Consat Telematics Solution

Configuration Manager (its4Depot) Reference Manual

Covers Front End Version 25.7.(X) (w. corresponding backend).

Contents

1 Glossary

Term	Explanation
CM	Configuration Manager, also called “its4Depot”.
Partition	A separate “data compartment” in the Configuration Manager, is useful for separating companies/operators and vehicles/signs (display systems). Each partition can only be accessed by users belonging to the corresponding user group.
Fleet	A vehicle/display system group with a common resource set.
Vehicle/Sign	Vehicle/display system equipped with Consat Telematics hardware.
Category	A vehicle/display system group with common software and configuration settings.
Member	A vehicle/display system that belongs to a group (fleet/category)
Node	A “distribution point” in the system –can be a physical vehicle/sign computer or a virtual unit used for defining an installation package.
Resource	Traffic data, sound files, etc. are used by the vehicle/display system.
Resource type	Resources are divided into types: Traffic database, sound files…
Customization	Customizations are ready-made packages put together for a particular customer. They contain configurations, boot-up images, sign settings, etc.
Parameter Group	A “set” of configuration settings. It makes common but complex settings easier to handle.
Hardware-ID	A unique ID hardcoded into every vehicle/display computer, not changeable by the users. The hardware ID is used for identifying the individual units/vehicles in the Consat Telematics system.

2 Functional Overview

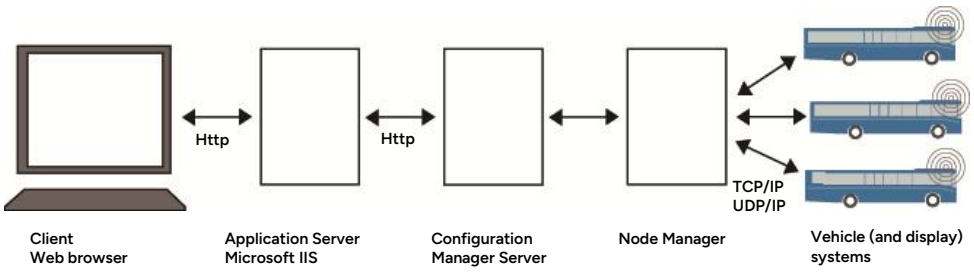
The Configuration Manager works much like a “heart” or nervous system in a Consat Telematics system. This system, with its web user interface, handles and distributes software, resources, and configuration data to all individual vehicles and display systems.

Two examples of typical resources are traffic data and sound files for the next stop and destination announcements.

Configuration data can be individual display system settings, volume settings, and configuration controlling when the next stop announcement shall be triggered.

The Configuration Manager can be said to consist of three major parts: The Application Server, running the user interface, The Configuration Manager Server, running the core functionality, and the Node Manager handling/distributing data to and from the individual vehicles/displays.

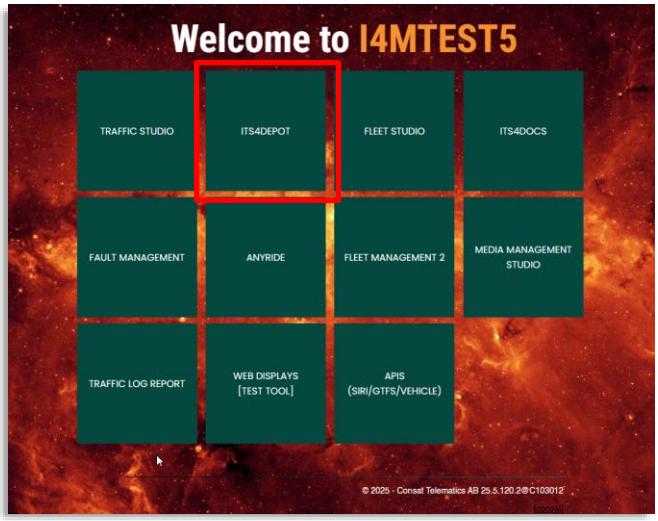
The Client providing the user with the user interface for controlling the Configuration Manager is a normal Web browser (Microsoft Explorer or Google Chrome).



3 Accessing the Configuration Manager

3.1 Configuration Manager/"Its4Depot" in the Customer Portal

You can access the web CM interface in your customer portal:



3.2 Web App Installation – Direct Access

For easy access on mobile devices (Android, IOS) and Windows Computers, you can install an "app shortcut" (depending on configuration).

With an installed "app" in a mobile device or computer, the CM will show up and can be accessed as an app/program in the device.

4 Basic Configuration Manager Terminology

The Configuration Manager interface is a tool for administering the potentially large and complex library of software releases, resources, and configurations, for all vehicles belonging to operators servicing different lines. To do this effectively, vehicles and display systems must be grouped. That way settings, changes, and updates can be applied to whole groups instead of to individual units.

Below we explain the basic terminology needed for understanding the Configuration Manager grouping.

4.1 Configuration Manager Partitions

The Configuration Manager data is normally divided into partitions or sections with separate user access. Each partition is accessed through its user group. To access all partitions a user must be a member of all groups.

Normally, partitions are used for handling vehicle and display (sign) systems separately and for handling companies that must not be able to access the traffic data or vehicle status information of their rivals. Partitions can also be used to divide the system into other logical sections, depending on the organization.

4.2 Vehicles and Signs (display systems)

A **vehicle** or **sign** in the Configuration Manager represents a physical vehicle or sign.

- **Every vehicle/sign has a name (vehicle/display system number) and a hardware ID for identifying the unit computer.**

4.3 Vehicle/Sign Grouping

Apart from individual vehicles and signs, there are two distinct groupings used by the Configuration Manager: **Categories** and **Fleets.**

4.3.1 Category

- **The Category grouping of vehicles/signs is used for units with the same hardware configuration which means they have the same software and configuration needs.**

Vehicles with the same hardware (like signs, displays, and sound systems) are normally placed in the same category. A few examples of configuration parameters set per category are sound volume, display protocols, and -resolution.

- **Individual vehicles can, of course, have special hardware installed; demanding special configuration, but the standard way of handling both software and configuration is applying it to whole categories.**

4.3.2 Fleet

- **The Fleet grouping of vehicles and display systems is used for easier handling of units with the same resource needs (like traffic data and sound files).**

The Configuration Manager can handle hundreds of vehicles from different companies, servicing different lines. If a company/operator services certain lines a custom resource set for the fleet of that company can be created to greatly simplify the traffic data distribution. Individual companies of course also have separate driver lists (used for the vehicle system login function if that function is included), which is also a resource suitable for the whole company fleet.

4.3.3 Only one Membership of Each Type

- **A unit (vehicle/display) can be a member of only one fleet and one category.**

4.3.4 Individual Settings Overrides Groups

- **Parameters set for an individual unit that is a member of a category override the category parameter settings.**

4.4 Parameter Groups

Apart from the Fleet and Category terms, **Parameter Group** is a term you should be familiar with as a CM user.

- **A Parameter Group is a preset, a collection of pre-defined settings that can be applied to a whole Category or individual units (vehicles/display systems).**

Parameter groups for, for example, a certain type of loudspeaker system or vehicle display combination make the configuration of diverse vehicle fleets much easier.

5 Operators use Separate Partitions

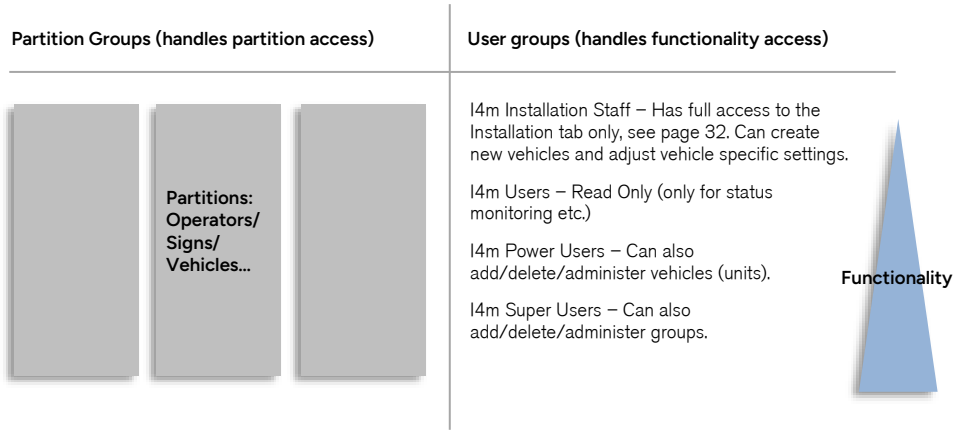
Many Companies/Operators can share the same Configuration Manager. In that case, they will use separate partitions. The Windows-based User Rights handling and the partition selection in the user interface make sure a Company will not get access to any data from a competitor. See the next chapter for user rights administration and limits for different user groups.

- **Operators/companies with their respective partitions are administered by Consat Telematics (added/edited/deleted) in the Configuration Manager.**

6 User Rights Administration

The Configuration Manager uses standard Windows User administration for handling user partition and functionality access (including the adaptation of the interface configuration: What tabs the user can see and access).

- **The Configuration manager uses a username plus password authorization.**
- **The users not only get access to different partitions by being members of the corresponding Partition Groups but access different levels of functionality depending on which User Group they are a member of.**



- **For more details about user administration, see current Windows documentation.**

- **For a detailed description of the functionality access of the four different user groups, see the next page.**

6.1 User Groups: Functionality Access

	Users	Power Users	Super Users	Installation Staff
Vehicles				
See vehicles w. configuration and software	x	x	x	x
Add, edit, remove vehicles		x	x	
Change vehicle software		x	x	
Change vehicle configuration			x	
Fleets				
See fleet members (vehicles/display systems)	x	x	x	
See fleet resources	x	x	x	
Add, remove fleet members (vehicles/display systems)		x	x	
Create, delete fleets			x	
Add fleet resources			x	
Categories				
See category members	x	x	x	
See category software	x	x	x	
Add, remove category members (vehicles/display systems)		x	x	
Create, remove categories			x	
Edit category configuration			x	
Assign category software			x	
Deliveries				
See available software (deliveries)	x	x	x	
Add, remove software (deliveries)			x	
Resources				
See available resources and resource content files	x	x	x	

	Users	Power Users	Super Users	Installation Staff
Add, remove resources/-files			x	

7 Application Overview

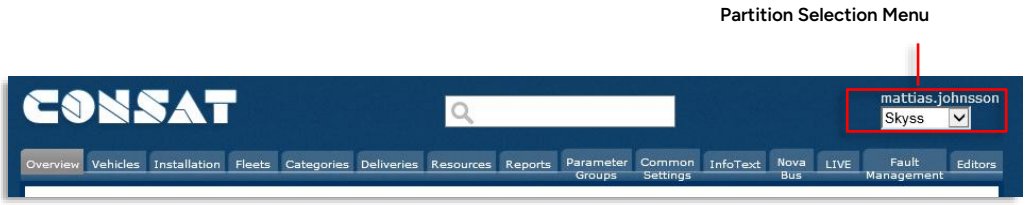
The Configuration Manager (web) application runs in a standard browser. Microsoft Explorer or Google Chrome is recommended, but others might work even if they are not officially supported.

All (user level) status monitoring, administration, and updates to software deliveries are handled through this web application.

The application is divided into eleven tabs (depending on configuration). In the following chapters, the functionality available under each tab is described. The short tab description list on the following page can be useful as an overview.

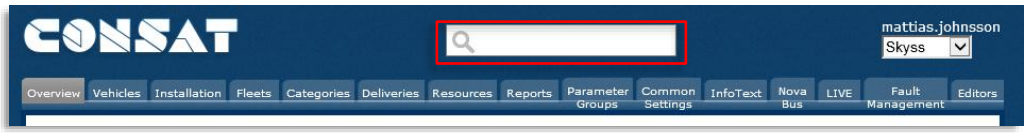
7.1 Select Partition/Operator

If you have access to two or more partitions (for different operators, vehicles/signs, etc.) you can select the one you want to work with using the **Partition selection menu** at the top of the page.



7.2 (Report) Search field

The top search field is a function in development. In its present version, it allows you to quickly perform a search for a report but the functionality will be expanded to other sections of the application in the future. See chapter 8.9 for more information.



7.3 User Interface Tabs

- **Note that the tabs/views available to you depend on your particular system configuration.**

Tab	Description
Overview	Quick status overview with pie charts, plus a vehicle list with customizable information columns and status indications.
Vehicles	Individual vehicles are handled using this tab. Software delivery, resources, and configuration are handled in subsections. Sections for remote diagnostics and history logs are also available. New vehicles can be added and installation packages can be created on this tab also (function duplicated on the Installation tab).
Installation	On this tab, all of the functionality needed by the installation staff is concentrated. When a user is a member of the I4M Installation Staff group the user interface is adapted and most tabs are not visible, so optimize the interface for the specific installation task.
Fleets	Fleet groupings are created, edited, and deleted under this tab. Fleet members can be added or removed from created fleets. And the fleet-specific resources can be added/removed.
Categories	Under this tab, Categories are created/edited and deleted. Members can be added or removed from the groupings. Category-assigned software deliveries are also set here.
Deliveries	Software deliveries are handled under this tab.
Resources	Resources (containing several files) and individual resource files are added, edited, and removed under this tab.
Reports	Under the Reports tab overview reports for all vehicles can be created, covering one or more partitions.
Parameter Groups	Here all pre-defined Parameter Groups are handled, including attaching these to individual vehicles or whole categories.
Common settings	Here, selected and often used settings can be dited using a simplified user interface.
InfoText	Functionality for distributing and triggering driver information messages (can be activated inside a specific rectangular geographic area).
Nova Bus	Nova Bus specific functionality, see appendix A.
Diagnose	Trouble Shooting page with a remote driver display screen and positioning functionality.
Fault Management	Here all active system/equipment faults are listed.

7.4 Keyboard Shortcuts for Tab Selection

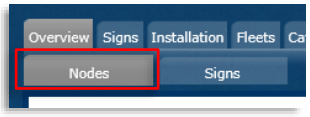
Pressing the following key **with nothing else focused** will navigate to that tab in the Depot GUI:

- **'o', Overview**
- **'v', Vehicle / Sign / Node**
- **'i', Installation.aspx**
- **'f', Fleet**
- **'c', Categories**
- **'d', Deliveries**
- **'r', Resources**
- **'p', ParamGroups**
- **'s', Common Settings**
- **'t', Info Text**
- **'n', Nova**
- **'l', Live**
- **'m', Fault Management**
- **'e', Editors**

8 Application User Interface

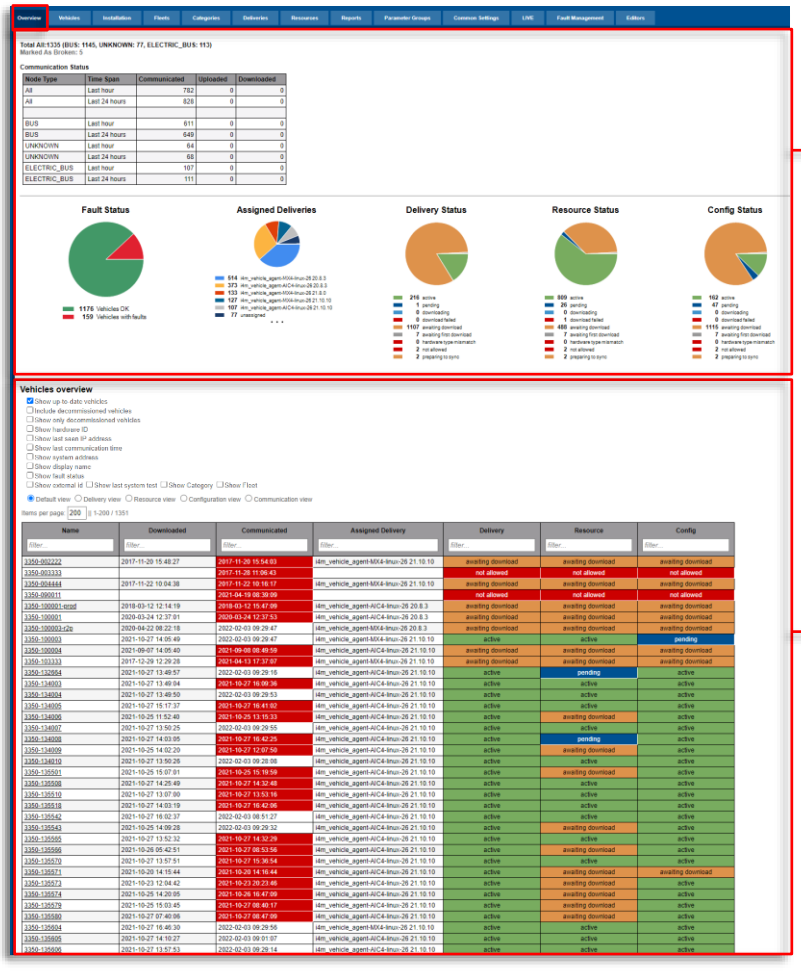
8.1 Overview

With a vehicle partition selected, under the Overview tab you will find quickly grasped statistics, telling you how well the system works, and below more detailed status information for every vehicle or sign in the partition. With a sign partition selected this view is displayed on the sub-tab Nodes. (See below and the following chapter.)



With a Sign partition selected the overview described below is presented on the "Nodes" sub tab.

The view is divided into an upper graphical statistics overview and a lower vehicles overview list with colour-coded cells showing the status for deliveries, resources, and configurations separately. The Vehicles overview is highly customizable.



Statistics overview, including key numbers for the last hour/24hours

Vehicles Overview, customizable

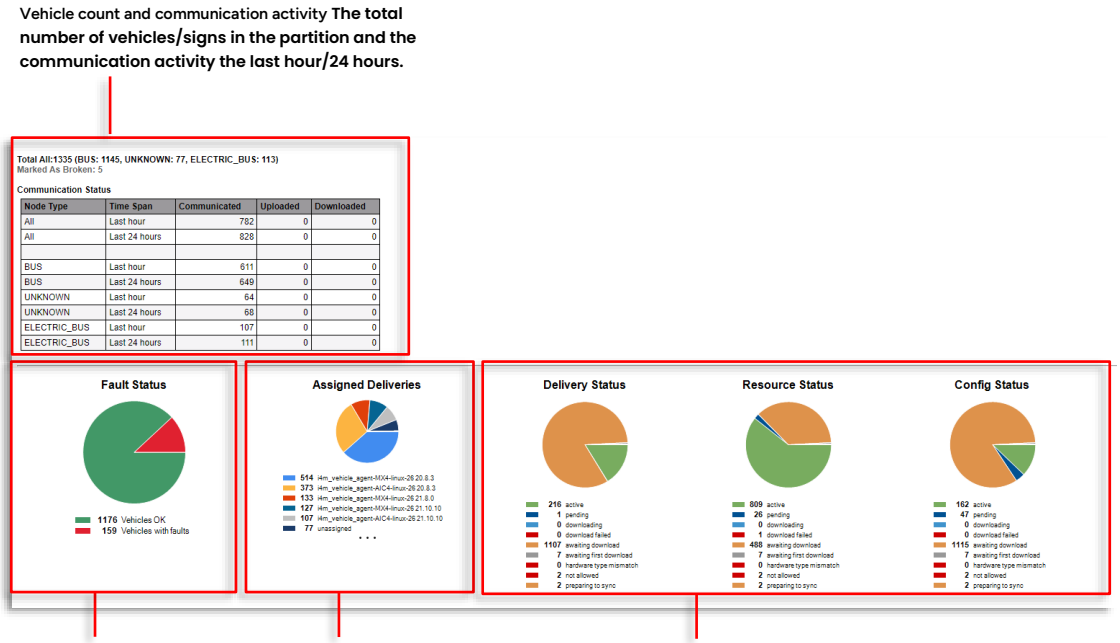
8.1.1 Statistical Overview

To get a quick idea of how up-to-date the vehicles/signs in the selected CM partition are, just glance at the five pie charts in the Overview section and look at the shortlist showing the communication status for the last hour and 24 hours respectively.

The **Active Faults** pie chart shows the distribution between the most common active fault types. (Note that these are active faults – current faults that have not been cleared. No-fault history is available.)

The **Assigned Deliveries** pie chart shows the software delivery distribution for the partition (how many units have which delivery assigned).

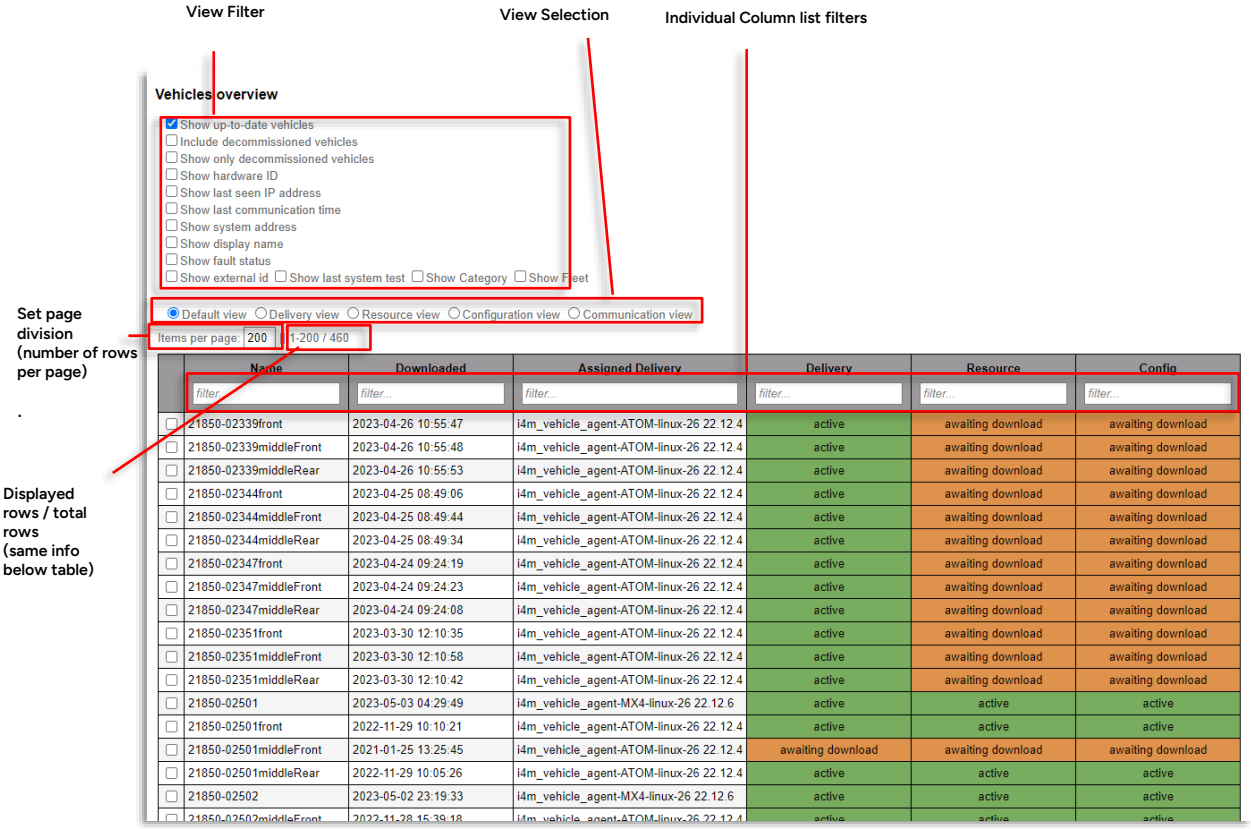
The three **Delivery, Resource, and Config Status** pie charts show the proportion of vehicles/signs running their assigned deliveries, resources, and configurations and those pending, downloading awaiting download, etc. If these charts look like green discs everything is up to date.



8.1.2 Vehicles/Signs Overview

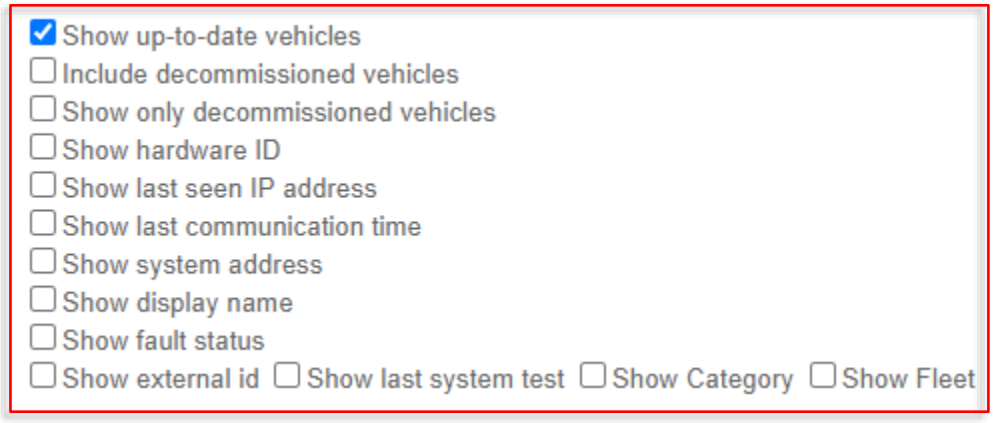
The underlying overview shows the current status of individual vehicles/signs. It is very flexible. By clicking on the Default view/Delivery view/Resource view/Configuration view or Communication view you can tailor the status list to your needs. And the additional View filter lets you focus on the information needed.

Separate column-free text filters also let you filter the list quickly. Enter text/numbers to filter the list: Only rows with column cells matching the corresponding filter will be shown.



View Filter

Apart from choosing the desired view, you can customize the list presentation by ticking/un-ticking the boxes above the list. For instance, showing only vehicles not up to date (untick the show up-to-date vehicles box) may shorten the list considerably and thereby allowing you to focus on the vehicles/signs that need attention.



Tick the Show up-to-date vehicles box to include the vehicles that are running up-to-date deliveries, resources, and configurations.

Tick Include/Show only decommissioned vehicles to view such "ex vehicles".

Tick the **Show hardware ID** box to include the Hardware ID column in the list view.

Tick the **Show last seen IP address** box to include the corresponding column in the list view.

Tick the **Show last communication time** box to include the corresponding column in the list view, showing when the vehicle/sign was last in contact with the Configuration Manager.

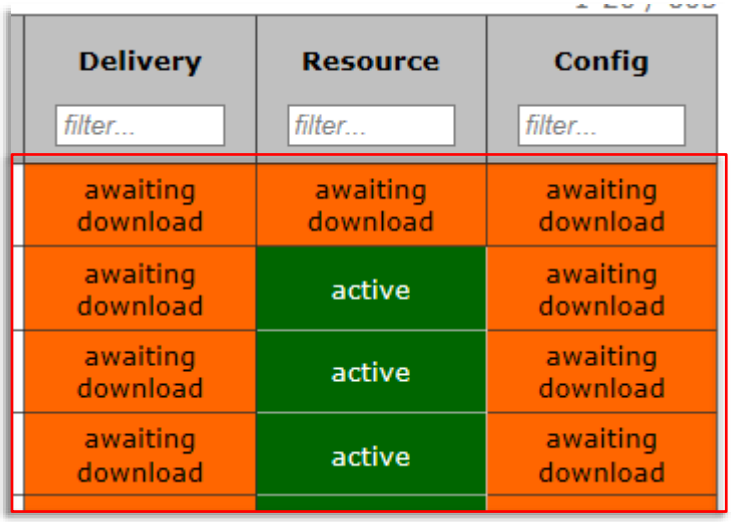
Tick the **Show System address** box to include the corresponding column in the list view.

Tick the **Show display name** box to view the "display name" of the vehicle/sign for easier identification. (The display name is manually set on the Vehicles/Signs tab.)

Tick the **Show fault status** box to view the number of active faults for each vehicle/sign. (Sort the list after this column to quickly find units with faults)

8.1.3 Vehicles Overview: Status Presentation Columns

The current delivery (software), resource, and configuration status are presented in the three status columns in the list.



active: The assigned delivery/resource/configuration is in use.

pending: The assigned delivery/resource/configuration has been downloaded but is not yet in use. (Reboot must occur first.)

preparing to sync: The vehicle/sign computer is preparing to sync something from depot.

Before download starts it will internally sync data from the active to the inactive tree, then it will sync the inactive tree with the new data from the depot.
To make this new delivery/resource/configuration active, the computer will then switch active and inactive trees when it reboots.

downloading: Download in progress.

download failed: An assigned download has failed. **Note:** A download can temporarily fail for many reasons, it can be that the vehicle has been turned off, that it has temporarily lost contact with the central or that too many vehicles are synching their software at the same time (a maximum of 100 vehicles can be synchronized simultaneously).

If the Download failed status will not remain for a long period usually there is no need for concern.

awaiting download: The assigned delivery/resource/configuration awaits download.

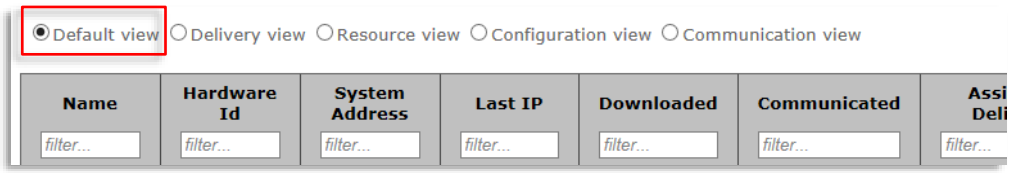
Note: The vehicle/vehicle system must be powered for download to start. If vehicle system is on and the awaiting download state persists, there may be a communication problem: Check the SIM card, antenna, coverage... Run the central system connection system test (in the maintenance menu) to verify.

awaiting the first download: An initial delivery/resource/configuration awaits download. This vehicle/sign is registered in the CM but has never downloaded any data.

Note: The vehicle/vehicle system must be powered for download to start. If vehicle system is on and the awaiting the first download state persists, there may be a communication problem: Check the SIM card, antenna, coverage... Run the central system connection system test (in the maintenance menu) to verify.

not allowed: The node is not allowed to sync. (The reasons for this can vary, it can be because the node is not activated, etc.).

8.1.4 Vehicles Overview: Default View

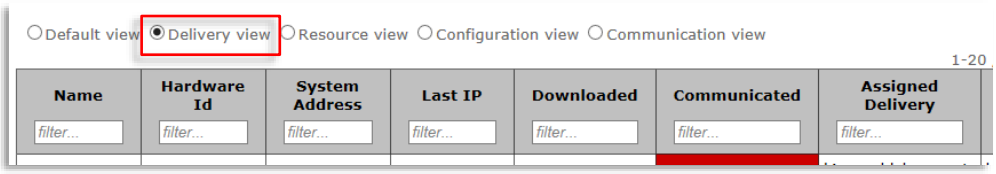


Presented in this view:

Header	Description
Name	Unit name, operator number followed by vehicle/sign number.
Display Name (optional - view filter)	The set display name of the vehicle/sign (see “Vehicles” chapter for information about setting display name).
Faults (optional - view filter)	The number of **active** faults in the unit (vehicle/sign). See also separate Fault management tab chapter.

Header	Description
Hardware Id (optional - view filter)	Unique hardware (vehicle/sign system computer) ID.
System Address (optional - view filter)	Vehicle/sign system address
Last IP (optional - view filter)	Last registered IP address for the vehicle/sign.
Downloaded	Timestamp showing when the vehicle/sign last completed a successful delivery/resource/configuration.
Communicated (optional - view filter)	Timestamp showing when the vehicle/sign system last communicated with the CM. Colour coding of the table cell: Vehicles that have communicated the last: 0-12 hours: White 12-24 hours: Light Yellow 24-36 hours: Light Orange 36-72 hours: Orange More than 72 hours: Red For vehicles with unknown communication time/that have not yet communicated, the cell is grey and contains no data.
Assigned Delivery	Name of the delivery assigned to the vehicle/sign.
Delivery, Resource, Config status	A status indicator showing current status, see description above.

8.1.5 Vehicles Overview: Delivery View

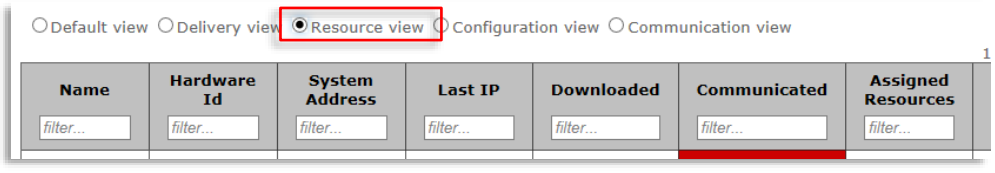


Presented in this view:

Header	Description
Name	Unit name, operator number followed by vehicle/sign number.

Header	Description
Display Name (optional - view filter)	The set display name of the vehicle/sign (see "Vehicles" chapter for information about setting display name).
Faults (optional - view filter)	The number of **active** faults in the unit (vehicle/sign). See also separate Fault management tab chapter.
Hardware Id (optional - view filter)	Unique hardware (vehicle/sign system computer) ID.
System Address (optional - view filter)	Vehicle/sign system address
Last IP (optional - view filter)	Last registered IP address for the vehicle/sign.
Downloaded	Timestamp showing when the vehicle/sign last completed a successful delivery/resource/configuration.
Communicated (optional - view filter)	Timestamp showing when the vehicle/sign system last communicated with the CM. Colour coding of the table cell: Vehicles that have communicated the last: 0-12 hours: White 12-24 hours: Light Yellow 24-36 hours: Light Orange 36-72 hours: Orange More than 72 hours: Red For vehicles with unknown communication time/that have not yet communicated, the cell is grey and contains no data.
Assigned Delivery	Name of the delivery assigned to the vehicle/sign.
Active Delivery	Name of the delivery currently active in the vehicle/sign.
Delivery status	A status indicator showing current status, see description above.

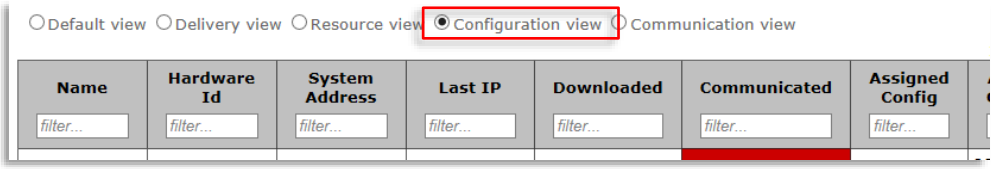
8.1.6 Vehicles Overview: Resource view



Presented in this view:

Header	Description
Name	Unit name, operator number followed by vehicle/sign number.
Display Name (optional - view filter)	The set display name of the vehicle/sign (see “Vehicles” chapter for information about setting display name).
Faults (optional - view filter)	The number of **active** faults in the unit (vehicle/sign). See also separate Fault management tab chapter.
Hardware Id (optional - view filter)	Unique hardware (vehicle/sign system computer) ID.
System Address (optional - view filter)	Vehicle/sign system address.
Last IP (optional - view filter)	Last registered IP address for the vehicle/sign.
Downloaded	Timestamp showing when the vehicle/sign last completed a successful delivery/resource/configuration.
Communicated (optional - view filter)	Timestamp showing when the vehicle/sign system last communicated with the CM. Colour coding of the table cell: Vehicles that have communicated the last: 0-12 hours: White 12-24 hours: Light Yellow 24-36 hours: Light Orange 36-72 hours: Orange More than 72 hours: Red For vehicles with unknown communication time/that have not yet communicated, the cell is grey and contains no data.
Assigned Resources	The timestamp for assigned resources.
Active Resources	Timestamp for active resources. If the assigned resources are in use, “Same as assigned” is displayed.
Resource status	A status indicator showing current status, see description above.

8.1.7 Vehicles Overview: Configuration View

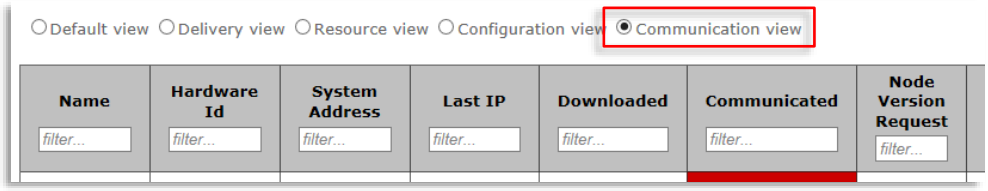


Presented in this view:

Header	Description
Name	Unit name, operator number followed by vehicle/sign number.
Display Name (optional - view filter)	The set display name of the vehicle/sign (see "Vehicles" chapter for information about setting display name).
Faults (optional - view filter)	The number of **active** faults in the unit (vehicle/sign). See also separate Fault management tab chapter.
Hardware Id (optional - view filter)	Unique hardware (vehicle/sign system computer) ID.
System Address (optional - view filter)	Vehicle/sign system address.
Last IP (optional - view filter)	Last registered IP address for the vehicle/sign.
Downloaded	Timestamp showing when the vehicle/sign last completed a successful delivery/resource/configuration.
Communicated (optional - view filter)	Timestamp showing when the vehicle/sign system last communicated with the CM. Colour coding of the table cell: Vehicles that have communicated the last: 0-12 hours: White 12-24 hours: Light Yellow 24-36 hours: Light Orange 36-72 hours: Orange More than 72 hours: Red For vehicles with unknown communication time/that have not yet communicated, the cell is grey and contains no data.
Assigned Config	The timestamp for the assigned configuration.
Active Config	Timestamp for active configuration. If the assigned config. is in use, "Same as assigned" is displayed.

Header	Description
Config Status	A status indicator showing current status, see description above.

8.1.8 Vehicles Overview: Communication View



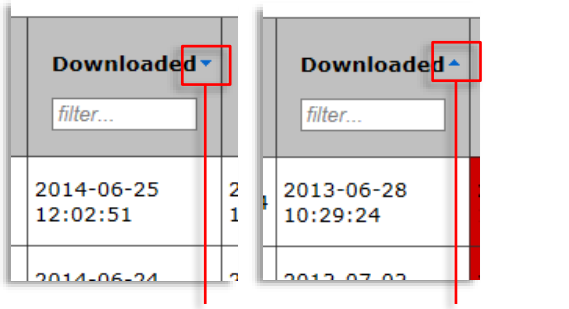
Presented in this view:

Header	Description
Name	Unit name, operator number followed by vehicle/sign number.
Display Name (optional - view filter)	The set display name of the vehicle/sign (see "Vehicles" chapter for information about setting display name).
Faults (optional - view filter)	The number of **active** faults in the unit (vehicle/sign). See also separate Fault management tab chapter.
Hardware Id (optional - view filter)	Unique hardware (vehicle/sign system computer) ID.
System Address (optional - view filter)	Vehicle/sign system address.
Last IP (optional - view filter)	Last registered IP address for the vehicle/sign.
Downloaded	Timestamp showing when the vehicle/sign last completed a successful delivery/resource/configuration.

