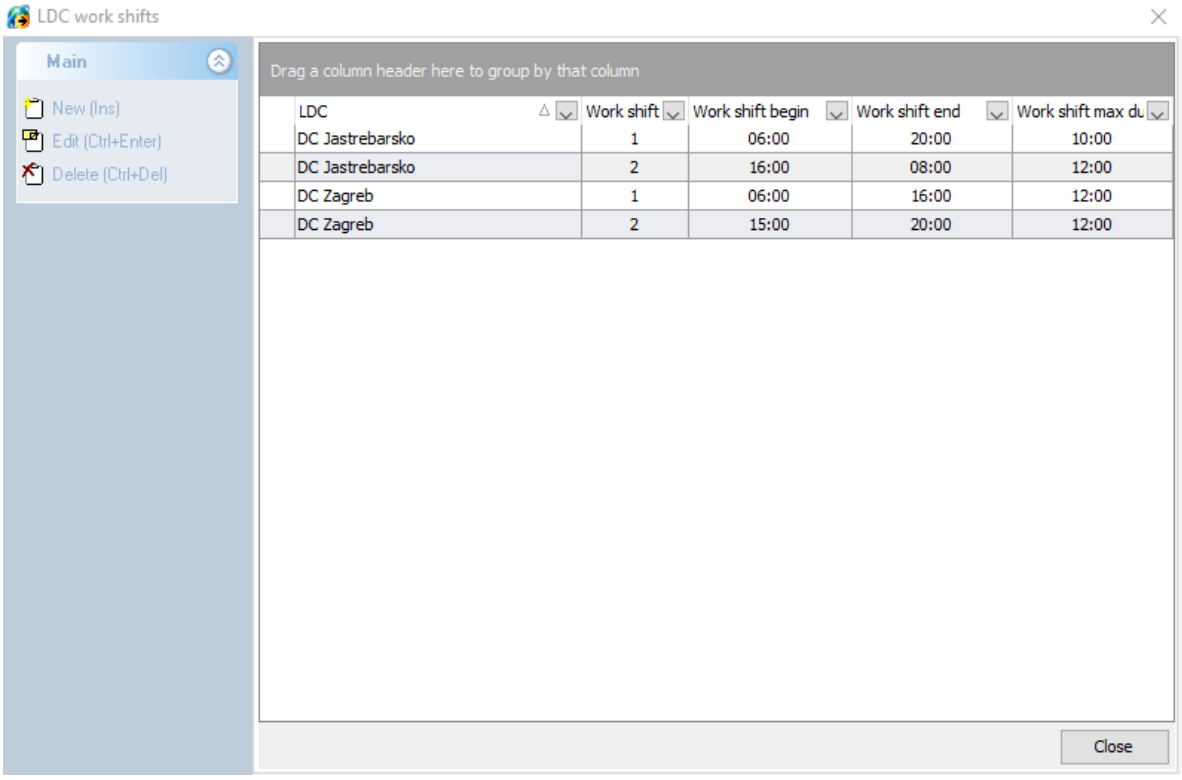


If we want to change the parameters for the second shift DC Jastrebarsko, click on Edit in the upper left corner.

A window opens as in the picture below where we can change the parameters for this shift.



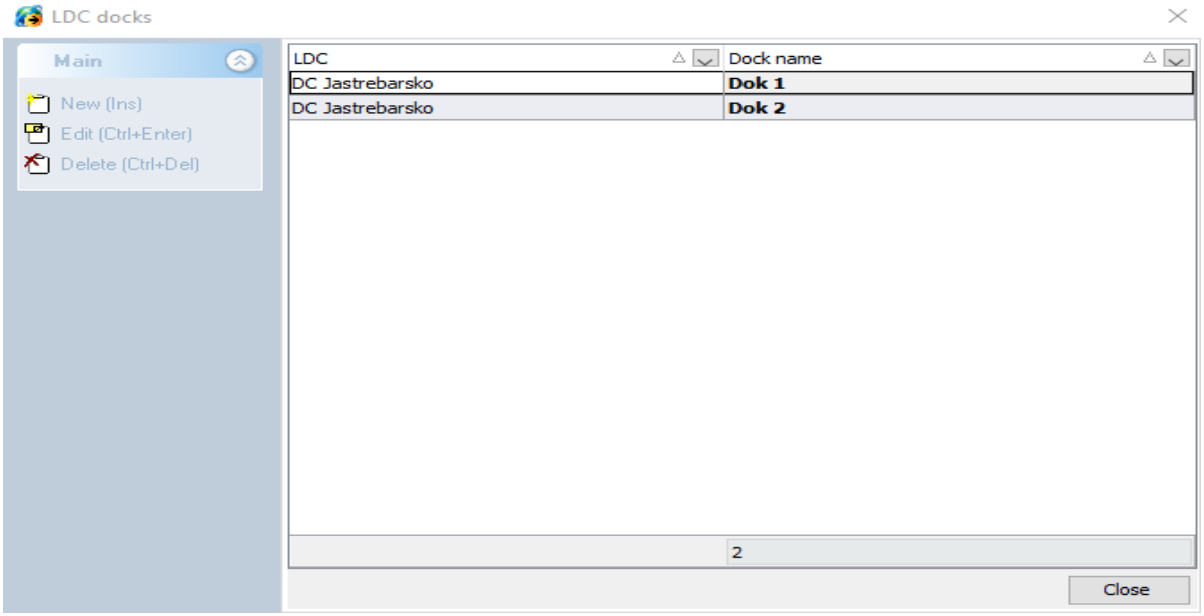
When we click OK after that, the changes will be saved.



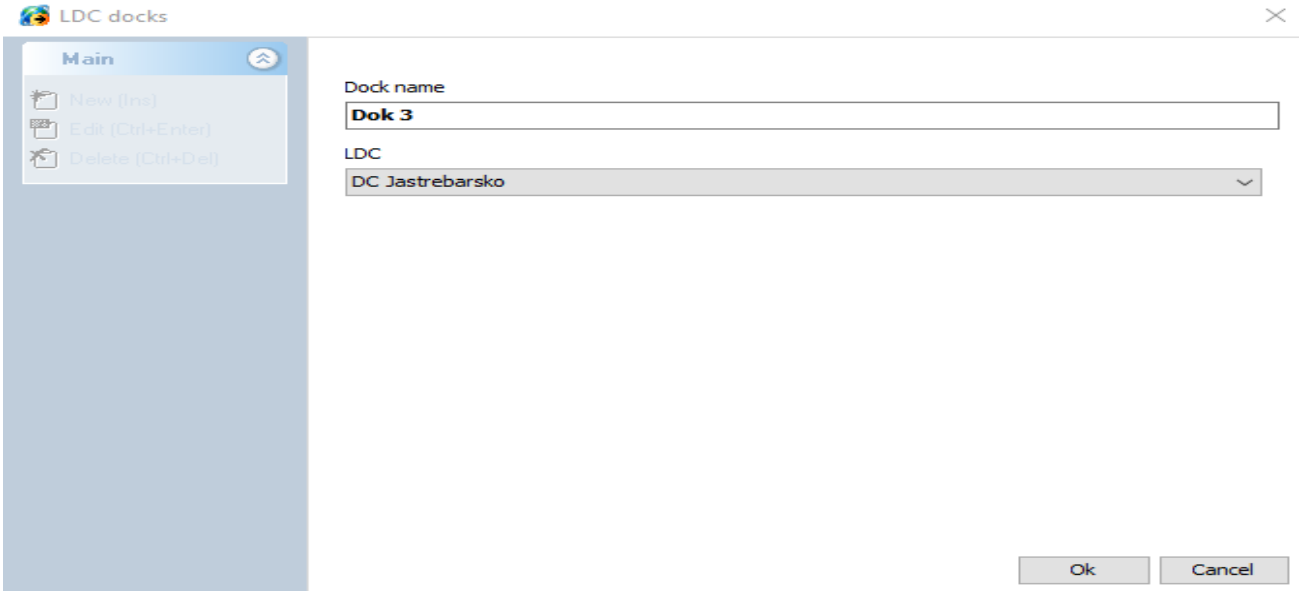
If we want to delete the specified shift after that, click on Delete in the lower left corner.
It would be best if only logisticians had this right.

LDC docks

By selecting the **LDC docks** option, it is possible to add new dock names for existing departure warehouses, change dock names for existing departure warehouses, or possibly delete a dock name for an existing departure warehouse.



If we want to add a new dock name, click on New, in the upper left corner of the window. A window opens as shown in the picture below.

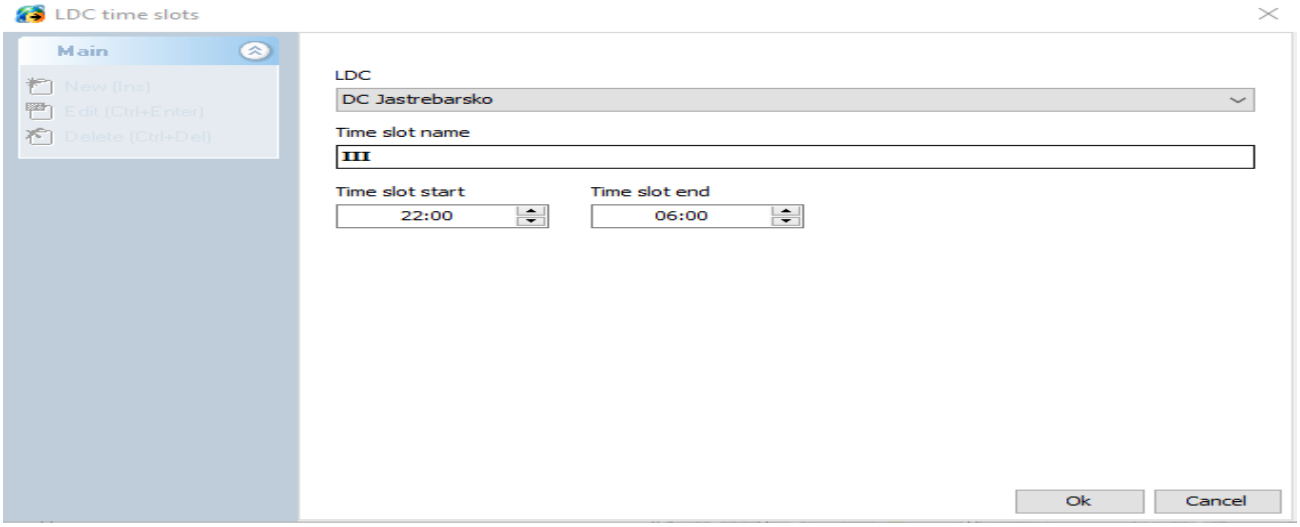


After creating a new dock name, we select the Source storage, by clicking OK we add a new dock name.

LDC time slots

By selecting this option, it is possible to add a new time slot for a specific source storage, modify existing time slots, as well as delete a specific time slot.

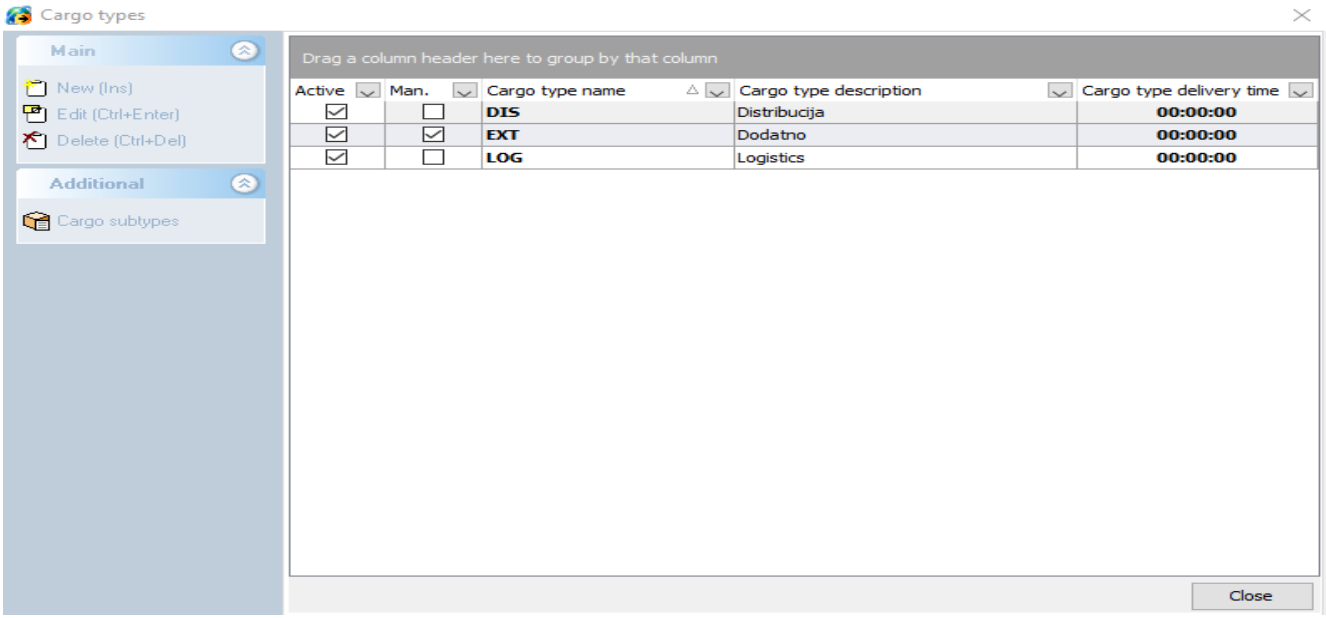
When we click on new in the upper left corner of the window, a window appears as in the picture below.



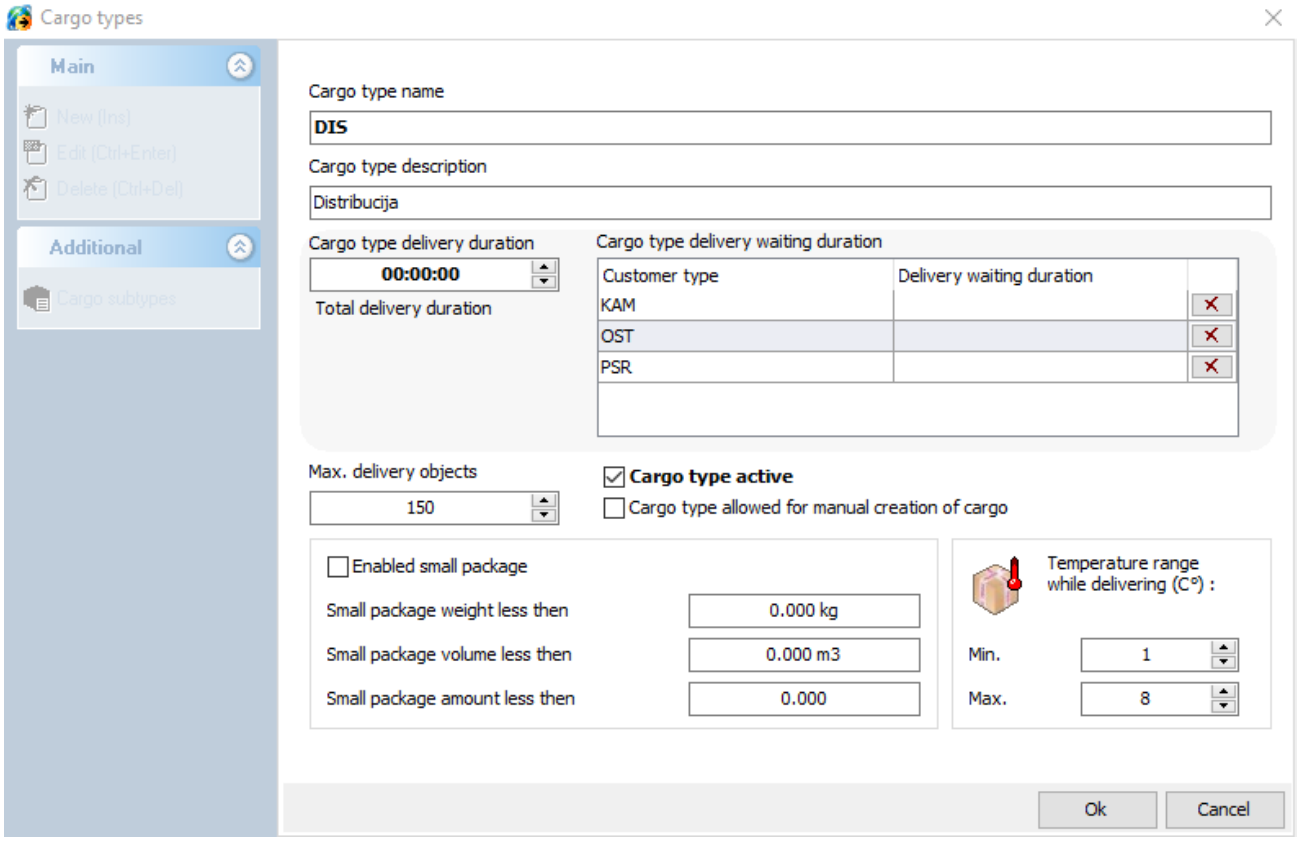
When we enter the time slot, select the starting warehouse, enter the beginning and end of the slot, click OK to add a new time slot for a specific crossdock.

Cargo types

Cargo types is a code book in which all relevant data for a certain type of goods are entered.
It is possible to add a type of goods, change an existing one and delete cargo types.



If we want to change the parameters for a certain type of goods, click on that type of goods, then on Change in the upper left corner of the window. A window like the one below appears.



It is possible to change the name of the cargo type, Cargo type description.

Cargo type delivery duration - depending on the type of cargo, it is possible to change and set another value.
In addition, it is possible to change the value of **max. delivery points** by type of goods.

Cargo type active - by checking this option, we mark the selected type of goods as active or inactive.

Cargo type allowed for manual creation of cargo - by checking this option, we mark this type as active or inactive for manual entry of delivery orders.

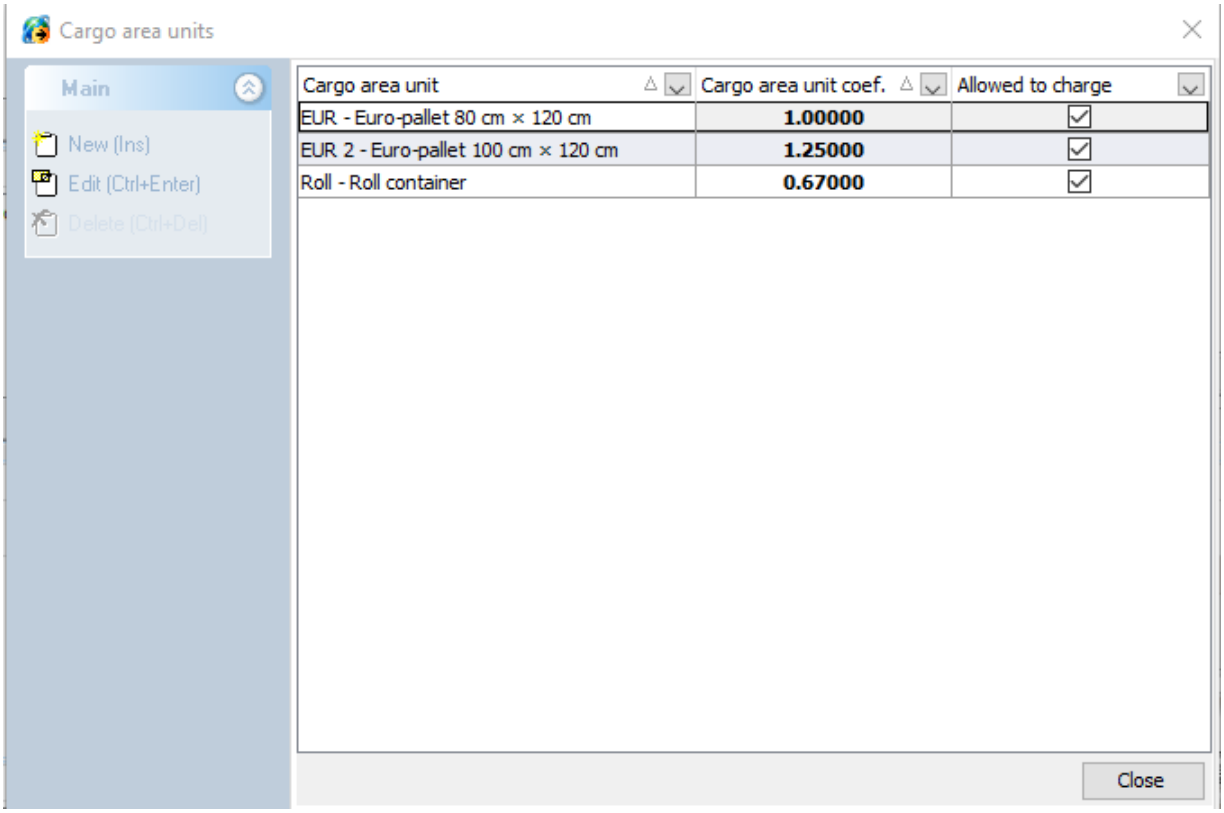
Enabled small package - with this option, we enable small packages, according to the criteria that a package is small if the weight is less than the entered number of kilograms, the volume is less than the entered number in m3, as well as the capacity is less than the entered number of pallets.

Temperature range while delivering - enter the minimum and maximum in degrees C during delivery.

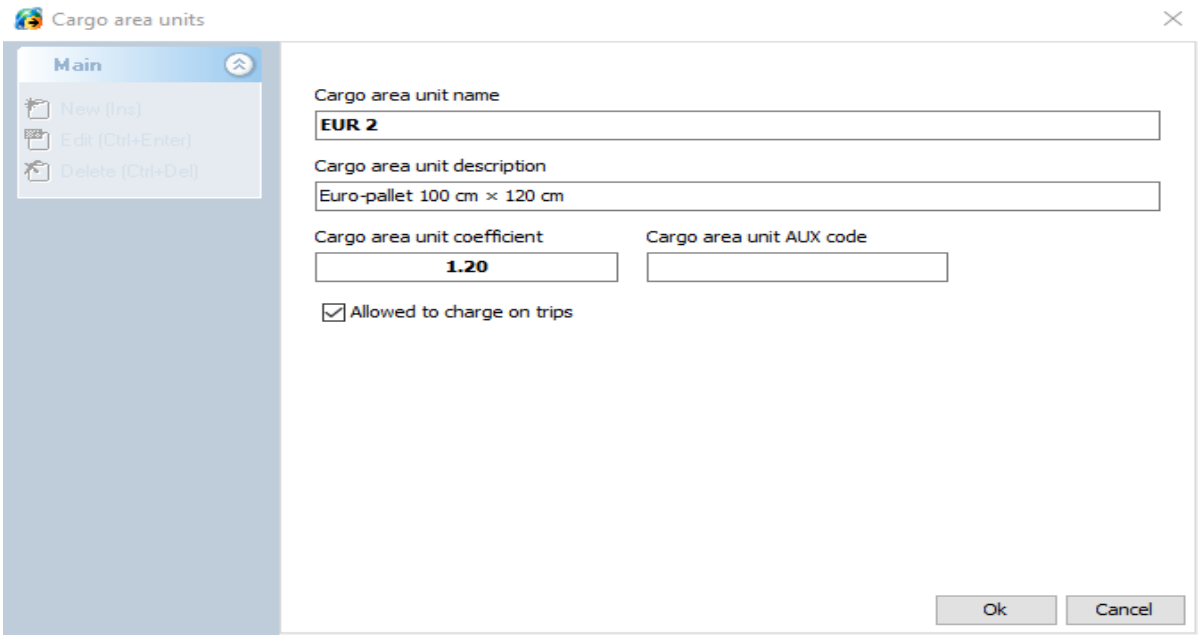
When we click on Ok, the changes for the specified type of goods will be saved.

Cargo area units

By selecting the option Types of capacity units, it is possible to add a type of capacity, change a type of capacity, and logisticians in the company should only have the option of deleting types of capacity.



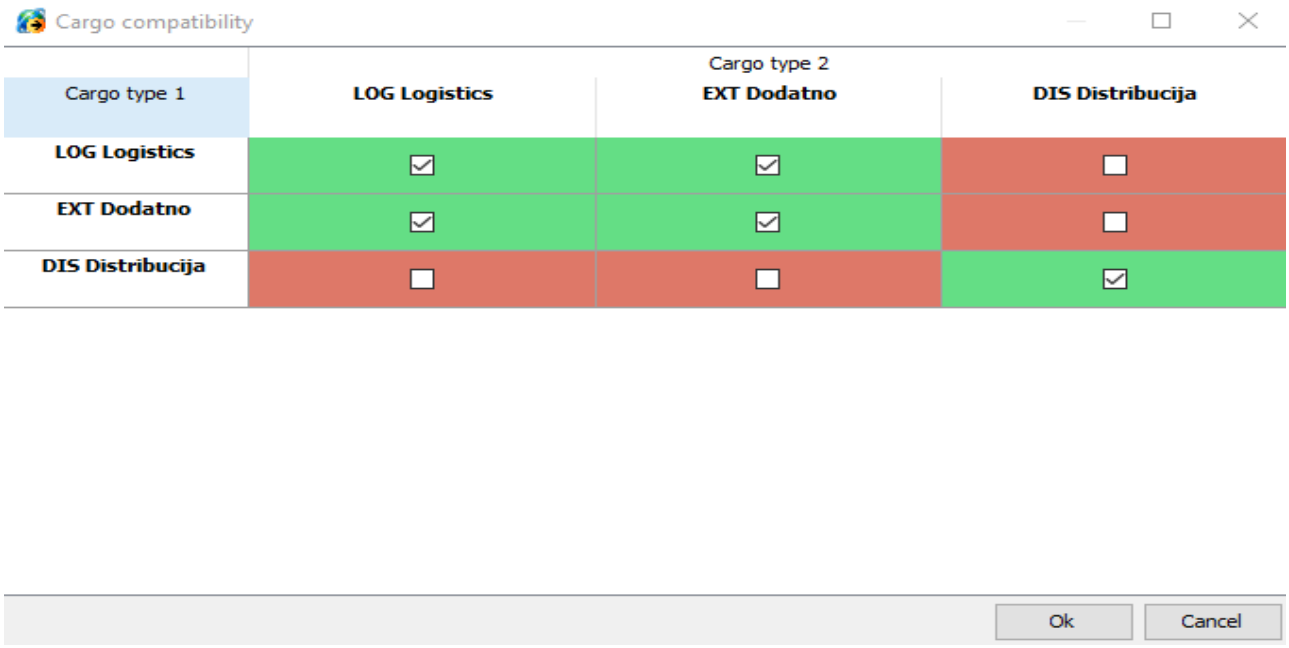
If we select the type of capacity, then click on Edit in the upper left corner of the window, a window opens as in the picture below.



It is possible to change the name of all capacity units, the description of the type of capacity unit, as well as the coefficient. It is possible to save the changes by clicking on Ok, or cancel the changes by clicking on Cancel.

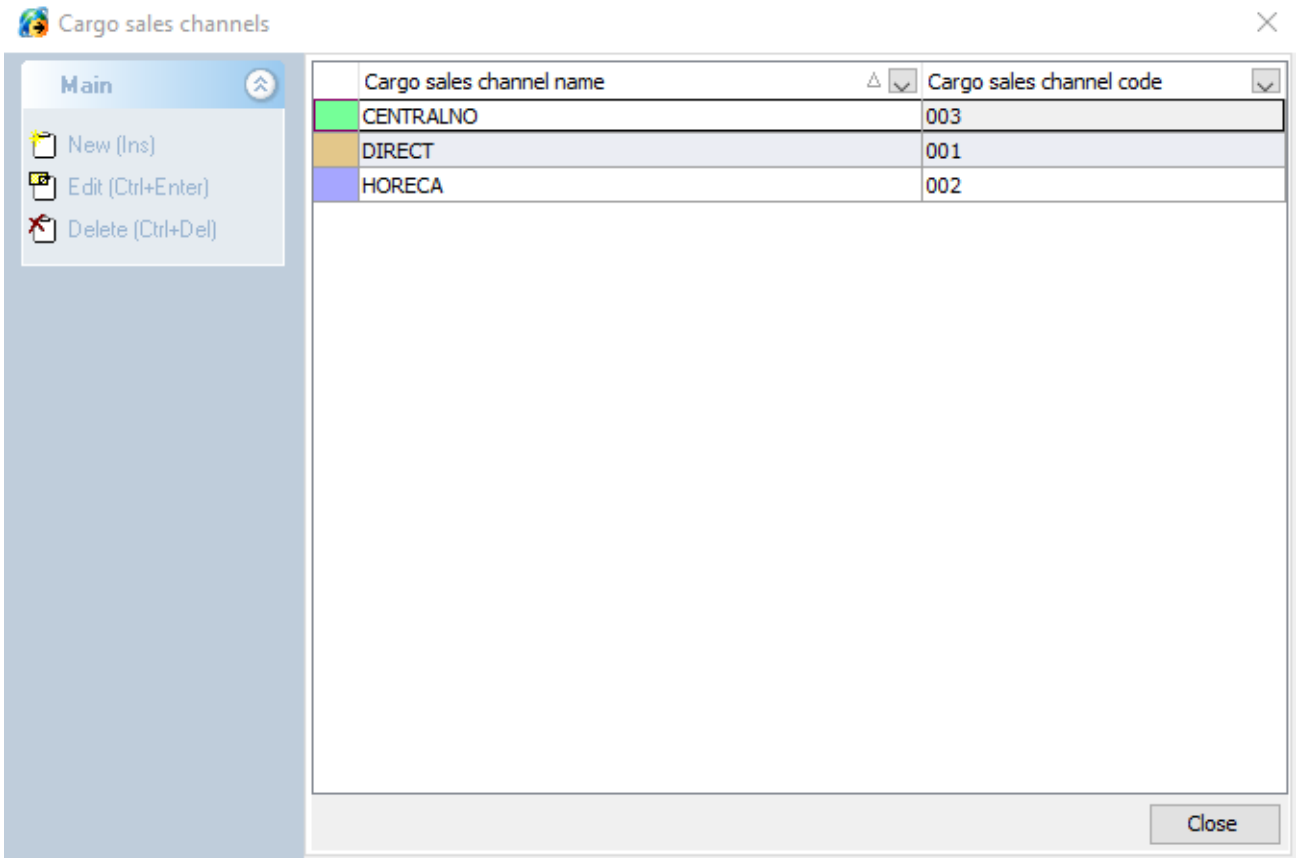
Cargo compatibility

Compatibility needs to be precisely defined for each type of goods. Some types of goods are incompatible and must not be together in the cargo area. The image below shows an example of goods that are incompatible with another type of goods, it is marked in red and that field is not checked.

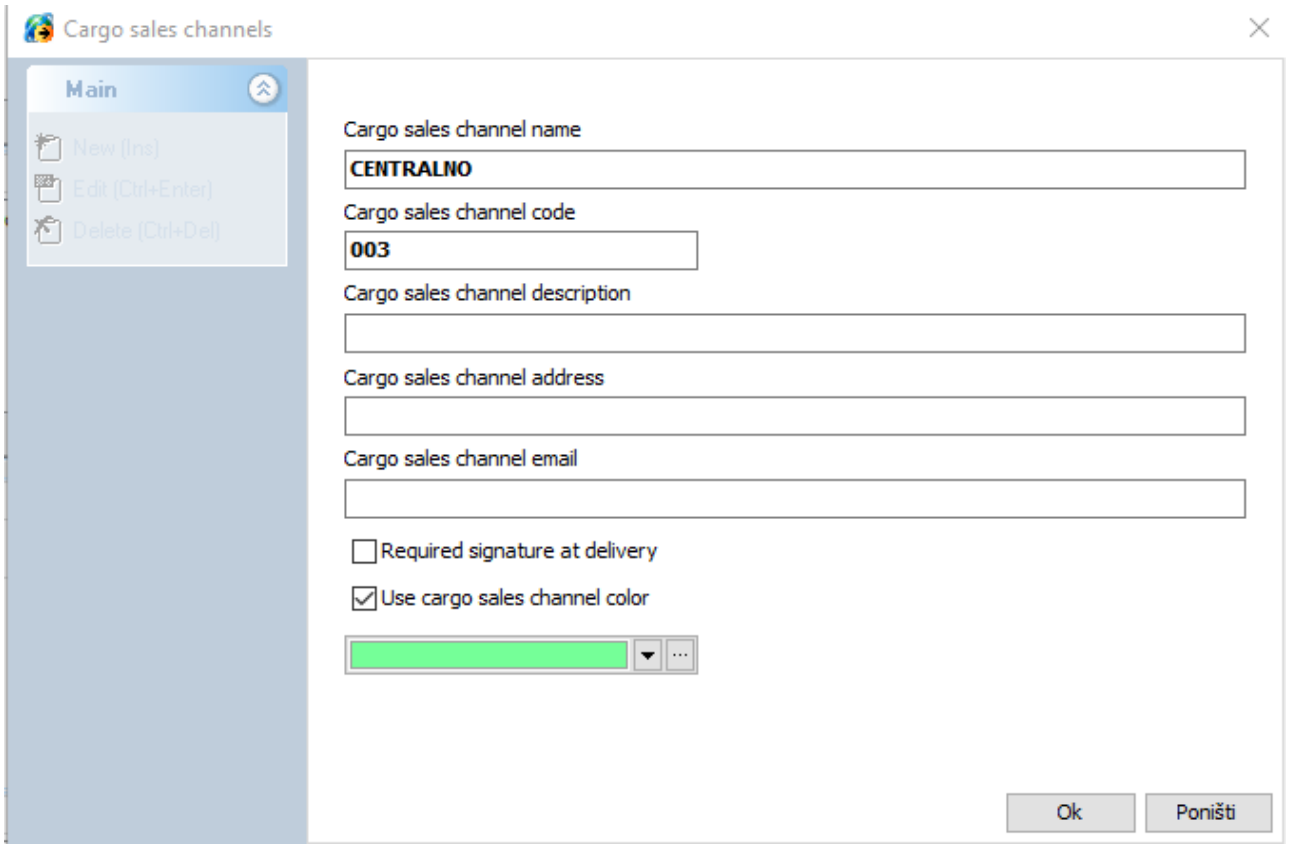


Cargo sales channels

By selecting the **Cargo sales channels** option, it is possible to add a new sales channel, change the existing one, or delete it if the user has the right to do so.

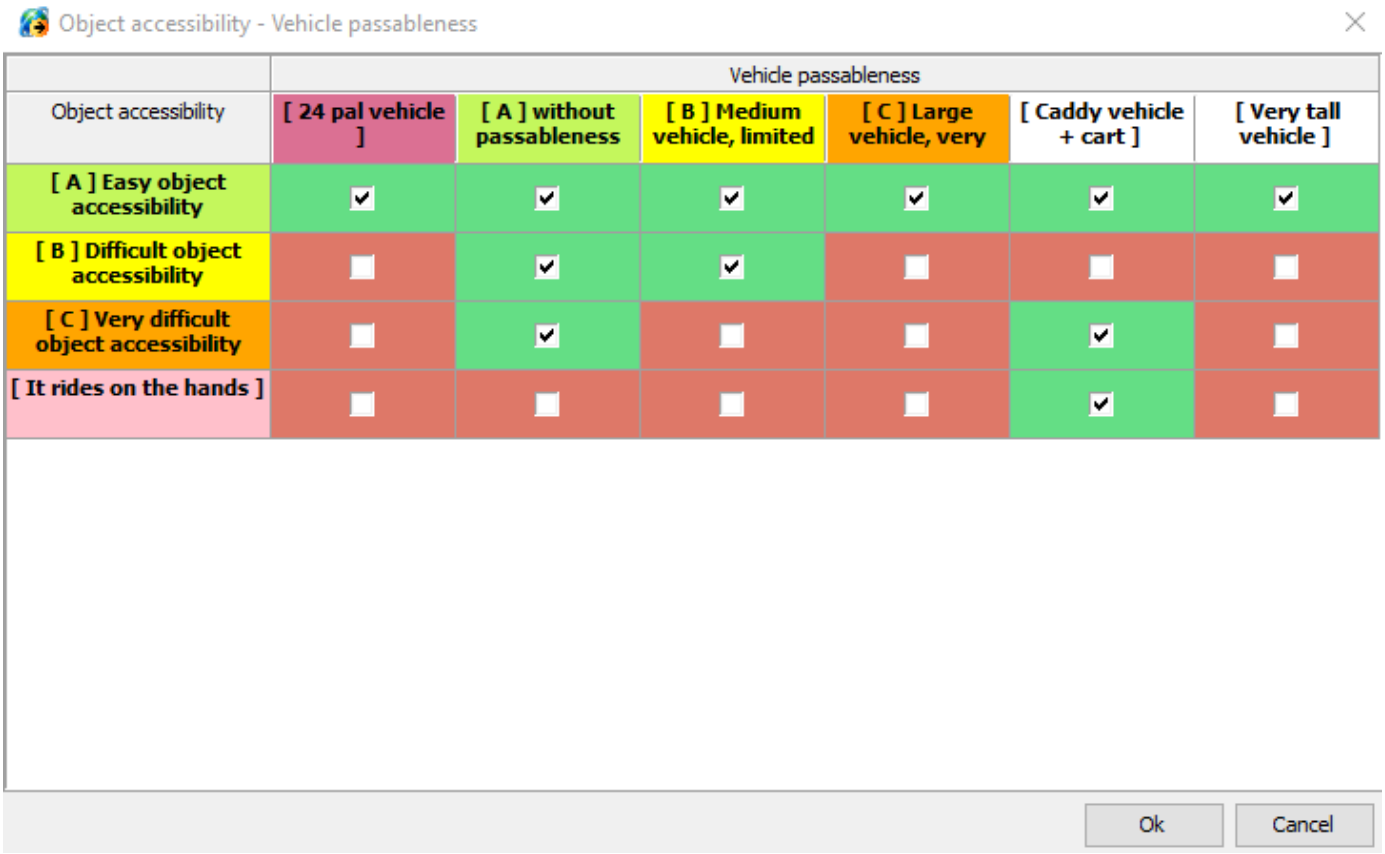


By clicking on Edit in the upper left corner of the window, the window below opens where it is possible to make changes for the selected channel. When you click OK, the changes will be saved.



Object accessibility-Vehicle passableness

The relationship between object accessibility and vehicle throughput is key to scheduling deliveries by vehicle, and the table depends on the data in the **object availability and vehicle throughput data**. It is crucial to precisely define these relationships.



If an object is not available for a certain vehicle passableness, that field will be marked in red and will not be checked.

1.3. Solutions

The Solutions menu contains a menu with: Show solution statistics, Loading lists for trips, Add vehicles to solution, Finalize trips, Show solution vehicle information, Show solution usage information, Show solution route information, Show solution expenses, Show solution drivers, Show solution vehicle capacity, Setup trips view columns.

Show solution statistics

In the Solution Statistics, when we click on the General tab, we see data on the total number of vehicles used during routing, the total number of drives-trips, the total number of auxiliary workers-helpers, the total number of kilometers, the average kilometers per vehicle, the average kilometers per trip. In addition, there are data on the total duration of the trip, the duration of the shortest trip, the duration of the longest trip, as well as the average duration of the trip.

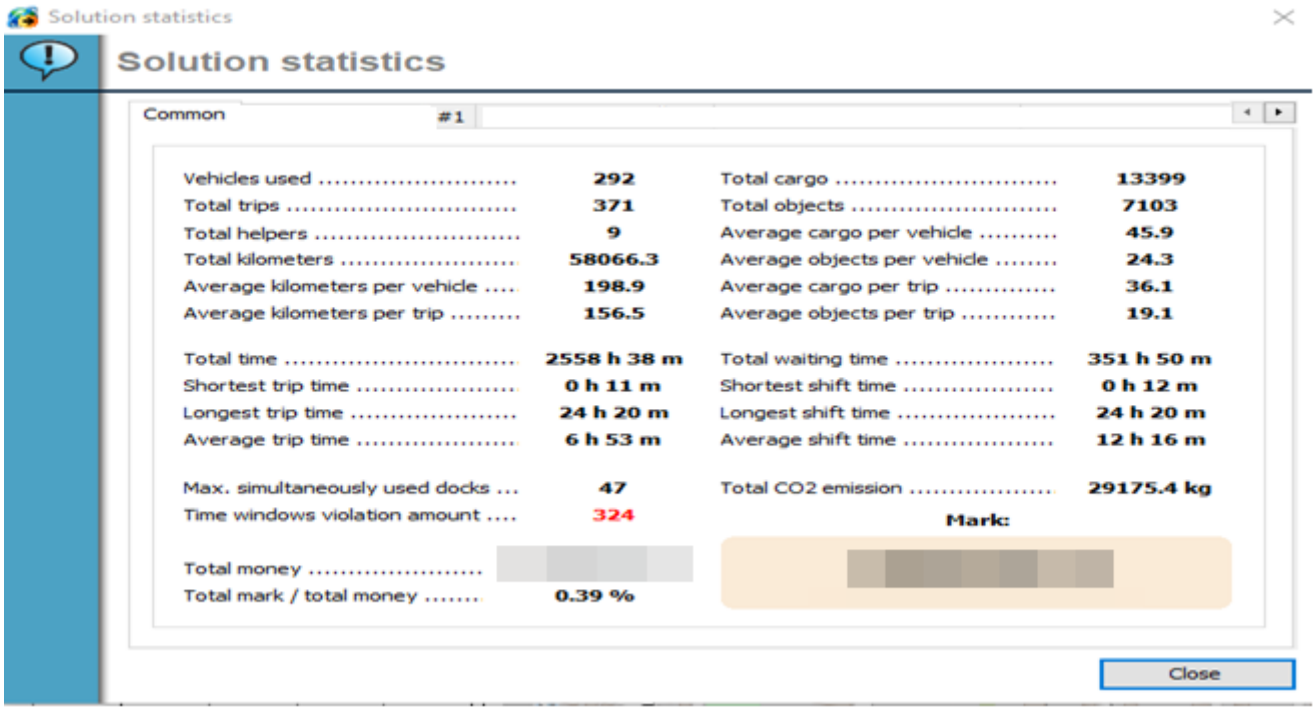
We also see data on the maximum number of simultaneously used docks, the number of deliveries outside working hours.

