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VOLVO CONNECT

Release Notes

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1 Volvo Connect

This document describes the functionality available in Volvo Connect for Volvo Buses.

1.1 General

1.1.1 User roles

Below is a list of user roles that are currently available.

Customer roles	Description
Fleet User	Users with the Fleet User role can access the Volvo Connect portal. They can view Vehicles and Drivers in all available tools.
Workshop User	Users with the Workshop User role can access the Volvo Connect portal, Workshop Services and External Links to Workshop applications. In Volvo Connect, they can view Calendar and News.
Parts User	Users with the Parts User role can access the Volvo Connect portal. They can view Calendar and News. They can access online stores for parts through Marketplace.
Driver	Users with the Driver role can access the Volvo Connect portal. They can view Vehicles and Drivers in all available tools. To prevent data privacy issues, checking User's access to assets within your fleet is essential.
Management User	Users with the Management User role can access the Volvo Connect portal. They can view Calendar and news.
Zone Admin	Users with the Zone Administrator role can access the Volvo Connect portal. They can edit all Safety and Coaching Zones in your fleet.
User Administrator	Users with the User Administrator role can access the Volvo Connect portal. They can view and edit users in your fleet.
Fleet Administrator	Users with the Fleet Administrator role can access the Volvo Connect portal. They can edit Drivers, Vehicles and other assets in your fleet. Manage fleet settings like API accounts and Reports.
Dealer Fleet User	By granting the Dealer Fleet User role to a user, you acknowledge that a representative of your chosen authorized Volvo Buses dealer will be able to access certain information that is displayed on your Volvo Connect portal. The level of information displayed to the dealer representative is based on your setup of services in Volvo Connect. Note that the Dealer Fleet User role does not authorize the dealer representative to view information related to your workshop (e.g. service planning, workshop history, logbook). Volvo Connect Terms of Use will apply to the Dealer Fleet User role.
Dealer Fleet Admin	By granting the Dealer Fleet Admin role to a user, you acknowledge that a representative of your chosen authorized Volvo Buses dealer will be able to access certain information that is displayed on your Volvo Connect portal. You further acknowledge that the dealer representative

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	may act on your behalf in regard to modifying settings in applicable parts of Volvo Connect. The level of information displayed to the dealer representative is based on your setup of services in Volvo Connect. Note that the Dealer Fleet Admin does not authorize the dealer representative to view information related to your workshop (e.g. service planning, workshop history, logbook). Volvo Connect Terms of Use will apply to the Dealer Fleet Admin role.

Supporting roles	Description
Internal Zone Admin	An Internal Zone Admin can administrate and manage any zone type or route in your fleet. An Internal Zone Admin cannot access or administrate any of the assets or users of your fleet.
Market User	Same access as Fleet User, for all customers in a market.
Market Admin	Same access as Fleet Admin, for all customers in a market.
Market User Admin	Same access as User Admin, for all customers in a market.

1.2 Sign-in to Volvo Connect

You are first greeted by a sign-in page. The login user experience has a new design, where a two-step authentication is required. Click **Sign in** to access Volvo Connect. For more information on how to use the authentication, visit https://www.volvobuses.com/en/tools/volvo-connect-migration/login.html or click the link on the sign-in page.

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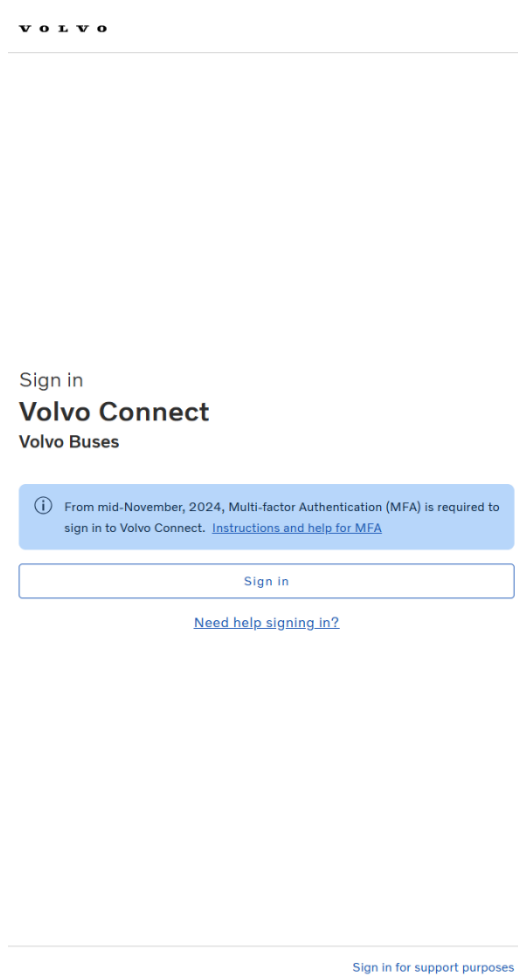
Figure 1: Sign-in page.

1.2.1 Terms of Use

The Terms of Use need to be accepted before using the portal. If you have access to more than one fleet, you need to agree to the Terms of Use once for each fleet.

If you get access to more fleet after accepting the terms, you are required to approve the Terms of Use again, once for each fleet.

You will get prompted to accept the Terms of Use for a fleet in the following situations:

- When signing into a fleet in Volvo Connect. When you sign into a fleet for the very first time. A Terms of Use acceptance page is displayed, which you need to accept to proceed signing in.

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- When switching organization to another fleet in the User menu. When you change to another fleet within the system, and you have not previously accepted the Terms of Use for the selected fleet, you will be redirected to the Terms of Use acceptance page where you need to accept the Terms of Use for that fleet. Once you have accepted the Terms of Use, you will be redirected to the other fleet.
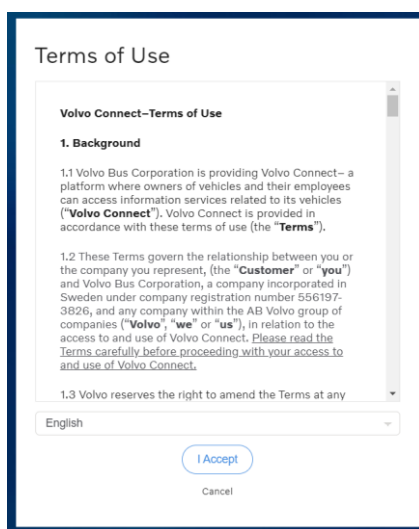

Figure 2: Terms of Use acceptance dialogue

1.2.2 Setting a new Password

The password rules are displayed both when a new user enters all user account information after being invited to a fleet or when a user needs to reset the password after having forgot the current password. Each displayed password rule is updated in real time as the user enters the new password to indicate whether the rule is fulfilled or not.

Some of the error messages that might be displayed have been updated to give a better explanation of what went wrong.

1.2.3 Password Rules

The following password rules must be fulfilled to set a new password successfully:

- Must be at least 14 characters long and policy must match 3 of 4 listen below character rules:
    - Contains upper case letters,
    - Lower case letters
    - Numbers,
    - And symbols: ~!@#$%^_-+=`|()[]{}:;<>,.?/&

There is also an additional password rule when changing the current password to a new password:
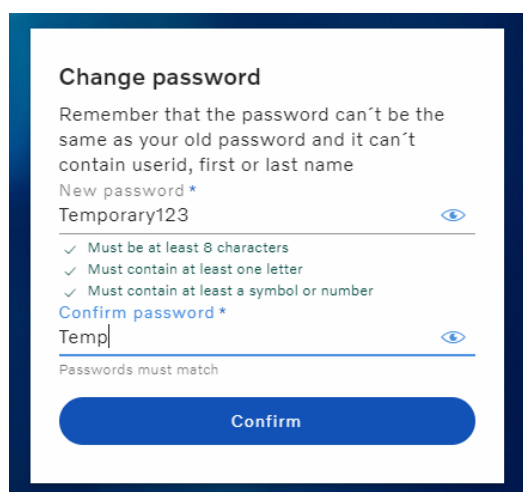
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- The new password must not be identical to the current password

1.2.4 Displaying Password Rules when resetting the password

If you have forgotten your password and need to reset it to a new password, you can either click on the **Forgot your password?** link on the Sign-in page or you can ask your User Administrator to send you a reset password e-mail by clicking the **Send Reset Password E-mail** button in the Users section of the Administration tool.

When you receive the reset password e-mail, click the **Enter new password** link to display the Change password dialogue. The same kind of password rules, as described in the previous chapters, are displayed.

Figure 3: Display password rules at password reset

Some password rules cannot be checked until you submit the information – for instance, if the new password is the same as your current password or if it includes your name or user ID. In these cases, an error message is displayed, and you need to specify a different password.

1.2.5 Volvo Support Login – Switch Organisation (support)

When you as a Volvo employee log in for support purposes, to select a market and a fleet, click **Search Organisation** on the **Select Fleet** page. Select a market in the pop-up screen and click **Next**, and then select a fleet and click **Select**.

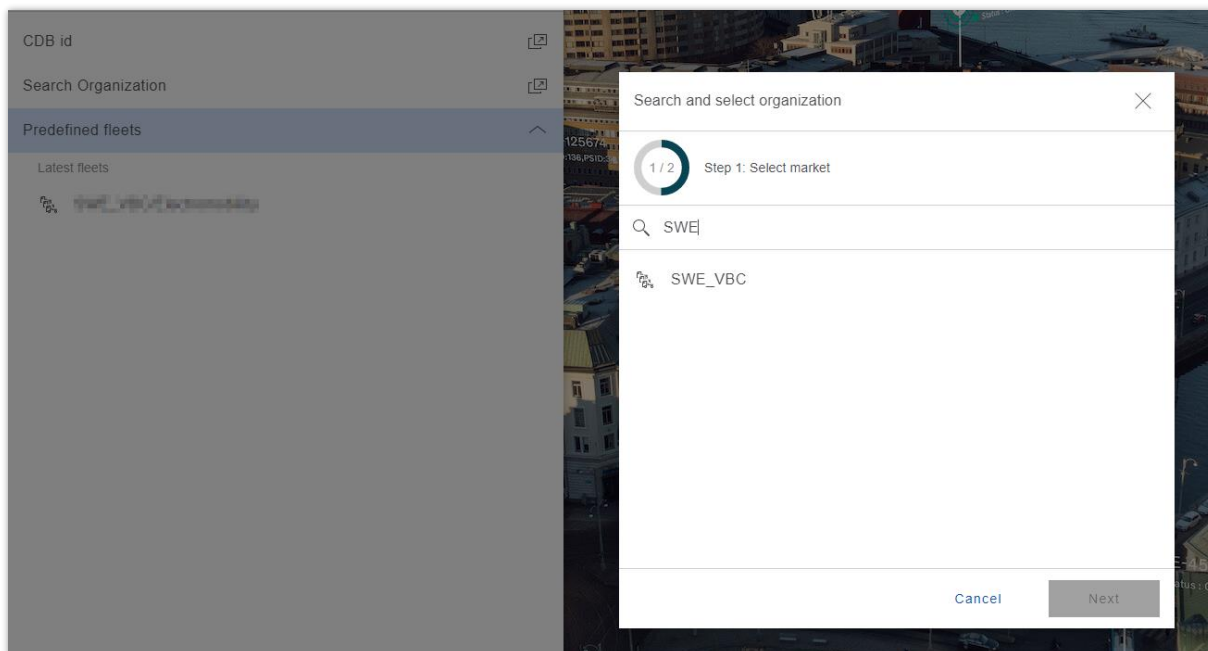| Company name		Type of document		
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Figure 4: **New Select Fleet page, with Search Organisation highlighted**.

On the **Select Fleet** page, under **Predefined fleets**, you will find the explicit assigned fleets and the latest fleets. The feature **Latest fleets** will now show up to nine of your recently accessed fleets.

