

# **I4M TrafficStudio**

## **Sudbury Waste - User Manual**

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# 1 Introduction

The manual you are holding in your hands (or reading on your screen) is an excerpt of the standard Traffic Studio user manual for the complete ITS4mobility system.

- Note: The chapters in this manual covering the tools and functionality that are not specific for the Waste handling monitoring/functionality, are basically unchanged from the standard manual. They show the available functions, but the screen shots taken from systems for public transport monitoring will of course differ from how the application will look set up for Waste collection monitoring.

## 2 System Overview

Below is a simplified image of how ITS4mobility works. The application is connected to a central system with databases and functions for forecasts and other system processes. The central system is, in turn, connected to a communication system for transferring data to and from the vehicle and the GPRS signs. The other signs are connected with cables. The central system also provides forecasts to other systems using the internet / cellphone applications. The assignments are sent to the central system from stand-alone planning tools.

### Application



The application allows the user to access real time information, to analyze stored data from the statistics reports and to interact with the central system.

### Central System

Running on any number of hardware servers, the central system holds all relevant data and runs the services that give ITS4mobility its core functionality.



### At-stop Displays

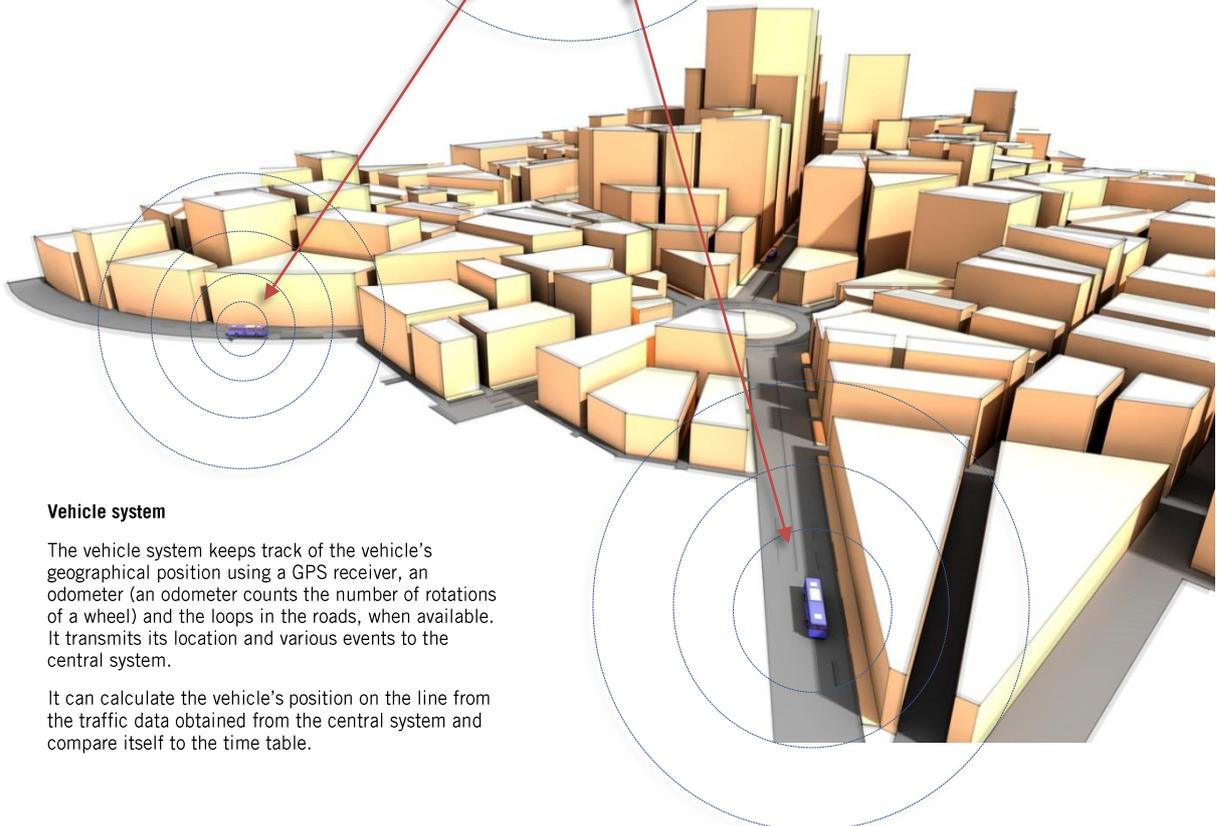
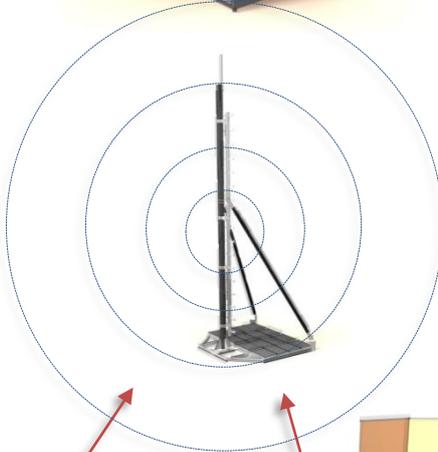
The signs receive and display the relevant forecasts and disturbances to inform the passengers.

They can be connected to the central system by using the long range wireless system or by using a wired/wlan connection.



### Communication System

The communication system manages wireless communications between the vehicles and the wireless displays. The system uses the gprs network.



### Vehicle system

The vehicle system keeps track of the vehicle's geographical position using a GPS receiver, an odometer (an odometer counts the number of rotations of a wheel) and the loops in the roads, when available. It transmits its location and various events to the central system.

It can calculate the vehicle's position on the line from the traffic data obtained from the central system and compare itself to the time table.

# 3 Overview and Basic Operations

This section covers the layout of the main window and the features that are common to the application's tools.

**Note: If the application is unable to connect upon startup, a blank window will appear with the Menu Bar and the Function Bar.**

**Note: If the application is configured to connect automatically upon startup, the main window will appear with all its different subdivisions.**

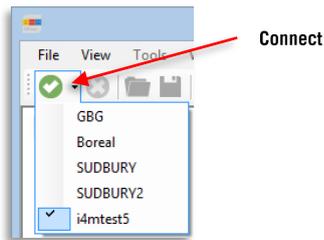
## Manual Connection to the Central System

You must connect manually if the automatic connection to the central system is not active.

Click on the icon  in the upper left corner of the ITS4mobility window (see below).

If you only have one central system to select, the application will connect to it. If you have several alternatives, you can click on the black down arrow to open a menu showing all the systems.

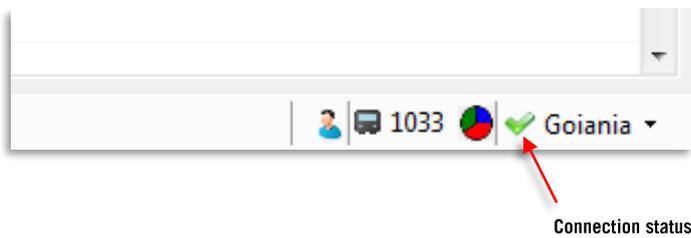
If you simply click on the icon, the application will select the system that was used the last time.



You can also connect via the Menu bar **File > Connect**

## Connection Status

The connection status is shown in the right bottom corner of the main window.



- A visible red cross  means that the application is not properly connected to the central system, i.e. it cannot reach one or many databases. Click on the black down arrow to open up a list with all the databases and their connection status.
- A visible green check  shown with the system name means that the application is properly connected to the central system.

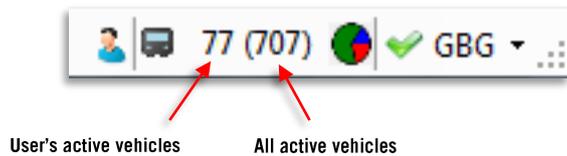


## Vehicle Counter and Punctuality Status

The vehicle counter is located in the lower right corner of the application framework, between the user and the connection status.

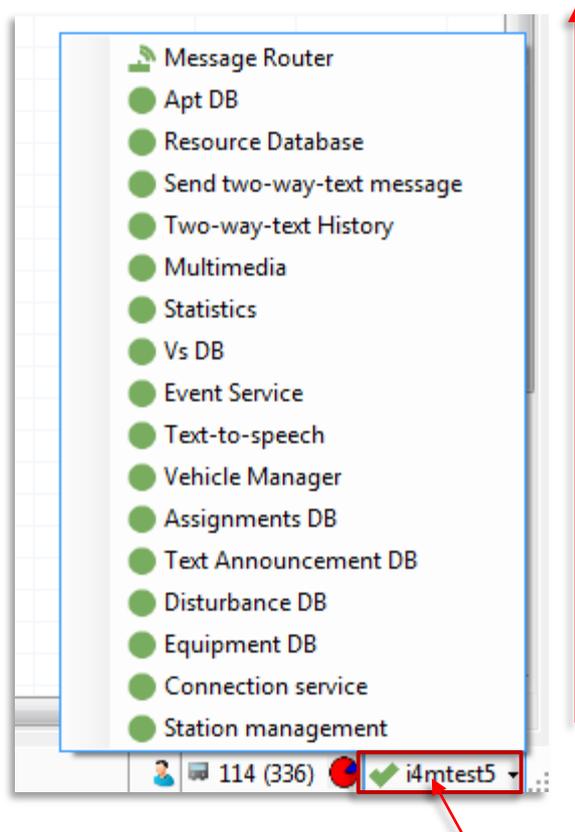
It shows the user's active vehicles and the total of active vehicles. The numbers can differ if the user does not have the right to access the information of all the currently active vehicles.

A small pie chart is located to the right of those numbers. Holding your mouse pointer over any part of the vehicle counter will open a larger view of the pie chart (see below).



## Connection Status Pane

Click on the connection status field to expand the connection status pane. Here, all connected services/servers are listed with color coded status symbols. A green connection symbol/dot indicates an OK connection. A red symbol indicate a not OK status. Contact your system administrator/support if the pane show any red status indicators.

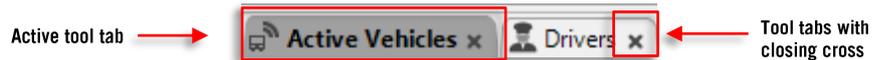


## 3.2 Tool Windows Management

### Tool Tabs

Many tools can be open at the same time in the tool windows. These tools are selected using the tabs. Clicking on the corresponding tab activates the tool. **An active tool tab is dark gray** while all inactive tool tabs are a lighter shade of grey. To close the tool, click on the tab's cross (see below).

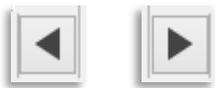
The administrator can disable the closing crosses for the tool tabs. This function is found in the configuration menu of the application. If the closing cross is disabled, the tool cannot be closed by the user.



### Minimize Buttons

The left and bottom tool windows can be minimized to give the Top tool window, such as the map, as much place as possible on the screen.