In addition to this data, you can see data on the total number of distributed shipments for that day, total routed objects, average routed shipments per vehicle, average routed objects per vehicle, average shipments per trip, average objects per trip.

You can see data on waiting time, the shortest shift duration, the longest shift duration, as well as the average shift duration.

In addition to this data, we can see data on the total amount of money for all trip(s), the rating for all trip(s), as well as the rating/total money ratio in percentages.

All this information can also be seen for individual LDCs, when we click on the LDC tab in Solution Statistics. In this case, you should click on the #1 card.

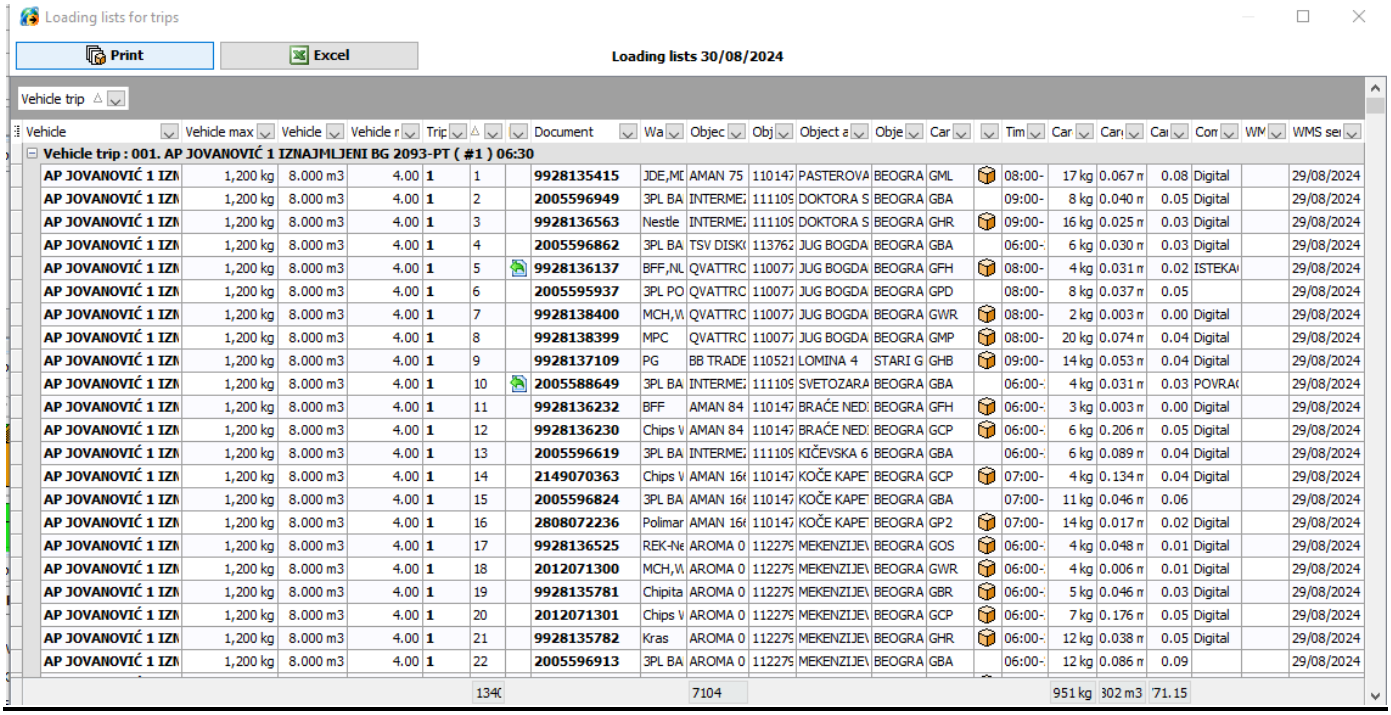


When we click on the close option or on the icon in the upper left window, we can close the Solution Statistics display.

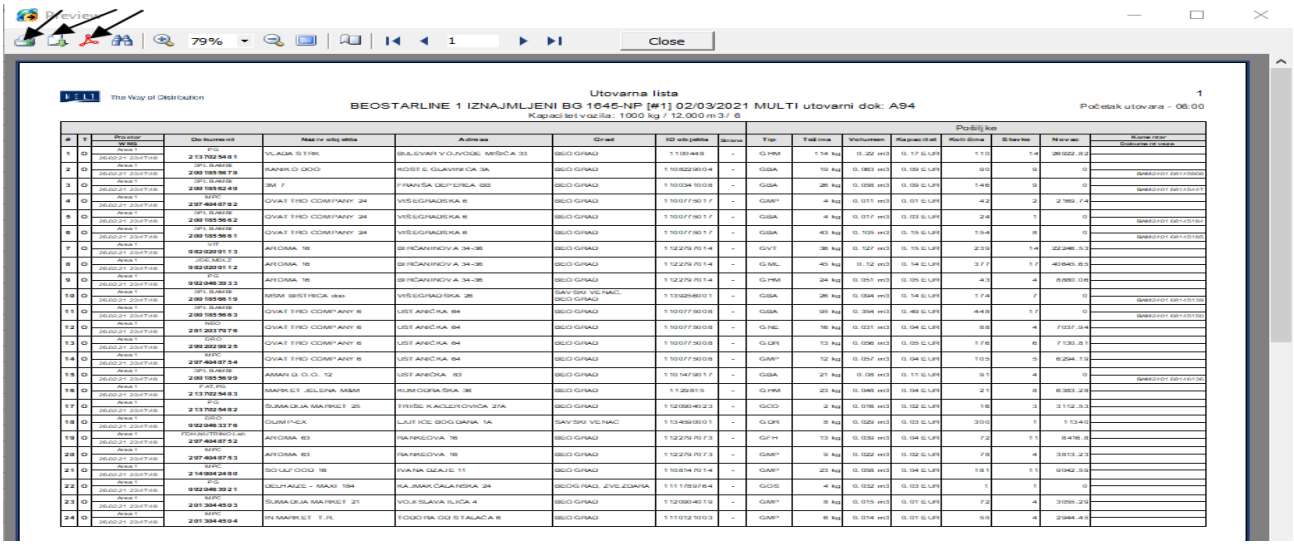
Loading lists for trips

Loading lists for trips contain data on the vehicle name, vehicle code, maximum vehicle load capacity, maximum vehicle volume, maximum vehicle capacity, driving code, serial number of the document, type of document - whether it is a delivery note or a return note. If it is a shipping slip, the field is marked empty, and if it is a return slip, an icon indicating a return appears. The document is marked in bold, for easy retrieval. The storage location contains information about the storage location for each document, sales channel as well. The name of the object contains the exact name of the object, along with the corresponding code of the object. The original destination generally matches the object name, and the destination code generally matches the object code. The address contains data for the street and object number, the place contains data to which place the object belongs. Customer type contains information about the type of customer of the goods. The type of goods contains information about which goods are transported, the method of delivery - orange cubes indicate that it is regular.

The time window indicates the time of receipt of the object's goods. Weight of goods on individual packing slip, volume of goods in m3, capacity of goods expressed in EUR pallets or others, quantity of items on packing slip, items on packing slip, amount per packing slip, date and time when the packing slip was sent to WMS.



The loading lists can be printed by clicking on Print in the upper left corner of the window or exported to Excel by clicking on the Excel option.
After that, it is possible to print the loading list by clicking on Print, export to EXCEL table (OLE), CSV file, export to PDF.

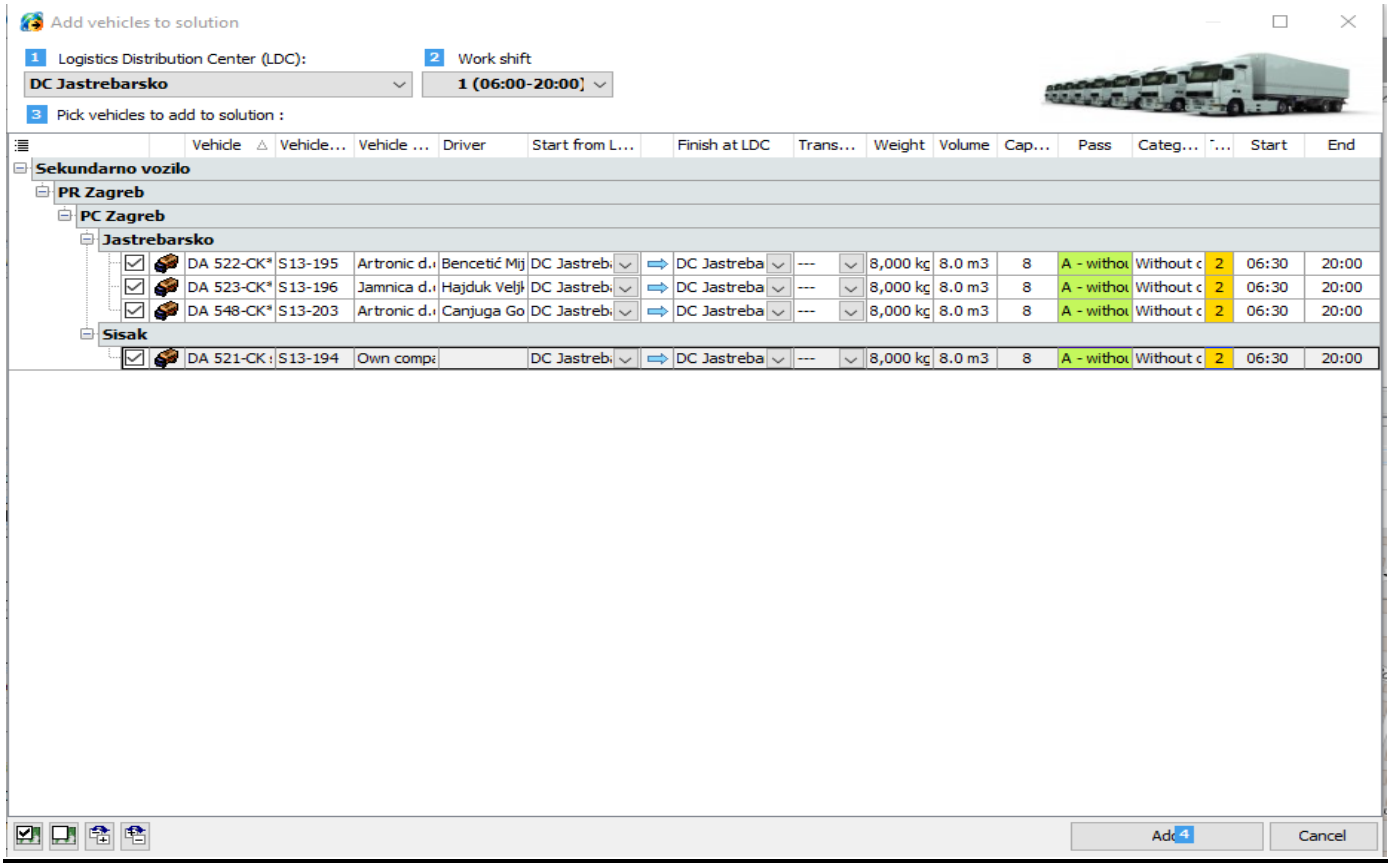


If we do not want any of the above, by clicking on the Close option, we return to the window with the loading list.

Add vehicles to solution

Vehicles can be selected that will drive the goods to the delivery points.

Add vehicles to solution consists of 4 steps: selecting an LDC, selecting a work shift, selecting a vehicle, adding a vehicle for a trip. If we want to add more vehicles, check them and click Add.



-Select all vehicles

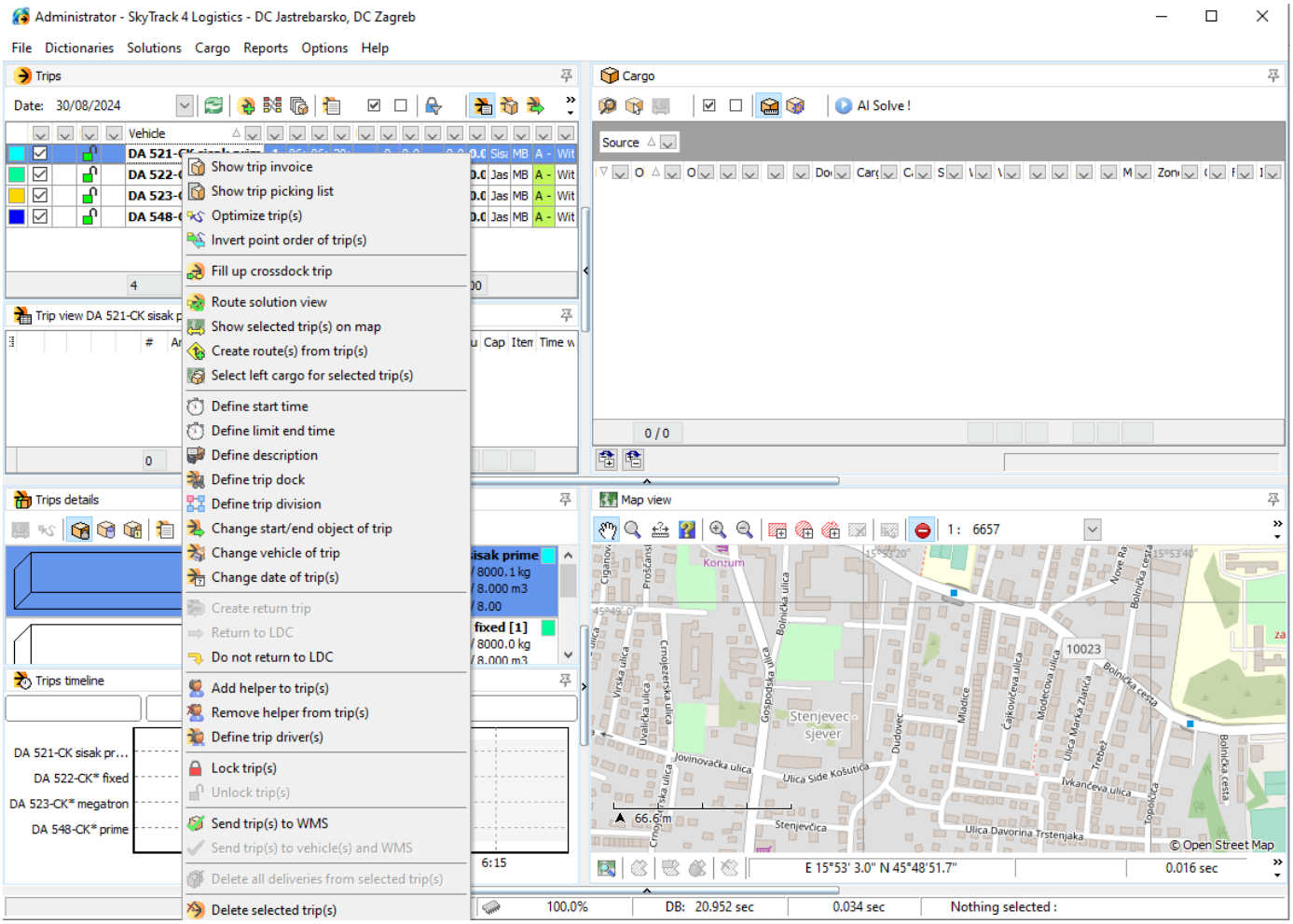
-Deselect all vehicles

-Expand view

-Expensive view

After adding vehicles, they appear in Trips window

When we right-click on a vehicle/ trip, a menu with more options opens.



Show trip invoice - opens a window with a list of goods that should be loaded into the truck. From this window it is possible to print the loading and delivery list.

Show trip picking list - opens a window with pallets, products, PHC for the selected vehicle.

Optimize trip(s) – optimizes the selected run.

Invert point order of trip(s) - changes the order of selected trip(s)

Fill up crossdock trip - filling option, if crossdock trip is selected.

Route solution view - routes the driving display on the map, according to aerial distances or according to values from the knowledge base, which are previously set.

Show selected trip(s) on map - centers and displays the selected trip on the map

Create route(s) from trip(s) - creates routes based on selected trip(s).

Select left cargo for selected trip(s)- marks unassigned shipments

Define start time - changes the start of the selected trip

Define limit and time- changes the end of the selected trip

Define description - serves to add a comment for the selected trip(s)

Define trip dock - serves to select a loading dock for driving

Changing start/end object of drive- changes the start and end point of the drive

Return to the original warehouse - means that the priority is to return to the original warehouse

No return to the original warehouse - means that the return to the original warehouse is not a priority

Add helper for selected trip(s) - adds helper to the trip

Remove support worker for selected trip(s) - removes the support worker from the trip

Driver selection for a trip - adds a driver AND co-driver/helper to the trip

Lock selected trip(s) - locks the trip and after this it is not possible to do anything on the trip

Unlock selected trip(s) - unlocks a trip, only certain users have this privilege

Send selected runs to WMS - sends data for selected runs to the warehouse management system and

there it generates lists for loading onto the truck

Send selected trips to vehicles AND WMS - sends data to vehicles AND to WMS

Delete all deliveries for selected runs empty the selected trucks of the cargo intended for them and

the destination where the cargo is to be transported

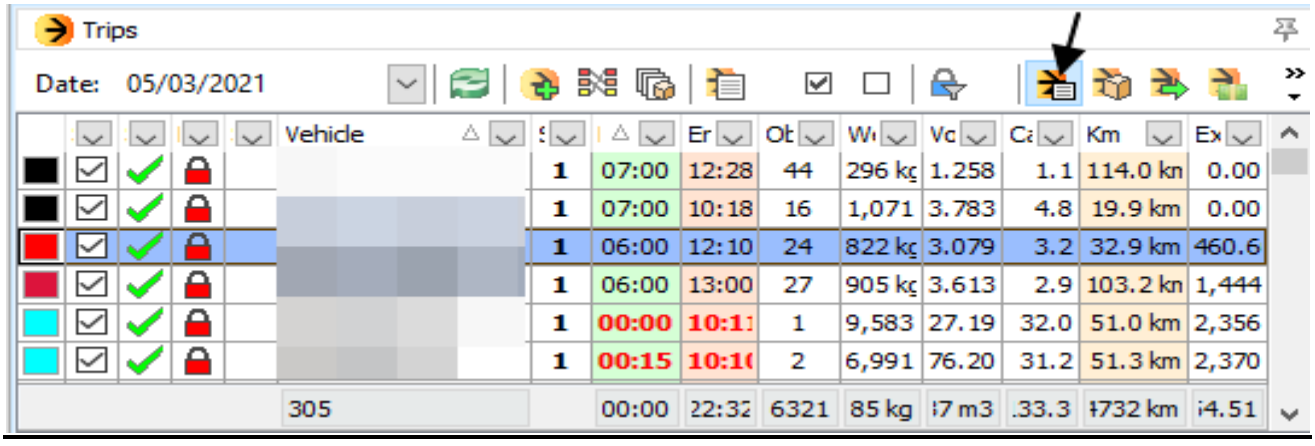
Delete selected trip(s) - deletes selected trip(s) from the list

Finalize trips

By selecting this option, it is possible to redistribute one trip to another with all documents and objects, goods, and at the same time, the second trip will be reassigned to the first trip.

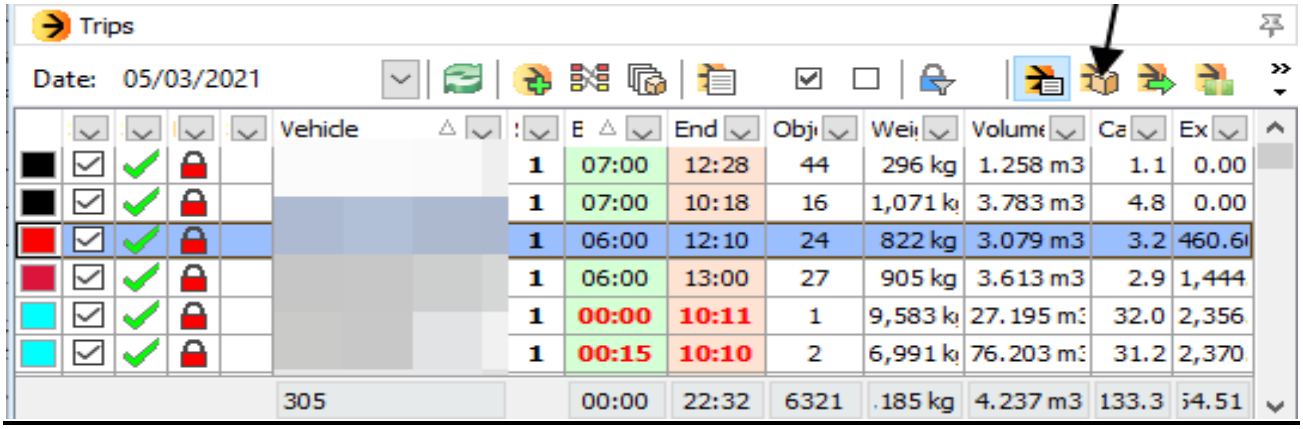
Show solution vehicle information

It provides information about the selected vehicle in the Drive List window, according to the previously defined layout in the Drive List View Column Layout option - which will be explained in a later part of the chapter.



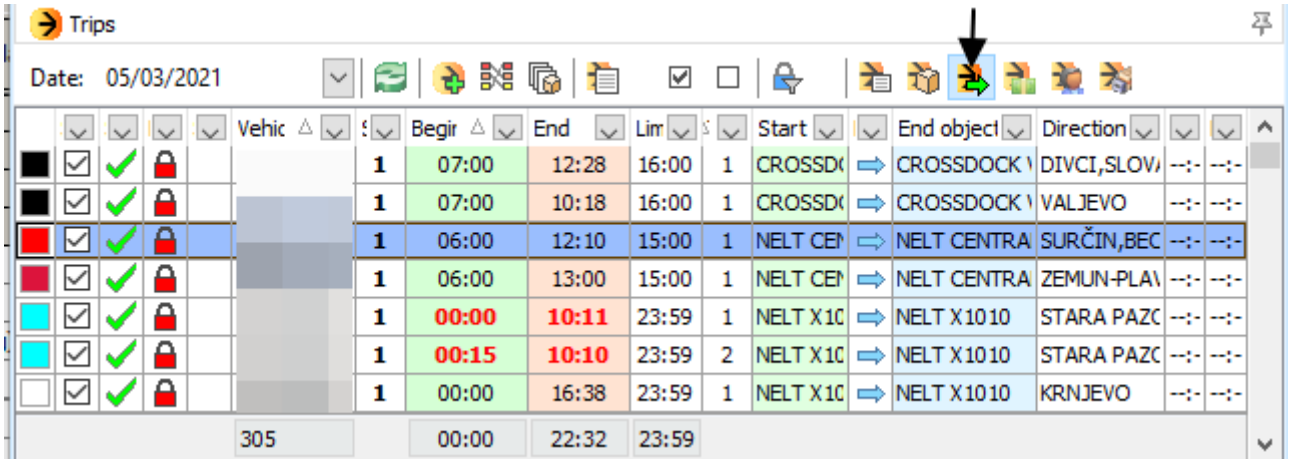
Show solution usage information

It gives information about the occupancy of the trip in the window List of trip(s), in most cases there are parameters of weight, volume and capacity.



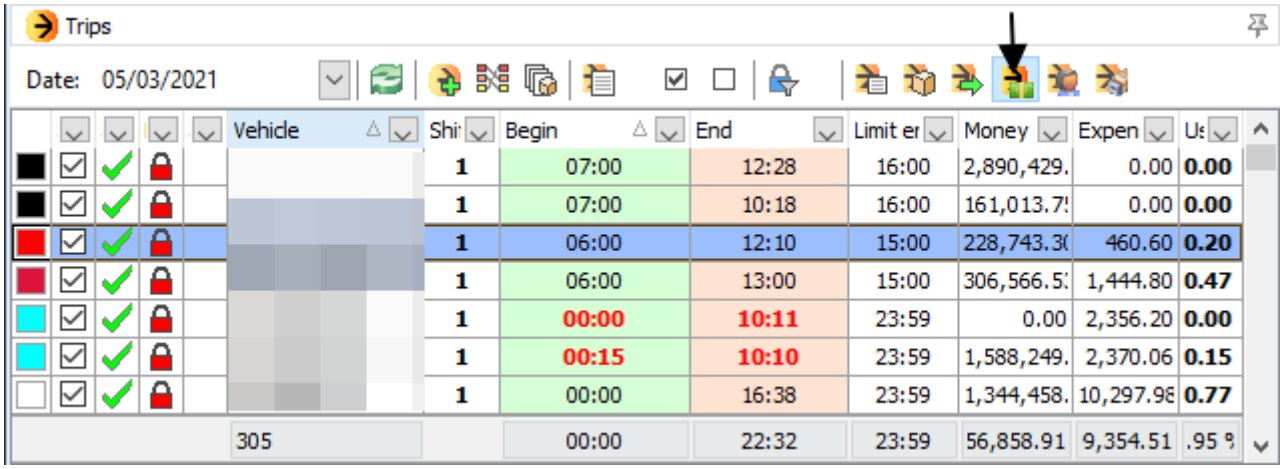
Show route information

Gives information about routes in the window List of trip(s), in most cases there are the parameters starting point, ending point and data about the driving directions.



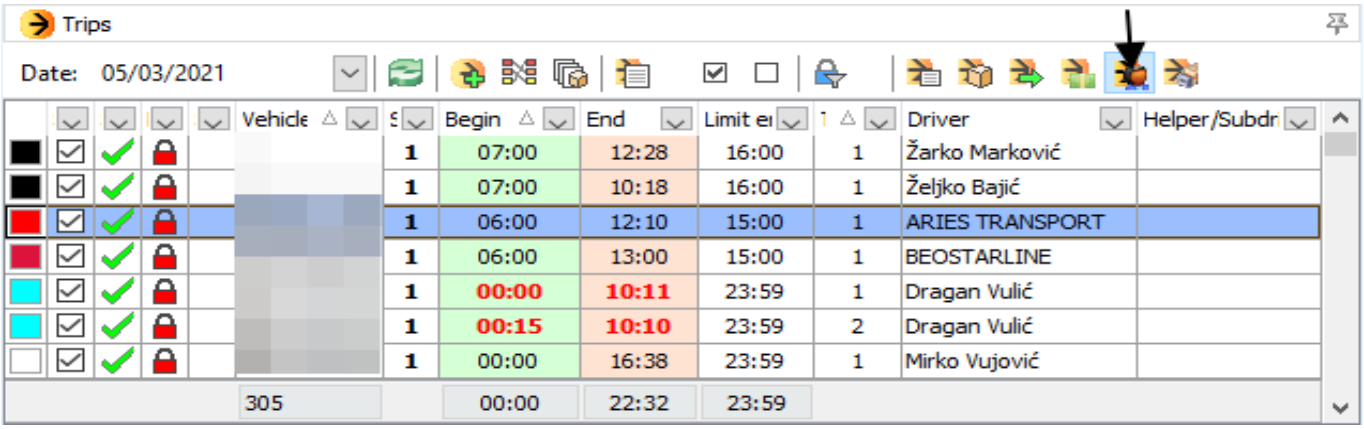
Show solution expenses

It provides information about the expenses of the trip, the value of the goods on the trip, as well as the share of the expenses in the total value of the goods in the List of trips window.



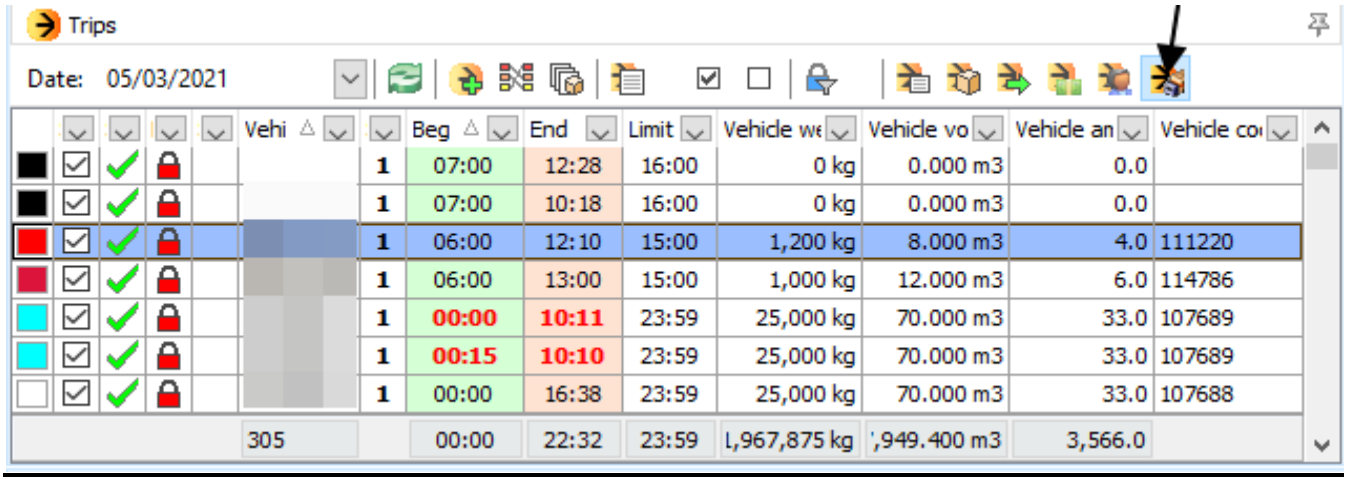
Show solution drivers

Gives information about the driver and assistant of the selected trip in the Trip List window.



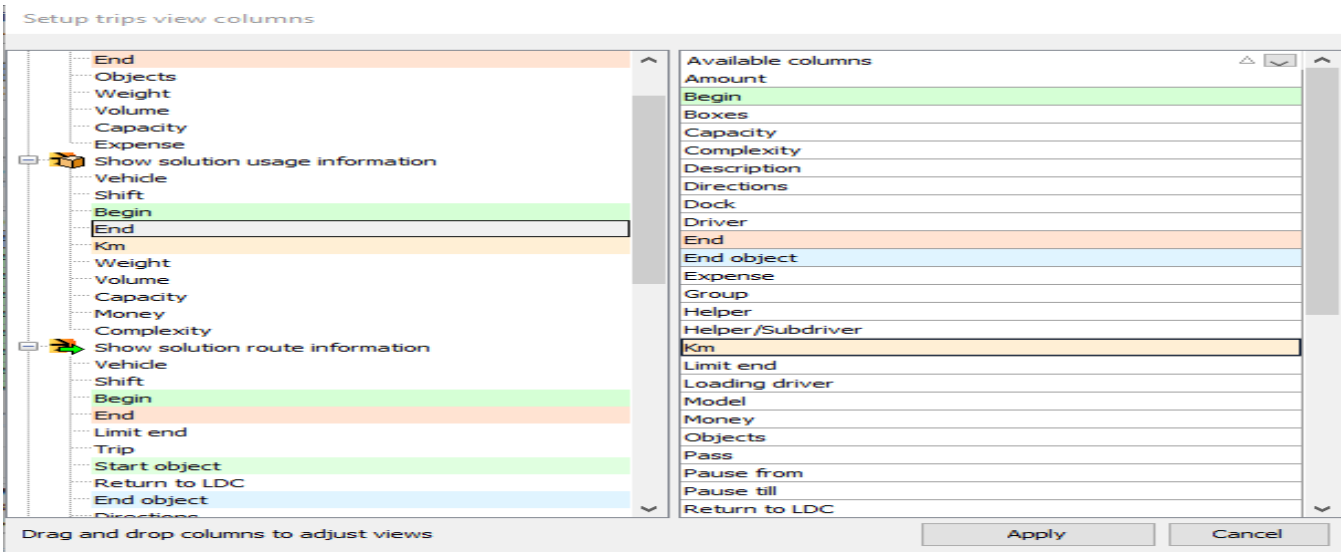
Show solution vehicle capacity

Provides information about vehicle capacity in the Trip List window. Mainly there are data on vehicle load capacity, vehicle volume and vehicle capacity.



Setup trips view column

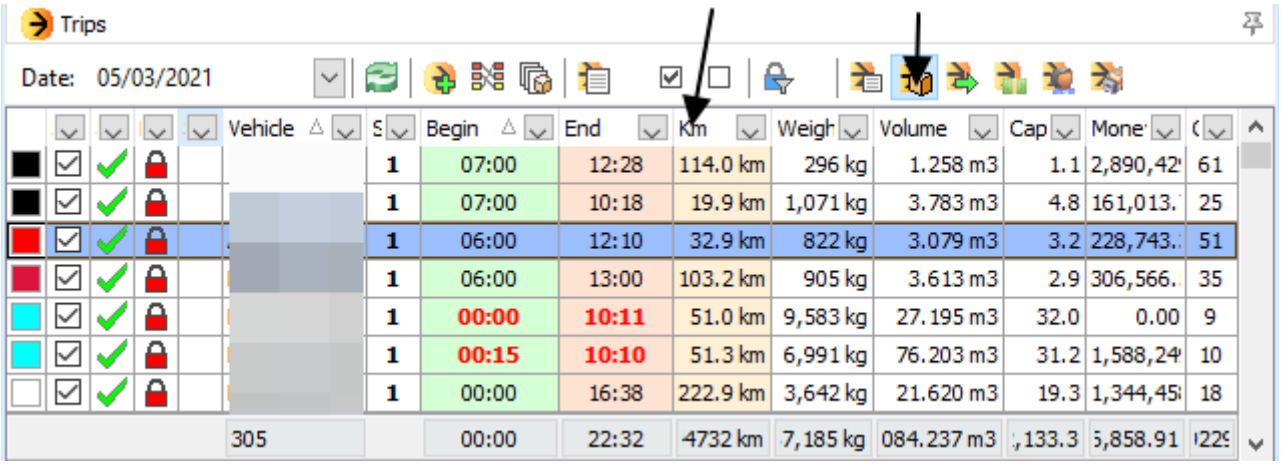
By selecting this option, it is possible to edit the list of trips, possibly add a column from the available columns on the right to one of the views on the left: View vehicle information, View information about driving occupancy, View route information, View expenses information, View driver's driving, display of vehicle capacity. In addition, if we want, we can remove the specified column from a certain display, by dragging it to the right in the Available columns.



For example, when we want to add a column Km (kilometers) to the show solution usage information, we click on the Km column on the right-hand side and drag it to the place where we want it to be in the display of driving information.

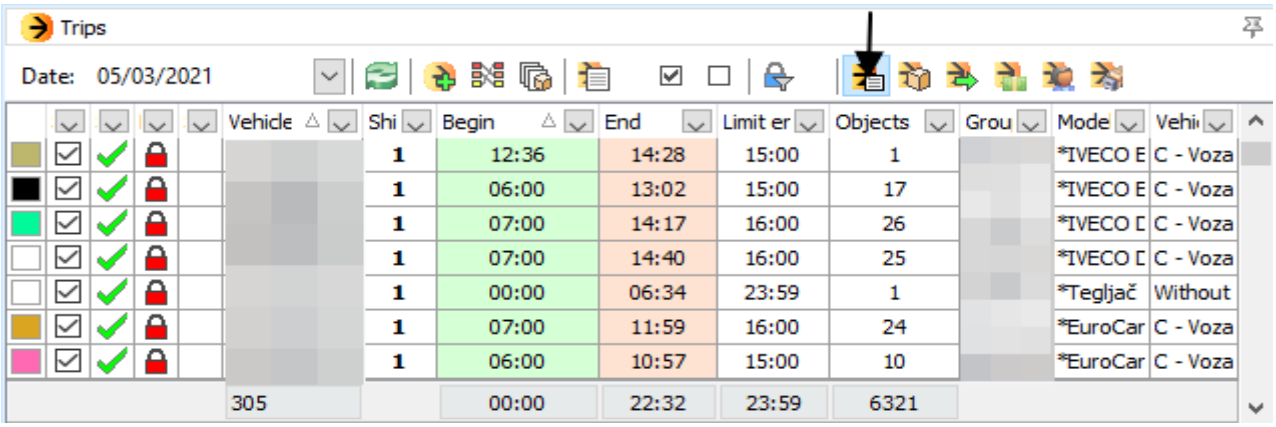
After that, when we click on Apply in the lower part of the window, the Km column will be arranged where we placed it.

When we select the option Display information about driving occupancy, we see the Km column exactly where we put it, behind the End column.



In the manner described above, we can add any of the listed available columns to one of the displays: Display vehicle information, Display information about driving occupancy, Display information about the route, Display information about expenses, Display driving drivers, Display vehicle capacity.

By starting the display that we choose - we see the data in the window List of trip(s).

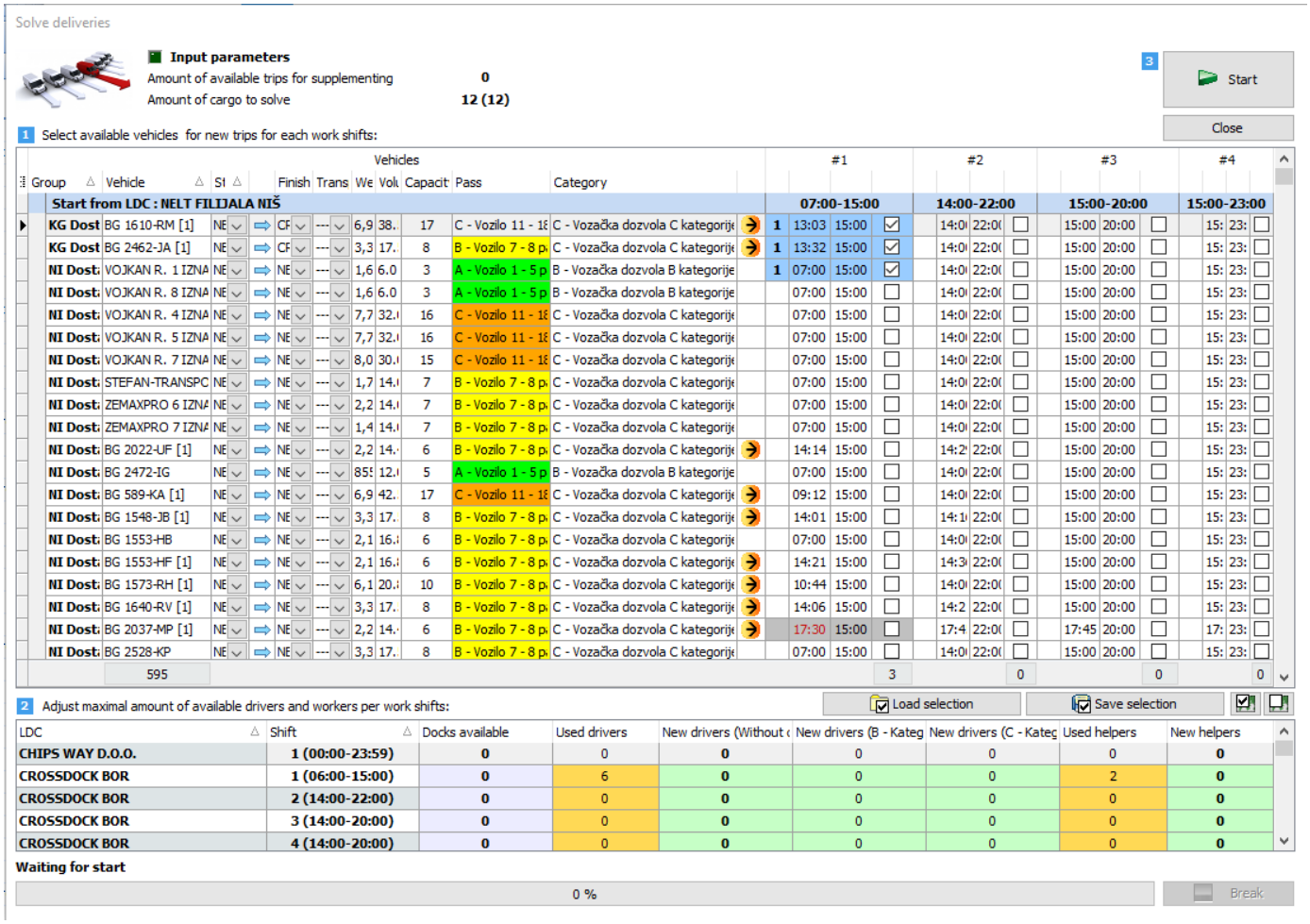


1.4 Cargo

This part contains **Scheduling, Searching Shipments, Checking Shipments According to Auto Date Rules, Selecting Shipments According to Conditions, Viewing Parameters, Displaying Destinations, Viewing Columns for Unscheduled Shipments.**

All solve

By selecting this option, it is possible to automatically distribute shipments to available vehicles.