Header	Description
Communicated (optional - view filter)	Timestamp showing when the vehicle/sign system last communicated with the CM. Colour coding of the table cell: Vehicles that have communicated the last: 0-12 hours: White 12-24 hours: Light Yellow 24-36 hours: Light Orange 36-72 hours: Orange More than 72 hours: Red For vehicles with unknown communication time/that have not yet communicated, the cell is grey and contains no data.
Node Version Request	The timestamp for the last version request from the vehicle/sign (periodical but can be manually triggered by CM user)
Download	Timestamp showing the last time the vehicle/sign has tried to download data from the CM.
Upload	Timestamp showing the last time the vehicle/sign has tried to upload data to the CM.

8.1.9 Sort List based on a selected column

You can sort the presented list by clicking on a column header. A sorting symbol shows the selected column and the sorting order. To sort the list after the same column but reverse the sorting order, simply click on the header again.



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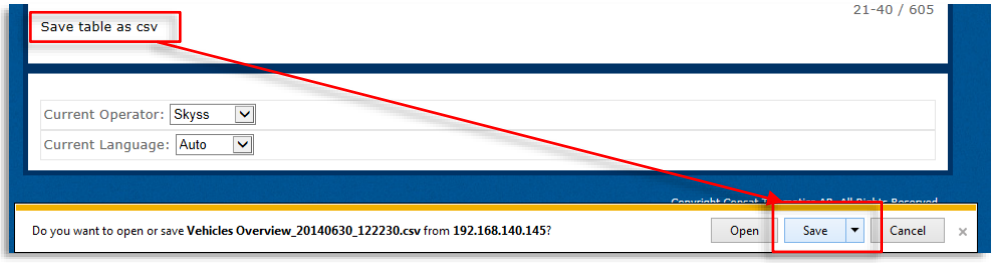
8.1.10 Save Overview Table/List as CSV File

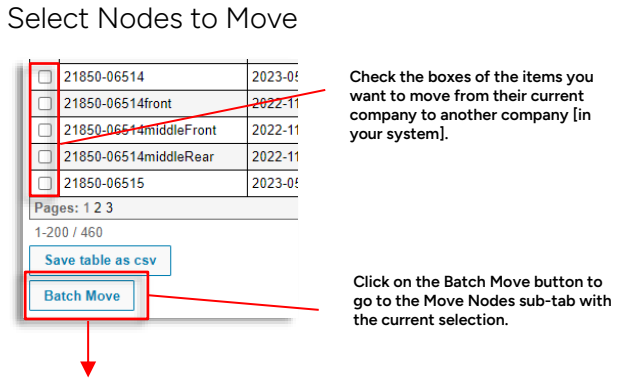
You can easily save the (filtered) overview list as a CSV file by clicking on “Save [the] table as CSV” under the list.


21-40 / 605
Save table as csv
Current Operator: Skyss
Current Language: Auto
Do you want to open or save Vehicles Overview_20140630_122230.csv from 192.168.140.145?
Open
Save
Cancel

8.2 Move Nodes (Function and Sub-Tab)

The **Move Nodes** function allows you to move one or more items/nodes (Vehicles, including onboard systems/displays, or Signs) from one operator to another. You can perform the move live or schedule it to be performed at a suitable time.

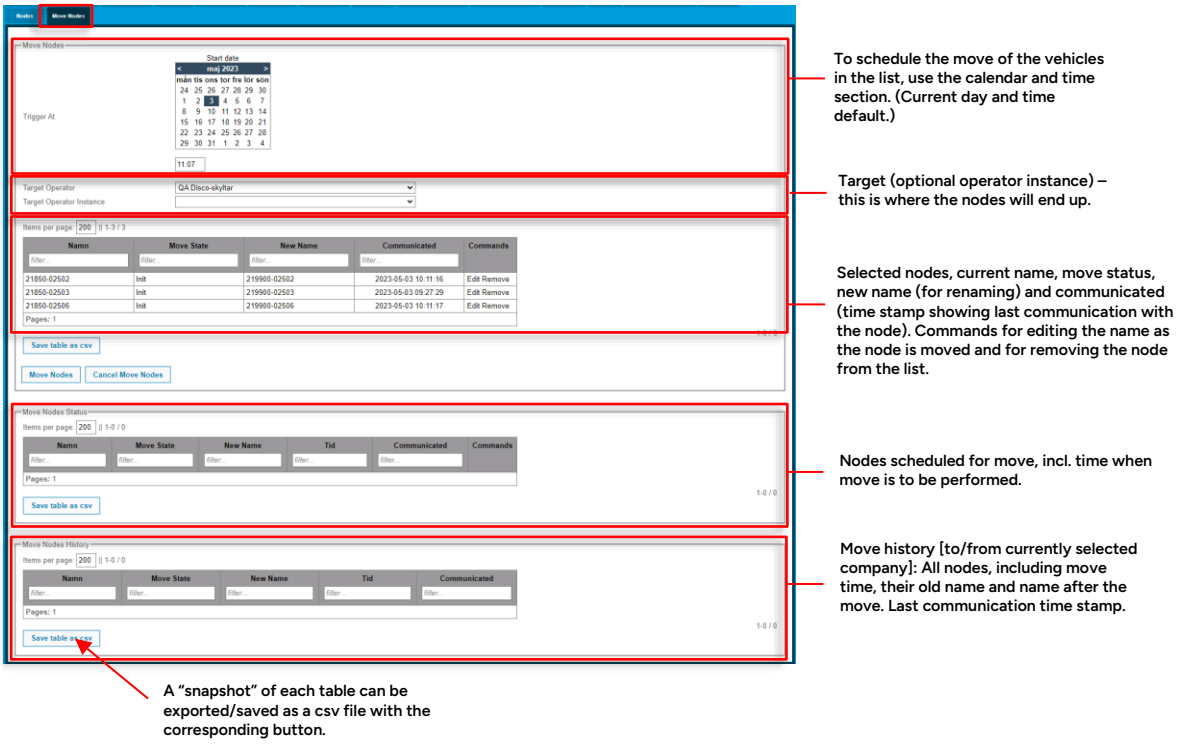
In a CM configured to include this function, you will find a Move Nodes sub-tab under the Overview tab, selection checkboxes on all rows on the Overview tab, and an extra “Batch Move” button under the list, see below.



8.2.1 The Move Nodes Sub Tab

When you have selected a set of nodes to move from the currently selected company operator to another company [in your system] and click Move Nodes, the Move Nodes sub-tab will show and look like the one below. A scheduling calendar and the selected nodes are displayed in the top Move Nodes section.

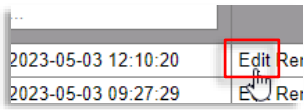
You can choose to rename your nodes when you move them, see below.



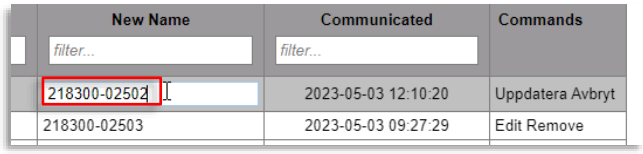
8.2.2 Change Names as You Move Nodes

As node names are normally used to identify the company the node belongs to, you will normally have to rename nodes that are to be moved. You define the new names of the nodes before you perform/schedule the move.

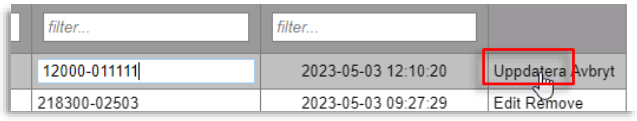
1. Click on "**Edit**" on the row in question in the Commands Column in the Move Nodes section. The row will be highlighted and the New Name field will switch to edit mode.



2. Change the name to suit the new company. (Copy-paste prefix for multiple nodes, etc.)

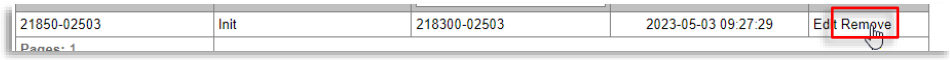


3. Click on **Update** in the Commands column. The New Name will be updated. This is the name of the node after the move.



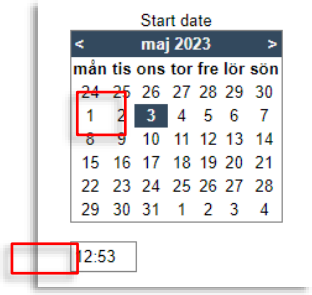
8.2.3 Remove a selected node from the move list

Click on **Remove** in the Commands column. The node is removed immediately.



8.2.4 Move [selected/listed] nodes to another company

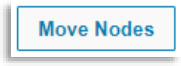
1. Select a suitable date and time for the move. (The default selection is the current date, time).



2. Select a target company (and, optionally instance, if applicable).

3. If needed, rename nodes, see above.
4. Verify the details of your move list.

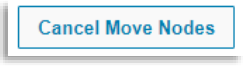
5. Click on the **Move Nodes** button.



The Move Nodes section will close and the nodes will instead be listed in the Move Nodes Status section. If this section already lists nodes planned for move the new nodes will be added to that list.

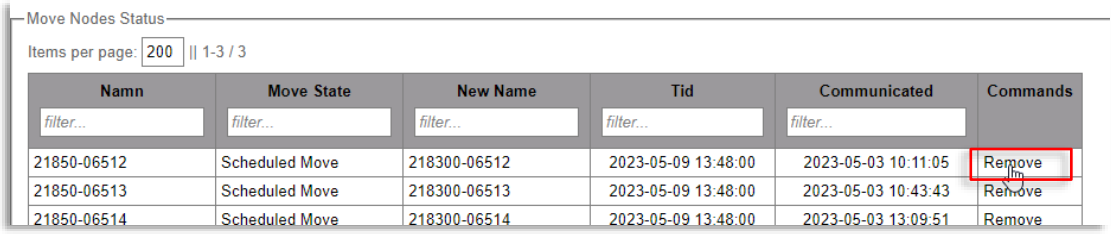
8.2.5 Cancel Move

If you change your mind, you can cancel the move by clicking on "**Cancel Move Nodes**". The Move Nodes section will close.



8.2.6 Remove a Node From a Scheduled Move

If you want to exclude a node from an already scheduled move, you can do this in the Move Nodes Status list. Simply click on **Remove** in the Commands column.



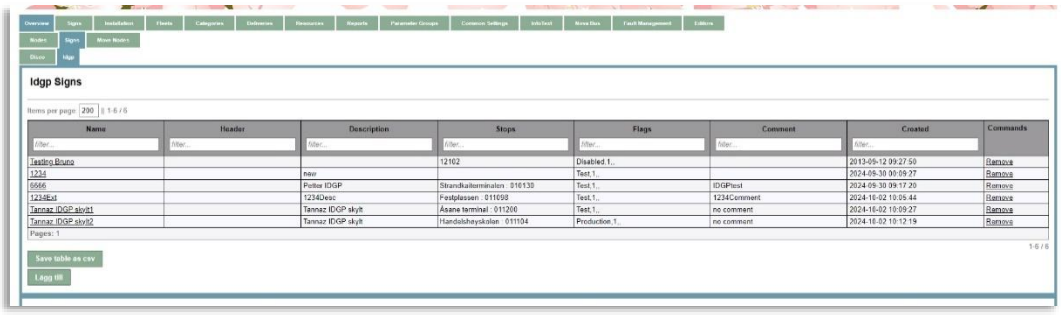
8.3 Signs (Sub Tab, Sign Partition)

With a sign/display partition selected, the Overview tab will have two sub-tabs displayed below: Nodes and Signs (beside the Move Nodes tab, if configured).

(Note: This sub-tab is not to be confused with the Signs tab described in the next chapter). The Nodes tab is described in the previous Overview chapter.

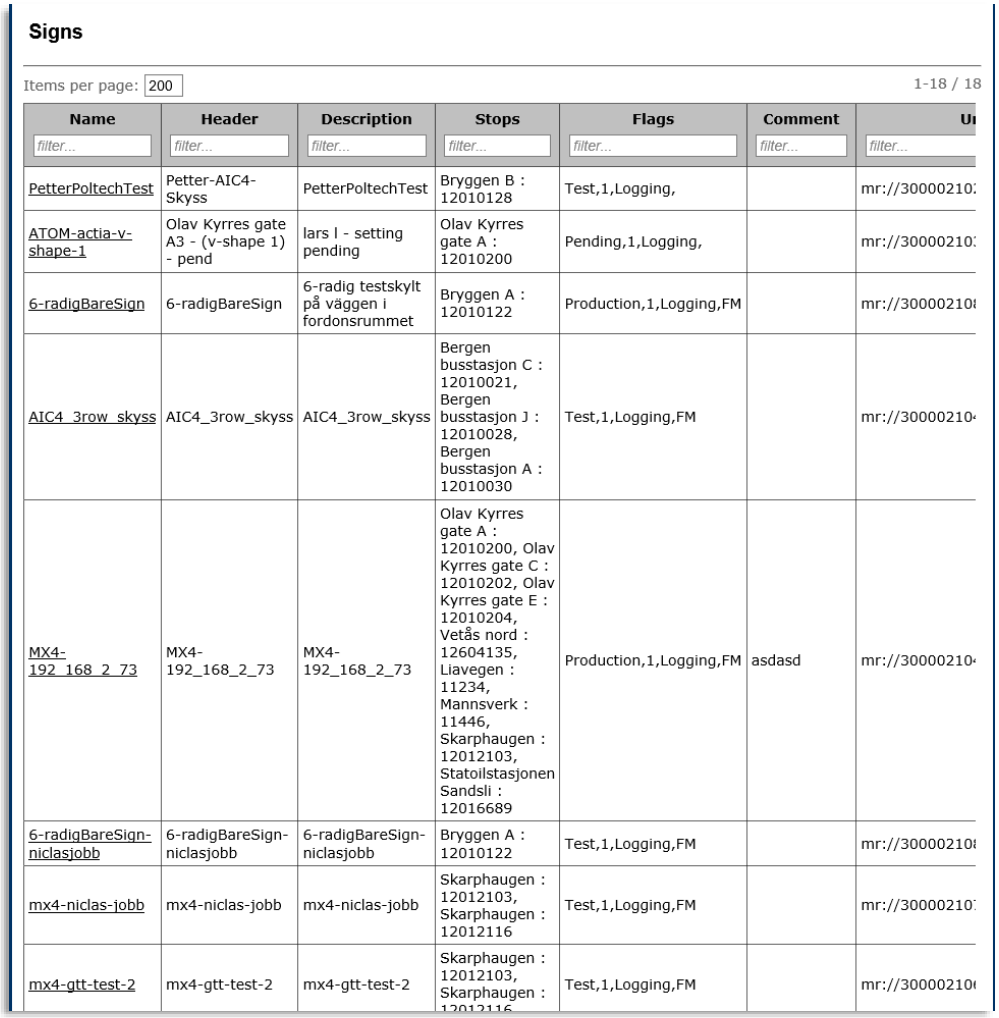
8.3.1 Signs sub-sub tabs: Disco, IDGP

In systems with both Disco (Consat) signs and IDGP (radio) signs, these will be listed separately. Under the Signs sub-tab you will find both Disco and IDGP sub-sub tabs. From these separate lists you can access the settings view for each sign (described below).



- **Each Sign name (extreme left column) links to a corresponding Sign configuration/settings page, see the following chapter.**

- **Each Depot Node links to the Sign tab, with the corresponding sign selected.**



Signs

Items per page: 200 1-18 / 18

Name	Header	Description	Stops	Flags	Comment	Ur
filter...	filter...	filter...	filter...	filter...	filter...	filter...
PetterPoltechTest	Petter-AIC4-Skyss	PetterPoltechTest	Bryggen B : 12010128	Test,1,Logging,		mr://30000210
ATOM-actia-v-shape-1	Olav Kyrres gate A3 - (v-shape 1) - pend	lars l - setting pending	Olav Kyrres gate A : 12010200	Pending,1,Logging,		mr://30000210
6-radigBareSign	6-radigBareSign	6-radig testskylt på väggen i fordonsrummet	Bryggen A : 12010122	Production,1,Logging,FM		mr://30000210
AIC4_3row_skyss	AIC4_3row_skyss	AIC4_3row_skyss	Bergen busstasjon C : 12010021, Bergen busstasjon J : 12010028, Bergen busstasjon A : 12010030	Test,1,Logging,FM		mr://30000210
MX4-192_168_2_73	MX4-192_168_2_73	MX4-192_168_2_73	Olav Kyrres gate A : 12010200, Olav Kyrres gate C : 12010202, Olav Kyrres gate E : 12010204, Vetås nord : 12604135, Liavegen : 11234, Mannsverk : 11446, Skarphaugen : 12012103, Statoilstasjonen Sandsli : 12016689	Production,1,Logging,FM	asdasd	mr://30000210
6-radigBareSign-niclasjobb	6-radigBareSign-niclasjobb	6-radigBareSign-niclasjobb	Bryggen A : 12010122	Test,1,Logging,FM		mr://30000210
mx4-niclas-jobb	mx4-niclas-jobb	mx4-niclas-jobb	Skarphaugen : 12012103, Skarphaugen : 12012116	Test,1,Logging,FM		mr://30000210
mx4-gtt-test-2	mx4-gtt-test-2	mx4-gtt-test-2	Skarphaugen : 12012103, Skarphaugen : 12012116	Test,1,Logging,FM		mr://30000210

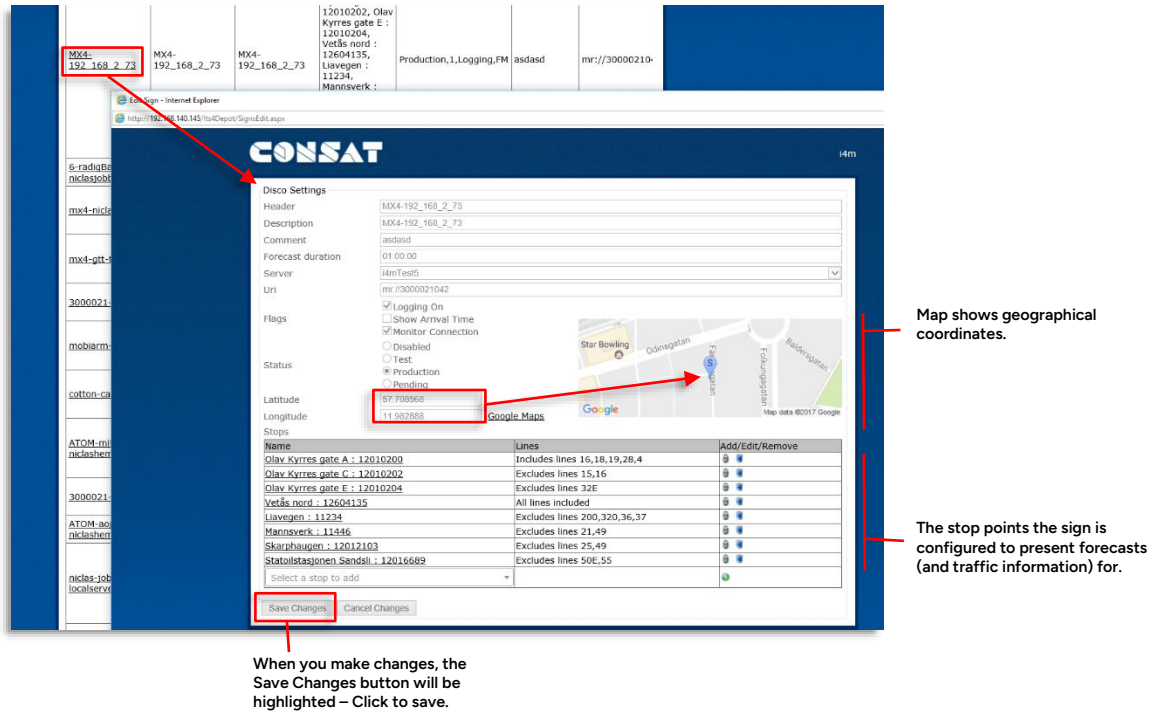
Header	Description
Name	The name of the sign Note: Link to the DISCO Settings view, see chapter 8.3
Header	The sign header is presented to the passengers (normally the Stop Points Covered)
Description	Optional description.
Stops	The stop(s) the sign is configured to present forecasts and traffic information.
Flags	Sign state and settings flags: Production/Test/Disabled/Pending (flags describing the sign production mode but not affecting its functionality) Forecast horizon (“duration”) value – how far ahead the forecasts reach. Logging (on/off) Fault Management on/off (“Monitor Connection”)

Header	Description
Comment	Optional comments, for instance about testing, installation, etc.
Uri	The Sign Uri
Created	Timestamp showing when the setting/configuration was last saved.
Depot Node	The sign node in the CM Note: Link to the Sign tab with the sign pre-selected.

8.3.2 DISCO/IDGP Settings (Configure Sign, Presentation)

When you click on a **Name link**, the DISCO/IDGP Settings view will open, see below. Here you can (depending on the sign type) set/edit the sign header, and various settings and configure the stops and passing lines the sign is to cover. You can also manually enter/edit and verify geographical coordinates for the sign (enabling correct positioning in the Traffic Studio application).

- **Changes will be highlighted. Save your changes by clicking on the Save Changes button. (It will only be active when you have made changes.)**



Header	Description
Header	The sign header is presented to the passengers (normally the Stop Points Covered)

Header	Description
Description	Optional sign description. (Visible in the My Displays tool in Traffic Studio)
Comment	Optional comment. (Visible in the My Displays tool in Traffic Studio)
Forecast duration	The forecast “horizon”: How far ahead the forecasts are to cover. HH:MM:SS
Server	The forecast server (menu)
Uri	The Sign Uri
Flags	Sign state and settings flags. Checkbox to enable. • Logging on • Show Arrival Time (instead of departure time) • [Enable] Monitor Connection (**F**ault **M**anagement monitoring)
Status	Select sign state: Production/Test/Disabled/Pending (flags not affecting functionality, only information)
Latitude	(Optional) Geographical Latitude
Longitude	(Optional) Geographical Longitude – verify on map presentation
Google Maps Link	Link to Google Maps online, for checking the positioning, etc. **Tip:** Copy-Paste Long-Lat from Google Maps to the corresponding fields in the DISCO Settings view to enter the position.
Stops	All stops the sign is configured to cover (present forecasts and information for). See below for how to add/edit the stop/lines settings.

Enter/Edit Sign Presentation

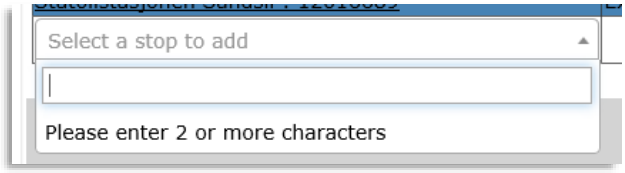
Check/Uncheck the “Flags” settings to configure the sign to show either Departure time (default) or Arrival time (“Show Arrival Time” box checked) and the forecast duration (horizon).

The stops the sign is to cover are configured in the Stops section.

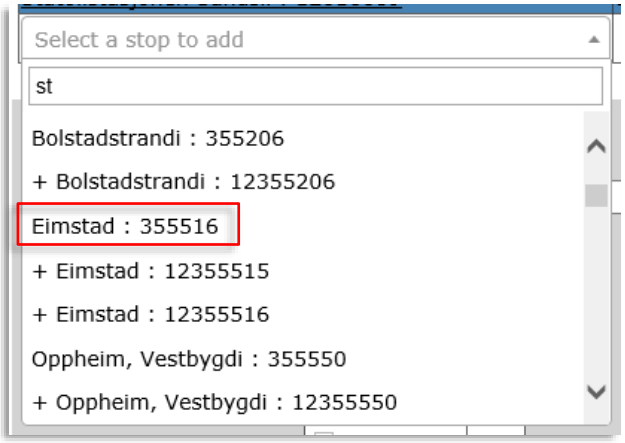
- **Note that you must click on the “Save Changes” button to save.**

Add a Stop to the Presentation:

1. Open the **Select a stop to add** a menu at the bottom of the stops list by clicking on the menu button. A search field will show, asking you to enter at least two characters included in the stop name.

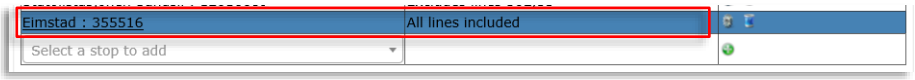


2. Select the stop in the presented filtered list.



3. Click on the green (+) add button to add the stop to the list.

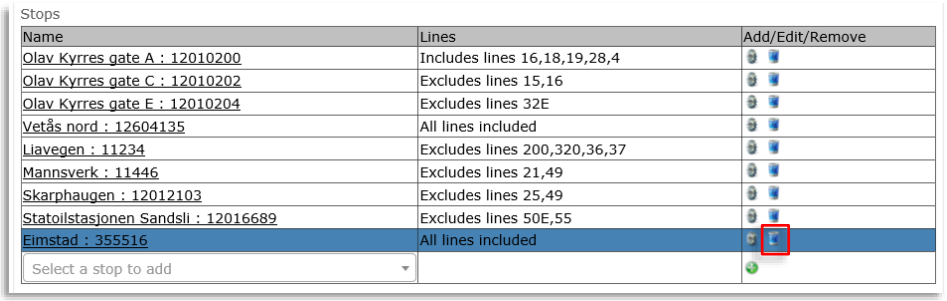
4. The stop will be added to the Stops list above the menu.

5. 

Note: Always verify that the configured Header is relevant for the stops selected!

Remove a stop from the Stops list

To remove a stop, simply click on the corresponding remove (wastebasket) button. The Stop will be removed immediately.

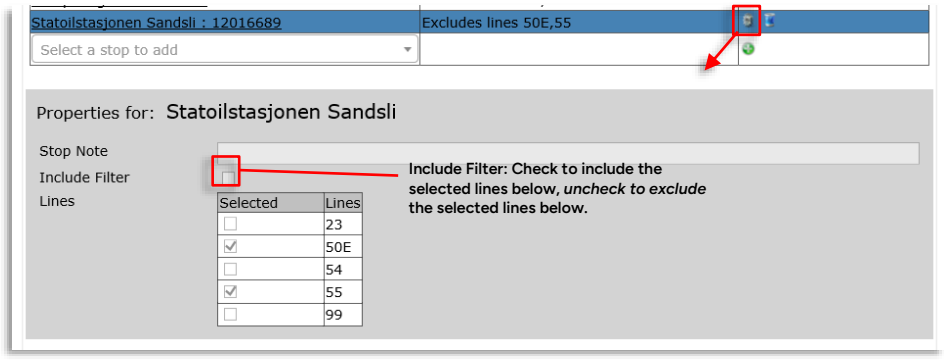


Set (optional) Stop Note and Filter the line presentation for a stop

To only display forecasts/information for *particular lines* passing the stop, you can filter the presentation.

1. Open the stop properties section by clicking on the **edit** button in the Add/Edit/Remove column. The section will expand below the Stops list, see below.

Click on the edit button for a stop included in the presentation to open/expand the corresponding properties section.



2. All passing lines are listed in the Lines section.
Either check the "Include Filter" box and then check the lines you want the sign to present forecasts/info for **or** uncheck the "Include Filter" box and check the lines the sign is **not** to cover.

3. **Optionally enter a stop note**, that will be presented under the corresponding departure. A typical use for this is to inform passengers that the stop point is some distance from the sign, or has been temporarily moved to a non-obvious location, see the example below.

Stop Notes ("Departs from Target [The Square], 200m south.")

8.4 Vehicles/Signs

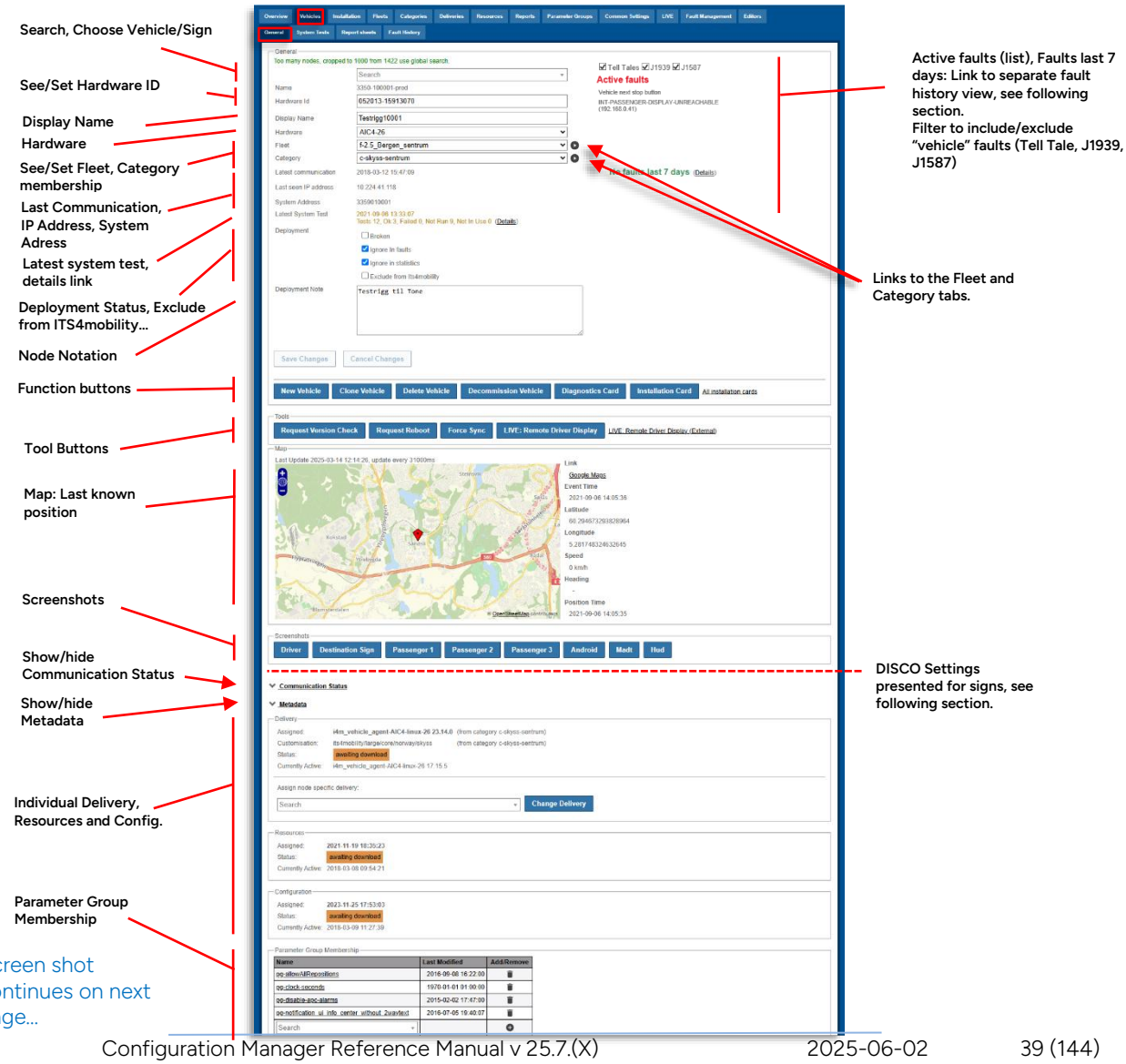
Under the Vehicles/Signs tab, individual vehicles or signs are set up and administered. (The tab is labelled Vehicles or Signs depending on partition content.)

- **Sub-tabs show vehicle system information (General), Performed system tests, logged report sheets (for pre-op/post-op checks, etc.), and fault history for the vehicle/sign.**

Here, vehicles/signs can be added, removed, and have individual delivery and parameters set. Controls for generating installation packages and uploading the current vehicle system GUI or front sign are also available. For troubleshooting remote diagnostics functions are available. A History section presents a changelog with the possibility to revert to earlier settings (for when a new setting causes problems). A fault section shows all active faults. A link opens a separate fault history view with the last 100 fault status changes for the vehicle/sign.

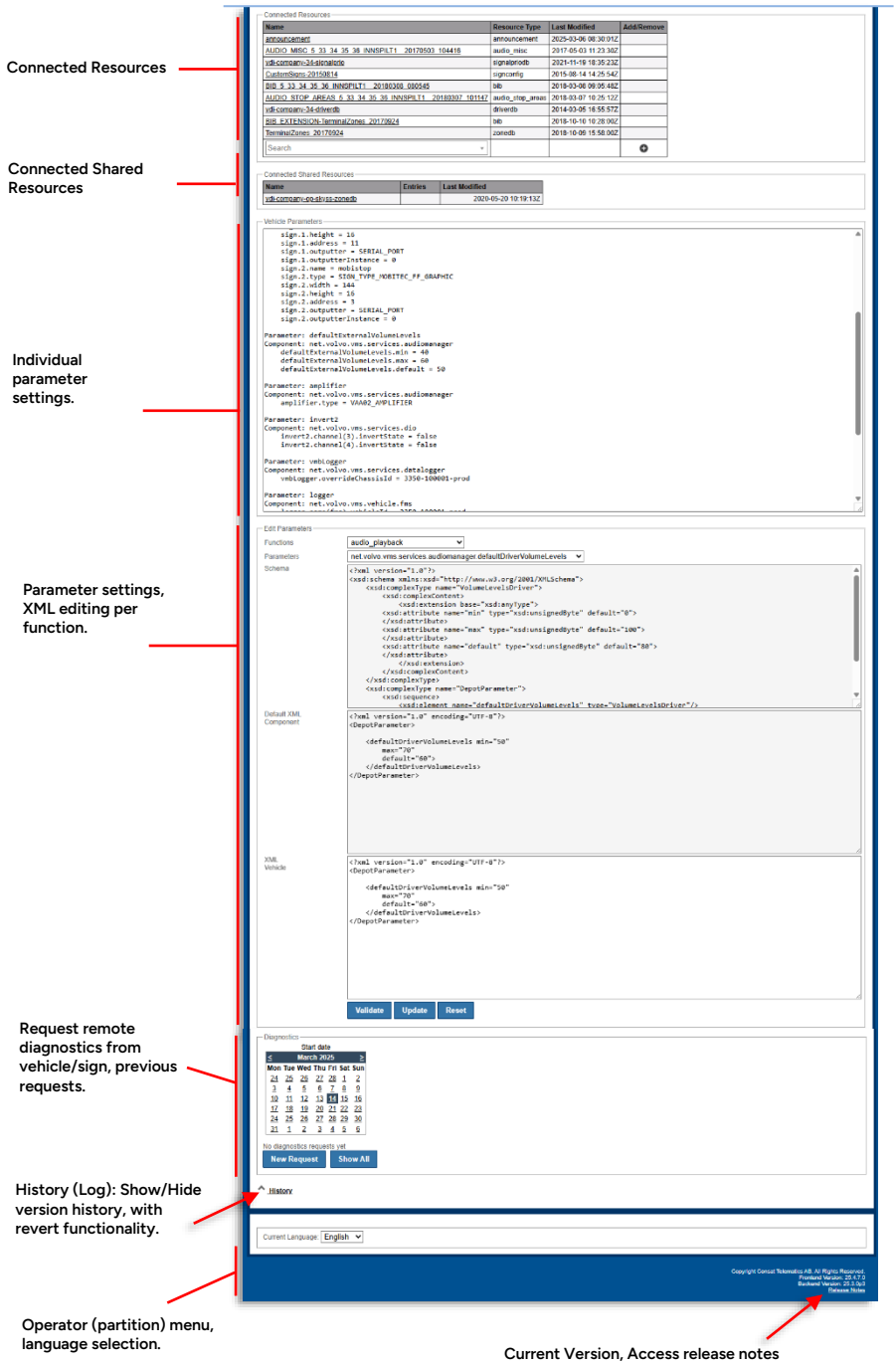
- **Individual vehicle/sign settings override fleet/category assigned deliveries and configurations.**
- **If possible, configure deliveries/resources and configuration collectively using the Fleet and Categories groupings. This will make updates easier to handle.**

8.4.1 General Tab

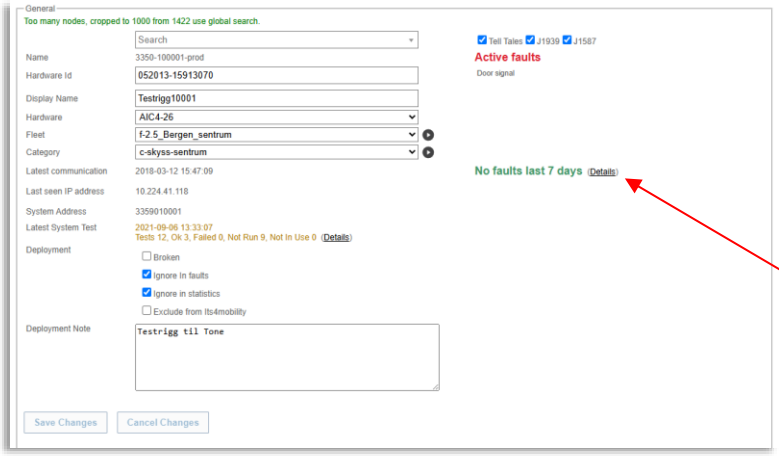


Screen shot continues on next page...

Screen shot, continued from previous page...