Click on the button located in the corner of the window area (see below) to minimize it, and again to expand it to its original size. The button has an arrow indicating the direction in which the window is minimized/expanded.

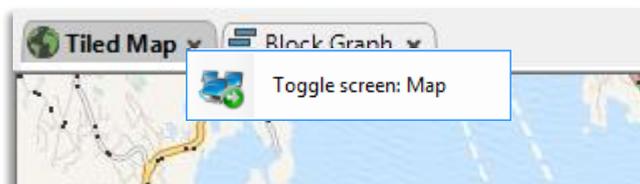


The minimize button (left) and expansion button (right) for the left tool window area.

### Toggle Screen (move tools between connected monitors)

**Toggle Screen** allows you to quickly and easily move tools between monitors if you are using two connected monitors.

Right-click on a tool tab (see below) and then click on **Toggle screen**. The tool will be moved to the other monitor and will retain its relative position.



### Copy & Paste From Application Tables/Lists to Excel

Some tools, such as Vehicle History and Stop Point History, allow you to copy their content and paste them in other programs such as Excel.

1. Select a row by clicking on it, or select many rows with the use of SHIFT and CTRL. Selected rows are highlighted in blue (see image below).
2. Press CTRL + C to copy the content.
3. Open the program of your choice, e.g. a new sheet in Excel.
4. Press CTRL + V to paste the content.

Vehicle History - 8223

Vehicle Id: 8223

Line	Destination	Block	Jour...	Journe...	Stop	Distance	Devia...	Stay time	Assigned	System Time	Vehicle Time	Sequen...	Status
606 ...	Osøyro	8223 TID	1582	Started...	Handelslaget	382	00:01...		0	4:15:02 PM	4:15:01 PM	786	Ok (0x77)
606 ...	Osøyro	8223 TID	1582	Started...	Hegglandsd...	95	00:00...	00:00:00	0	4:13:53 PM	4:13:52 PM	778	Ok (0x77)
606 ...	Osøyro	8223 TID	1582	Started...	Tveit	533	00:00...		0	4:13:48 PM	4:13:46 PM	777	Ok (0x77)
606 ...	Osøyro	8223 TID	1582	Started...	Tveit	435	00:00...		0	4:13:35 PM	4:13:34 PM	776	Ok (0x77)
606 ...	Osøyro	8223 TID	1582	Started...	Tveit	343	00:00...		0	4:13:26 PM	4:13:24 PM	775	Ok (0x77)
606 ...	Osøyro	8223 TID	1582	Started...	Tveit	237	00:00...		0	4:13:15 PM	4:13:13 PM	774	Ok (0x77)

Book1 - Excel

Julie Belanger

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	606 606 TID_3 Osøyro	8223 TID	1582	Started	Hegglandsd		95	0:00:57		0	4:14:00 PM	4:13:58 PM	779	Ok (0x77)
2	606 606 TID_3 Osøyro	8223 TID	1582	Started	Hegglandsd	Journey stop po		0:00:52	0:00:00	0	4:13:55 PM	4:13:52 PM	778	Ok (0x77)
3	606 606 TID_3 Osøyro	8223 TID	1582	Started	Tveit		533	0:00:48		0	4:13:48 PM	4:13:46 PM	777	Ok (0x77)
4	606 606 TID_3 Osøyro	8223 TID	1582	Started	Tveit		435	0:00:46		0	4:13:35 PM	4:13:34 PM	776	Ok (0x77)
5	606 606 TID_3 Osøyro	8223 TID	1582	Started	Tveit		343	0:00:46		0	4:13:26 PM	4:13:24 PM	775	Ok (0x77)
6	606 606 TID_3 Osøyro	8223 TID	1582	Started	Tveit		237	0:00:47		0	4:13:15 PM	4:13:13 PM	774	Ok (0x77)

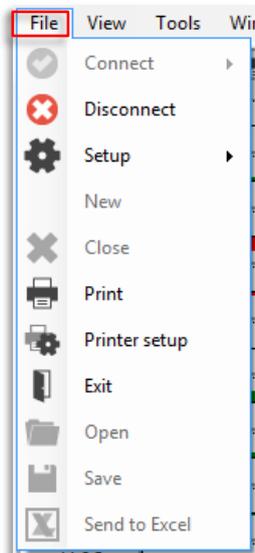
## 4 Menu Bar

This section explains the Menu bar, its various options and their submenus. The Menu bar is found in the left upper corner of the application window.



### 4.1 File

You find common settings and features in the **F**ile menu.



#### Connection

File > Connect

Select this menu item to connect the application to the central system. You can also select to which system you want to connect (e.g. Gothenburg and Goiania) if several systems are configured.

#### Disconnection

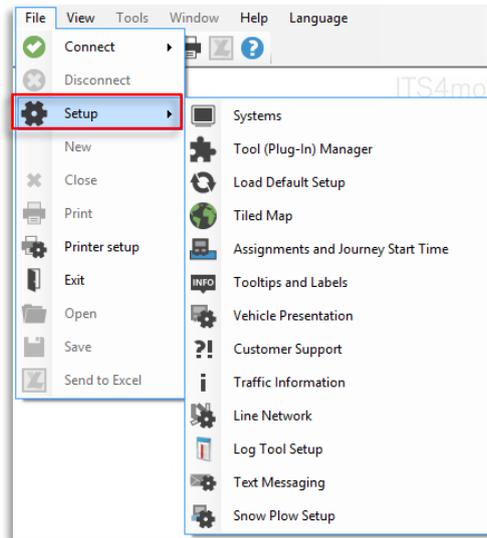
File > Disconnect

This will disconnect the application from the central system.

## Setup

File > Setup

- To access the setup menu, the application must be disconnected from the central system. This is achieved by clicking on the **Disconnect** button in the Function bar  or via File > Disconnect. You can reconnect the application to the central system when you are done with the setup.



## Systems

This function is only available to the administrator. See the **Administrator manual** for more information.

## Configure Docking Windows (Administrator)

This function is only available to the administrator. See the **Administrator manual** for more information.

## Tool (Plug-in) Manager

This function is only available to the administrator. See the **Administrator manual** for more information.

## Tooltips and Labels & Vehicle Presentation

Complex configuration functionality. See the standard Traffic Studio User Manual.

## Individual Tool Setup Sections

Individual tools: Assignment, Traffic Information, Customer Support, Map, etc. have individual setup sections in the menu. Depending on the tool, these are described in the individual tool chapters in section 9 Tools or in the separate Administrator manual.

## Load Default Setup

File > Setup > Load default setup

Reset the setup to the default/factory setup, i.e. the application will return to its setup when the program was installed, including the group's default settings.

## Close

File > Close

Close the File menu.

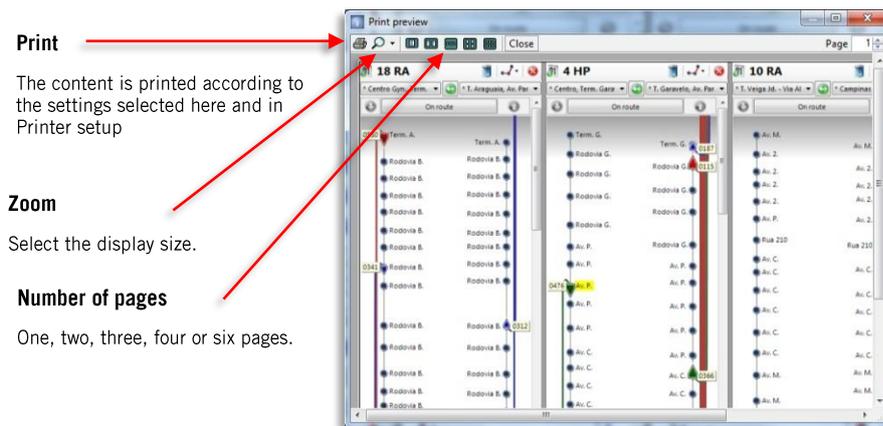
## Print

File > Print (Open the window Print preview)

Print the content of the active tool.

- Note: Print functionality is only available in some tools. The button will be greyed out when this functionality is not available.

Selecting **Print** will open up the window **Print preview** where you can select what will be printed and on how many pages the image will be printed.



## Printer Setup

File > Printer setup

Open the default Windows printer setup where you can select paper size and set up the printer. See the **Windows user's guide and printer documentation**.

## Exit

File > Exit

Exit the application.

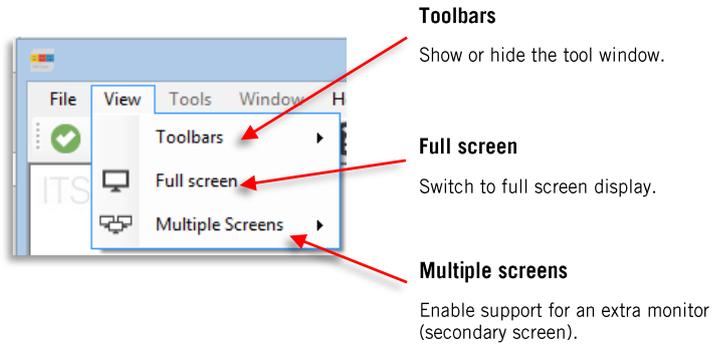
## Send to Excel

File > Send to Excel

Export the data to an Excel file.

## 4.2 View

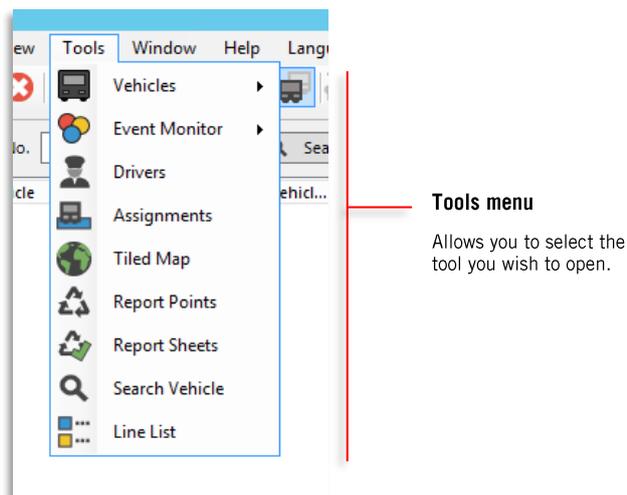
Offer the options to show/hide the Function bar, select full-screen display for the application and enable the support for a secondary monitor.



## 4.3 Tools

The tools menu displays all the available tools at your disposal in the application. The tools are presented hierarchically in the menu.