Distribution of shipments consists of 3 parts:

1. Selects available vehicles for new runs for each work shift. In this example, there are 3 vehicles for the first shift.

2. Selects the number of available drivers and assistant drivers

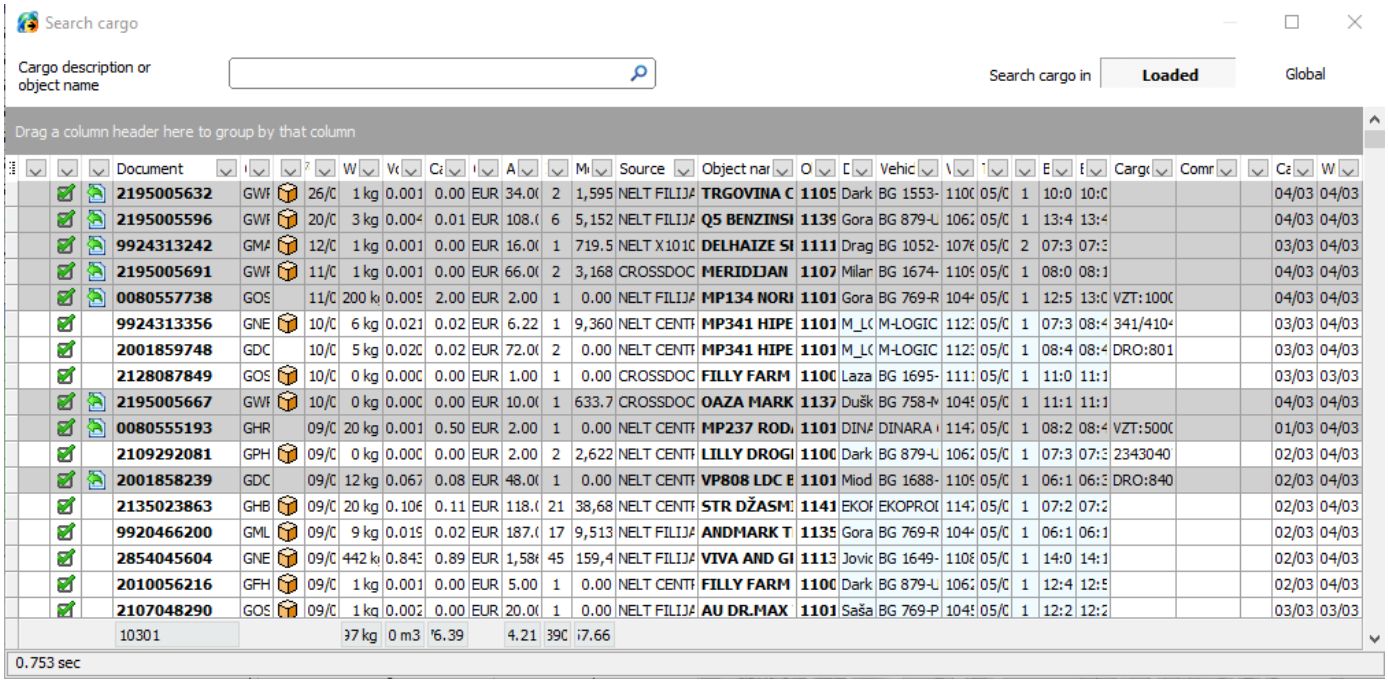
3. Selects the Go option, which starts the distribution of shipments to vehicles, creating trips for selected vehicles with a routed schedule of delivery of shipments to objects.

After clicking on the Go option, the process of optimization, reporting, top-up preparation and top-up for all runs is started. This is a process that can take a few minutes and you should wait until the process is completed. The bottom bar shows the percentage the deployment process has reached.

After the deployment process is completed, the Solution Statistics window appears, which provides detailed insight into the automatic deployment solution.

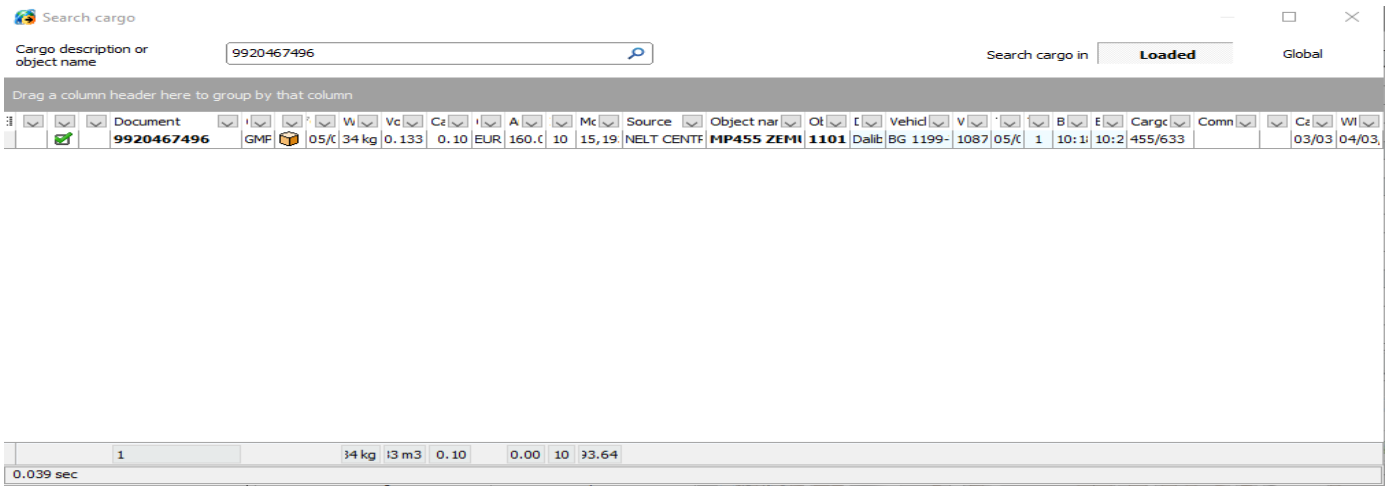
Search cargo

By entering the appropriate shipment or object name in the Search field, it is possible to search for shipments and find them.



When we enter the shipment (document) and click on the Search option, the specified shipment will be found.

Shipments can also be searched Globally for a longer period. When the Global tab is selected, enter the document or the name of the object in the Search field, set the period in days for which we are doing the search, and when we click on the Search option, the shipment will be found.

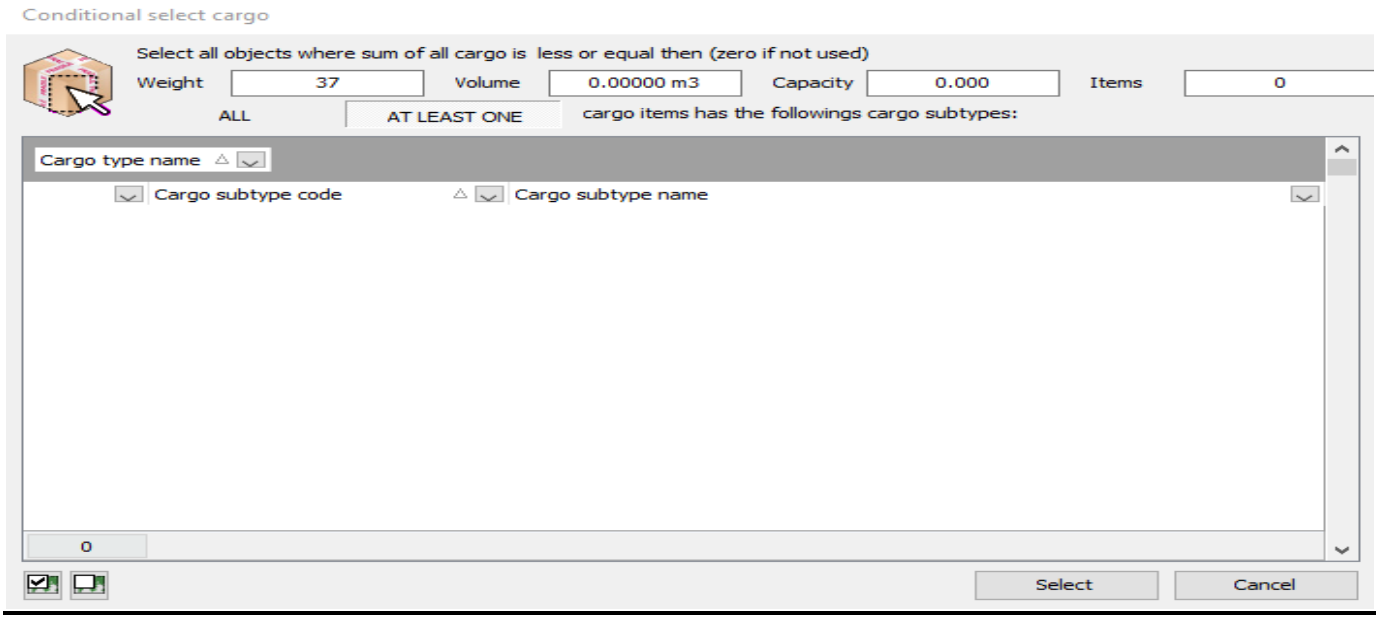


Check cargo date by date by date rules

Check shipments according to a previously set date.

Conditional select cargo

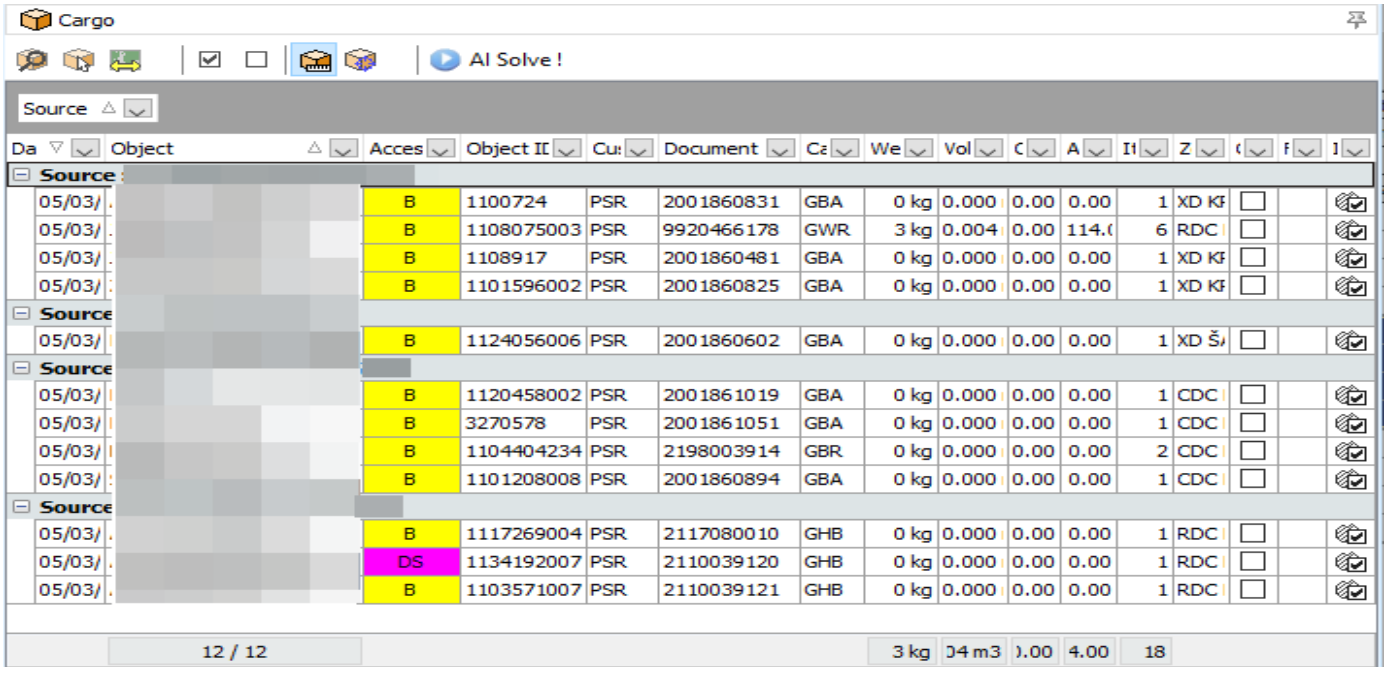
It is possible to select a shipment according to the parameters of weight, volume, capacity, by selecting the type and subtype of goods.



If, for example, we enter the weight: 37kg and then click on the Selection option, it will show us all objects for which each shipment has a weight less than or equal to 37kg in the Shipments window.

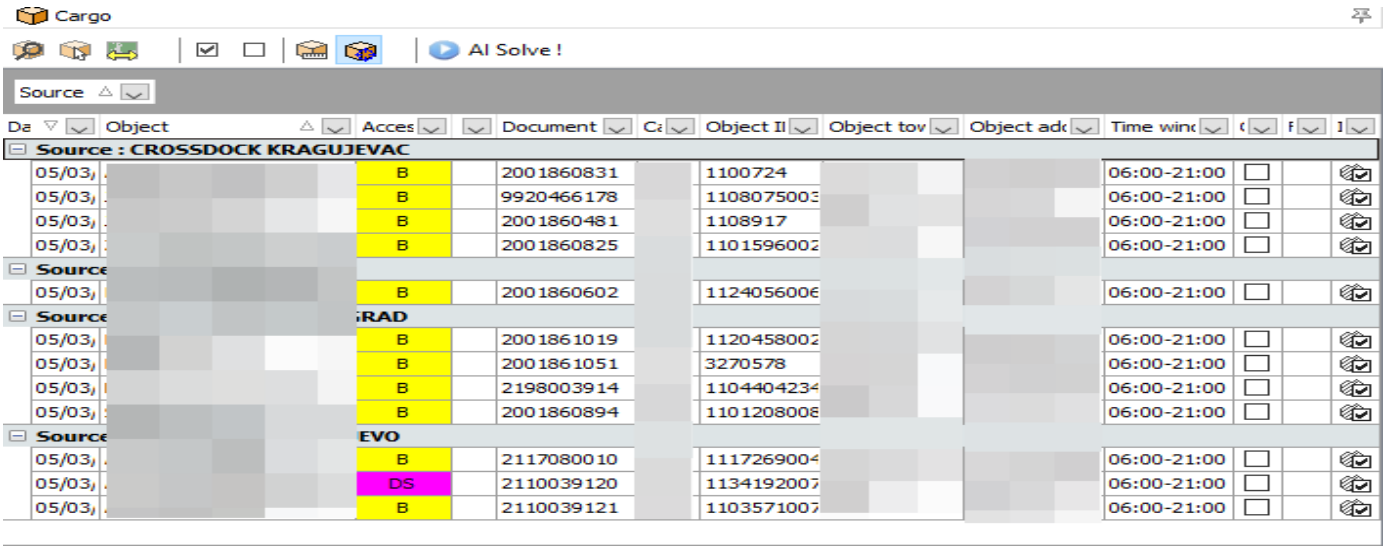
Show cargo parameters

By selecting the **Display parameters** option, the shipment parameters are displayed in the Shipments window. Mainly there are data about the object, document, type of goods, weight, volume, capacity. The parameters that will appear in the Parameter View can be defined in the Schedule of Unassigned Shipments View Columns.



Show cargo location

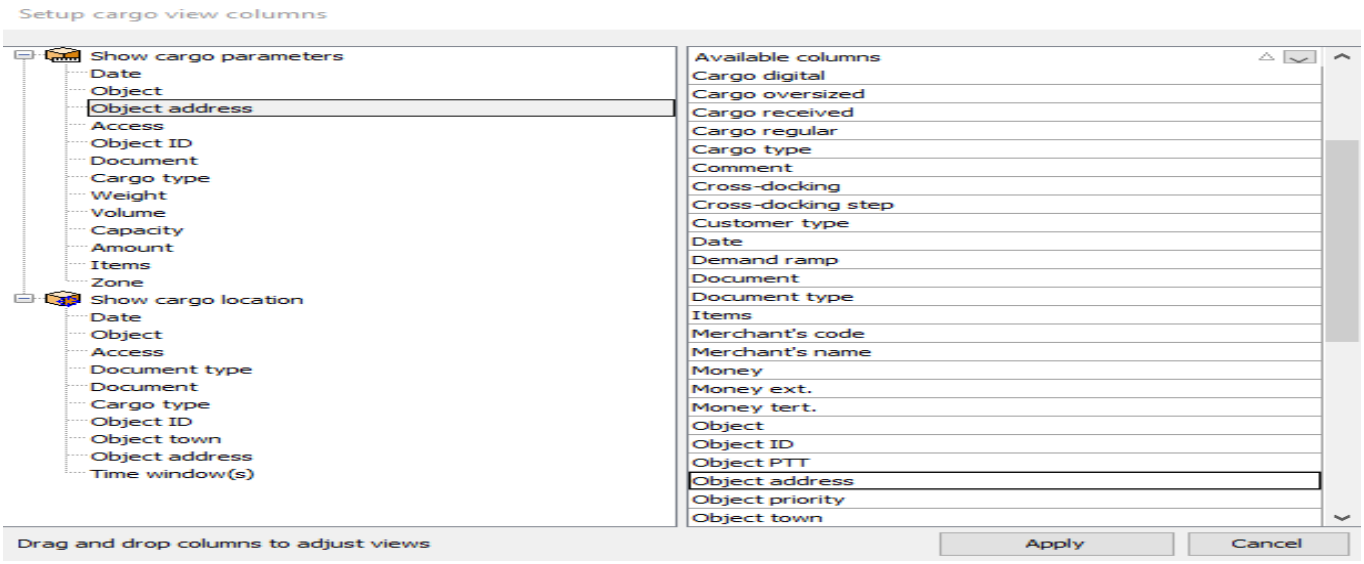
By selecting the **Show destination** option, the destination parameters are displayed in the Shipments window. Mainly there are data about objects, documents, type of goods, place, address of the object, as well as the time of receipt of the object's goods. The parameters that will appear in the View of Destinations can be defined in the Schedule of Unassigned Shipments View Columns.



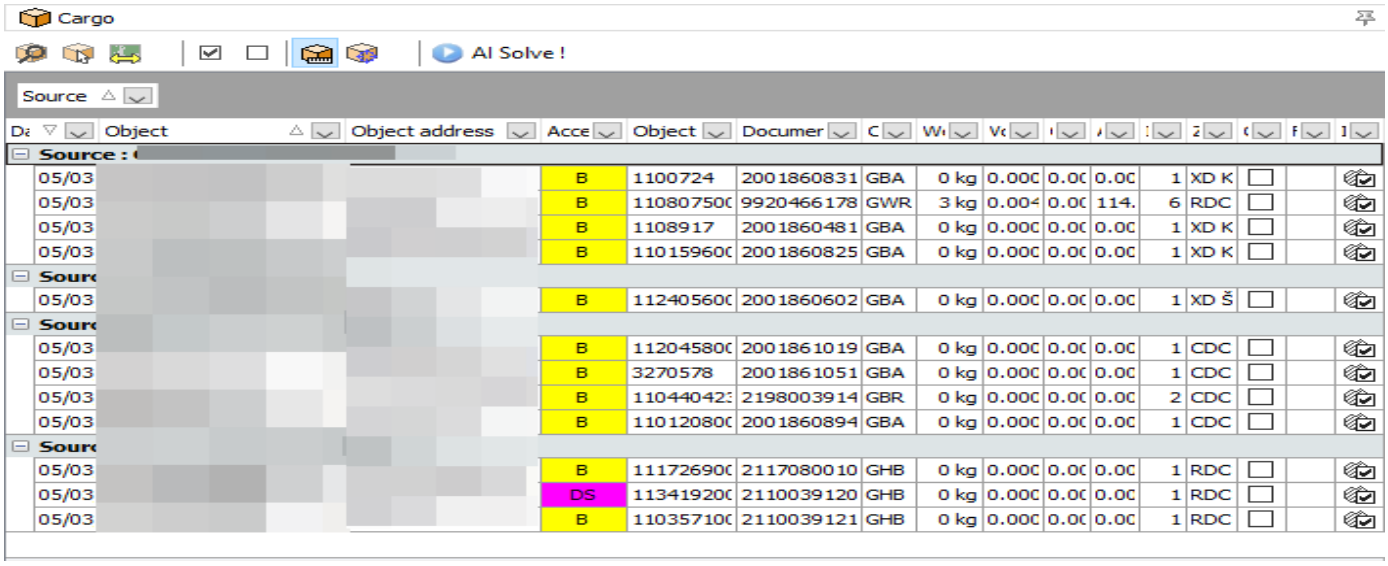
Setup cargo view columns

In this section, it is possible to create a schedule for viewing unscheduled shipments, and possibly add available columns on the right to Display parameters on the left.

We do this by clicking on a certain column, holding it down and switching it to the Parameter View on the left.

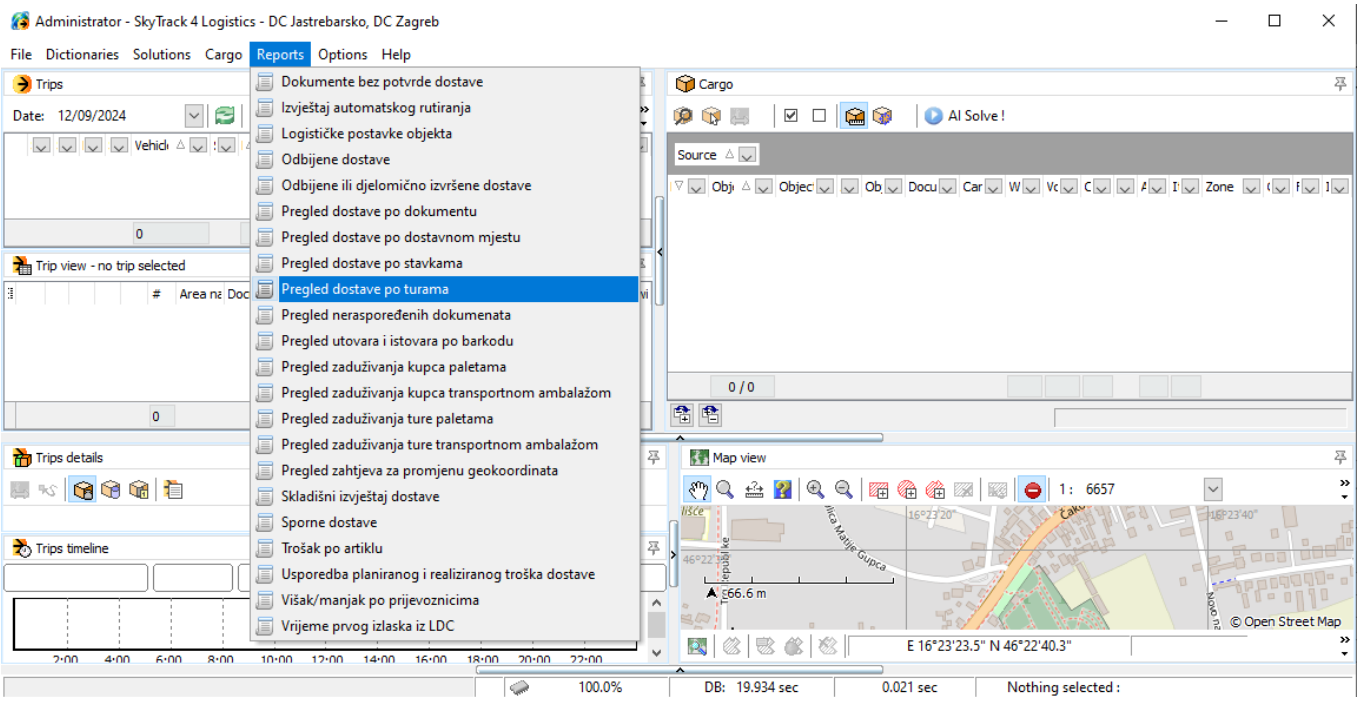


When we click on the Apply option in the lower right part of the window, the specified column will be added in the Parameter View, right after the Object column. In the same way, we add the available columns to the Display destination.

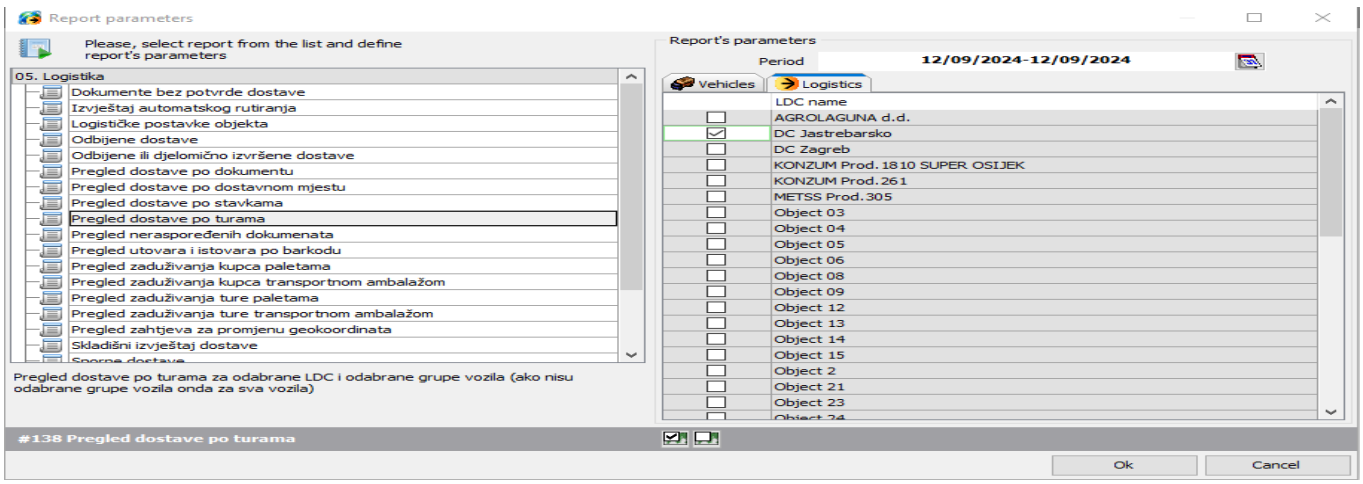


1.5 Reports

From the Reports menu, it is possible to select a report from the list of Logistics reports.

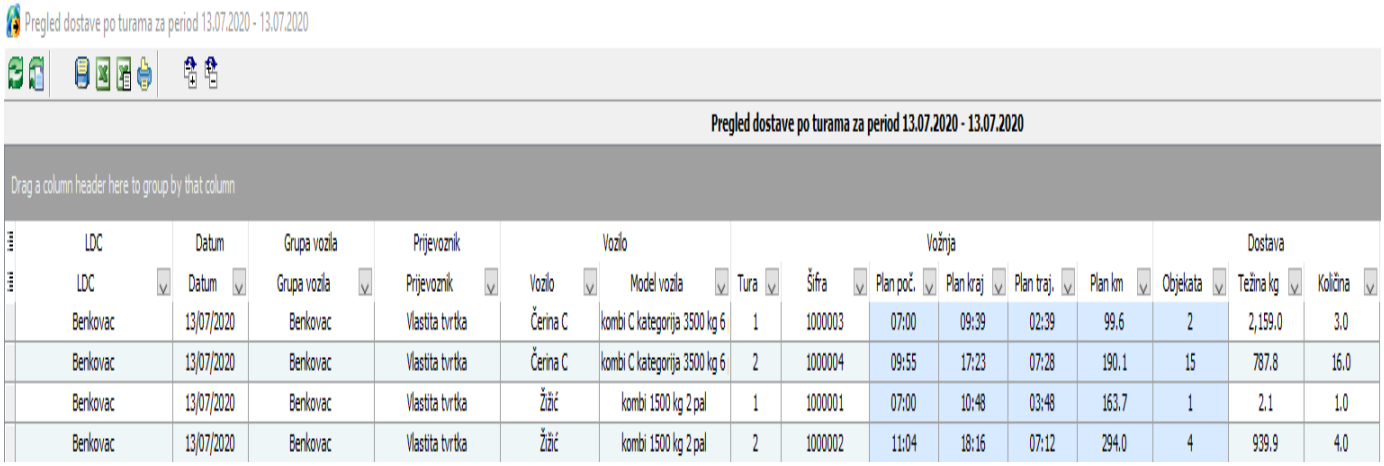


After we click on the report we want, the window below opens.



In it, when we click again on the desired report, in the lower left corner - below the list of reports, the program gives us a description of what the selected report does. In this example, the selected report Overview of deliveries by tours, provides an overview of deliveries by tours for the selected LDC AND the selected vehicle groups - if no vehicle groups are selected, then it provides for all vehicles.

After selecting the report we want, we select the period in which we want to see the display, then we select the LDC for which we want to see an overview of deliveries by rounds and click OK. After that, the mentioned report is opened.


Pregled dostave po turama za period 13.07.2020 - 13.07.2020

Pregled dostave po turama za period 13.07.2020 - 13.07.2020

Drag a column header here to group by that column

LDC	Datum	Grupa vozila	Prijevoznik	Vozilo	Model vozila	Vožnja						Dostava		
LDC	Datum	Grupa vozila	Prijevoznik	Vozilo	Model vozila	Tura	Šifra	Plan poč.	Plan kraj	Plan traj.	Plan km	Objekata	Težina kg	Količina
Benkovac	13/07/2020	Benkovac	Vlastita tvrtka	Čerina C	kombi C kategorija 3500 kg 6	1	1000003	07:00	09:39	02:39	99.6	2	2,159.0	3.0
Benkovac	13/07/2020	Benkovac	Vlastita tvrtka	Čerina C	kombi C kategorija 3500 kg 6	2	1000004	09:55	17:23	07:28	190.1	15	787.8	16.0
Benkovac	13/07/2020	Benkovac	Vlastita tvrtka	Žitić	kombi 1500 kg 2 pal	1	1000001	07:00	10:48	03:48	163.7	1	2.1	1.0
Benkovac	13/07/2020	Benkovac	Vlastita tvrtka	Žitić	kombi 1500 kg 2 pal	2	1000002	11:04	18:16	07:12	294.0	4	939.9	4.0

1.6 Options

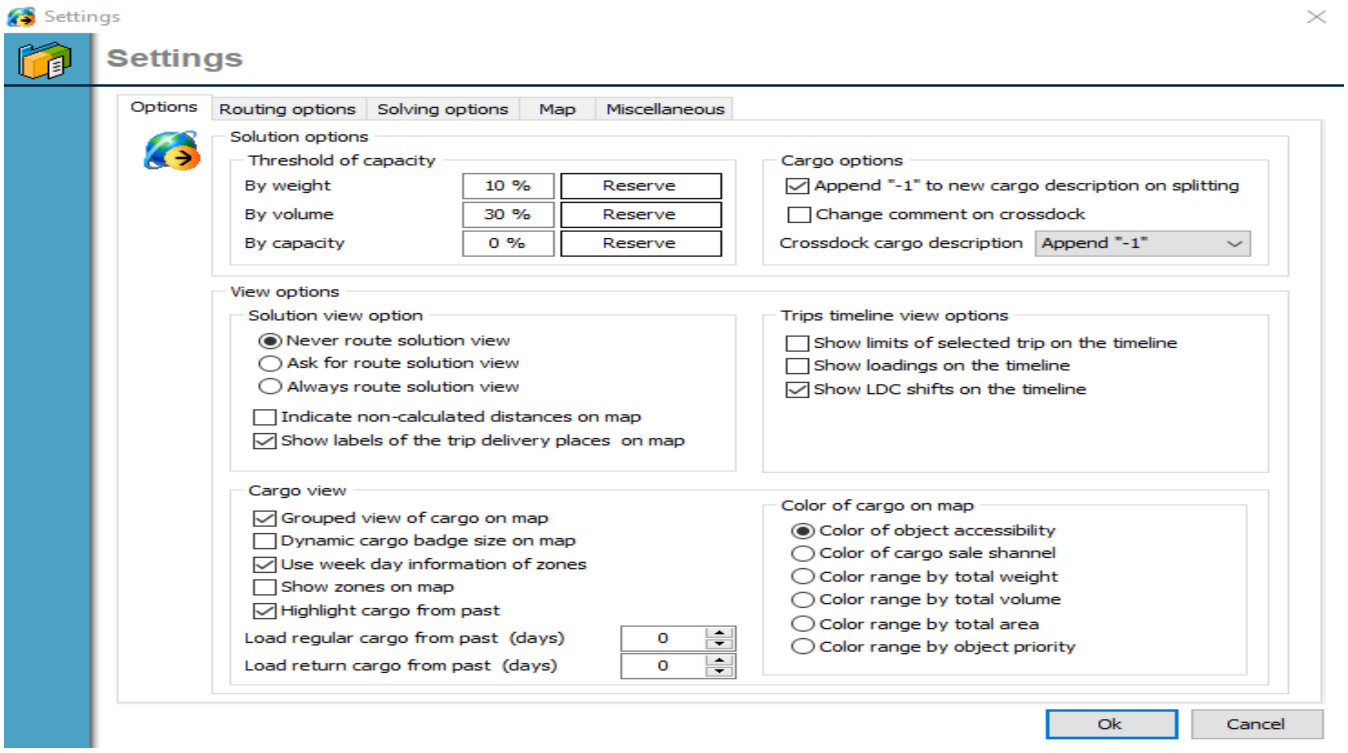
The Options menu contains the **Settings menu** and the **Shipment Data Integrity Check.**

Settings

Settings - a menu with options that define the operation of the shipment scheduling algorithm.

Options

When we click on the Options tab belonging to the Settings menu, the window below opens.



Solution options

Treshold of capacity - select the percentage that must remain empty in the cargo space in three categories: weight, volume and capacity.

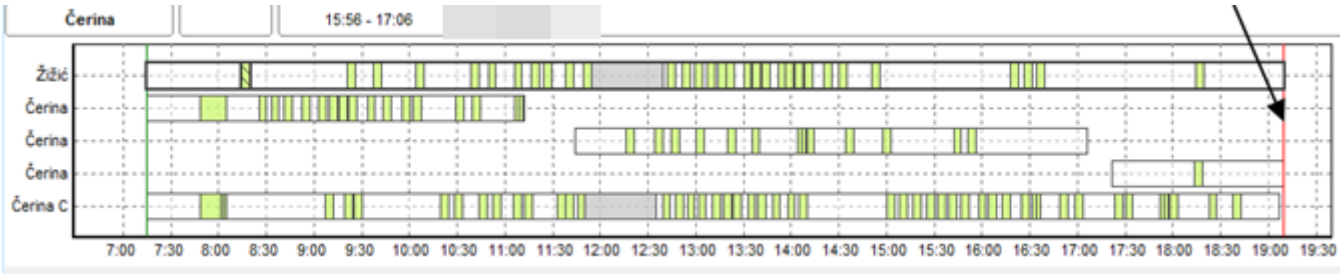
Cargo options - by including one of the existing options, it is possible to enable: adding "-1" to the document number when sharing, adding "-1" to the document number for crossdocking, changing the shipment comment when crossdocking.

View options

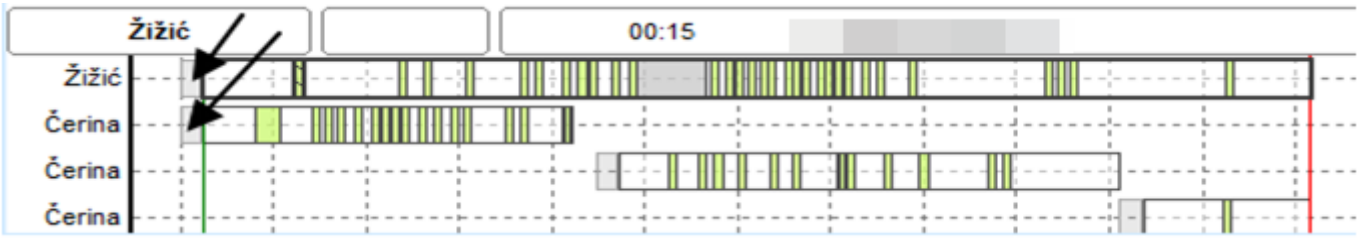
Solution view option - select one of the options related to the routing method: never route a trip, ask for routing a drive, always route a drive display. If we select the option never route the trip - the view of the trip on the map will not be routed, if we select ask for routing the trip - when selecting the trip, the program will ask us if we want to route. If we choose always route trip(s) - the program will route the trip we choose.

Show aerial distances of trip(s) on the map – shows aerial distances of trip(s) on the map.
Displaying the names of delivery points for driving on the map - shows the names of delivery points on the map.
Postavke pregleda vremenske skale

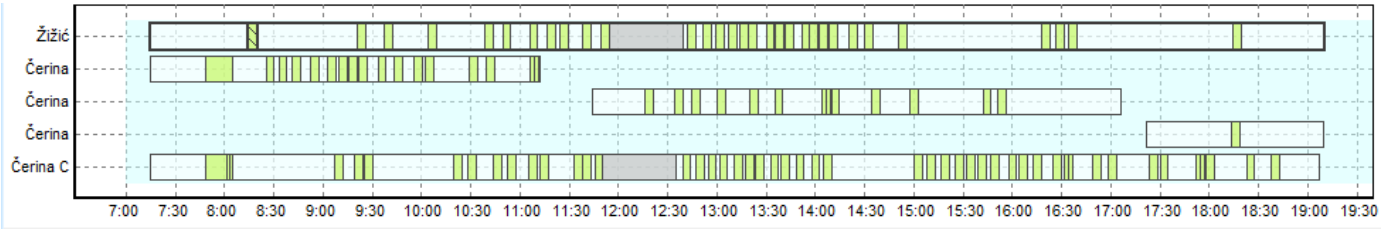
Display of the time limit of the selected drive - provides an overview of the end time of the drive for the drive we select, in the Drive Time Scale window marked with a red vertical line.



Display of loading time on the time scale – provides an overview of the loading time for each run that we select on the Time Scale of the run marked gray. In our case, the loading time was previously set to 15 min in the LDC work shift settings and in the vehicle transit settings.



Display of the work shift on the time scale - marks the background in the window Time scale of driving, for a specific work shift, with a blue transparent color.



Cargo view

Grouped view of cargo on map - groups shipments by groups on the map.
Dynamic cargo badge size on map - turns on or off the dynamic display size of shipments on the map.
Use week day information of zones - includes zone day of week information.
Show zones on map - turns on or off the display of zones on the map.

Highlight cargo from past - enter a limit in the number of days, for which we want to see loaded shipments

Highlight old shipments with a different color - turning on this option marks old shipments with a different color
Loading returns not older than (days) - enter a limit in the number of days, for which we want to see loaded returns.

Color of cargo on map

Color of object accessibility - Displays an unallocated object in the previously defined object availability color.
Color of cargo sale channel - Displays the unassigned object in the previously defined sales channel color
Color range by total weight - Displays unspaced objects ranged by total weight
Color range by total volume - Displays unspaced objects ranged by total volume
Color range by total capacity - Displays unassigned objects in range by total capacity

When we click on Ok in the lower right corner of the window, the settings made in the Options tab will be activated.

If you change your mind about the changes you made, you can also click Cancel in the lower right corner of the window.