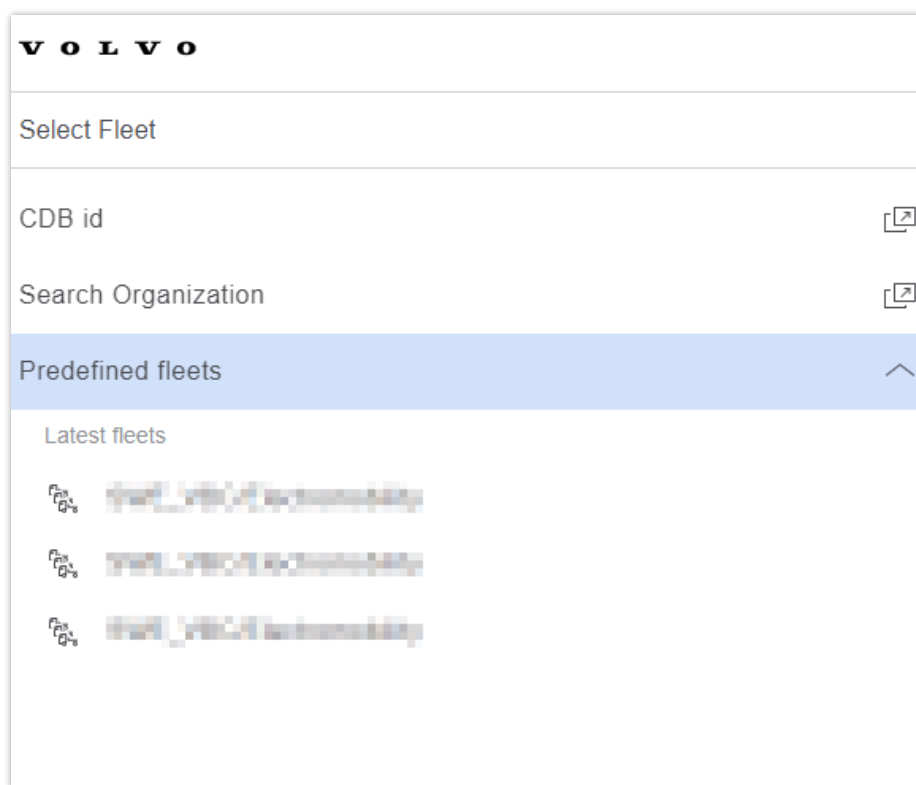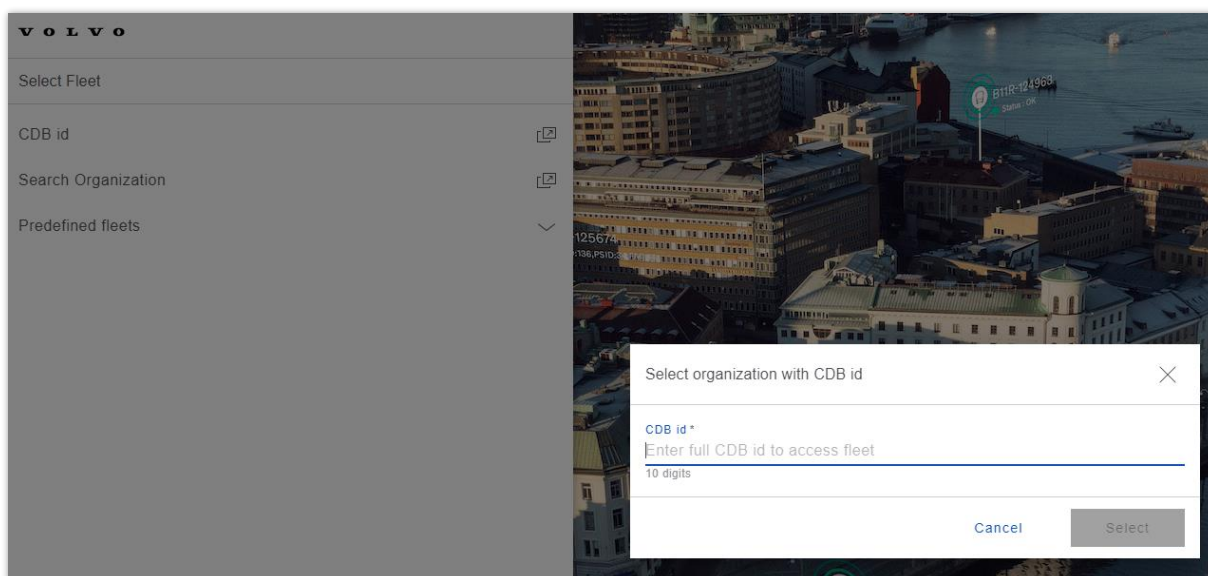| Company name	Type of document		
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Figure 5: **Predefined fleets option**.

1.2.6 CDB ID Login Feature in Switch Organisation (support)

When you log in for support purposes, it is possible to search for a CDB ID to find a specific fleet in a market. At the **Select Fleet** page, click **CDB id**. Then enter the desired ID and click **Select**.

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Figure 6: **CDB id login**.

1.3 Dashboard

After logging in and accepting the terms of use, you will be directed to the Volvo Connect dashboard. The dashboard includes widgets and quick access to tools and information. You can always return to the dashboard by clicking the Volvo Connect text in the top-left corner of the screen.
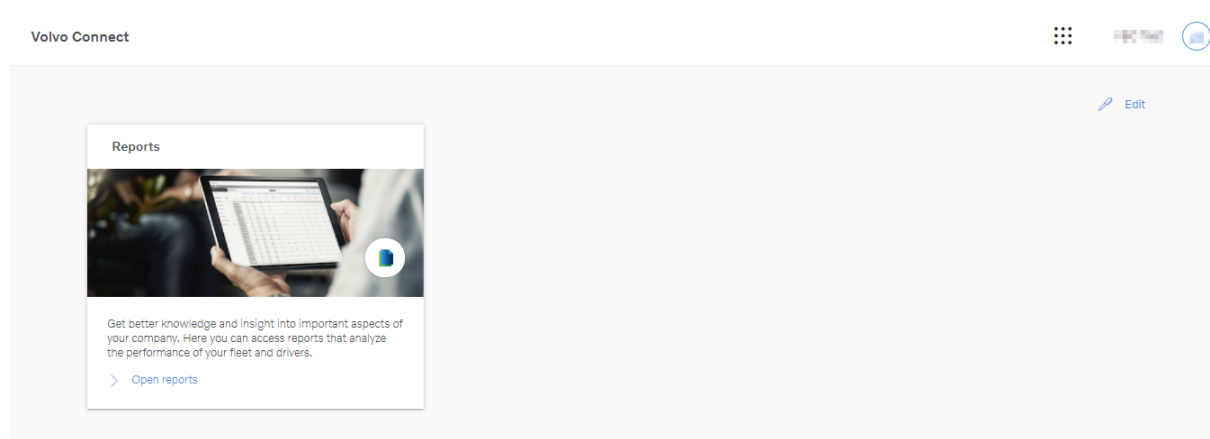
Figure 7: Volvo Connect Dashboard

You can manage your dashboard and rearrange widgets or select what widgets that should be visible by selecting **Edit** in the top-right corner of the dashboard.
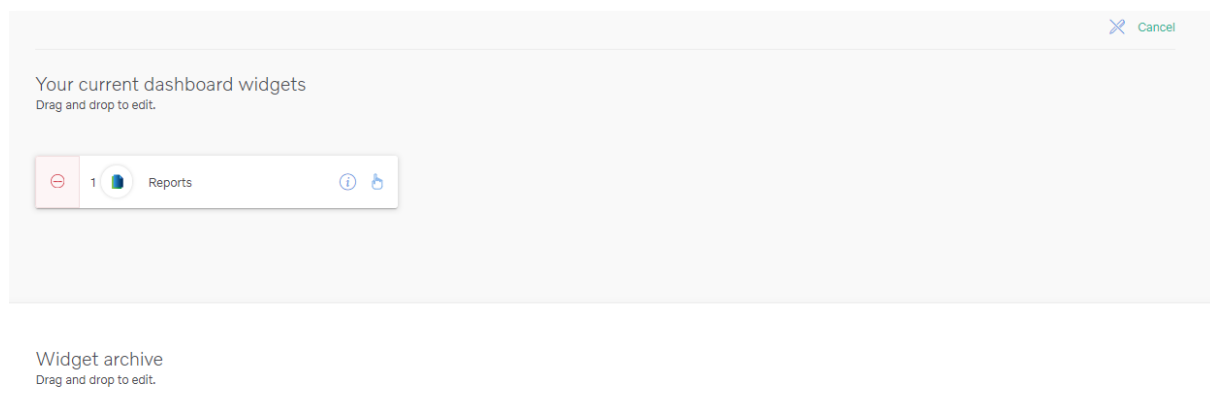

Figure 8: Edit dashboard

In the edit mode of the dashboard, you can click the minus icon to the left of the widget name, or drag and drop it, to place it in the widget archive. You can also drag and drop the widgets to rearrange the order.

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Note: The edit is only applied to your dashboard. Every user's dashboard can look different depending on their specific needs.

1.4 Navigating between tools

In the upper right corner of the portal, you will find three menus.

- **Main menu,**
- **User menu** and
- **Notifications**

1.5 Main menu

The main menu is your link to the different tools in Volvo Connect. You reach it by clicking the menu icon.
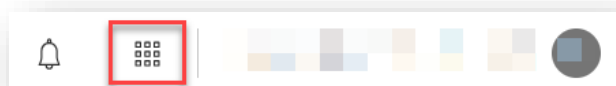

Figure 9: Main menu icon

Every tool in the portal is listed under Portal tools, and every external application is listed under **External Links.** Simply click a link to go to that tool or application. What you see in this view depends on the role that your user has.
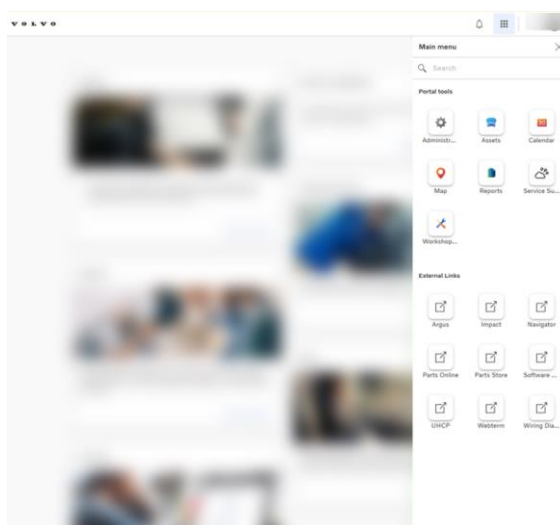

Figure 10: Main menu

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You can choose to open the tool in a new window by hovering over the link and clicking the icon for open in a new tab on the right-hand side of the icon.
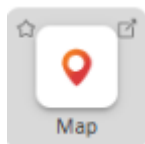
Figure 11: Hover over a tool to see the menu

You can mark a tool as favorite by hovering over it and clicking the star icon on a left hand side of an icon.

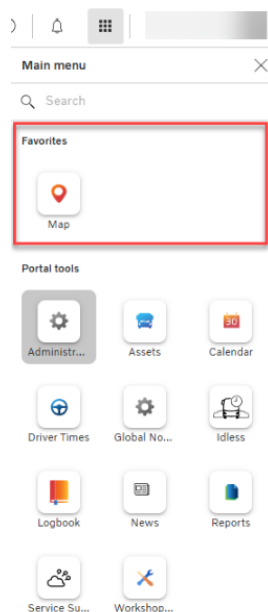Favorited tools will be displayed at the top of the Main menu.

Figure 12: Menu favorites

1.6 User Menu

The user menu consists of links to

- **My account** to edit personal settings
- **Support**
- **Switch Organization** for users with access to more than one fleet
- **Marketplace**

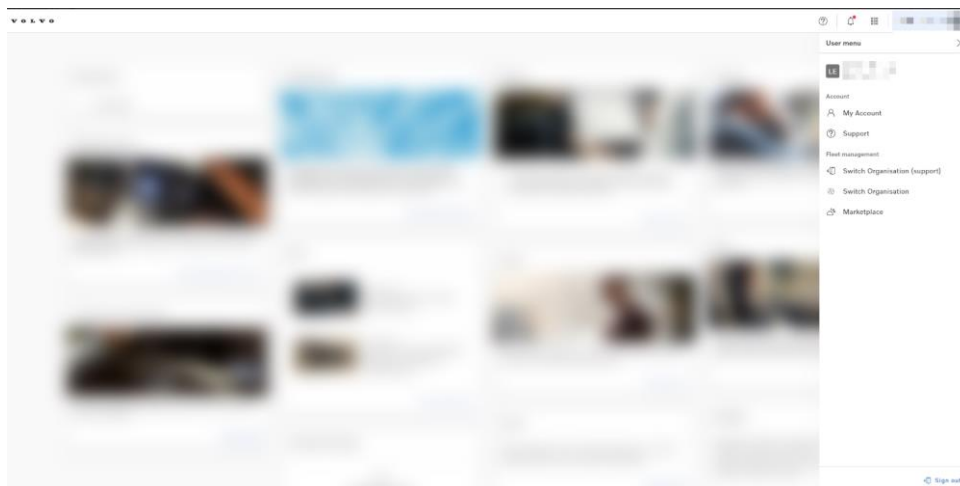| Company name		Type of document		
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- Sign out

Figure 13: User menu

1.6.1 My Account

To manage your account, open **User menu** in the top-right corner by clicking on the fleet name, and select **My Account.**
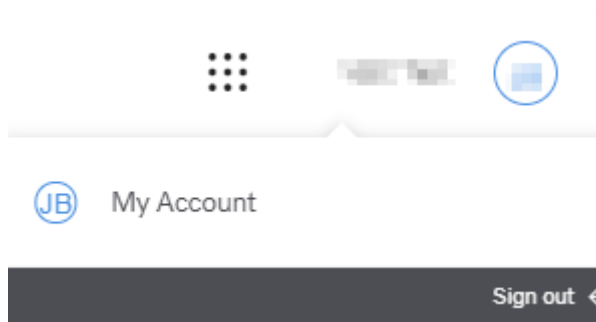

Figure 14: My Account in User menu

Account details give you an overview of your account information.