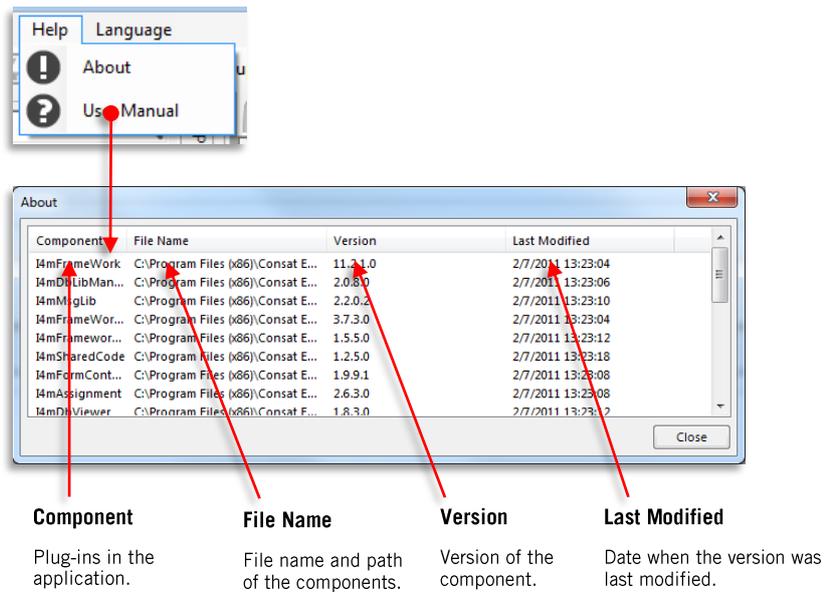
Depending on the configuration, the tool menu can look different from the one shown below (e.g. different order for tool and different available tools.). The individual tools are described in chapter 7.



## 4.4 Help

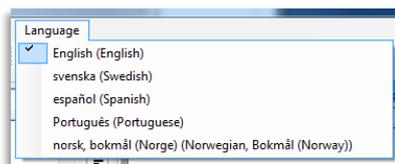
The Help function provides information about the **version of the application** and various plug-ins (tools, etc.). Select **Help > About** in the Function bar to open the window **About**.

If the option **Context help** is active, your system will be able to display context help for Traffic Information. In this case, a new Winhelp-window will be opened with helpful information about the traffic information tool.



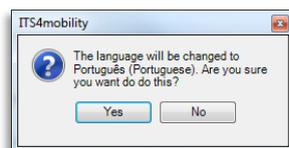
## 4.5 Language

You can select the language for all the menus and functions in the application.



After selecting another language, a window will pop up requesting you to confirm your new selection (see below). Confirm by clicking on **Yes** and cancel by clicking on **No**.

If you accept the changes, the application will automatically disconnect from the central system to change the language and it will restart by itself after a few seconds.



# 5 Function Bar

The Function bar comprises buttons and text fields granting a quick access to selected features (depending on the configuration), functions and tools.

## Function Bar Configuration

The Function bar is easily configurable. Its components can be moved or sorted in the order of your choice.



### “Component handles”

To move or drag a component, hold down your mouse’s left-button and drag the component to where you want to place it.

## Move Components in the Function Bar:

To move a component, take hold of the dotted “handle” and drag it where you want to have it. For example, you can move it to the bottom of the main page (see below).



## 5.1 General Functions in the Function Bar

On the left side of the Function bar, you usually find a series of buttons that are not related to a specific tool.

**Connect**  
Connect the application to the central system. The down arrow opens a menu where you can select between different central systems if you have access to many.

**Disconnect**  
Disconnect the application from the central system.

**Open**  
Open a document for a selected tool (only used by some tools).

**Save**  
Save a document for a selected tool (only used by some tools).

**Print**  
Print the information of the active tool . A preview of the image is shown in the Print preview.

**Help**  
Activate the help window in the application.

**Export to Excel**  
Export the data in an Excel document.

## 5.2 Specific Functions in the Function Bar

### Filter: Show My Vehicles Only

With the function bar filter **Show my vehicles only** you can exclude all vehicles from other operators by simply pressing the tool button. The button is highlighted whenever the function is active (see below).



#### Press to only see own vehicles

To filter the presentation to only include own vehicles, activate the Show my vehicles only filter.

### Filter: Line Group

Line groups are not used in the Sudbury Waste system, even if the tool is present in the function bar.

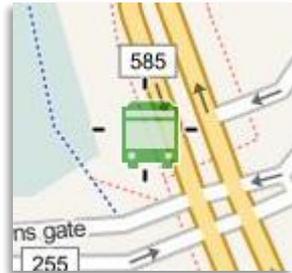


## 6 Tooltips, Shortcut Menus and Icons

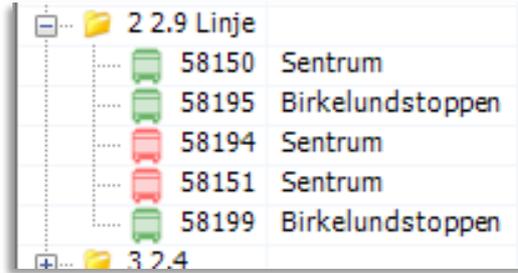
This section focuses on the shared display options and features used by the tools in the ITS4mobility application.

### Vehicle Icons

In many tools vehicle position and status is indicated with color coded icons for various vehicle types (see example below).



Bus Icon, Map

A screenshot of a 'Line List Tool' interface. It shows a list of bus lines with corresponding icons. The first section is for '2 2.9 Linje' and the second for '3 2.4'.

2 2.9 Linje	58150	Sentrum
	58195	Birkelundstoppen
	58194	Sentrum
	58151	Sentrum
	58199	Birkelundstoppen
3 2.4		

Bus Icons, Line List Tool

### Vehicle type Icons

Different types of vehicles are normally presented with corresponding icons, see below.



Waste Truck Icon



Snowplow Icon



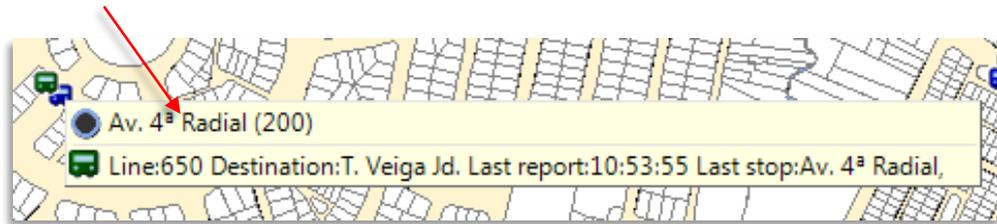
Car Icon (for inspection cars etc.)

### Color Coding

The vehicle icon color code normally indicate both the punctuality (vehicles servicing a line with a timetable) and the service state of the vehicle. As waste trucks do not run a time table, they will always be color coded grey.

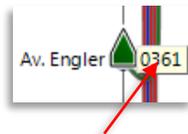
## Tooltips

Tooltips are information boxes that are displayed when you hold your mouse pointer over an object in one of the tools. The information in the tooltip can be configured/customized to fit your needs. See the standard Traffic Studio user manual for how to configure tooltips and labels.



## Vehicle Labels

The vehicle icons can, optionally, be supplemented with labels including information such as vehicle number etc. The vehicle label is configured in the same way as the tooltips. The difference is that the labels are displayed at all time and not only when the mouse pointer is held over a vehicle symbol, a reason why the label should not contain too much information.



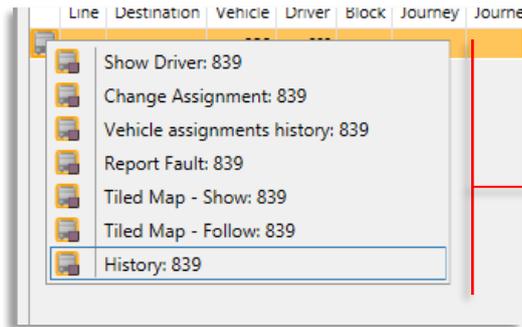
Vehicle label

## 6.1 Shortcut Menu, Vehicle

Right-clicking on a vehicle symbol will open a shortcut menu for that vehicle with links to other tools and information windows.

**Note: The content of the shortcut menu depends on the installed toolset. For waste truck monitoring, this menu will be much reduced with only a few menu items available.**

You can also reach the shortcut menu for the closest stops on the serviced route by selecting **Last** and **Next (stop)**.



An example of how the shortcut menu for vehicle may look in a specialized system.

Shortcut menu for vehicle

### History:

Shortcut menu vehicle > History:

The vehicle history window provides instant access to the basic information included in the logged vehicle reports from the selected vehicle.

Sort the history by clicking on the column headers. You can also sort columns horizontally by dragging the column headers left/right.

A screenshot of a 'Vehicle History - 49999' window. It features a table with columns: Block, Line, Destination, Journey, Journey status, Stop, Distance, Deviation, Stay time, Assigned, System time, Vehicle time, Sequence number, Valid flags, Event, and Sign contr. The table contains multiple rows of data for vehicle 49999, showing various stops and events. At the bottom of the window, there are navigation buttons: 'Previous' (with a left arrow), a date field showing '2015-08-31', and 'Next' (with a right arrow) and 'Now' (with a clock icon) buttons. A red arrow points to the 'Previous' button, and another red arrow points to the date field.

#### Previous

Move backward in the vehicle history

#### Calendar, Next, Now

Select the date, move forward in the history or return to the current time.

Headers	Description
Line	Line number and operator
Destination	Destination of the line. If the vehicle has a “via destination” in its planned route, which differs from its final destination, it will be shown in the table as “Via destination (final destination)” until the vehicles has traveled past the “via destination”.
Block	Block number and operator
Journey	Journey number
Journey Status	The journey status of the vehicle such as started (journey), between (journeys), awaiting (journey start) etc. “Learning” displayed for vehicles (manually) assigned for training.
Stop	Previous stop point
Distance	Vehicle Event/distance to the stop when the vehicle report was sent. <b>Note: See Appendix A for more information about vehicle reports and description of the individual vehicle events.</b>
Deviation	Deviation from the time table
Stay Time	Stay time at stop (arrival > departure)
Assigned	Assigned block number
System Time	Time the message was received from the vehicle
Vehicle Time	Time the message was sent from the vehicle
Sequence Number	The vehicle report sequence number. Can be used for checking that no reports are missing in the “sequence”.
Valid flags	The vehicle report status: Can be “Ok” or not Ok depending on “Invalid Block time” etc. (Administrator information)
Event	The vehicle event (report)
Sign control	How the vehicle signs were controlled: No text (automatic, default)/ “Manual” (manual sign control)/ “External” (signs controlled by external sign controller unit).