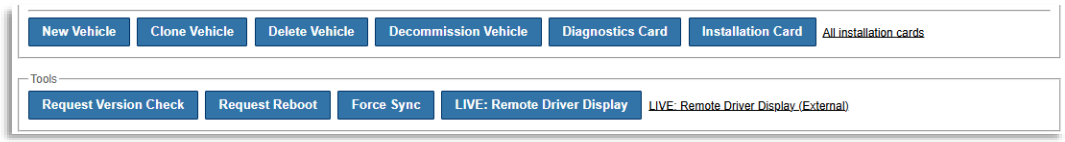
General



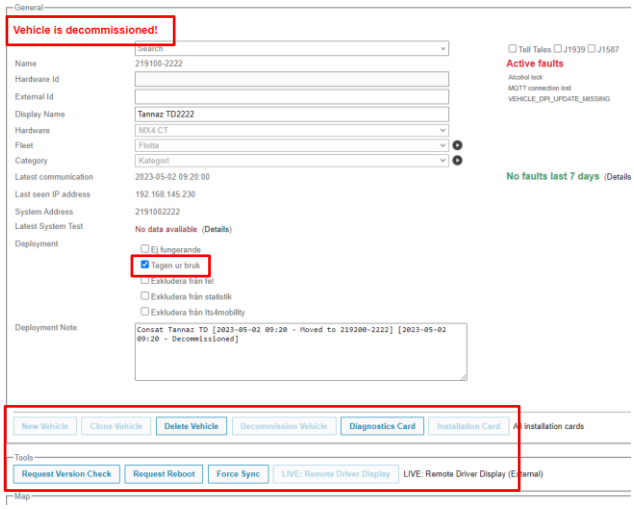
Header	Description
Search	Vehicle/Sign search/selection menu: Press the field to open the complete vehicle/sign list (for the selected partition), including eventual installation, and test "nodes". Optionally enter numbers/letters to filter the list and make your selection by clicking on an item in the list.
Name	The vehicle/sign is selected in the above menu. In Traffic Monitoring systems an operator-specific number is included in the name. The number of digits is defined in the operator/company configuration. Installation and test nodes have freely defined names.
Hardware Id	The vehicle/sign computer hardware ID number.
Display Name	A user-defined node/unit name (that can be as non-technical as the user wishes) is presented in various user interfaces, for instance, the Media Manager interface.
Hardware	Menu: Select vehicle/sign computer type (AIC3/4/Atom….)
Fleet	What (if any) Fleet the vehicle/sign is assigned to.
Category	What (if any) Category the vehicle/sign is assigned to.
Latest communication	Timestamp showing when the vehicle/sign last communicated with the central system/CM.
Last seen IP address	Last registered IP address for the vehicle/sign.
System address	The unit system address.

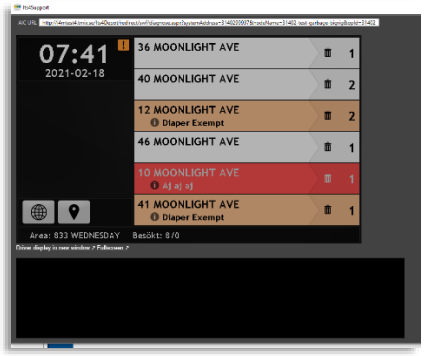
Header	Description
Latest System Test	 The time of the latest system test(s) performed on the vehicle, the number of tests performed, the number of OK tests, the number of failed tests (if any), and the number of system tests not yet run (if any). **Details,** is a link to the separate System Test view, see the following section.
Deployment	Tic boxes for marking vehicles as broken and to leave the selected vehicle/sign out of the statistics in the CM overview and the daily status mail (useful for test/installation units). Decommissioned – this flag is checked if the vehicle is decommissioned. The Exclude from faults, statistics, ITS4mobility checkboxes will, when ticked. Keep the vehicle/sign "outside the corresponding parts of the system". "Excluded from its4mobility" units will not be visible in the Traffic Studio tools etc. A useful function for text units/vehicles that are not to "pollute" the system.
Deployment Note	Text field for adding notation about the particular node (vehicle/sign).

Function, Tool Buttons



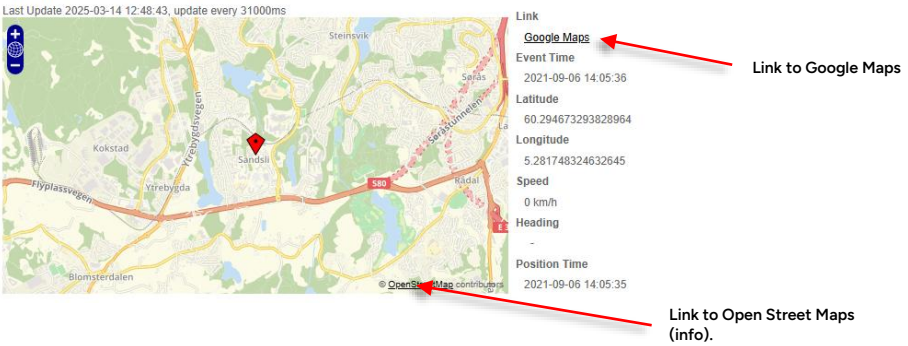
Top, Function Section	Description
New Vehicle/Sign	Generate new vehicle/sign.
Clone Vehicle/Sign	Copy all settings from the existing vehicle/sign into a new one.
Delete Vehicle/Sign	Delete selected vehicle/sign.

Decommission Vehicle/Sign	Click to decommission the vehicle (internal displays grouped with the vehicle system will also be decommissioned). When a vehicle/sign is decommissioned, this will be highlighted in red in the General section, the decommissioned box will be checked and function buttons related to active vehicles will be deactivated.  **Note**: You can filter the Overview list to only show/also include decommissioned vehicles.
Diagnostics Card	Generates a diagnostics flashcard for the vehicle
Installation Card	Generate a flashcard with present settings for manual installation in the vehicle.
All installation cards (link)	Link to a page with a list of all generated installation cards, and a simple list of zip files.
Tools	
Request Version Check	Manual triggering of the vehicle check for updates - to synchronize changes as quickly as possible. (Normally, vehicles/signs check with the CM for updates every hour.)
Request Reboot	Send a request to the vehicle, telling the vehicle computer to reboot.
Force Sync	Trigger a vehcile-depot sync, regardless if there is any change.
LIVE: Remote Diver Display (vehicles only)	Switches to the LIVE tab, showing the vehicle with a remote-accessed driver GUI. **Note:** Current browsers do not support Flash. This function requires a browser that supports Flash. Use the link described below instead if you use a modern, updated browser.

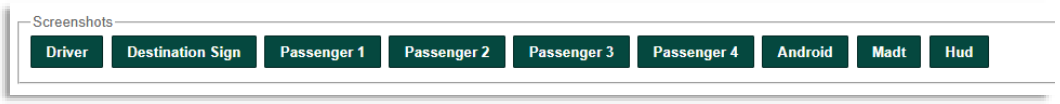
LIVE: Remote Driver Display (External)	Opens floating its4Support app window for driver GUI access, independent of browser Flash support. (Example below from when accessing Waste Collecting Driver Interface.) 
Open DISCO Server Configuration Tool (signs only)	Open the Display Manager application with the sign pre-selected, for configuration.

Map

Shows the last known position. Use the Google Maps link for driving directions to that position.



Screenshots



Screenshots	
Driver	Upload a screenshot of the **driver user interface**, not including the front sign image.
Destination Sign	Upload a screenshot of the front sign (the same image of the sign normally presented in the driver user interface)
Passenger 1/2/3 etc.	Upload a screenshot of the interior passenger display image. One button for each configured display.
Android	Upload a screenshot from Android unit.

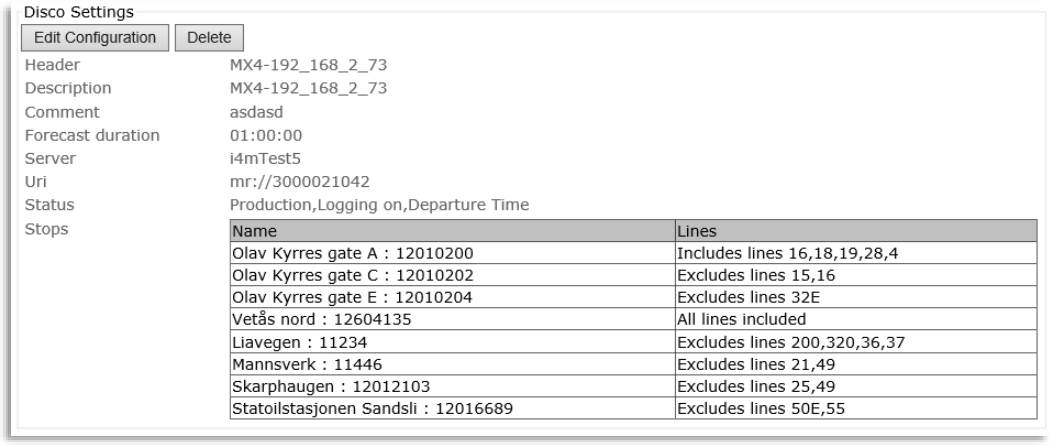
Madt (optional)	Upload a screenshot from the [Cosat] Android MADT.
Display/LED Display (signs only)	Upload a screenshot of the current screen image.
HUD	Upload a screenshot from the HUD

DISCO Settings (Signs Only)

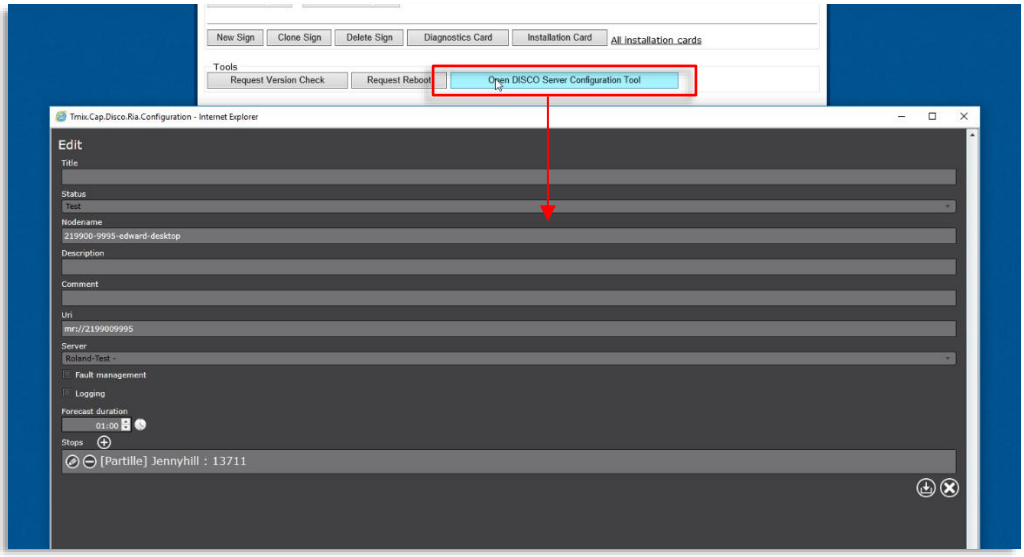
For signs, you will find an extra section below the function buttons called “DISCO Settings”. This section shows the settings and configured presentation for the sign, mirroring the information on the Signs sub-tab, **see chapter 8.3 for a description**.

- **An Edit Configuration button opens the Disco Settings view for the sign, where you can edit all settings, see chapter 8.3.**

- **Click on the Delete button in this section to delete the current sign settings and presentation configuration.**



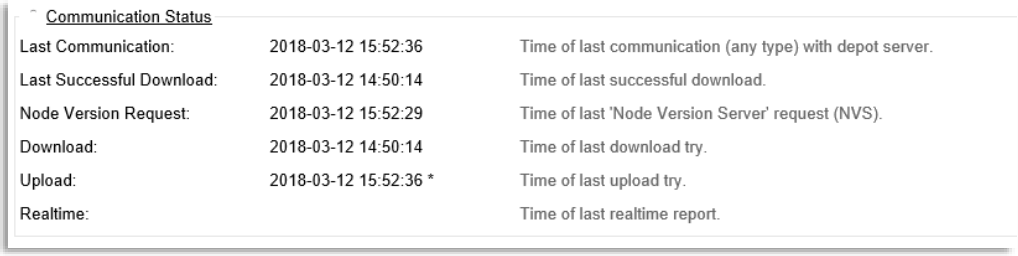
Note: Signs also have an extra button in the tool section available: **Open Disco Server Configuration Tool,** see image below. This button will open the **Display Manager** tool (see separate Manual), for comprehensive display configuration.



Communication Status

Click on "Communication Status" to expand the section and view communication details for the individual vehicle/sign (the same information is available in the communication view on the overview page).

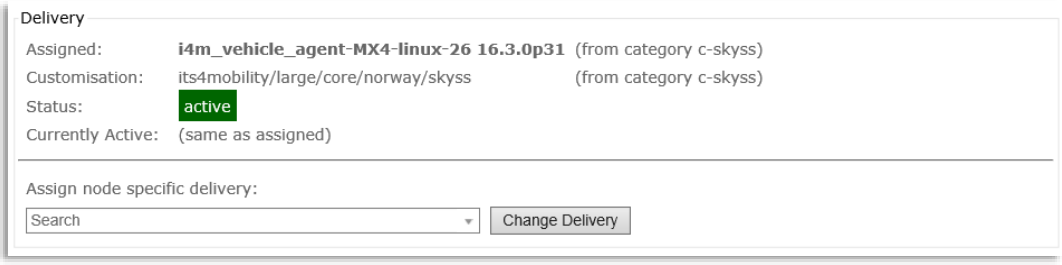
- **The section includes explanation texts.**



Metadata (Consat Troubleshooting Functionality)

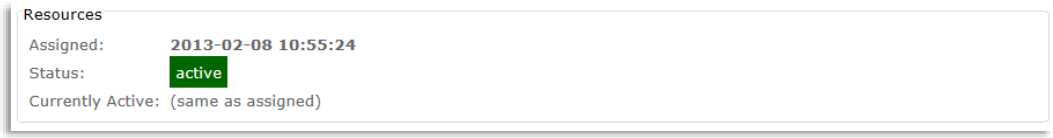
This section is not for public use.

Delivery



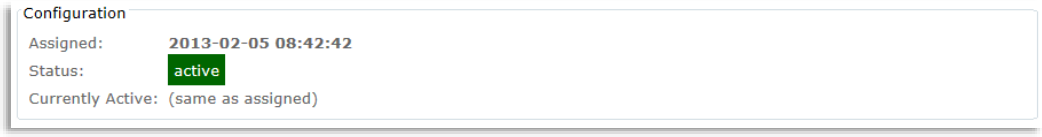
Label	Description
Assigned	Name of the assigned delivery/software, if the delivery comes from a category this is presented between brackets.
Customization	Customer-specific configuration set. If the customization comes from a category this is presented between brackets.
Status	Status for assigned delivery. Colour-coded – see Overview, page 16
Currently Active	Active delivery/software, if the same as assigned the text “same as assigned” is displayed.
Assign node-specific delivery (menu)	Assign delivery/software for the selected vehicle/sign. Optionally enter numbers/letters to quickly filter the list and make your selection by clicking on an item. Click on the Change Delivery button to assign the selected delivery.

Resources



Label	Description
Assigned	The timestamp for assigned resources.
Status	Status for assigned resources. Colour-coded – see Overview, page 16
Currently Active	Active resources. If the same as assigned the text “same as assigned” is displayed.

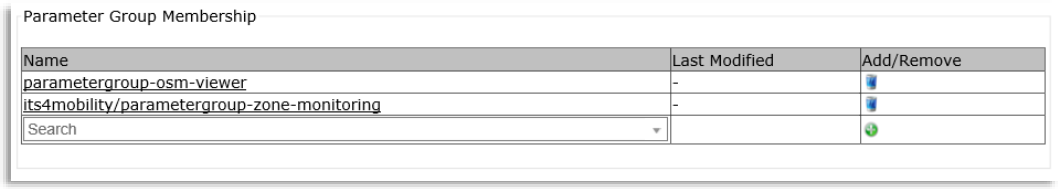
Configuration



Label	Description
Assigned	The timestamp for the assigned configuration.
Status	Status for assigned configuration. Colour-coded – see Overview, page 16

Label	Description
Currently Active	Active configuration. If the same as assigned the text "same as assigned" is displayed.

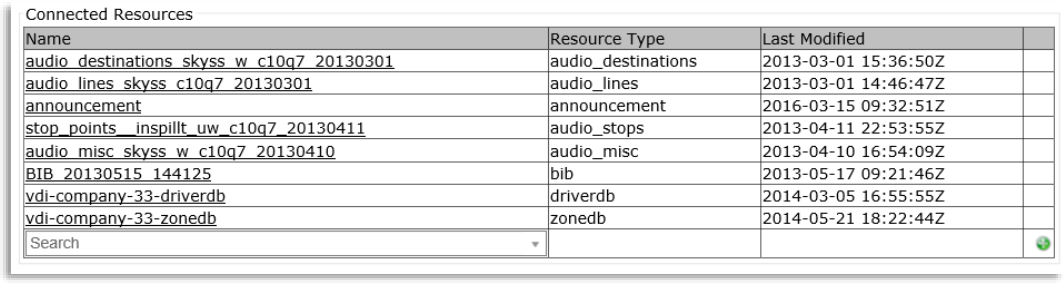
Parameter Group Membership



In this section, you can apply/remove parameter groups to the selected vehicle/sign. The timestamp for the last change is displayed for every individual parameter group. The menu for applying parameter groups is searchable (enter content to filter the menu).

See the Parameter Group section, page 104.

Connected Resources

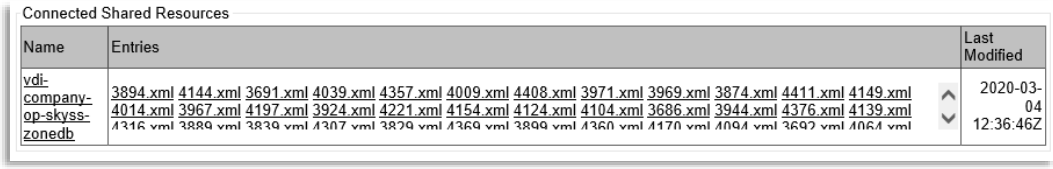


Under Connected resources all resources used by the vehicle/sign are listed, both resources added to the particular node and resources that "come with" the fleet the vehicle/sign belongs to. You can add resources to the particular vehicle/sign (node) by selecting the resource in the menu (type to filter the opened menu) and clicking on the green "+" symbol button to the right.

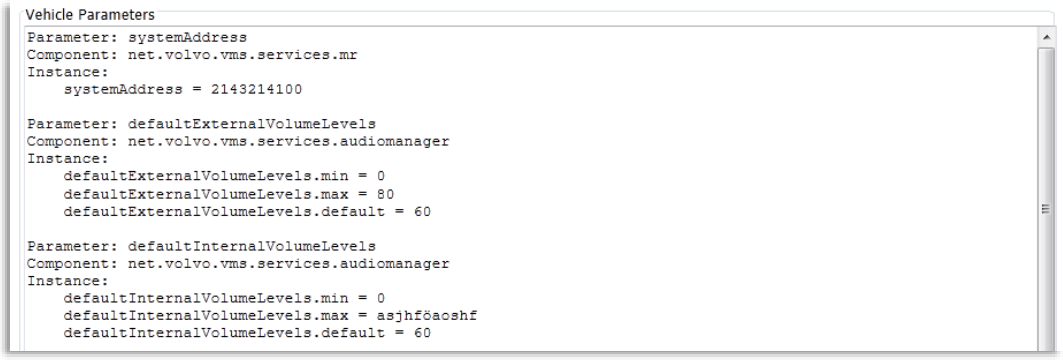
You can remove resources that are node-specific with the trash bin symbol on the corresponding row. Of course, you cannot remove listed resources belonging to the fleet. (Those are administered on the Fleet tab.)

Connected Shared Resources

Shared Resources are resources that contain selected files used by the vehicle/sign. In this section, the shared resources are listed (only information, no editing).

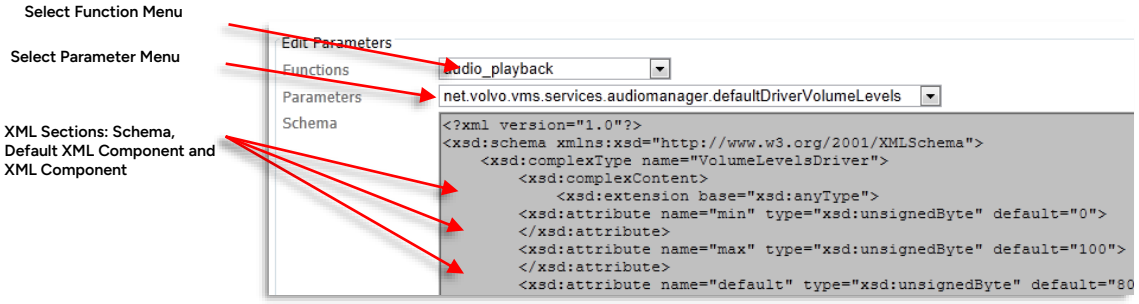


Vehicle Parameters Section



The Vehicle Parameters section lists all parameters set for the selected vehicle/sign.

Edit Parameters



In this section, all parameters can be checked and edited in XML format.

- **Whenever possible, do parameter changes at the category level and not per individual vehicle/sign.**

To see or edit a parameter, first, select the basic function in the Function Menu, then the individual parameter in the Parameter Menu, the XML sections will show the data for the selected parameter. The Schema section includes (.xsd) explanations of the parameter.

The parameter XML code can be edited in the bottom XML Component section. The Validate and Update buttons are used for first validating the XML code and updating the parameter. The Reset button will return a changed XML parameter to the default setting (the one shown in the Default XML component section).

Diagnostics

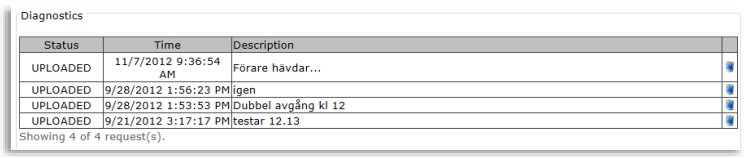
The Diagnostics functions allow remote diagnostics to be performed on individual vehicle/sign systems. You simply “order” the required files from the vehicle or sign system. The ordered files are then uploaded to the CM and can, normally, be analysed after a few minutes if the version request is triggered manually (using the Request Version Check button).

The Diagnostics section is divided into two parts, an upper log section, and a lower request section. Prior Diagnostics requests are listed in the upper section, including descriptions.

- **Note: The diagnostics log can be used as a simple (partial) problem log for the vehicle/sign.**

Diagnostics Log

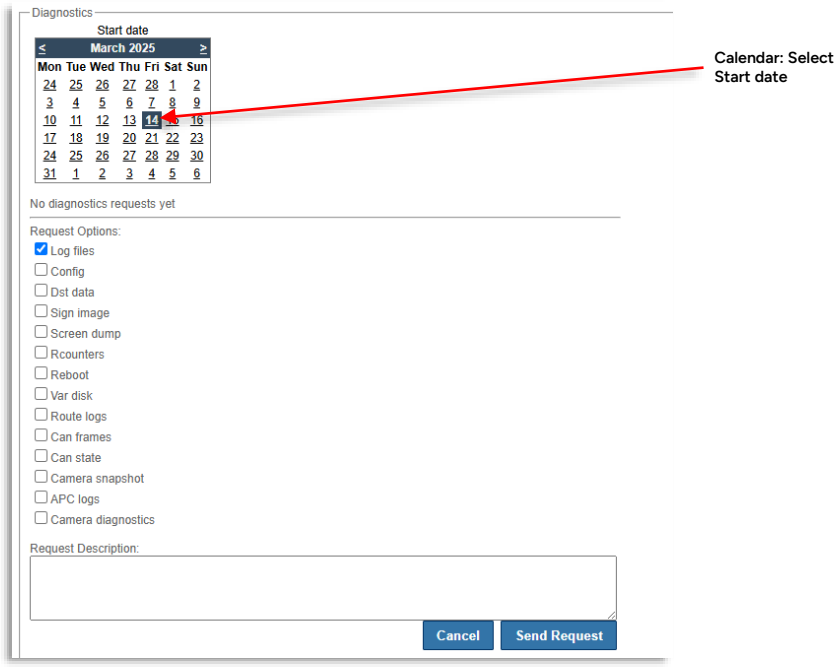
If users have requested diagnostic files from the vehicle/sign system, these are listed with status, timestamp, and description. If needed, rows can be deleted in the log by clicking on the trash bin to the right of the corresponding row.


Diagnostics

Status	Time	Description
UPLOADED	11/7/2012 9:36:54 AM	Förare hävdar...
UPLOADED	9/28/2012 1:56:23 PM	igen
UPLOADED	9/28/2012 1:53:53 PM	Dubbel avgång kl 12
UPLOADED	9/21/2012 3:17:17 PM	testar 12.13

Showing 4 of 4 request(s).

Request Options



Request options	Description
Log Files	Troubleshooting logs (for Consat Telematics support personnel).
Config	Complete vehicle system configuration settings.
Dst data	Volvo-specific function.
Sign Image	Image file showing the front sign. Time-stamped.
Screen Dump	Image file showing the driver user interface. Time-stamped.
Rc counters	Statistics counters (Consat troubleshooting functionality).
Reboot	Request a vehicle/sign system reboot. Normally performed after file upload. (If this is the only box ticked this provides a remote reboot function.)
Var disk	Upload the whole Var disc, including all log files.
Route logs	Route log files for automatic route measurement (Internal Consat troubleshooting function).
CAN frames	All CAN Frames logged during a pre-configured period.
Can state	CAN bus statistics.
Camera snapshot	Snapshop from a connected camera (camera depending on specific vehicle solution)
APC Logs	Current APC counter status/log
Camera Diagnostics	Diagnostic files from the vehicle CCTV cameras.

Request Diagnostics Files

1. Select the diagnostics files you want to upload from the vehicle/sign by ticking the appropriate box. Note: There are a few advanced diagnostics functions not listed below but these are normally not used by customers.
2. Enter a short problem description in the Request Description field.
3. Click on the Send Request button.
4. The request will normally be processed at the next periodic node version request. To speed up things a manual Node Version Request can be triggered by clicking on the Node Version Request button.
5. When the requested file (-s) has been uploaded this will be shown in the list with the status text UPLOADED.

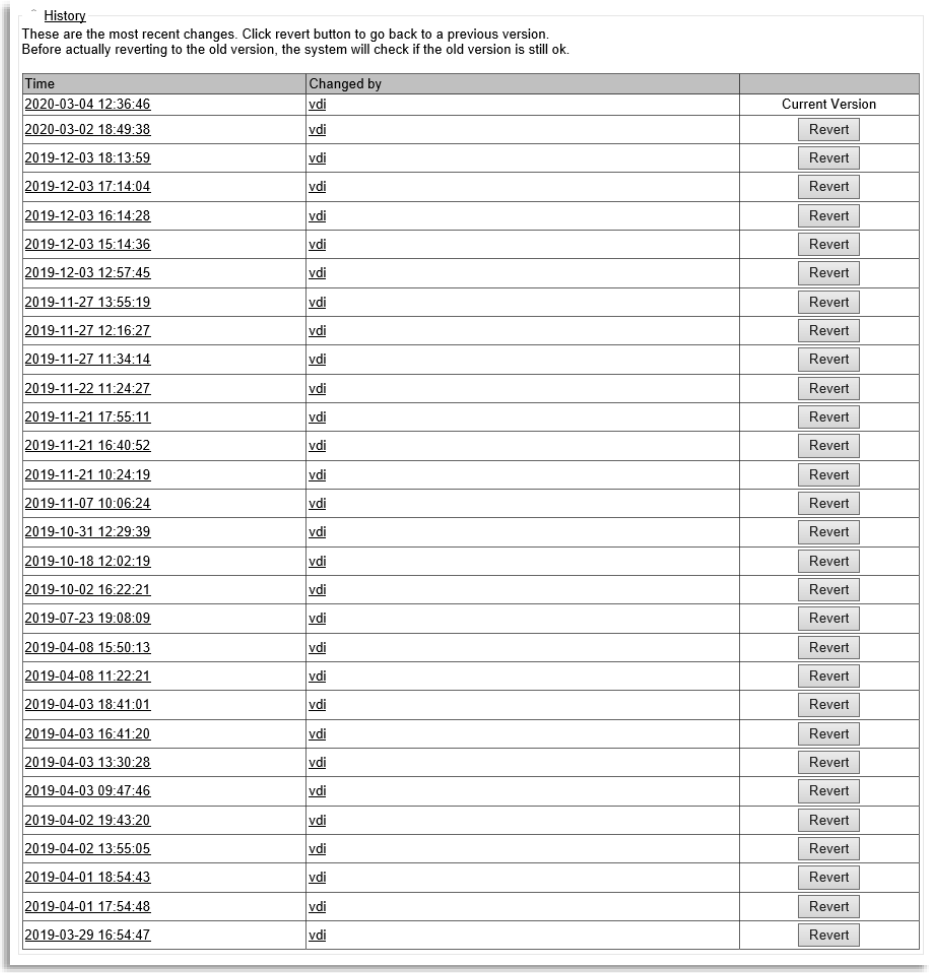
- **After Requesting a log Diagnostic file, contact Consat Telematics support. The Support department will have access to the uploaded file (-s) so you do not have to mail them separately.**

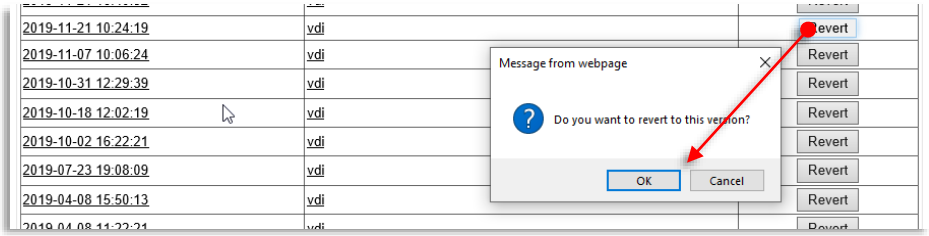
The zipped diagnostics files can be saved by right-clicking on the selected list row and saving at an appropriate location. The uploaded files can also be deleted by clicking on the respective litter box at the extreme right of the list.

History: View or Revert to Earlier Version

Expand the History section to see a log covering all changes, including time stamps and the user that initiated the change/upgrade. Click on the Time or Changed By cells to see all settings in a separate XML window.

The log also includes a Revert function. By clicking on the Revert button for the previous version you can easily "undo" a change that has caused problems. The system will check the older version before the change. **A confirm dialogue prevents mistakes** (see below).





Add a Vehicle/Sign

1. Choose partition (company/operator) in the Partition Menu.
2. Click on **New vehicle**. The interface will change and only the top fields will be active. The Company/operator name is added before the vehicle/sign name comes from the chosen partition.
3. Enter the Vehicle/Sign ID.
4. For Signs, enter Hardware ID. For vehicles: Do not enter the Hardware-ID; it is automatically entered at the commissioning.
5. Make no selection in the Hardware menu. The vehicle/sign computer type is automatically selected at the commissioning.
6. If applicable, select Category and Fleet membership. It is possible to create an "empty" vehicle/sign but delivery, resources, and configuration is best handled by using the Category end Fleet groupings.
7. Click on **Add Vehicle (/Sign)** to save the new vehicle/sign – the Add Vehicle button was activated to the left of the New Vehicle button when this was clicked in step 2.

Clone a Vehicle/Sign

1. Choose partition (company/operator) in the Partition Menu.
2. Select the vehicle/sign you want to clone in the Name menu in the General section.
3. Click on **Clone vehicle/sign**. The interface will change. Only a name field and a hardware ID field will be active. The cloned vehicle's name will be presented with the addition of the text "-clone".
4. Change the name if needed.
5. Normally, the Hardware ID is entered automatically at the initial commissioning but if needed. It can be entered manually in the designated field.
6. Click on **Add vehicle/sign** to save the new vehicle.

Delete a Vehicle/Sign

- **Note: This action cannot be undone by users, only by Consat Support!**

1. Select the vehicle/sign in the Name menu.
2. Click on **Delete Vehicle**.
3. The **Confirm deletion** dialogue is presented. Click on **OK** to confirm.

Edit (change) Fleet/Category Membership for a Vehicle/Sign

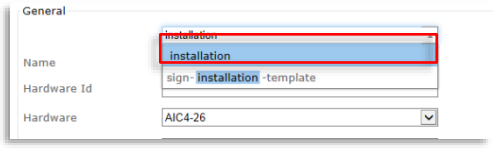
1. Select the vehicle/sign in the Name menu.
2. Change Fleet/Category in the corresponding menu.
3. Click on **Save Changes**

Generate a General Installation Package

Installation packages can be generated either here or under the separate Installation tab (see chapter 8.5). The procedure is the same even if the control layout differs a little.

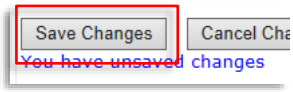
- **When you want to generate a general installation package, use one of the specially configured installation nodes provided by Consat. These will be pre-configured for specific hardware, Fleet, and Category membership.**

1. Select the correct installation node using the top Search menu. **There are separate installation nodes for each hardware type, all beginning with "installation" followed by the hardware name**.

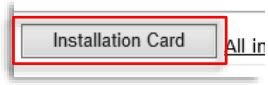


2. **Select Hardware type in the Hardware menu** (if you forget to select hardware and click on Generate Installation immediately, the Hardware field will be highlighted as a reminder that this information is needed before the Package can be generated, see image below).

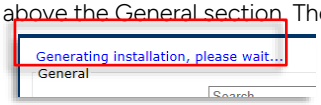
3. Click on Save Changes to save your hardware selection.



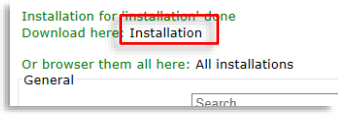
4. Click on the **Generate Installation** button (Hardware type has to be selected, and saved, for the button to be active).



The status message "**Generating installation, please wait...**" in blue text is shown above the General section. The generation may take a few minutes.



5. When the status message "**Installation for [vehicle/sign name] done. Download here: Installation**" is shown in green text, you can right-click on the link to save the file on your desktop or chosen folder.



6. Unpack the compressed zip file with the installation package directly onto a flashcard. The card is now ready for installation.

Generate a Vehicle/Sign Specific Installation Package

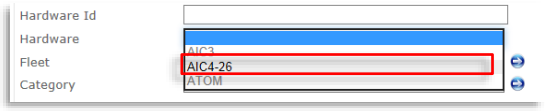
Vehicle/sign-specific installation packages are useful when you want to create a package for a vehicle with a special configuration.

1. Select the vehicle/sign you want to generate an installation package for, using the top Search menu.

Tip: Type to quickly filter the opened menu to find a particular item.

- **Make sure that the Hardware ID is correct (see unit computer label) – a specific installation package will only work with the specified Hardware ID.**

1. **Make sure the hardware type is correct** - if needed, select the correct type of hardware in the hardware menu.



2. If you have made changes this will be indicated with blue information text: "You have unsaved changes". Click on **Save Changes**.

3. Click on the **Installation Card** button.
The status message "**Generating installation, please wait...**" in blue text is shown above the General section. The generation may take a few minutes.

4. When the status message **"Installation for [vehicle/sign name] done. Download here: Installation**" is shown in green text, you can right-click on the link to save the file on your desktop or chosen folder.

5. Unpack the compressed zip file with the installation package directly onto a flashcard. The card is now ready for installation in the selected vehicle.

Generate an Installation Package for a Vehicle Computer Replacement Unit

When you need to make a vehicle-specific installation package for a vehicle that is to have its vehicle computer replaced, you have to delete the Hardware ID, as this is the ID of the presently installed computer and will not be accepted by the replacement unit:

1. Select the vehicle/sign you want to generate an installation package for, using the top Search menu.

2. Delete the content of the **Hardware ID** field. (The new hardware will have a different ID. This will be updated in the CM during the initial provisioning process as part of the

installation.)

3. Select the new Hardware type in the **Hardware** menu.

4. Click on **Save Changes**

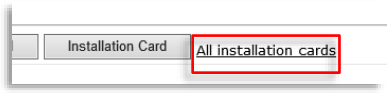
5. Click on the **Installation Card** button.
   The status message "**Generating installation, please wait...**" in blue text is shown above the General section. The generation may take a few minutes.

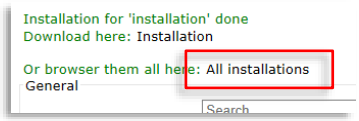
6. When the status message "**Installation for [vehicle/sign name] done. Download here: Installation**" is shown in green text, you can right-click on the link to save the file on your desktop or chosen folder.

7. Unpack the compressed zip file with the installation package directly onto a flashcard. The card is now ready for installation in the selected vehicle.

Browse all Generated Installation Packages

To list all files generated from the selected partition, click on the **All Installation Cards** link. After an installation package has been generated the same list can be accessed through the "Or browse them all here: All installations"





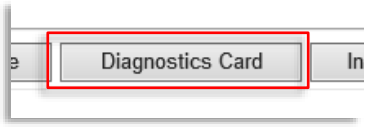
Generate an On-Board Diagnostics card

Whenever remote diagnostics for some reason cannot be performed, vehicle system diagnostics files can be retrieved by inserting a specially prepared diagnostics flashcard/USB drive into the vehicle computer. The diagnostics files will then be copied to the card/USB stick for troubleshooting.

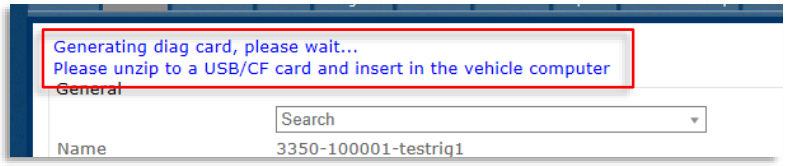
The **Get Diag Card** button lets you quickly and easily generate the necessary files, as a compressed zip file. The file is then unzipped to the card/stick you want to use.

1. Although diagnostics cards are not vehicle/sign-specific, they need to be adapted to the unit software version. Just to make sure the diagnostics card will work with the vehicle/sign you need to troubleshoot, first select this in the General section.