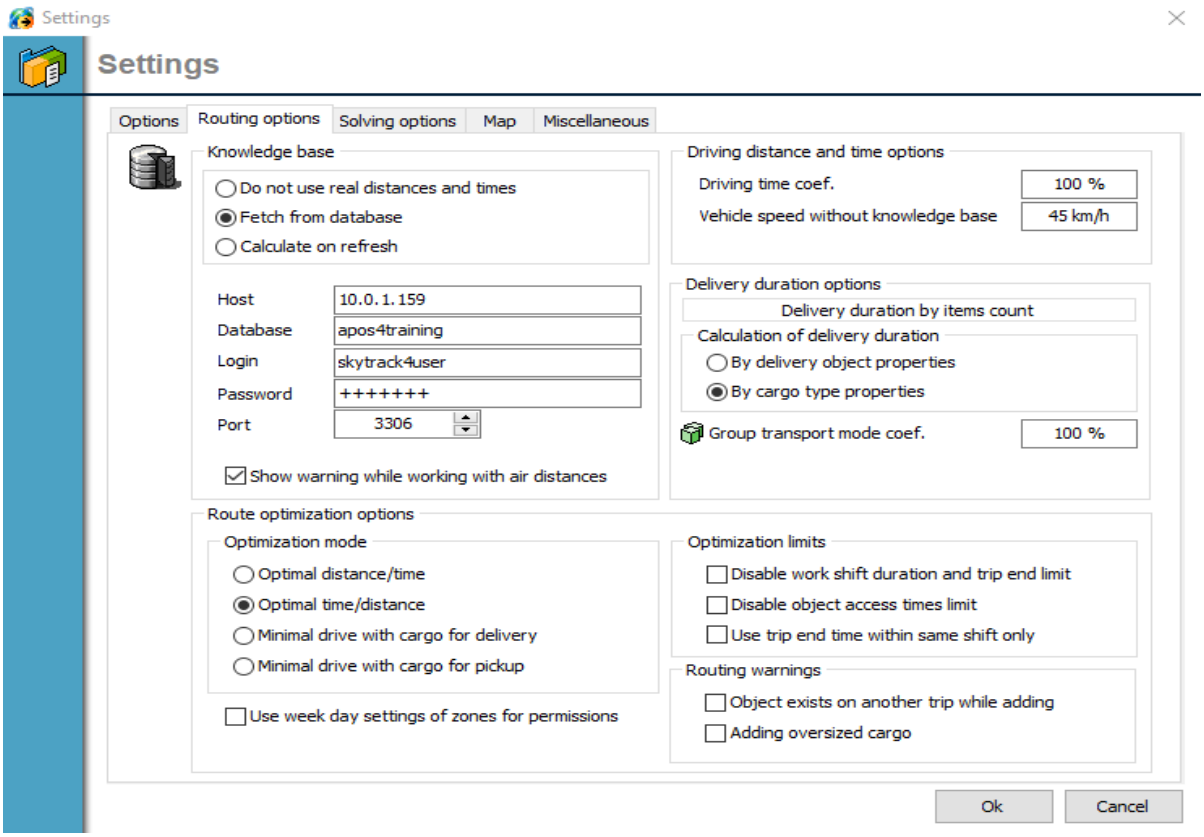
Routing settings

Knowledge base

Do not use real distances and times - the application then works according to aerial distances.
Fetch from database - retrieves data for trip(s) directly from the knowledge base.
Calculate on refresh- when we select this option and confirm with Ok, during the next refresh of the application, data from the knowledge base is loaded. When we right-click on a trip -Routing show trip(s), the map shows us the trip according to road distances.

Host - enter the IP address or domain name of the server
Database - enter the name of the database
Login - enter the user name
Password - enter the password from the user
Port - enter the port for connecting to the knowledge base

Air distance operation warning - when this option is turned on, a notification appears when the application operates according to air distance.



Driving distance and time options

Driving time coef. – enter the percentage that defines the driving time
Vehicle speed without knowledge base - enter the speed value in km/h, which represents the speed of the vehicle without using the knowledge base.

Calculation of delivery time

By delivery object properties – calculates delivery time according to object settings

By cargo type properties - calculates the duration of delivery according to the settings of the type of goods

Group transport mode coef. - enter the value in percentages for the group delivery method

Route optimization options

Optimization mode

Optimal distance/time - the program optimizes the minimum driving distance

Optimal time/distance - the program optimizes so that the driving duration is minimal

Minimal drive with cargo for delivery - the program optimizes so that there is a minimum driving with the load in the delivery

Minimal drive with cargo for pickup - the program optimizes so that there is a minimal driving with cargo in pickup

Optimization limits

Disable work shift duration and trip end limit - by selecting this option, it is possible to turn off and enable the limitation of the duration and end of the journey when routing

Disable object access times limit - by selecting this option, it is possible to turn off AND enable the limitation of working hours of the object when routing

Use trip end time within same shift only -

Routing warnings

Object exists on another trip while adding - by selecting this option, it is possible to turn on and off the warning when routing or manually adding shipments to the trip - that delivery to the object also exists in other trips
Adding oversized cargo - by selecting this option, it is possible to turn on and off the warning during routing or manually adding shipments to the drive - about the addition of oversized goods.

When we click on Ok in the lower right corner of the Routing Settings tab, the settings we make will be saved and used during routing. If we change our mind, we can click Cancel.

Solving options

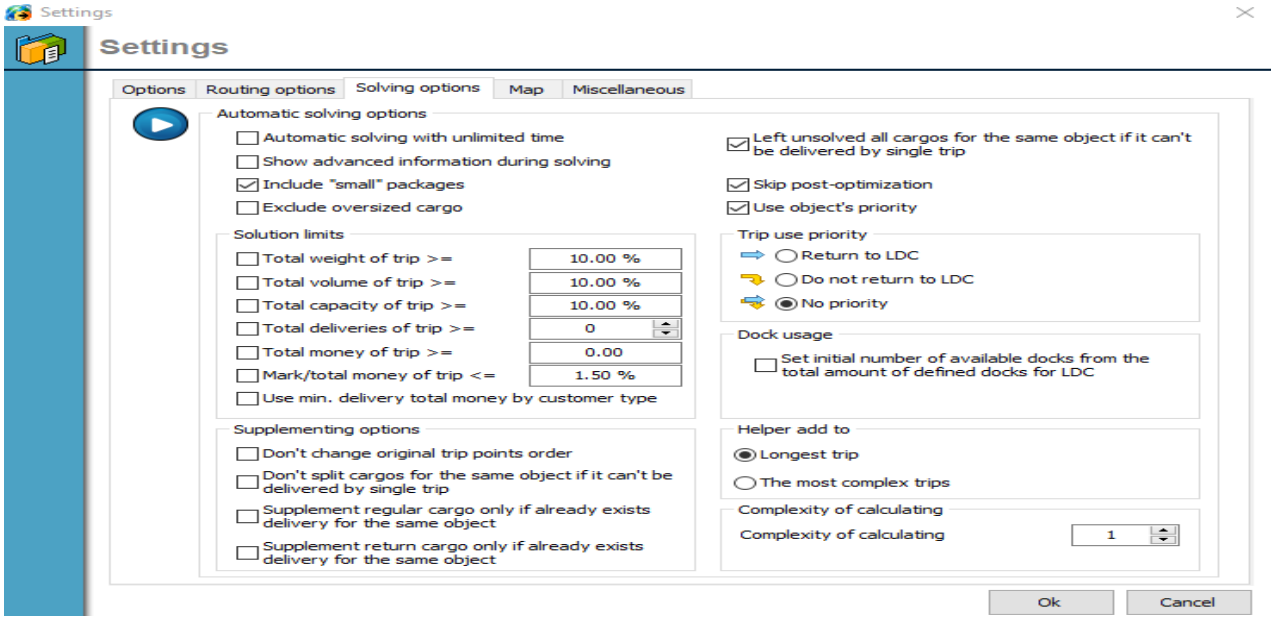
Automatic solving options

Automatic solving with unlimited time - turn on or off the option of unlimited automatic scheduling of shipments

Show advanced information during solving - toggles the option of additional information on or off

Include Small packages - Enables or disables the deployment of small packets

Exclude oversized cargo - excludes or includes deployment of oversized goods



Leave all shipments for the delivery location

Left unsolved all cargos for the same object if it can't be delivered by single trip - Shipments remain unassigned if they cannot be delivered in one run
Skip post-optimization - turn post-optimization on or off during automatic deployment
Use object's priority - turns object priorities on or off when routing. Object priorities are defined in advance in Object Settings.

Solution limits

Total weight of trip - includes or excludes the driving weight limit in relation to the weight of the vehicle model, which should be equal to or above a certain value in percentage - for automatic assignment to driving to be possible
Total volume of trip - turns on or off the limitation of the driving volume in relation to the vehicle volume, which should be equal to or above a certain value in percentage - so that automatic assignment to driving is possible.
Total capacity of trip - includes or excludes the limitation of driving capacity in relation to the vehicle capacity, which should be equal to or above a certain percentage value - for automatic scheduling to be possible
Total deliveries of trip - the limit on how many objects should be on the trip is turned on or off
Total money of trip - includes or excludes a limit on how much the total value of the goods should be in order for the trip to be realized
Mark/total money of trip - includes or excludes the limit on the value of the grade/total money in percentages
Use minimum delivery total money by customer type - turns on or off the minimum shipping amount by customer type

Trip use priority

Return to the LDC - sets the driving priority to return to the original warehouse
Do not return to LDC - sets the priority of driving without returning to the original warehouse
No priority - sets no priority

Dock usage

Set the initial number of available docks according to the total number of defined docks for LDC - uses information about the total number of defined docks for LDC

Supplementing options

Don't change original trip points order -
Don't split cargos for the same object, if it can't be delivered by single trip - by enabling this option, it is impossible to top up with a shipment for a particular delivery point, if it cannot be delivered in one trip

Supplement regular cargo only if already exists delivery for the same object- by enabling this option, it is possible to replenish with shipments for tours, where there is already a delivery for the same delivery point

Supplement return cargo only if already exists delivery for the same object- this option allows for top-up of returns for tours where there are already deliveries for the same delivery point

Helper add to

It is possible to add a support worker:

The longest trip
The most complex trip(s)

Calculation complexity

Calculation complexity - the integer value of the calculation complexity is entered

Map

Common map rendering rendering options

Fill Background – fills the background on the map
Transparent Info Tool – displays a transparent Info Tool (yellow question mark) on the map
Use hardware acceleration for 2D display - hardware acceleration option used for 2D map display
Use hardware acceleration for 3D display - hardware acceleration option used for 3D display on the map
Detail level – the slider is set to a number from 1-100, which represents the level of detail on the map
Zone's transparency - the slider is set to a value that represents the transparency of the zone display
Color scheme – one of the 3 existing schemes is selected, which changes the color scheme on the map

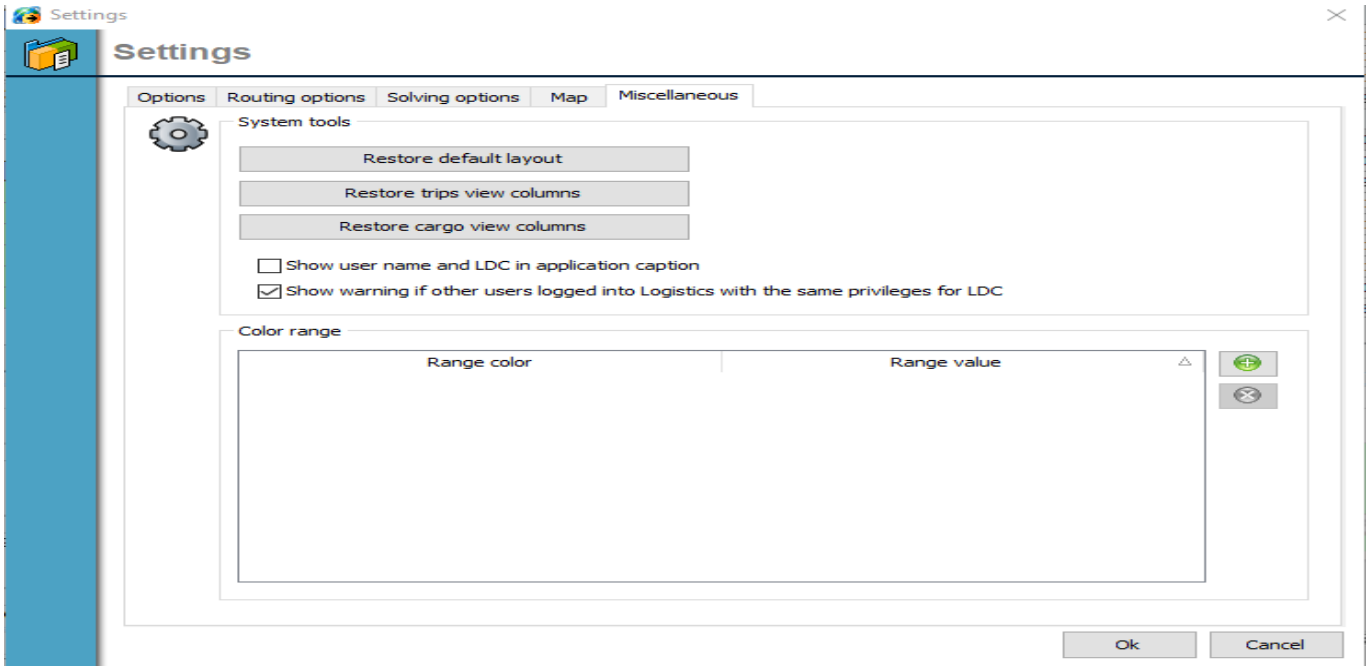
Enable on-line maps - pulls maps from the Internet

Open street maps options

Disk space usage - number in MB
Clear disk cache - clears the disk cache

Miscellaneous

By selecting the Miscellaneous option, it is possible to restore the initial layout of the window, restore the initial layout of the columns of the driving list, restore the initial layout of the shipment review, turn on/off the display of the user's name and LDC in the header, display of warnings when working simultaneously with other users on the same days and LDC.



Restore default layout - returns all settings to initial values. Requires program restart.

Restore trips view columns - restores the arrangement of the columns of the list of trip(s) to the initial values

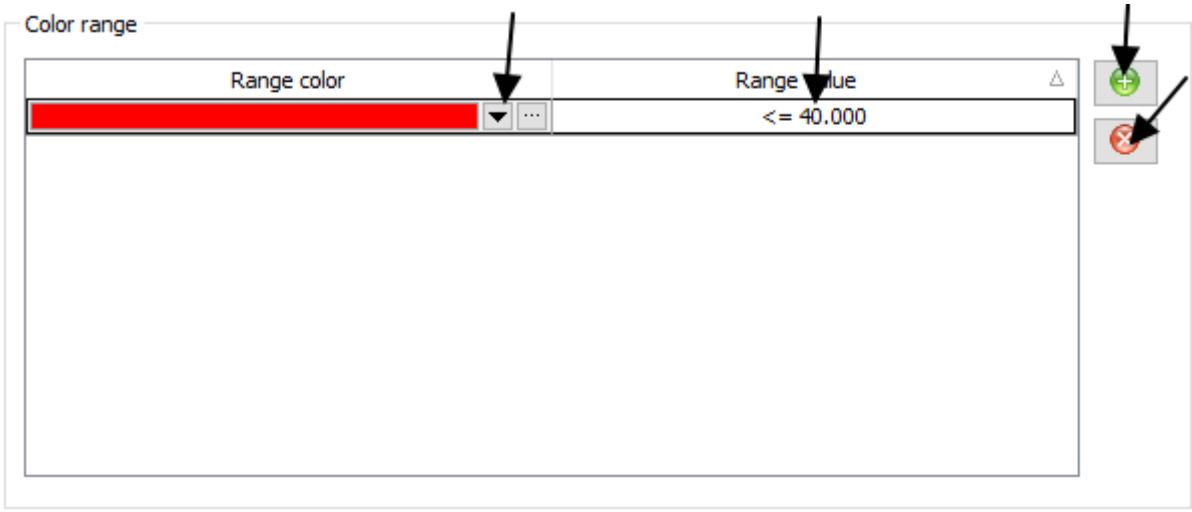
Restore cargo view columns - restores the shipment review schedule to its initial values

Show user name and LDC in application caption - turns on or off the display of I LDC user information in the application header

Show warning ih other users logged into logistics with the same privileges for LDC - turn on or off the warning of simultaneous work with other users on the same days I LDC.

Color range

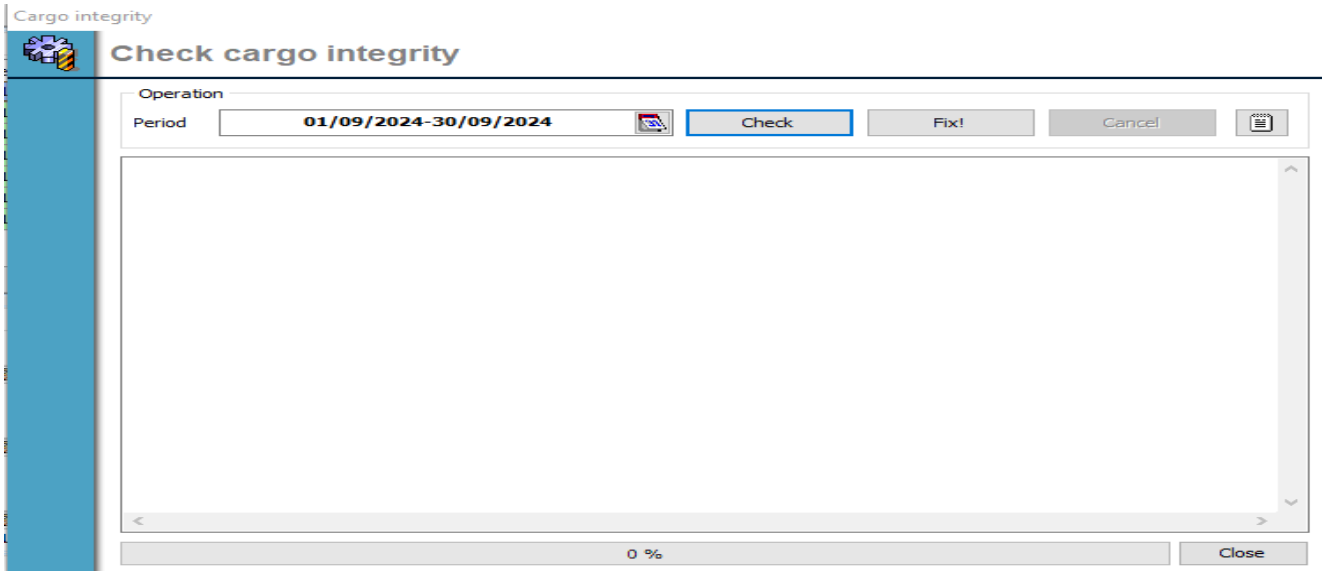
It is possible to add color and value by clicking on the green plus sign in the upper left corner of the color range window. By clicking on the red icon, the specified color and value are deleted.


Color range
Range color
Range value
<= 40.000

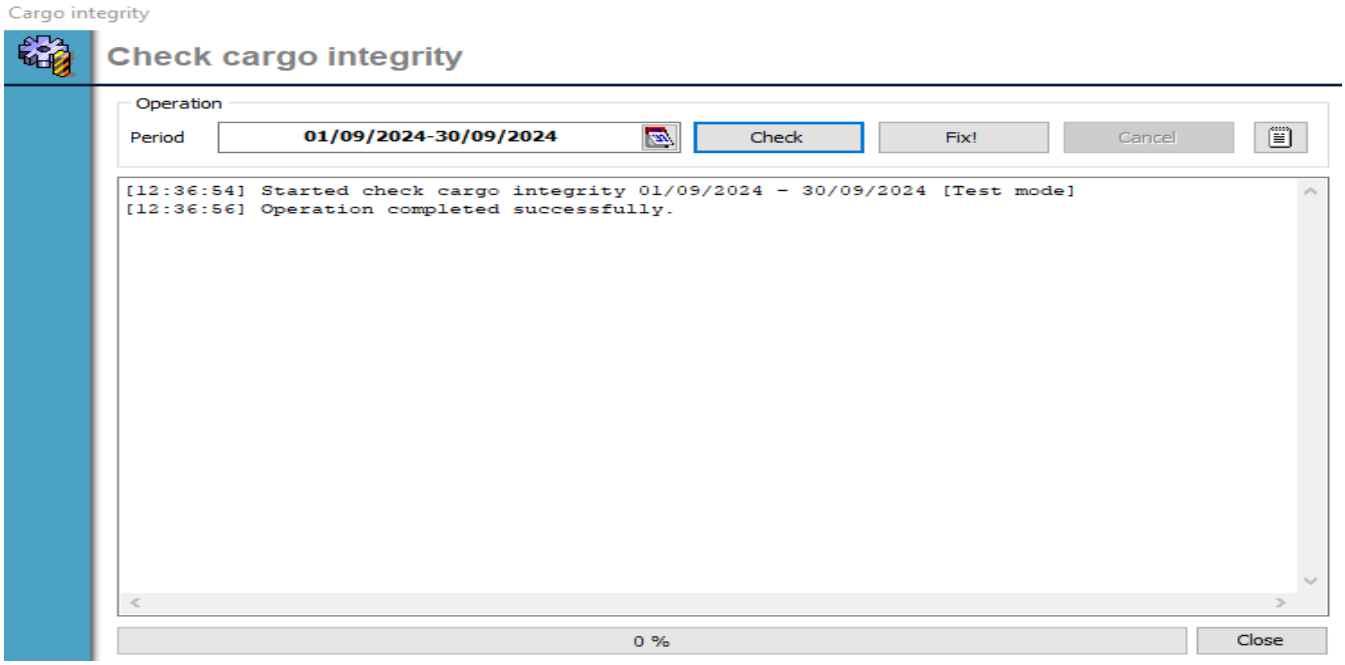
Check cargo integrity

With this option, it is possible to check the integrity of the data about shipments loaded into the application.

When we select this option, the window below opens.



We need to select the date for which we want to check, then click on the Check option and the window below opens.



In this case, the check was successful and the shipment data is correct. If they were not, they would click on the Correction option.

By clicking on the Show log option in the upper right corner of the window, a notepad file is opened in which all the activities we have done in this window are recorded.

If we want to close the Shipment data integrity check window, click on Close.

1.4 Help

Help contains a manual for working with the program and a window with basic information about the program.

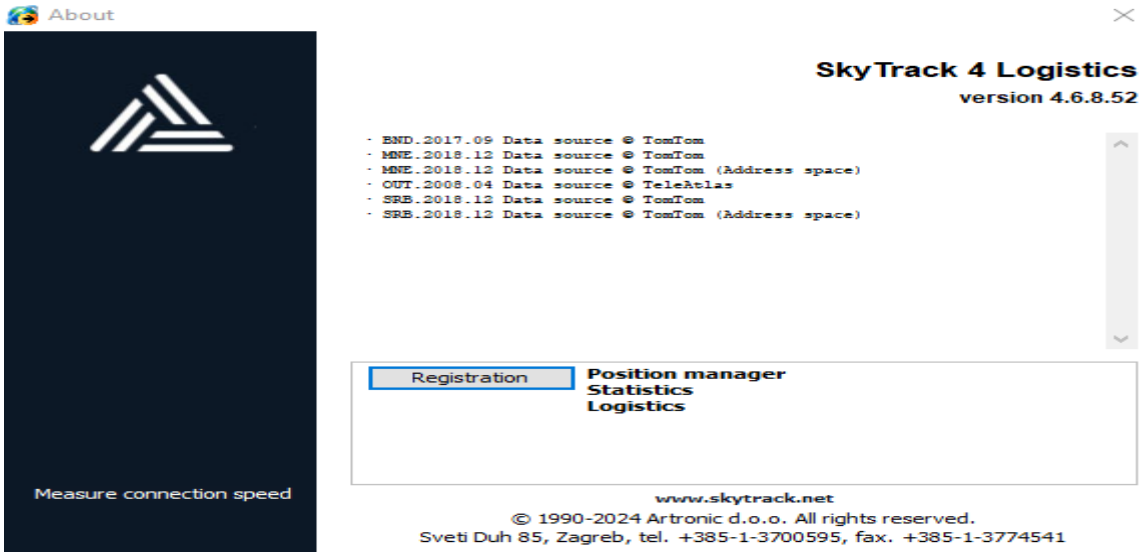
Help

Help for working with the program.

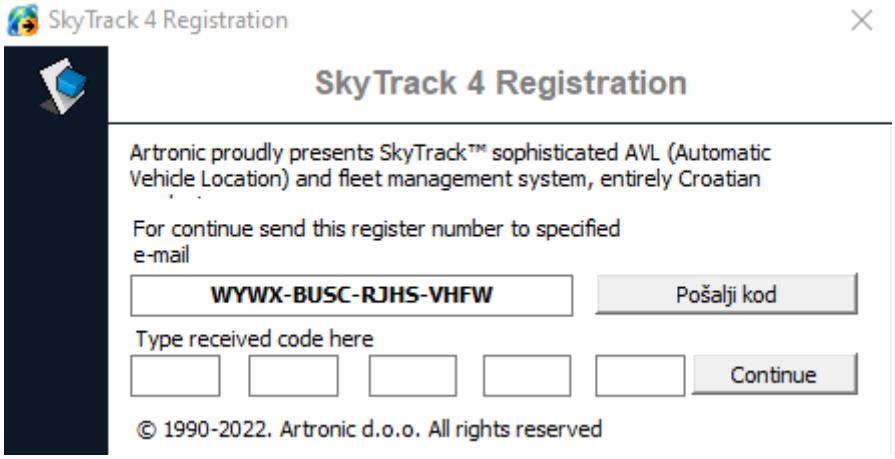
About the program

A window with basic information about the program.

Below the name Sky Track 4 Logistics is written the version of the application



When the Registration option is clicked, the window below opens, through which it is possible to register Sky Track 4 applications if they are not registered, by sending the specified registration code to registration@skytrack.net.



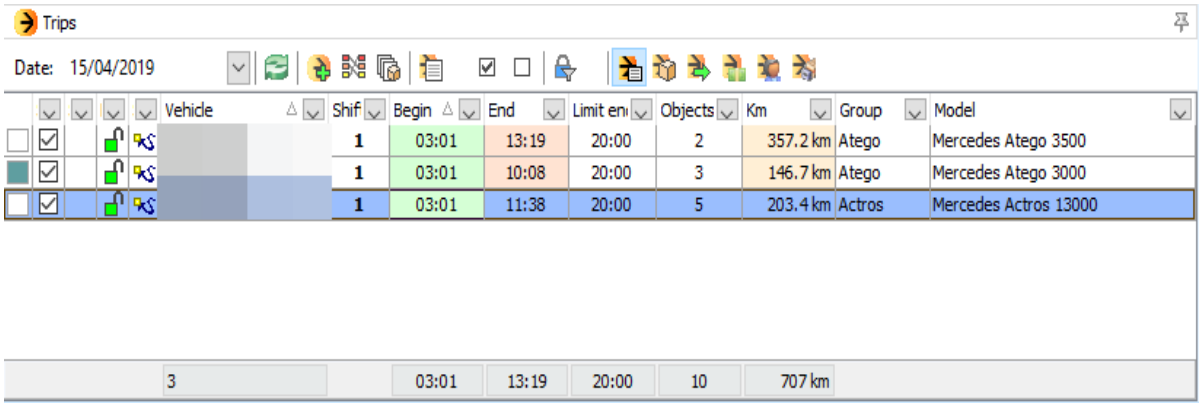
When you click on Measure connection speed, the application gives us information about the connection speed in Mbps.

Chapter 2 - Trips

This chapter talks about shipment drives, which are located in the windows on the main screen in the program.

2.1 Trips

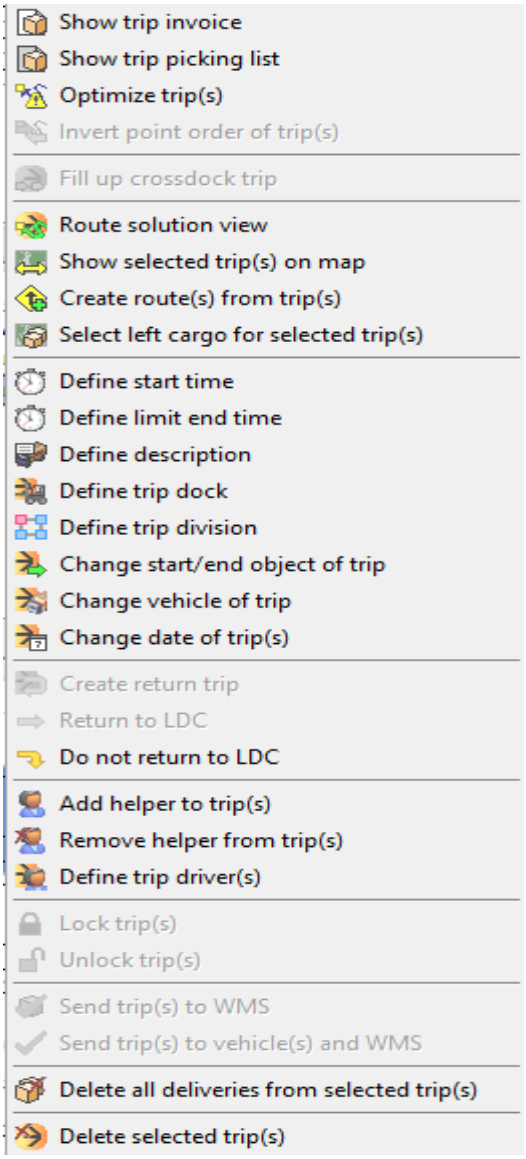
The **Trips** window is used to view general data about trips and vehicles.



Toolbar:

- Date of solution: it is possible to select the date on which we want to work
- Refresh: retrieves fresh data from the database
- Add vehicle to solution: add vehicles to solution manuly
-Finalize trip(s): redistributes trip(s) from one to another
-Show loading lists for selected trips: loading lists for selected trips can be viewed
- Display of solution statistics: displays solution statistics for selected trips
- Check all: includes the selection of all vehicles
- **Uncheck all**: deselects all vehicles
- Change filter by locking status: it is used to quickly switch from viewing locked trip(s) to viewing unlocked trip(s).
- Show solution vehicle information: while this option is on, the table shows the previously defined vehicle information display data.
- Show solution usage information: while this option is turned on, information about driving occupancy is displayed in the table
-Show solution route information: while this option is on, the data about driving routes is visible in the table
-Show solution expenses: while this option is turned on, the table shows data about driving **expenses**
-Show solution drivers: while this option is turned on, data about drivers and assistants/passengers can be seen in the table
- Show solution vehicle capacity: while this option is turned on, the table shows data on vehicle capacity, vehicle load capacity and vehicle volume.

Options per vehicle/ solution**:** right-clicking on a vehicle/ solution opens a menu with more options.



Show trip invoice - opens a window with a list of goods that should be loaded into the truck. From this window it is possible to print the loading and delivery list.

Show trip picking list - opens a window with pallets, products, PHC for the selected vehicle.

Optimize trip(s) – optimizes the selected trip, this is usually used when a trip is manually loaded

Invert point order of trip(s) - changes the order of selected trip(s)

Fill up crossdock trip - filling option, if crossdock trip is selected.

Rout solution view - routes the driving display on the map, according to aerial distances or according to values from the knowledge base, which are previously set.

Show selected trip(s) on map - centers and displays the selected trip on the map

Creating user routes from selected trip(s) - creates routes based on selected trip(s).

Mark other unassigned shipments for delivery points for driving - marks unassigned shipments

Define start time - changes the start of the selected trip

Define limit end time - changes the end of the selected trip

Define description - serves to add a comment for the selected trip(s)

Define trip dock - serves to select a loading dock for driving

Chang start/end object of trip - changes the start and end point of the drive

Return to LDC - means that the priority is to return to the original warehouse

Do not return to LDC - means that the return to the original warehouse is not a priority

Add helper to trip(s) - adds helper to the trip

Remove helper from trip(s) - removes the support worker from the trip

Define trip driver(s) - adds a driver AND co-driver/helper to the trip

Lock trip(s) - locks the trip and after this it is not possible to do anything on the trip

Unlock trip(s) - unlocks a trip, only certain users have this privilege

Send trip(s) to WMS - sends data for selected runs to the warehouse management system and

there it generates lists for loading onto the truck

Send trip(s) to vehicle(s) and WMS - sends data to vehicles AND to WMS

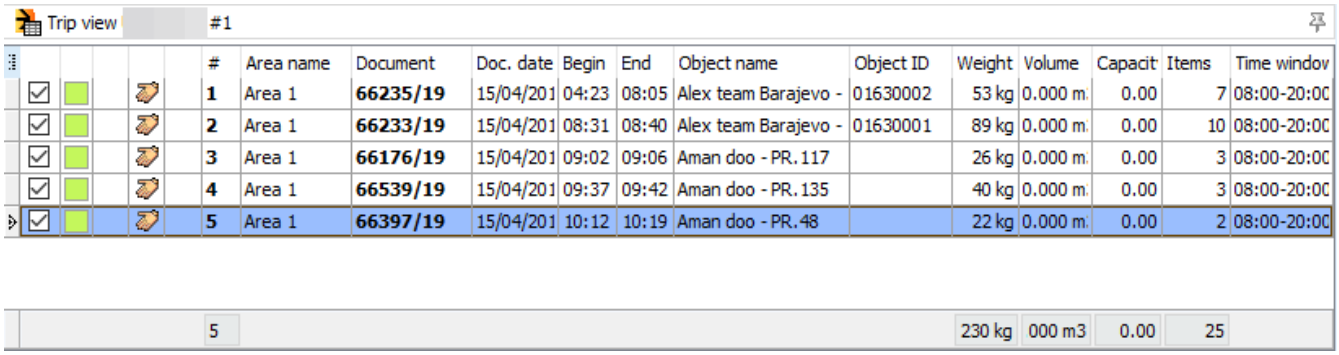
Delete all deliveries for selected trip(s) - empty the selected trucks of the cargo intended for them and

the destination where the cargo is to be transported

Delete selected trip(s) - deletes selected trip(s) from the list

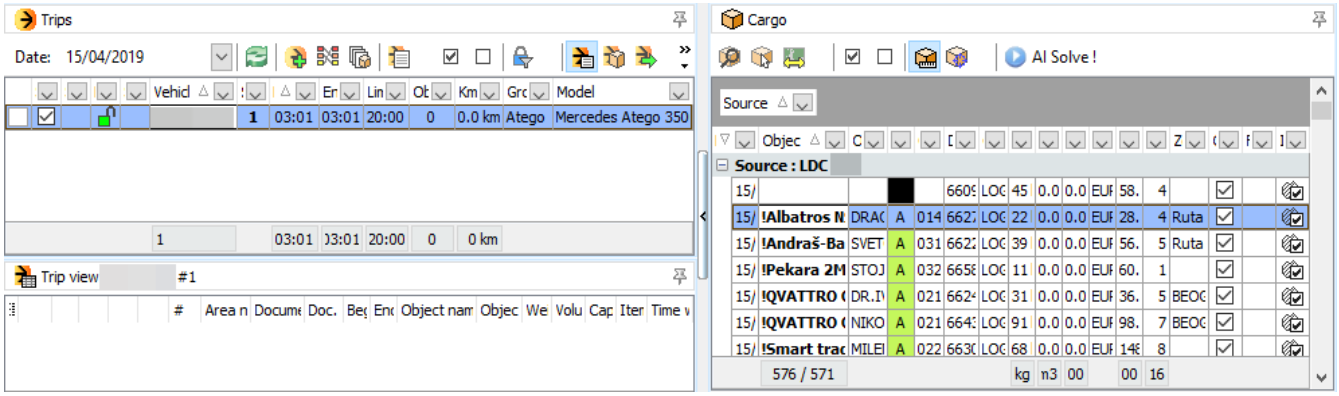
2.2 Trip view

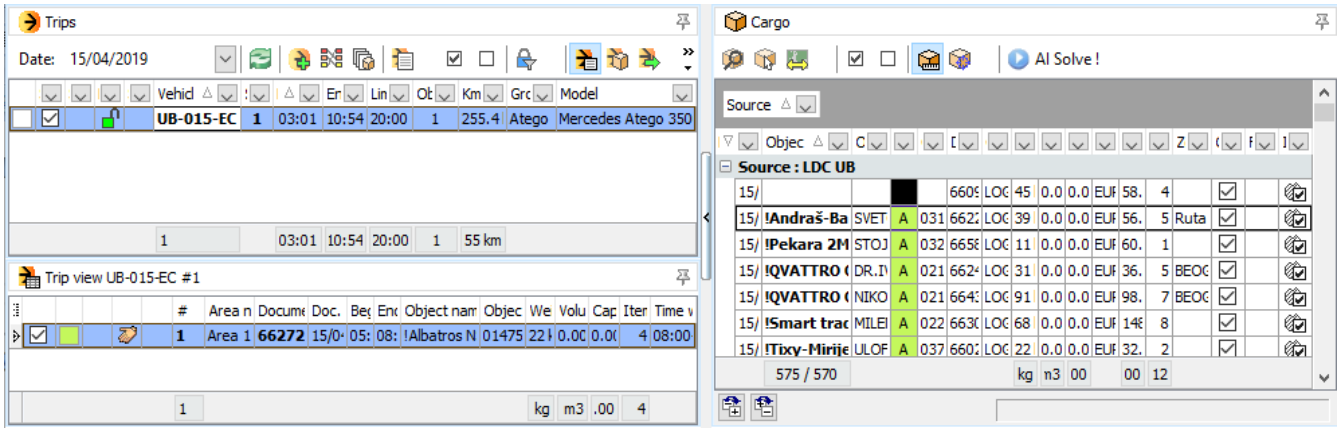
Review of a trip is a review of all documents for that trip. The items on the documents are the date of the document, estimated delivery time, type of goods, weight, volume, capacity, quantity, value of a shipment, and to which object the goods are delivered.



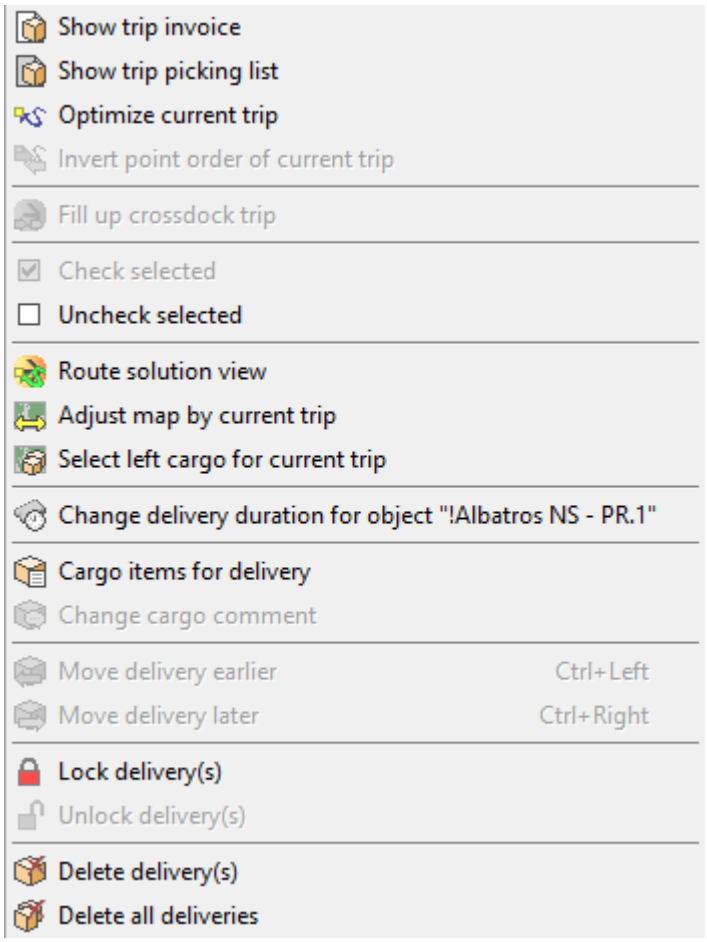
It is also possible to manually transfer documents from the list of unassigned documents to the drive.

This is done in the following way: We select the document we want from the Shipments window, hold it and drag it into the Drive Overview window.





Options after driving review: right-clicking on an item opens a menu with more options.



- Show trip invoice: opens a window with a list of goods to be loaded into the truck with their value and the total value of all goods.

- Show trip picking list: opens a window with pallets, products, PHC for the selected vehicle.

- Optimize current trip: optimizes the order of deliveries and shortens the driving distance.

- Invert point order of current trip: changes the order of the selected trip

- Fill up crossdock trip - option for filling, if crossdock trip is selected.

- Check selected: Enable selection selects the specified document

- Uncheck selected: deselects the specified document

- Route solution view: routes the driving view on the map, according to air distances or according to values from the knowledge base, which are previously set.

- Adjust the map cargo for current trip: according to the selected drive centers and marks the object on the map

- Select left cargo for current trip: Indicate other unassigned shipments for delivery points for driving indicates unassigned shipments

- Change delivery duration for object "!Albatros NS – PR.1": allows you to change the duration of delivery and the duration of waiting at the object

- Cargo items for delivery: gives an overview of the shipment items. Items are the type of goods, weight, volume, capacity, quantity, items, value of a shipment and to which object it is delivered.