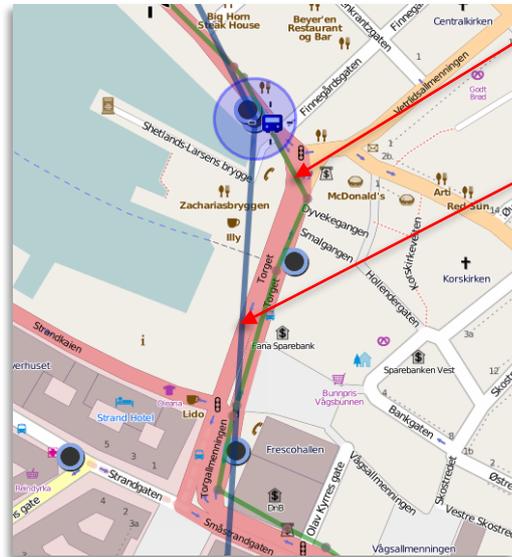
## Copy Information

You can copy information and paste it in other software, such as Excel, Word, etc. Select one or many rows with SHIFT and/or CTRL. Once selected, use the keyboard shortcut for “copy”, which is CTRL+C. Open your software of choice and paste the information (CTRL+P).

## Vehicle History: Trail on Map

Opening the history of a vehicle also displays its trail, in green, on the (tiled) map. It also shows all its reports as small dots.

- Use the **previous** and **next** buttons to navigate through the history and update the trail on the map.
- **Double click on a row in the History window to view the particular vehicle event on the map (highlighted orange).**



**Vehicle's logged trail (green)**

Green lines link up the sequential vehicle report showing the route the vehicle was driven.

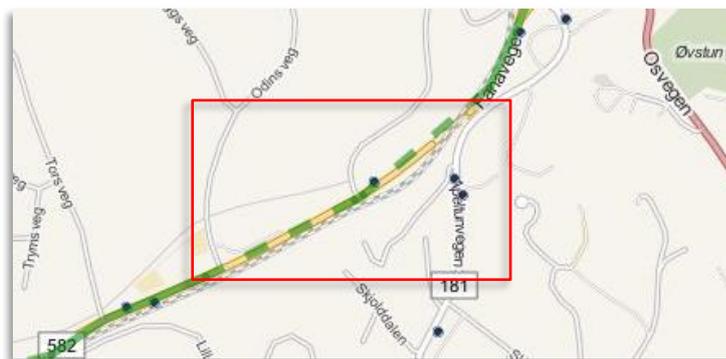
**The planned route as reference (blue) – activated in Planned Traffic tool**

Click on the corresponding route in Planned Traffic to also view the geographical traffic data showing the planned route and the stop positions.

**Vehicle trail “gaps”**

To make the vehicle trail as correct as possible, “gaps” in the vehicle reports are plotted as dashed straight lines. These are trail sections where there is too little information to plot the actual driven route with confidence. Gaps can occur where for technical reasons vehicle reports are missing.

The trail lines are dashed wherever the distance between reports are greater than a set threshold, or the time between reports are more than the configured threshold. (See chapter 8.3 for information about this configuration.)

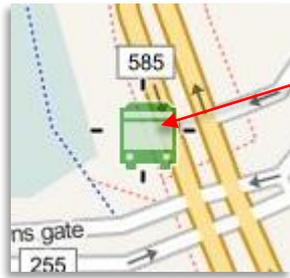


Trail sections where the time or distance between vehicle reports is above set thresholds is dashed, to indicate to you that the exact driven route is less certain.

**Map - Show:**

Shortcut menu vehicle > Map – Show:

Show a close-up view of the vehicle in its own map window (a new map tab is created with the vehicle ID in its heading). If a black crosshair is shown (see below), the displayed position is based on the GPS data sent from the vehicle.



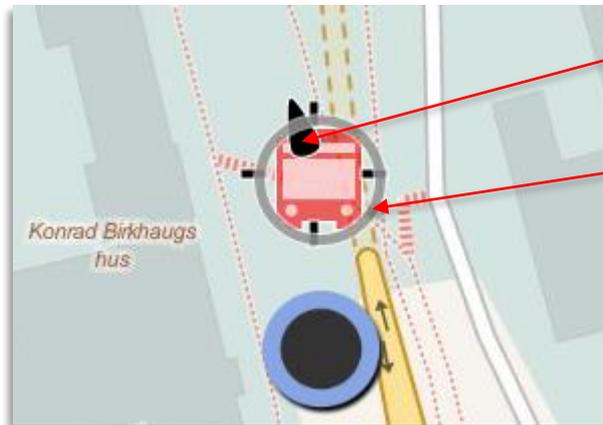
Crosshairs indicating GPS position

An arrow symbol shows the GPS heading, if available. (See example in following section).

## Map – Follow:

Shortcut menu vehicle > Map – Follow:

When you select a vehicle to be followed, a new map/tiled map tab will open, zoomed in on that vehicle. The vehicle icon on the map will be surrounded by a circle indicating that the vehicle is being followed. If the position is based on GPS data from the vehicle the vehicle symbol will also be displayed with a cross/crosshairs. A heading arrow indicates the latest reported heading.



GPS Heading Indicator

"Following Vehicle" Indicator

# 7 Tools

The tools give the application its functionality. In this chapter, we will go through all the available tools and their settings.

Note: Your access to other companies vehicles may be limited. When inaccessible, the data will be replaced by “???” to indicate that it is not available. The shortcut menus of these vehicles will also offer a limited functionality. This is done to protect each operator’s information.

# 7.1 Report Points

Tools > Report Points

The Report Point tool is used for viewing planned and imported report points. The addresses and planned number of units to be collected can be viewed in table form. The report point geographical positions can be viewed using the map tool.

Two lists are used for quick navigation: A list to the left shows all routes, and a list to the right shows all report points, in the route you selected in the left list. Separate free text filters

## Overview

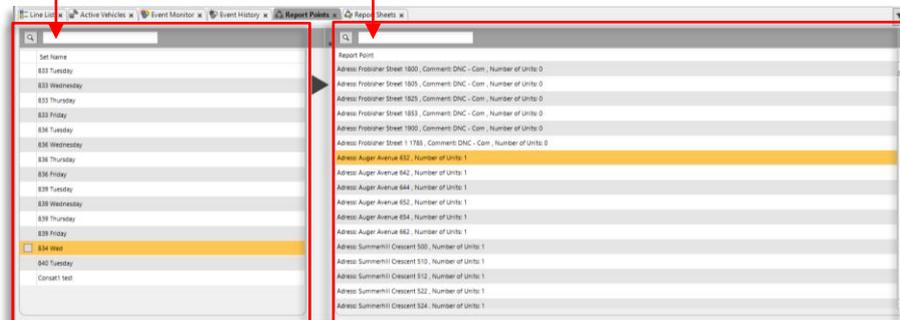
The report point tool consists of two lists, one covering all imported “routes”, and one listing all report points of the route you selected in the left list.

### Routes: Free Text Filter

Enter filter content and click on the filter button (the looking glass) to only view matching routes.

### Report Point list: Free Text Filter

Enter filter content and click on the filter button (the looking glass) to only view matching list rows.



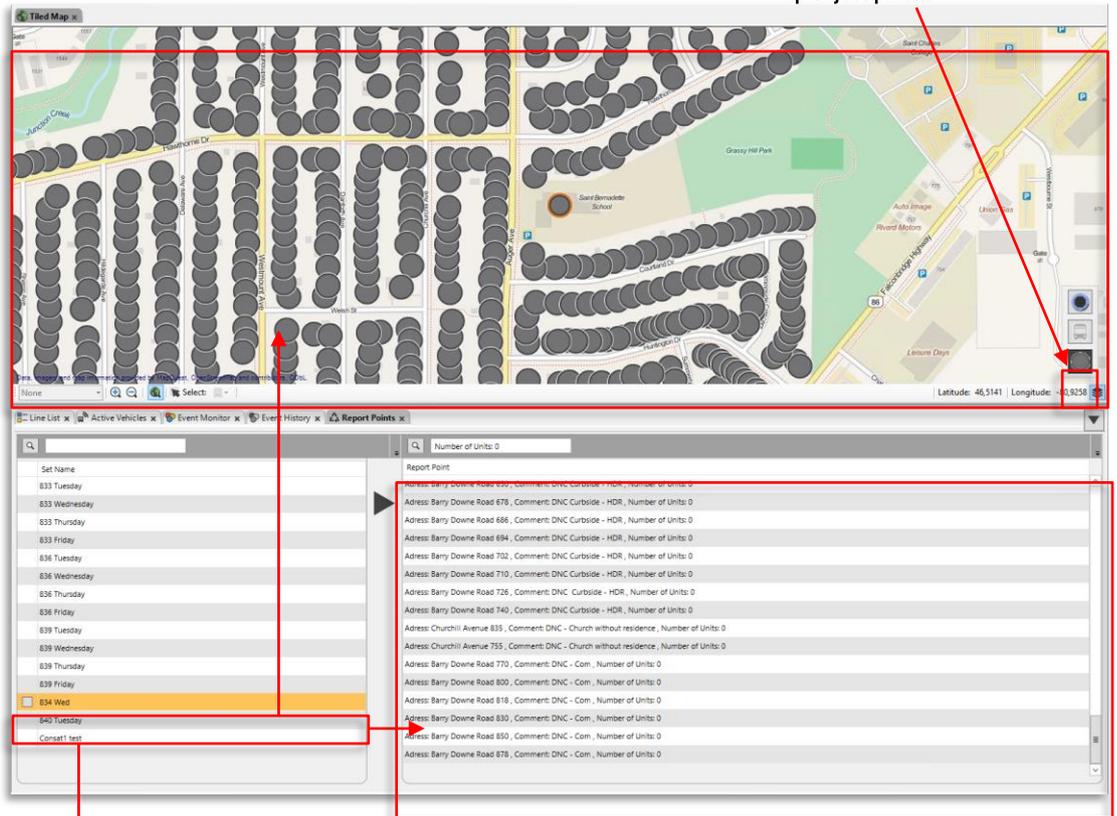
### All Imported Routes

Click to select route and view its report points on map and in the report point list

### Report Point List (all report points of the selected route)

The points are sorted in the order they are placed in the imported file (normally the planned service order). Click to select a report point in the list and zoom to it on the map.

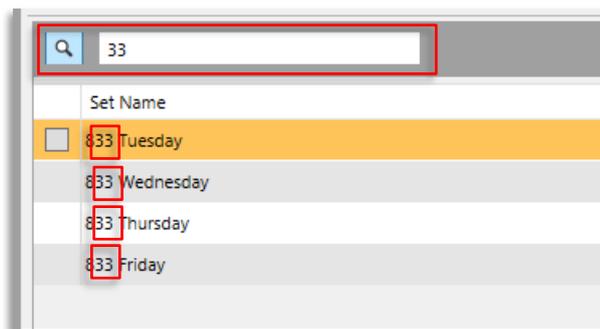
Show/hide route points by clicking on the report point button in the Map Object palette



Click to select and view route on map and in route point list

## Filter Route List

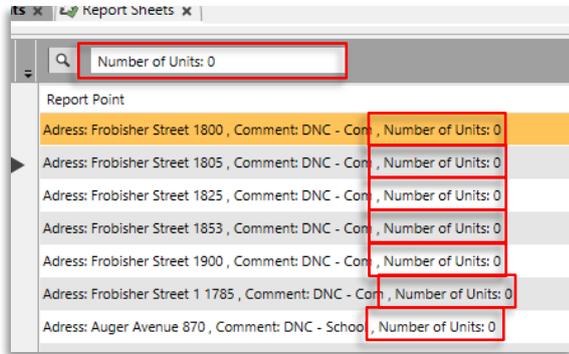
If the routes list is long you can filter it to make it more manageable. Simply enter the desired filter content in the free text filter field and click on the filter button (the looking glass button).