2. Now press the **Diagnostics Card** button to generate the zipped card file.



3. A status message is shown during the generation process:

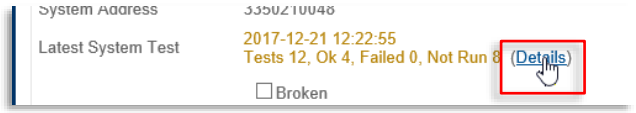


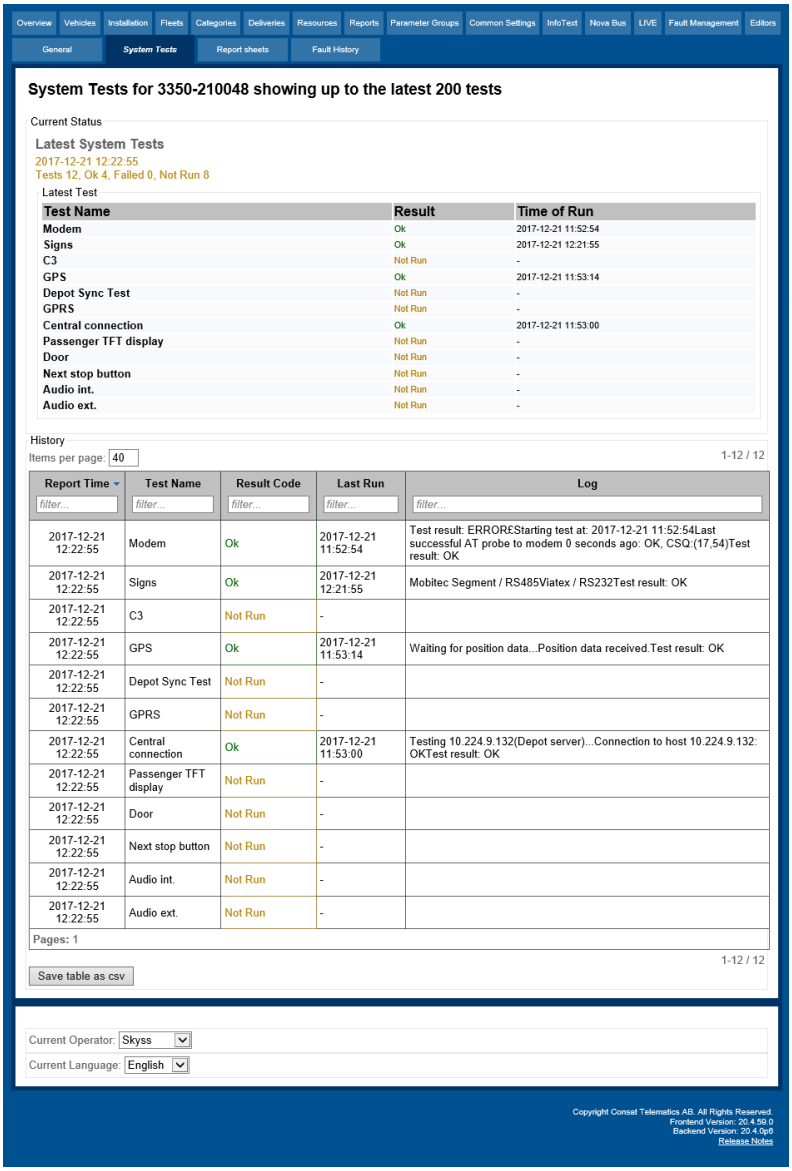
4. As stated in the message, when the generation has finished, unzip the file to the USB stick/Flash card (CF or SD depending on the computer).

8.4.2 System Test Tab

On the System Tests tab, detailed information about the latest system tests is available. This view also lists historical system tests (up to 200 tests presented).

- **Note: You can also access the system tests tab from the General tab Details link, see below.**





The latest performed system tests of each type - on the particular vehicle, including results and time stamps.

System test history (one test per row)

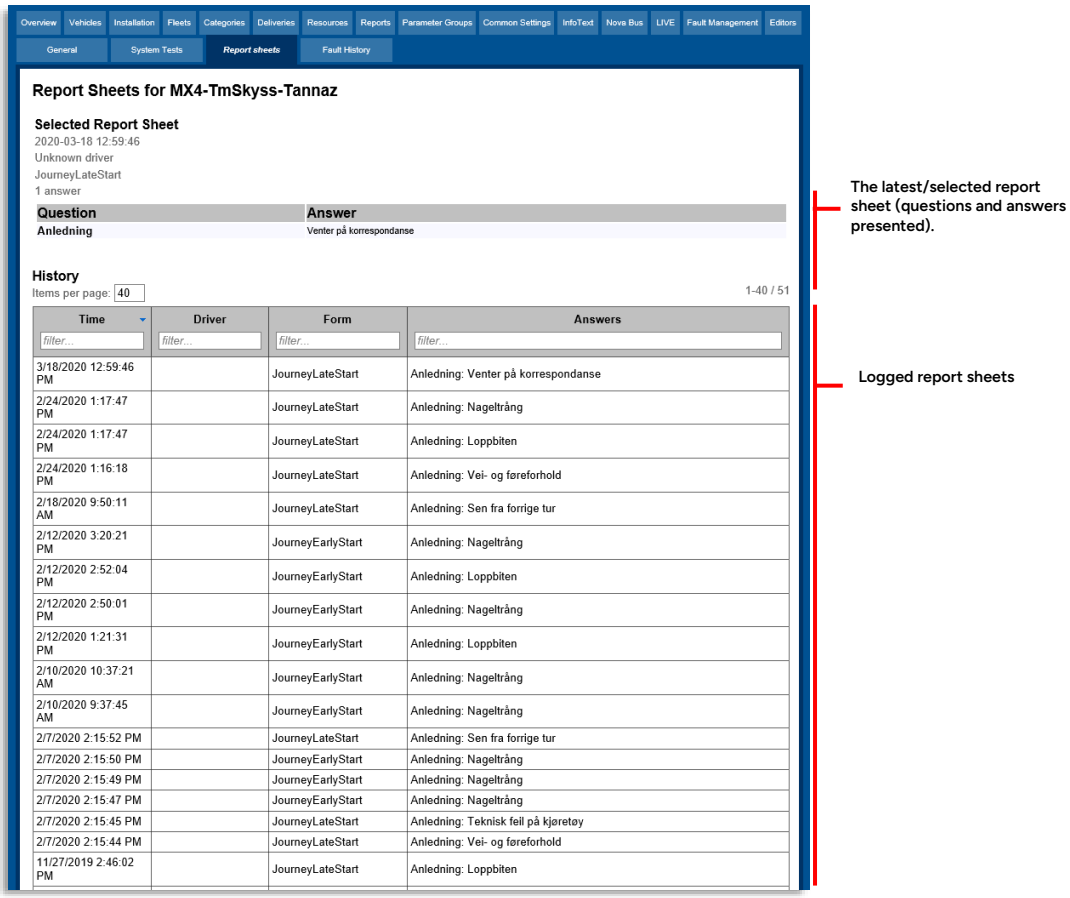
The table can be filtered and sorted by any column.

Label	Description
Report Time	Timestamp, showing when the system test log was sent to the CM by the vehicle computer.
Test Name	The Name of the test/Type of test
Result Code	The test result (OK/Failed, or “Not Run” if the particular test was not performed.
Last Run	Time Stamp Showing when the particular test was the last run on the particular vehicle.
Log	Test log/information about the test (varies w. test/result).

8.4.3 Report Sheets Tab

On the Report Sheet tab, all logged report sheets for the vehicle are displayed. Report Sheet is a function for driver interaction. The driver is, at a suitable time, prompted to manually answer questions in the report sheet, which is then logged and uploaded and will be available both here in the CM and the Traffic Studio application.

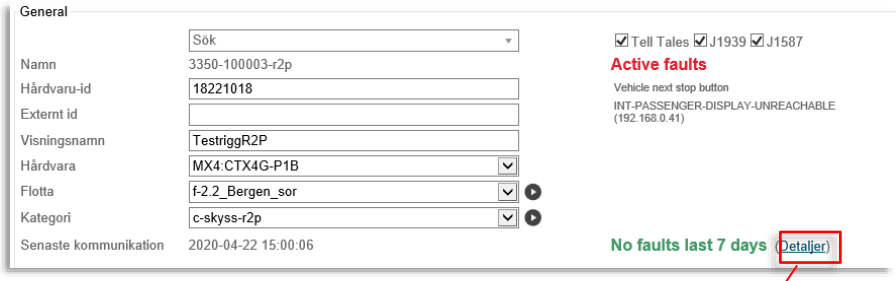
The function is very flexible. For example, report Sheets can be used for driver explanations for traffic deviations and/or for manual pre and post-op checks of specific parts of the vehicle. The customer defines the questions and multiple-choice answers, etc. in each report sheet.

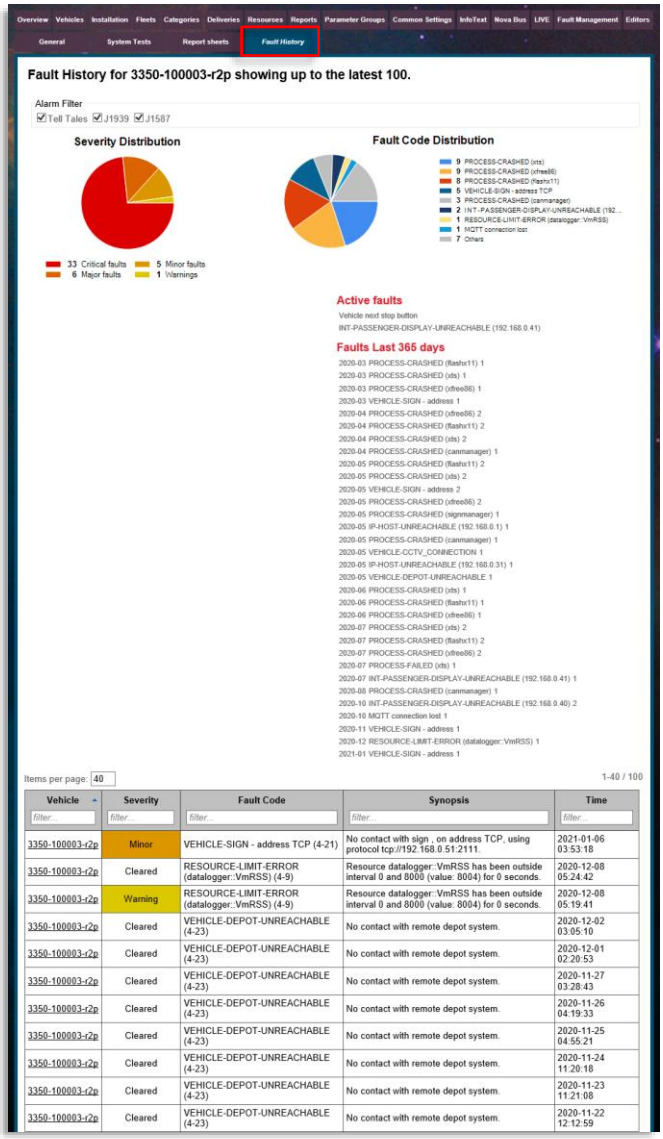


8.4.4 Fault History Tab

On this tab, the logged fault history of a specific vehicle/sign system is displayed.

- **Note: You access this tab using the Details link on the Vehicles Tab, General Section, see below.**





Vehicle Faults Statistics:

Alarm Filter: Include/Exclude "Vehicle" Faults: Tell tale, J1939, J1587

Severity distribution and fault code distribution. Pie charts and numerical presentation.

Active faults: List, mirroring the list in the Vehicle/Sign view.

Historical faults: Past year (365 days) - numerical presentation (number of activations per fault).

Detailed fault status change list (activations/clearings) up to 100 changes, including fault codes, synopsis and time stamps.

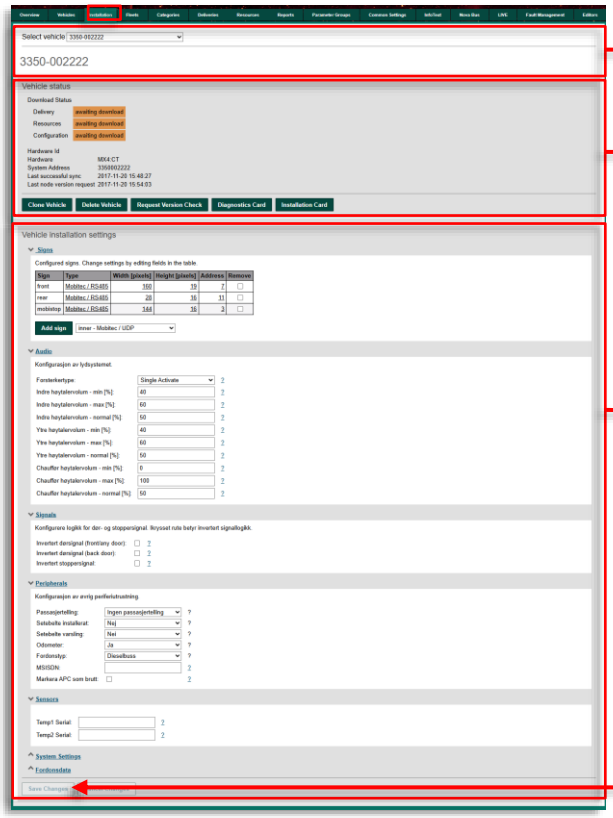
The table can be filtered and sorted by any column.

Label	Description
Vehicle	Vehicle number.
Severity	Fault severity/ status
Fault code	The fault name/code. See Appendix B for vehicle faults. (The fault is also explained in the Synopsis column.)
Synopsis	A short description of the fault.
Time	Timestamp showing when the fault state was detected/changed.

8.5 Installation

Installation Staff is a separate user category in the Configuration Manager (see chapter 6). For installation staff, several tabs in the interface are removed. This makes the user interface more purposeful and minimizes the possibilities for mistakes.

For installation staff, this tab is very much all that is needed with other pages available only in read-only mode.



Select Vehicle: Select vehicle in the menu.

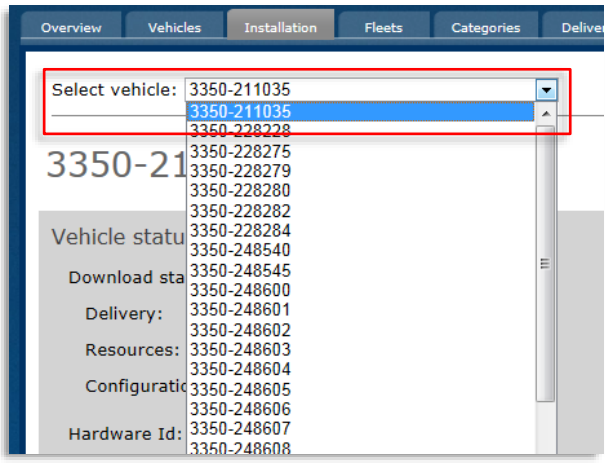
Vehicle Status: Current status and vehicle information. Buttons for cloning, deleting, manually trigger version check (update) , generate diagnostics card, and generate vehicle specific installation card.

Vehicle Installation Settings: Signs, Audio etc.

Save Changes

8.5.1 Select Vehicle

Select vehicle in the top menu:



8.5.2 Vehicle Status

The Installation page is divided into two sections: **Vehicle Status** and **Vehicle Installation Settings**. In the top section the current delivery, resources, and configuration status is presented (using the standard colour-coding found elsewhere in the user interface):

active: The assigned delivery/resource/configuration is in use.

pending: The assigned delivery/resource/configuration has been downloaded but is not yet in use. (Reboot must occur first.)

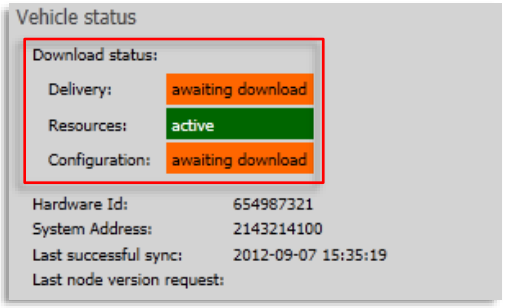
downloading: Download in progress.

download failed: An assigned download has failed. **Note:** A download can temporarily fail for many reasons, it can be that the vehicle has been turned off, that it has temporarily lost contact with the central or that too many vehicles are synching their software at the same time (a maximum of 100 vehicles can be synchronized simultaneously).

If the Download failed status will not remain for a long period usually there is no need for concern.

awaiting download: The assigned delivery/resource/configuration awaits download.

awaiting [the] first download: An initial delivery/resource/configuration awaits download. This vehicle/sign is registered in the CM but has never downloaded any data.

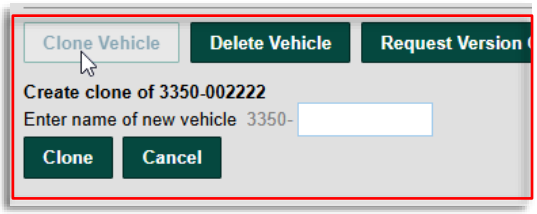


8.5.3 Clone Vehicle

Cloning a vehicle is a very effective way of re-using complex settings in several vehicles; the only data that is not copied is the System address (generated when the new vehicle is named) and the Hardware ID.

Cloning the selected vehicle is simple:

1. Click on **Clone Vehicle**, the following message is presented:

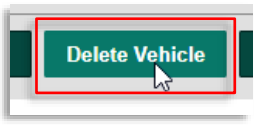


2. Enter the name of the new vehicle and click on **Clone**.
   Cancel cancels the action.
   The new vehicle will appear on the top vehicle menu.

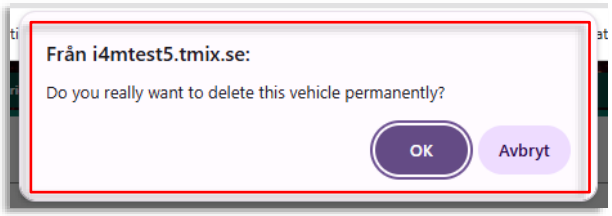
8.5.4 Delete Vehicle

- **Note! Installation Staff can only delete vehicles not yet commissioned (vehicles not yet provided with Hardware ID).**

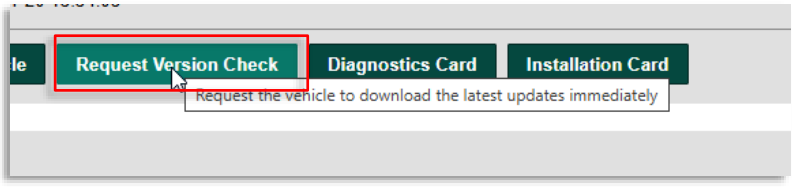
You can delete the selected vehicle by clicking on the **Delete** button.



A confirm dialogue opens to prevent mistakes. Click OK to delete, Cancel to cancel the action.



8.5.5 Request Version Check (Manual update trigger)



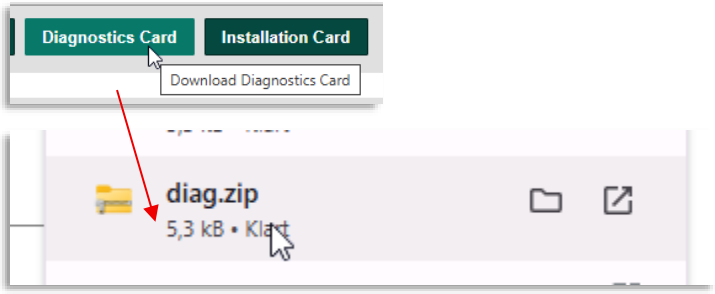
The vehicles check their own delivery/resources and configuration versions against those assigned in the CM every hour (configurable frequency). Only then will updates be initiated.

You can manually trigger this function by clicking on the Request Version Check button. This sends a message to the vehicle system in question making it immediately check for new versions. As you have made changes, these will be downloaded and will then take effect after the next vehicle system reboot.

- **For manual Request Version Check to work the vehicle must be commissioned and be within GPRS/3G coverage.**

8.5.6 Generate Diagnostics Card

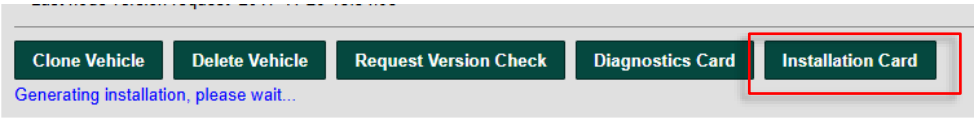
Click on the Diagnostics Card button to generate a diagnostics zip file.



- Extract the Zip to the root folder of a USB Stick to make the Diagnostics card.

8.5.7 Generate Installation Package

Vehicle-specific installation packages can be generated directly from the Installation page. With all settings checked, simply click on the **Generate Installation** button:

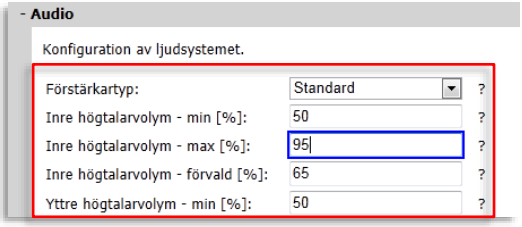


When the installation status message shows that the installation package file has been generated, right-click on the "Installation file" link and save it to an appropriate location. Unpack the file onto a suitable flashcard.

8.5.8 Vehicle Installation Settings

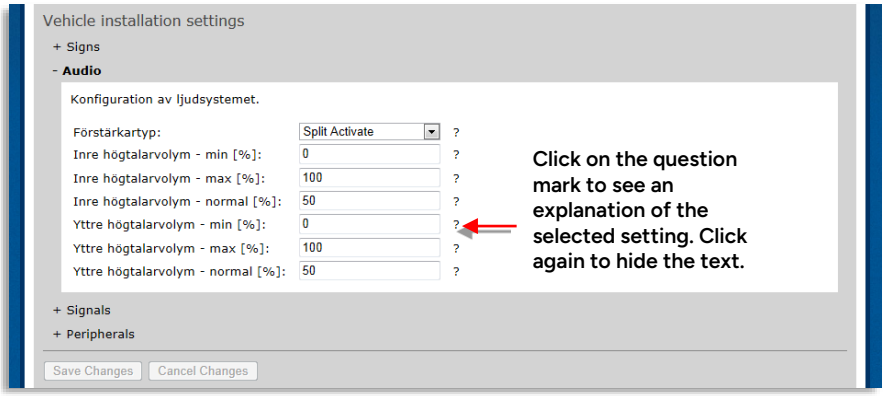
All basic vehicle configuration settings can be made directly on the Installation page. These settings are defined in collaboration with the customer and may vary depending on particular needs. Under expandable headers, you will find settings, including individual explanations.

Simply change the required settings in the respective fields – settings changed but not saved are highlighted with a blue rectangle.



When all changes are made, click on the **Save Changes** button at the bottom of the page (or click **Cancel Changes** to revert to the default setting).

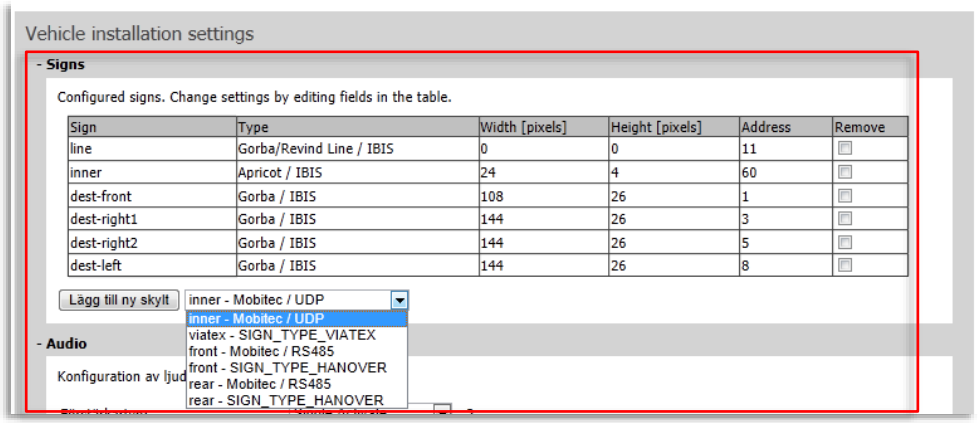
- **Note! No changes will take effect until you save. If you leave the page without saving all changes will be lost**



8.5.9 Signs (Sign Configuration for a vehicle)

Although the Sign configuration function is adapted for every customer vehicle fleet, just like the rest of the settings, a few often used sign terms may need explanation.

- **Note that the Sign names vary depending on the customer (Customization).**



The first column in the list contains “Sign names”, determining the information presented on the sign. If the sign name is “front”, for instance, the content and layout will be adapted for presentation on the front sign of the bus. For internal signs/displays, there are many custom layouts so there are several alternatives for these. The table below describes various sign names in use by our customers.

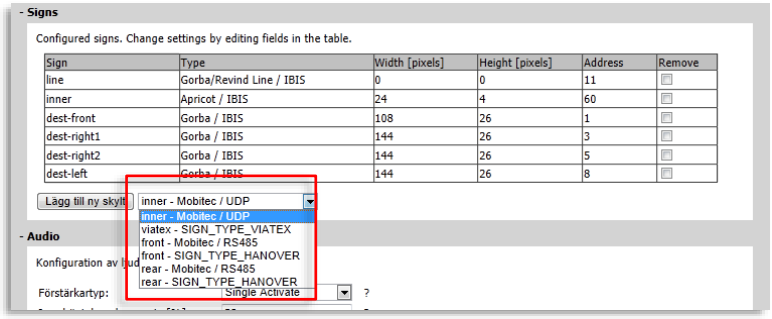
Label	Description
front	Front sign
front2	Used if the side sign needs a different configuration than the front sign. (Most often they have the same address and resolution.)
left-small	Used for side line sign, if it is small and needs a different configuration than the rear sign.

Label	Description
rear	Rear outer sign
segment	Rear outer sign (seven-segment display)
inner	Inner sign, if another type than Mobistop, Viatex, or Apricot
mobistop	Inner Mobistop LED sign
viatex	Inner Viatex sign
nsi	Inner Mobitech Next Stop Indicator sign
dest-front	The front destination sign
dest-right1	The front right side destination sign
dest-right2	The rear right side destination sign
dest-left	The left side destination sign
line	Outer tram “roll” type line sign.

8.5.10 Add a New Sign:

To add a sign to the vehicle configuration is easy:

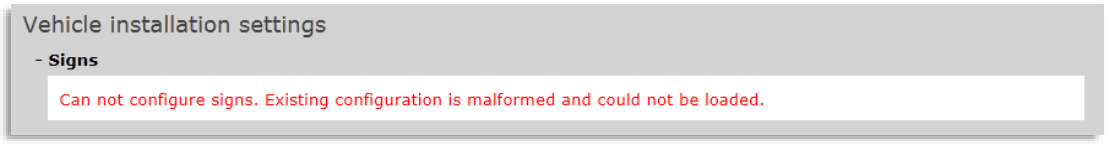
1. Select sign type in the menu (see below)



2. Click on **Add new sign**, the sign is added to the sign list and can now be configured.

Sign Configuration Faults

If the Configuration Manager discovers problems with the sign configuration the following message is displayed:



Most often this is because the user has entered the wrong resolution or address for one or more signs. To solve the problem, try to revert to an earlier version using the History section on the Vehicle page (see chapter 8.3)

Other settings

Settings for **Audio**, **Signals** and **Peripherals** vary with customer configuration. Use the built-in setting explanation (click on the question mark) to see what each setting means.

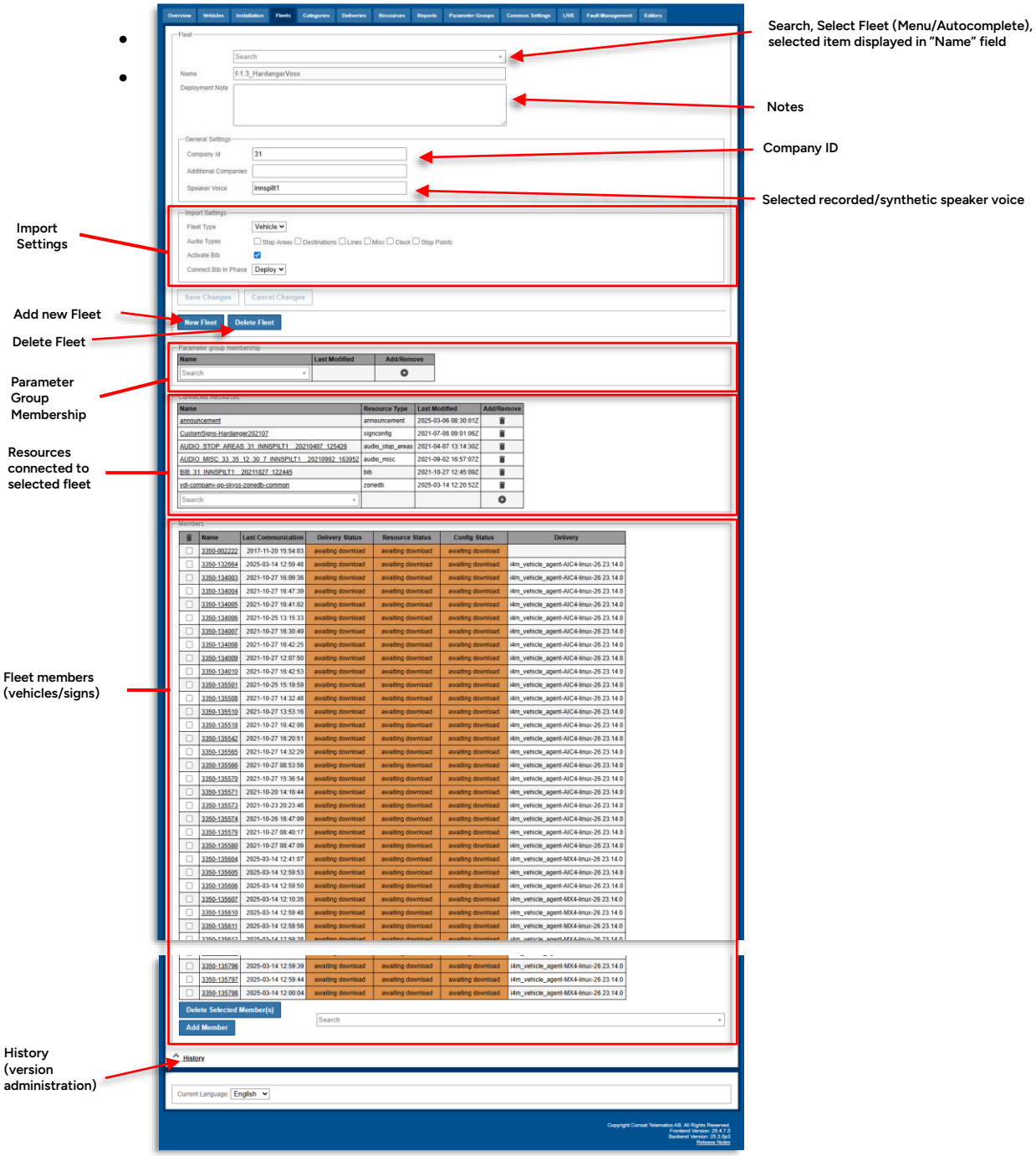
8.6 Fleets

On the Fleet page, the Fleet groupings are administered. Here you can create and delete fleets and configure the resources connected to each fleet. Whenever a resource connected to a fleet has changed, all vehicles in the fleet will be updated with the changes, as soon as the vehicles have downloaded the change and have rebooted.

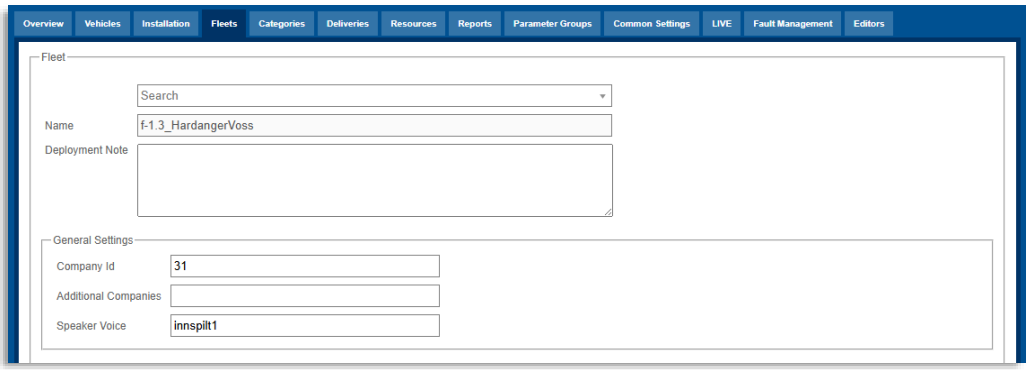
Which vehicles/signs shall be added to a particular fleet can be defined here, or on the Vehicle/Sign page, depending on which is most convenient in each case.

More information about the connected resources can be found on the **Resources** page (chapter 8.8.4)

- **Tip:** Always create a new Fleet and a new Category for a new Delivery. Name the Fleet and the Category accordingly. This makes reverting to older versions much simpler.



8.6.1 The General Section



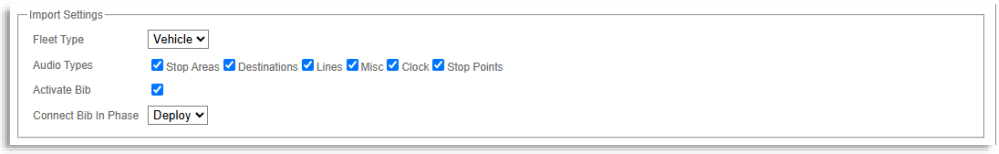
Label	Description
Search	Search and select field. Enter text to get matching items in the menu below to choose from. Click on the menu arrow to the right to expand the menu. Click in the list to select – selection displayed in the Name field, below.
Name	Menu: Selected fleet
Deployment Note	Add/change fleet deployment notes here, then click on Save Changes to save.
Company ID	The ID number for the Operator/Company Note that if the Company ID is not entered, the CM cannot automatically assign resources to the vehicles of the fleet. The correct ID must be entered for all fleets that need traffic data resources. Multiple fleets can have the same Company ID if they need the same traffic data resources. If you, for test reasons, create a fleet that does not need automatically distributed resources, you can leave this field empty.
Additional Companies	Traffic data from these companies will also be included (if company id:s entered).
Speaker Voice (configurable input field)	In systems using alternative voices, you can enter the selected voice for the fleet here. In systems using synthetic voices (Acapela), select the voice you want to use in the fleet here. Eg. “Rhona”, “Louise” etc.

8.6.2 Import Settings

The Import Settings section configures if data packages to vehicles/signs (“BIB:s”) are to be generated for the fleet, and when in the import process these are to be distributed.

Tip: To verify traffic data with a test rig in a test fleet, configure BIB generation directly when the import stage has been completed. See the “Connect BIB in phase - Import” setting below.)

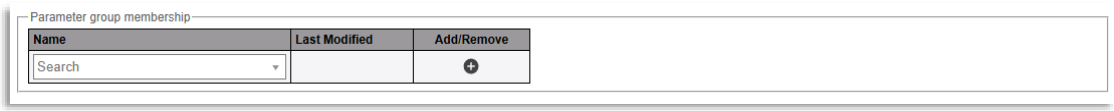
Note: Depending on system, the audio file inclusion and BIB generation may instead be a part of the system configuration.



Label	Description
Fleet Type (menu)	Vehicles/Signs
Audio Types	The type of audio files to be included. Depending on the system.
Activate Bib	Create Bib (data packge for vehicles/signs). Check to generate/activate BIB. Uncheck if bib generation is unnecessary.
Connect Bib in phase (menu)	When to distribute the BIB:s to the vehicles/signs: **Import:** When the import stage in the TS traffic data import tool has been completed, and before the verification and deployment of the traffic data.) **Use this setting to verify data with test rigs included in test fleet.** **Deploy:** When the import has completed the deploy stage (see TS Traffic Data import tool description). The BIB:s are distributed when the traffic data is deployed in the central system. **This is the normal setting for fleets with vehicles/signs in service.**

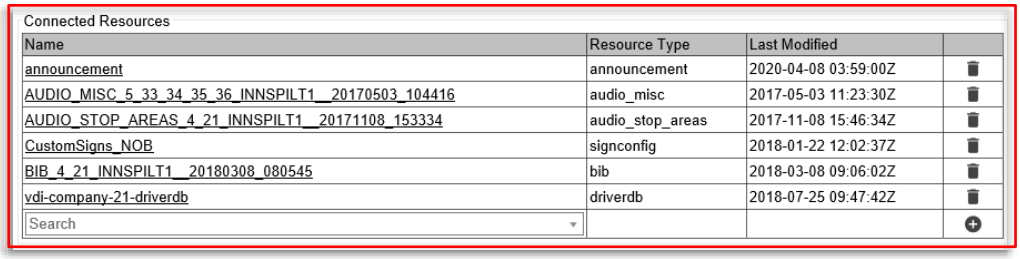
8.6.3 Parameter Group membership

Add/remove parameter group membership(s) for the fleet.



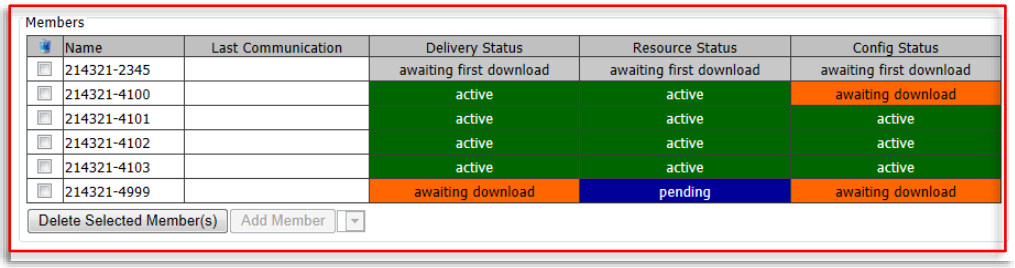
8.6.4 The Connected Resources Section

The connected resources section lists all resources connected to the fleet. Controls for deleting and adding selected resources are available.



Header	Description
Name	Resource name
Resource Type	Resource type
Last Modified	Timestamp showing when the resource was last edited/changed/saved.