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Figure 15: Account details

To modify the language and measurement system, click on the pen icon located in the upper right-hand corner.

1.6.1.1 My Groups

My Groups is a section displayed in the left-hand navigation menu under **My Account. My Groups** are groups with selected drivers or vehicles created and used by the user creating the group. New groups can be created by selecting **+ Create group** and then selecting drivers or vehicles. Existing groups can be updated by selecting the group and then select **Edit Group.**

Figure 16: My groups

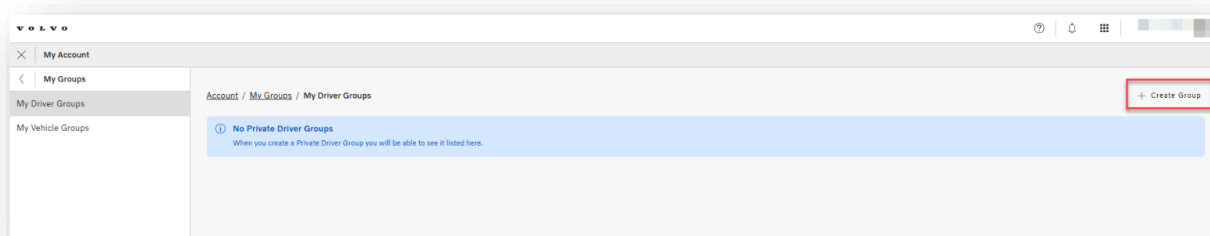**My groups** can be viewed and used in all the different tools of Volvo Connect.

1.6.2 Support

Under the support section, you find Contact information to Volvo Buses support channels, Frequently Asked Questions, Terms of use, Privacy compliance, Cookie statement and System status.

1.6.2.1 Cookies settings

In **Cookies Settings** you can read the cookies statement and change the cookies settings.

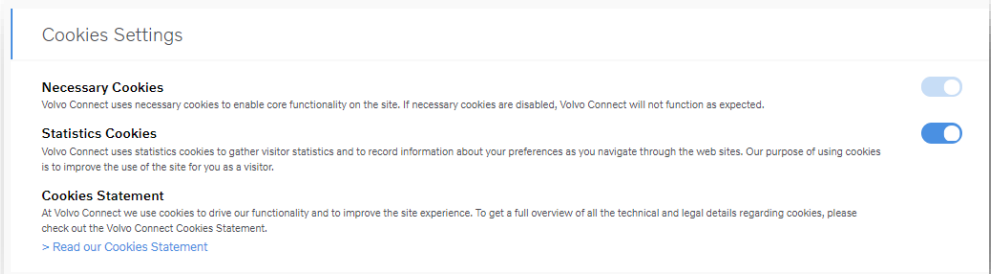| Company name	Type of document		
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Figure 17: Cookie settings

1.6.2.2 System status

In **System Status** you can see ongoing incidents and planned maintenance that may affect your experience of the Volvo Connect portal.
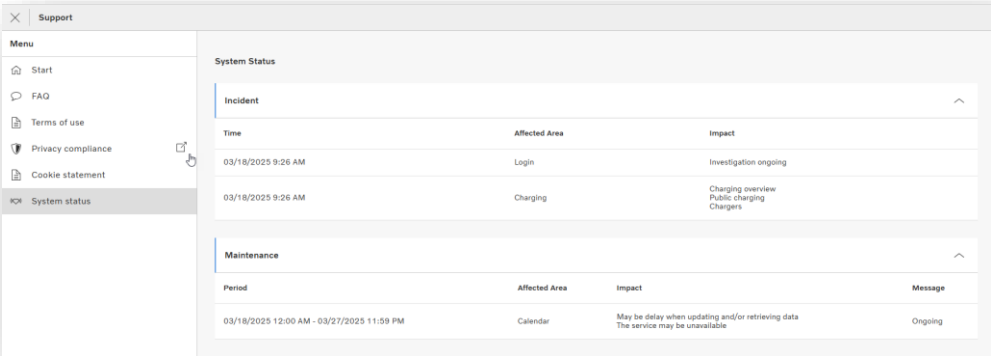
Figure 18: System status

1.6.3 Marketplace

In Marketplace, you find links to **Volvo Merchandise**, **Volvo Parts Store** and **Digital Service Store**, depending on your user role.

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Figure 19: Marketplace

The Digital Service Store is where you can view the services that can be acquired for Volvo Buses. To view a specific service, select one from the list.
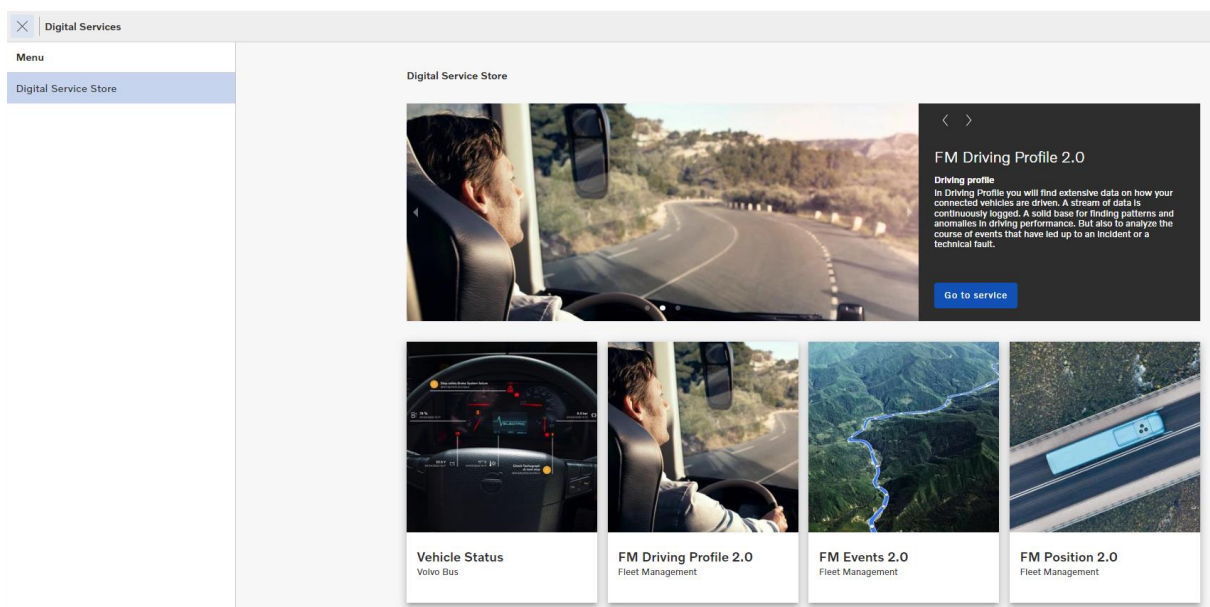
Figure 20: Example of services in the Digital Service Store.

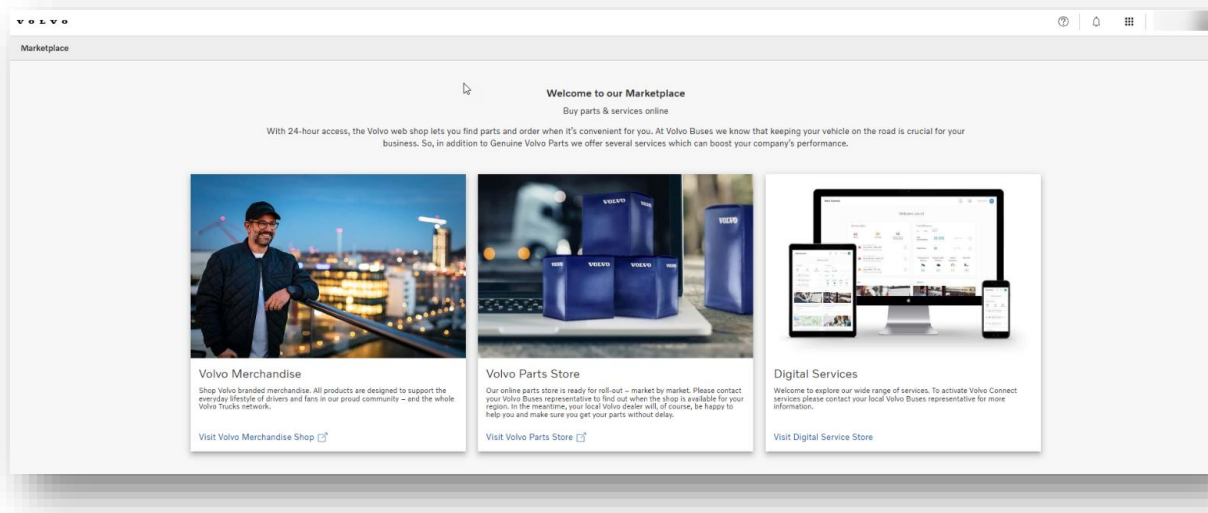| Company name		Type of document		
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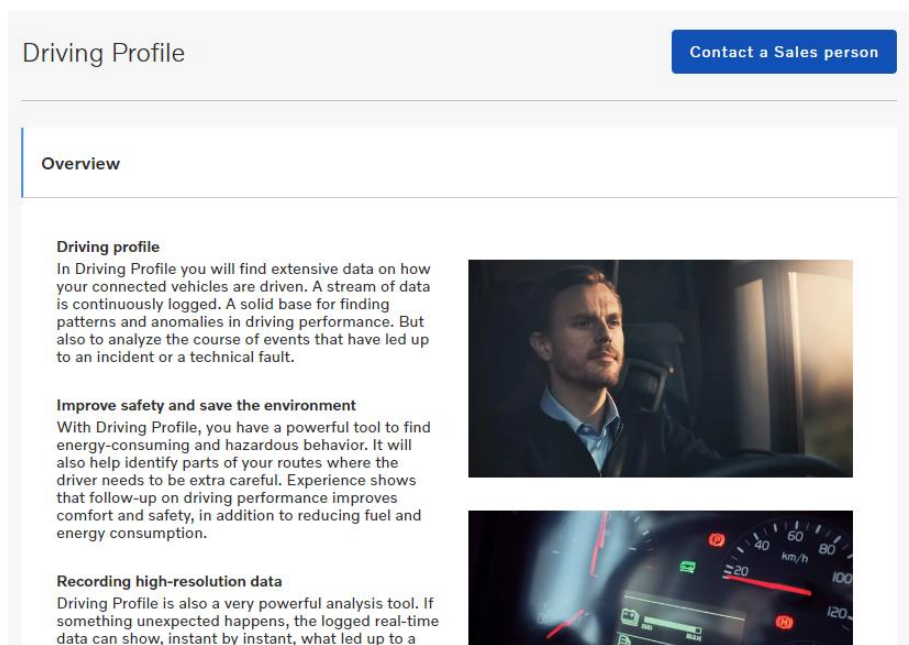
Figure 21: The Driving Profile service.

If you want more information about a service, click the **Contact a sales person** button. Enter your details in the pop-up window and write a message and click **Send.** You will then receive more information about the service and how to obtain it.

Figure 22: Contact a sales person pop-up window.

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1.7 Notifications

Under the bell icon, at the top of the screen, you can view notifications sent by vehicles. It can either be information, warnings or alerts. You can configure these notifications in the notification settings.
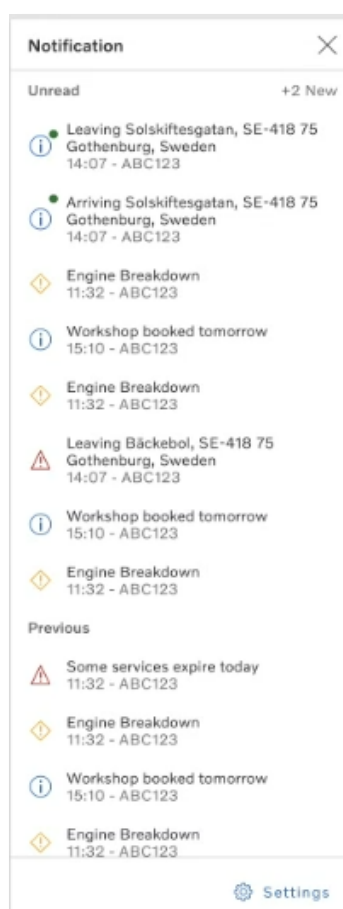

Figure 23: Example of Notifications.