## Filter Report Point List

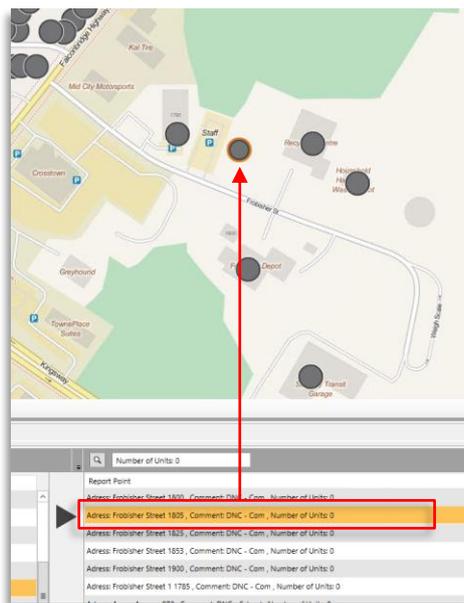
The report points list is normally quite long and here the free txt filter can be of much use. You can enter street names and even report points with certain number of planned units to collect, to filter the list.

- Note: In this version of the tool the map shows all report points of the selected route, regardless of how you filter the report point list.



## View selected report point on map

You can highlight and zoom in on any report point in the report point list simply by clicking on the corresponding row in the report point list.



## 7.2 Search Vehicle

Tools > Search vehicle

Locate a vehicle or a block in the system by typing in their number or part of their number. Clicking on search will list all the vehicles/blocks with the search criteria in their number will be listed (Ex. 3 will show vehicles such as 3, 103, 131, 302, etc.).

The results will list both active and historical vehicles (vehicles that have completed their routes). The vehicles are sorted according to their last report. Active vehicles are listed with the most recent report first. Historical vehicles are listed the opposite way, with the vehicle with the oldest report as the first in the list.

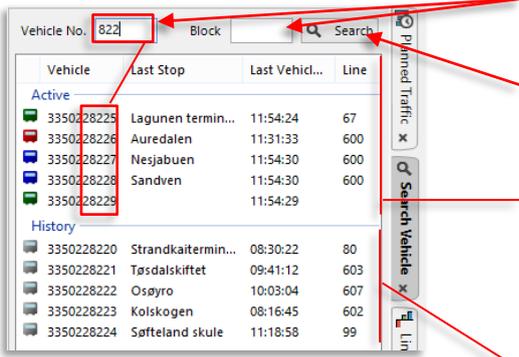
You can select the time interval for active/historical vehicles in the **Vehicle setup** tool under the **Presentation** tab by entering values for “Ignore messages older than <date>”. See chapter Vehicle Presentation for more information.

### Tool window, Search Vehicle

To search after a vehicle or a block:

1. Enter all or parts of the vehicle number or block number.
2. Click on **Find**.

All the vehicles fitting the criterion, at least partially, are listed. The top of the list shows the active vehicles while the lower part shows the historical vehicles.



The screenshot shows the 'Search Vehicle' tool window. At the top, there are input fields for 'Vehicle No.' (containing '822') and 'Block'. A 'Search' button is located to the right of the 'Block' field. Below these fields is a table with columns: 'Vehicle', 'Last Stop', 'Last Vehid...', and 'Line'. The table is divided into two sections: 'Active' and 'History'. The 'Active' section lists vehicles with colored icons (green, red, blue) and their last stop and time. The 'History' section lists vehicles with grey icons and their last stop and time. On the right side of the window, there are buttons for 'Planned Traffic', 'Search Vehicle', and 'Lin'. Red arrows point from text labels to specific elements in the window: 'Vehicle number or block number' points to the 'Vehicle No.' field; 'Search' points to the 'Search' button; 'Active' points to the 'Active' section header; and 'History' points to the 'History' section header.

Vehicle	Last Stop	Last Vehid...	Line
<b>Active</b>			
3350228225	Lagunen termin...	11:54:24	67
3350228226	Auredalen	11:31:33	600
3350228227	Nesjabuen	11:54:30	600
3350228228	Sandven	11:54:30	600
3350228229		11:54:29	
<b>History</b>			
3350228220	Strandkatermin...	08:30:22	80
3350228221	Tøsdalskiftet	09:41:12	603
3350228222	Osøyro	10:03:04	607
3350228223	Kolskogen	08:16:45	602
3350228224	Søfteland skule	11:18:58	99

**Vehicle number or block number**  
Enter the number in the right box

**Search**  
Start the search for the given criteria.

**Active**  
Show in real time the active vehicles fitting the search criteria. The vehicle symbol's color displays the time derivation of the vehicle according to the latest vehicle report.

**History**  
Show the inactive vehicles fitting the search criteria.  
The vehicles are shown in grey. Right-clicking on a vehicle will open a shortcut menu where you can see the color of the vehicle symbol reflecting its status in the latest vehicle report received.

### Shortcut Menu > Search Vehicle

Right-clicking on a vehicle in the **Search Vehicle** tool window will open the vehicle shortcut menu, see chapter 6.1

## 7.3 Map (tiled)

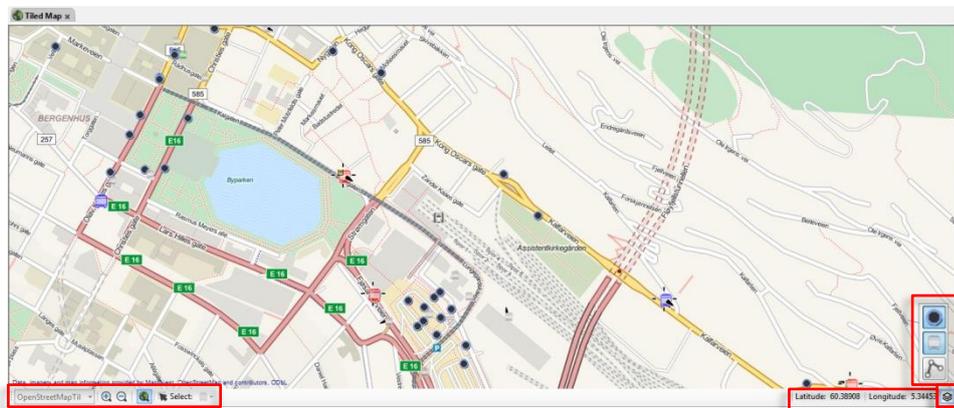
Tools > Map (tiled)

The Map tool gives a geographical overview of a particular area (It uses OpenStreetMap for its geographical visualization).

The Map tool has many uses. The selection tools, for instance, lets you select on the map the info point for traffic information (see New Traffic information Tool). The function **Follow vehicle** allows you to follow a vehicle on the map. You can of course also directly access shortcut menus for vehicles and stop points via the map. See **chapter 6 Tooltips, Shortcut Menus and Icons, p.19** for more information.

The map settings are explained in detail in the **administrator manual**.

### Tool Window



Navigation, Selection Controls

Pointer Coordinates

Map Object Layers

### Navigation, Selection Controls

There are many available functions for the map that are at the disposal of the user. These functions and their symbols are described below.

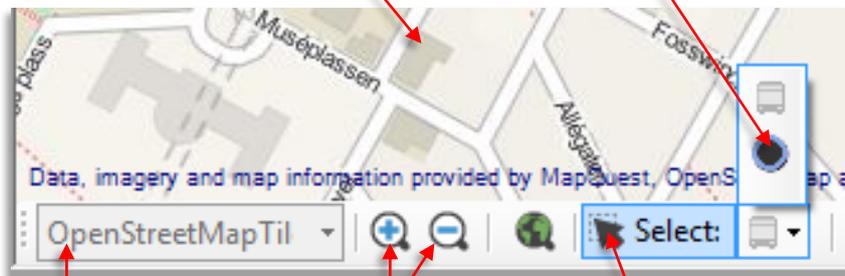
#### Pan

Pan the map by using your mouse. Hold down the left button and drag to navigate the map.

#### Select

Select/Deselect vehicles or stop points on the map. Toggle between the two in the dropdown menu.

**Note: Select several units at a time by holding down the shift key.**



Map Type

Not user selectable

Zoom in/out

Zoom in/out by 25 %.

Zoom-area

Zoom in to a user-defined area

## Coordinates

The map view also has a coordinates bar in its lower part showing the coordinates of the mouse pointer in the map. These values are described in the map coordinate system.

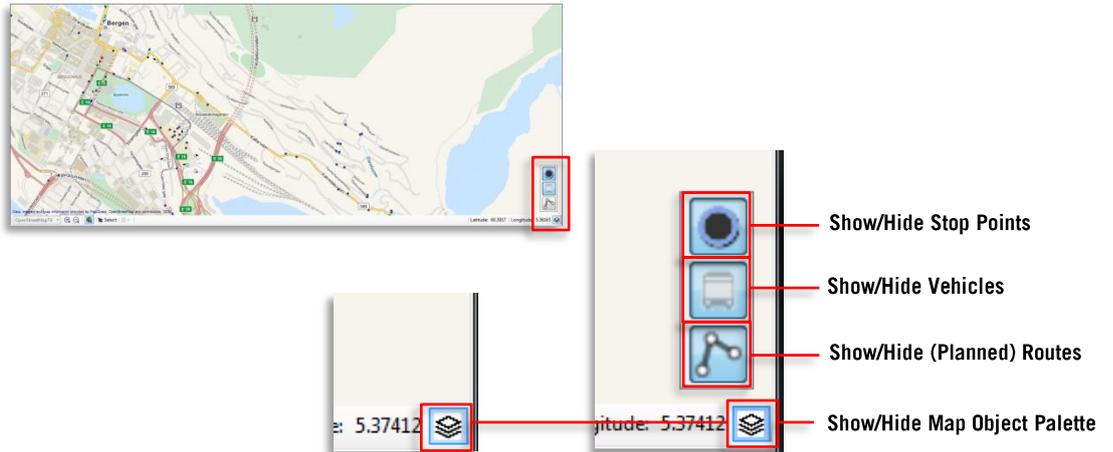
Longitude: 5.29093 | Latitude: 60.35122

## Map Object Palette

To focus the map view on what's important to you, map "object" types like stops, vehicles, plotted routes etc can be shown/hidden, per type, using the map object palette. This palette, in turn, is displayed/hidden using the Map object Palette button in the bottom right corner of the Tiled Map tool window, see below.