8.6.5 The Members Section

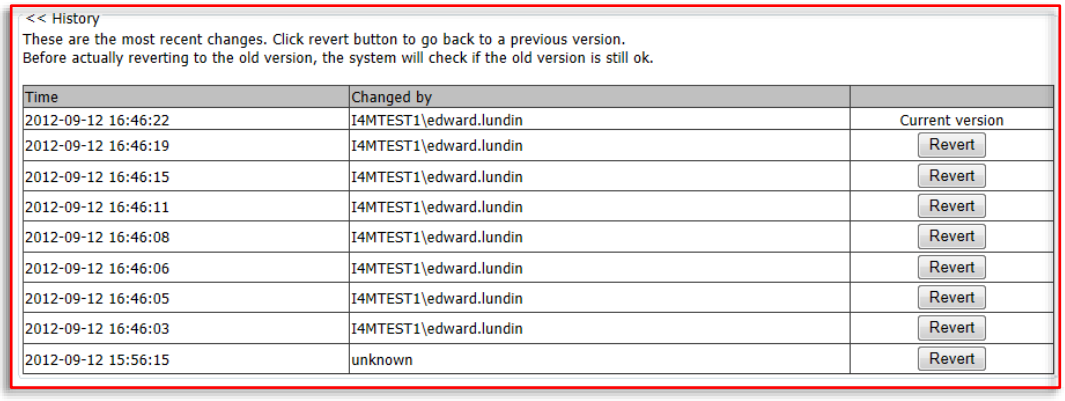


Begrepp	Förklaring
Name	The vehicle name, including a three or four-digit vehicle number. (Depending on company configuration).
Last Communication	Timestamp showing the last time the vehicle/sign was in contact with the CM.

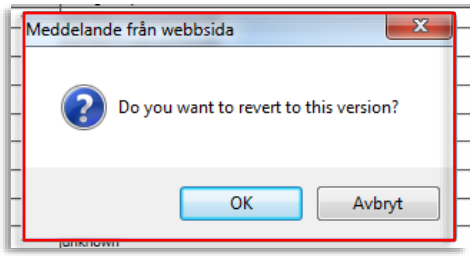
Begrepp	Förklaring
Delivery Status	Delivery status, colour-coded **active:** The assigned delivery/resource/configuration is in use. **pending:** The assigned delivery/resource/configuration has been downloaded but is not yet in use. (Reboot must occur first.) **downloading:** Download in progress. **download failed:** An assigned download has failed. Note: A download can temporarily fail for many reasons, it can be that the vehicle has been turned off, that it has temporarily lost contact with the central or that too many vehicles are synching their software at the same time (a maximum of 100 vehicles can be synchronized simultaneously). If the Download failed status will not remain for a long period usually there is no need for concern. **awaiting download:** The assigned delivery/resource/configuration awaits download. **awaiting [the] first download:** An initial delivery/resource/configuration awaits download. This vehicle/sign is registered in the CM but has never downloaded any data.
Resource Status	Resource status, colour-coded (see above)
Config Status	Configuration status, colour-coded (see above)

8.6.6 The History Section (Expandable)

Click on **History** to expand the section. Here a list is displayed showing the last (up to a maximum of ten) fleet versions:



Click on a version row in the list to see the XML settings for the version. Click on the **Revert button** to revert to the selected version. A dialogue window is presented. Click OK to revert and **Cancel** to cancel the action.



When you revert to an earlier version this is added to the list, just like a new version.

8.6.7 Create New Fleet

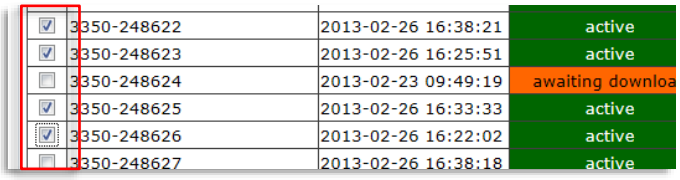
1. Click on **New Fleet** – the text field is emptied, and the Add Fleet button is added.
2. Enter the name of the fleet in the empty field.
3. Add resources in the **Resources** menu.
4. Click on **Add Fleet**.

8.6.8 Add Vehicle/Sign (members) to a Fleet

1. Select a vehicle /sign in the list.
2. Click on **Add member** to add the vehicle/sign to the list.

8.6.9 Remove Fleet Member(s)

1. Tick the boxes for the vehicles/signs you want to remove from the fleet.



2. Click on the **Delete member** button. Confirm in the dialogue.
3. Click **OK** in the dialogue to remove the vehicle/sign (-s).

- **Note that the vehicle/sign is not deleted, simply removed from the selected Fleet grouping!**

8.6.10 Delete Fleet (Without Members)

1. Select Fleet in the top menu
2. Click on **Delete Fleet**, a dialogue is shown
3. Confirm by pressing **OK**.

- **Note! Only fleets without members can be deleted. To delete the fleet you first have to remove all members from the fleet.**

- **Note! Vehicles removed from a fleet, that no longer will have any resources connected will not function in the system until they have resources (either individually connected or through a new Fleet membership).**

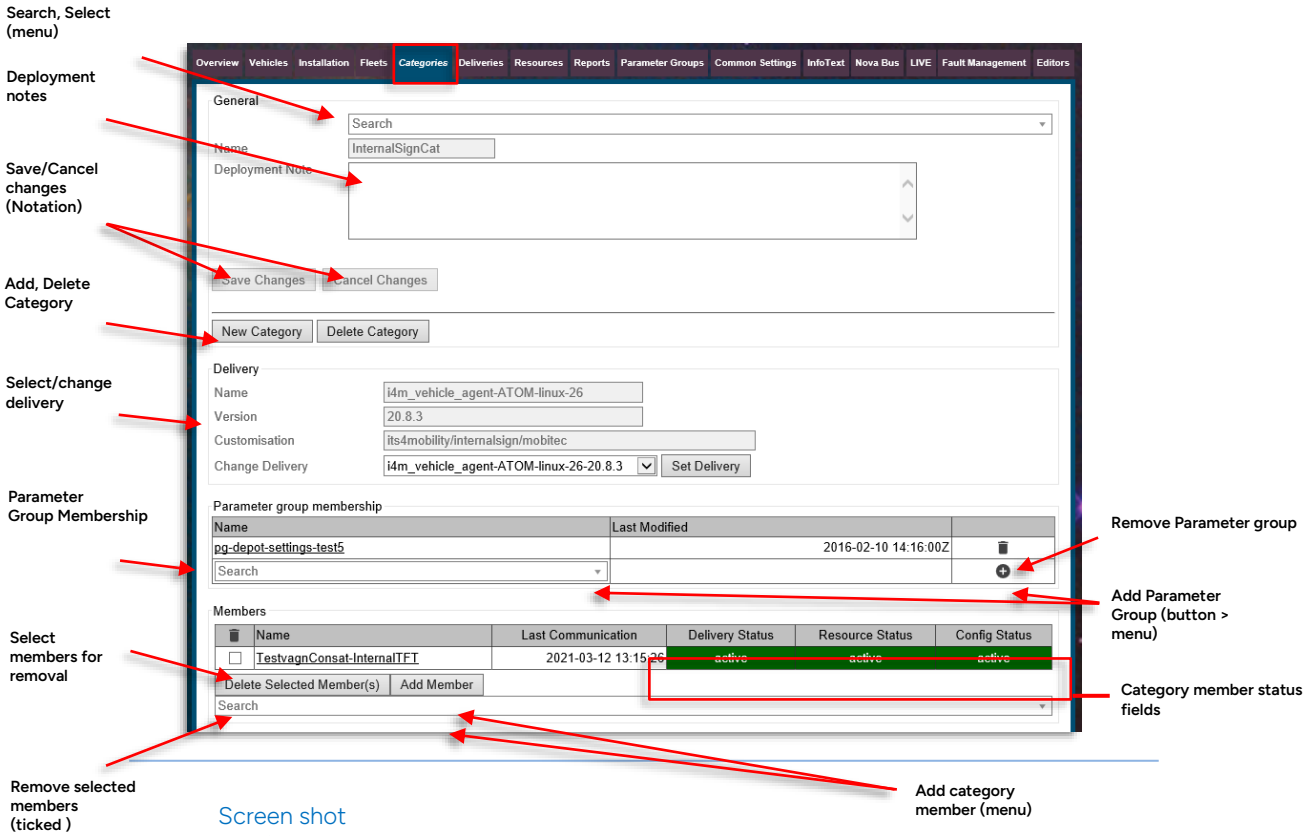
8.7 Categories

On the Categories page, categories are created and deleted. Here, every category can be set up with the appropriate delivery (software version) and all category parameters can be set.

- **Note! We recommend that you always create a new Category (and Fleet) for every major Delivery release, instead of simply updating the delivery for an existing category. This makes it much easier to revert to a tried and tested system configuration when problems arise.**

- **Note! Unless specific vehicle requirements demand it, always set the parameters for whole categories instead of individually per vehicle. This makes it much easier to handle changes/updates for many vehicles.**

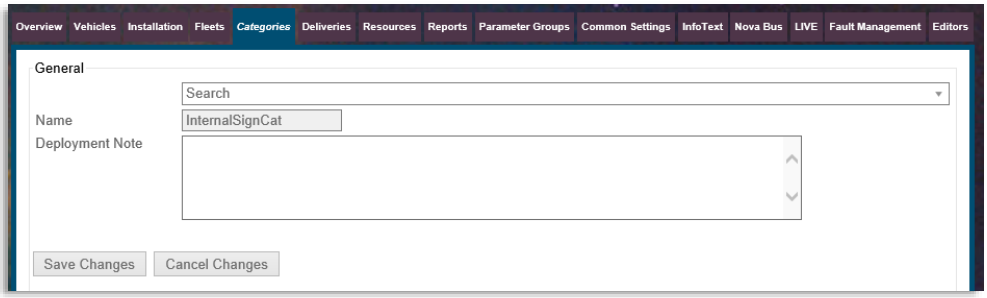
The Categories page is divided into four sections: **General** (category), **Delivery** (software release), **Members** (category members – vehicles/signs), and **Parameters** (parameter editing XML tools):



Screen shot continues on next page...

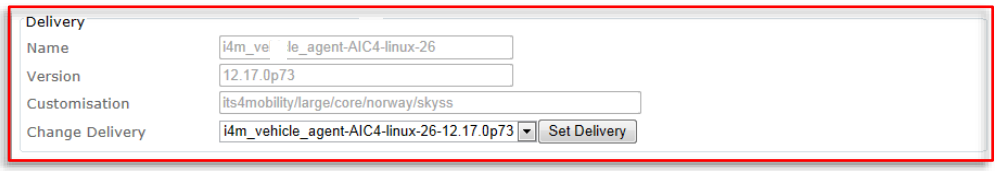

Category Parameters
Parameter: amplifier
Component: net.volvo.vms.services.audiomanager
amplifier.type = VAA02_AMPLIFIER
amplifier.preload.0.speakers = ALL_SPEAKERS
amplifier.preload.0.timeMs = 800
Parameter: sign
Component: net.volvo.vms.libraries.signmanager-custom
sign.0.name = front
sign.0.type = SIGN_TYPE_HANOVER
sign.0.width = 160
sign.0.height = 19
sign.0.address = 1
sign.0.outputter = SERIAL_PORT
sign.0.outputterInstance = 0
sign.1.name = rear
sign.1.type = SIGN_TYPE_HANOVER
sign.1.width = 32
sign.1.height = 17
sign.1.address = 3
sign.1.outputter = SERIAL_PORT
sign.1.outputterInstance = 0
sign.2.name = lateral
sign.2.type = SIGN_TYPE_HANOVER
sign.2.width = 160
sign.2.height = 19
sign.2.address = 2
sign.2.outputter = SERIAL_PORT
sign.2.outputterInstance = 0
Parameter: defaultInternalVolumeLevels
Component: net.volvo.vms.services.audiomanager
defaultInternalVolumeLevels.min = 60
Category parameters listed
Edit Category Parameters
Functions
audio_playback
Parameters
net.volvo.vms.services.audiomanager.volumeReduction
Edit selected category
Schema
<?xml version="1.0"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
<xsd:simpleType name="Speaker">
<xsd:restriction base="xsd:unsignedByte">
<xsd:enumeration id="UNKNOWN_SPEAKERS" value="0"/>
<xsd:enumeration id="INTERNAL_SPEAKERS" value="1"/>
<xsd:enumeration id="EXTERNAL_SPEAKERS" value="2"/>
<xsd:enumeration id="DRIVER_SPEAKERS" value="4"/>
<xsd:enumeration id="ALL_SPEAKERS" value="7"/>
<xsd:enumeration id="NO_AMP_CONTROLLED_SPEAKERS" value="8"/>
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="VolumeReduction">
<xsd:annotation>
<xsd:documentation>
Default XML Component
<?xml version="1.0" encoding="UTF-8"?>
<DepotParameter>
<volumeReduction name=""
speakers="1"
startTime="00:00"
endTime="00:00"
completelyOff="false"
reductionPercent="0">
</volumeReduction>
<volumeReduction name=""
speakers="1"
startTime="00:00"
endTime="00:00"
completelyOff="false"
XML
<?xml version="1.0" encoding="UTF-8"?>
<DepotParameter>
<volumeReduction name=""
speakers="1"
startTime="00:00"
endTime="00:00"
completelyOff="false"
reductionPercent="0">
</volumeReduction>
<volumeReduction name=""
speakers="1"
startTime="00:00"
endTime="00:00"
completelyOff="false"
Validate
Update
Reset
History

8.7.1 The General Section



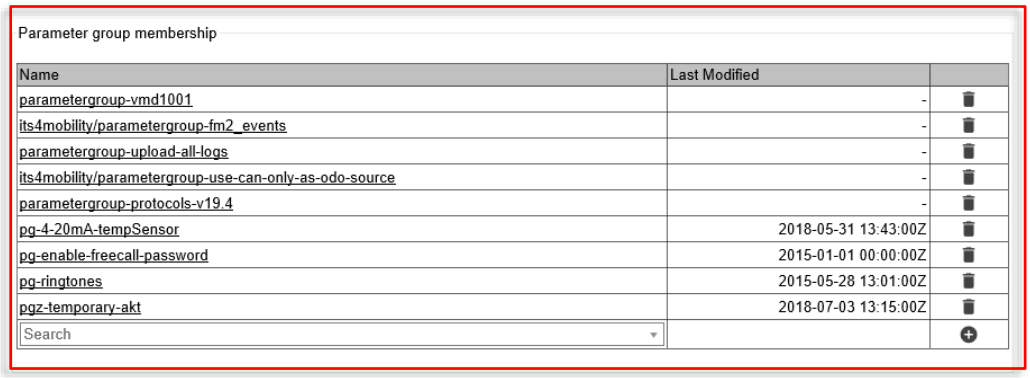
Label	Explanation
Search	Search and select field. Enter text to get matching items in the menu below to choose from. Click on the menu arrow to the right to expand the menu. Click in the list to select – selection displayed in the Name field, below.
Name	Selected category name
Deployment Note	Category notes (Save changes with Save Changes button, cancel with Cancel Changes button…)

8.7.2 The Delivery Section



Label	Explanation
Name	Name of the software delivery
Version	Software version
Customization	Chosen customer adaptation
Change Delivery	Menu: Change delivery

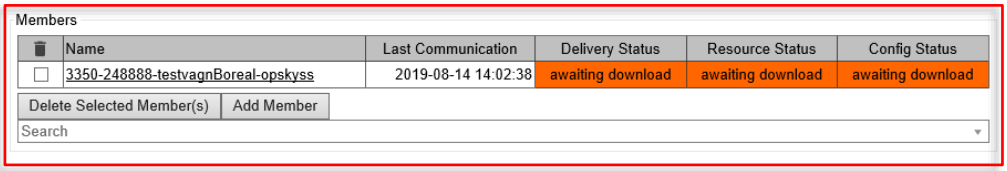
8.7.3 The Parameter Group Membership Section



In this section, you can apply or remove parameter groups for the category. For every parameter group, the Last Modified column shows when the particular parameter group was changed/applied.

See the Parameter group chapter (8.10) for more information about Parameter groups.

8.7.4 The Members Section

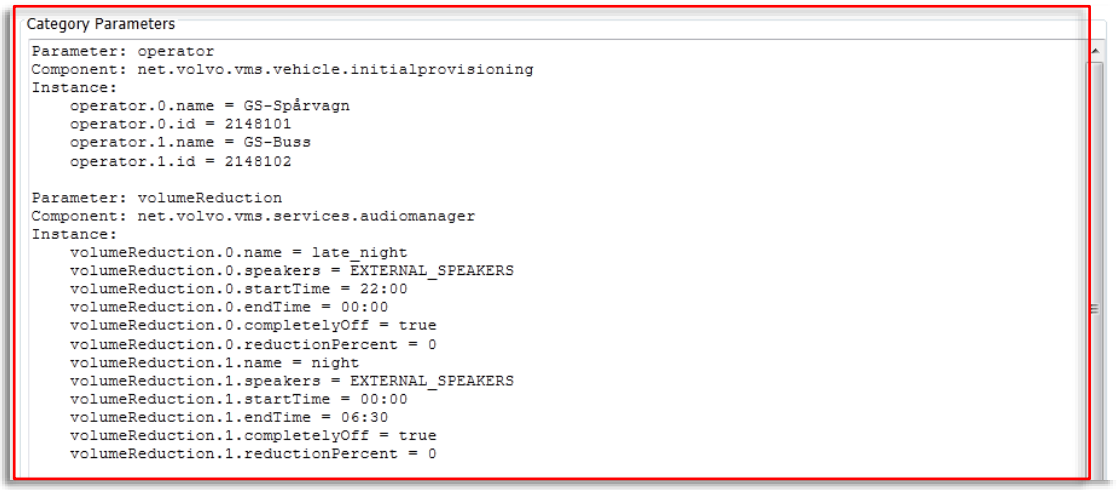


In the Category Members section, all vehicles/signs included in the selected category are listed with added information about last communication and delivery, resource, and configuration status. Controls under the list let you add or remove category members.

Label	Explanation
Name	Name of the member (vehicle/sign)
Last Communication	The last time the vehicle/sign communicated with the CM

Label	Explanation
Delivery Status	Delivery status, colour-coded active: The assigned delivery/resource/configuration is in use. pending: The assigned delivery/resource/configuration has been downloaded but is not yet in use. (Reboot must occur first.) downloading: Download in progress. download failed: An assigned download has failed. Note: A download can temporarily fail for many reasons, it can be that the vehicle has been turned off, that it has temporarily lost contact with the central or that too many vehicles are synching their software at the same time (a maximum of 100 vehicles can be synchronized simultaneously). If the Download failed status will not remain for a long period usually there is no need for concern. awaiting download: The assigned delivery/resource/configuration awaits download. Awaiting [the] first download: An initial delivery/resource/configuration awaits download. This vehicle/sign is registered in the CM but has never downloaded any data.
Resource Status	Resource status, colour-coded (see above)
Config Status	Configuration status, colour-coded (see above)

8.7.5 The Category Parameters Section



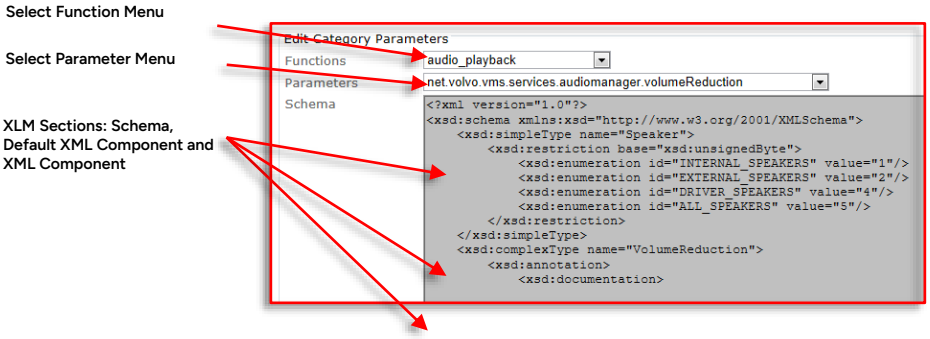
All individual parameters set for the selected category are listed in the Category Parameters section.

8.7.6 The Edit Category Parameters Section

In this section, all Category parameters can be checked and edited in XML format.

To see or edit a parameter, first, select the basic function in the Function Menu, then the individual parameter in the Parameter Menu, the XML sections will show the data for the selected parameter. The Schema section includes an (xsd) explanation of the parameter.

The parameter XML code can be edited in the bottom XML Component section. The **Validate** and **Update** buttons are used for first validating the XML code and updating the parameter. The **Reset** button will revert a changed XML parameter to the default setting (the one shown in the Default XML component section).



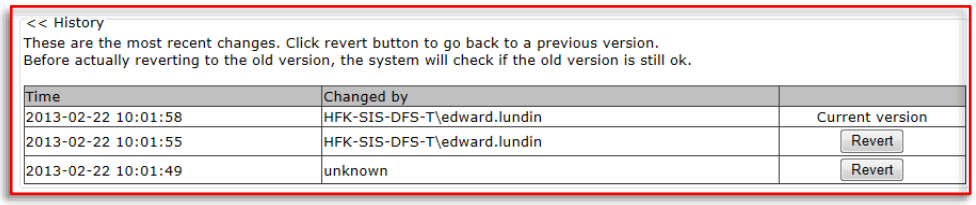
Label	Explanation
Functions	Menu: Functions
Parameters	Menu: Individual parameters available for the selected function
Schema	Documentation: Parameter alternatives for parameters set in the XML field (see below).
Default XML Component	Default parameter setting, included in the delivery.
XML	A field for XML parameter setting

- **Note. The parameters are included in the selected (software) delivery. If no delivery has been selected in the Delivery section, the Edit Category Parameter menus and fields will be empty.**

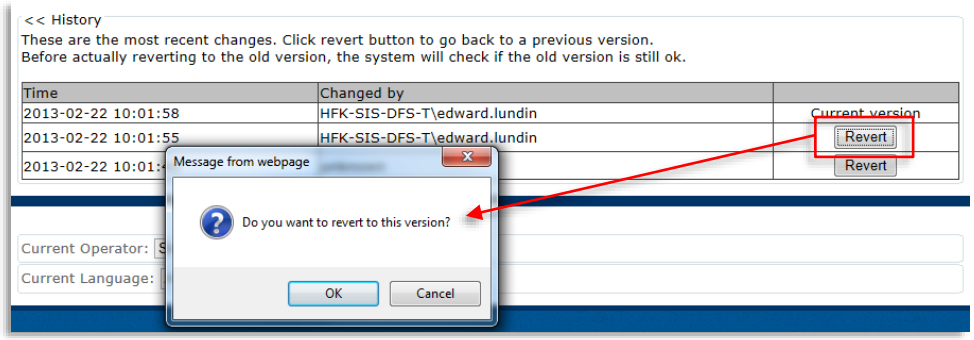
8.7.7 The History Section

Expand the History section to see a log covering all changes, including time stamps and the user that initiated the change/upgrade. Click on the Time or Changed By cells to see all settings in a separate XML window.

The log also includes a Revert function. By clicking on the Revert button for the previous version you can easily "undo" a change that has caused problems. The system will check the older version before the change.



A confirm dialogue prevents mistakes (see below).

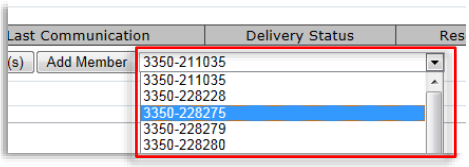


8.7.8 Create New Category

1. Click on **New Category** – the text field with the category name will be emptied and the **Add Category** button will be added
2. Enter a name and click on the Add Category button. A warning text will indicate that the category is “empty” and without functions.
3. Select delivery in the **Delivery** menu and click on the **Set Delivery** button. The delivery details will be displayed in the Delivery section.
4. Optionally, add Parameter group membership(s).

8.7.9 Add a Vehicle/Sign (member) to a Category

1. Select a vehicle/sign in the menu to the right of the Add member button.



2. Click on the **Add member** button. The vehicle/sign is added to the category.

8.7.10 Remove Category Member

1. Tick the boxes for the vehicles/signs you want to remove from the category.
2. Click on the **Delete Selected Member(s)** button. A confirm dialogue is presented.
3. Click on the **OK** button in the dialogue window to remove the selected vehicles/signs. **Cancel** cancels the action.

- **Note! Removing a vehicle from a category does not mean that the vehicle is “deleted”, only that is not included in the selected category!**

8.7.11 Delete Category

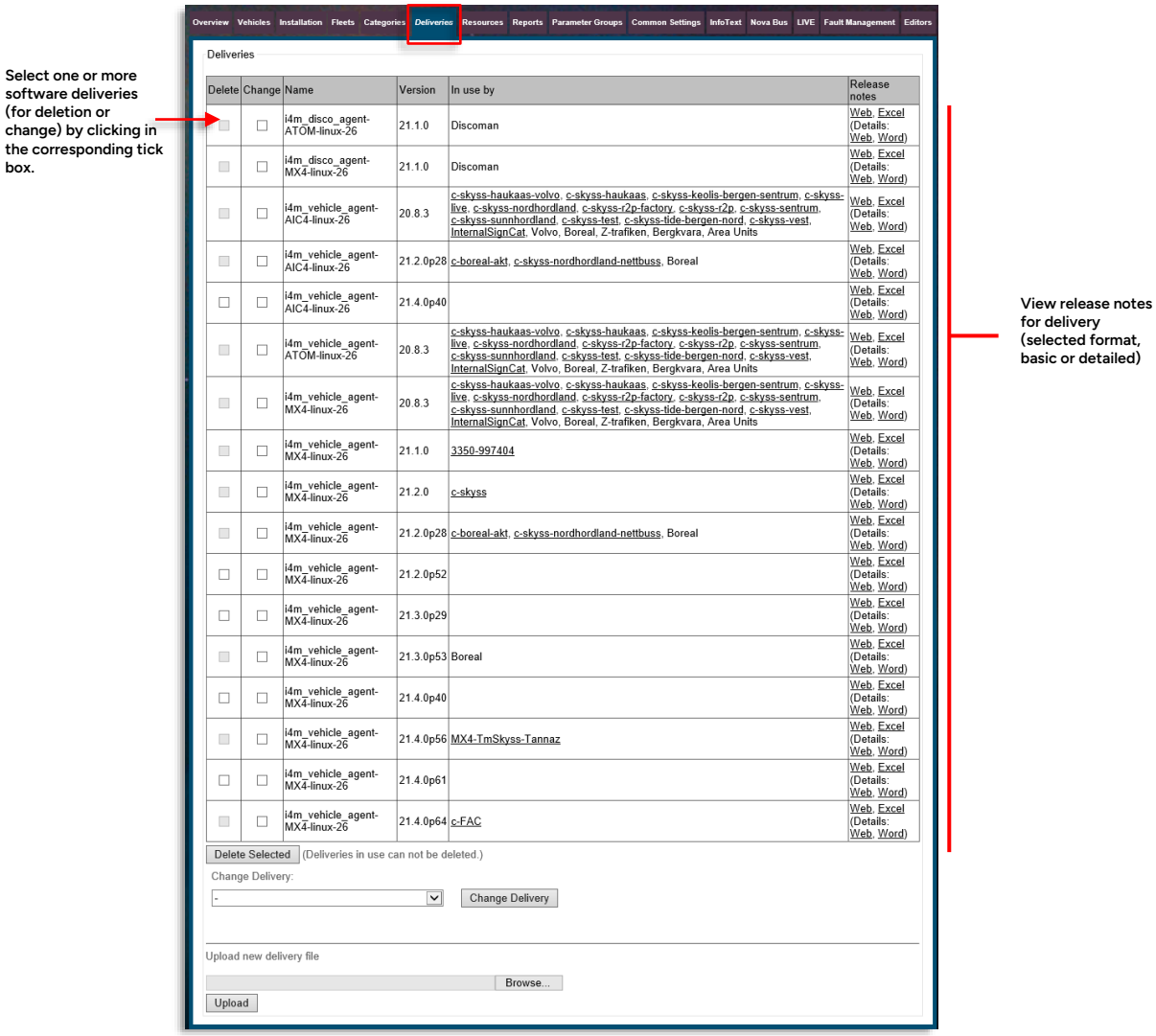
- Note! Only a category without members can be deleted. If you want to delete a category with members, first remove the members (see above) and then delete the category.

1. Select the category you want to remove in the **Name** menu.
2. Click on the **Delete Category** button. A confirmation dialogue is presented.
3. Click on the **OK** button in the dialogue window to delete the category. **Cancel** cancels the action.

8.8 Deliveries

On the Deliveries page, all available software deliveries are administered. The deliveries included in the list here are those that can be assigned to the Categories and individual Vehicles/Signs on their respective pages.

- **Note:** Deliveries are shared and available for all companies/partitions in the system.
- Deliveries are supplied by Consat as zip files and uploaded to the customer CM using functions on this page.



The Deliveries Section

Label	Explanation
Name	Delivery name
Version	Software version. Versions including a “p” are preliminary (not tested enough for major release).

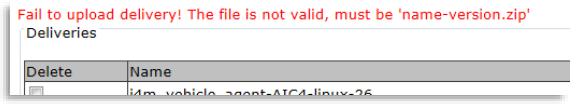
Label	Explanation
In use by	A list of all vehicles/signs/categories that use the delivery.
Release notes	Open release notes for delivery – web/word format. Basic or detailed release notes are available.

8.8.1 Add New Delivery (software version)

1. Select a partition in the top menu (if you have not already selected the wanted partition to work with).
2. Click on the **Browse button** and select the (zip) file you want to upload.

3. Click on the **Upload** button. The new delivery will be added to the list.

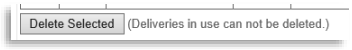
- **Note! The uploaded file, of course, must be a correct delivery. If not, a warning message will be displayed:**



8.8.2 Delete Unused Delivery/Deliveries

- **Deliveries in use cannot be deleted (those checkboxes are greyed out).**

1. Tick the **Delete** box/boxes of the delivery or deliveries you want to delete.
2. Click on the **Delete Selected** button.

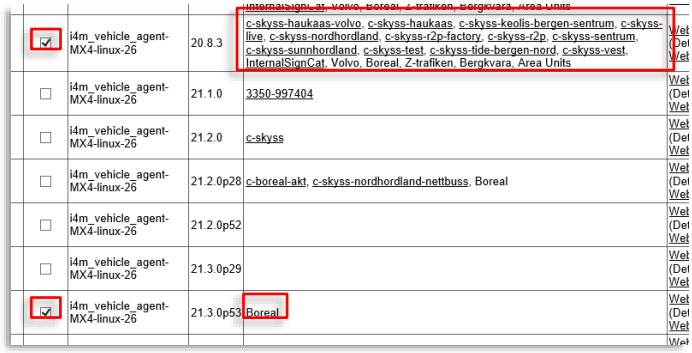


8.8.3 Change delivery for all users of selected deliveries

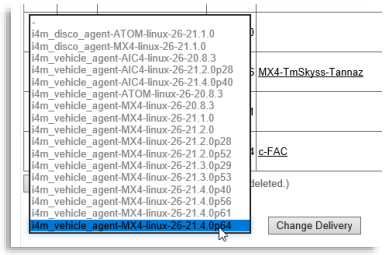
You can quickly change the delivery for several users (i.e. "move" all users of one or more selected deliveries to another delivery in the list) with the "change delivery" function.

- **All *users of the deliveries you select in the list* will receive the selected delivery.**

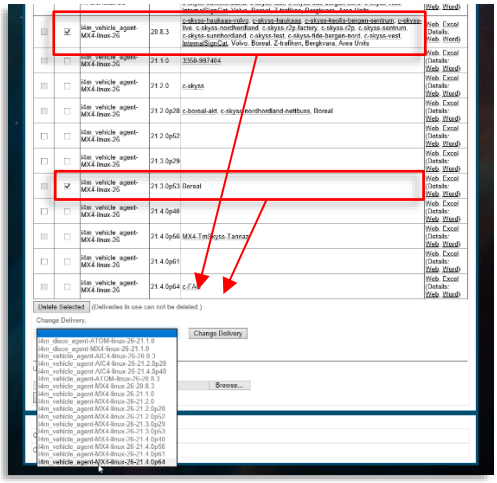
1. Tick the Change box/boxes of the delivery or deliveries whose users you want to receive the (new?) delivery.



2. Open the **Change Delivery Menu** and select the delivery all the users are to receive.



3. Click on the **Change Delivery** button. All users of the selected deliveries will now receive the delivery you selected in the menu. The users will be "moved to" that delivery in the list.



8.8.4 Resources

On the **Resources** page, all resources are managed. These resources can be assigned to Fleets and/or vehicles on their respective pages.

So, just what is a “resource” in the Consat Telematics system? Simply put, it is all the data that the vehicle and sign systems need to have to perform their tasks. Examples are Traffic data (BIB files) including geographic data, time tables, and blocks, sound files for next stop and destination announcements, driver lists for driver log-in, etc.

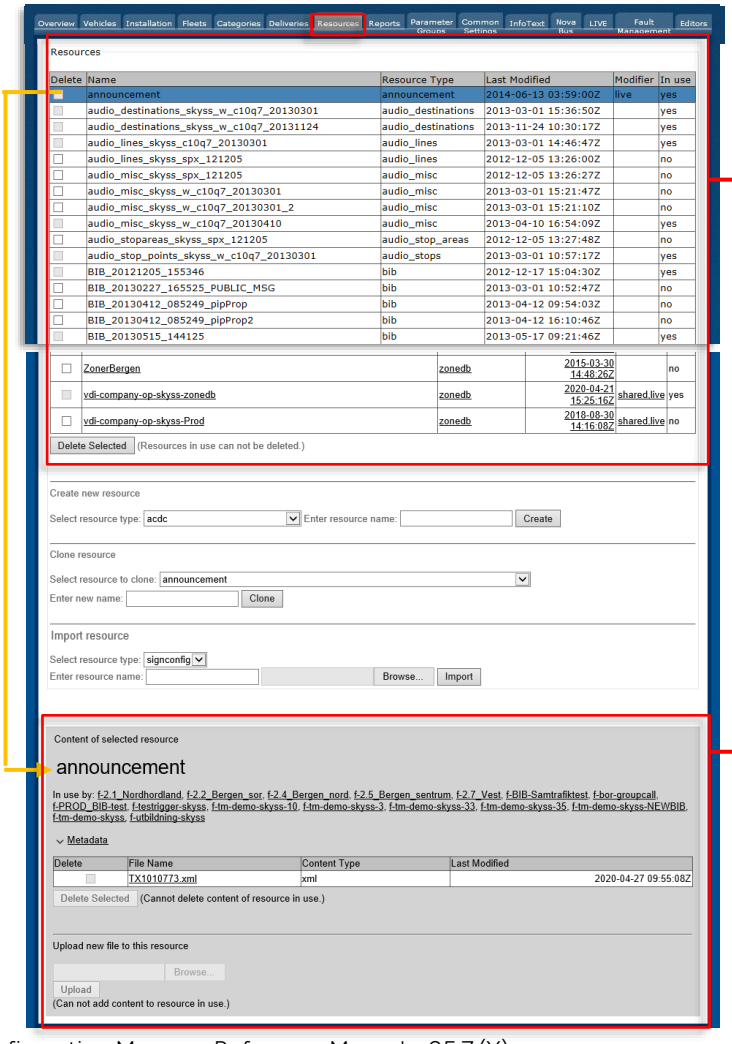
Resources are handled separately from the software (delivery) and configuration data and can be updated regularly without these being affected at all. All resources are adapted for the customers’ needs so no unnecessary data will be transferred.

- **A Fleet or a vehicle can have several resources of the same type assigned, like “audio_lines” for instance. Just make sure the resource files in the resources do not have the same name.**

The Resources page is divided into two sections:

In the top, **Resources**, section all available resources are listed. Here resources can be created or cloned (copied and renamed for later editing). Some resource types can also be created from imported excel files.

To view and edit the content of a resource, click on the resource row in the top section. The bottom **Content of [the] selected resource** section lists all individual files included in the resource. Here files can be added or deleted from the resource.



Resource list: All available resources for the fleets and vehicles/signs of the partition are listed here. Select a resource by clicking on the row. The included individual files will be listed in the Content of selected resource below.

Individual resource files in the resource selected in the top section.

8.8.5 Resources Section

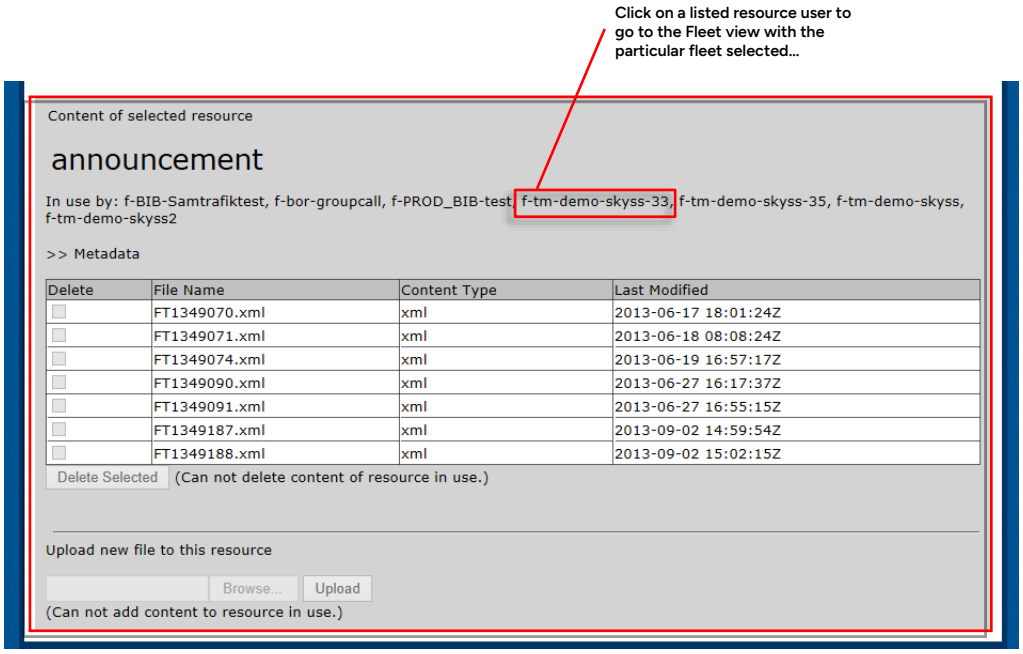
(Lists all available resources.)