- Change cargo comment: adds or changes a comment to a specific shipment

- Move delivery early: move the specified delivery to drive earlier

- Move delivery later: move the specified delivery to drive later

- Lock selected delivery(s): locks selected delivery And after that there is no more work with that delivery

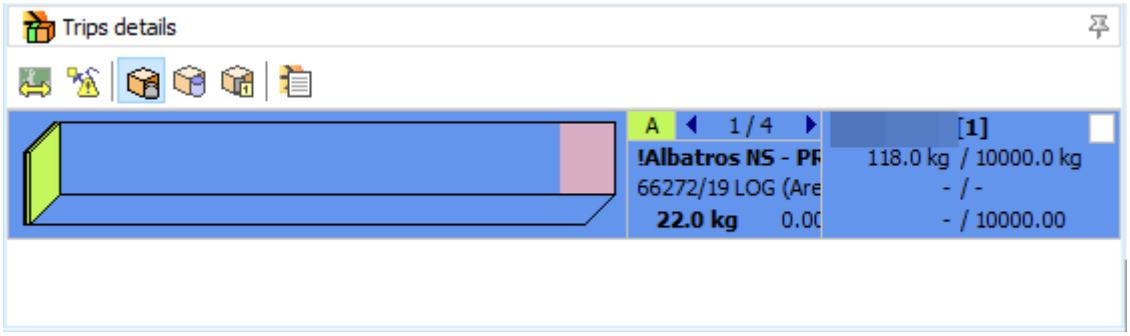
- Unlock delivery(s): unlocks delivery, only certain users have this privilege

- Delete selected delivery(s) - unloads the selected goods from the truck

- Delete all deliveries - unloads all goods from the truck

2.3 Driving details

Details of the trip is a window in which you can see a graph showing the occupancy of the cargo space, the order number of the selected document on the trip/number of deliveries on the trip. You can also see the figures related to individual deliveries and the occupancy of the cargo area.



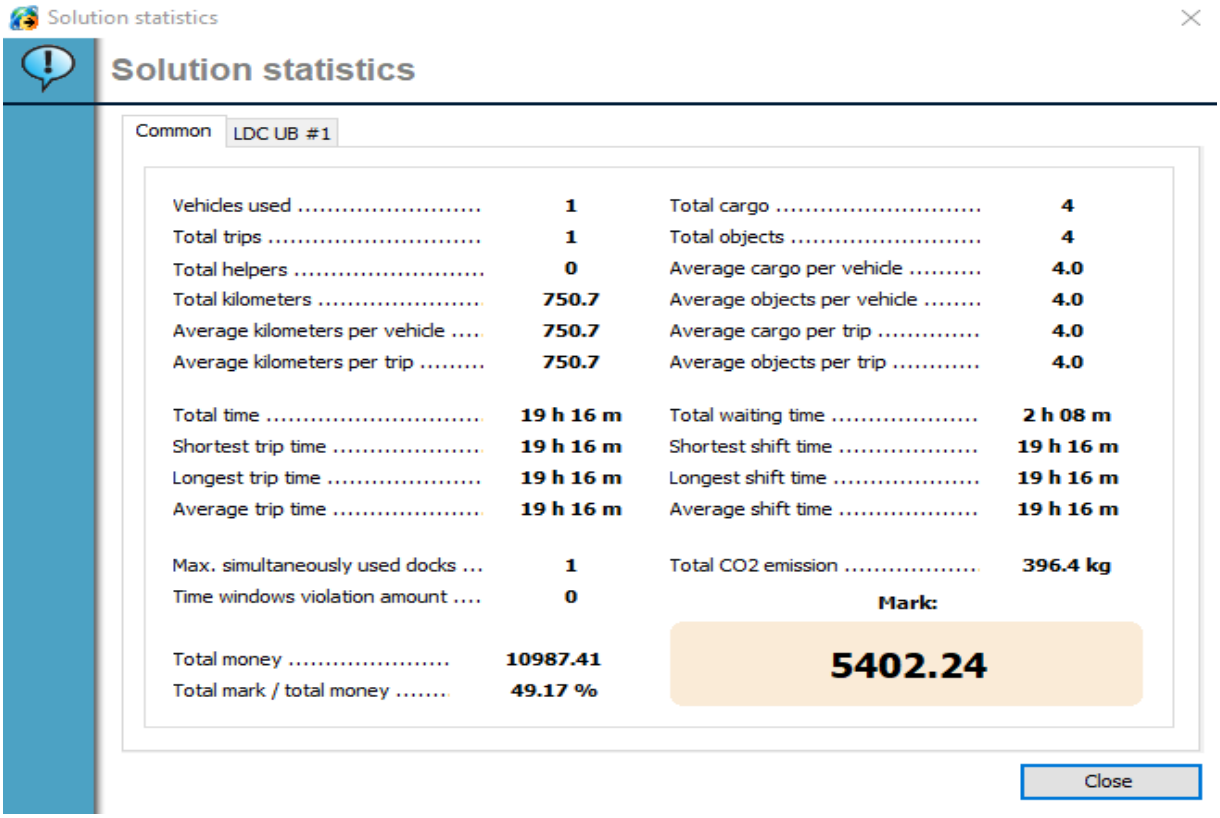
At the top of the window is a toolbar with options:

Adjust the map according to the selected route zooms the map so that you can see the entire route and the names of the delivery points to which the truck delivers the goods.

Optimize current driving optimizes the order of deliveries and shortens the driving distance.

View by weight/volume/capacity displays a graph showing data by weight, volume, capacity.

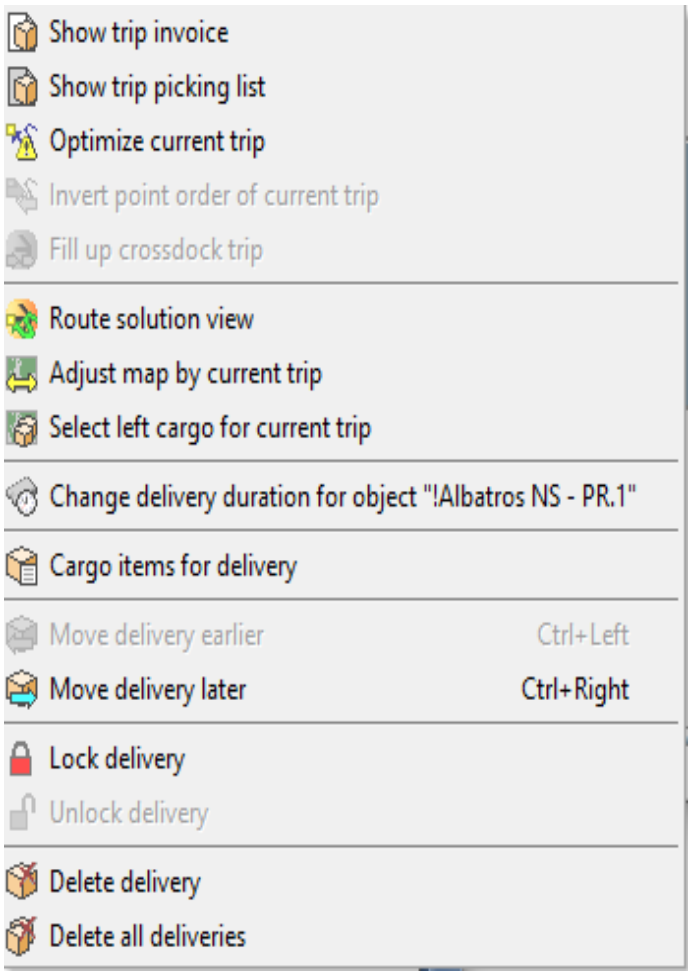
Display of solution statistics opens a window with statistical data summarized for all runs, as well as for individual LDCs.



In the mentioned window, you can see the total number of vehicles used, the total number of trips created, the total number of shipments, as well as the total number of objects, etc. When you click on the LDC card, you can see these data for individual LDCs as well.

If we want to close the specified window, click on the Close option in the lower right corner of the window, or click on the x in the upper left corner of the window.

Options after driving review: right-clicking on an item opens a menu with more options.



- Show trip invoice opens a window with a list of goods to be loaded into the truck with their value and the total value of all goods.

- Show trip picking list opens a window with pallets, products, PHC for the selected vehicle.

- Optimize current trip optimizes the delivery order and shortens the driving distance.

- Invert point order of current trip - changes the order of the selected trip

- Fill up crossdock trip - option for filling, if crossdock trip is selected.

- Route solution view - according to air distances or according to values from the knowledge base, which are previously set.

- Adjust map by current trip - according to the selected drive centers and marks the object on the map

- Select left cargo for current trip - for delivery points for driving indicates unassigned shipments

- Change delivery duration for object “Albatros NS – PR.1 - allows you to change the duration of delivery and the duration of waiting at the object

- Cargo items for delivery - gives an overview of the shipment items. Items are the type of goods, weight, volume, capacity, quantity, items, value of a shipment and to which object it is delivered.

- Move delivery earlier - early switches the specified delivery to drive earlier

- Move delivery later - later switches the specified delivery to drive later

- Lock delivery - locks the selected delivery and after that there is no more work with that delivery

- Unlocks delivery - unlocks delivery, only certain users have this privilege

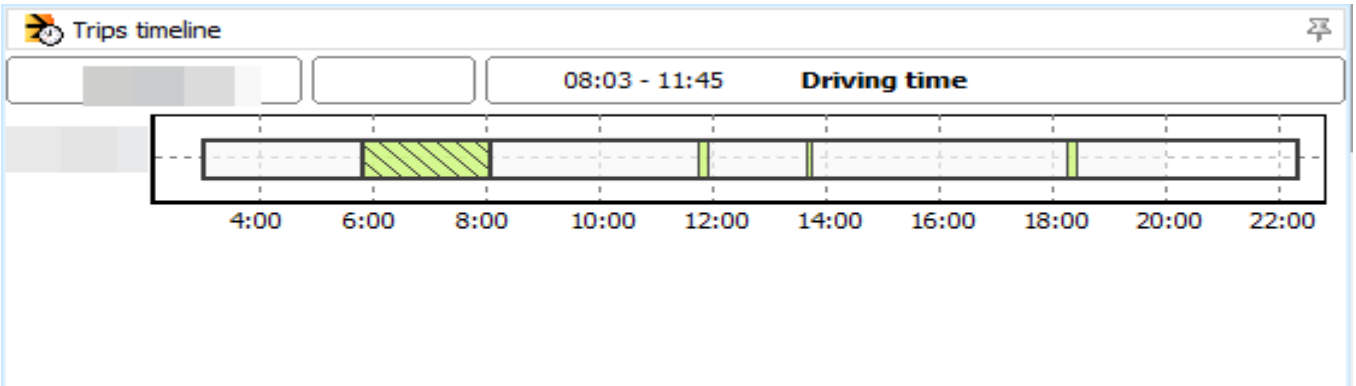
- Delete deliveries - unloads the selected goods from the truck

- Delete all deliveries - unloads all goods from the truck

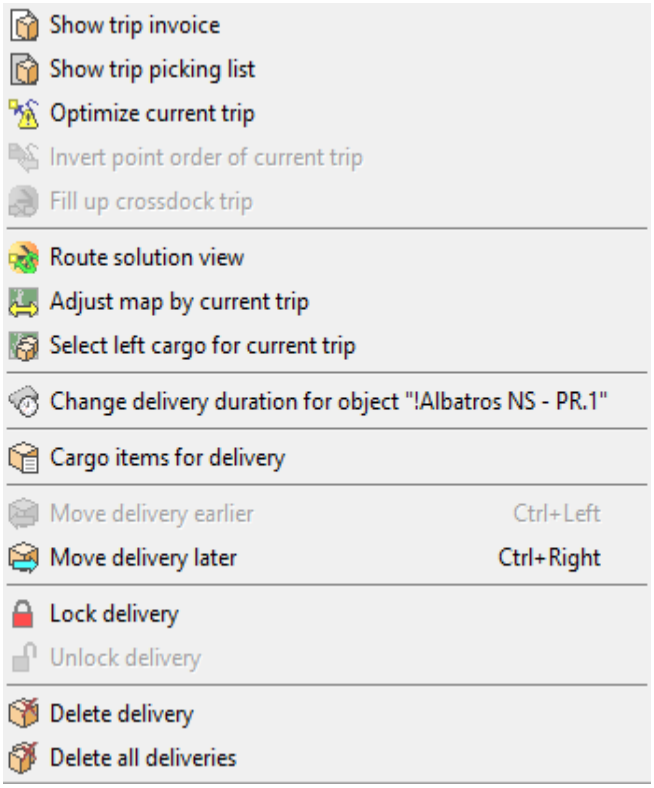
2.4 Trips timeline

The trip timeline is a window in which there is a graphical display of driving in time.

By clicking on one of the rectangles representing the delivery, the delivery location is marked on the map and at the top of the window you can see the expected delivery time and the name of the delivery location.



Right-clicking on a trip opens a menu with more options.



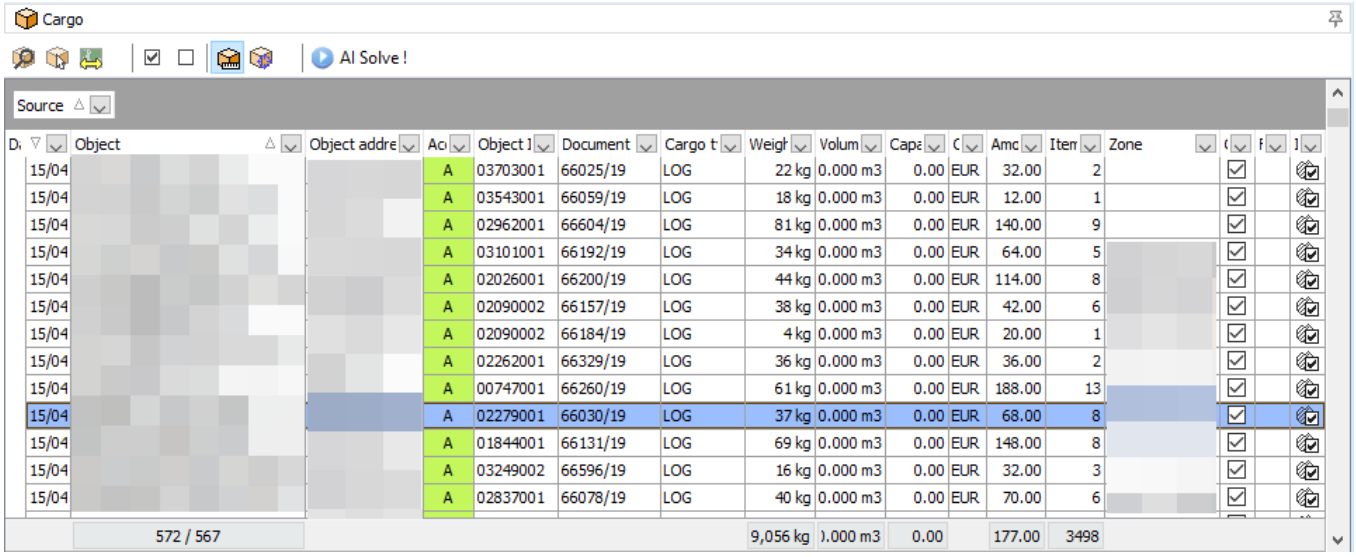
- Show trip invoice - opens a window with a list of goods to be loaded into the truck with their value and the total value of all goods.
- Show trip picking list - opens a window with pallets, products, PHC for the selected vehicle.
- Optimize current trip optimizes the delivery order and shortens the driving distance.
- Invert point order of current trip - changes the order of the selected trip.
- Fill up crossdock trip - option for filling, if crossdock trip is selected.
- Rout solution view - routes the driving view on the map, according to air distances or according to values from the knowledge base, which are previously set.
- Adjust map by current trip - according to the selected drive centers and marks the object on the map

- Select left cargo for current trip, the drive indicates unassigned shipments

- Change delivery duration for object "!Albatros NS – PR.1" - allows you to change the duration of delivery and the duration of waiting at the object
- Cargo items for delivery - provides an overview of shipment items. Items are the type of goods, weight, volume, capacity, quantity, items, value of a shipment and to which object it is delivered.
- Move delivery earlier - move the specified delivery to be driven earlier
- Move delivery later - move the specified delivery to drive later
- Lock delivery - locks the selected deliveries and after that there is no more work with that delivery
- Unlock delivery - unlocks delivery, only certain users have this privilege
- Delete delivery - unloads the selected goods from the truck
- Delete all deliveries - unloads all goods from the truck

2.5 Cargo

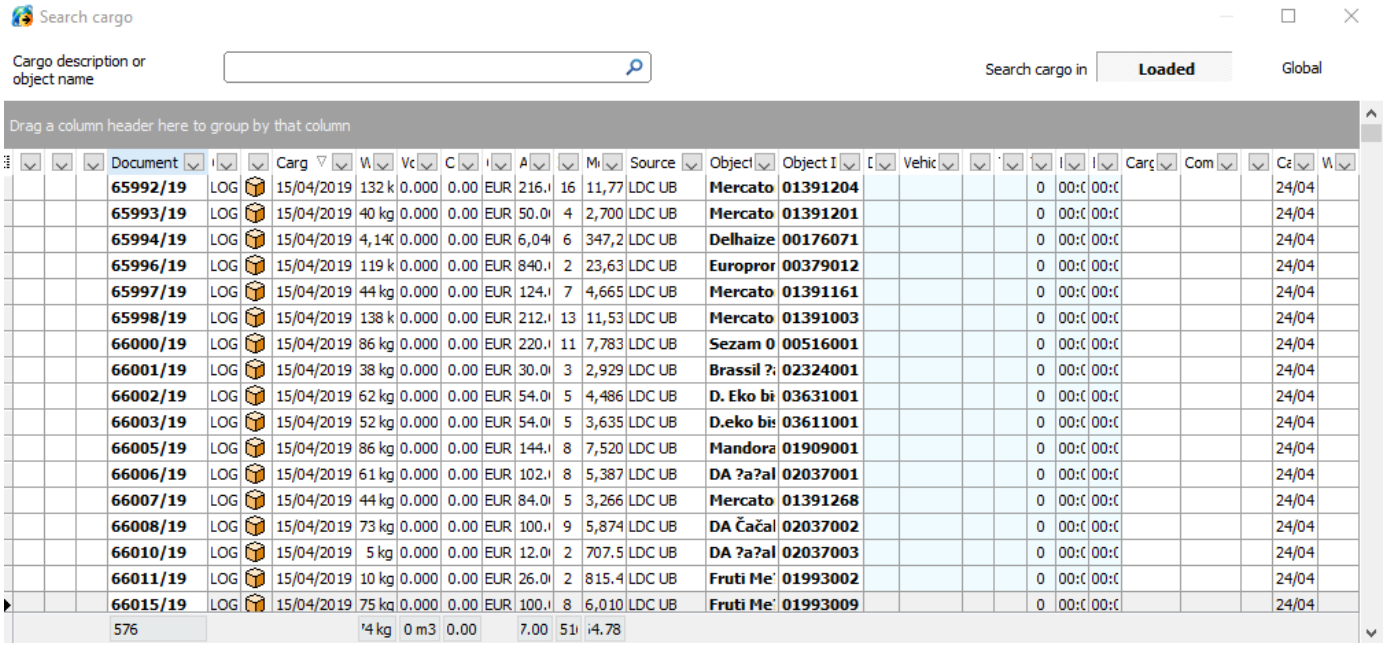
The Cargo window contains a list of unassigned documents. Near the top is a toolbar that contains:



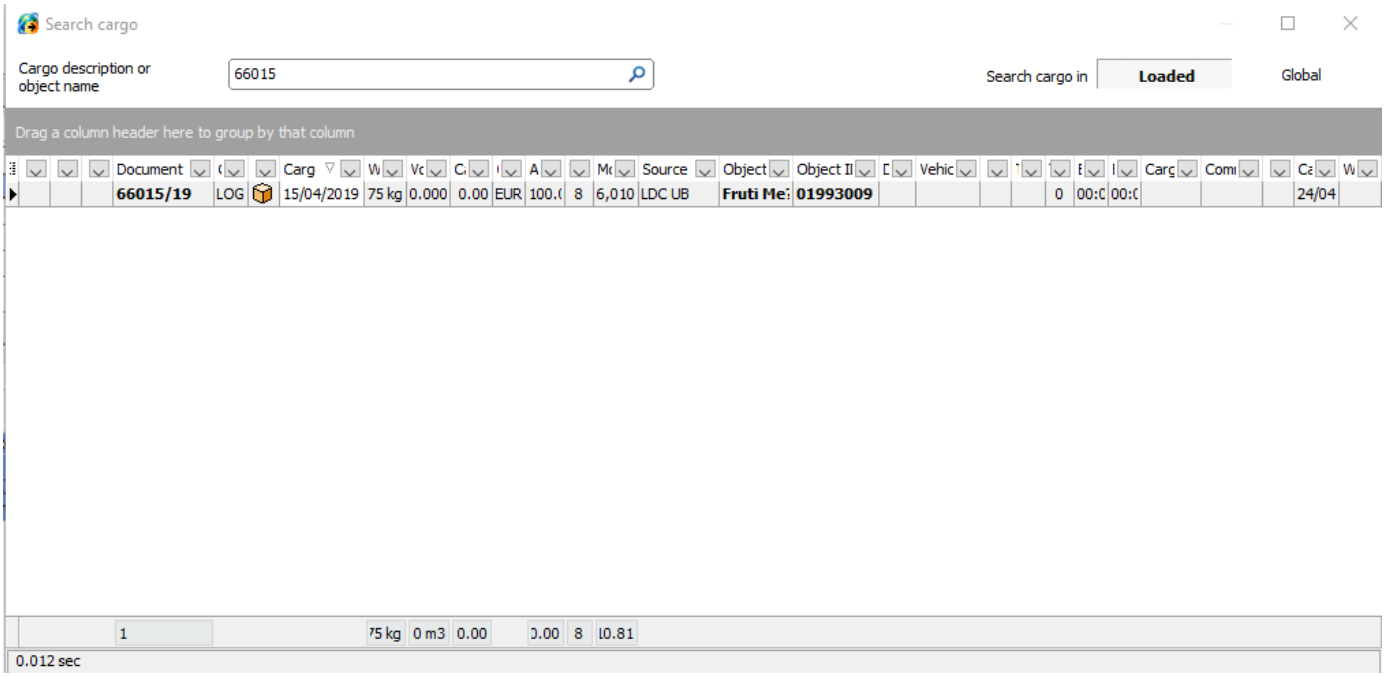
Cargo search - cargo search by cargo description or object name
Selection of cargo according to conditions - searches cargo according to weight, volume, capacity, number of items for selected subtypes of goods
Adjust Map - Centers and zooms the map for a better view
Include All - selects all documents
Deselect all – deselects all documents
Display of parameters - displays in the Shipments window according to previously defined parameters in the Schedule of columns of the overview of unassigned shipments
Display destination - provides a display in the Shipments window according to the previously defined parameters in the Schedule of columns of the overview of unassigned shipments. Basically, there are data about the code of the object, the place of the object, the address of the object, the time window of the object.
Deployment - opens the Delivery Solution window. Available vehicles are selected for each work shift. Then the number of available drivers and auxiliary workers per shift is entered. By pressing Go, the program automatically arranges deliveries by vehicle according to the given criteria and optimizes their schedule and delivery times.

Search cargo

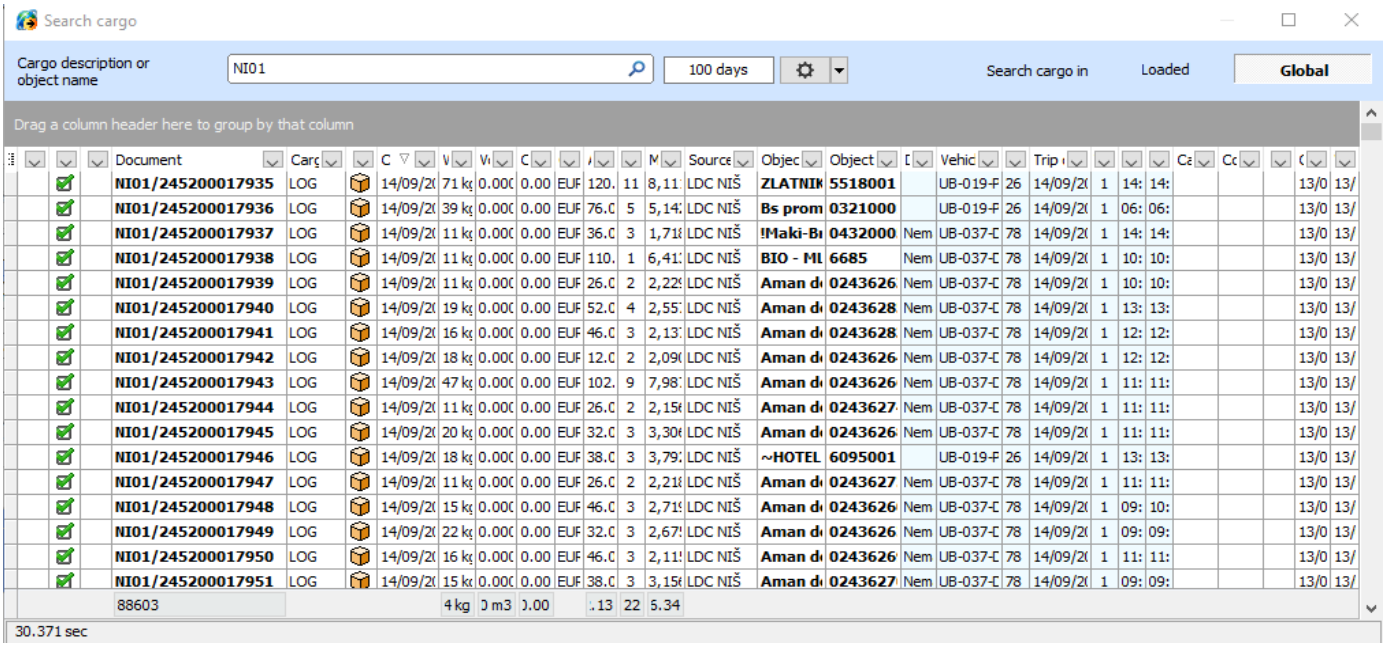
When we select the option from the toolbar for **Search cargo**, a window opens as shown in the image below.



When we enter a document or the name of an object, then click on search (magnifying glass), the requested document and object appear.



It is possible to search for the specified shipment AND globally (for multiple dates). Click on the tab: Global, then enter the specified document and click on Search (magnifying glass) and the results will appear as in the picture below.



In the above picture, we can see that the dates of the documents from 14.09.2024. In this case it shows us all the documents starting with NI01 but they are all different documents. Otherwise, one document with a unique document number may appear on more than one date, if the date of the document (shipment) changes or if the delivery for the specified document is not made and the document is returned to unassigned on another date.

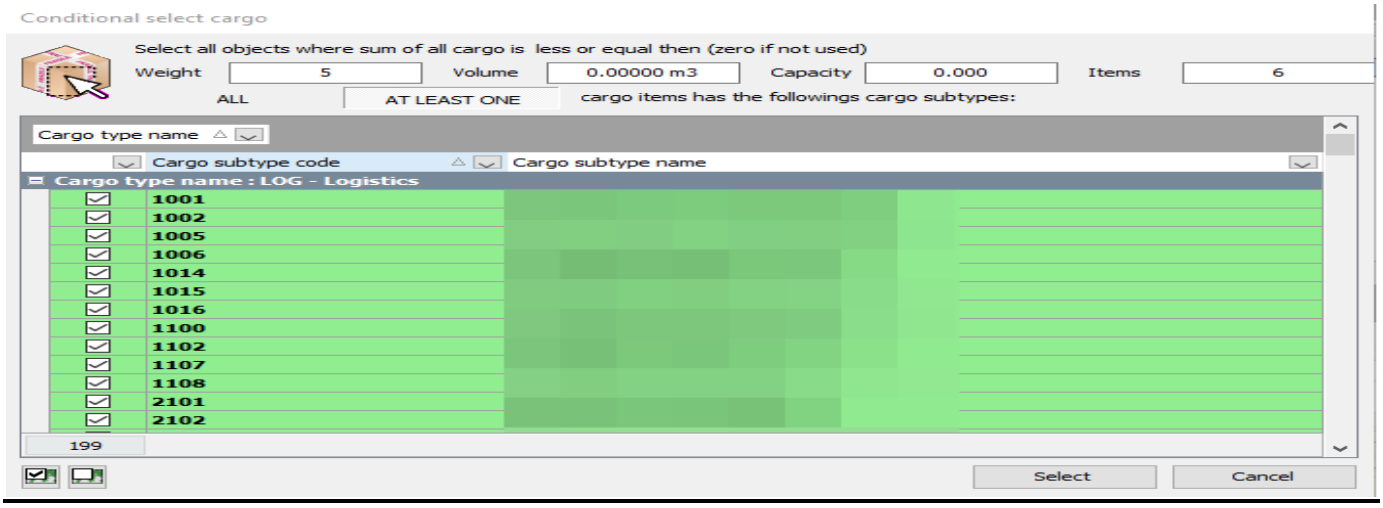
In addition, we can set the number of days for which we want to search shipments.

If we want to see the cargo items, right-click on cargo, then Show cargo details.

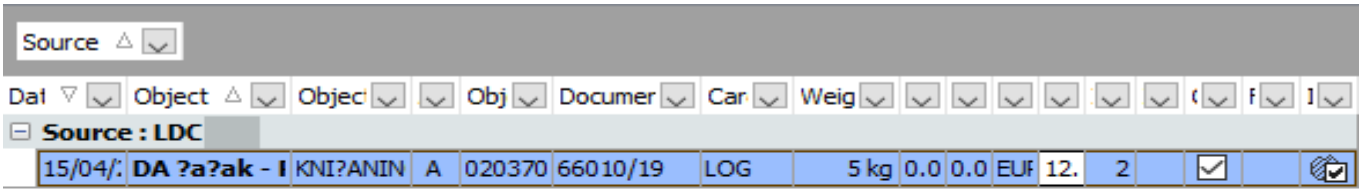
If we want to export the specified found cargo or cargo, right-click, then Export to Excel.

Conditional select cargo

It is possible to select a shipment according to the parameters of weight, volume, capacity, by selecting the type and subtype of goods.

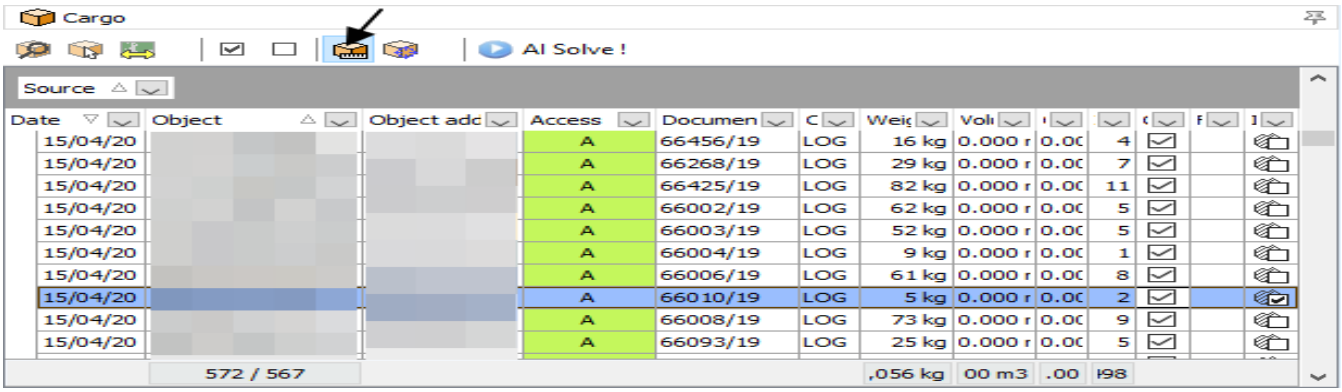


If, for example, we enter the weight: 5 kg and then click on the Selection option, it will show us all objects for which each shipment has a weight less than or equal to 5 kg in the Shipments window.



Show cargo parameters

When we select the Show cargo parameters option in the Shipments window, a window opens as shown in the image below.

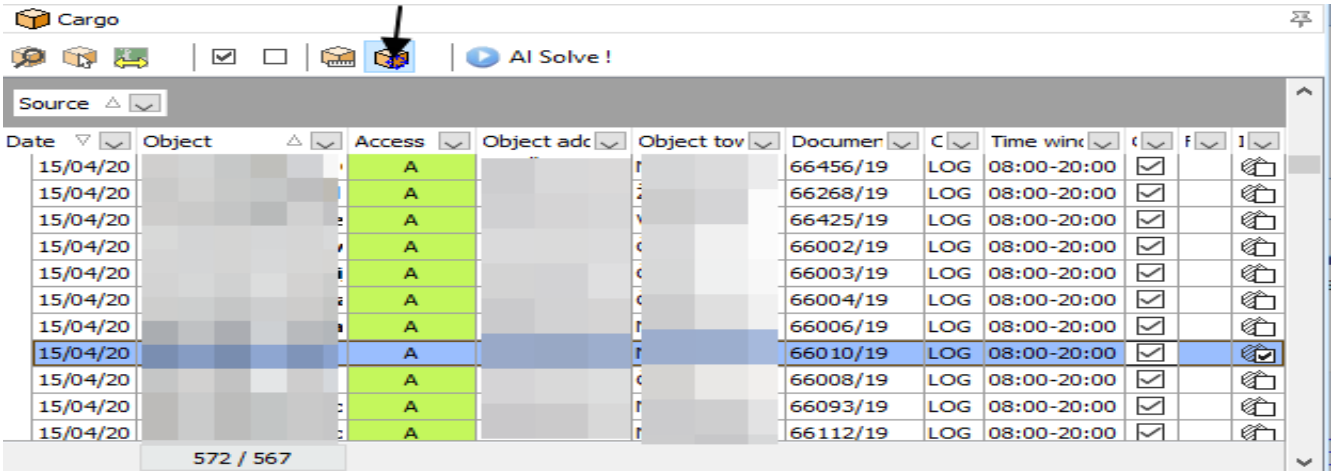


There we can see the object to which the delivery is made, the address of the object, the access of the object, document, type of goods, weight, volume, capacity.

The display of the parameters that will appear in the Cargo window can be defined in the Cargo- Setup cargo view columns.

Show cargo location

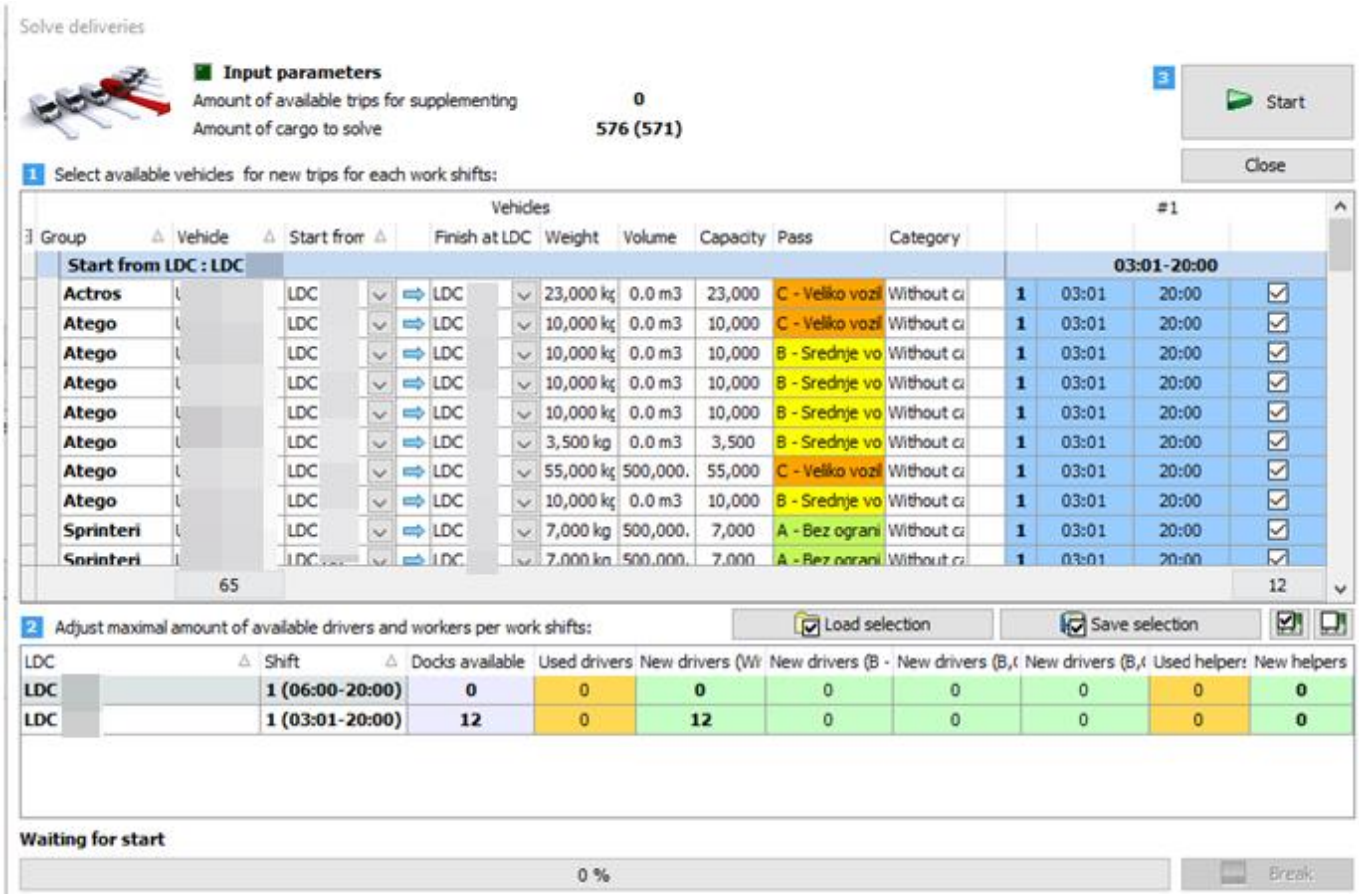
When we select the View destination option in the shipment window, a window opens as shown in the image below.



There is information about the object, the access of the object, the address of the object, the place where the object is located, as well as the time window of the object (the time of receipt of the object's goods).

The data that will appear in the Cargo window when we click on Show cargo location can be defined in the Cargo-Setup cargo view colums.

AI solve !



When we select the **Scheduling** option, the Solve deliveries window opens.

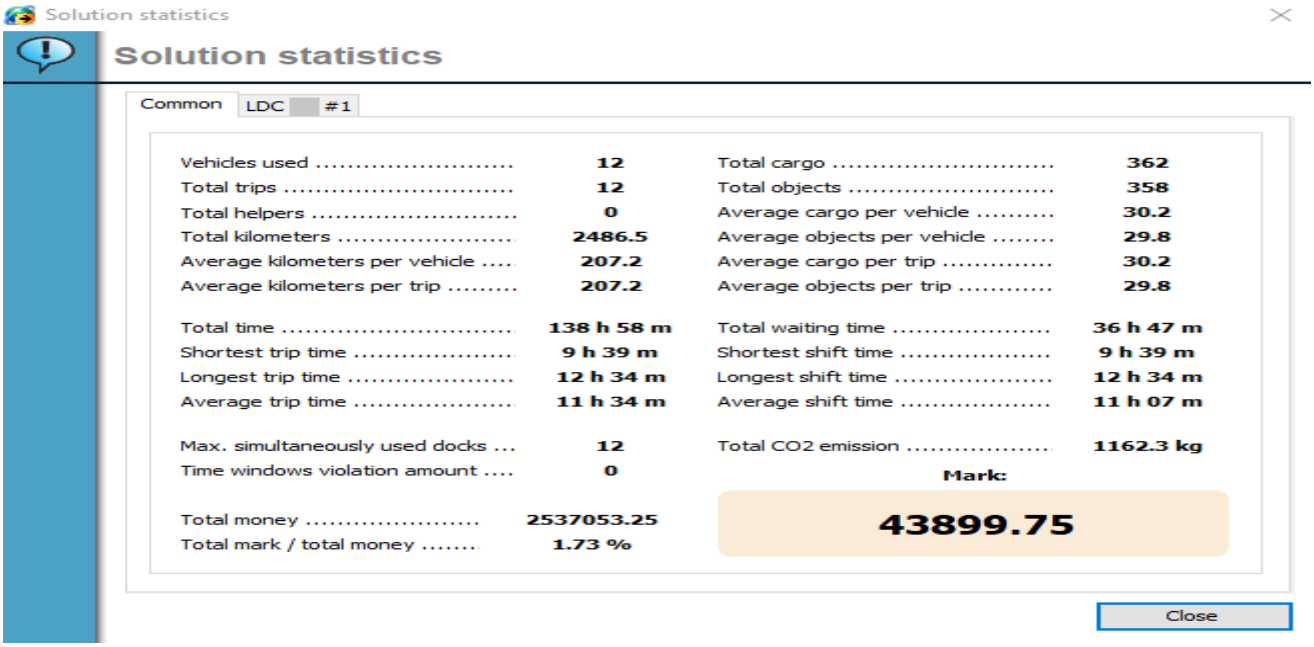
Automatic distribution of shipments consists of 3 parts: Selecting vehicles for new trips for each work shift, Selecting the number of available drivers and auxiliary workers per shift, the process of distributing shipments to trips and creating routes when we click on the Go option.

We select vehicles according to the starting warehouses for which we want to do routing. When we select the vehicles we want for, the number of available docks and the number of available drivers per shift for that starting point automatically appear in the second part. If we want, we can change these parameters and increase, for example, the number of available drivers and workers.