For information about information display map layer, see the Traffic Information chapter.

For information about route layers, see the chapters covering the Planned Traffic and Route Checker tools. Different route types/link status plots can also be viewed/hidden individually. This function is presently only used by our Snow Plow Monitor function, see the corresponding chapter.



## Map Object Show/Hide Examples



Show vehicles, selected planned route, hide stops



Show vehicles, stops, hide selected planned route

## Stop Points Symbols



The stops are shown with these symbols: . The orange color means that the stop is selected.

Note that the vehicle and stop point symbols give direct access to many tools via their shortcut menus.

## 7.4 Active Vehicles

Tools > Vehicles > Active Vehicles

The Active Vehicles tool shows the real time status of all the vehicles considered active by the system, i.e. the vehicles that have been reporting within a predetermined time. The settings for this time period is based on the one found in Vehicle Presentation.

The listed vehicles can also be filtered with the **Line Group** tool, by company, by interval and with the use of the free text Filter/search field.

Active Vehicles includes an expandable bar chart displaying the number of communicating vehicles by 15 minutes intervals during the calendar day.

### Tool Window

Active Vehicles provides detailed information about all active vehicles (those reporting within a given time interval). The list can be sorted after each column by clicking on its header.

Every time the list is updated, the new information is highlighted in bright yellow (see image below).

**Company filter**

Select all or only the vehicles of one company.

**Interval**

Only vehicles reporting within this time limit will be included.

**Free Text Filter**

Only rows with cells that match the filter field content will be presented..

**Show/hide bar graph**

Line	Destination	Vehicle	Block	Time table	Journey	Journey status	Last stop	Distance	Deviation	Passengers	Latest communication	Sequence number	Loop repc
3 Sietten		8606	8606	5191	91	Started Fageråsen,		Avgang	00:02:57		14:30:02 AMS	7609	
3 Sietten		8611	8611	5191	89	Avsluttet:Sietten anuplass,		Ankomst			14:28:47 AMS	6482	
3 Stabotn		8612	8612	5191	86	Avsluttet:Stabotn busslayfe,		Ankomst			14:02:44 AMS	1470	
3 Sietten		8614	8614	5191	93	Started Statsankivet,		224	00:01:55		14:30:00 AMS	6757	
3 Stabotn		8617	8617	5191	92	Started Lokketodalen,		Avgang	00:05:50		14:30:01 AMS	7880	
3 Stabotn		8626	8626	5191	98	Started Kong Oscars gate,		Avgang	0: 0 0		14:29:57 AMS	11314	
3 Sietten		8629	8629	5191	100	Started Koilbudalen,		Avgang	1: 4 3		14:29:54 AMS	1891	

Name	Description
Line	Line from which the vehicle is reporting.
Destination	Vehicle's destination. If the vehicle has a "via destination" in its planned route, which differs from its final destination, it will be shown in the table as "Via destination (final destination)" until the vehicles has traveled past the "via destination".
Vehicle	Vehicle number
Block	Block on which the vehicle is operating.
Time table	Version of the time table.
Journey	Journey's number.
Journey status	Status for each journey: started, ended, off route or aborted. "Learning" displayed for training vehicles.
Last stop	Previous stop.

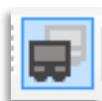
Name	Description
Distance	Distance to the previous stop point or one of the following messages: <b>Arrival</b> (to the stop point) <b>Departure</b> (from the stop point) <b>On stop</b> (at the stop point) <b>Off route</b> (automatic reposition when the system detects “back on route”, based on GPS information) <b>Manual</b> (manual reposition by the driver) <b>Automatic reposition</b> – new assignment
Deviation	Variation between the vehicle's actual position and the estimated time in the timetable.
Passengers	Total of passengers onboard the vehicle at the time, amount of passengers who boarded the vehicle at the latest stop point, amount of passengers who alighted the bus at the latest stop point.  <b>Note:</b> If the APC system has been off-line and comes back on-line it will report the total of all passengers that have boarded/alighted during the period it was off line. When this happens “Invalid” will be displayed instead of the APC data, to indicate the problem.
Sequence number	Numbered vehicle report (deviations in the amount of vehicle reports).
Loop reports	Amount of loops encountered under that period.
Stay time	Time spent by the vehicle at the stop with opened doors.
Company	Vehicle's company.
Valid flags	Status for validation.
Status flags	Show the communication status. Can be Tetra or udp/ip.
Vehicle displaying	Vehicle sign control status: No text (automatic control)/Manual (manual sign control)/External (signs controlled by external sign controller unit).

## Refine the Presentation

You can filter the information by various means to adapt the list view to your needs and/or make it easier to read, see below.

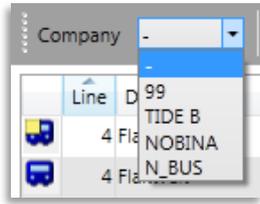
### Show my vehicles only

Click on the “Show my vehicles only” filter button (in the function bar) to only view vehicles belonging to your own company.



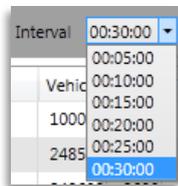
## Company

You can choose to show all vehicles (according to the filters mentioned above) or only the vehicles of one selected company. Select it via the company drop-down menu.



## Interval

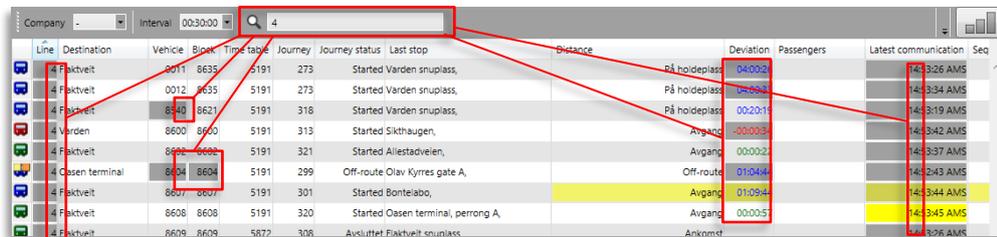
Active Vehicles by default lists all the active vehicles for a predetermined time interval, e.g. all vehicles that have sent a report in the last 30 minutes. You can select a shorter interval in the drop-down menu to filter the list to only include vehicles having sent a report in the last 5, 10, 15, 20 or 25 minutes.



## Free Text Filter

The free text field filters the data displayed in the list. Every cell matching the filter content is highlighted grey to make them easier to notice. Only the rows with matching cells are included in the list.

The list is automatically updated as you enter information in the filter field.

A screenshot of a software interface showing a data table with a search filter applied. The search filter is set to '4'. The table has columns: Line, Destination, Vehicle, Block, Time table, Journey, Journey status, Last stop, Distance, Deviation, Passengers, Latest communication, and Seq. The search filter is highlighted in red, and the results are filtered to show only rows containing the number '4'. The table is highlighted in grey where the search filter matches. The table data is as follows:

Line	Destination	Vehicle	Block	Time table	Journey	Journey status	Last stop	Distance	Deviation	Passengers	Latest communication	Seq
4	Fakstveit	8011	8635	5191	273	Started	Varden snuplass,	På holdeplass	04:00:0		14:3:26 AMS	
4	Fakstveit	0012	8635	5191	273	Started	Varden snuplass,	På holdeplass	07:00:0		14:3:34 AMS	
4	Fakstveit	8540	8621	5191	318	Started	Varden snuplass,	På holdeplass	00:20:1		14:3:19 AMS	
4	Varden	8600	8600	5191	313	Started	Sikthaugen,	Avgang	-00:00:3		14:3:42 AMS	
4	Fakstveit	8602	8602	5191	321	Started	Allestadveien,	Avgang	00:00:2		14:3:37 AMS	
4	Oasen terminal	8604	8604	5191	299	Off-route	Olav Kyrres gate A,	Off-route	01:04:4		14:2:43 AMS	
4	Fakstveit	8607	8607	5191	301	Started	Bonteilabo,	Avgang	01:09:4		14:3:44 AMS	
4	Fakstveit	8608	8608	5191	320	Started	Oasen terminal, perrong A,	Avgang	00:00:5		14:3:45 AMS	
4	Fakstveit	8609	8609	5872	308	Avsluttet	Fakstveit snuplass,	Ankomst			14:3:26 AMS	

## Column Specific Filters

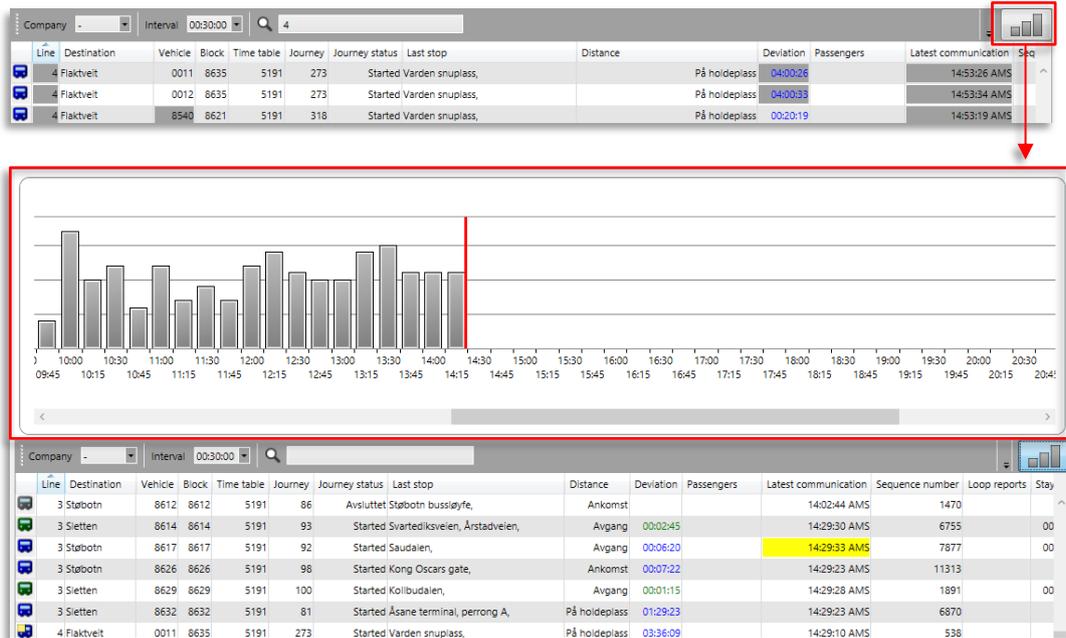
Click on the looking glass symbol to activate the column specific filter function. Separate search fields for each searchable column will appear. Enter search text/digits in one or more column fields to filter the list. Only matching lines will be included, but the matching cells will not be highlighted gray. Click again on the looking glass symbol to deactivate/hide the column search fields.

Note that the column specific filters can be used together with the regular free text filter.