Label	Explanation
Name	Resource name
Resource Type	Type of resource
Last Modified	The timestamp shows when the resource was most recently modified
Modifier	User or process that has modified the resource. “Live” means an automatic process has updated the resource.
In use	In-use status (yes/no), shows if the resource is in use by any unit.

8.8.6 Content of selected resource Section

(Lists files in the selected resource.)

The Fleets that use the resource are listed above the content list. Click on a fleet link in this list to go to the corresponding Fleet view, see the example below.

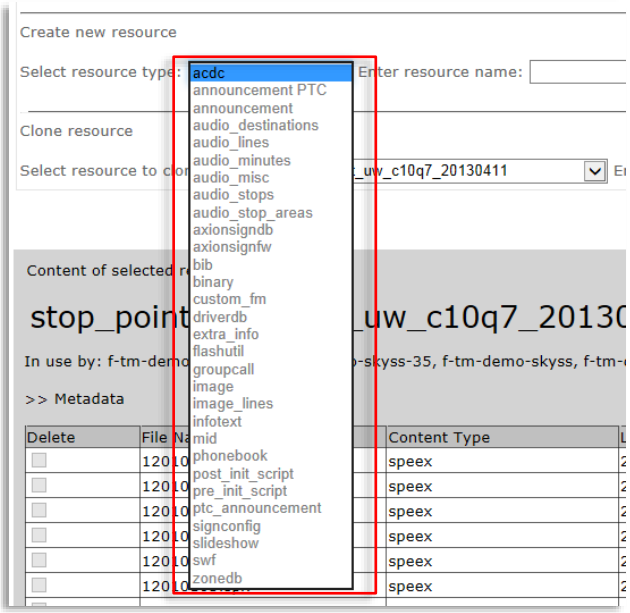


Label	Explanation
File Name	The name of the resource file. Note: For manual sign resources created from an imported excel file, the original Excel file will also be available in the list.
Content Type	File type (xml, txt, jpg ...)

Label	Explanation
Last Modified	The timestamp shows when the resource file was most recently modified

8.8.7 Add New Resource

1. Choose resource type in the "Select resource type" menu.

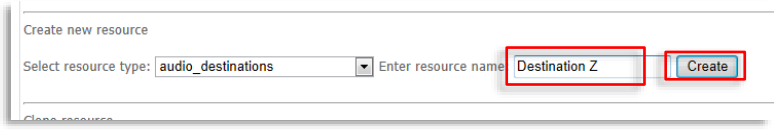


3.

2. Enter the name of the new resource in the text field to the right of the menu

4.

3. Click on the **Create** button to add the new resource to the list of resources.

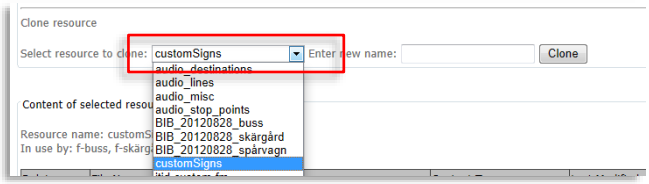


- **Note: If you try to create a new resource with the same name as one of the resources in the list, an error message will be shown. Change the name and try again.**

8.8.8 Clone a Resource

Cloning resources is a very useful function for creating variations of a resource. Clones can, for instance, be edited to include extra resource files and/or to exclude resource files in the original resource.

1. Choose a resource to clone in the menu.



2. Enter a new name in the field to the right.
3. Click on the **Clone** button to add the cloned resource to the resource list.

8.8.9 Import an Excel File to Create a Resource

In the "Import resource" section, you can import Consat specified Excel files for creating corresponding resources.

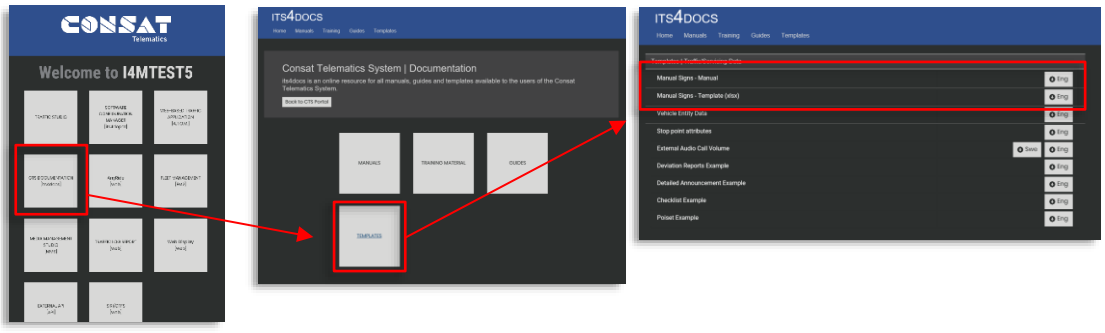
Currently, configuring your "Special" vehicle signs is the only supported resource type. The file template is available on your system portal, see below.

Note that the name of the Excel file configuring Special Signs is "Manual Signs".
(Other files/resource types will be supported by future releases.)

Excel file template

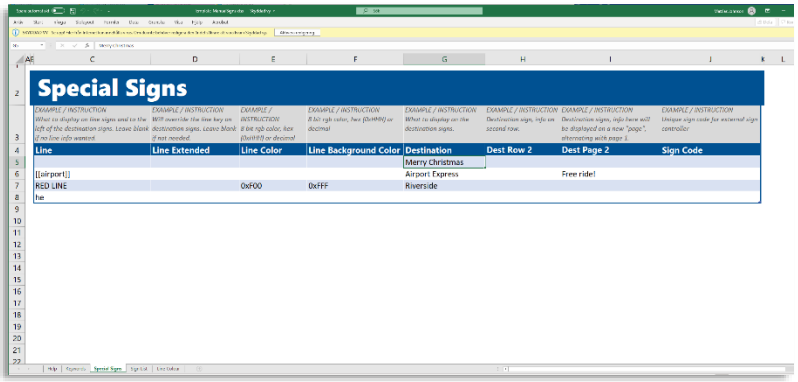
- **The "Manual Signs" config Excel template is available on your Consat system portal, see below for how to find it.**

  Tip: The "Manual Signs – Manual" document graphically shows the different symbols and layouts currently available.



- **Note that the Manual Signs Excel file has separate tabs with information and sign config/content, where you specify the available Special signs. See the image below.**
- **The "Help" tab specifies the destination field formatting.**

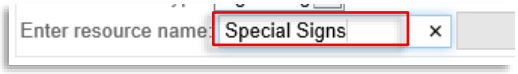
- **Appendix B in this document describes basic Manual Sign configuration using the Excel template, w. resulting signs.**



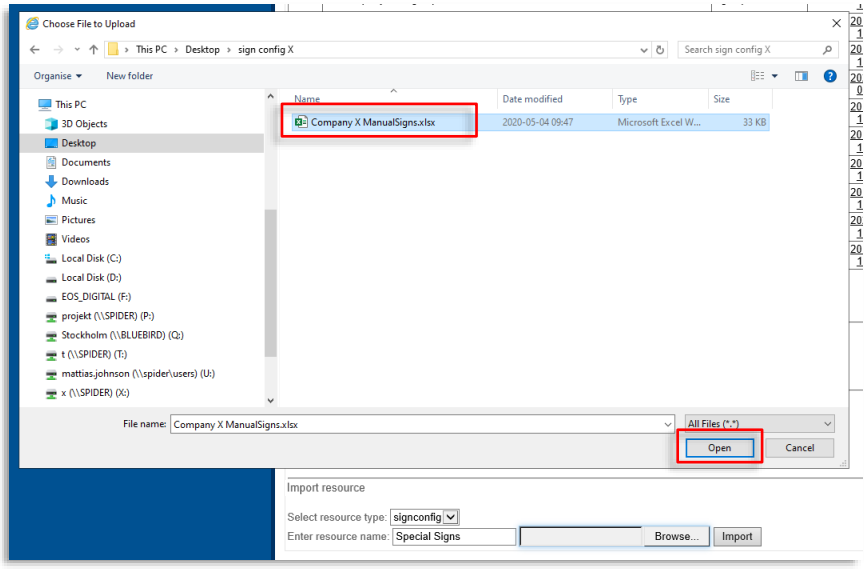
Edit the needed sections of the template and save it to a suitable location.

Import Excel File and Create Resource, Step-By-Step

1. Enter a descriptive resource name. (This does not have to match the file name.)



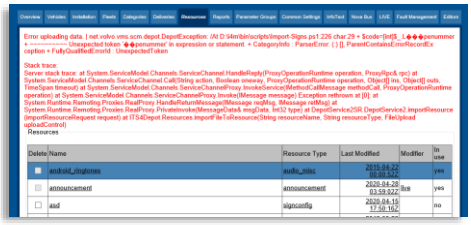
2. Click on **Browse** to open a browser window. Navigate to and select the Excel file.



3. Click on **Open** in the browser window

4. Click on the **Import** button.

Note: If you try to import a file type that is not supported or a config file with the wrong content an error message will show in red at the top of the tab page. See below.



8.8.10 Delete Unused Resource

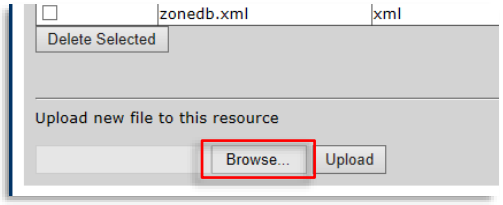
- **Note! Only resources not used by any unit can be deleted.**

1. Tick the corresponding box (in the extreme left column in the list) to select the resource (-s) you want to delete.
2. Click on the **Delete** button. A dialogue will show. Click on the **OK** button to delete and on **Cancel** to cancel the action.

8.8.11 Add Files to a Resource

- **Note! Resource files can only be added to a resource, not in use. To update a resource in use, first Clone the Resource (see a previous chapter) then edit the clone, and finally, switch to using the clone instead of the original resource.**

1. Select the resource you want to add files to in the list by clicking on the row (not the tick box in the delete column). The current content is listed in the lower **Content of the selected resource** section. If the resource contains no files the text "Resource has no content" is displayed.
2. Click on the **Browse** button at the bottom of the **Content of the selected resource** section. Locate and select the file you want to add.



- **Note: Several files can be added simultaneously but in that case, they must be zipped into one file. All files must be placed in the zip root. The CM will unpack and add the files to the resource.**

3. Click on the **Upload** button. The file is added to the resource. (The file must, of course, be of the right type to be accepted by the Content Manager).

8.8.12 Edit a Resource File

1. Select the resource in the Resources list.
2. Right-click on the file in the Content of the selected resources list that you want to edit. Save the resource to your local hard drive.
3. Open the resource file with a suitable editor and make the edit. Save.
4. Add the file to the resource as described above, an uploaded file will overwrite the original resource file.

8.8.13 Delete an Unused Resource File

1. Make sure the right resource is selected in the Resources section.
2. Tick the corresponding box in the Delete column in the Content of selected resource section.
3. Click on the **Delete** button. A confirm dialogue will be presented. Click on **OK** to delete and **Cancel** to cancel the action.

8.9 Reports

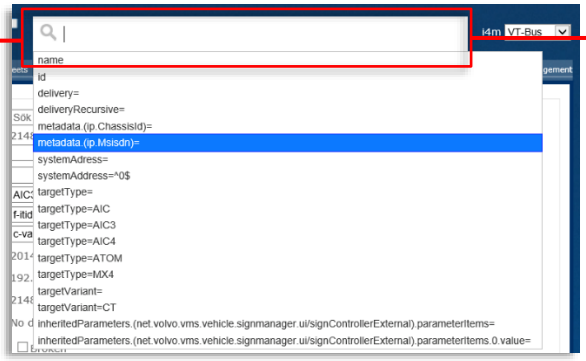
On the Reports page, parameter reports for selected vehicles/signs from one or more partitions (companies) can be created. For instance, reports allow you to quickly identify units with specific hardware or configuration.

A powerful filter section with flexible filtration both before and after the report search allows focused, to-the-point, reports that only cover what you need to know.

8.9.1 Application Top Report Search Field

With any other tab than the Reports tab selected, a top Search field is presented above the application tabs. Presently, this works like a "remote" for and as a link to the report search on the Reports tab.

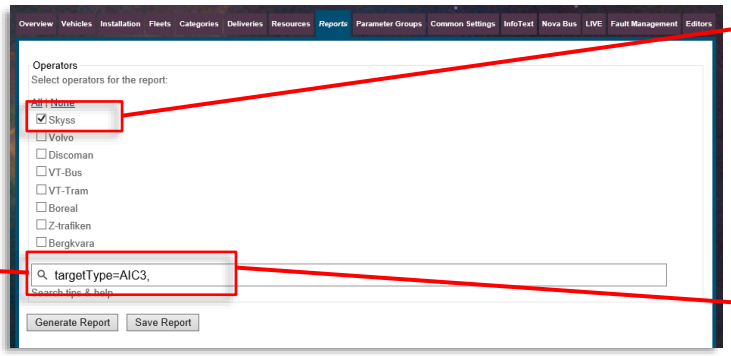
- **When you click in the field, it expands for extra clarity.**
- **Enter search criteria: Name, number, hardware-ID, etc. Below the search field, search hints are listed that can be selected for inclusion in the search. The search hints simplify entering specific search items.**
- **The search hints also affect the report, as columns are added to include specific content (target type/variant etc.)**
- **Multiple entries can be included comma separated.**
- **Press Enter to perform the search – the reports tab will open, presenting the report.**



To quickly perform a report search, enter search criteria in the top search field and press Enter. The report tab will open showing the report generated with the last used operator/partition selection. You can use the report (save/print) or modify and redo the search as needed.

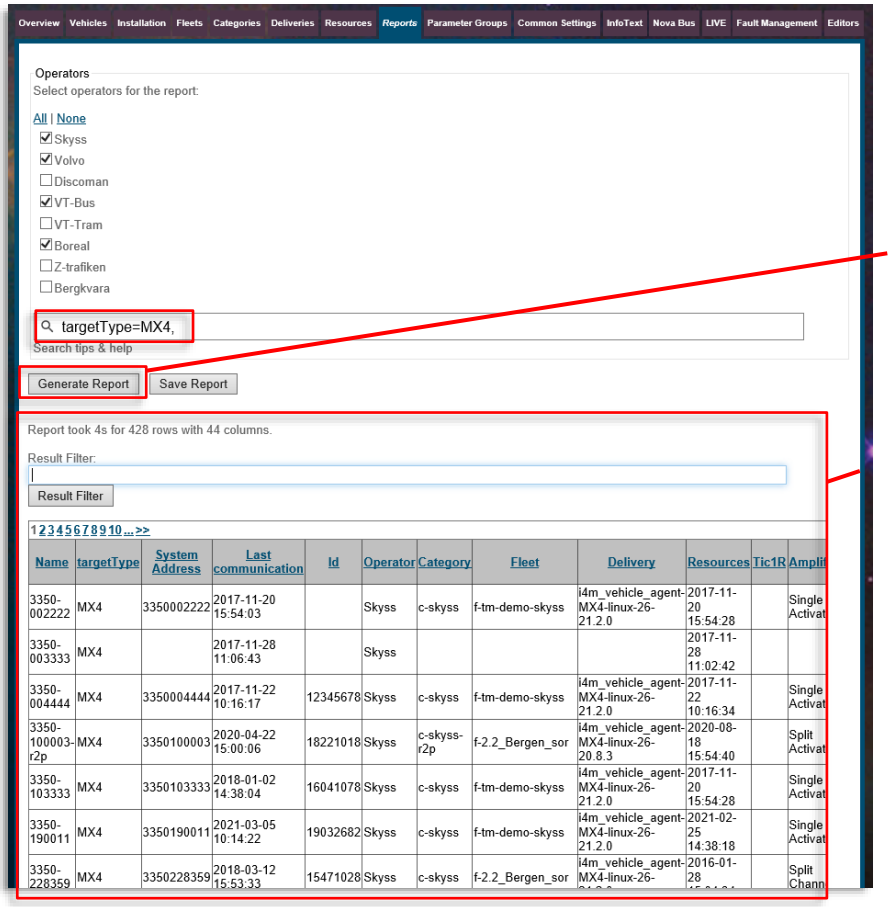
8.9.2 The Reports Tab: Operators and search filter

The Reports tab consists of a search section where you select the operators/partitions that are to be included in the search, and the specific search entries (the search field is also presented above the tab row in the application with any of the other tabs selected).



Select one or more operators/partitions that are to be included. This selection will be the default in the next search during the current session.

The report search field (Search carried over from the top search field if you used that to open the report tab).



If you did not generate the report directly from the top search field (by entering a search item and pressing enter), you can generate the report by pressing the "Generate Report" button below the search section. The report list will be presented below.

The report list will include a pre-specified number of columns to suit the search, and include extra columns as specified in the search field (target type etc.)

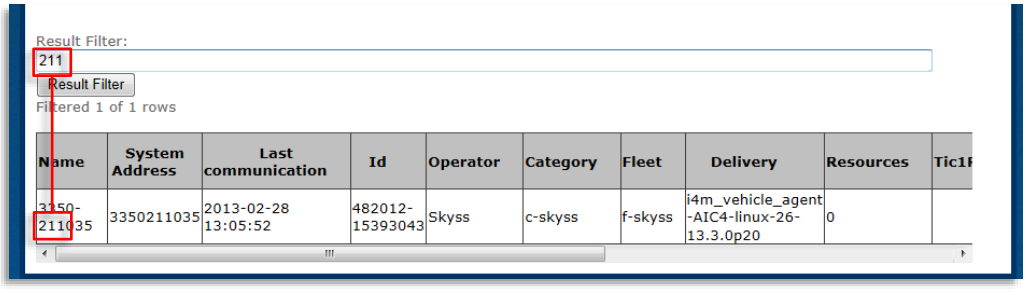
8.9.3 Save Report as Excel File

The generated report can be saved as a standard excel file by clicking on the **Save Report** button.

8.9.4 Result Filter – Limit Report Presentation

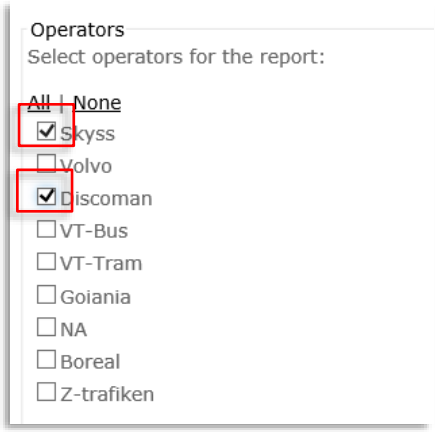
A "post search" free text Result filter lets you exclude everything but the information you are after in the presented report data. Both text and numbers can be entered.

Simply enter the desired filter and click on the **Result Filter** button to limit the report to the matching content.

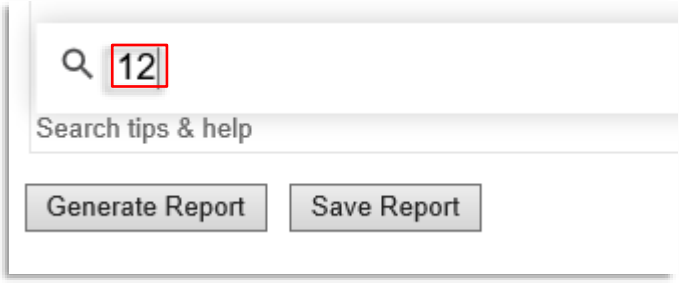


8.9.5 Generate a Report (Without Using the top Search Section)

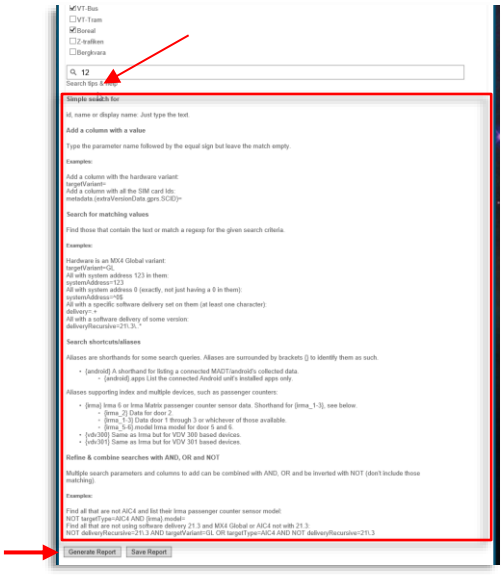
1. Choose partitions (operators) by ticking the corresponding boxes or click on "**All**" to tick all the boxes in one go. "**None**" deselects all boxes.



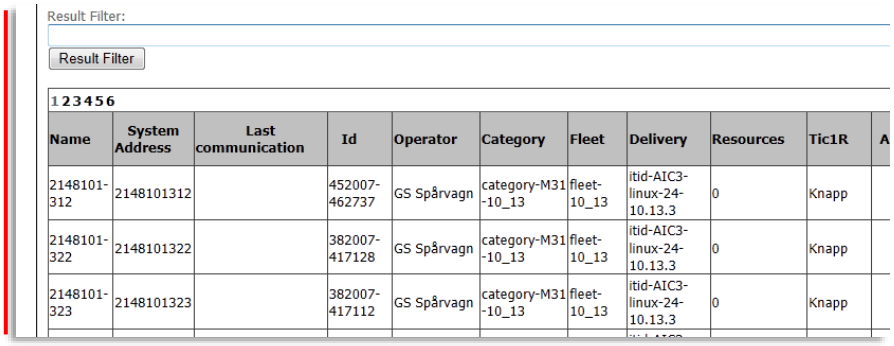
2. If you want to only include some vehicles/sign enter these in the filter field. If you enter "12" like in the screenshot below, all entries with Name or Hardware ID including this number will be included in the report:



- **Click Search Tips & Help to view an explanation of the search possibilities.**



3. Click on the **Generate Report** button to generate the report.



Name	System Address	Last communication	Id	Operator	Category	Fleet	Delivery	Resources	Tic1R	A
2148101-312	2148101312		452007-462737	GS Spårvagn	category-M31-10_13	fleet-10_13	itid-AIC3-linux-24-10.13.3	0	Knapp	
2148101-322	2148101322		382007-417128	GS Spårvagn	category-M31-10_13	fleet-10_13	itid-AIC3-linux-24-10.13.3	0	Knapp	
2148101-323	2148101323		382007-417112	GS Spårvagn	category-M31-10_13	fleet-10_13	itid-AIC3-linux-24-10.13.3	0	Knapp	

Now either save the report by clicking on the **Save Report** button, selecting a suitable location and again clicking save. Or you can examine the report directly and limit the presentation to the free text/numbers you enter in the Result filter. Click on the **Result Filter** button for the filter to take effect.

The Report Content

- **Columns will be added to suit a specific search (when Targettype, TargetVariant, etc. is included in the search string…), for instance, will Irma APC-sensors be displayed with serial no, firmware version, etc.**
- **Note: Missing configuration will leave a blank cell in the report spreadsheet.**

Header	Explanation
Name	Vehicle name
Metadata.(xxx) – several columns	Columns showing connected Irma sensors firmware version, model, serial no…
System Address	Unique system unit address, used for communicating with the central system.
Last Communication	Timestamp showing the most recent communication.
Id	Hardware ID
Operator	Partition (often used for dividing the CM content for different Operators)
Category	Assigned Category
Fleet	Assigned Fleet
Delivery	Software delivery (software version)
Resources	Resource
Amplifier	Type of amplifier
Volume Internal Min	Set minimum volume level, internal speakers (%).
Volume Internal Max	Set maximum volume level, internal speakers (%).
Volume Internal Default	Set default volume level, internal speakers (percentage, within the interval between minimum and maximum level)
Volume External Min	Set minimum volume level, external speakers (%).
Volume External Max	Set maximum volume level, external speakers (%).
Volume External Default	Set default volume level, external speakers (percentage, within the interval between minimum and maximum level)
Volume Reduction [#X]	Volume Adjustment
Speakers [#X]	Speakers affected by the Volume Adjustment

Header	Explanation
Start Time [#X]	Volume Adjustment start time
End Time [#X]	Volume Adjustment end time
Reduction [#X]	Volume reduction (%)
Off [#X]	Mute (yes/no)
Sign [#X]	Sign position
Type [#X]	Sign protocol
Width [nummer X]	Sign width in pixels
Height [nummer X]	Sign height in pixels

8.10 Parameter Groups

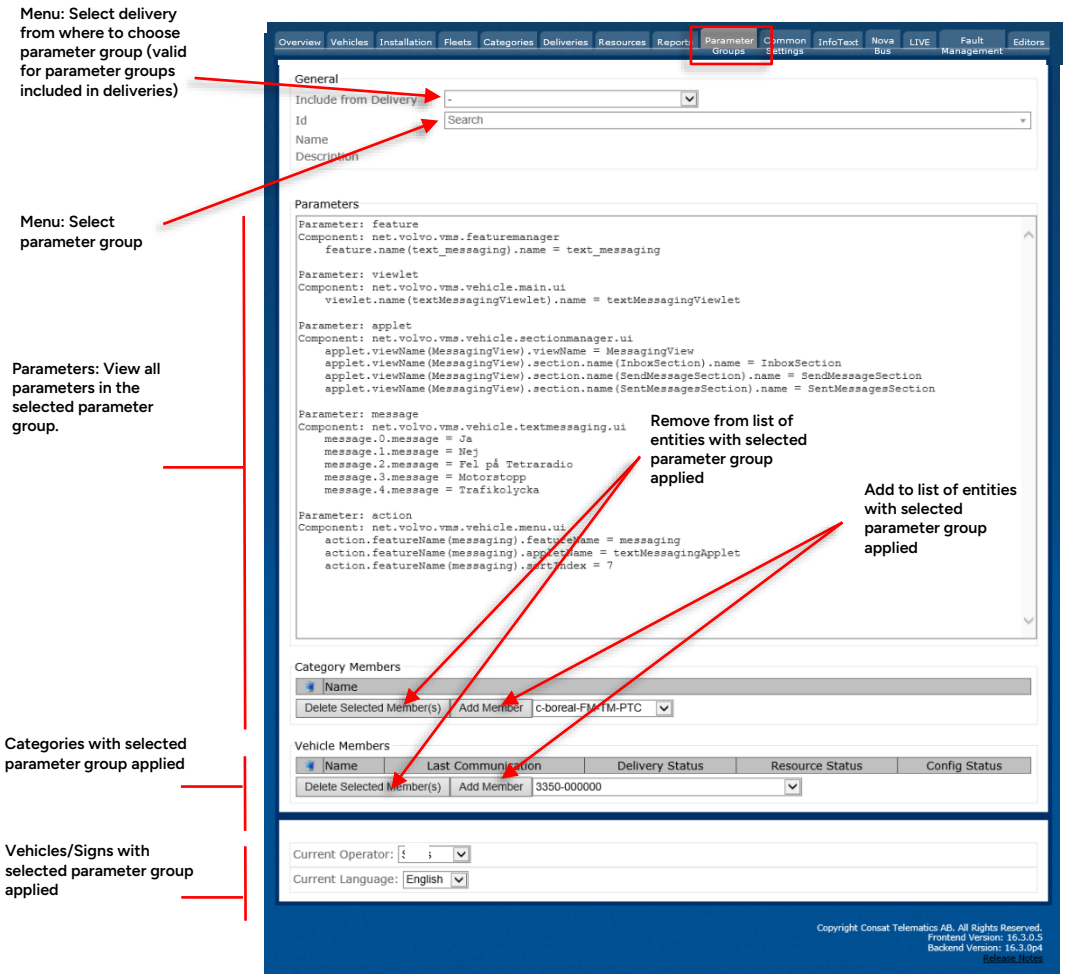
Parameter Groups, or Parameter Sets, are ready-made parameter sets used for feature enabling, easier configuration, etc. They can be applied to whole Categories or individual vehicles/signs.

Parameter sets can either be pre-configured in the CM by Consat or included in the software deliveries.

On the Parameter Group page, you select and view the parameter groups available in the deliveries currently stored in the Configuration Manager. A short description of the selected parameter group is presented under the ID (parameter group selection) menu in the General Section.

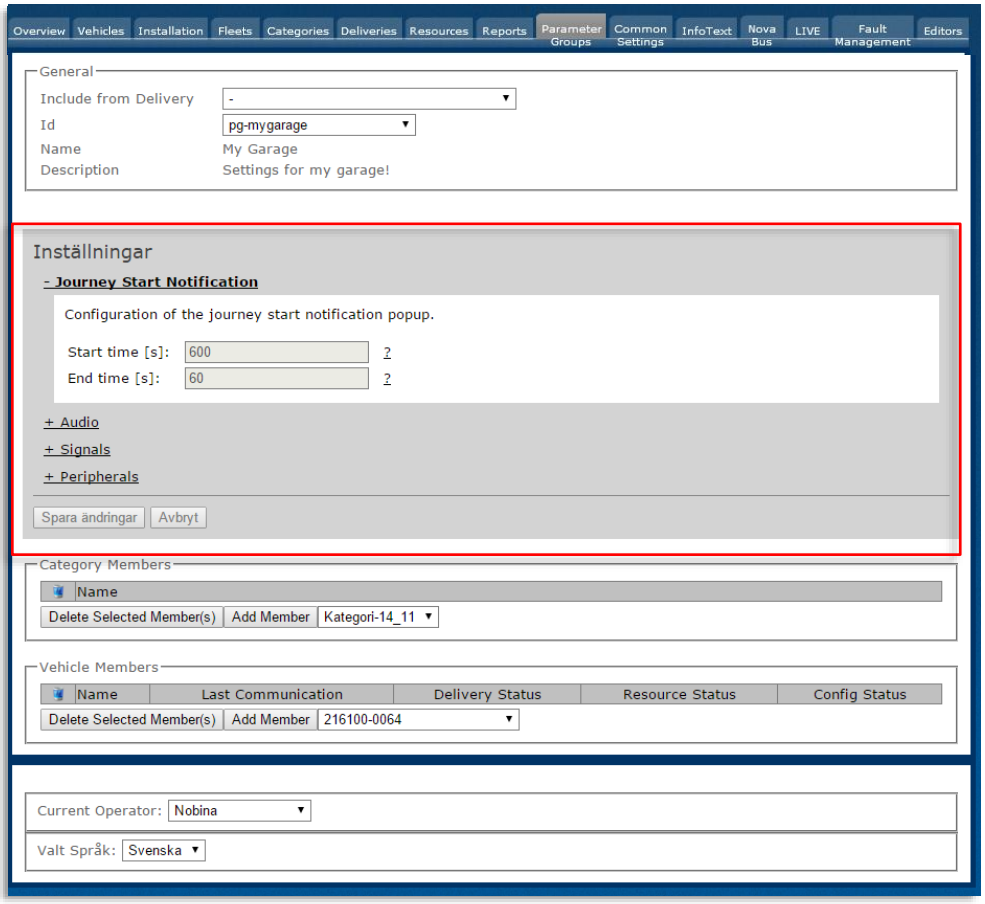
Apart from viewing parameter groups the page also has functions for applying parameter groups to categories and individual vehicles/signs. Although this can be done on the respective Category and Vehicle/Sign pages, sometimes it can be more efficient to do it from the Parameter Group page. The "member" lists work just like the other lists in the interface with a menu for adding a "member" and tick boxes for selecting and removing members.

- **Note! The system checks compatibility between the selected parameter group and the delivery in the selected vehicle/category and will alert the user about incompatibility issues when applying the parameter group. Even so, it is possible that applying a parameter group to a category with one or more vehicles with separately assigned deliveries can cause compatibility problems. Make sure your vehicle deliveries are compatible with the parameter group you are applying.**



8.10.1 Customer Specific Parameter Group Settings Field

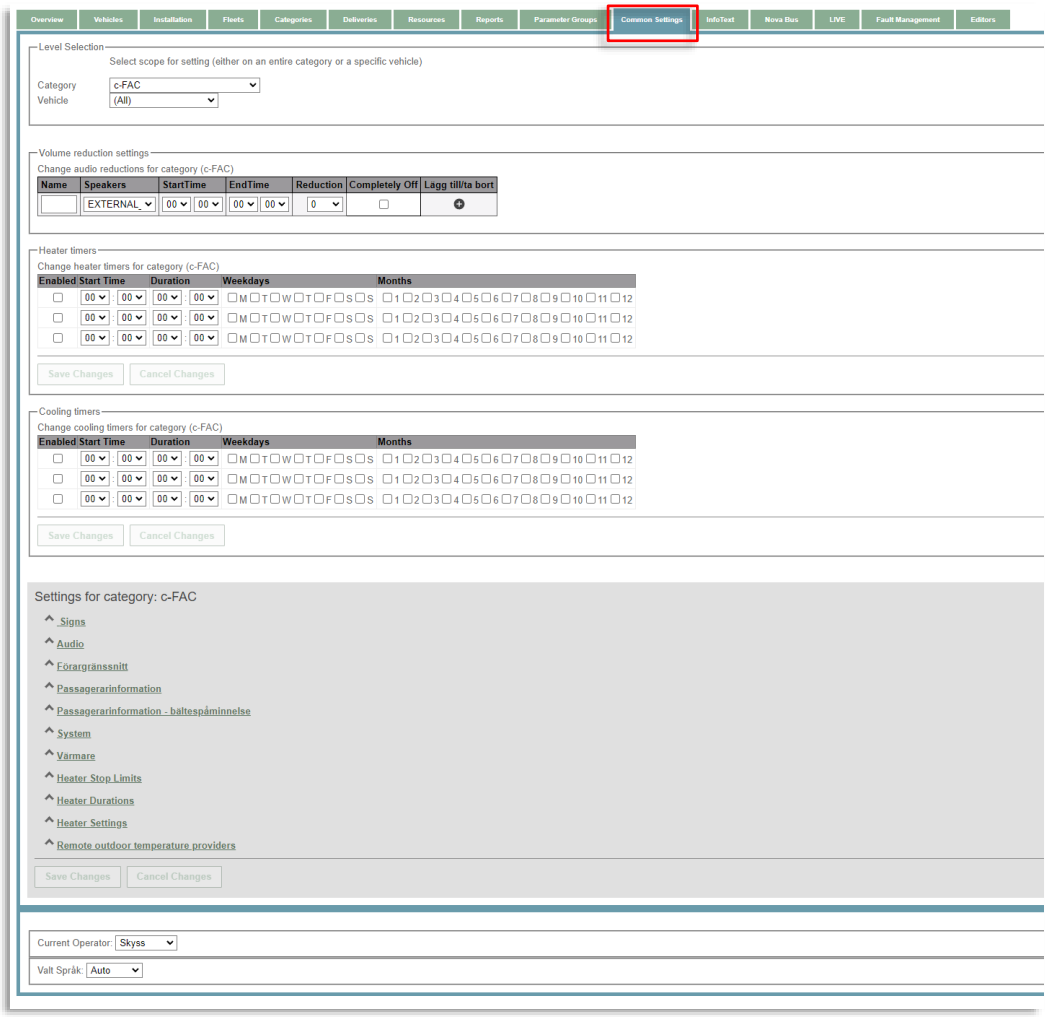
Depending on customer needs the parameter group tab may include a customized settings field for easy editing of selected parameter group settings. The settings work just like the ones you find on the Installation and Common Settings tabs. The field includes parameter descriptions – click on the question marks to view individual descriptions. See the example below.



8.11 Common Settings

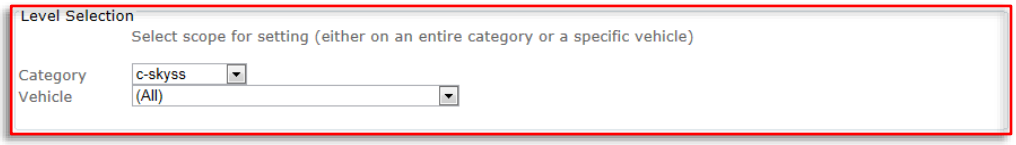
Although all vehicle/sign system configurations can be performed using the XML-editing tools in the Vehicle/Sign and Categories windows, many users are uncomfortable with XML-editing. To simplify setting commonly used parameters the Common Settings page provides simple menus and numerical fields to empower all non-power users.

The settings are performed, either on a selected category, (all vehicles/signs) or a single vehicle/sign in the selected category. (A single vehicle has to be a member of a category to be able to be configured with this simplified tool.)



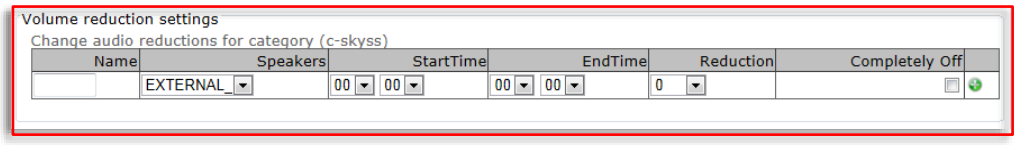
8.11.1 Level Selection Section

Here you select which system units are to be affected by the settings. First, select a category and then select all vehicles/signs in the category, or a single individual vehicle/sign in the category. (A vehicle has to be a member of a category to be "reachable" by the tool.)



Label	Explanation
Category	Selected category (menu).
Vehicle	Selected vehicle/all vehicles in the category that will be affected by the parameter settings.

8.11.2 Volume Reduction Settings Section

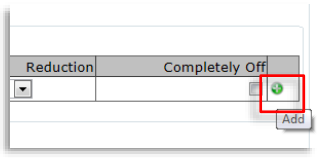


In the Volume Reduction settings section, volume reduction settings for specified periods can be stored and named. For instance, the sound levels may be lowered at night.

Header	Explanation
Name	Name of Volume Reduction setting. Free text.
Speakers	The speaker sets covered by the setting (driver/internal/external speakers).
Start Time	Start of the volume reduction period.
End Time	End of the volume reduction period.
Reduction	Volume reduction during the set period (per cent). A higher value means more reduction from the current set level.
Completely off	Check to mute selected speakers during the set period.