When we select the Go option, the process of automatic distribution of shipments begins. At the bottom of the Delivery Solutions window in the header, we can monitor how the deployment process is progressing. The process starts from Dormancy and moves to Main optimization. In the status line of the header at the bottom, we can monitor the percentage the process has reached, and in the lower right corner, we can monitor the time since the start of the deployment process in minutes:seconds.

From the process of Main optimization routine, it is transferred to the process of Saving results.

Then follows the process of Preparation for supplementing for all trips, then Suplementing-which is also the final one, after which we get a display of the Statistics of the automatic deployment solution.



In Solution Statistics, when we click on the Common tab, we see data on how many vehicles were used in routing, total number of trips, total auxiliary workers, total kilometers, average kilometers per vehicle, average kilometers per vehicle, average kilometers per trip. In addition, there are data on the total duration of the trip, the duration of the shortest trip, the duration of the longest trip, as well as the average duration of the trip.

We also see data on the maximum number of simultaneously used docks, the number of deliveries outside working hours.

In addition to this data, you can see data on the total number of distributed shipments for that day, total routed objects, average routed shipments per vehicle, average routed objects per vehicle, average shipments per trip, average objects per trip.

You can see data on waiting time, the shortest shift duration, the longest shift duration, as well as the average shift duration.

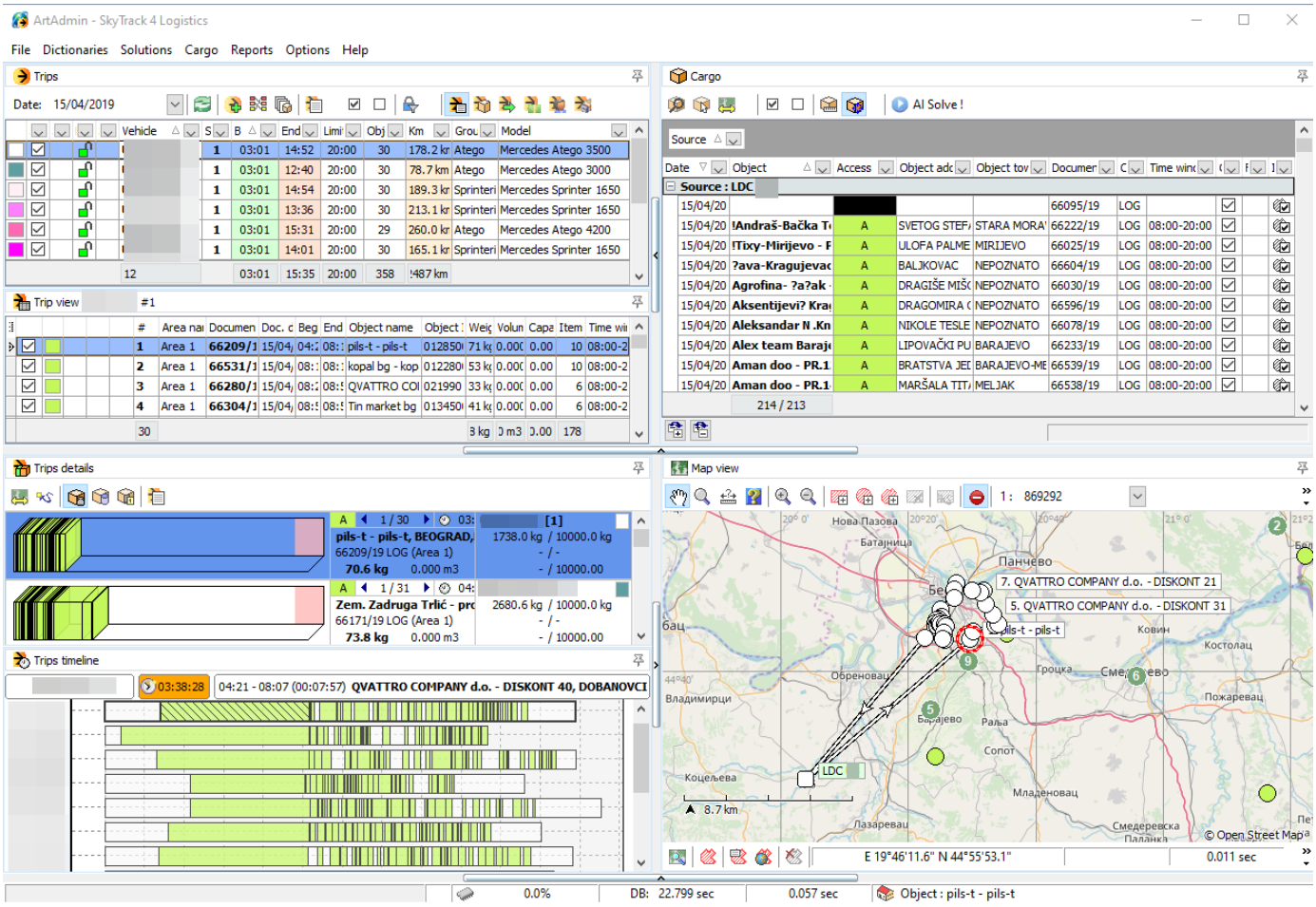
In addition to this data, we can see the rating data for all trip(s).

All this information can also be seen for individual LDCs, when we click on the LDC tab in Solution Statistics. In this case, click on the Granary #1 tab.

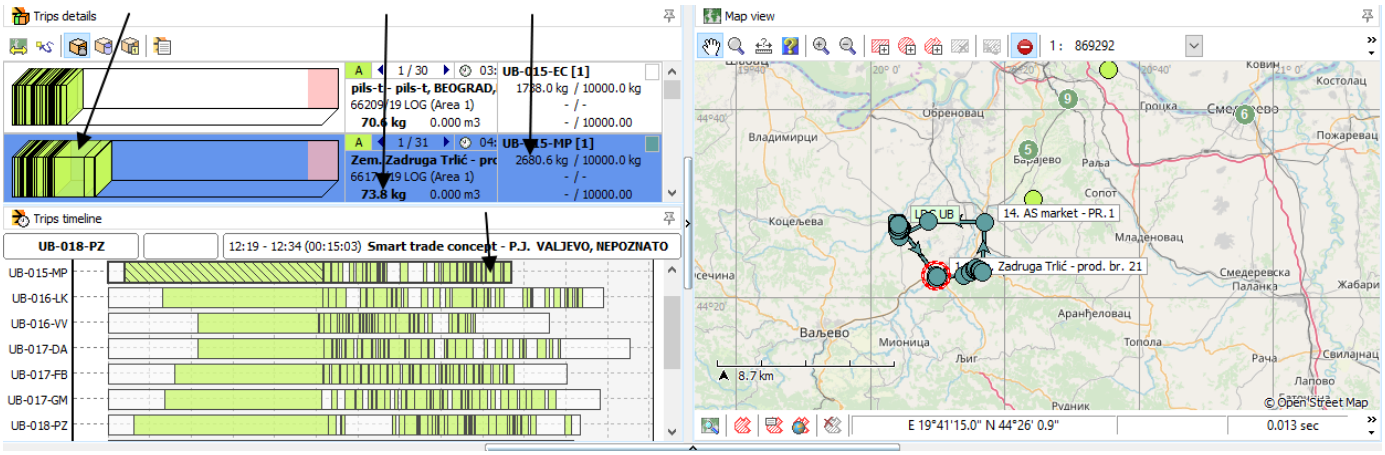
When we close this window by clicking on the Close option, we can see the solution for the automatic distribution of shipments in the driving, shipment and map windows.

In the Trips window we see 12 runs for 12 different vehicles.

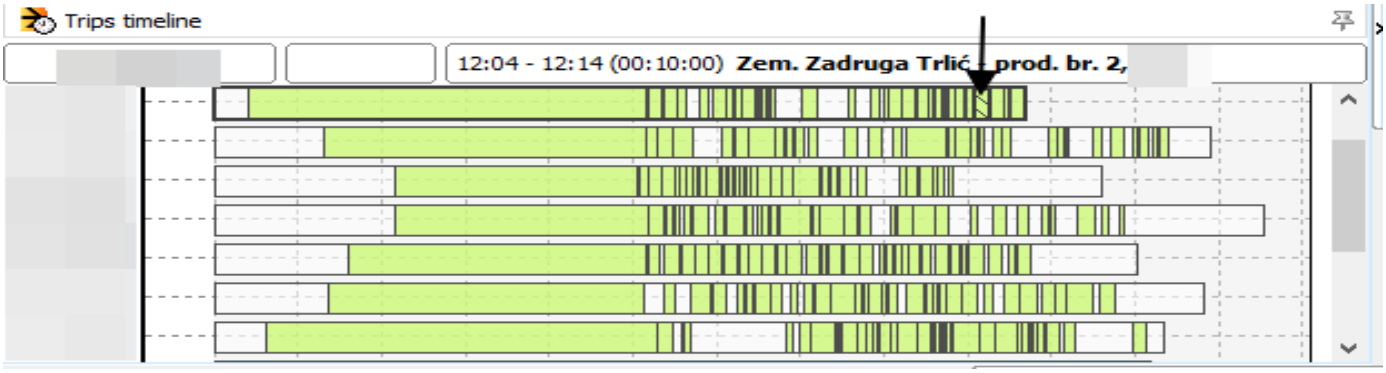
When we click, for example, on another run, a list of shipments for the specified run opens in the Run Overview window. When we click on the first document from the list, the specified object (marked with a red circle) to which the shipment is delivered appears on the map.



In addition, in the Trip Details window, a 3D graphic appears showing the occupancy of the cargo space of the trip, as well as how much individual shipments occupy the occupancy of the trip.

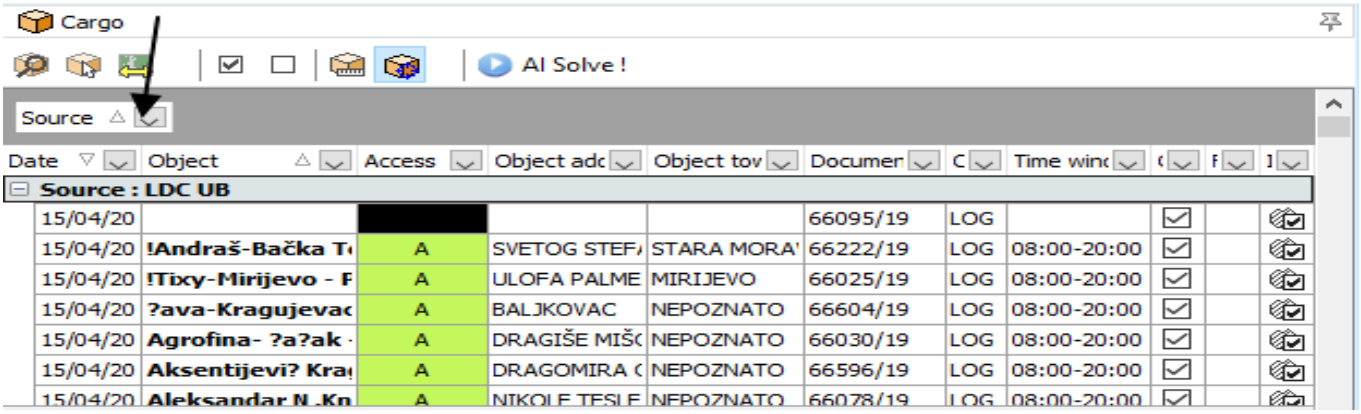


For the selected shipment, in the Driving Timescale window, we see the planned delivery time marked on the graph (black rectangle in the image below). By clicking on the rectangle that represents the delivery, the place of delivery is marked on the map and at the top of the window you can see the expected delivery time and the name of the place of delivery.

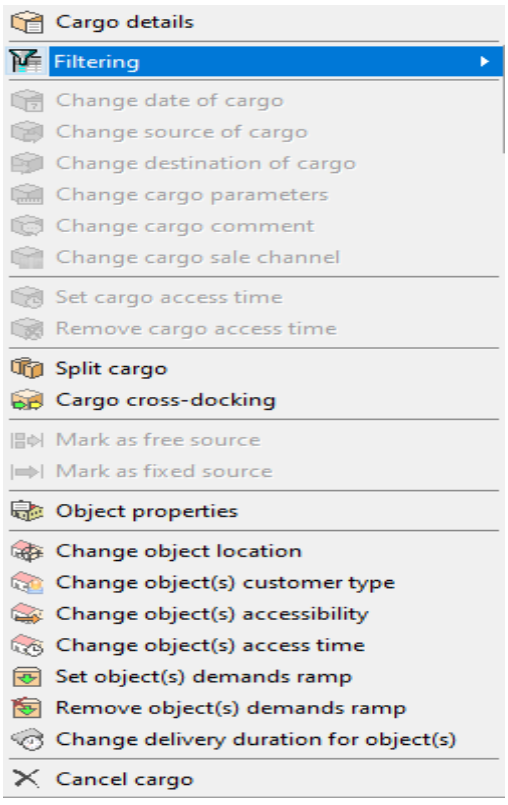


Objects and shipments

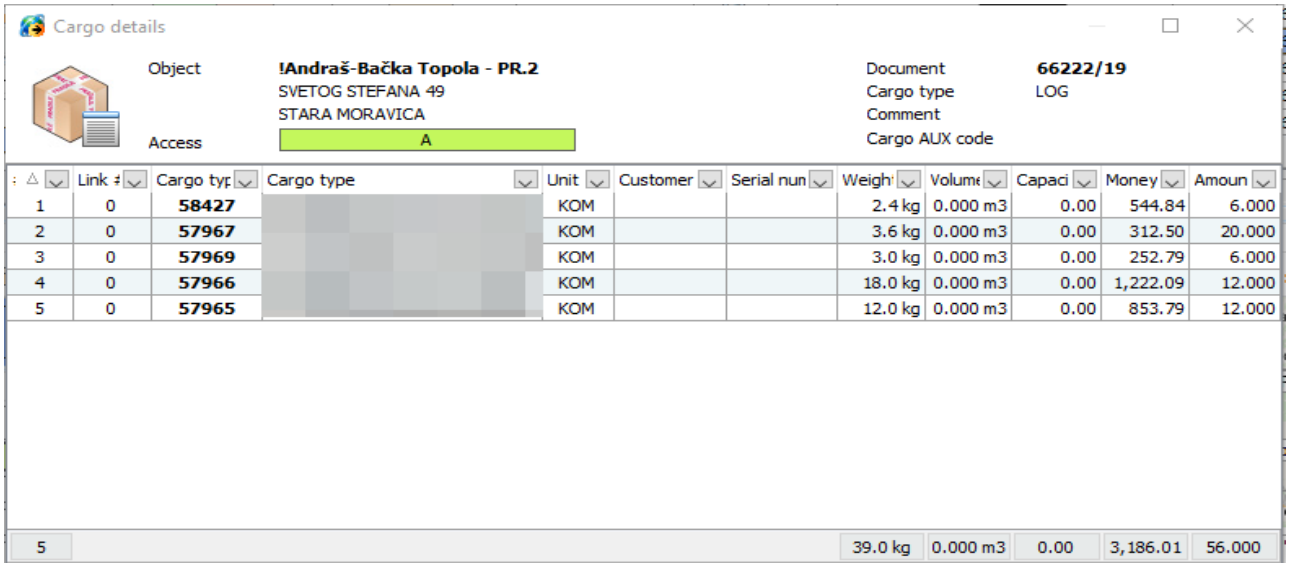
By selecting the Source option from the drop-down menu, it is possible to select the LDC source, from which we want to see unassigned objects and documents for that date.



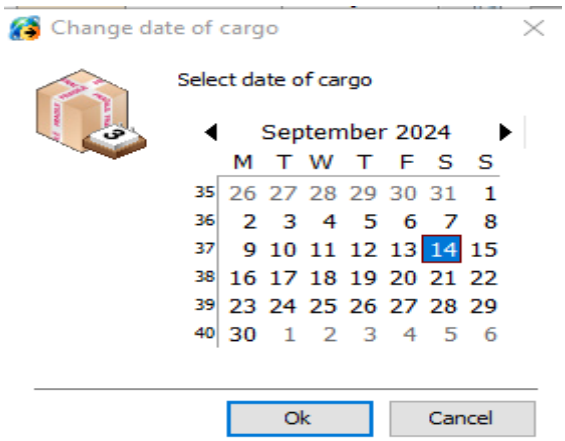
When we right-click on a document/object, a menu with several options opens.



When we select the **Cargo details** option, the window below opens.



When we select the **Change shipment date** option, the window below opens.



There it is possible to transfer the selected shipment (document) to unassigned on another date. By clicking on Ok, we confirm the change we make, and by clicking on Cancel, we cancel the change of date for the shipment.

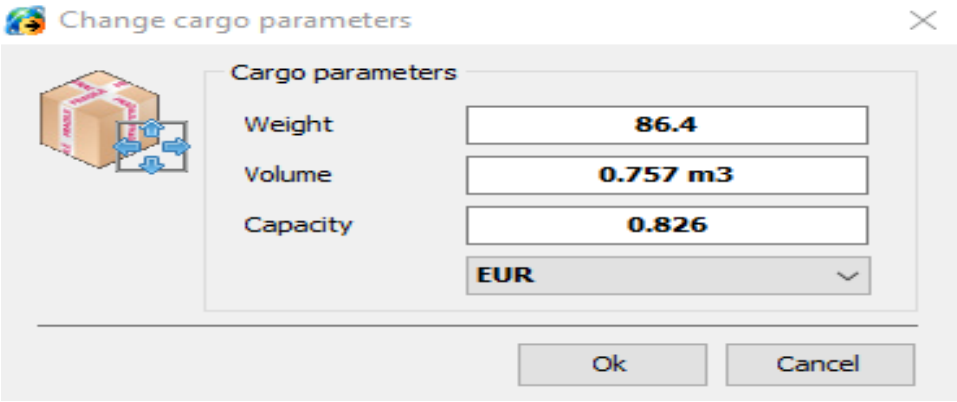
When we select the **Change source of cargo** option, the window below opens.

There it is possible to change the source of the shipment (document). By clicking on Ok, we confirm the change we make, and by clicking on Cancel, we give up on changing the source of the shipment.

When we select the **Change destination of cargo** option, the window below opens. When, for example, we enter the name of the object: PLODINE in the search field, a whole list of objects opens to us where we can set the destination of the specified shipment.

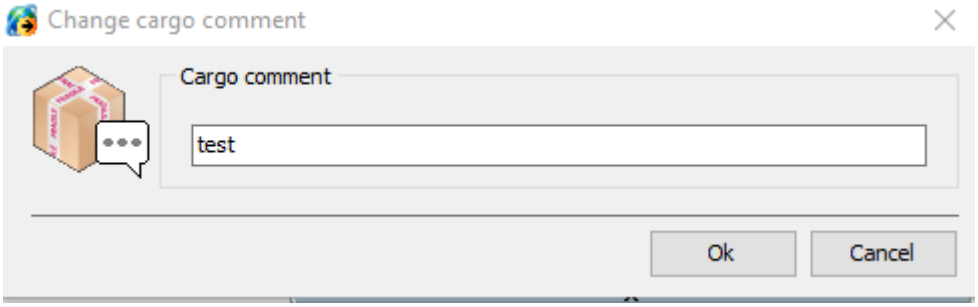
By clicking on Ok, we confirm the change of shipment destination if we are 100% sure, otherwise we will click on the Cancel option.

When we select the **Change cargo parameters** option, the window below opens.

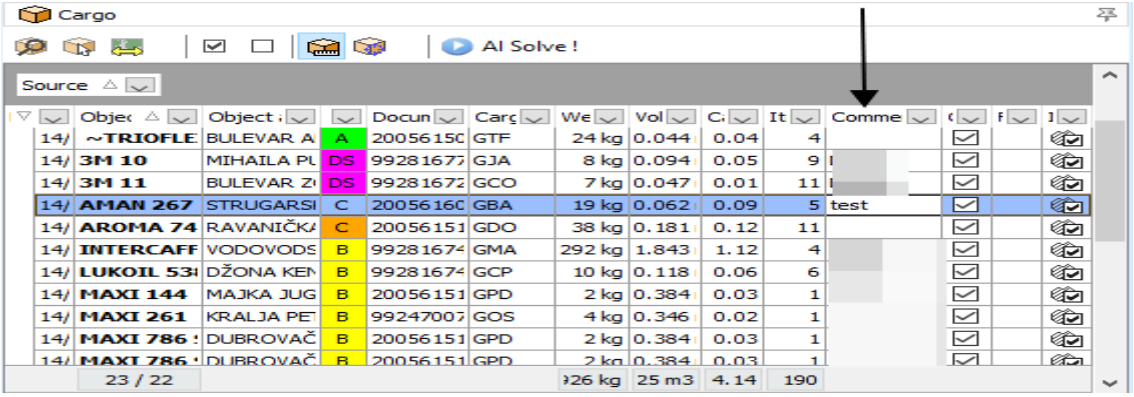


There it is possible to change the weight of the shipment, the volume of the shipment and the capacity of the shipment, as well as the type of capacity unit.
After making the changes, if we click on Ok, the specified changes become visible for the specified shipment in the Shipments window. If we change our mind about the changes for the specified shipment, then click on the Cancel option.

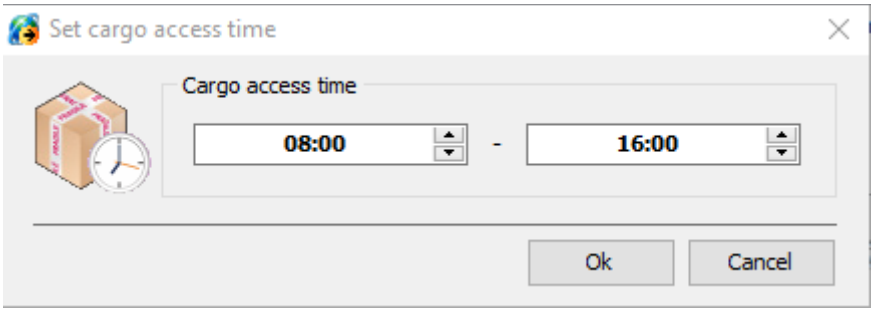
When we select **Change shipment comment**, it is possible to add a comment for the specified shipment.



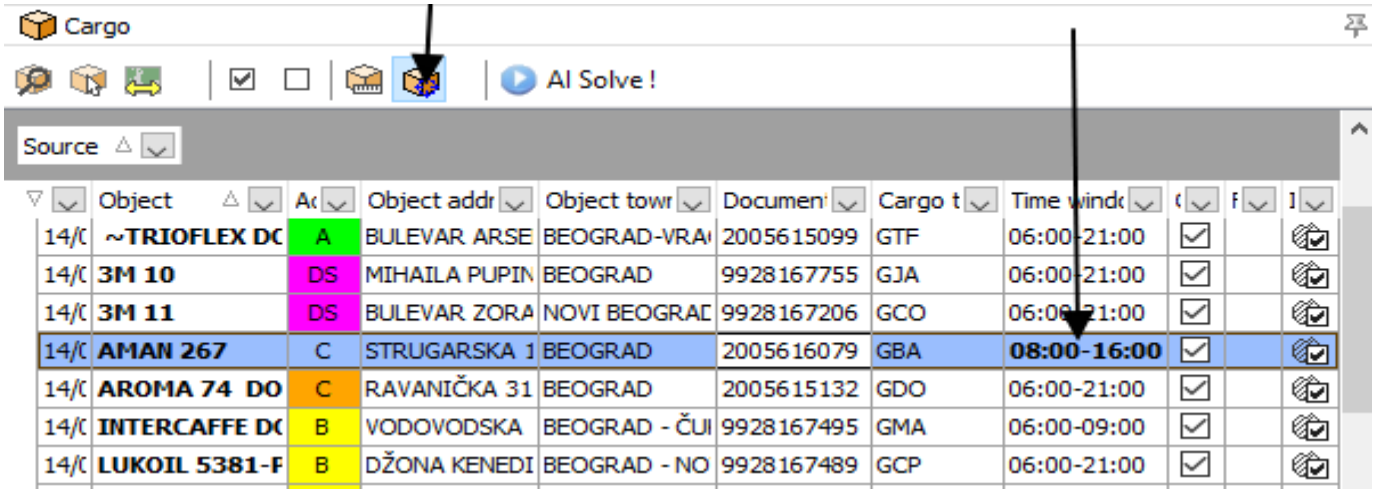
If we click OK, the specified shipment comment will be visible in the Comment column in the shipment window. If you change your mind about adding a comment, then click Cancel.



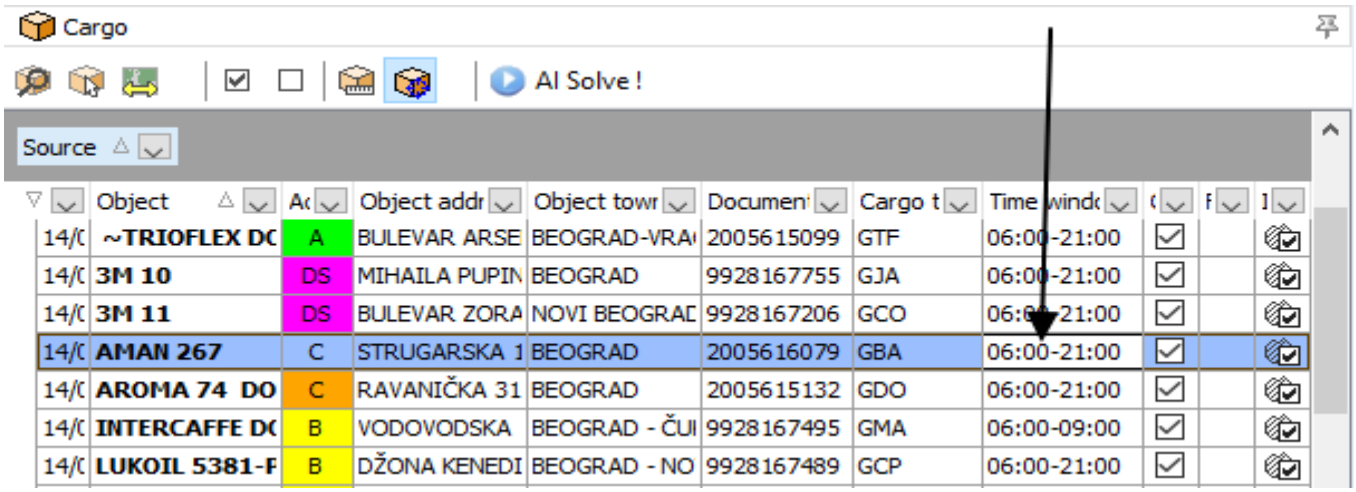
When we select **Set cargo access time**, the window below opens.



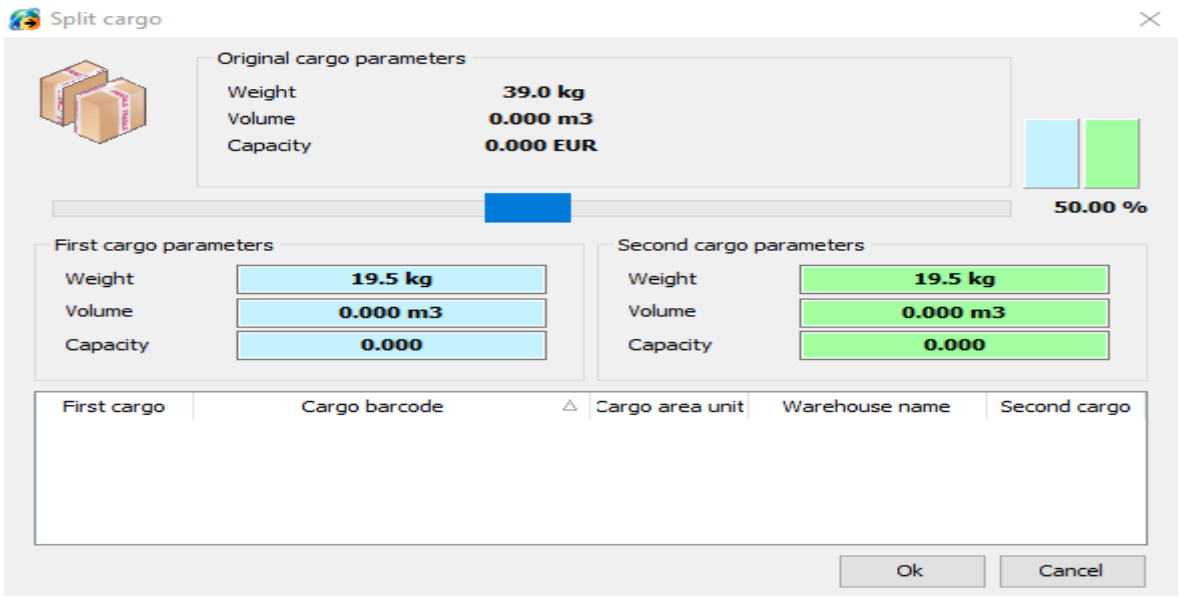
There it is possible to change the time of receipt of goods. If we click on Ok after the change, the change will be visible when we click on Display destination in the toolbar of the Shipments window.



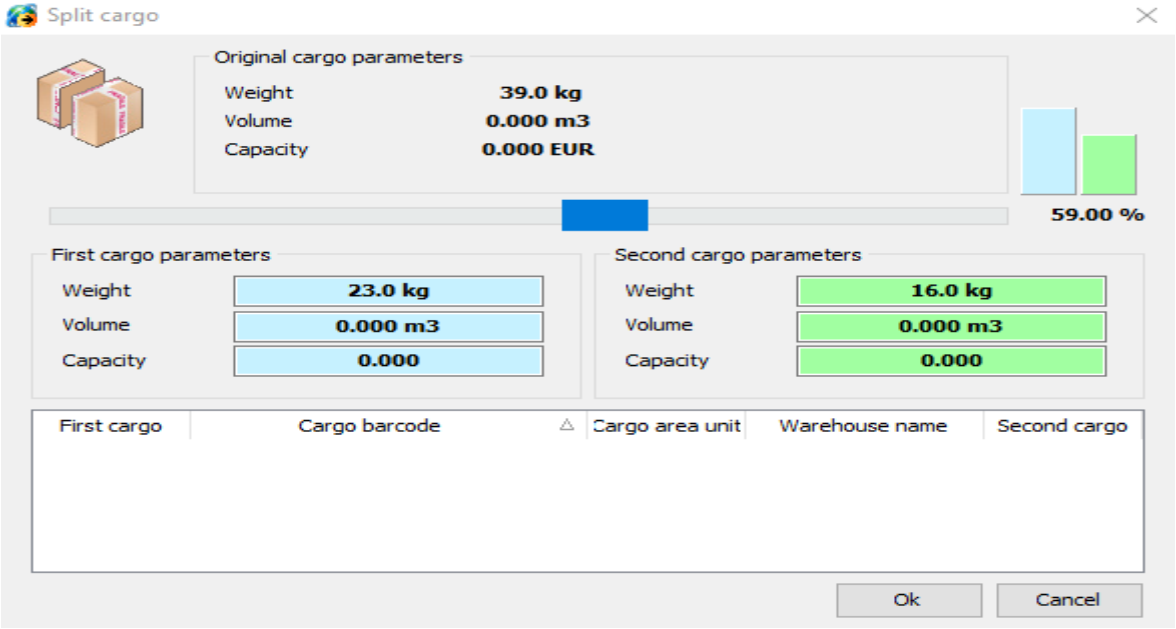
When we select the option **Remove cargo acces time**, the goods receipt time is returned to the one that was originally set. The change will be visible when we click on View destination in the toolbar of the Shipments window.



When we select the **Split cargo** option, the window below opens.

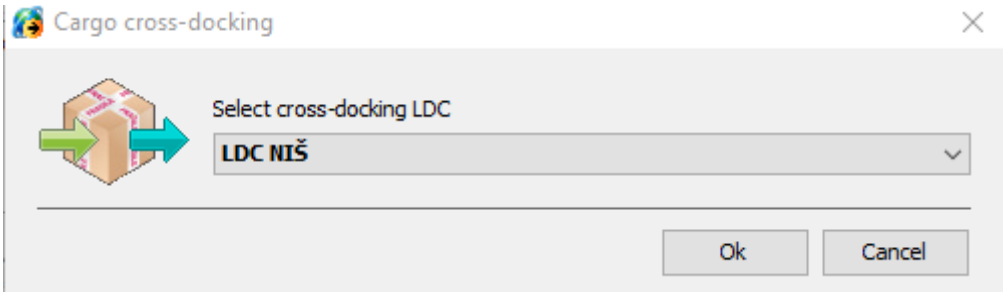


We have a defined weight of 39kg for this shipment. It is possible to make 2 shipments from it, by distributing the weight by moving the slider to the left or right, or by manually entering the weight in the fields for the first shipment and for the second shipment.



If we click on Ok after the change, the change will be clearly visible when we click on Show cargo parameters in the toolbar of the Cargo window. If we click on Cancel, we abandon the specified changes.

When we select the Cross-docking LDC option, the window below opens.



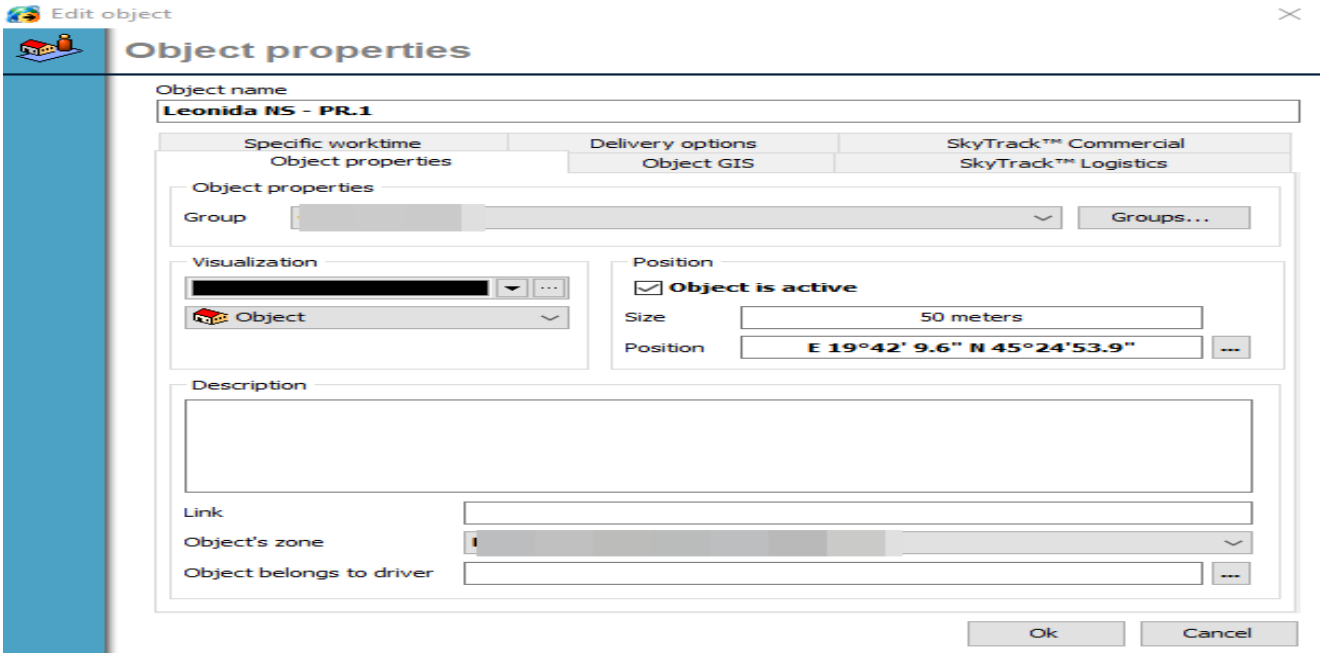
From the drop-down list, it is possible to select the cross-docking LDC for the specified shipment. When we click on Ok the change will be saved. If we click on Cancel, we abandon the specified changes.

When we select the **Mark as Free source** option, a free source is added, which becomes visible when clicking on Display parameters and Display destination, in the Shipments window.

When we select the **Mark as Fixed source** option, the fixed source ceases to be visible when clicking Show cargo parameters and Show cargo location, in the Cargo window.

Object properties

When we select the **Object properties** option, the Object Properties window opens. By default, the **Object properties** tab is displayed.

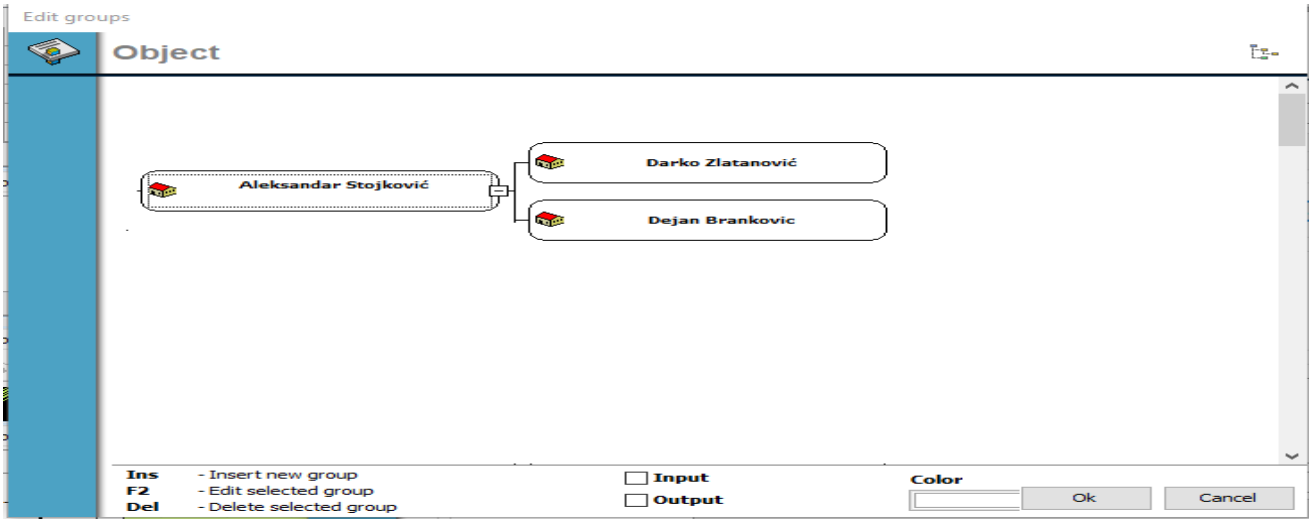


Object settings

On the **Object Settings** tab, we can make object settings, set the object display and location, enter a description for the specified object, enter a link, assign a certain zone to the object, associate a certain driver with the object.

Object settings

In this section, it is possible to select the object group it belongs to from the drop-down list. By clicking on the Groups option in the right part, the Edit Groups window can be opened.



In this section, it is possible to add a new group of objects by clicking Ins from the keyboard. By clicking on F2, it is possible to change the previously selected (selected) group. By clicking Del from the keyboard, it is possible to delete the previously selected (selected) group - if we are 100% sure.

In addition, for the selected group, it is possible to set whether it is input or output, or both, by clicking on these options. It is possible to adjust the color by choosing from the drop-down list of colors or by adding a new one by clicking on the three dots.

If we want to save the changes we made, click on the Ok option, and if we don't, click on Cancel.

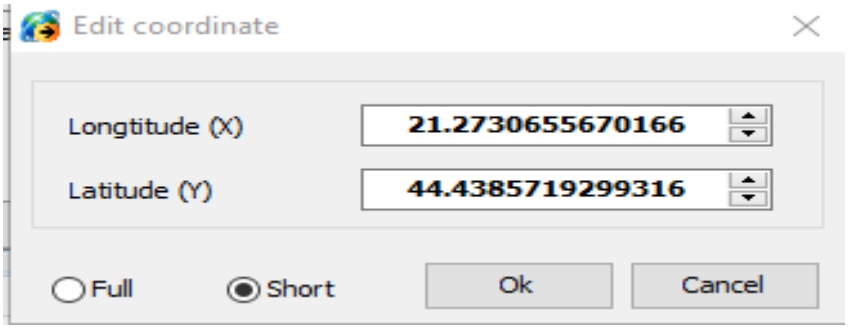
Display

In this section, it is possible to change the color of the object's display, the icon symbolizing the object.

Location

In this section, it is possible to set whether the specified object is active or not. It is possible to set the radius of the object size in meters. In addition, in the Location field we see the object's geocoordinates.

If we want to change the geocoordinates of the object, click on the option with three points - the window below opens.



Edit coordinate - Geocoordinates for objects can be found on Google Maps, if we know the address for that object or the exact name of the object. When we find the geocoordinates for the object, we can enter it in the specified Longitude (X) and Latitude (Y) fields.

By clicking on Ok, we confirm the given entry of geocoordinates and they become visible in the Location field. If we still give up on entering the geocoordinates, then click on Cancel.

Description

In the description section, we can enter any description for the specified object.

Connection

In the links section, it is possible to enter a link to an object, web page, etc.