Line	Destination	Vehicle	Block	Journey	Journey Status	Last Stop	Distance	Deviation	Passengers	Latest Communication	Sequence Number	Loop Reports	Time at Stop	Company	Valid Flags	Status Flags
10035		4051			Between					1011:56 AMS	9284			2.1 Northordland	Invalid Block (0x72)	UDP/IP
10037		4063			Between					1010:47 AMS	10572			2.1 Northordland	Invalid Block Time (0x73)	UDP/IP
11048		4009			Between					1011:34 AMS	7499			2.1 Northordland	Invalid Block Time (0x73)	UDP/IP
6	skys.no	48540	8540	2970	Started	GARASIE Haukås	440			1011:44 AMS	3092			2.4 Bergen nord	Invalid Block Time (0x73)	UDP/IP
9	skys.no	48540	8640	3155	Started	GARASIE Knavik	666			1011:51 AMS	7468			2.4 Bergen nord	Invalid Block Time (0x73)	UDP/IP
300	skys.no	11063	4031	1748	Started	GARASIE Knavik	At Stop			1010:55 AMS	25			2.1 Northordland	Invalid Block Time (0x73)	UDP/IP
311	Knavik skytastasjon	11061	4071	105	Started	Averfaten nord	456	-0001:24		1012:05 AMS	9411		0000:00	2.1 Northordland	OK (0x77)	UDP/IP
320	skys.no	11033	4001	2667	Started	GARASIE Knavik	15147			1011:07 AMS	11607			2.1 Northordland	Invalid Block Time (0x73)	UDP/IP
320	Flatøy - Knavik (Flatøy/Knavik)	11034	4002	178	Started	Munkebotn	842	0001:12		1012:07 AMS	13645		0000:00	2.1 Northordland	OK (0x77)	UDP/IP
320	Bergen busstasjon (Kun avgang)	11038	4006	177	Started	Kaavaneset	784	0003:18		1012:08 AMS	9992		0000:48	2.1 Northordland	OK (0x77)	UDP/IP
320	skys.no	11042	4026	2701	Started	GARASIE Knavik	96			1011:39 AMS	12069			2.1 Northordland	Invalid Block Time (0x73)	UDP/IP
320	Flatøy/Knavik	11043	4011	176	Started	Flatøy	176	0000:31		1012:07 AMS	9338		0001:44	2.1 Northordland	OK (0x77)	UDP/IP
320	skys.no	11044	4012	2713	Off Route	GARASIE Knavik	11718			1012:08 AMS	1538			2.1 Northordland	Invalid Block (0x0)	UDP/IP

## Bar Graph

The bar graph is minimized by default. Click on the chart button to show the graph above the vehicle list in the Active Vehicles tool.

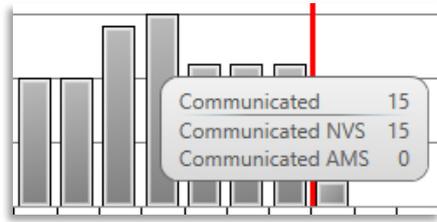


The bar graph shows the number of of vehicles, both assigned and unassigned, that are communicating. Each bar represents an interval of 15 minutes, for the current calendar day (00:00 to 23:58).

The horizontal red line indicates the current time. Its position is updated as time passes and the graph gets another 15.minute bar.

## Tooltip

Hold the mouse over a bar to get a tooltip showing the total amount of reports, followed by its repartition in each category (AMS and NVS).



- AMS reports are related to positions, door opening, deviations, etc. Most reports are in this category.
- NVS reports are related to the vehicle asking the depot about its software version.

# 7.5 My Vehicles

Tools > Vehicles > My Vehicles

The **My Vehicles** tool lists all available static vehicle information for the vehicles in a system. This can include everything from chassis ID to Wheel chair capacity to Manufacturing date. The tool includes a company and a free text filter for narrowing down the presentation and functions for sorting the content.

**Note:** The column order can be set by dragging and dropping the columns.

## Tool Window

### Filter: Company

Optional filter to only view vehicles from one company.

### Free Text Filter

Narrow down the presentation with the free text filter. Only vehicles with one or more matching cells is included in the list.

The numbers after the filter field shows the number of vehicles after filtration/the total number of vehicles

Company	Vehicle	Type	System Address	Node Name	Active	Rakel Address	MSISDN Number	Chassi ID	External ID	Description	Equipped for Wheel Chair Transport	Audio Information	Ramp
CONSAT	3140200-972	Bus	3140200972	3140200-972	Yes			3140200-972		Generated by VolvoImporter	No	No	No
CONSAT	3140200-973	Bus	3140200973	3140200-973	Yes			3140200-973		Generated by VolvoImporter	No	No	No
CONSAT	3140200-974	Bus	3140200974	3140200-974	Yes			3140200-974		Generated by VolvoImporter	No	No	No
CONSAT	3140200-975	Bus	3140200975	3140200-975	Yes			3140200-975		Generated by VolvoImporter	No	No	No
CONSAT	3140200-981	Bus	3140200981	3140200-981	Yes			3140200-981		Generated by VolvoImporter	No	No	No
CONSAT	3140200-982	Bus	3140200982	3140200-982	Yes			3140200-982		Generated by VolvoImporter	No	No	No
CONSAT	3140200-983	Bus	3140200983	3140200-983	Yes			3140200-983		Generated by VolvoImporter	No	No	No
CONSAT	3140200-985	Bus	3140200985	3140200-985	Yes			3140200-985		Generated by VolvoImporter	No	No	No
9999	31402-00619	Snow plow	3140200619	31402-00619	Yes			31402-00619		Generated by VolvoImporter	No	No	No
9999	31402-54806-riccs-edward-test	Snow plow	3140254808	31402-54806-riccs-edward-test	Yes			31402-54806-riccs-edward-test		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-larnaz	Snow plow	3140299920	31402-test-snow-larnaz	Yes			31402-test-snow-larnaz		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-rlip	Snow plow	3140299921	31402-test-snow-rlip	Yes			31402-test-snow-rlip		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-thomas	Snow plow	3140299923	31402-test-snow-thomas	Yes			31402-test-snow-thomas		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-zenobia	Snow plow 4	3140299925	31402-test-snow-zenobia	Yes			31402-test-snow-zenobia		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-edward	Snow plow	3140299926	31402-test-snow-edward	Yes			31402-test-snow-edward		Generated by VolvoImporter	No	No	No
9999	31402-test-snow-bigrig	Snow plow	3140299927	31402-test-snow-bigrig	Yes			31402-test-snow-bigrig		Generated by VolvoImporter	No	No	No

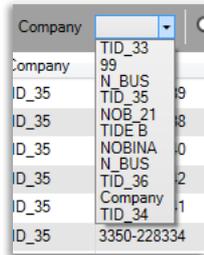
## Column description

Name	Description
Company	Vehicle Operator/Company
Vehicle	Vehicle number
Type	The vehicle type, presented with the symbol used in the application and a type name (Bus, Snowplow, Ferry etc...) Available types depending on system.
System Adress	Unique vehicle system address
Node Name	I4M System Node name.
Active	(Yes/No) If the vehicle is on active duty or not
Rakel Address	Rakel radio address
MSISDN	The "phone number" of the vehicle modem.
Chassi ID	Chassis number.
External ID	External Vehicle ID number.

Name	Description
Description	This data field shows the origin of the vehicle data.
Handles transport wheel chair	(Y/N) Vehicle is equipped for wheel chair transport.
Audio Information	(Y/N) Vehicle is equipped for audio information broadcast.
Ramp or Lift	(Y/N) Vehicle has ramp/lift for disabled passengers.
Type	Vehicle type (bus/tram etc.)
Hcp	(Y/N) Handicapped equipped vehicle
Low Entry	(Y/N) Vehicle has low entry doors.
Low Floor	(Y/N) Vehicle has low floor.
Stroller Space	(Y/N) Vehicle has space for stroller
Toilet	(Y/N) Vehicle is equipped w toilet.
Visual Information	(Y/N) Vehicle is equipped w information displays.
Suitable for wheel chairs	(Y/N) Vehicle has room and is equipped for passengers in wheelchairs.
Wheel Chair Places	The number of wheel chair spaces.
Commissioned	The time and date the vehicle was commissioned.
Manufactured	The time and date the vehicle was manufactured.
Modified	The time and date the vehicle was last modified.
Road Speed Limiter	Road Speed Limiter threshold (km/h)
Overspeed	Overspeed threshold (km/h)
RPM Economy Lower	Lower RPM economy range threshold
RPM Economy Upper	Upper RPM economy range threshold
Over Weight	Over Weight threshold
Harsh Acceleration	Harsh Acceleration threshold
Harsh Braking	Harsh Braking threshold
Harsh Curving	Harsh Curving threshold
Inclination	Inclination threshold
Fuel Drain	Fuel Drain threshold (l)
Excess Idling	Excess Idling threshold (sek)

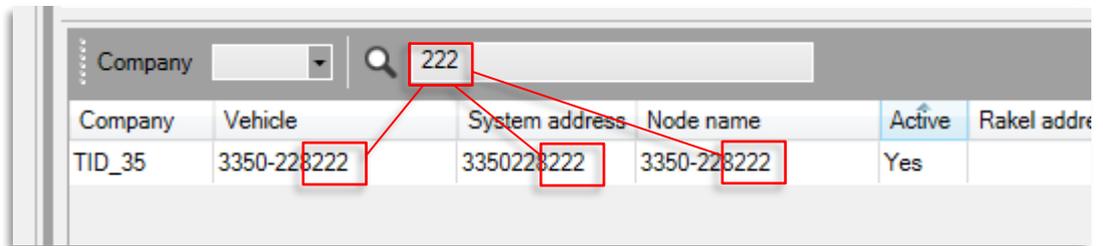
## Company filter

To only view the vehicles of a particular company, use the Company filter: When the filter field is blank all vehicles in the system is included in the list.



## Free Text filter

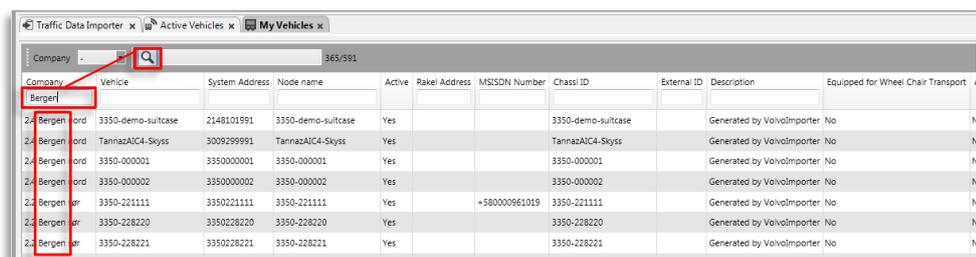
To narrow down the presentation you can apply a free text filter. Only rows with one or more matches will be included in the list.