To configure which notifications you want to receive, click **Settings**. Then select either **Map** or **Assets**. Depending on what can be sent as a notification, you can select to receive either information, a warning or an alert. The options are symbolised by three icons, and only notifications that can be sent are selectable.

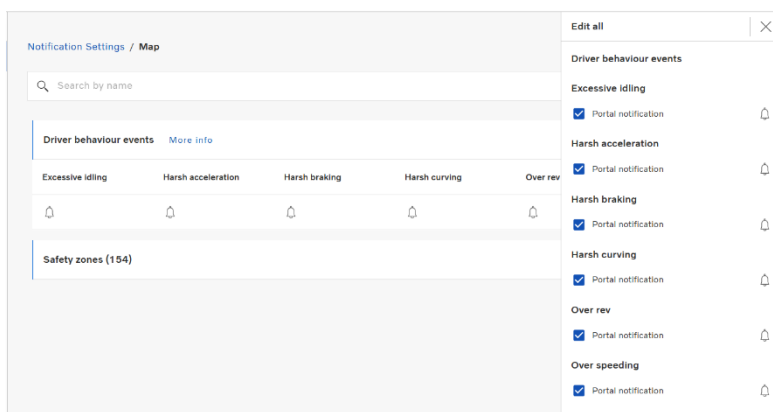| Company name		Type of document		
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Figure 24: Example of Safety Zone and Driver behavior notifications.

Once you have selected your notifications, click **Save.**

The following notifications can be selected for Assets:

- Fault Codes

The following notifications can be selected for Map:

- Driver behaviour events. The settings affect the notifications for: Deviations inside and outside zones set per vehicle, Deviations set in Coaching zones and Deviations for Over speeding in Safety zones
  - o Excessive idling
  - o Harsh acceleration
  - o Brash braking
  - o Harsh curving
  - o Over rev
  - o Over speeding
- Safety Zone
  - o Arriving
  - o Leaving
- Charge Monitoring Zone
  - o Arriving
  - o Leaving
  - o Charge Monitoring Zone - Deviation
- Coaching Zone
  - o Arriving
  - o Leaving
- Zero Emission Zone
  - o Arriving

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- o   Leaving
- o   Zero Emission Zone - Deviation
- Battery Saving Zone
    - o   Arriving
    - o   Leaving
    - o   Battery Saving Zone - Deviation

1.8   Digital Tools – Map

Map tool is using data from services Position, Events, Electromobility Data, Driving Profile and all Zone services.
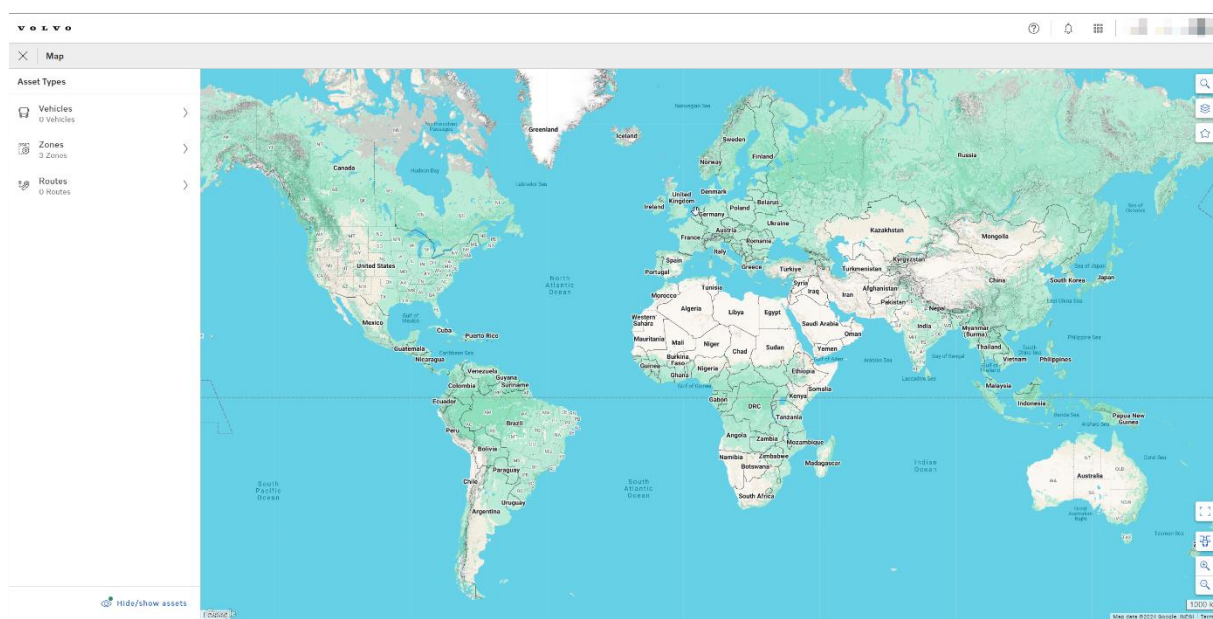
1.8.1   Map Overview

Figure 25: The map

In the top-right corner of the map you can find the function for Search on map, Display options and Map favorites.

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Figure 26: Search on map, display options and map favorites
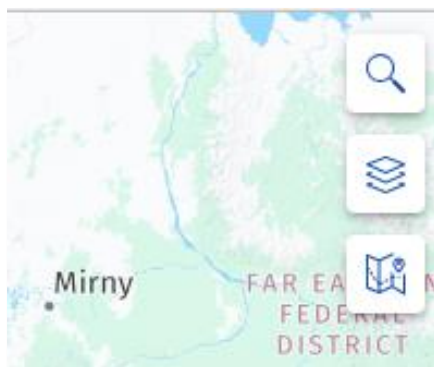
1.8.2 Search on map

In the search field you can search for places, such as countries, cities, addresses and points of interest.
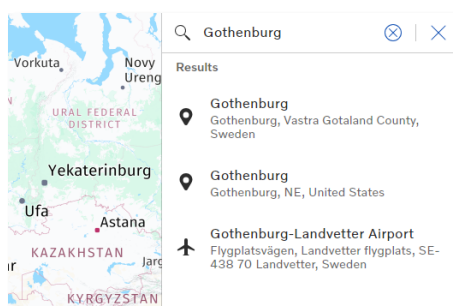

Figure 27: Search for places

1.8.3 Display Options

Display Options is divided into different sections, Assets, Asset markers, Map information and Map type. These display options only apply to your personal user account. The headings

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can be collapsed or expanded based on your preference. Your selection will be saved and remain the same the next time you access the options.
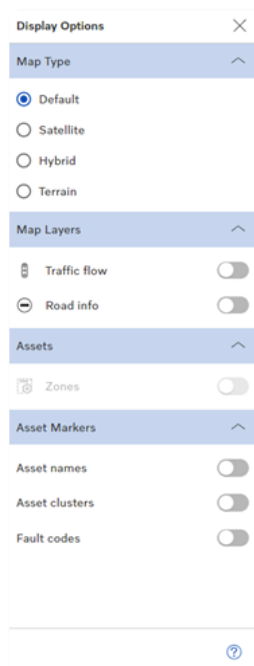

Figure 28: Display options

In **Map Type** you can change the view of the map, between default, satellite, terrain and hybrid. These views are sourced from Google Maps. By selecting the map type, you can determine if the map labels are visible or not. With **Default** and **Terrain,** the map labels are

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always visible. With **Satellite,** the map labels are removed. Use the **Hybrid** map type to get a satellite view with map labels.

Under **Map Layers** you can decide to show coloured traffic flow, road information such as weight limit and height limit, names of cities and other places.

In the **Assets** section you can choose to switch on and off zones and determine what is displayed on the map. If you want to hide and show vehicles, use the **Hide/show assets** feature in the bottom left corner.

The **Asset Markers** section allows you to show or hide asset names below the vehicle icon on the map, making clusters of vehicles that are close to one another and showing the triangular icon for the fault codes.

There is also a **Guide** under the question mark icon on bottom of this section, which describes the different color icons and its meanings.
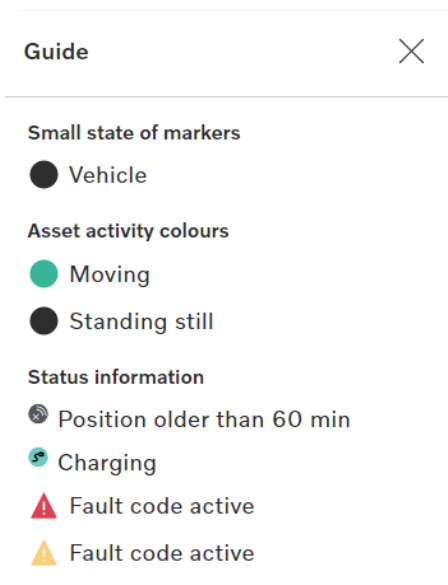

Figure 29: Legend

1.8.4   Hide or Show Assets

This feature allows you to show or hide specific assets on the map, and get a better overview of your assets in the Map tool. The function is located at the bottom of the left menu.

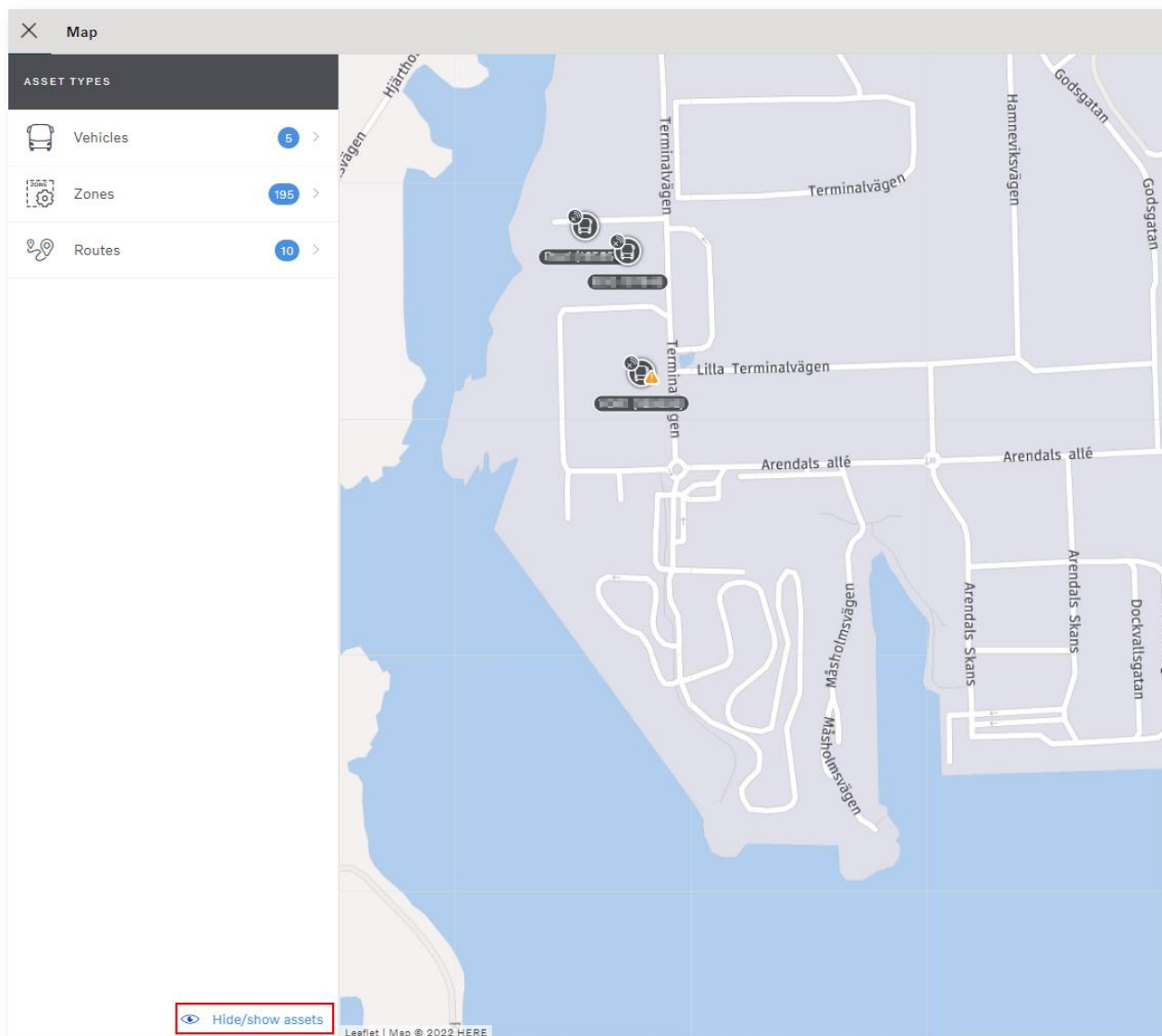| Company name		Type of document		
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Figure 30: Hide/show assets highlighted.