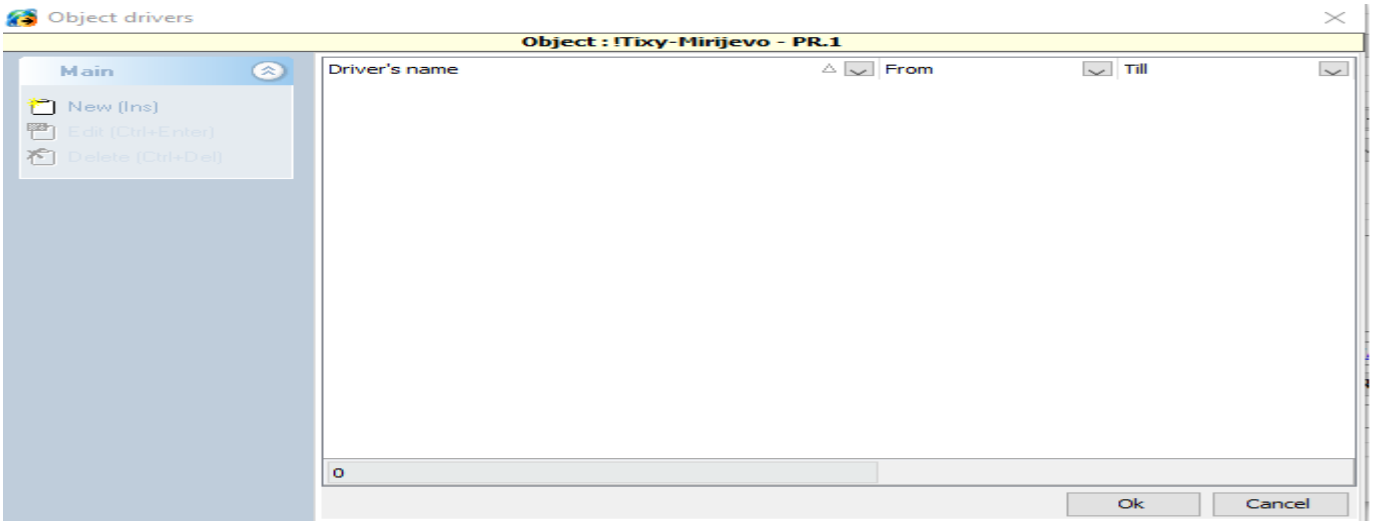
Zone of the object

In this section, it is possible to assign a certain zone to the selected object.

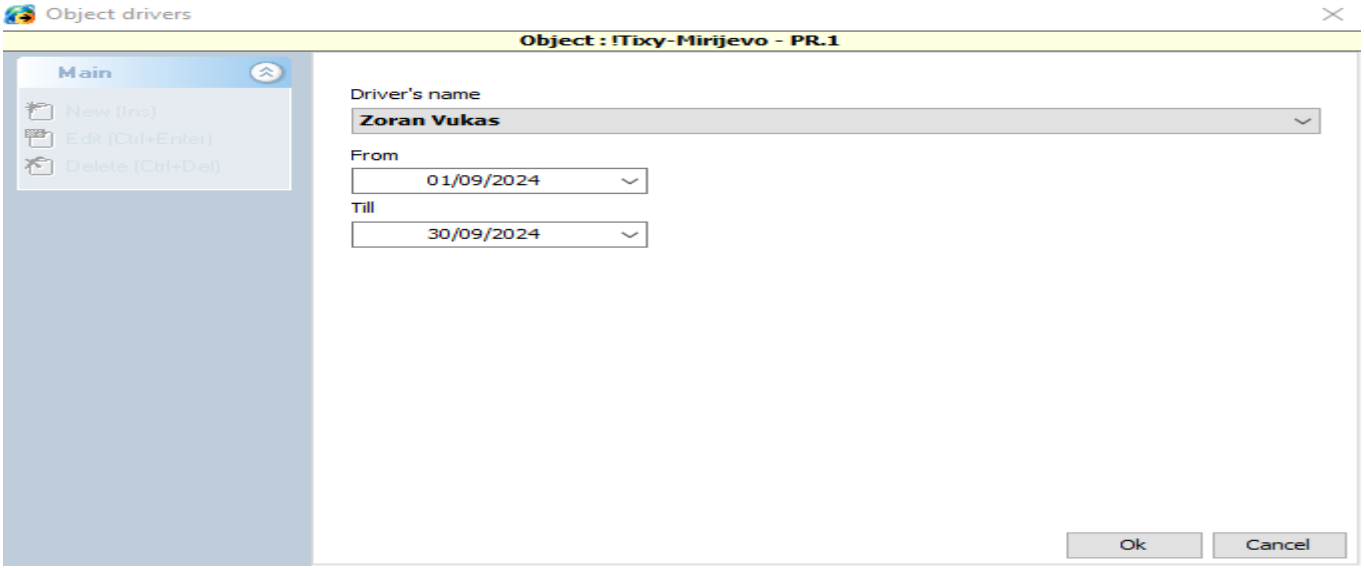
Object belongs to driver

In this section, it is possible to associate a specific driver for the specified object.

When we click on the three dots, the window below opens.

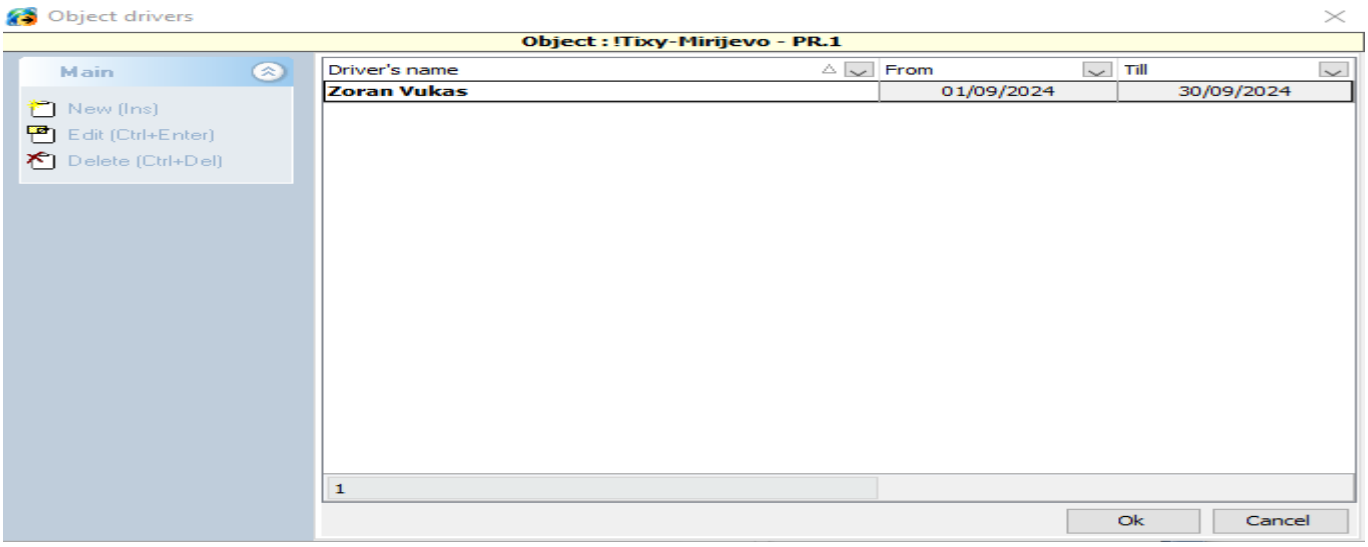


When we click on the New option in the upper left corner of the window Drivers attached to the object, the window below opens.



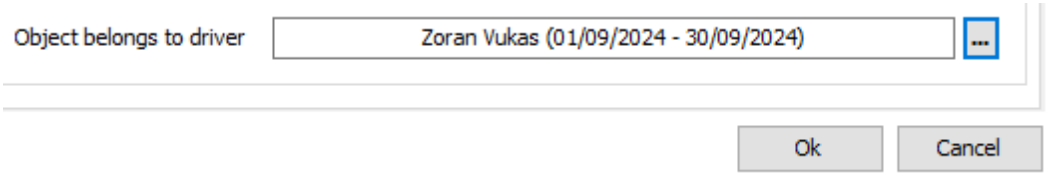
From the drop-down list, it is possible to select the driver we want to associate with the specified object. In addition, it is possible to select the period from when the driver is attached to the specified object, to when he is attached to the specified object.

If we click on OK, we associate the driver with the specified object in the period for which we have selected - the window below. If we click on Cancel, we abandon the changes.



In a similar way, we can add more drivers to the same object by clicking New in the upper left corner of the window. If we want to make changes for the added driver, click on the Change option. If we want to delete the association of a specific driver - select the driver and click on the Delete option.

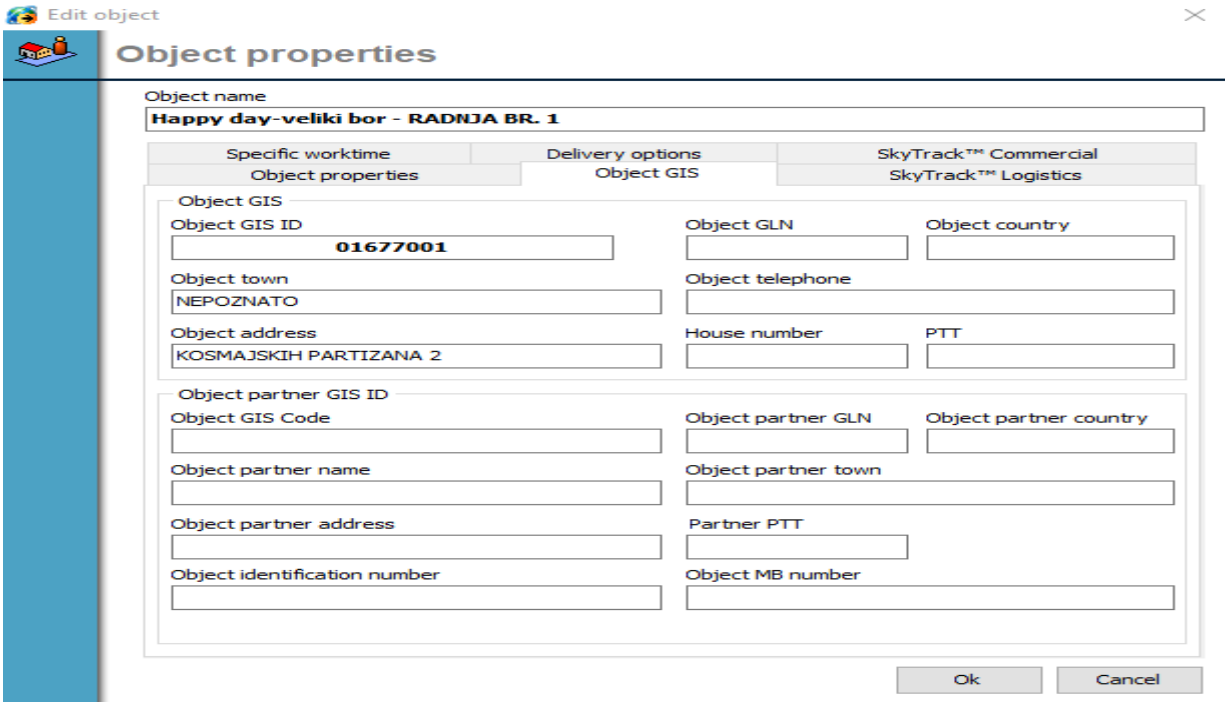
If we are sure about joining one driver/several drivers to the specified object, click on Ok and the window below will open. If not, click on the Cancel option and none of the above changes will be visible.



When we repeat Ok the specified driver will be associated with the specified object. If not, click on Cancel and the specified changes will not be saved.

Object GIS

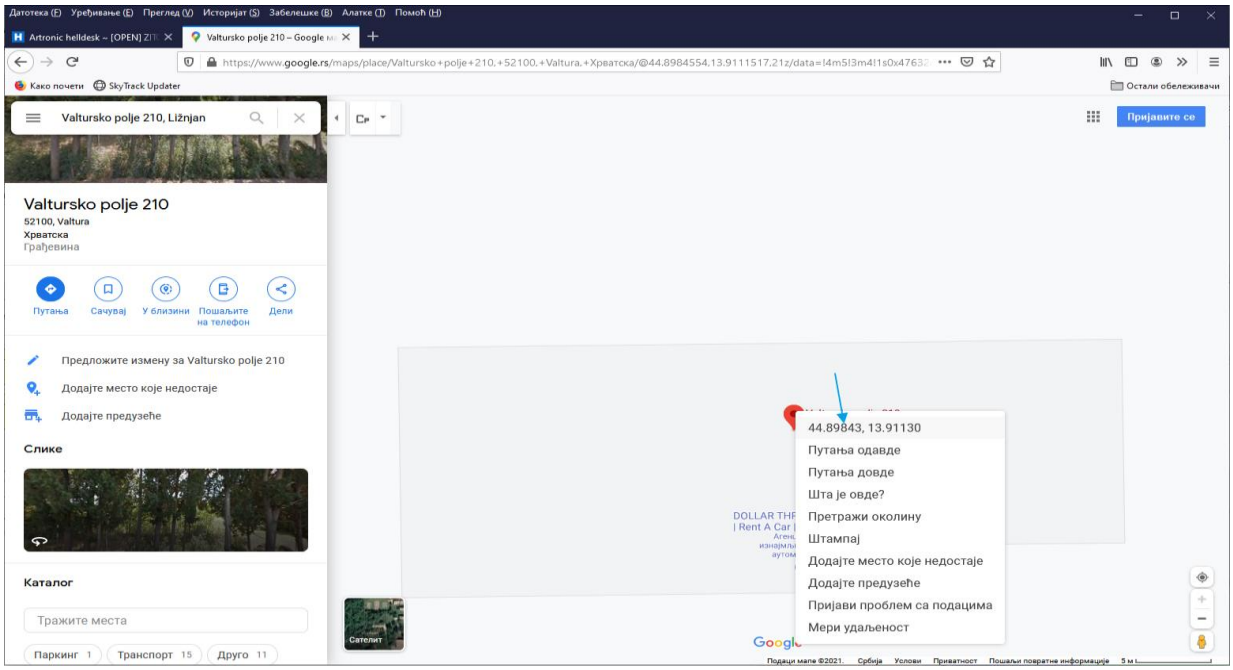
When we click on the Object GIS system tab, the window below opens.



The GIS system tab usually contains data imported from the client's business system.

There is data on the object's external code, the place to which the object belongs, the object's address, data for the postal code.

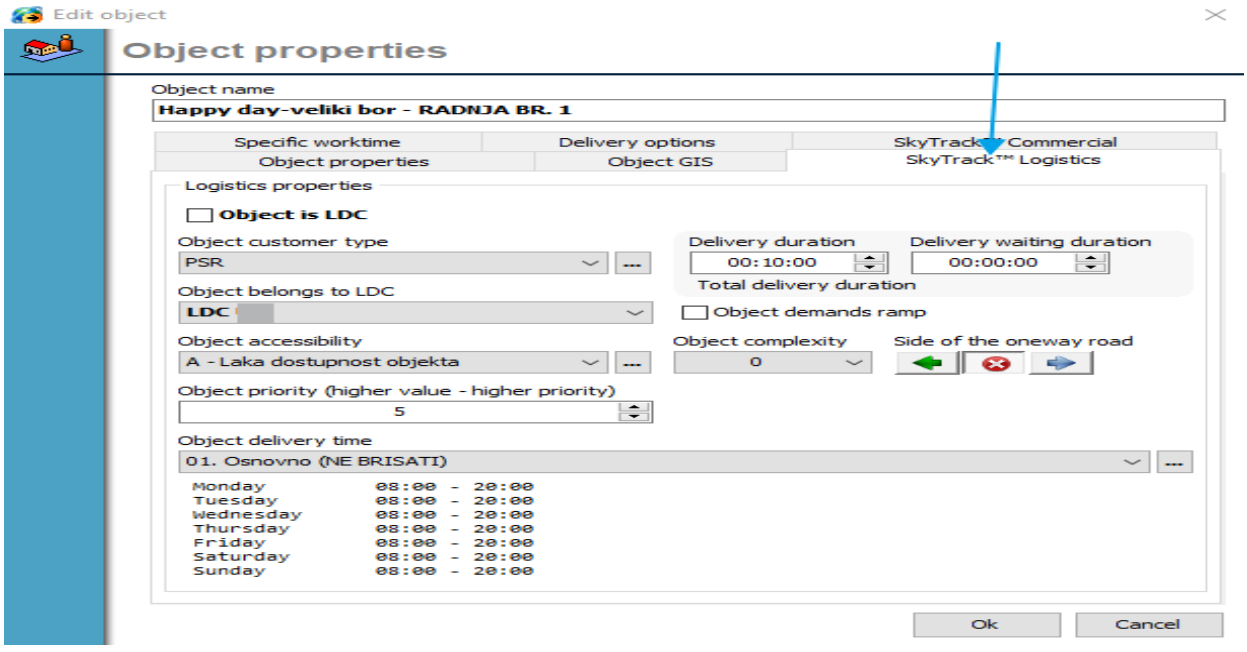
Based on the data on the address of the object, the place to which the object belongs and the postal code, the name of the object is possible
geolocate the object more precisely when this data is entered into Google Maps and the object is found. When we zoom in on the specified object, then right-click on the displayed object (red bubble) on the map - the geocoordinates of the object are visible.



The obtained geocoordinates can then be entered in Logistics in the Location field on the Object Settings tab, according to the instructions previously described.

Logistics

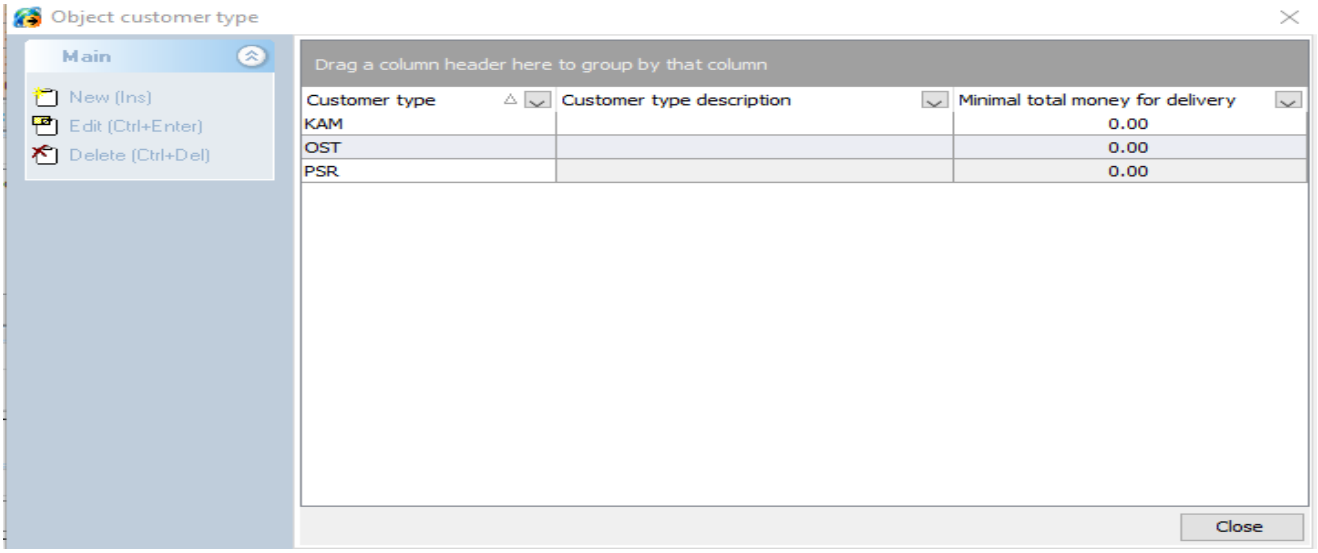
When we select the Logistics option, the window below opens.



SkyTrack Logistics settings

Object is LDC - if we check this option, the specified object becomes a Logical Distribution Center (LDC).

Object customer type - it is possible to select the type of customer from the drop-down list. If we click on the three points in the extension, the customer type code book opens.



If we click on the New option in the upper left corner of the window, it is possible to add a new customer type, which we can later set as the customer type for the specified object. If we click on Change, it is possible to change the parameters for the specified type of customer. We will click on the Delete option only if we are sure that we want to delete the specified customer type.

Delivery duration

Here you can set how long it takes us to deliver the specified object. Usually this time is in minutes.

Delivery waiting duration

The waiting time at the object can be set here.

Object belongs to LDC

From the drop-down list, it is possible to choose which LDC the object belongs to.
The object requires a vehicle with a loading ramp

If we check this option, only a vehicle with a loading ramp will be able to deliver to the object.

Object accessibility

From the drop-down list, it is possible to select one of the defined availability for the specified object. If you click on the three points in the extension, the previously described object accessibility code opens. In it, it is possible to add new availability of the object if there is a need for it, change the parameters of the existing availability and delete a certain availability of the object if we are 100% sure.

Object complexity

From the drop-down list, it is possible to select a number from 0 to 10, which represents the complexity of the specified object.

Side of a one-way road

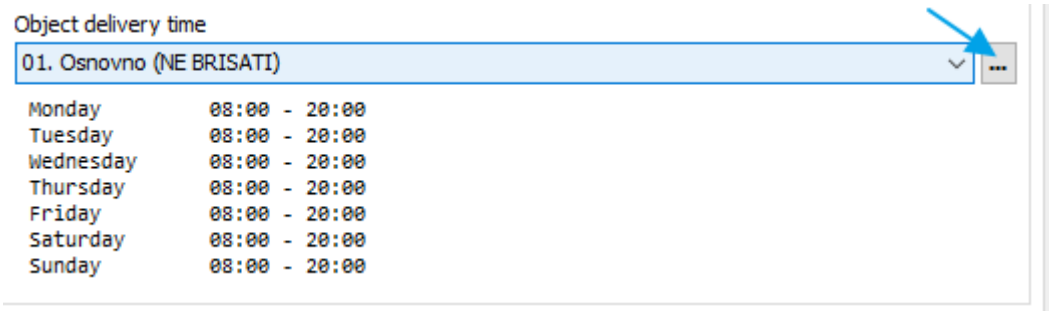
Here we can choose which side of the one-way road the object is located on. The arrow to the left indicates that it is on the left side, the arrow to the right indicates that it is on the right side, and the red circle I inside the x indicates that it is not on either side.

Object priority

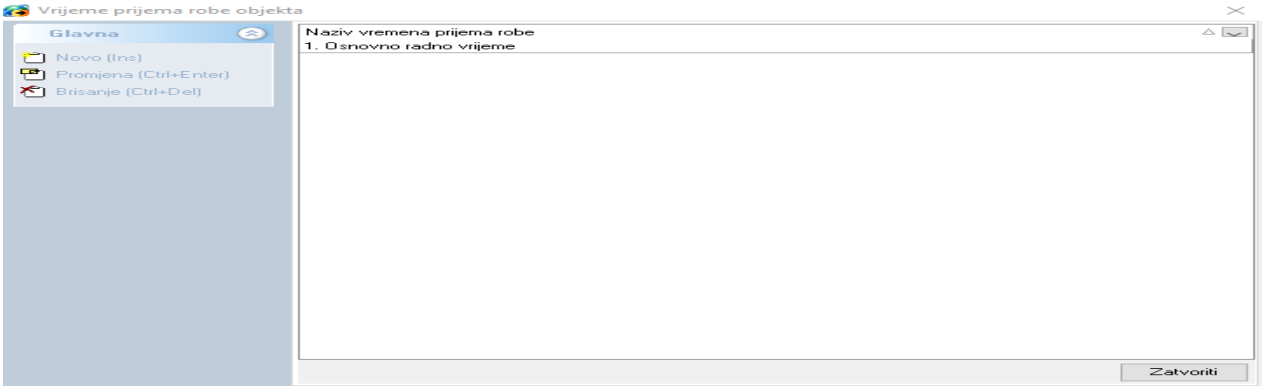
In this field, it is possible to enter a number representing the priority of the object. If the value is higher, the priority of the object is higher.

Object delivery time

It is possible to select previously defined working hours from the drop-down list.



If we click on the three points in the extension, the Object d**elivery time name** of the object below, which was previously described in the **Dictionaries section**, opens.

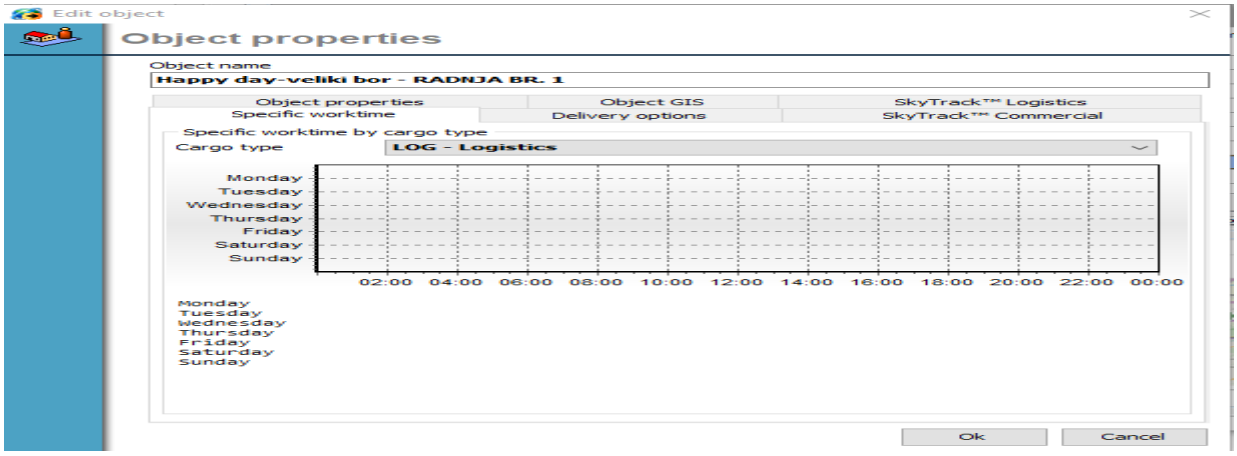


By selecting the New option, it is possible to add a new goods receipt time with the associated schedule of goods receipt times by day of the week. By selecting the Change option, it is possible to change the parameters of the selected name of the time of receipt of goods. Deleting a certain time of receipt of goods is best not to do unless we are 100% sure.

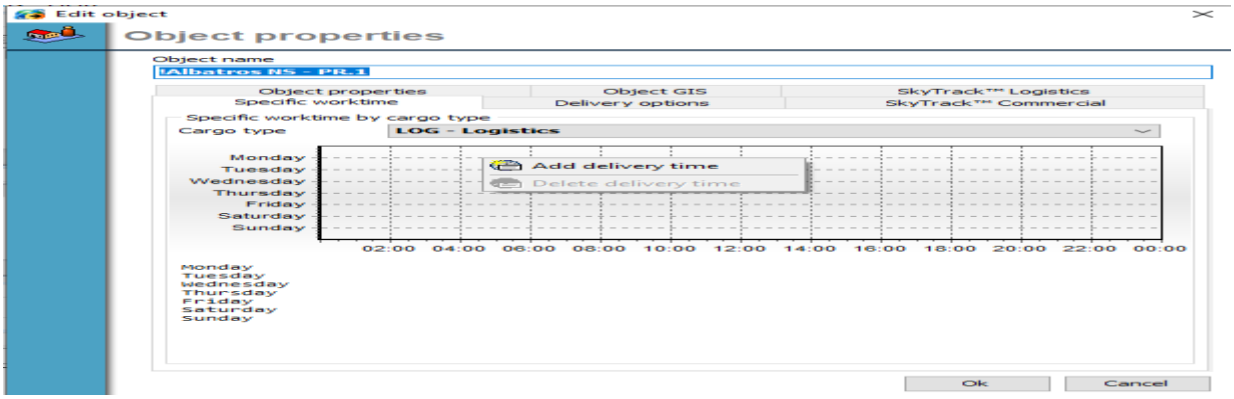
After all the changes we make on the **Logistics** tab, if we click on Ok, the changes will be saved. If we click on Cancel, we abandon the changes made.

Specific worktime

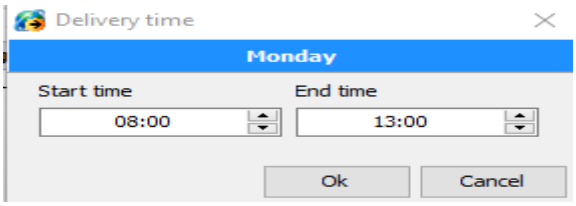
When we select the Special time of goods receipt tab, the window below opens.



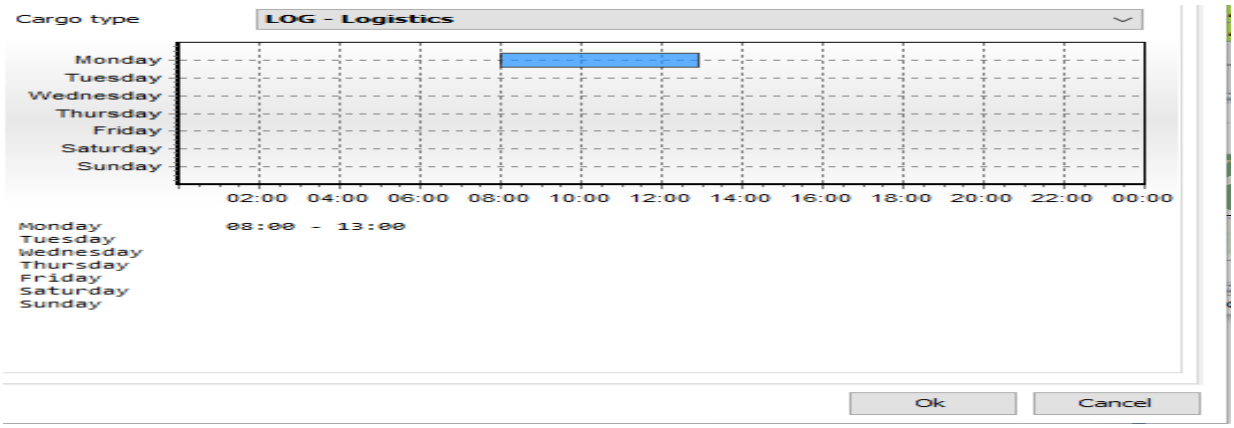
From the drop-down list, it is possible to select the type of goods for which we want to set a special time for receiving the goods.
For example, as in this case, we can choose LOG - Logistics.



When we right-click on the diagram in the plane of the day for which we want to set the time of receipt of goods, then on Add delivery time, the window below opens.



When we click on Ok, the specified time of receipt of goods according to the type of goods for the selected day becomes visible on graph I in the schedule of time of receipt of goods for that day.

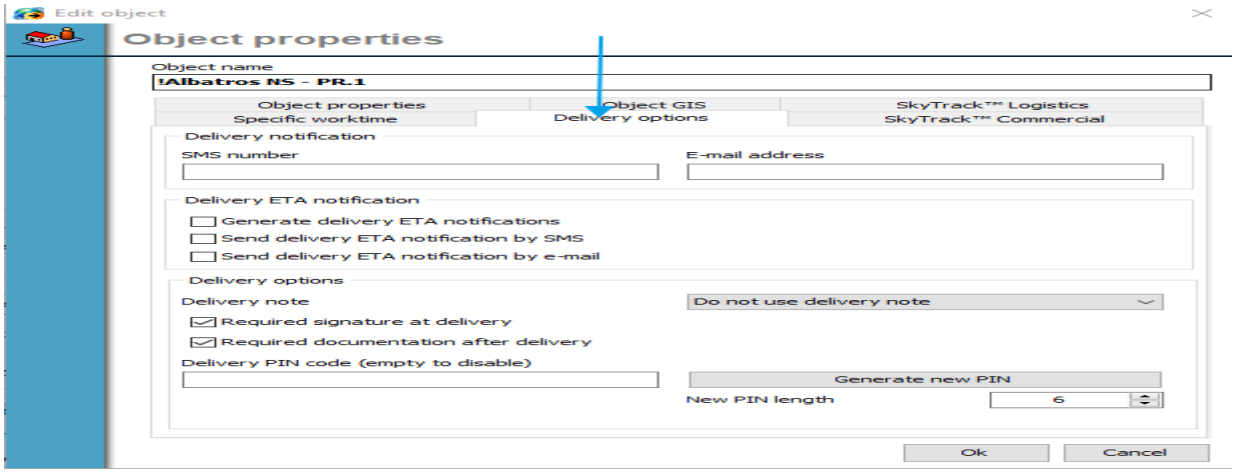


In the same way, we can add the time of receipt of goods for other days of the week.

If we are sure about the changes made on the Special receipt of goods card, click OK, otherwise click Cancel.

Delivery options

When we select the **Delivery options tab**, the window below opens.



Delivery notification

Generate information about the estimated delivery arrival time - by checking this option, we enable the generation of information about the planned delivery arrival time
Notify by sending an SMS to a number - by checking this option, we include sending a notification to the number, which can be entered in the field in the extension on the right.
Notify sending an e-mail message to the address - by checking this option, we enable the sending of notifications to the e-mail address, which can be entered in the field in the extension on the right.

Delivery options

Work with delivery notes

From the drop-down list, it is possible to choose whether delivery notes are used or not.

Signature required upon delivery - checking this option requires a signature upon delivery
Request to send documentation after delivery - checking this option requires sending documentation after delivery

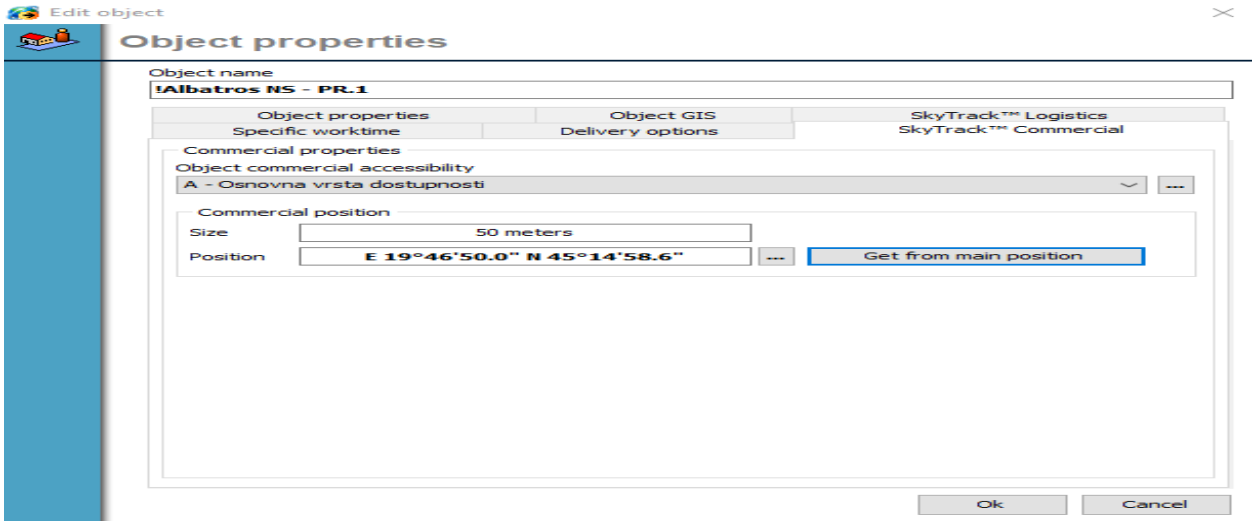
Shipping pin

It is possible to enter the delivery pin code in the Delivery pin code field. If it is disabled, the field is left blank.

If we want to save any changes made on the **Object Notification** tab, click on Ok, if we want to cancel the changes made, click on Cancel.

Commercial

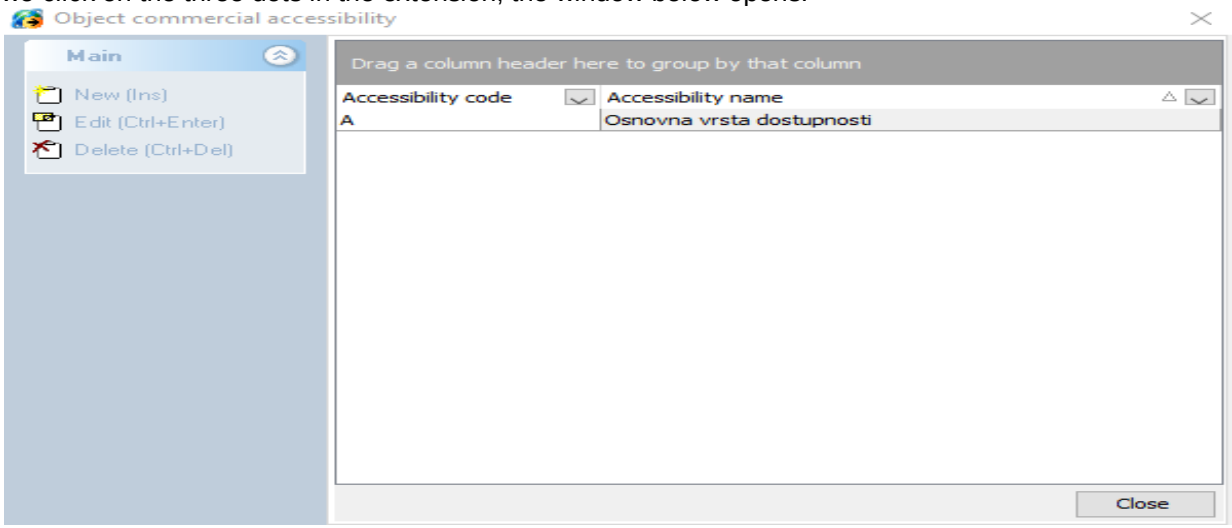
When we select the **Commercial** option, the window below opens.



Commercial properties

Object commercial accessibility

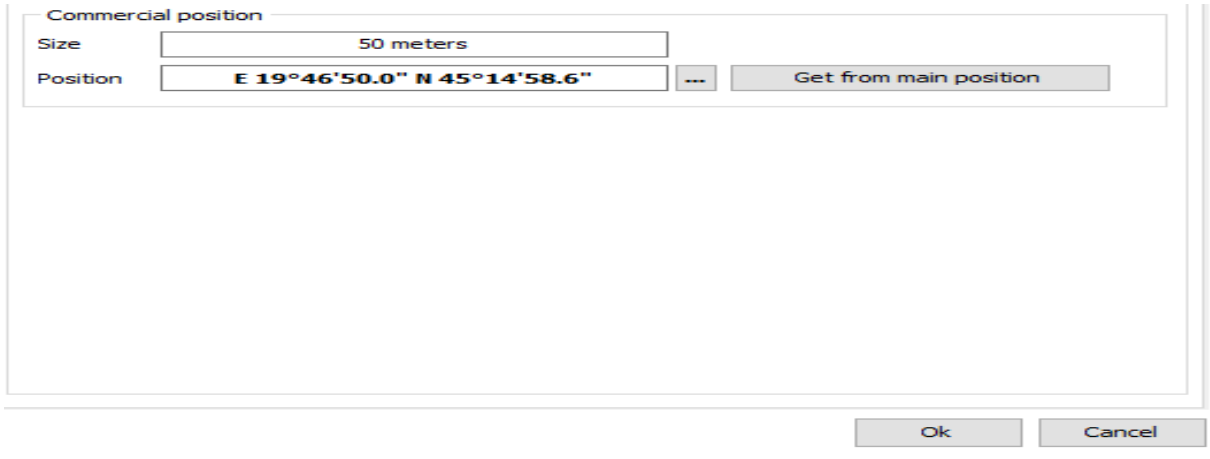
From the drop-down list, it is possible to select one of the previously defined object availability for the commercial. If we click on the three dots in the extension, the window below opens.



Here we see that there is already a defined Basic availability type for commercial, whose availability code is A.

If we want to add a new type of availability for the commercial, click on the New option in the upper left corner of the window. If we want to change the parameters of the specified availability, click on the Change option. Deleting a certain type of availability is best not done unless we are 100% sure.

Location for commercial



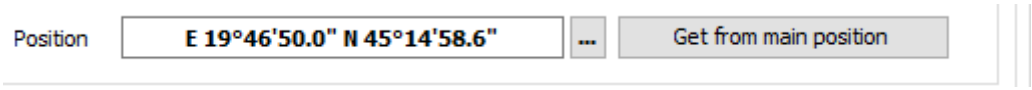
Size

The radius of the size of the object in meters is entered in this field.

Position

In this field, the object's geocoordinates are displayed. If we click on the three points in the extension, it is possible to manually enter the geocoordinates of the object.