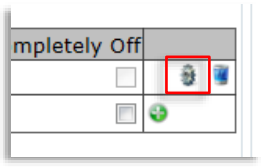
8.11.3 Add Volume Reduction Setting

1. Enter a name in the name field
2. Select speaker set
3. Select start and end time
4. Set reduction or “Completely off”
5. Click on the green “+” bullet to save the setting, it will be added to the list.



8.11.4 Edit Volume Reduction Setting

Click on the edit symbol to the left of the trash can in the row you want to edit. Change the parameter and then click on the disk symbol to save (or on the red cancel symbol if you want to cancel the change).



8.11.5 Delete Volume Reduction Setting

Simply click on the trash can at the extreme right of the volume reduction list.

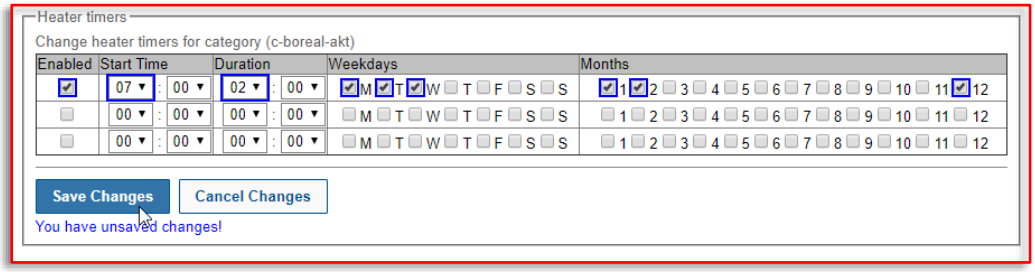
- **Note! Do not enter conflicting Volume Reduction settings, it may result in faults.**

8.11.6 Heater Timers

Up to three heater timers (starting a sequence for heating, fuel, engine, and cabin…) can be set for the selected category/vehicle. Enable a heater timer with the corresponding checkbox, set start time and duration, and active weekdays and months.

- **The same timer settings are available in the service menu in the driver interface. The last changing of the settings overrides previous settings, regardless of where the changes were made (vehicle or CM).**
- **Note that the presented settings will not reflect changes made locally in the vehicle.**

- **Click on the "Save Changes" button (enabled when settings are changed) to save.**

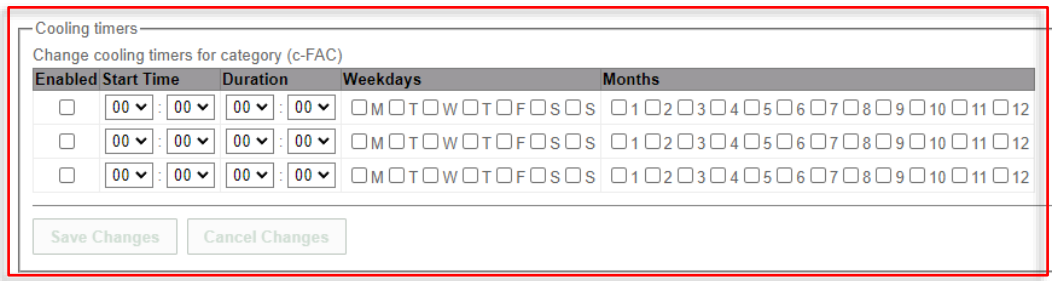


Header	Explanation
Enabled	Check to enable heater timer
Start Time	Set start time using the menus (HH:MM)
Duration	Set duration using the menus (HH:MM)
Weekdays	Check the boxes for the weekdays the timer is to be active
Months	Check the boxes for the months the timer is to be active

8.11.7 Cooling Timers

Up to three cooling timers (starting a sequence for cooling driver compartment and cabin…) can be set for the selected category/vehicle. Enable a cooling timer with the corresponding checkbox, set start time and duration, and active weekdays and months.

- **The same timer settings are available in the service menu in the driver interface. The last changing of the settings overrides previous settings, regardless of where the changes were made (vehicle or CM).**
- **Note that the presented settings will not reflect changes made locally in the vehicle.**
- **Click on the "Save Changes" button (enabled when settings are changed) to save.**



Header	Explanation
Enabled	Check to enable cooling timer

Header	Explanation
Start Time	Set start time using the menus (HH:MM)
Duration	Set duration using the menus (HH:MM)
Weekdays	Check the boxes for the weekdays the timer is to be active
Months	Check the boxes for the months the timer is to be active

8.11.8 Settings for Category:

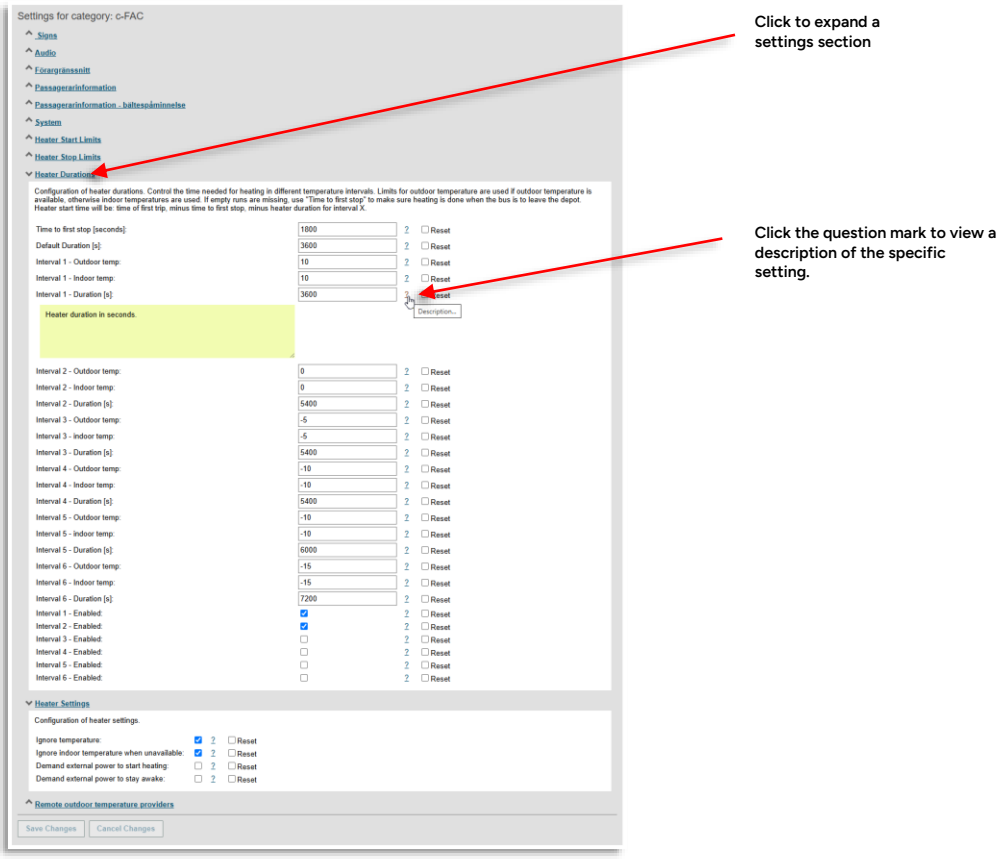
In this customer customisation dependent section, you can configure much of the onboard functionality/equipment and system settings.

Separate sections with settings are available:

- **Signs**
- **Audio**
- **Driver Interface**
- **Passenger Information**
- **System Settings**
- **Heater Settings:** Start Limits, Stop Limits, Durations, [general] Settings
- **Remote Outdoor Temperature Providers** (CTS computer with temperatire sensor providing local temperature data.)

> - **Note! Use the built-in documentation (reached through the "?" marks) for an explanation of each individual setting.**

Expand a section and edit/enter the settings. When a setting has been changed but not saved this is highlighted with a blue rectangle. Click on the Save Changes button to save all changes. The Cancel button cancels all changes.



8.12 LIVE (Requires Browser Flash Support)

The present LIVE functions let you access a driver interface and view internal display (TFT) and vehicle positions.

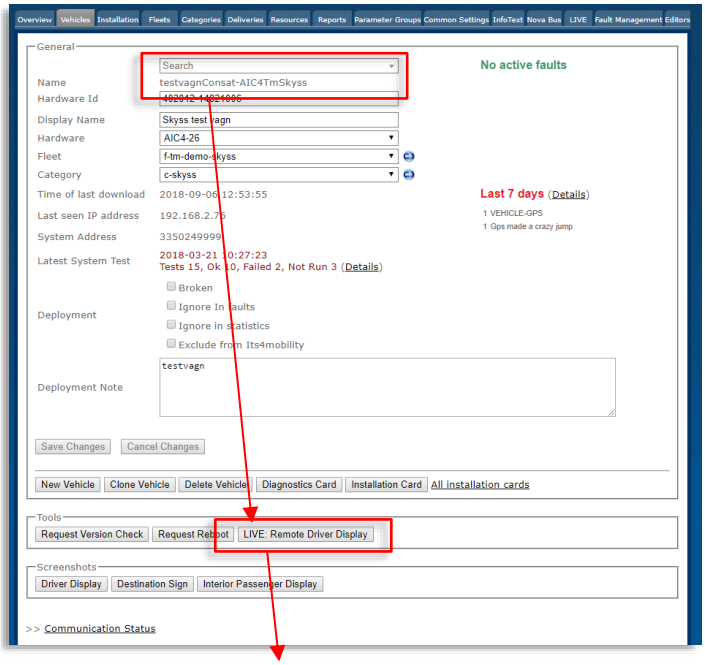
- **Note: The functions on this tab are based on browser Flash support. Current standard browsers do not support Flash. I.e. this tab will only work with specific browsers that support Flash.**

- **When you access the LIVE view from the Vehicle tab, using the LIVE: Remote Driver Display button, the presented driver interface, and map view show the selected vehicle only. You can open the view in a separate window/view it in fullscreen mode with links below the view.**

- **When the LIVE tab is selected directly, only the map view is presented, showing the latest reported positions of *all vehicles* in the selected partition (operator).**

8.12.1 Access from Vehicle tab: Selected Vehicle Remote GUI and Position Trail

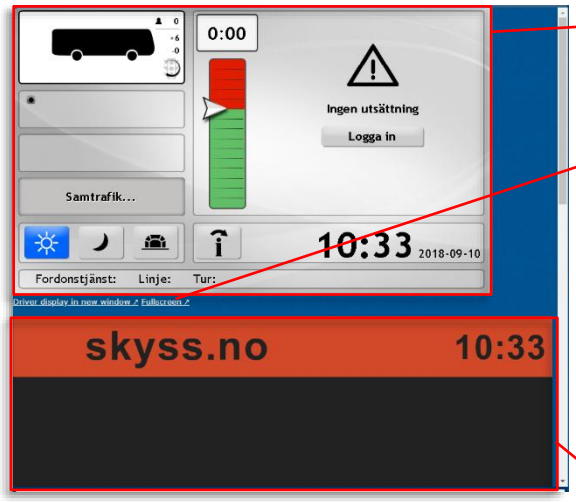
1. In the Vehicles view: Select the vehicle whose position trail you want to see/whose driver interface you want to access.
2. Click the LIVE: ... button.



3. **The LIVE view tab is opened**, showing the driver interface (it may take a few seconds to load), and below, the current internal display (if available) and a map with a vehicle trail showing the latest vehicle positions - reported during the past 10 minutes (configurable time).

- Note that the driver interface is really “live” and interactive – you can click on the soft buttons, make selections in the menus, etc., just like on the touch screen in the vehicle – and of course, see what the driver does with the interface - in almost real-time.

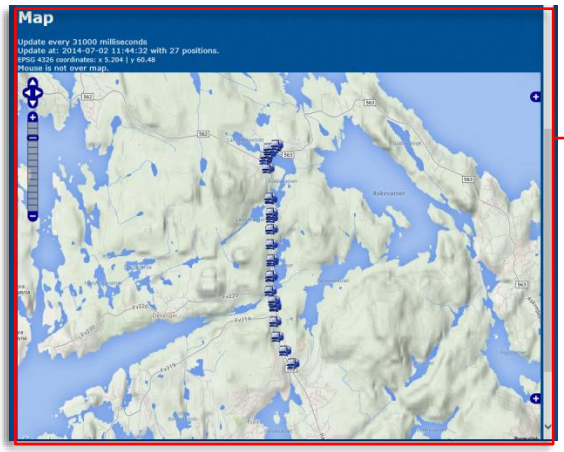
  See the separate driver manual for information about driver interface functions.



Live driver interface mirror. (Click to navigate, - it works just like the on-board touch navigation. See Driver manual.)

Links to open the driver display in new window and to view it in fullscreen mode. The internal display can also be viewed in fullscreen mode.

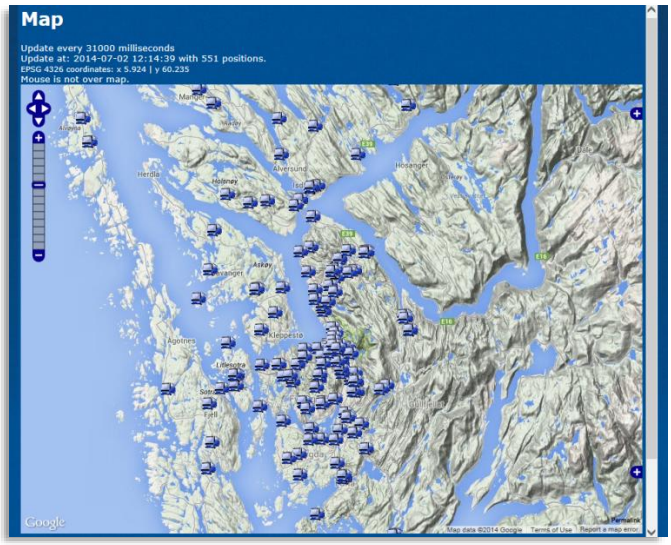
The current internal display view



Vehicle trail on map, updated live – showing vehicle positions reported during the last 10 minutes (configurable time period).

8.12.2 Direct access: Last Vehicle Positions in Partition

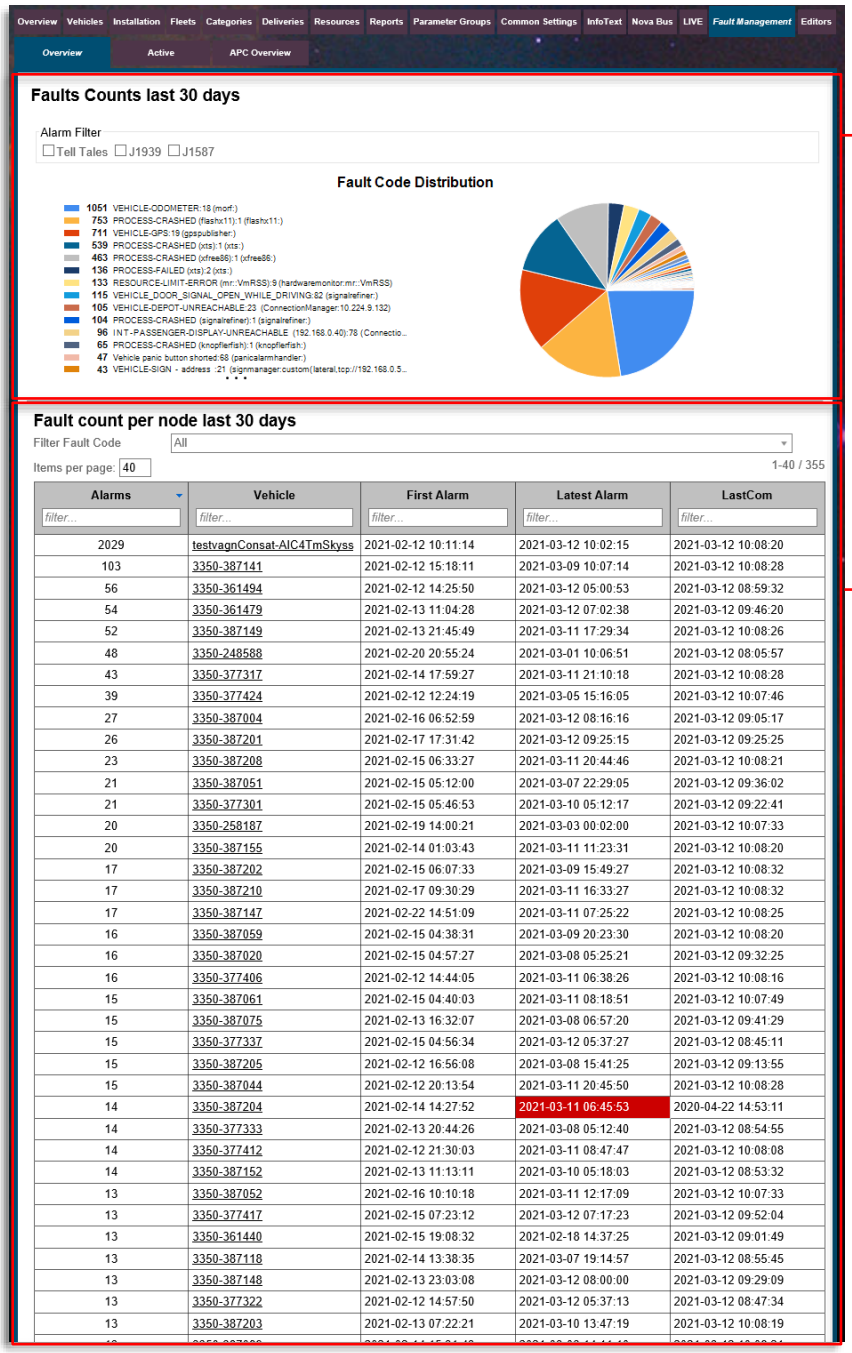
When you select the LIVE tab directly, only the Map view will be shown. The last reported positions of all vehicles in the fleet (partition) are plotted on the map.



8.13 Fault Management

The Fault Management view can, depending on configuration, consist of up to three separate views: The basic Overview view showing the latest faults over the last 30 days, the Active view, showing all active faults, and an APC view, available in systems with APC-functionality.

8.13.1 Overview



Overview section:

A pie charts and numerical information shows the fault code distribution the last 30 days.

Filter checkboxes for including Telle Tales, J1939 and J1587 faults.

Fault code distribution (list sorted with most common fault on top).

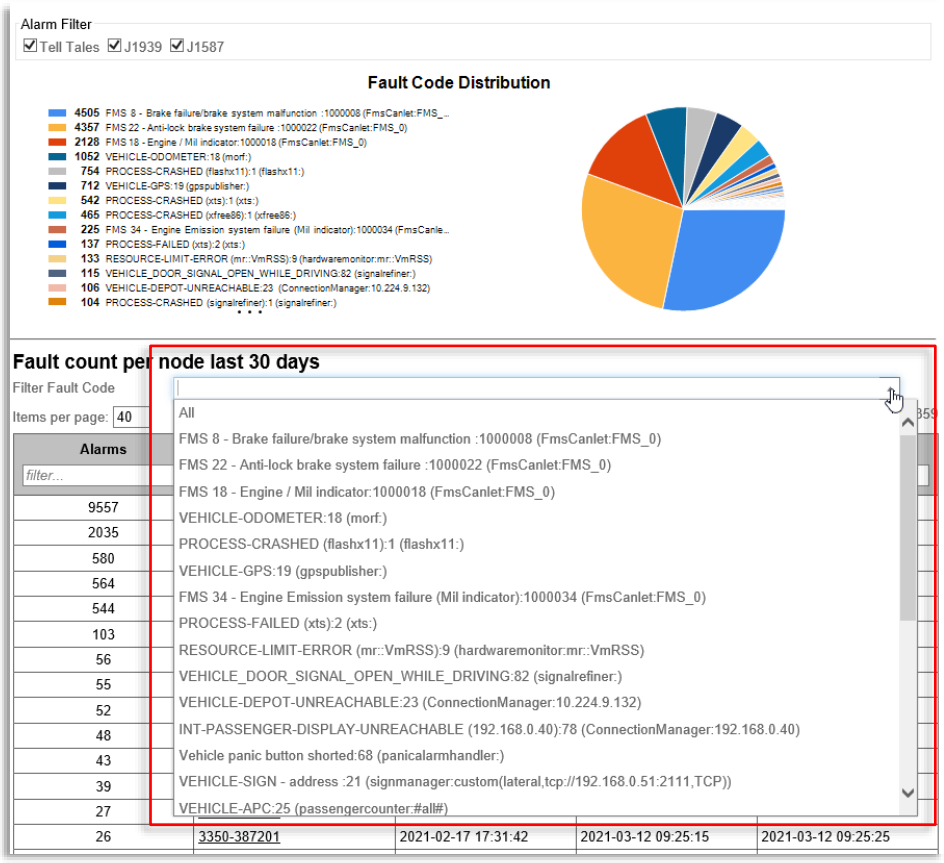
Fault Count List, last 30 days:

Here, all vehicles are listed with the vehicle with the most faults the last 30 days sorted on top.
You can filter and sort the list to find the needed information quickly.

Fault Code Filter

Click on the filter field arrow to select one specific fault type. You can also type in the field to only get matching “autocomplete” filter alternatives listed below.

To return to seeing all fault types, open the menu and select the top “All” item.

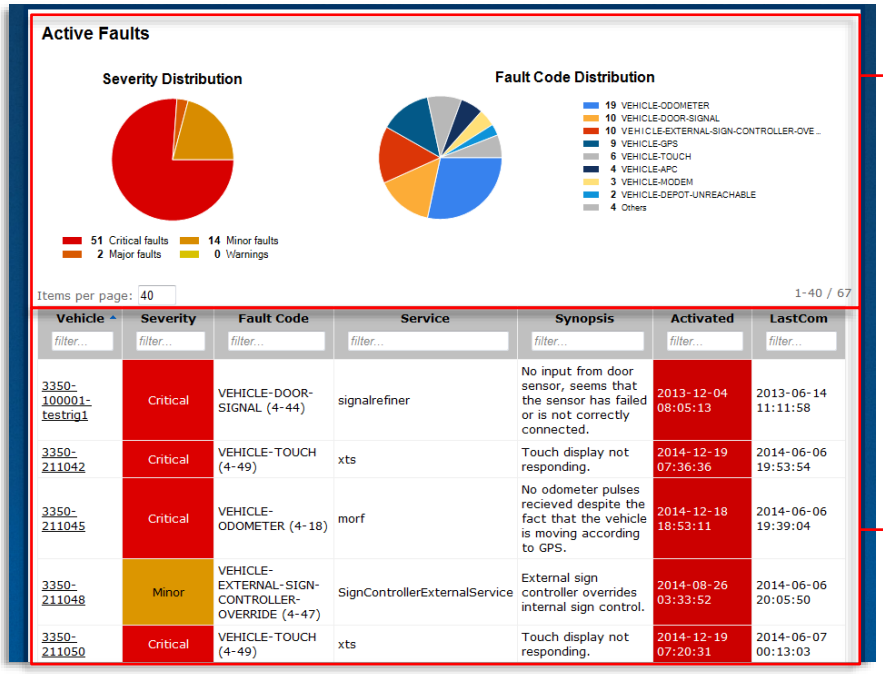


List Description

Label	Explanation
Alarms	The number of alarms logged in the last 30 days
Vehicle	Vehicle number (link to vehicle tab)
First Alarm	A timestamp indicating when the **first** alarm was logged during the period (last 30 days)
Latest alarm	A timestamp indicating when the **last** alarm was logged during the period (last 30 days)
Last Com	A timestamp indicating when the vehicle last communicated with the CM.

8.13.2 Active

The overview (tab) provides a quick summary/overview plus more detailed information about each active fault, including a short fault-type synopsis. You can, of course, sort the fault list and use the column filters to focus on particular faults/vehicles, etc., see below.



Active: Overview section:

Two pie charts and numerical information shows the distribution between severe and less severe faults, and the distribution between fault type/codes, respectively.

Active faults list:

Here, all active faults are listed.
Fault severity and time since last communication (LastCom) are colour coded, highlighting problems that may need your attention.

List Description

Label	Explanation
Vehicle/Sign	Vehicle /sign name/number
Severity	Faults can have these severity levels: Critical - A fault that will *seriously impair system performance*. It should be addressed/corrected as soon as possible. Major - A less critical fault that will degrade system performance or disable less crucial functionality. Minor – Not critical "fault" affecting some system functionality/performance, for example, an external sign controller is overriding the internal sign control. Warning – A less serious problem
Fault Code	The "fault type name".
Service	The service/system not working properly.
Synopsis	A short description of the fault.
Activated	Timestamp showing when the fault was registered (in the vehicle/sign system)

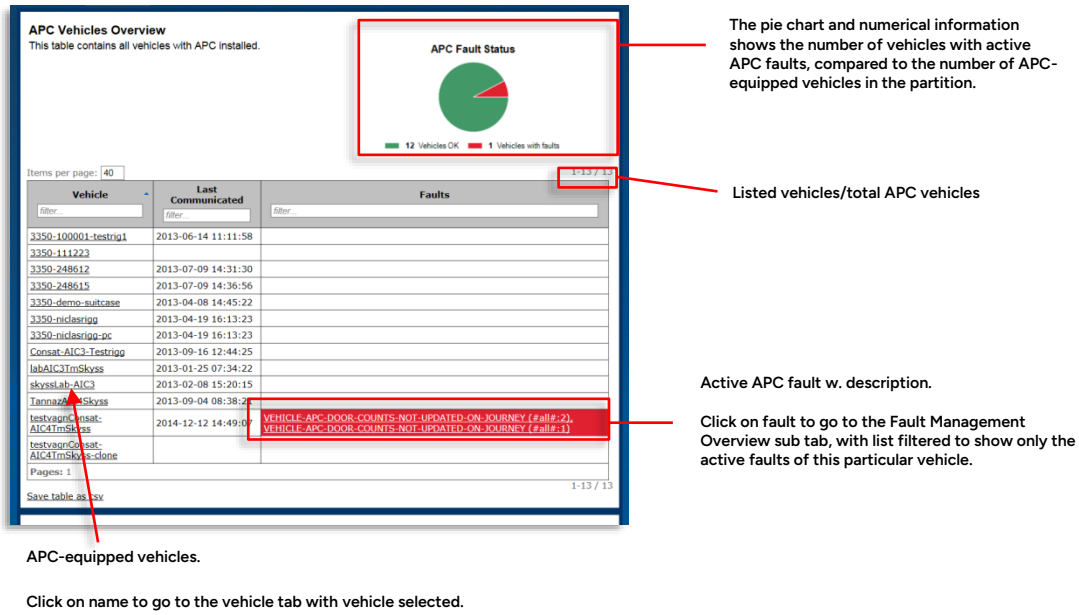
Label	Explanation
LastCom	Timestamp showing when the vehicle/sign with the fault last communicated.

- **For a complete list of all vehicle faults, see Appendix B**

8.13.3 APC Overview

The APC Overview view presents all vehicles with APC systems and any active APC faults. An overview pie chart shows how many vehicles have active APC faults compared to the total number of APC-equipped vehicles in the partition.

Tip: This view can also be used as an "APC Vehicle list" as only APC-equipped vehicles are listed.



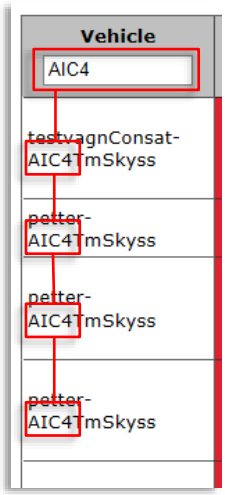
List Description

Label	Explanation
Vehicle	Vehicle name
Last Communicated	Timestamp showing when the vehicle last communicated with the Configuration Manager system.
Faults	Active fault(s), including a short description.

- **For a complete list of all vehicle faults, including APC faults, see Appendix B**

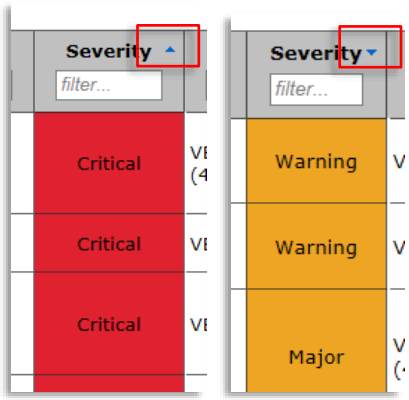
Filter the list

If you only want to see information relevant to you, you can filter the list using one or more column filters. Only matching rows will be included in the presentation.



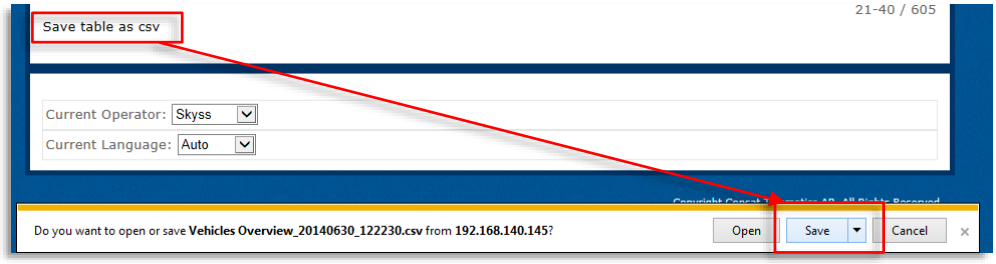
Sort the list based on a selected column

To sort the list after any of the columns, simply click on the column header. To reverse the sorting order, click again on the header.



Save as CSV File

You can easily save the (filtered) list as a CSV file by clicking on “Save [the] table as csv” under the list.



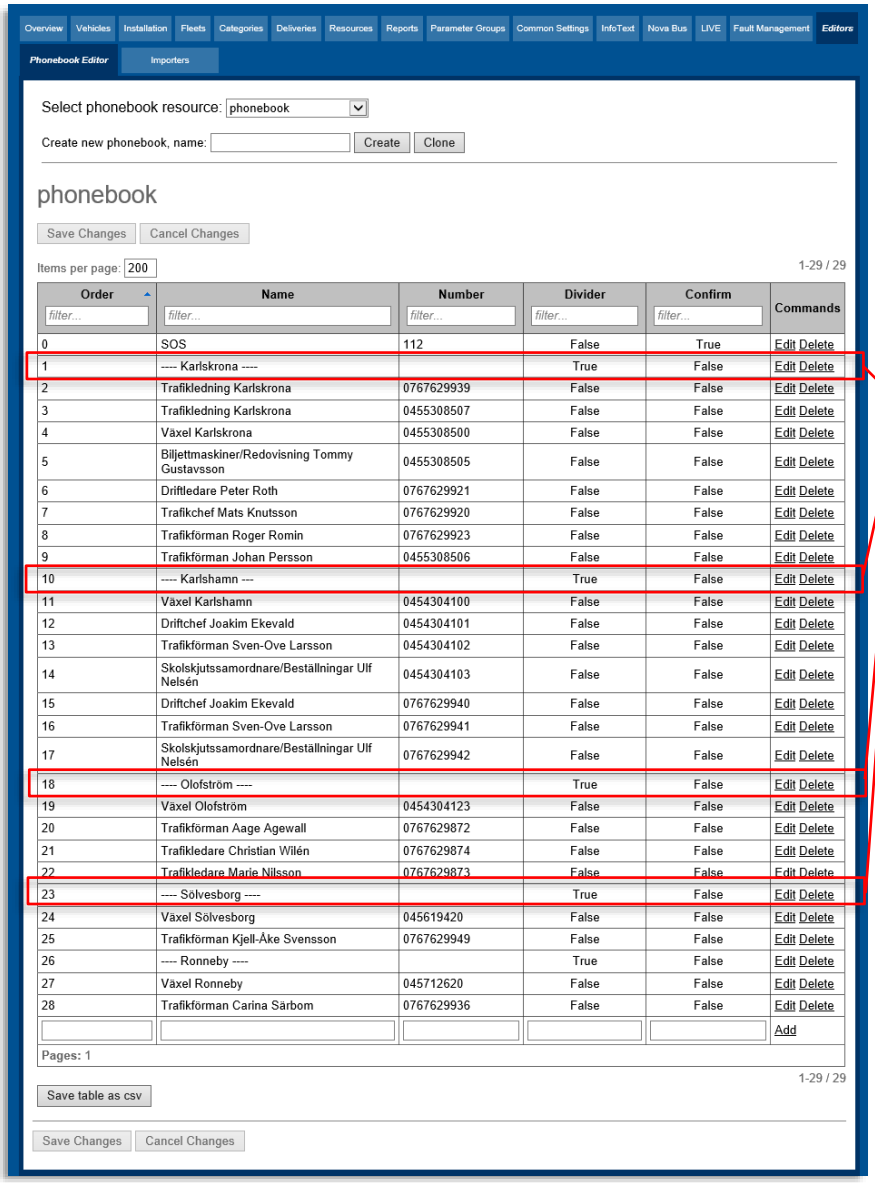
8.14 Editors

On this tab, you will find editors for specific resources.

8.14.1 Phonebook (Resource) Editor

Use the Phonebook editor to view/edit selected phonebook resources. A phonebook resource is simply a list of names with corresponding phone numbers. These numbers can be called by the drivers by direct selection in the Phone Book menu in the driver interface.

Note: Resources like phonebooks are still *administered* (edit resource name, clone, delete unused…) on the Resources tab. The Phonebook editor is for editing the *content* of a selected phonebook resource.



Section Dividers

Divide the phone book into sections to simplify the number selection for the drivers.

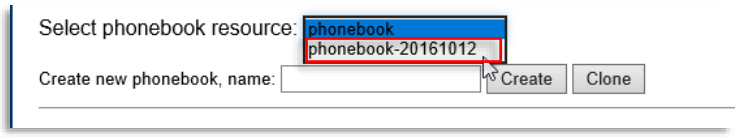
To create a section break, enter a Section Header without phone number and set the divider to "true" for this entry, see example to the left.

List Description

Label	Explanation
Order	The order items are to be presented in the driver's phonebook menu.
Name	Contact Name, or Section Header
Number	Contact Phone Number (excluded for section header)
Divider	List divider true (on)/false (off) – typically used for Section header entry, see examples in the screenshot on the previous page.
Confirm	If the selected number is to open a confirmation popup (**true**) or not (**false**). Set to true to prevent calling a number by mistake, for instance, SOS…

Select Phonebook Resource (for viewing/editing)

Use the top Select phonebook resource menu to select which phonebook resource to view/edit.



Clone or Create Phonebook Resource

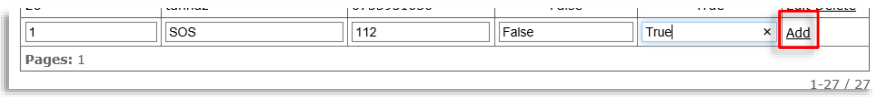
- **Enter a new name and click on Create to create a new (empty) resource.**
- **Select a phonebook resource, enter a new name for the clone, and click on Clone to clone the selected resource.**

Add Item to Phonebook resource

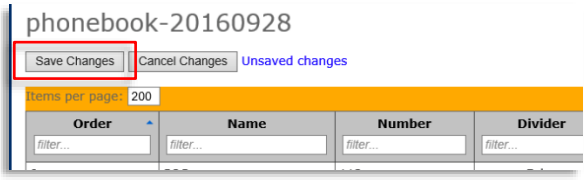
To add an item to the list:

1. Enter order number, name, number, divider (true/false), and confirmation (true/false), as needed in the "Add Section" at the bottom of the list.

2. Click on "**Add**" to add the item to the list. The list will be highlighted to indicate that it has been edited, but not yet saved.



3. Proceed to make additional changes to the phone book, or save your changes by clicking on "Save Changes".

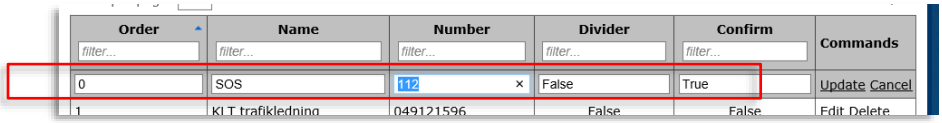
4. 

Note: If you enter an order number that is in use, the existing item with this number will be moved one step down, i.e. have is order number increased by 1. You can thus place your new entry anywhere on the list.

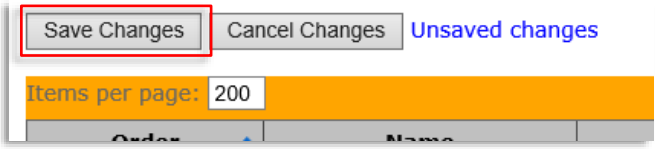
Edit Item in Phonebook Resource

To make changes to an item in the phone book:

1. Click on "**Edit**" on the corresponding row, and the item will be placed on top of the list. The contents of all cells can now be edited.



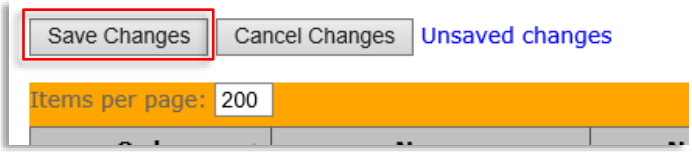
2. Click on "Update" to update the item. The list will be highlighted to indicate that you have made changes but have not yet saved them.
3. Save your changes by clicking on the **Save Changes** button.



Delete Item, in Phonebook Resource

1. Click on "Delete" on the corresponding row. The item will be deleted from the list (but the change will not take effect until you have saved your changes).

2. Click on the **Save Changes** button.



Save as csv

You can save the displayed phonebook resource as a csv file by clicking on the save table as csv (and browsing the location you want to put it etc.)