When you click **Hide/show assets,** toggle **Activate filtering.** Clicking the check mark or **Select all** will select all assets. You can also deselect all by unchecking the check mark or clicking **Deselect all.** You can manually select specific assets by clicking a group, to view a full list of assets, or by using the search option.

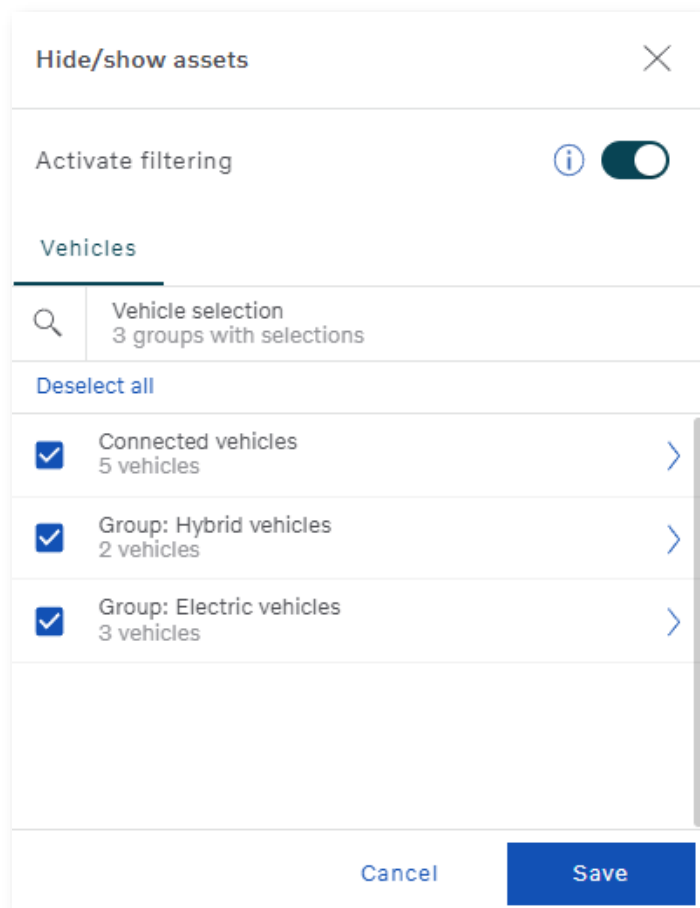| Company name		Type of document		
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Figure 31: Hide/show assets, with six connected vehicles.

Once you have made your selection, make sure to click **Save.**

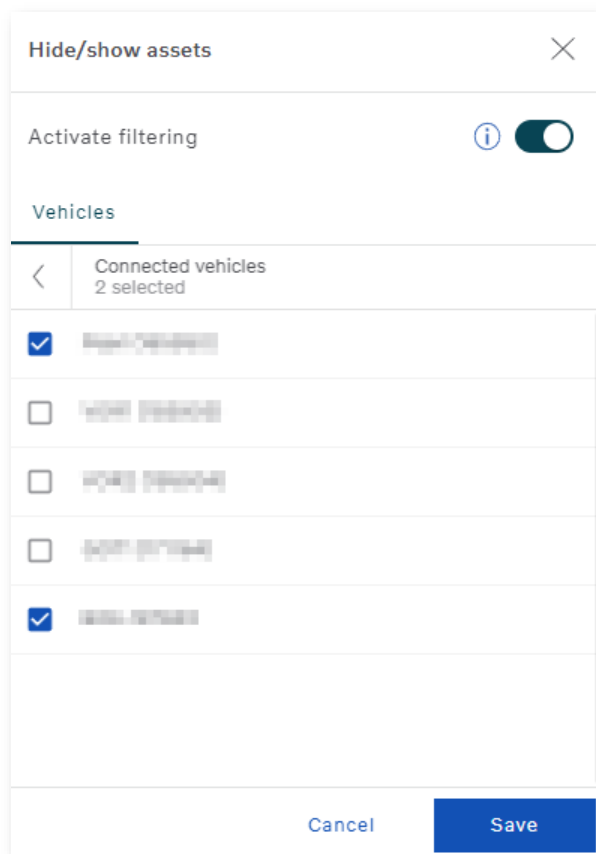| Company name	Type of document		
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Figure 32: Hide/show assets, with two vehicles selected.

When the Hide/show asset is active, the number of assets on the map is reduced and will only show the selected assets. A green circle next to the feature also indicates that the filter is active.
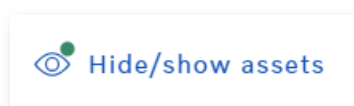

Figure 33: Green circle indicates filter is active.

When you filter on assets, the filter result is also applicable in the following features:

Asset list, Vehicle list, Vehicle groups, Map settings, Search on map, Tracking Overview, Position History, Map favourites.

1.8.5 Map Favourites
Below is the icon for display options is the map favourite.

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Figure 34: Map favourite icon

The toggle to enable or disable Map Favourites is accessed by clicking the star icon to open the feature. Additionally, the button to add a new favourite is a plus symbol.

To create a new map favourite, first zoom into a specific place on the map. Then click the icon and the button **+**.
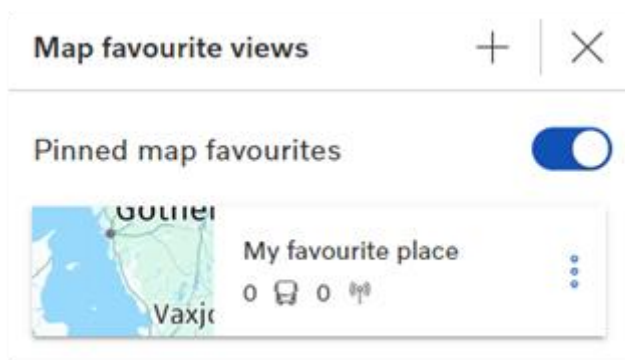

Figure 35: Add new map favourite with the + icon

Choose a name for your map and if it should be always visible on the map (pinned on map), and if it should be set as default view when you enter the map. You can have several pinned maps, but only one default.

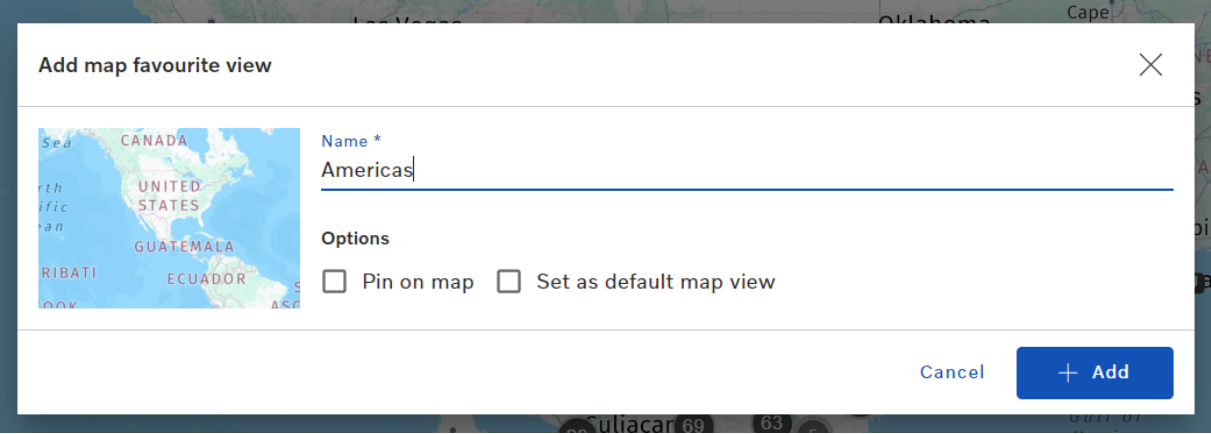| Company name		Type of document		
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Figure 36: Add map favourite

The pinned map is the located in the bottom-left corner of the map.

Figure 37: Pinned maps and My favourite views list

When your map favourite is created, it appears in the map favourite list. By clicking the three dots to the right of the map you can edit it, unpin the map, remove it as default or delete the map.

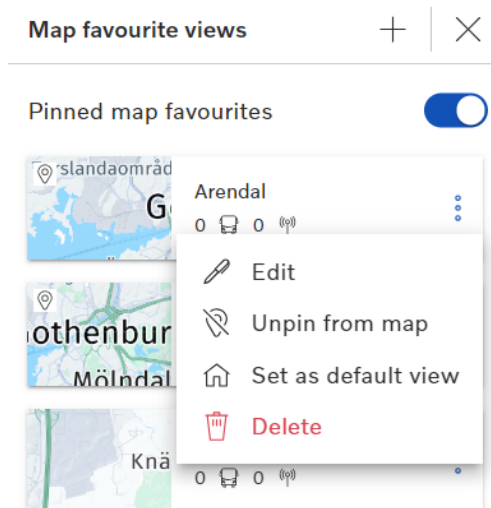| Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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Figure 38: Map favourite view options for a map favourite

1.8.6 Vehicle details

When you select an asset in the Map tool, the latest information received from the vehicle will be shown under **Vehicle details.**
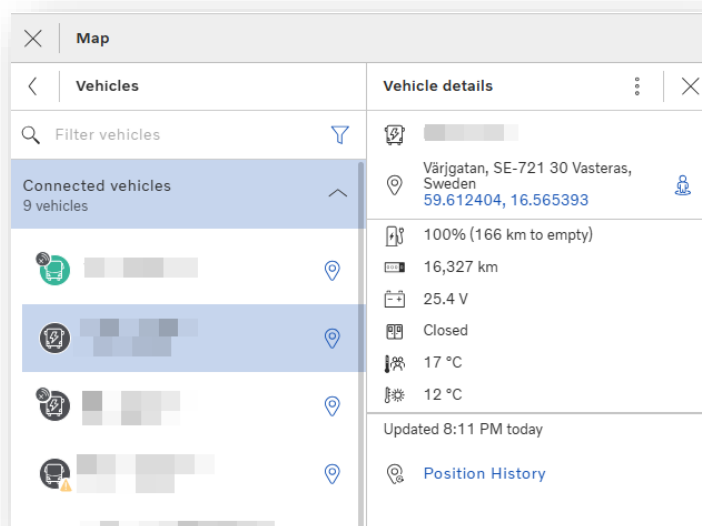

Figure 39: Vehicle details in Vehicles menu

You can click the coordinates for latitude and longitude to copy them.

You can also click the icon to the right over the coordinates to open the view in Google Street View.

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1.8.7 Position History

In the map you can view the historical positions of your vehicles. To access this view, go to the Map tool and then select a vehicle. In the vehicle details view you can click **Position history**.
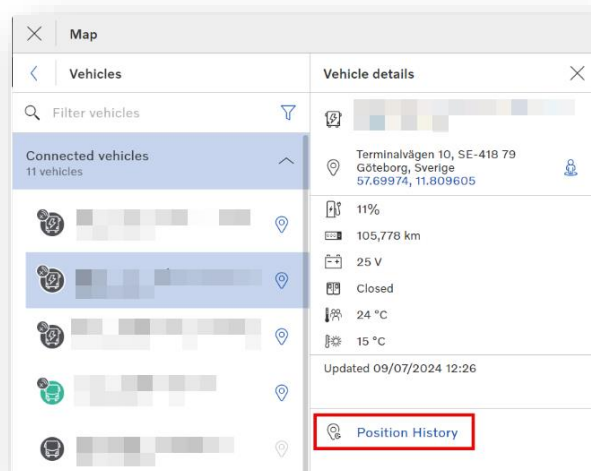

Figure 40: Access position history

In the position history, you will see the historical events for the selected vehicle. These events are listed as a full event list, trips based on ignition on/off, as a snail trail in the map and as a graph.