## Column Specific Filters

Click on the looking glass symbol to activate the column specific filter function. Separate search fields for each searchable column will appear. Enter search text/digits in one or more column fields to filter the list. Only matching lines will be included, but the matching cells will not be highlighted gray. Click again on the looking glass symbol to deactivate/hide the column search fields.

**Note that the column specific filters can be used together with the regular free text filter.**



## Sort list

Click on a column head to sort the list after the column content. The column head will be highlighted and a Sorting direction indicator will show the sorting direction. Click again on the column head to sort the list after the column content - in reverse order.

Chassi Id
3350-228225
3350-228226
3350-228227
3350-228228
3350-228229
3350-228231

Chassi Id
3350-248636
3350-248635
3350-248634
3350-248633
3350-248632
3350-248631

## Highlight row

The vehicle list can be large hard to read with so many columns and so much information. To highlight a chosen vehicle row in the list, simply click on the row.

# 7.6 Vehicle Groups

Tools > Vehicles > Vehicle Groups

The **Vehicle Groups** tool lets you create groups of vehicles, which can be used, for example, to make group calls in the Voice Communication tool.

## Tool Window

The Vehicle Groups tool window consists of three sections.

- Left section: List of all current vehicle groups.
- Central section: Editable fields for the selected (or a new) vehicle group.
- Right section: List of all vehicles available for inclusion in a group.

**Note:** Vehicles can belong to more than one group.

### Vehicle Groups

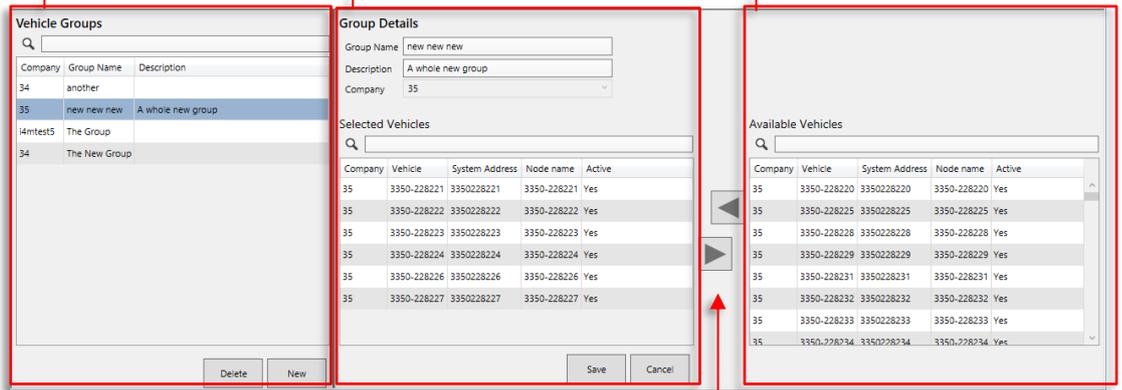
List shows all vehicle groups. Click on column to sort list. Add or delete group using buttons at the bottom.

### Group settings and selected vehicles

Enter **group name** and **description**. (Free text)  
The Selected Vehicles list shows all current group members.

### Available vehicles

These vehicles are available for inclusion in a group.



### Move vehicle arrow buttons

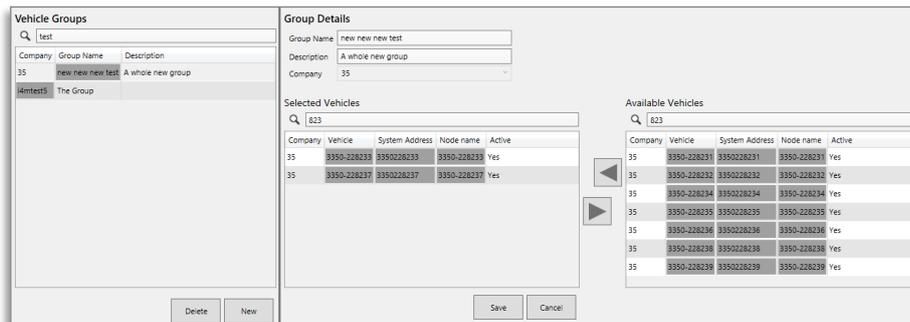
Click on the top arrow button to move the selected vehicle in the Selected vehicles list to the Available vehicles list.

Click on the bottom arrow button to move the vehicle from Available to Selected.

## Search

The search field filters the data displayed in the list. Every cell matching the filter content is highlighted in grey to make them easier to notice. Only the rows with matching cells are included in the list.

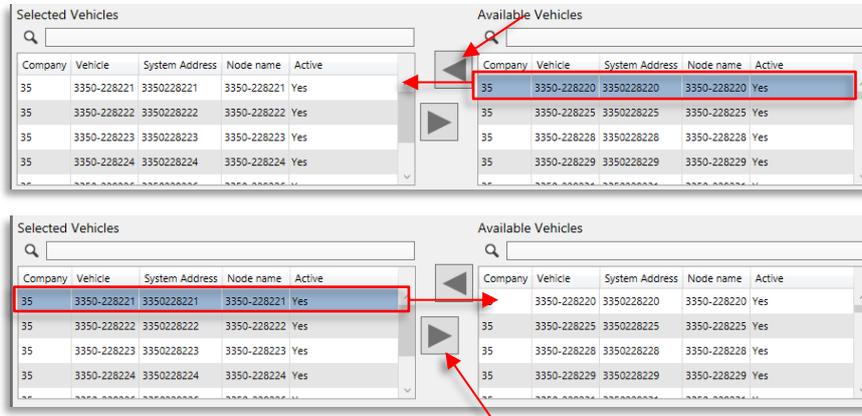
The list is automatically updated as you enter information in the filter field.



## Move vehicles to/from group

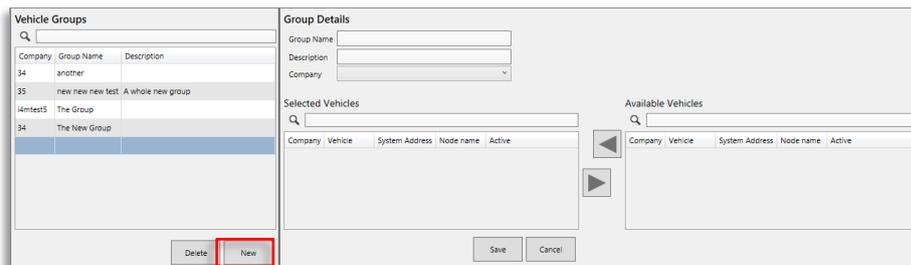
To add/remove a vehicle to/from, an existing group:

- You can double-click on a vehicle or select it and use one of the arrows.
- To make a multiple selection, use SHIFT and/or CTRL, then click on the appropriate arrows.

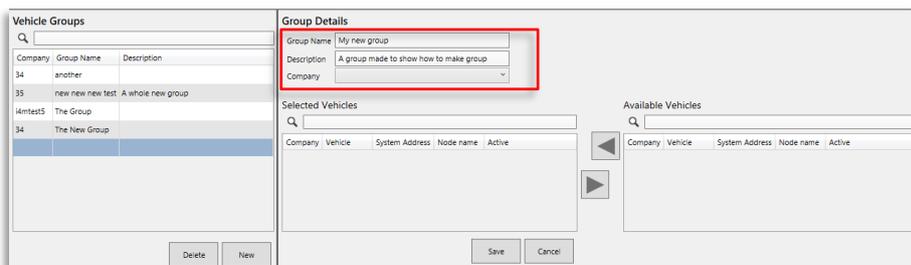


## Create a new vehicle group

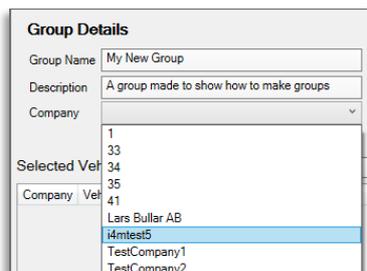
1. Click on the New button.



2. Enter the information under Group Details, such as Name and Description.

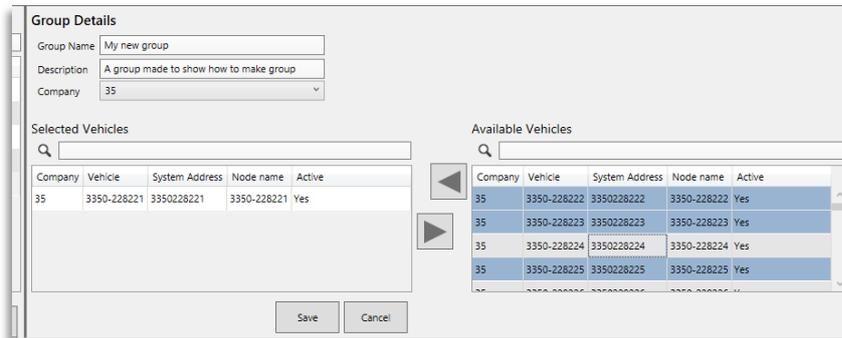


3. Select the group's company via the drop down menu. The list of vehicles will be generated in the Available Vehicles list. Note that once the group is saved, the company menu is locked.

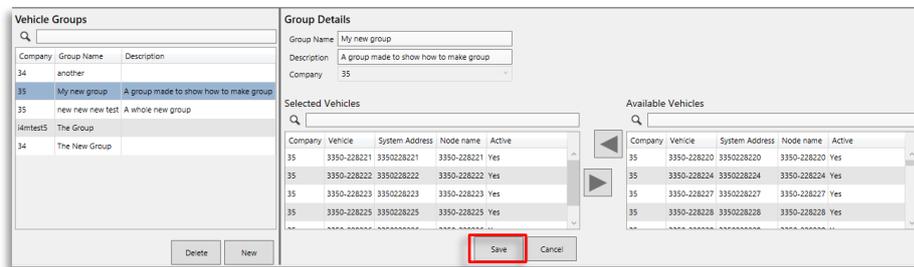


4. Select the vehicles in the Available Vehicles list. You can double-click on a vehicle to select and move it to the group, or select it and then use the upper arrow  to move it. To make a

multiple selection, use **SHIFT** and/or **CTRL** to select several vehicles in the available vehicles list, then click on the upper arrow  to move them to the group. You can of course always remove a vehicle, or many, from the Selected Vehicles list.



5. Click on Save to save your group. The blue row will update with the group information. Click on Cancel to end the group creation.



## Edit a vehicle group

1. Select a group in the Vehicle Groups list. Its properties appear in the Group Details window, including its name, description and selected vehicles. Note that you cannot modify the company associated to the chosen vehicle group.
2. Modify the name, description or add/remove vehicles.
3. Click on Save to keep the changes or click on Cancel to continue without modification.

## Delete a vehicle group

1. Select a group in the Vehicle Groups list. Its properties appear in the Group Details window.
2. Click on Delete to remove it from the list. Note that you will not be asked to confirm the deletion, nor can you undo it.