8.15 Importers

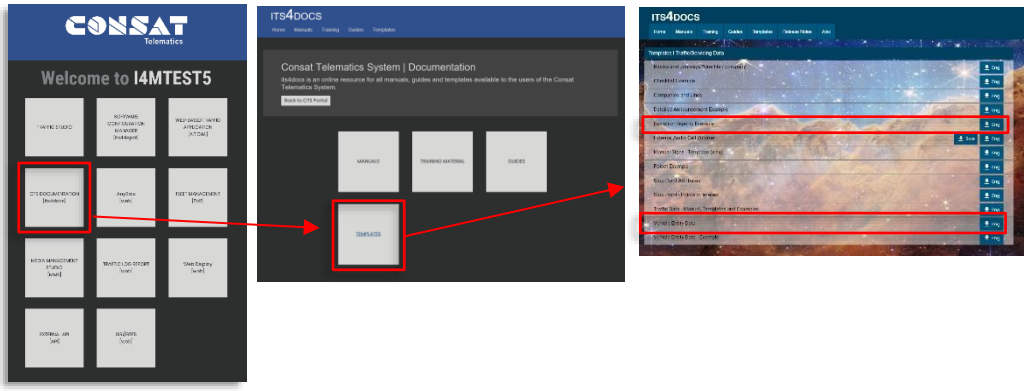
On this tab, you will find simple functions for importing Consat-specified report sheet configuration Excel files and vehicle entity data. (**Pre-/post-op checks**, and deviation cause, are currently supported files).

The **deviation report sheets** specify the deviations and available causes presented to the drivers when deviations are detected. (The resulting deviation priority is also configured in the file.)

The **vehicle entity** file describes the vehicle (type) "entities" data available to CTS, like low floor, audio system info, wheelchair equipment, toilet, doors… fuel tank, and the settings for harsh braking, overspeed, etc.

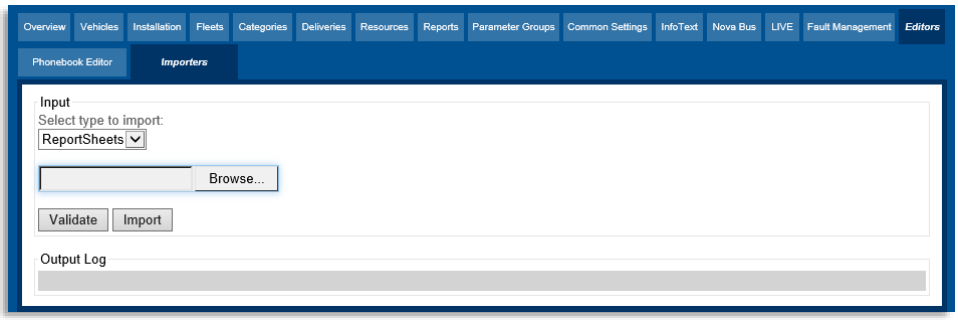
8.15.1 File Templates

- The Deviation Cause and (pre-/post op) Checklist Excel templates are available on your Consat system portal, see below for how to find them.
- Vehicle EnityData templates are available in the same location



- Note that Report Sheet files for Waste management reporting are not [yet] supported.
- Note: All imported files must be validated before importing. Therefore, the import is performed in two stages.

8.15.2 Import Excel Report Sheet/Entity Data file, Step-By-Step



1. Select the type of file to validate (and then import). ReportSheets for Pre/Post Op Checks and Deviation reports and Vehicle Entiy for, well, vehicle entity files.
2. Click on **Browse** to browse and select the file.
3. Click on **Validate** to run a validation check of the file (mandatory). A red warning text will show if the file is not valid. The Output log shows the validation details.
4. If no red warning text is displayed, the validation is ok.
5. Browse to and select the file again and now click on **Import** to import the file to the CM.

9 Appendix A: Customer Specific functionality

9.1 Nova Bus Tab/View

This tab provides functions for administering software (resources) on external equipment: [Axiom] sign controllers and electrical system (BEA ECU) nodes, in Nova vehicles.

Administering resources for external equipment is much like handling resources for the Consat vehicle/sign computers, although the extra step of distributing and communicating with the external equipment adds a little to the complexity of status overviews, etc.

The software can thus be distributed and be available to the external equipment onboard but for reasons beyond Consats control its usage may be delayed, or information about its status in the external hardware may not be available.

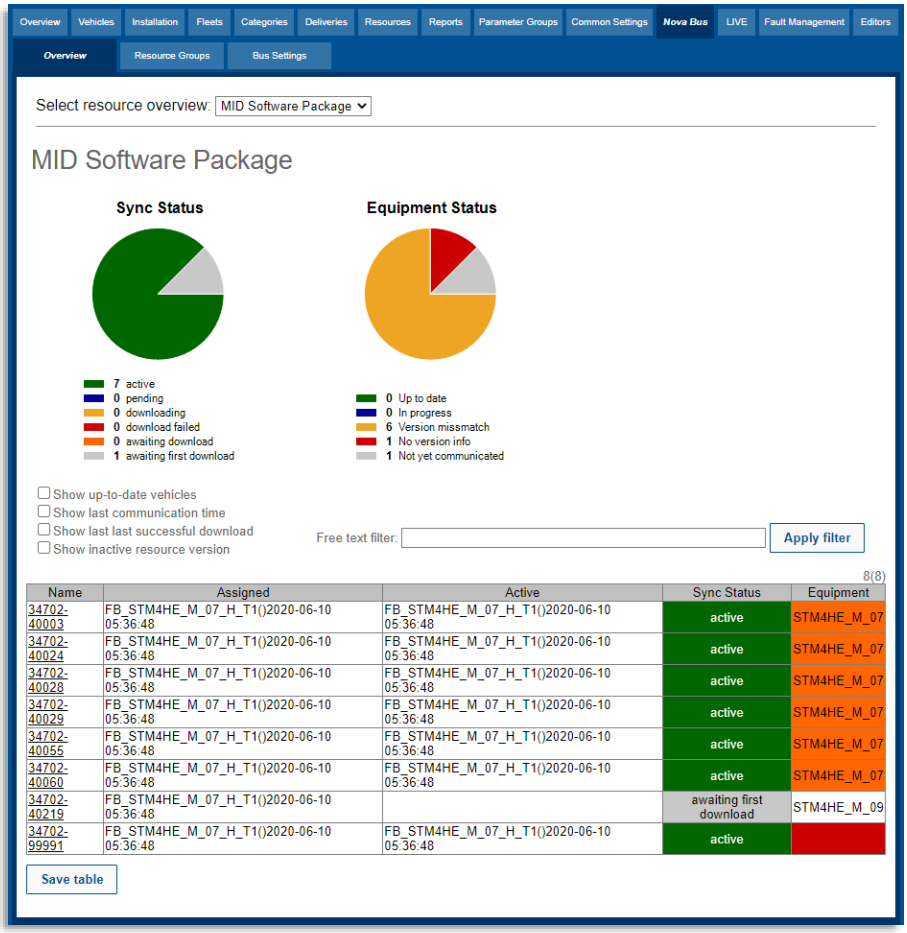
9.1.1 Tab: Overview

Select resource overview menu

In this menu, you select the hardware group whose status you want to view in the list/graphs below. (MID Software package is for BEA ECU:s and Axiom Sign database is for, well, Axiom signs.)

With the desired resource selected in the top menu, the current status for all such nodes in the partition is displayed below. Two pie charts with numerical sections/colour code descriptions below show [Software] sync status and Equipment [software] status. The latter indicates if the target equipment is running the correct/latest software distributed.

The table below can be filtered using the filter section including status filters (checkboxes) to the left and a free text filter to quickly find a specific vehicle/BEA ECU/Sign controller, etc.



- **Click on the Save table button to export the table in Excel format.**

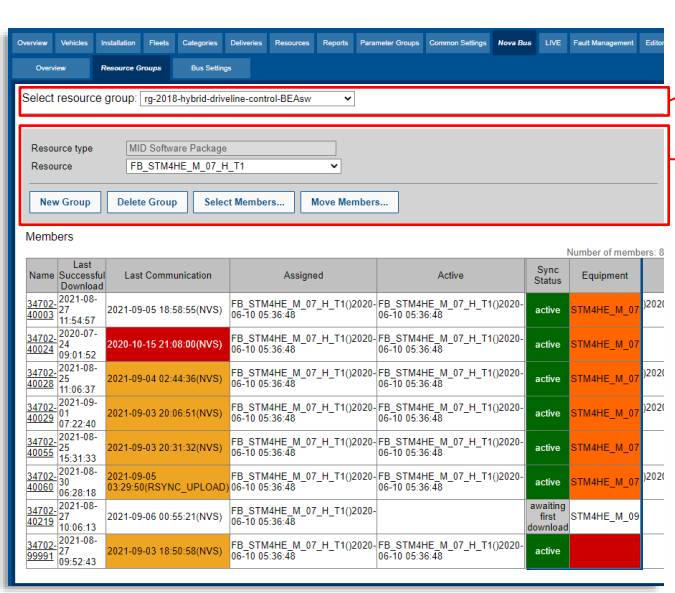
Label	Description
Name	Vehicle Name/number
Assigned	Assigned software package
Active	Software package currently in use

Label	Description
Sync Status	active: The assigned resource is in use. pending: The assigned resource has been downloaded but is not yet in use. downloading: Download in progress. download failed: An assigned download has failed. awaiting download: The assigned resource awaits download. awaiting [the] first download: An initial resource awaits download.
Equipment	Resource recipient (hw type). Colour-coded cells – see Equipment status pie chart description above. Up to date: Running the latest software In progress: Updating Version mismatch: HW software version not matching the latest, available, software No version info: HW is not communicating its sw version. Not yet communicated: HW has not yet communicated with the Consat system.

9.1.2 Tab: Resource Groups

On this tab resource groups, for vehicles w specific external hardware, are managed. All vehicles in a group are managed together to receive software versions for their hardware.

You can create, delete groups, and manage their members (vehicles).



Members [Table]

In this table, the members of the above-selected resource group are listed with essential status information.

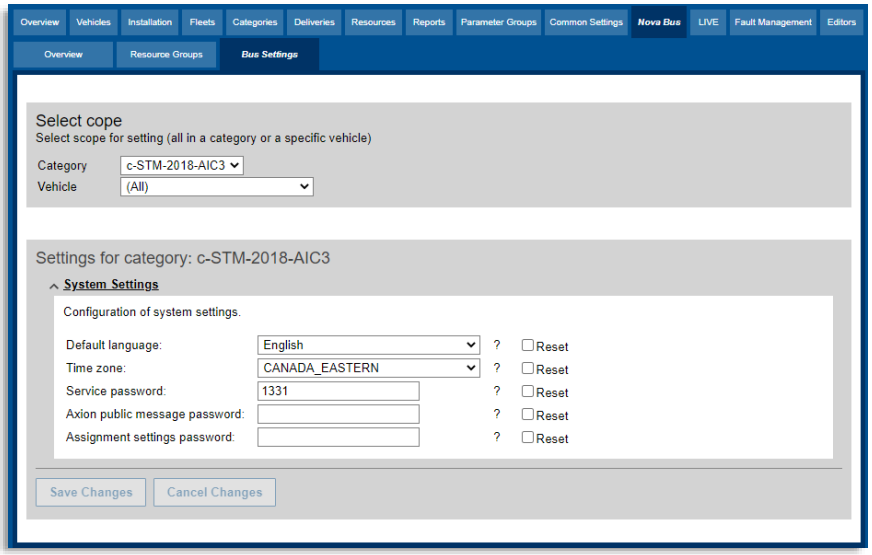
Label	Description
Name	Vehicle Name/number
Last Successful Download	The time stamp showing the last successful sw download
Last Communication	The time stamp showing when the vehicle last communicated with the CM
Assigned	Assigned software package
Active	Software package currently in use
Sync Status	active: The assigned resource is in use. pending: The assigned resource has been downloaded but is not yet in use. downloading: Download in progress. download failed: An assigned download has failed. awaiting download: The assigned resource awaits download. awaiting [the] first download: An initial resource awaits download.

Label	Description
Equipment	Resource recipient (hw type). Up to date: Running the latest software In progress: Updating Version mismatch: HW software version not matching the latest, available, software No version info: HW is not communicating its sw version. Not yet communicated: HW has not yet communicated with the Consat system.

9.1.3 Tab: Bus Settings

Use the Bus Settings tab to set basic system settings for all vehicles in a category or a selected vehicle in a category. The system settings may vary.

- **Select Category in the Category menu and either (All) or a specific vehicle in the vehicle menu.**
- **Click on a question mark to view a description of that setting**



- **Save changes made with the Save Changes button.**

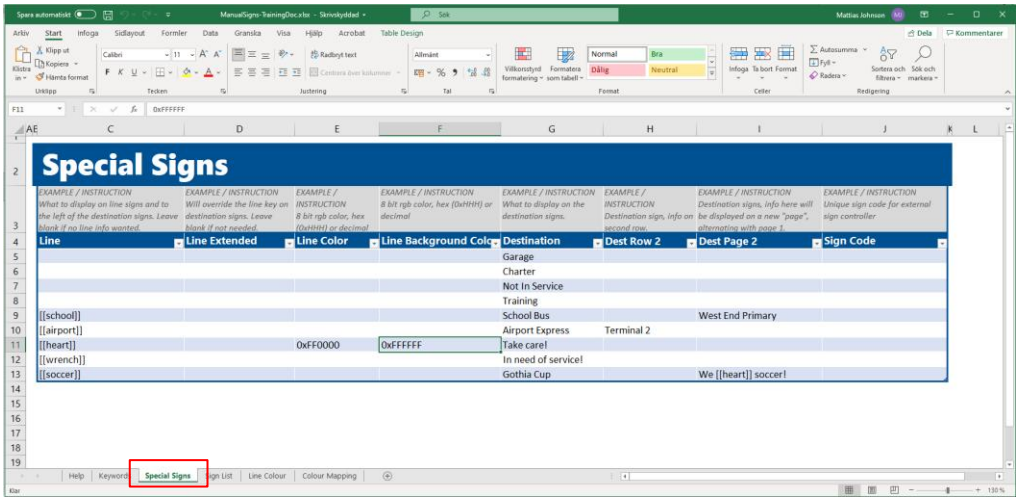
10 Appendix B: Manual Sign Configuration

The manual sign resource is configured using an Excel file template. Separate tabs in the template file configure signs selectable in corresponding menus in the driver interface.

- **For basic usage, skip the two first Tabs in the Excel Document.**

10.1 Excel Tab: Special signs

Manual signs specified on this tab will be selectable from the "Special signs" section in the driver UI.

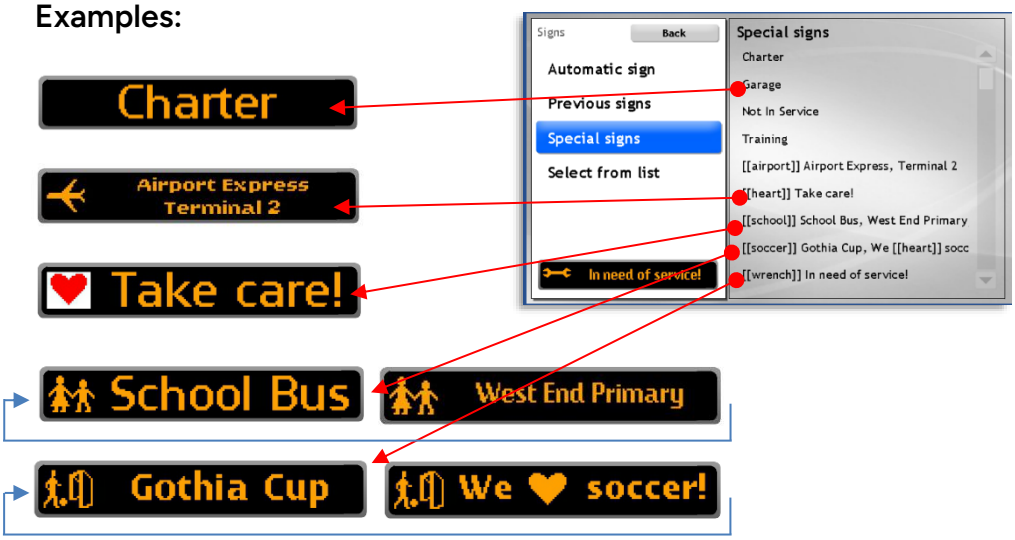


Check the tab contents above, and column descriptions below, and view the resulting signs in the following section.

Column	Explanation
Line	Will be shown where the line number is normally displayed. Can be left out.
Line Extended	Will replace the line on destination signs (not on small line only signs)
Line Colour	The foreground colour of the line presentation

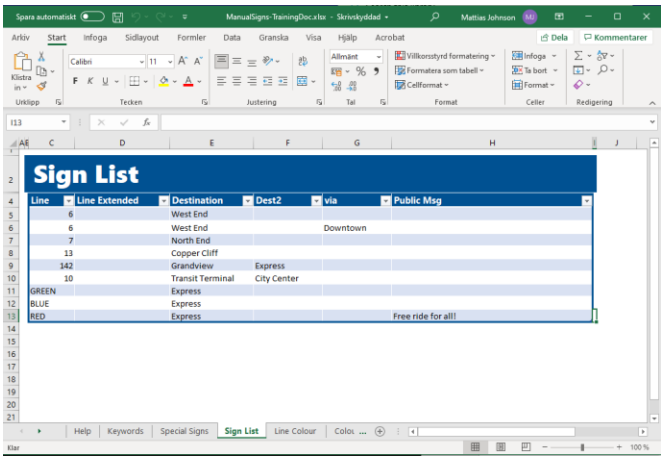
Column	Explanation
Line Background Colour	The background colour of the line presentation
Destination	
Dest Row 2	Sub destination, will be displayed on row 2
Dest Page 2	Will be displayed on page 2 (alternating with page 1)
Sign Code	Use with external sign controller (not used with full CTS sign integration)

10.1.1 Examples:



10.2 Excel Tab: Sign List

Signs specified here will be selectable from the "Select from list" section in the driver UI.
(Note: In this section, signs from the traffic database may also show up, if configured.)



Check the tab contents above, and column descriptions below, and view the resulting signs in the following section.

Column	Explanation
Line:	Will be shown where the line number is normally displayed. Can be left out.
Line Extended:	Will replace the line on destination signs (not on small line only signs)
Destination:	
Dest2:	Sub destination, will be displayed on row 2
via:	Will be prefixed by system configured via-word and displayed on row 2
Public Msg:	Will be displayed on page 2 (alternating with page 1)

10.2.1 Examples:

10.3 Excel Tab: Line Colour

This tab does not specify selectable manual signs, it maps line colours with lines. So, if you specify line foreground and background colours for line X, then line X will always be displayed using those colours. Regardless of manual or automatic sign control.

11 Appendix C: Vehicle Faults

- **Numbers within brackets show message variables.**

Fault	(Synopsis), Description	Proposed Repair Action
PROCESS-CRASHED ({0})	The process {0} has crashed	Check the log file for additional information. Check the configuration file for errors. Verify that {1} is the correct binary.
PROCESS-FAILED ({0})	The process {0} has failed to start	Check that {1} is the correct executable. Check the permissions on the executable. Check the existence and permissions of the configuration file. Check the log file for any additional information on the problem.
IP_HOST_UNREACHABLE	The host {0} is unreachable	
SERVICE_UNREACHABLE	The service {0} is unreachable	
TCP_CONNECT_FAILURE	Could not connect to the service "{2}" at "{0}:{1}".	Verify that the service "{2}" is running. Check the hostname ("{0}")and port number ("{1}") of the service
SERVICE_UPDATE_MISSING	The service {0} {1} at {2} (version {5} system address {3}:{4}) is no longer sending updates	Verify that the host {2} is reachable. Verify that the service {0} {1} is running. Restart the service if necessary
RESOURCE_LIMIT_ERROR	RESOURCE-LIMIT-ERROR ({0})</	Resource {0} has been outside interval {1} and {2} for {3} seconds.
DATABASE-ERROR ({0})	Database {0} has malfunctioned	
DATABASE_UNREACHABLE	The {2} database, of the type {3}, on {0} is unreachable.	
CORBA_SERVER_UNREACHABLE	The {2} corbaserver, on {0} is unreachable.	
WEB_SERVICE_UNREACHABLE	Webservice "{0}" ({1}) is unreachable	
SYSTEM_TIME_ERROR	The time on {0} is wrong with {1} seconds	
PROTOCOL_ERROR	The protocol limit {3} was exceded {2} on channel {0} with the interval length {1},	

Fault	(Synopsis), Description	Proposed Repair Action
INFORMATION_DISPLAY_UNREACHABLE	The information display is unreachable	
URL_UNREACHABLE	The URL is unreachable	
DETECTOR_FAILURE	The detector fails	
VEHICLE_ODOMETER	No odometer pulses were received even though the vehicle is moving according to GPS	Run the test program in the service menu. Check electrical connections
VEHICLE_GPS	No NMEA input from GPS seems that the GPS device has failed or is not correctly connected	Run the test program in the service menu. Check electrical connections
VEHICLE_TIC1R	No contact with the TIC1R device	Run the test program in the service menu. Check electrical connections
VEHICLE_SIGN	No contact with sign {0}, on address {1}, using protocol {2}.	Run the test program in the service menu. Check electrical connections.
VEHICLE_GATEWAY_UNREACHABLE	No contact with a gateway on the local network.	Run the test program in the service menu. Check gateway and network settings
VEHICLE_DEPOT_UNREACHABLE	No contact with remote depot system	Run the test program in the service menu. Check wireless communication device
VEHICLE-FARE-BOX	No contact with Farebox unit	Run test program in the service menu
VEHICLE-APC	No contact with APC (passenger counter) system	Run the test program in the service menu. Check connections
VEHICLE_MODEM	No contact with the modem	Run the test program in the service menu. Check connections
VEHICLE_CAN	No contact with CAN bus	Run the test program in the service menu. Check connections
VEHICLE_J1708	No contact with the J1708 bus	Run the test program in the service menu. Check connections
VEHICLE_DST	Invalid checksum detected in DST(Data parameter set).</	Please reprogram the DST
VEHICLE_LAMP_AND_FAULT_STATUS	Driver cluster fault indicator status	See the Volvo service manual for detailed information.

Fault	(Synopsis), Description	Proposed Repair Action
	Fault level: {0} ["alarm"->red lamp, "warning"->yellow lamp, "info"->info lamp, "clear"->no lamp] Sending MID: {1} Fault PID/PPID/SID/PSID: {2} Fault type: {3} FMI: {4}	
VEHICLE_J1587_FAULT	Fault level: {0} ["alarm"->red lamp, "warning"->yellow lamp, "info"->info lamp, "clear"->no lamp] Sending MID: {1} Fault PID/PPID/SID/PSID: {2} Fault type: {3} FMI: {4}	See Volvo service manual for detailed information
VEHICLE_BEA_FAULT	Fault Number: {0} ECU Address: {1} FMI: {2} Occurrences: {3} Group Mask: {4}	See Volvo service manual for detailed information
VEHICLE_J1939_FAULT	Spn: {0} Source Address: {1} FMI: {2} Occurrences: {3}	See Volvo service manual for detailed information
VEHICLE_FMS_TELL_TALE	Id: {0}	See Volvo service manual for detailed information
VEHICLE_VERSION_REQUEST_MISSING	Missing version request for node {0} Node: {0} Last request: {1} Threshold: {2} System address: {3} Hwid: {4} Software: {5} Resources: {6}	Verify that the node is in service and if so diagnose the computer/network.
VEHICLE_CUSTOM_FAULT	Generic FMS condition Condition: {0} Current Value: {1}	
APC_NO_DATA_AVAILABLE	APC data not received from vehicle Last successful upload: {0}	
APC_EXTERNAL_SYSTEM_PUSH_FAILURE	Not able to push APC data to an external system Uri: {0}	
UPLOAD_SERVICE_NO_DATA_UPLOADED	No data uploaded from the vehicle since the threshold Node id: {0} Last successful upload: {1} Upload pattern: {2}	
TRAFFIC_MEASUREMENT_LOW_FLOW	Få fordon har passerat slingan (VT) Det har passerat {4} över slinga {0} med system-adress {1} namn {2} {3} mellan {5} och {6}.	

Fault	(Synopsis), Description	Proposed Repair Action
LOOP_ERROR	Det har detekterats fel på slingan. Slinga {0} med system-adress {1} namn {2} {3} har .	
MR_SYNC	Msgrouters are not in sync. Msgrouter {0}:{1} and {2}:{3} not in sync	
VEHICLE_DATA_ERROR	DATA-ERROR ({0}) Process "{0}" has detected data error on data source "{2}" with value "{3}" for vehicle "{1}"	
VEHICLE_DOOR_SIGNAL	VEHICLE-DOOR-SIGNAL No input from the door sensor. It seems that the sensor has failed or is not correctly connected	Run the test program in the service menu. Check electrical connections
VEHICLE_DOOR_SIGNAL_OPEN_WHILE_DRIVING	Door signal in an open state while driving.	Run the test program in the service menu. The door signal is either stuck in the open state or has the wrong polarity. To clear the alarm, the vehicle must be driven with doors closed.
VEHICLE_EXTERNAL_SIGN_CONTROLLER_OVERRIDE	External sign controller overrides internal sign control	Check external sign controller switch and/or electrical connections
VEHICLE_TOUCH	Touch display not responding	Check electrical connections and power to display.
UDP_NODE_SPAM	Abnormal communication for UDP node with system address {0}. Limit of {1} messages reached in less than {2} seconds	Check cudpgw logs for more details. There might be a lot more nodes spamming, the first node that spams triggers this alarm. But the alarm is not cleared until all spamming nodes are back to normal.</
TASK_SCHEDULER_TASK_ERROR	The task {0} has failed to run by Tmix.Cap.Platform.Process.TaskScheduler	Check the logfile for process Tmix.Cap.Platform.Process.TaskScheduler
VEHICLE_APC_COUNTS_NOT_UPDATED_ON_JOURNEY	APC counters from source {0} and door {1} are not updated while occupying a journey	Run the test program in the service menu. Check connections
VEHICLE_APC_DOOR_COUNTS_NOT_UPDATED_ON_JOURNEY	APC counters from door {1} not updated while occupying a journey.	Run the test program in the service menu. Check connections.

Fault	(Synopsis), Description	Proposed Repair Action
VEHICLE_GPS_NO_FIX	The GPS got no fix for {0} seconds of uptime	Run the test program in the service menu. Check connections and antenna
VEHICLE_GPS_NO_FIX_ON_JOURNEY	The GPS got no fix for {0} seconds spent on the journey	Run the test program in the service menu. Check connections and antenna.
EXCESSIVE_NODE_DOWNLOADS	Abnormal download communication. Limit {0}.	Check depot logs for more details.
EXCESSIVE_NODE_UPLOADS	Abnormal upload communication. Limit {0}.	Check depot logs for more details.
MQTT_CONNECTION_LOST	MQTT connection lost	MQTT broker connection lost.
MQTT_TETRA_CONNECTION_DOWN	Lost Tetra MQTT connection	Check ethernet switch/cable or MQTT broker
MQTT_TETRA_SEND_ERROR	Multiple MQTT send error	Check ethernet switch/cable or MQTT broker
DISPLAY_BACKLIGHT_SENSOR_FAILURE	Display backlight error	Check display, the backlight sensor cannot detect any light being emitted.
VEHICLE_IGNITION_SIGNAL	No input from the ignition pin, seems that the input has failed or is not correctly connected.	Run the test program in the service menu. Check electrical connections.
VEHICLE_GPS_CRAZY_JUMP	The GPS made a crazy jump of {0} meters. Positions being filtered: {1}.	Reset GPS unit.
DATAIMPORT_IMPORT_FAILED	Dataimport import failed.	Check import
DATAIMPORT_VERIFY_FAILED	Dataimport verify failed.	Check import
DATAIMPORT_DEPLOY_FAILED	Dataimport deploy failed.	Check import
VEHICLE_NEXT_STOP_BUTTON	Vehicle next stop button signal not toggled while on the journey.	Check the next stop button signal.
VEHICLE_PANIC_BUTTON	The vehicle panic button signal shorted at startup.	Check the panic button signal.
VEHICLE_ODK_CONNECTION	The ODK is not responding to PId 501 since {0} seconds	Check the ODK power and its connection.
DISCO_SLAVE_MISSING	No response from a disco slave unit, slave ID: {0}	Check connections of connected slave units in the Disco sign group setup. Also, check master/slave configurations.

Fault	(Synopsis), Description	Proposed Repair Action
DISCO_SLAVE_UNKNOWN	A disco slave unit that is unknown is discovered by the master, slave ID: {0}	Check the configuration of the master unit in the Disco display group.
CAMERA_CONTROL_CONNECTION	Connection to camera control for {0} lost	Check wiring
VEHICLE_CCTV_CONNECTION	No contact with CCTV (camera) system.	Run the test program in the service menu. Check wires and connectors.
VEHICLE_CCTV_SYSTEM	Error CCTV (camera) system, status:	Run the test program in the service menu. Check the CCTV control box. Check wires and connectors.
VEHICLE_CCTV_CAMERA	Error status for CCTV cameras: {0}. Connected cameras: {1}	Run the test program in the service menu. Check cameras, wires and connectors.
VEHICLE_CCTV_DISK	CCTV disk storage is not active. Status: {0}	Run the test program in the service menu. Check the CCTV control box.
VEHICLE_SENSOR_ALCOLOCK	No contact with the alcohol lock unit.	Run the test program in the service menu. Check wires and connectors.
INFORMATION_DISPLAY_FLAPPING	Communication with the information display is 'flapping, meaning it goes up and down several times a day.	
VEHICLE_INTERIOR_PASSENGER_DISPLAY_UNREACHABLE	The interior passenger display at IP: {0} is unreachable.	Run the test program in the service menu. Is the display powered on? Check network cables. Are the correct network ports used?
VEHICLE_TRAFFIC_DATABASE_VERSION_MISMATCH	The traffic database is not in sync with the backend.	Make sure the unit has a mobile connection to the backend and trigger a sync
DEPOT_EXCESSIVE_SYNC	A node {0} is downloading excessively.	Make sure the unit is healthy
DISCO_CONNECTION_LOST	Disco client lost connection to the server, timetable backup {0}	Make sure the unit is healthy
VEHICLE_SIGNAL_IO_ERROR	A signal source in failstate, details {0}	Check connections and wires
VEHICLE_INTERIOR_TEMP_SENSOR	Vehicle interior temp sensor not producing valid values.	Check wiring or sensor.
VEHICLE_HEATER_NOT_STARTED	The heater is blocked for some reason.	Check fault codes of the heater and the heater.

Fault	(Synopsis), Description	Proposed Repair Action
VEHICLE_TSP_MODEM	There is no data received from the TSP modem	Check fault codes and wiring
VEHICLE_PROCESS_HUNG_RESTART	Found hung process that was restarted	
VEHICLE_PROCESS_HUNG_REBOOT	Found hung process, restart failed, rebooted	
VEHICLE_DRIVING_MONITOR_CONNECTION	There is no data received from the {0} driving monitor	Check fault codes and wiring
VEHICLE_DRIVING_MONITOR_CAMERA_ERROR	There is no data from the {0} driving monitor camera, video channel: {1}	Check fault codes and wiring
VEHICLE_DRIVING_MONITOR_INDICATOR_ERROR	{0} Driving monitor driver indicator (small display) not responding	Check fault codes and wiring
VEHICLE_EXTERNAL_POWER_NOT_CONNECTED	The external power cable should be connected when the vehicle is parked in the depot area.	Connect the external power. If already connected, troubleshoot the connectors and the corresponding in signal to the MX4 unit.
SOFTWARE_BUG	A software bug has been detected	Contact supplier/developer
VEHICLE_HEATER_NOT_HEATING	The indoor temperature is not rising even though the heater is activated. Temperature has gone from {0} to {1} degrees during {2} minutes of heating.	Report the error to the heater system
VEHICLE_HEATER_FAULT_CODE_ACTIVE	The heater is generating an active fault code.	Report the error to the heater system supplier
VEHICLE_DISPLAY_CONTROLLER	Display controller not responding.	Check the controller board
VEHICLE_INTERIOR_PASSENGER_DISPLAY_MISMATCH	DPI Screen route not matching journey route {0}	Contact supplier/developer
VEHICLE_ASSIGNMENT_MISMATCH	{0} has another assignment: {2}. Our: {1}	Check the assignment and make sure it's correct.
VEHICLE_REMAINING_RANGE_INSUFFICIENT	Seems like the remaining battery range is not sufficient to fulfil the current trip. SOC is {0}, estimated remaining range is {1} meters, while distance left on current trip is {2} meters.	Cancel the trip and recharge batteries at the nearest charging station.
VEHICLE_EXCESSIVE_UNEXPECTED_REBOOTS	System detected {0} unexpected reboots in {1} seconds	Check power source to MX4.

Fault	(Synopsis), Description	Proposed Repair Action
VEHICLE_RTC_BATTERY_DRAINED	If the battery for the internal clock is drained, the clock may be inaccurate	Check power source to MX4.
VEHICLE_IP_ADDRESS_CONFLICT	IP address conflict detected for {0} on device {1}. Mac addresses with same IP address: {2}.	Check configuration of network connected devices.
SERVICE_SELF_TEST_FAILED	The service {0} self test failed.	
VEHICLE_HUD_CONNECTION	No connection from Heads Up Display.	Run test program in service menu. Check wires and connectors. Network switch powered?
VEHICLE_VIMI_APC_REPORTING	There is a communication problem with the "Vimi Report Gateway" for APC reports. Error type: {0}. Error count: {1}.	
VEHICLE_MODBUS_CONNECTION	Modbus device ({0}) not responding.	Check the connection.
VEHICLE_MOBILEYE_FAILURE	Mobileye device in error state.	Contact supplier/developer
VEHICLE_MOBILEYE_CONNECTION	Mobileye device not responding	Check the connection
VEHICLE_WEATHER_STATION_CONNECTION	Weather device not responding	Check the connection
VEHICLE_TACHOGRAPH_CONNECTION	Tachograph device not responding	Check the connection
VEHICLE_ALCOLOCK_CONNECTION	Alcolock device not responding	Check the connection
VEHICLE_ALCOLOCK_CALIBRATION	Alcolock calibration required	Contact supplier/developer
VEHICLE_ALCOLOCK_MALFUNCTION	Alcolock malfunction	Check the connection
VEHICLE_DPI_UPDATE_MISSING	No update from DPI provider {0}, on trip {1}.	Check the connection
VEHICLE_TACHO_DOWNLOAD_FAILED	Tachograph download failed	Check connection. Contact supplier/developer
RESOURCE_AGE_ERROR	Resource {1} has an invalid age {2}	Replace the resource {1} with a newer one.

Fault	(Synopsis), Description	Proposed Repair Action
MODIFIED_FILE	Files have been modified on host {0}	Replace the file(s) with the orginal one(s).
KPI_MONITOR	KPI monitoring {0}: {1}	Check server and network performance. Check log files for relevant service(s). Check for other alarms.
VEHICLE_HIGH_POWER_CHARGER_NOT_CONNECTED	The high power charger is not connected. {0} Details: {1}	Connect the charger. If already connected, check signal that should reflect that the charger is connected or not.
VEHICLE_HIGH_POWER_CHARGING_PROBLEM	The high power charger gives insufficient charging, despite being connected. Details: {0}	Check charger and charger cable. The alarm will clear at next functional charging session for the vehicle.
VEHICLE_TARGET_SOC_NOT_REACHED	Target SOC is not reached. Scenario: {0} SOC at time of alarm: {1}%, target SOC: {2}%, charger connected: {3}	
VEHICLE_MODEM_NETWORK_CONNECTION	Problem connecting to mobile data network. Details: {0}	Check SIM for debris or misplacement. Dismount, clean and remount. Check SIM card validity.
VEHICLE_GPS_UNAVAILABLE	GPS is currently unavailble due to modem reset. Which in turn is caused by problem connecting to mobile data network. Modem has been requested to reset at {0}.	Check SIM for debris or misplacement. Dismount, clean and remount. Check SIM card validity.
VEHICLE_STARTER_BATTERY_LOW_VOLTAGE	Critially low battery voltage on the starter battery. Details: {0}.	Connect charger.
VEHICLE_SMOKE_DETECTOR_ALARM	Smoke detector disconnected or active	
VEHICLE_FIRE_DETECTOR_ALARM	Fire detector disconnected or active	
VEHICLE_EXTERNAL_POWER_DEACTIVATED_DUE_TO_LOW_VOLTAGE_THRESHOLD	External power deactivated due to lower voltag threshold hit	
VEHICLE_HANOVER_DPI_DUPLICATE_ADDRESS_ERROR ({0})	Hanover duplicate address {1}.	
LOW_SOC_WARNING	Low SOC warning. Battery state of charge: {0}%. Warning level: {1}%.	Recharge batteries as soon as possible.

Fault	(Synopsis), Description	Proposed Repair Action
LOW_SOC_LIMP_MODE	Limp mode warning due to very low SOC. Battery state of charge: {0}%. Warning level: {1}%.	Position vehicle in a safe spot, then contact service personel.
VEHICLE_EXTERNAL_POWER_CONNECTED_SIGNAL_BROKEN	Signal for "external power connected" seems to be broken. It has not toggled for several days.	Check signal connection.
VEHICLE_VOLTAGE_TOO_LOW_FOR_PRECONDITIONING	Cutting power to external equipment, due to low voltage. Voltage: {0}V, time below threshold: {1}ms	Charge battery.
VEHICLE_DPI_GPU_HUNG	DPI unit GPU hung	Unit needs a repair
VEHICLE_DPI_REG_SOURCE_MOVED	This DPI unit has been moved from its original registration source (vehicle computer). Or the registration source has been renamed.	Redo initial provisioning for this DPI unit.
VEHICLE_SIGN_DUPLICATE_LOGICAL_ADDRESS	Duplicate logical sign address detected. Logical adress: {0}, on signs: {1}.	Check configuration of these signs.
VEHICLE_DPI_PERSISTENT_STORAGE_ERROR	Browser storage corruption detected. screen id: {0}	Storage has been corrupted.
VEHICLE_DPI_PERSISTENT_STORAGE_CLEARED	Storage has been cleared	Storage has been cleared
VEHICLE_SECURITY_CHECKSUM_ERROR	Checksums are not matching between device and backend	Storage has been rsynced.
VEHICLE_SIGN_MISSING_ADDRESS_ERROR	One or more Hanover displays are missing on the network. Logical address: {0}.	
VEHICLE_GRAPHICS_ENGINE_RESTART	Graphics engine was hung	Will auto reset
VEHICLE_PTC_RADIO_CONNECTION	Lost radio connection	Check cable and power of radio