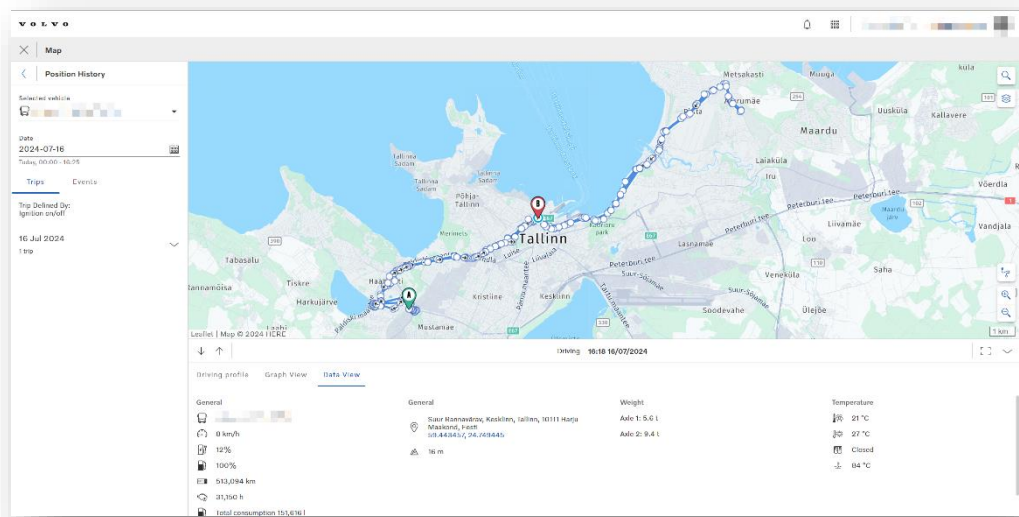| Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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Figure 41: Position history

You can easily switch between vehicles within your fleet, using the vehicle drop-down in the top of the menu on the left-hand side. You can also select what time span you want to view. Today is selected by default when you enter position history. You can also select to view the trips and the full event list.
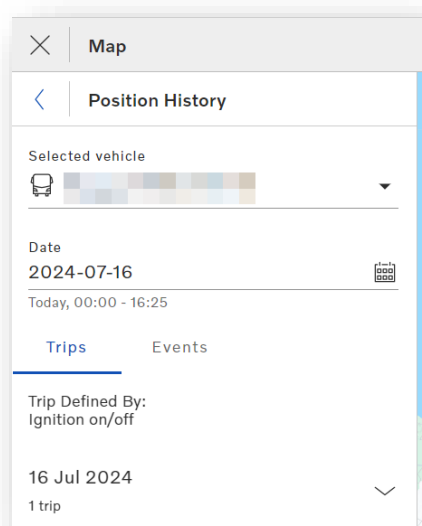

Figure 42: Position history menu

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To view a specific trip, click the **+** to the far right of the date. You will then get a list of all the trips performed during that specific date. Each trip can be expanded to show a summarized view of consumption, distance and duration during that trip.
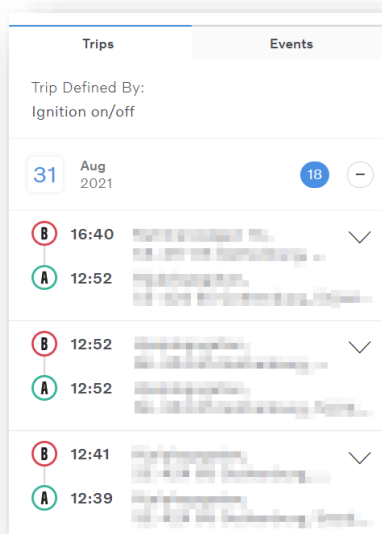

Figure 43: Trips defined by ignition on/off
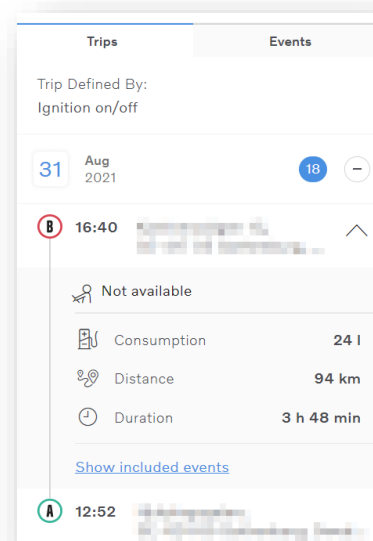
Figure 44: Specific trip summary

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If you click **Show included events,** you will get a full list of the events within that trip.

Figure 45: Events within trip

In the **Events** tab, you will get a full list of all the events that occurred for this specific vehicle during the selected time span.

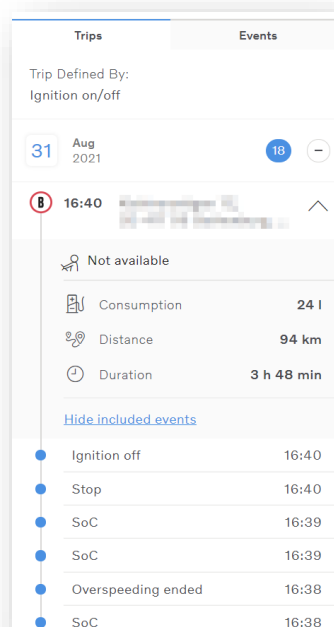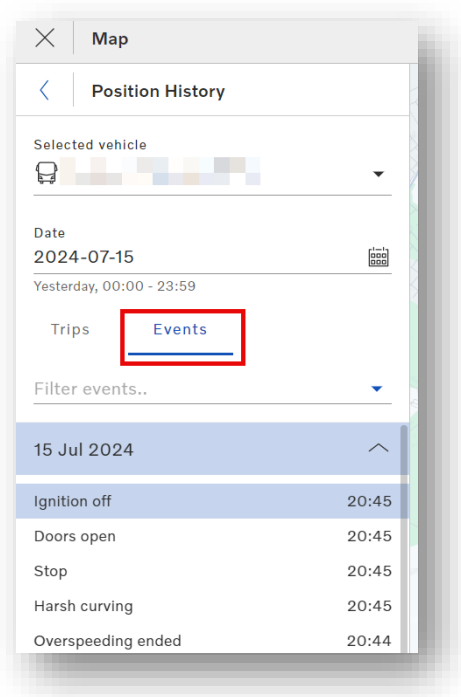| Company name		Type of document		
Volvo Buses		**Release Notes**		
Name of document		Version	Reg. No.	Page
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Figure 46: Event list

You can filter on different events if you are only interested in one or a handful of events. Click the **Filter events** drop-down and type or select your preferred events.
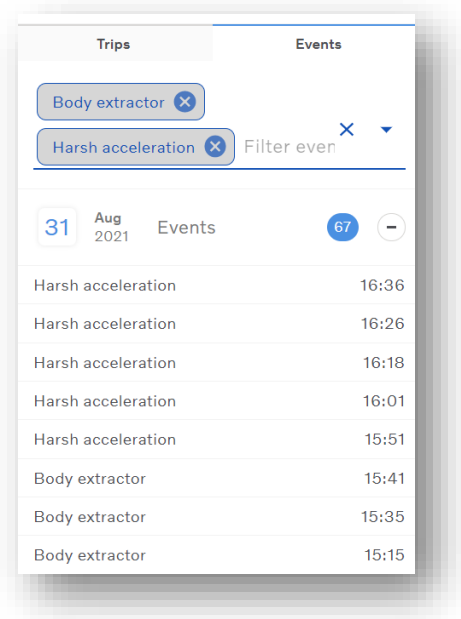

Figure 47: Filter events

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In the **Graph View,** you can get a visual overview of vehicles behaviour for certain parameters. Speed (on the left-side axle) and fuel level (on the right-side axle) are shown by default. Temperature, weight and altitude are selectable in the drop-down options in the top-right of the graph.
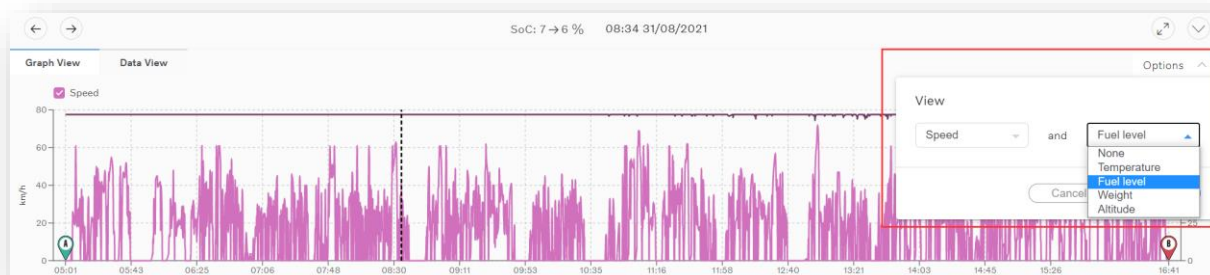
Figure 48: Position history graph

In the **Data View** you can see event details as well as additional data about the vehicle and its driver. The details shown may consist of both new and old data. If the data is old, it will be shown in italic. If the data is older than 10 minutes, it will not be shown in the event.

Figure 49: Data view

All the events are connected to the positions on the map as well as the graph view and data view. If you select an event in the list, that specific event will be highlighted with a larger dot in the snail trail and with a dotted line in the graph.

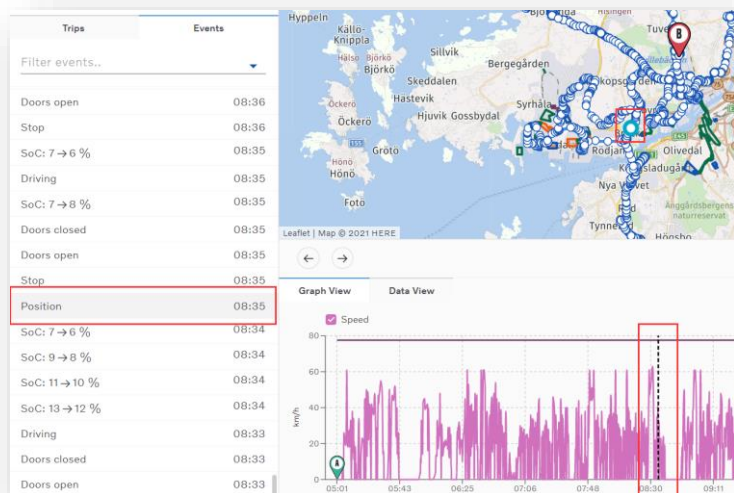| Company name		Type of document		
Volvo Buses		**Release Notes**		
Name of document		Version	Reg. No.	Page
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Figure 50: Selected event

1.8.7.1 Driving Profile

The Driving profile service allows you to easily analyse and investigate what happened just before an incident, and access historical information down to a second.

The Driving profile feature can be found by selecting a vehicle in the Map tool. Once selected, click **Position History**. The feature is presented as five separate graphs, under the tab **Driving profile**.
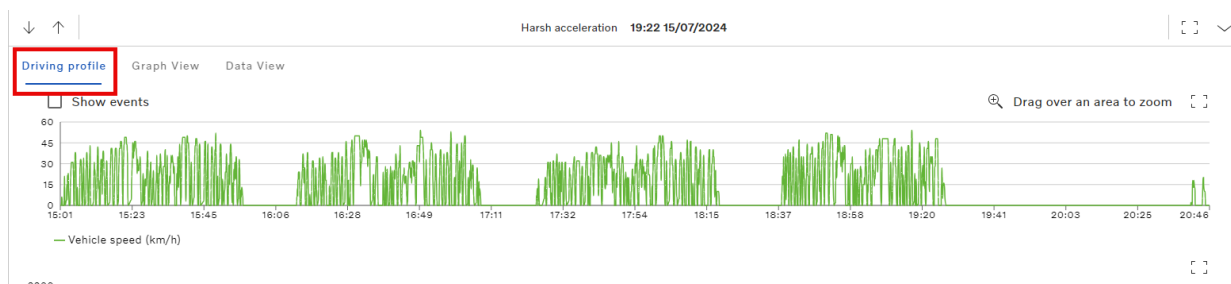

Figure 1: Driving profile tab in Position History.

The five graphs are:

- Vehicle speed
- Engine speed
- Altitude
- Fuel level
- Total weight

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Click **Show events** to display detailed information in the graphs on single events. When you hover over an event, you can get information about the following parameters:

- Engine speed
- Vehicle speed
- Total weight
- Engine coolant temperature
- Fuel Level
- Total Consumption
- Current gear
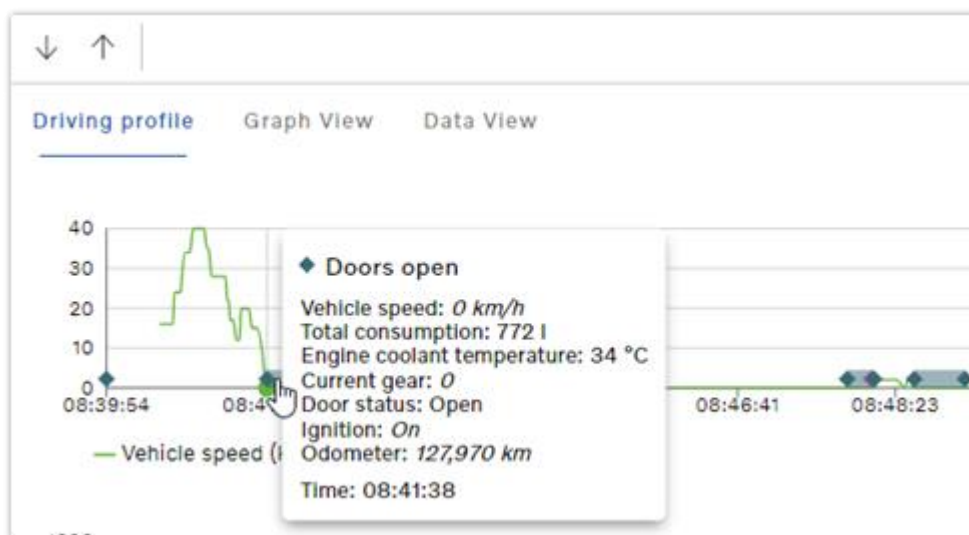- Door status
- Odometer
- Ignition status
- Driver
- Time

Figure 2: Hover over an event to display more information.