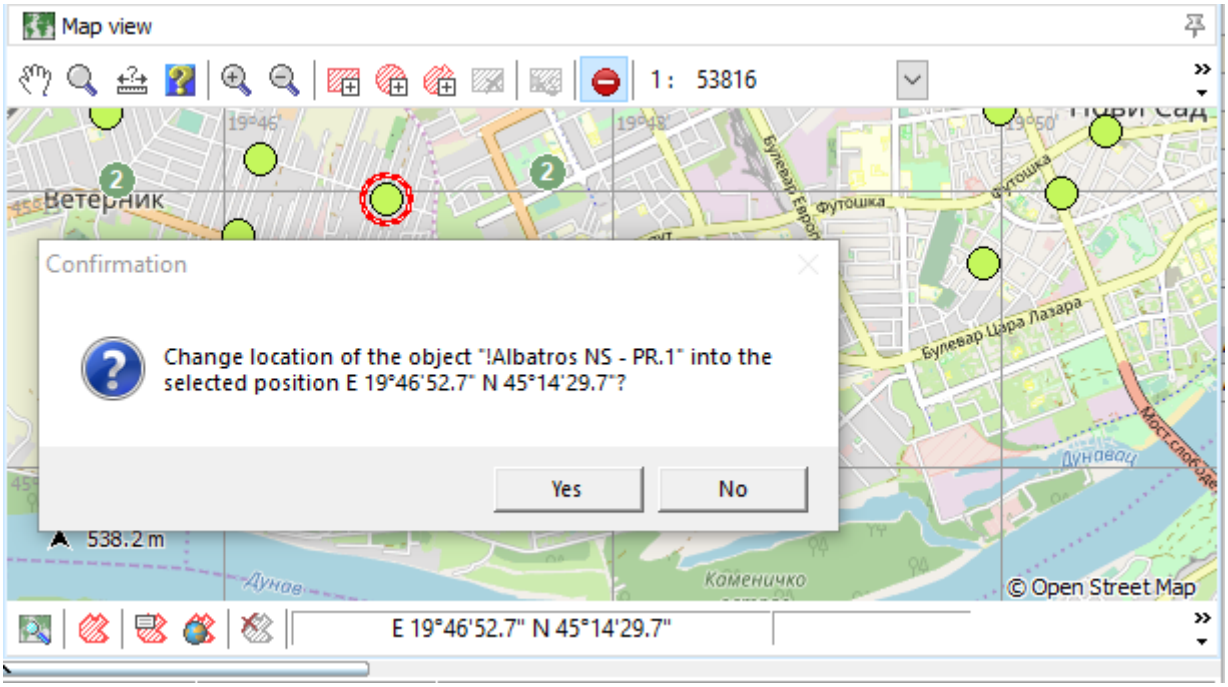
We prefer the **Get from Main postition** option. When we click on this option, the object's geocoordinates appear in the Postition field.



By clicking on Ok, the changes made on the Commercial tab will be saved. If we want to abandon the changes made, click Cancel.

Change the location of the object

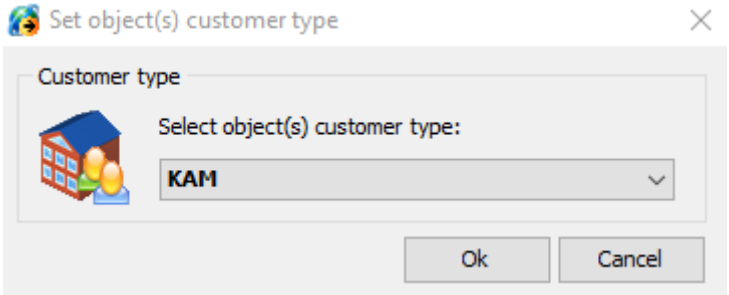
When we select the option Change the **location of the object**, the window below opens.



If we are sure, we click on the Yes option, and if we are not, on No.

Change object(s) customer type

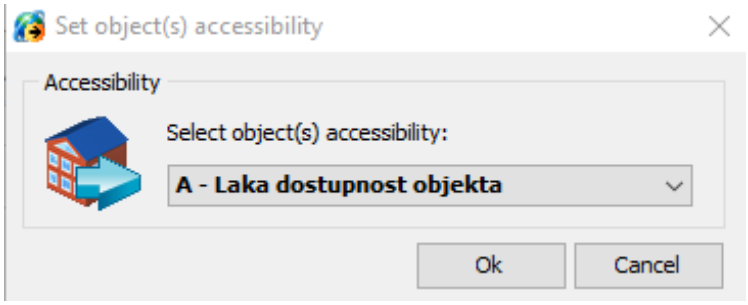
When we select the option **Change the type of buyer of objects**, the window below opens.



From the drop-down list, it is possible to select the type of customer for the specified object.

Change object(s) accessibility

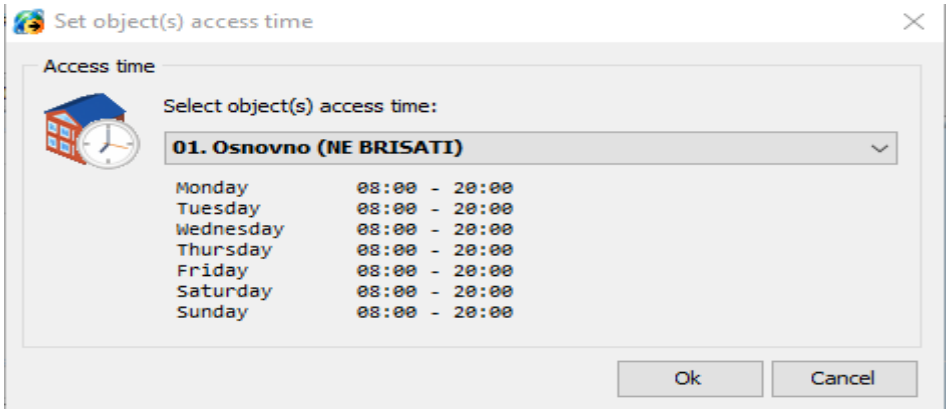
When we select this option, the window below opens.



From the drop-down list, it is possible to select the availability of the object for the specified object.

Change object(s) access time

When we select this option, the window below opens.



From the drop-down list, it is possible to select the time of receipt of goods for the specified object.

Set object(s) demands ramp

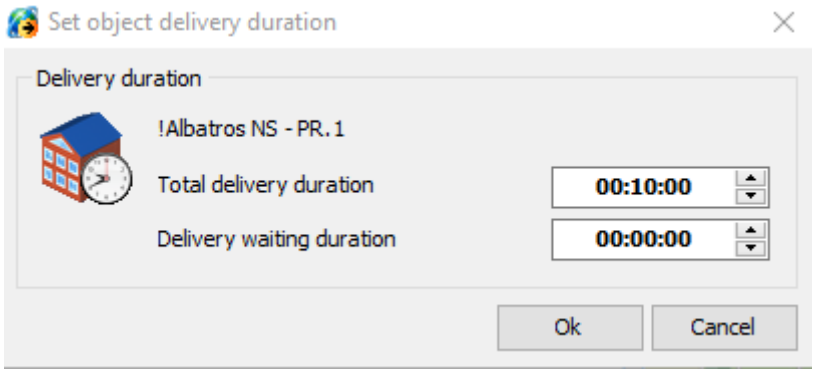
By selecting this option, a vehicle with a loading ramp is required for the specified object.

Removed object(s) demands ramp

Selecting this option removes the need for a vehicle with a loading ramp for the specified object.

Change delivery duration for object(s)

Selecting this option opens the window below.



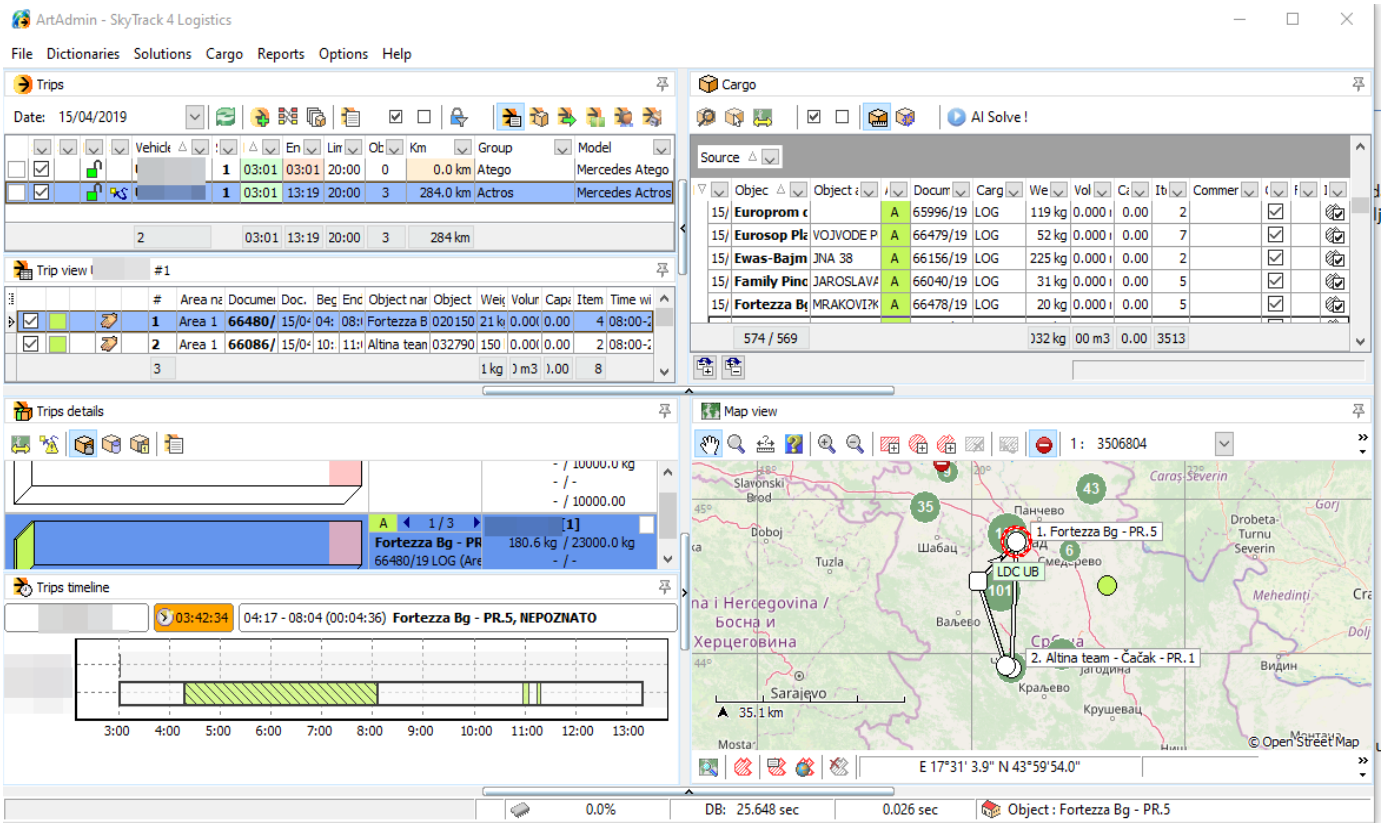
It is possible to set the total duration of delivery at the specified object, as well as the duration of waiting at the object.

Cancel delivery

If we select the specified option, the specified cargo will no longer appear in the list of Unassigned cargo.

2.6 Map view

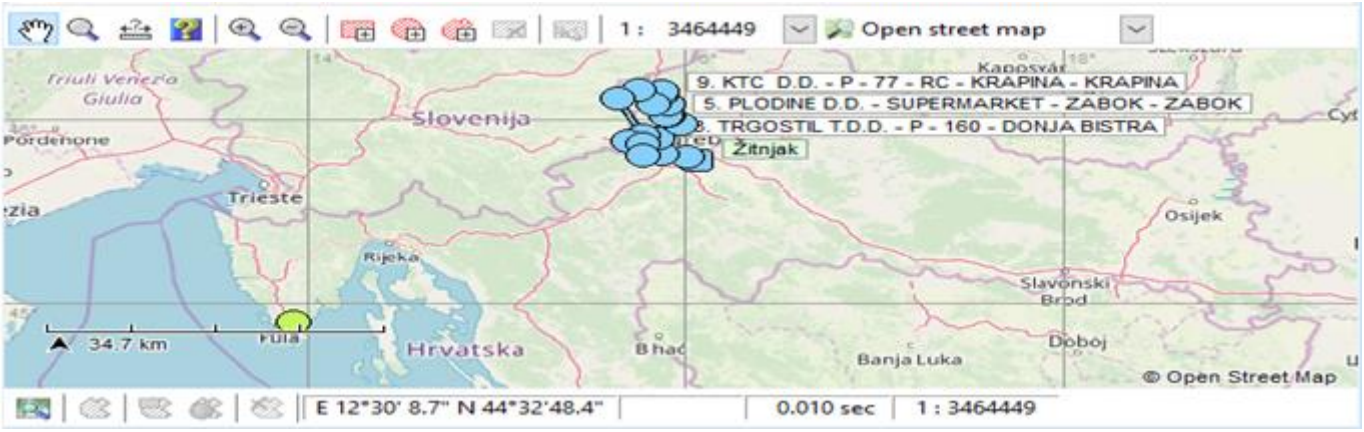
The map view shows the routes we select and the delivery points of unassigned shipments.

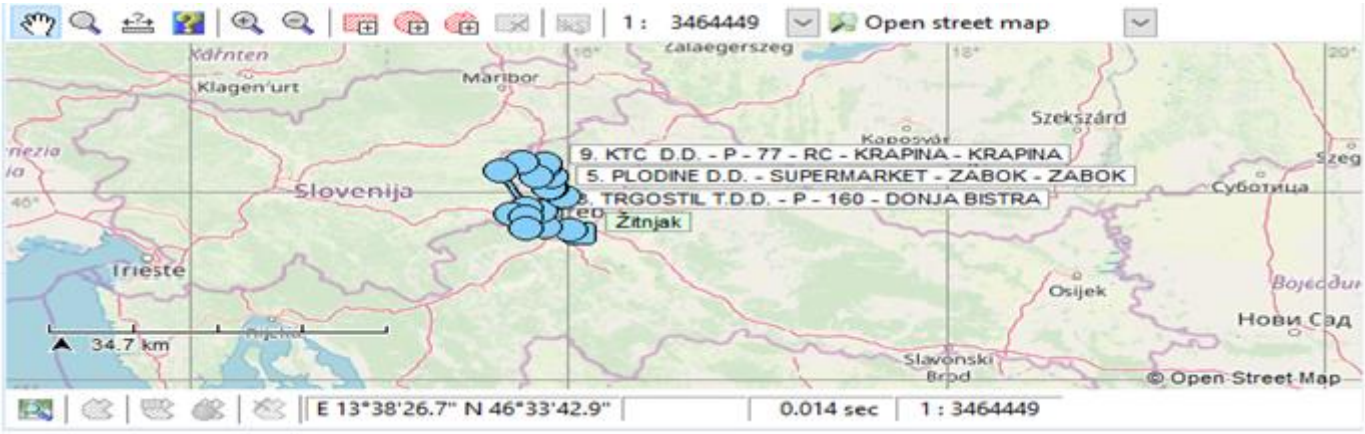


The map view contains a standard toolbar for working with the map.

Pan - is used to manually move the map

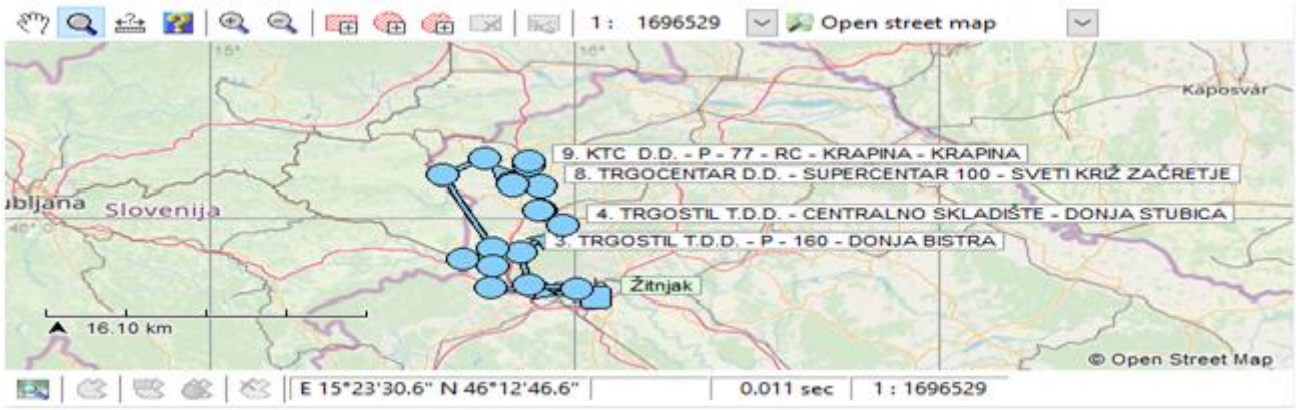
When we select this option, we have the possibility to move the map left, right, up and down. We do this by clicking on the map and holding the click, then moving the map in the direction we want. When we move it where we want, release the mouse click.

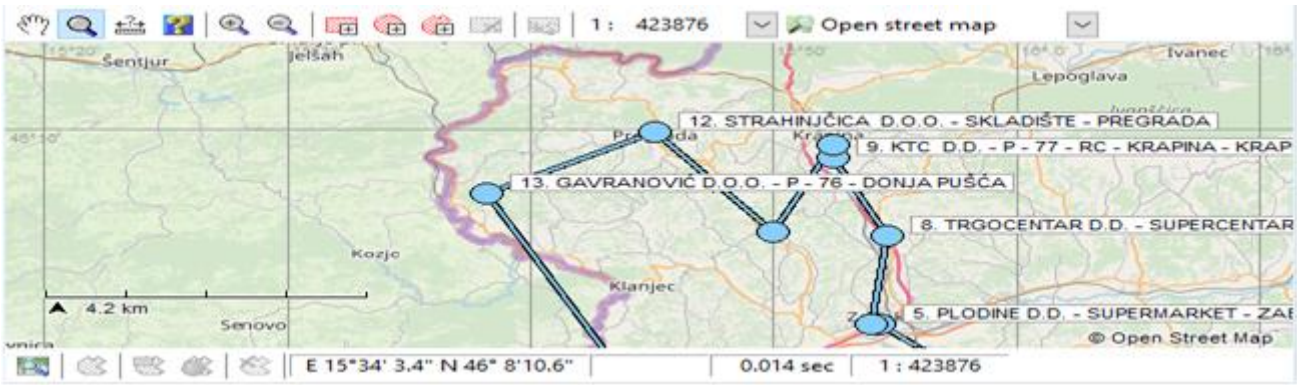




Zoom - zooms in on a specific object on the map

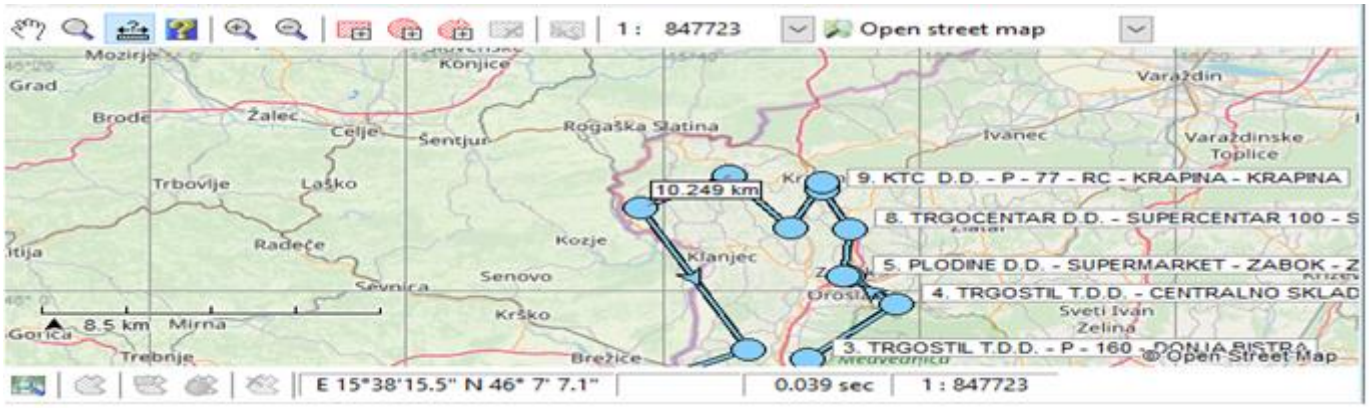
When we select this option, a magnifying glass appears, with which when we select a certain part of the map, or certain objects, they are zoomed.



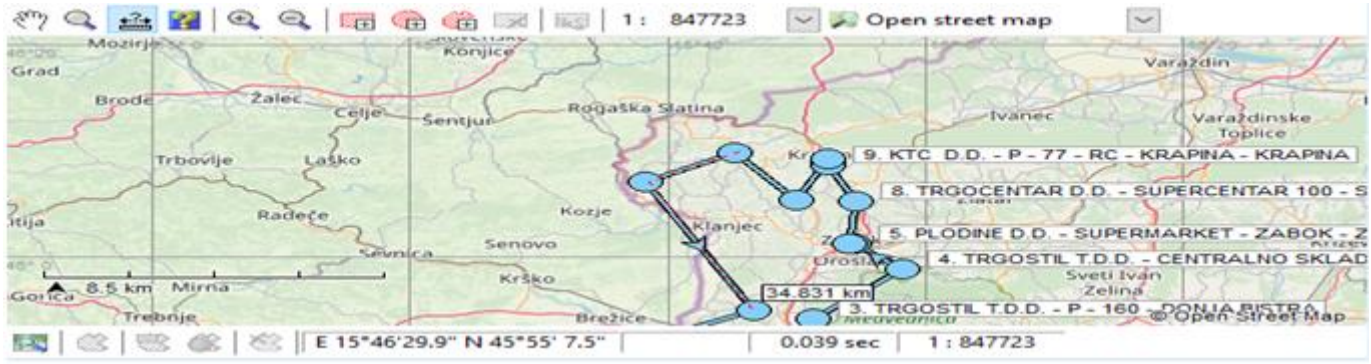


Measure distance - measures the distance between objects

When we select this option, a tool appears, with which when we click with the left mouse button on the first object on the map, then we move the tool to the second object and the distance in kilometers is shown.

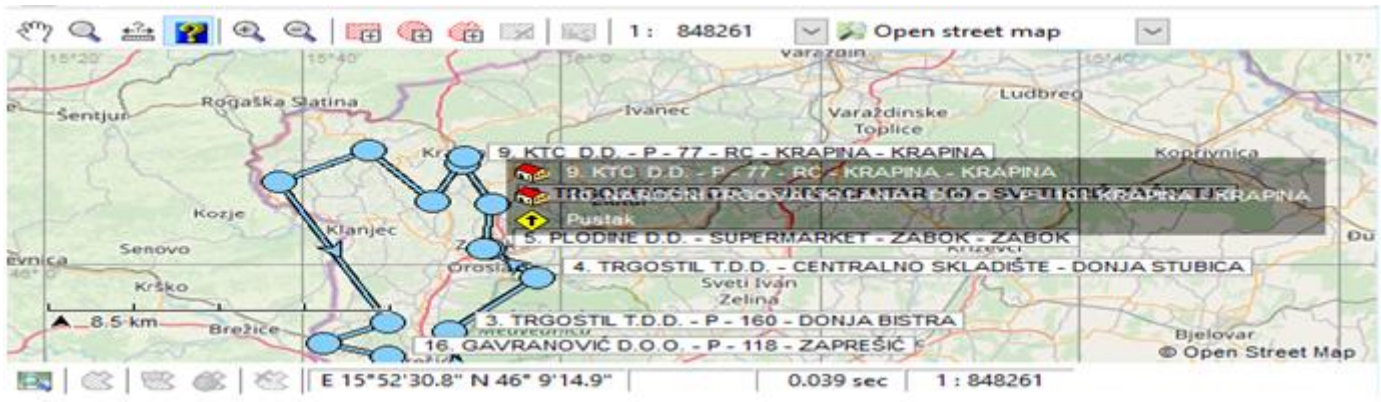


If we then want to see the distance to the third object on the map, left-click on the second object and move the tool to the third object - where the distance from the first to the third object appears in kilometers.



Show information - displays information about a specific object

When we select this option, a yellow question mark appears, which when placed on an object or several, shows us information about that object or several.

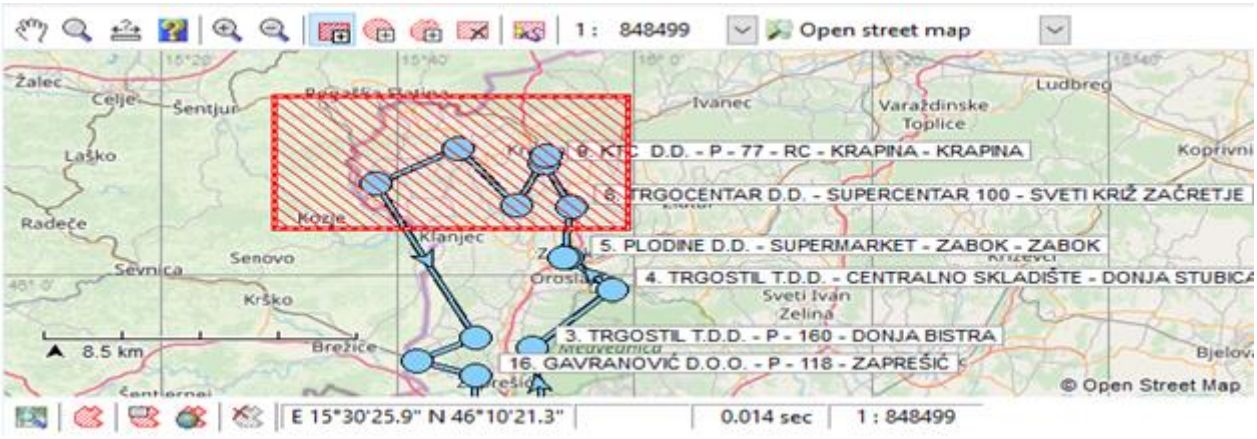


Zoom - zooms in on the map

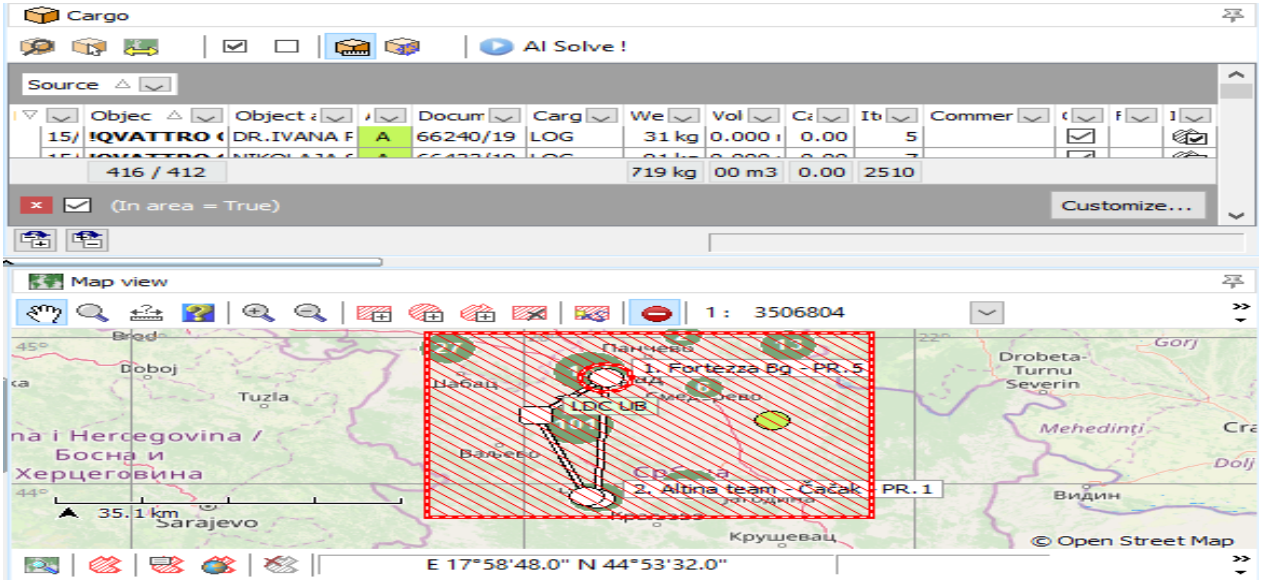
Zoom out - zooms out on the map

Add rectangle selection area - selects the area where we mark with a rectangle

When we select this option, a tool appears in the form of a rectangle, which when we move it on the map, the selection area appears.



When we disable adding the selection area for unassigned shipments/objects, data on weight, volume, and capacity appear at the bottom of the Shipments window. These data can be for one shipment/object or aggregate data for several of them, depending on how many are selected on the map.



Add circle selection area - selects the area where we mark with a circle

When we select this option, a tool appears in the form of a circle, which when we move it on the map, the selection area appears.

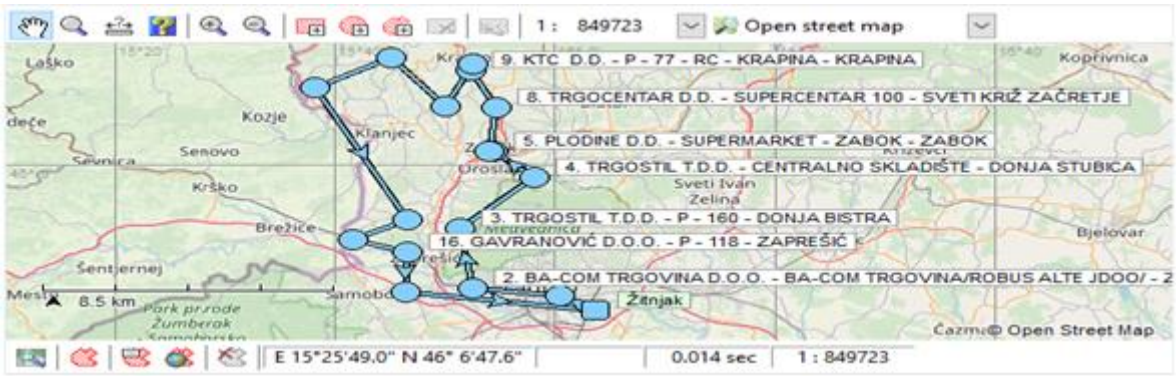
Add zone selection area - gives the possibility to add and select a zone on the map

When we select this option, the tool for drawing the zone on the map appears.

We move this tool to the place where we want the first point of the zone to be. Then we move the tool to the second point - where we left-click and the point is set, then the same to the third point of the zone. That's how we draw the zone.

Remove Selection Area - Removes specific selection areas on the map

When we select this option, the image below appears, in which there is neither a circle as a selection area nor a zone.

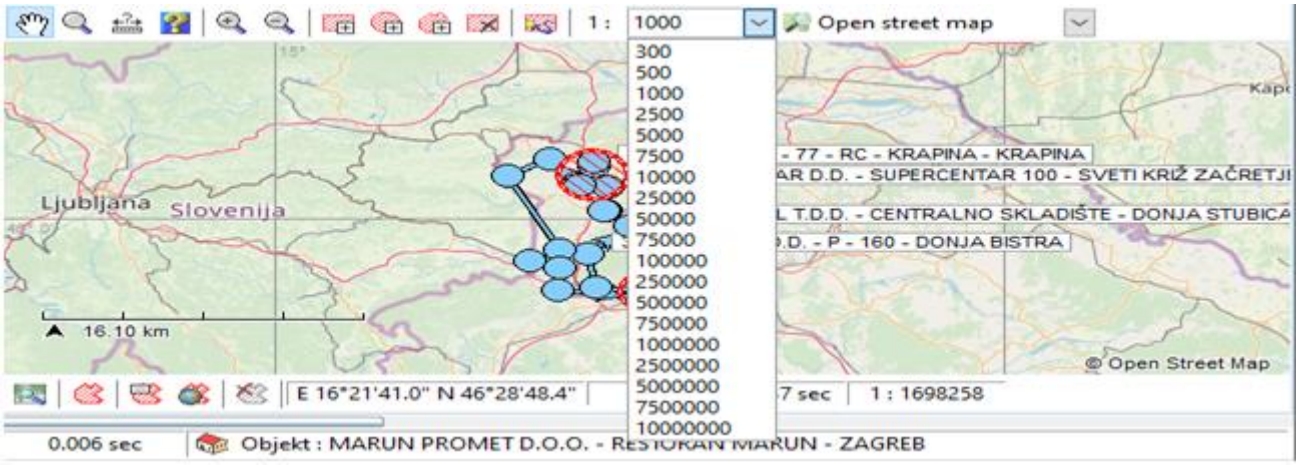


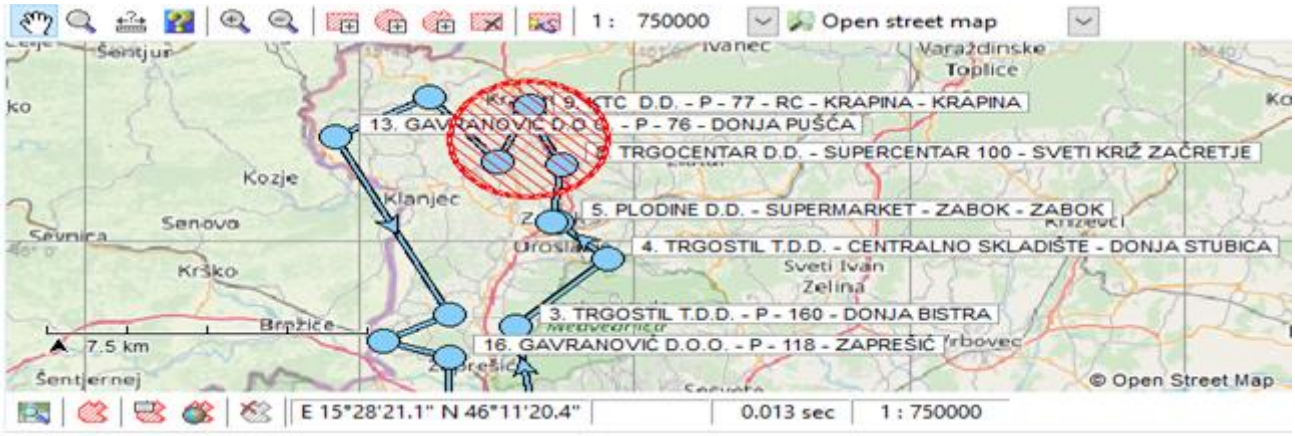
Show trip(s) in selected area - shows trip(s) in certain areas that we have selected

When we select this option, a trip for the selected area is selected.

Map scale – gives the option to select the scale of the map.

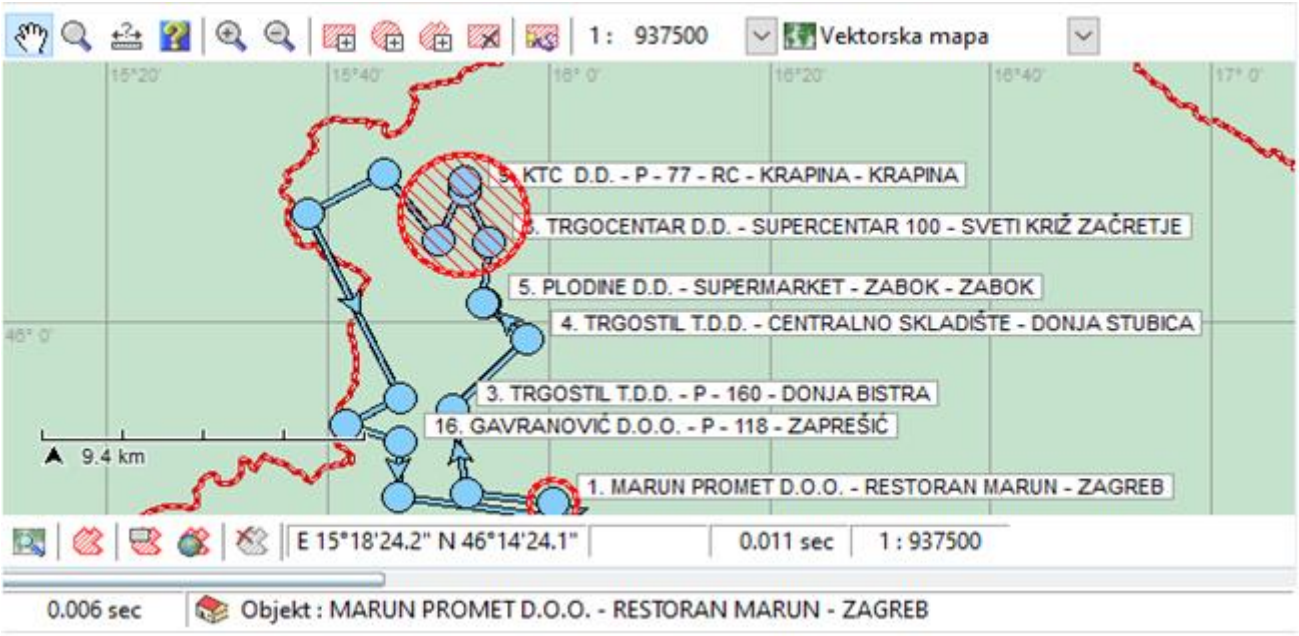
When we select this option, we have the possibility to change the scale of the map.





Select map - gives the option to select a map

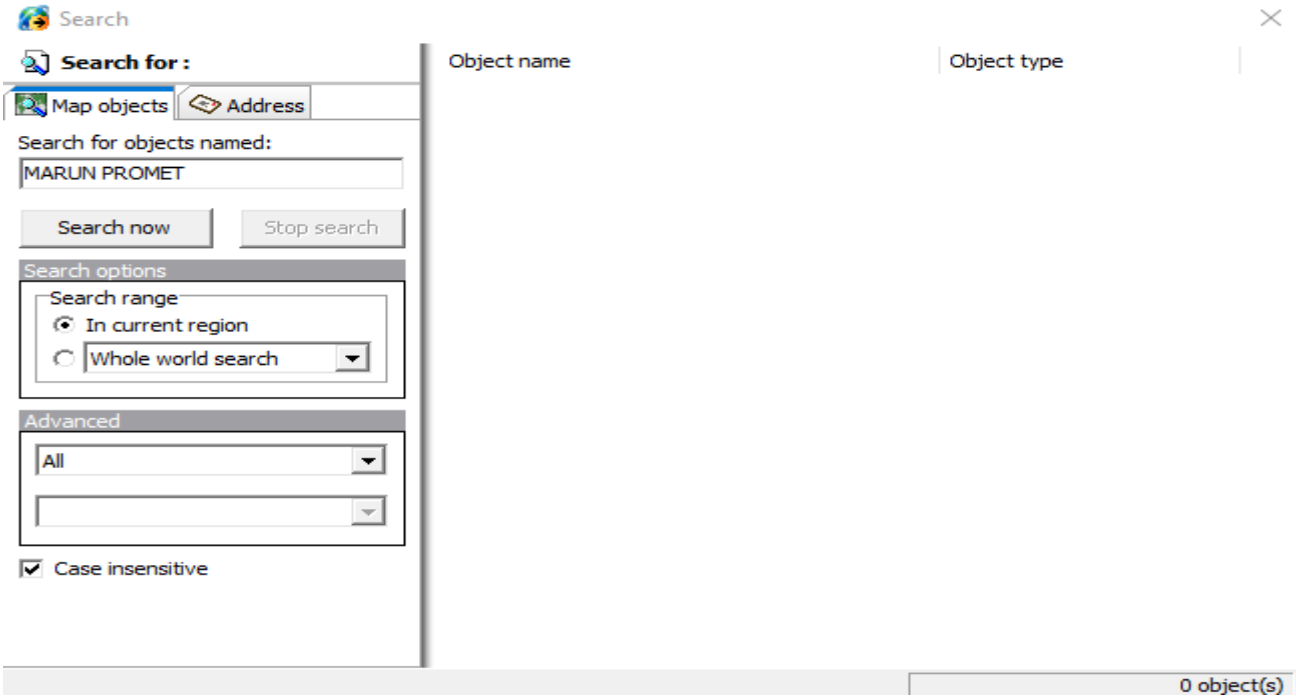
Currently, the Open Street map was selected, if we want, we can also select the **Vector map** from the drop-down list.



In addition to the tools mentioned at the bottom of the **Map View** window, there is the following toolbar.

Search

When we select this option, the window below opens. When we enter the name of the object and click search, it finds the object we are looking for.



When we double-click on it in the right part of the window, the view of the object on the map opens.

Go to selection

When we select this option, it shows us the object we previously selected.

Edit selection

When we select this option, it opens the Object Settings window for the previously selected object. Object settings are explained previously.

Go to link of selection

When we select this option, we go to the selection link, if it was previously defined.

Clear selection

If we choose this option, we move the selection and the tools Go to selection, Selection properties, Go to selection link, Remove selection become grayed out and cannot be used.

In order to be able to use them again, we need to click on the Show trip(s) in the selected area tool in the upper tool palette of the Map View window