1.8.8 Zone management

In the menu **Asset types** there is a section called **Zones**. You need to have a zone role to be able to access zones – fleet user, zone admin or internal zone admin. The number of all currently available zones are shown to the right.

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Figure 51: Zones section in map menu

1.8.8.1 Zones overview

There are seven different types of zones currently available:

- Safety Zones
- Coaching Zones
- Zero Emission Zone
- Battery Saving Zone
- Charge Monitoring Zone
- Assignment Zone
- Unassignment Zone

If at least one vehicle in the fleet has the zone service active, the menu will appear automatically.

- **Safety Zones** is available in the portal if there is at least one vehicle in the fleet that has Safety zone service.

- **Coaching Zones** is available if there is at least one vehicle in the fleet that has the Coaching zone service.

- **Zero Emission Zone**, **Battery Saving Zone** and **Charge Monitoring Zone** is available if there is at least one vehicle in the fleet that has the Zero Emission zone service.

- **Assignment Zone** is available if there is at least one vehicle in the fleet that has the Assignment Zone service.

Under Zones on the left-hand side menu there is a list of the following types of groups:

- All Zones group containing all zones in the fleet available for the fleet user.
- All zones per zone type, e.g.
  - Safety Zones group containing all Safety Zones.
  - Coaching Zones group containing all Coaching Zones.

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- User created groups which have additional menu displaying options for editing the name of the group.
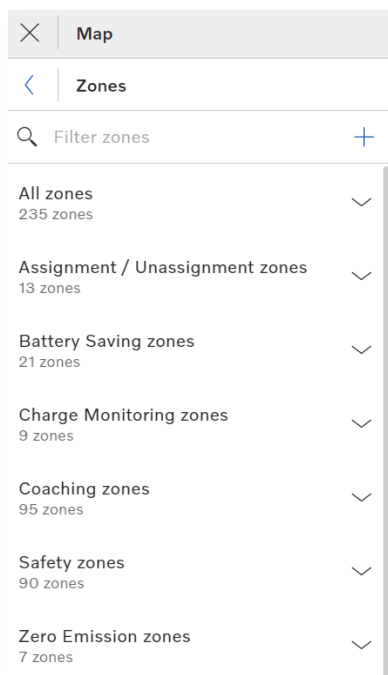

Figure 52: Zone groups

Filter zones is available for filtering the zones in the fleet and the possibility to create a new zone type. The user needs Zone Admin credentials to create a Safety/Coaching zone. For Zero Emission zones, the Internal Zone Admin role is required.

Note: Time zone is picked from the center point of the drawn shape, and new and older zones will always show that local time zone, regardless of where the user is located.

1.8.8.2 Show zone details

When the user selects a zone in the zone list, zone details are shown. Depending on the credentials that the user has it is possible to edit, delete or just view the zones. Depending on the zone type, different zone details can be shown:

- Type of the zone, name and shape
- Status if it's active or inactive
- Group
- Schedule activation
- List of triggers
- List of vehicles

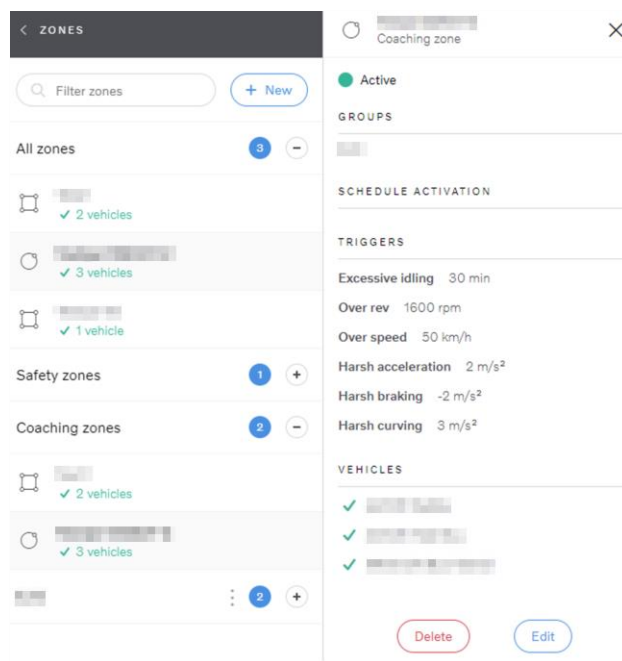| Company name		Type of document		
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Figure 53: View created zone

1.8.8.3 Create a new zone

The user must have a role with special credentials in an order to create zones.

When the user wants to create a new zone, the following options are available:

- Shape of the zone (rectangle, circle or polygon)
- Name of the zone
- Groups
- Schedule activation: Always active or Schedule activation
- Activation condition: List of triggers depending on Zone type
  - o Safety Zone: Speed limit
  - o Coaching Zone, Over rev, Over speed, Harsh braking, curving and acceleration, Excessive Idling
  - o Zero Emission Zone: Electric mode (advisory), Electric mode (mandatory)
  - o Battery Saving Zone: Combustion engine
  - o Charge Monitoring Zone: On enter criterion, On leave criterion
- Assign a vehicle or all vehicles to a zone
- Status of the zone: Active or Inactive

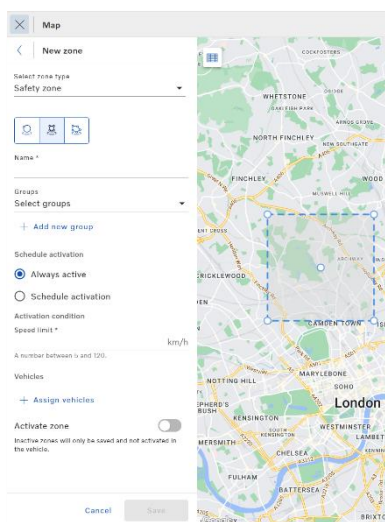| Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		43

Figure 54: Create safety zone

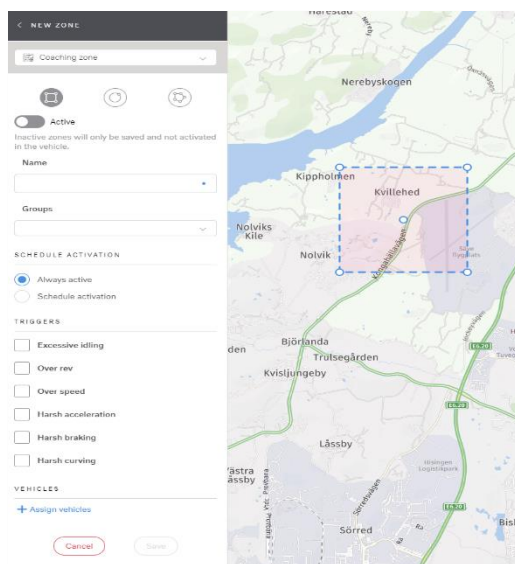After adding all the details it's possible to save or cancel.

Figure 55: Create coaching zones

For all zones, you can select between two active modes, **Always active** or **Scheduled activation.** Scheduled activations can be scheduled to have the zone active within one or several intervals. The scheduled activation will only apply if the zone is set to active with the toggle bar.

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Click **Save** to save your zone. By selecting your zone in the list of saved zones you can check the conditions and when they will activate.
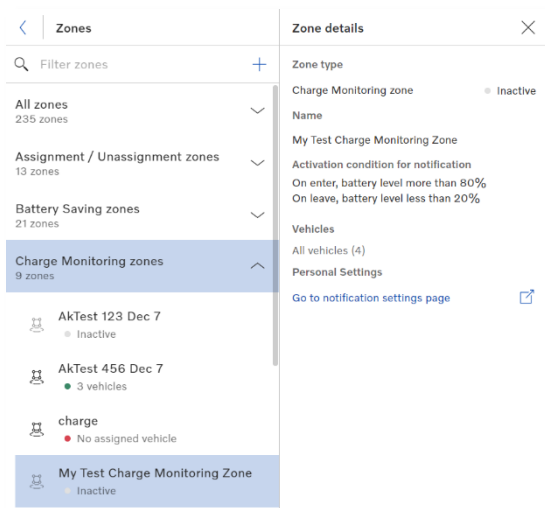

Figure 56: Example of a saved zone, with the activation conditions.
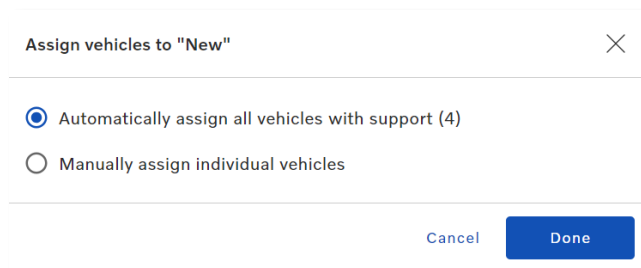
1.8.8.4 Assign vehicles to zone

Figure 57: Add vehicle to zone

When the user clicks **Assign Vehicles,** the following view is displayed:
- Automatically assign all vehicles with support (*digit showing number of vehicles with service active currently)*
- Manually assign individual vehicles

If the user chooses to manually assign individual vehicles, a window is displayed which lets the user select which vehicles that should be assigned to the zone.

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Figure 58: **Manually assign individual vehicles to a zone pop-up window**

When assigning vehicles manually, vehicles that subscribe to the zone service in the future will <u>not</u> be added to the zone.

1.8.8.5 Assign a zone to a route

To assign a zone to a route, go to the preferred route and click on **+Assign Zones.** Select which zone to assign in the list of zones presented. If for example the Zero Emission zone has vehicles assigned to it, make sure to remove the assigned vehicles before the zone can be assigned to the route.

When a zone has been assigned to a route it is then active in the direction of the route, from A to B, and not in the opposite direction.

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1.8.9 Route planning

Route planning is available for the role Internal zone admin.

To create a route, go to the Map tool, select **Routes** in the menu on the left-hand side and click the **+New** button. Type the starting point address and destination of the route, or click the map.
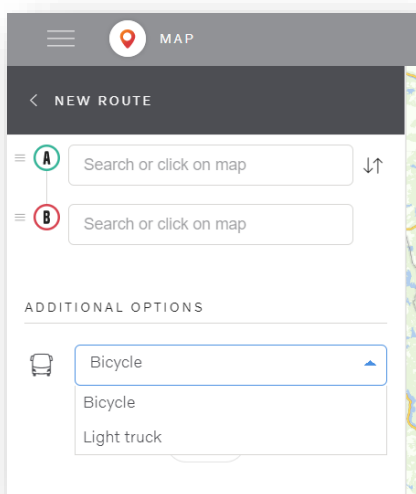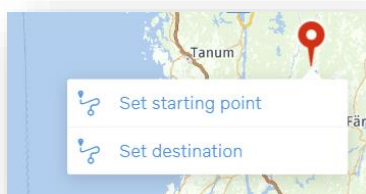

Figure 59: Create new Route

Figure 60: Right click on map

More destinations can be added to the route, and the order of the destinations created can be changed. To rearrange destinations, click the arrows to the right or drag and drop the three lines to the left of each row.

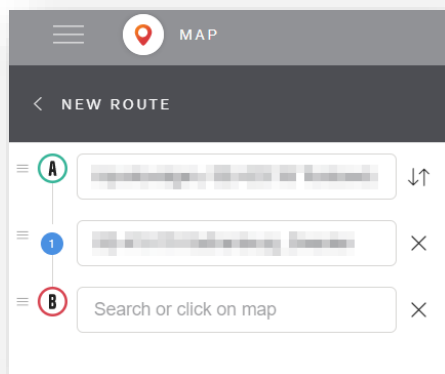| Company name		Type of document		
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Figure 61: Add and rearrange destinations

Once the starting point and destination are set you can choose between **Bicycle** or **Light truck** as routes, where **Bicycle** is adapted for city buses and **Light truck** for long-distance coach buses.

Once the route is created, it takes a few seconds for it to be synchronized with Consat. During this time the route cannot be edited.
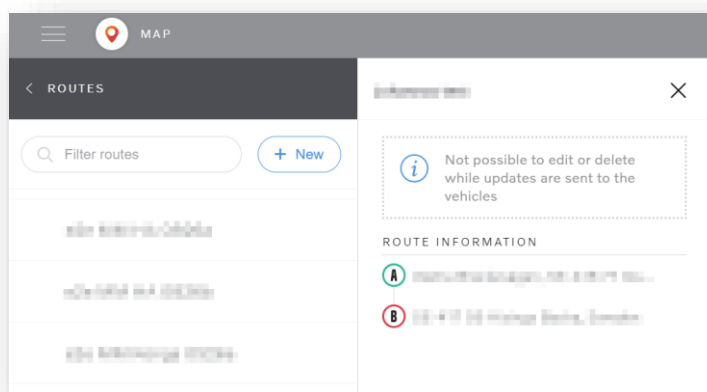

Figure 62: Information during Consat synchronization

Once the synchronization is complete you can edit the route, assign vehicles to it or delete it.

Company name		Type of document		
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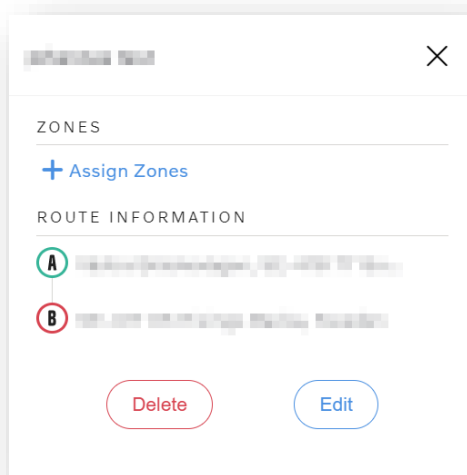Figure 63: Synchronized route

1.8.9.1   Assign zone to route

To assign a zone to the route, click **+ Assign Zones** and select what zone you wish to assign. You will get a list of zone groups, according to the zone management, where you can pick a zone to add to your route.
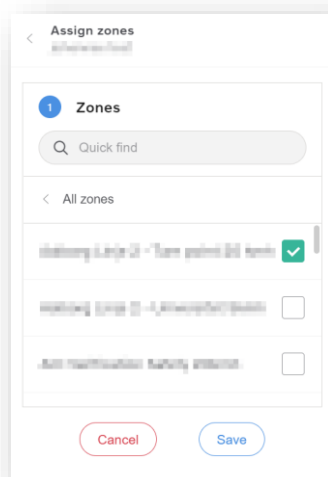

Figure 64: Assign zones to route

If a zone is created but are currently in a pending state, it will be listed in the selection list but greyed out and cannot be assigned to a route. If a Safety zone has a vehicle assigned to it, it cannot be assigned to the route. Make sure that you then remove the assigned vehicles from the zone, then you can assign the zone to the route.

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When you have selected zones, click **Save** and you will end up in the main view of your route. If you want to remove an assigned zone from the route, click **Assign zones** again and unselect the boxes of the zones you wish to remove from the route. Then click **Save**. Note that Safety zones can be assigned to several routes, while the Assignment zones can only be assigned to one route.

When a zone has been assigned to a route it is active in the direction of the route, from A to B, and not in the opposite direction.

To edit your route, click the **Edit** button on your route. You can edit the name, destination points and the type of the route. Click **Save** when you are done. To delete a route, you simply click the **Delete** button for that zone and then verify. If you have assigned zones to your route, these must be removed before deleting the route.
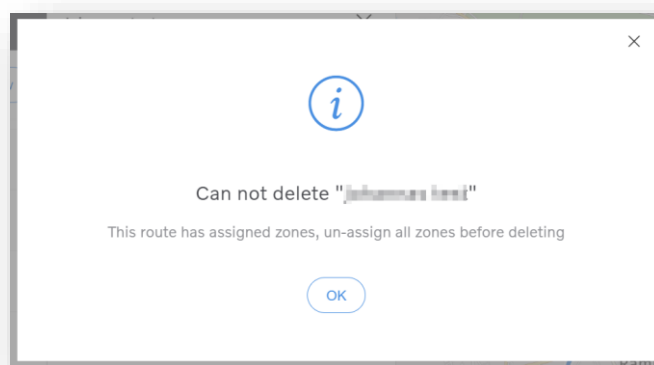

Figure 65: Cannot delete zone

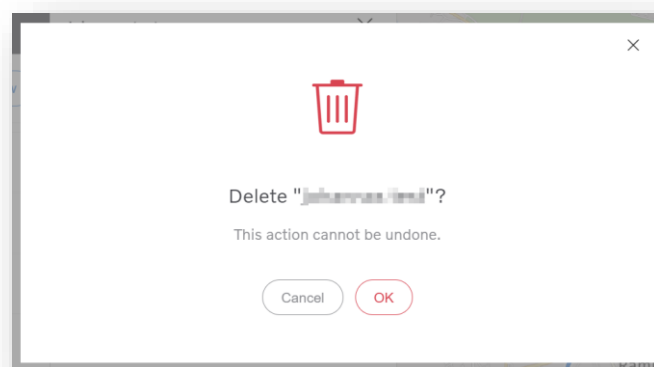Once the assigned zones are removed from the route, you can delete the route.

Figure 66: Delete confirmation

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Volvo Connect Release Notes		1.0		50

1.8.10 Assignment/Unassignment zones

To assign and unassign zones, you need to have the role of Internal Zone Admin and the vehicles must have the services Assignment zone service and Event service. To access the zone administration, go to the Map tool and **Zones** in the left-hand side menu.

An assignment zone needs to be connected to a route that includes other zones. When a vehicle enters the assignment zone, it activates the zones along the route for the assigned vehicle. An unassignment zone clears all assigned zones from all routes for the assigned vehicle.
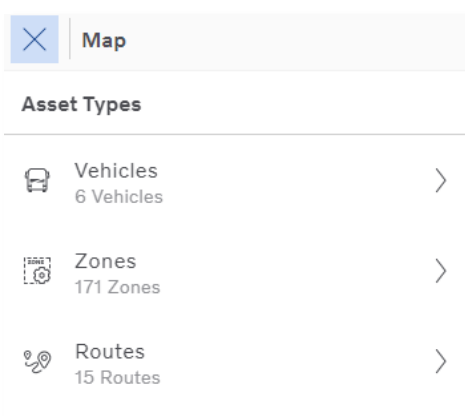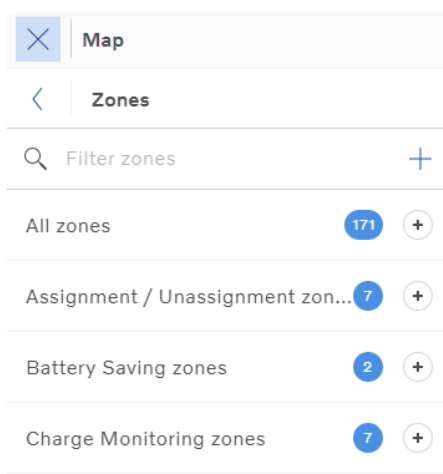

Figure 67: Left-hand side menu

Figure 68: Zone groups

A list of the groups for the different types of zones are shown. To create a new zone, click the plus symbol in the top-right corner of the group list and select what kind of zone you wish to create.

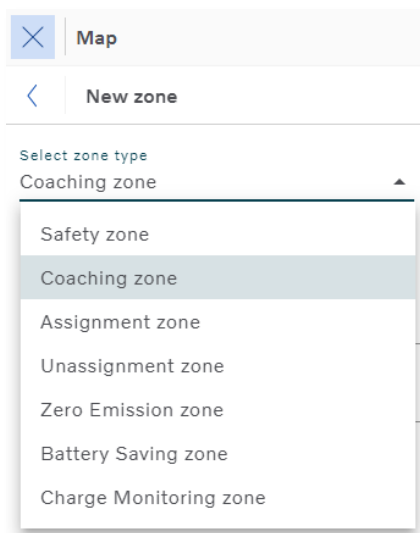| Company name		Type of document		
Volvo Buses		Release Notes		
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Figure 69: Zone types

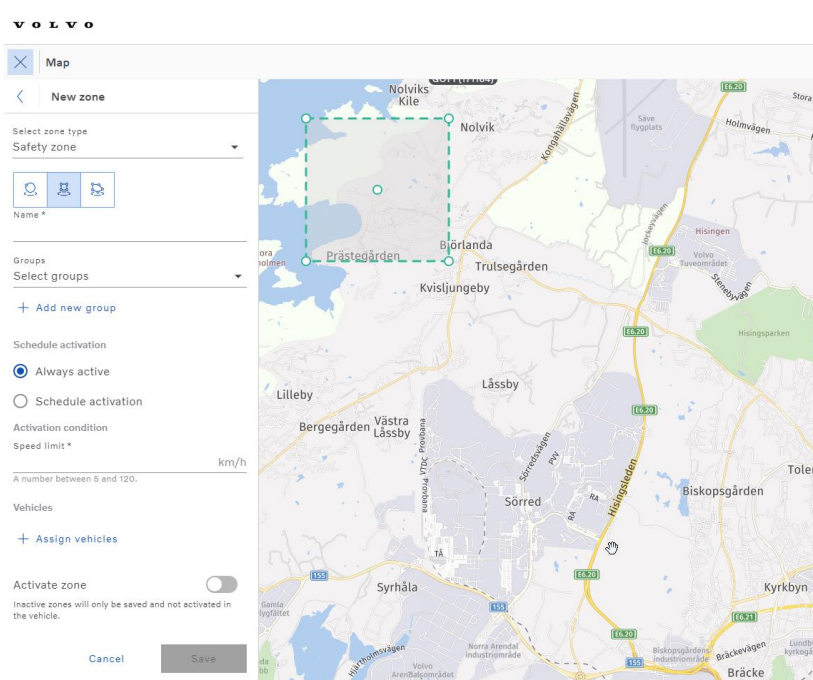To create assignment and unassignment zones works the same way.

Figure 70: Create assignment/unassignment zone

First select the shape of the zone you wish to create; square, circle or polygon. To change to size of the shape you simply click one of the white dots and drag and drop to the size you want. To change the shape of a polygon you click the smaller white dots, and to change the size you click the bigger white dots.

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You can enable if the zone should be active towards the vehicles, and there are different activation conditions depending on the selected zone.

Give your zone a name and add it to a zone group. If you wish to schedule your zone, what hours of the week the zone should be active, you can type a time span and select active days. If you want to add a second time span, click **+ Add more intervals.**

Figure 71: Schedule activation

The last thing is to assign vehicles to your zone. The vehicles assigned to the assignment zone will activate zones associated with the route.

If no vehicles are assigned to an unassignment zone, all vehicles will automatically be assigned to it when the zone is saved.

Figure 72: Assign vehicles

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When the assignment/unassignment zone is created it will be listed in the menu and can easily be edited or deleted. The zone is visible on the map with a purple line.
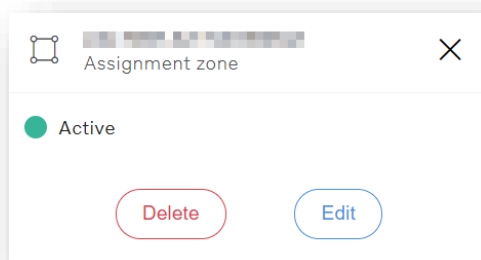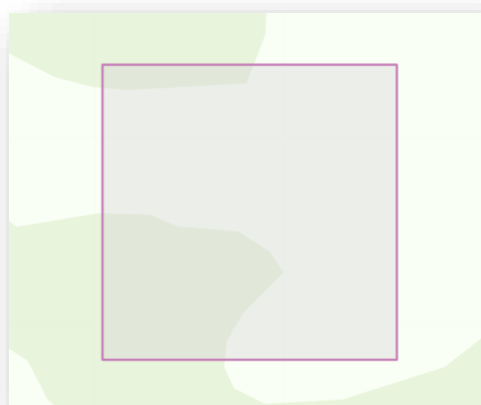

Figure 73: Created assignment zone

Figure 74: Purple zone in map

Routes in FM and Volvo Connect are calculated in slightly different ways. When editing an imported zone from Consat the route between the way points will potentially be recalculated. If you edit the zone, make sure that you know what the route looked like so that you can create it in the same way.

Imported Consat zones will be added to a specific zone group called **FM imported routes.**

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1.9 Digital Tools - Assets

1.9.1 Vehicle status

1.9.1.1 Landing page – fleet overview

The landing page in Assets is a fleet overview, with the fleet's current status of lit warning lamps and alarms.
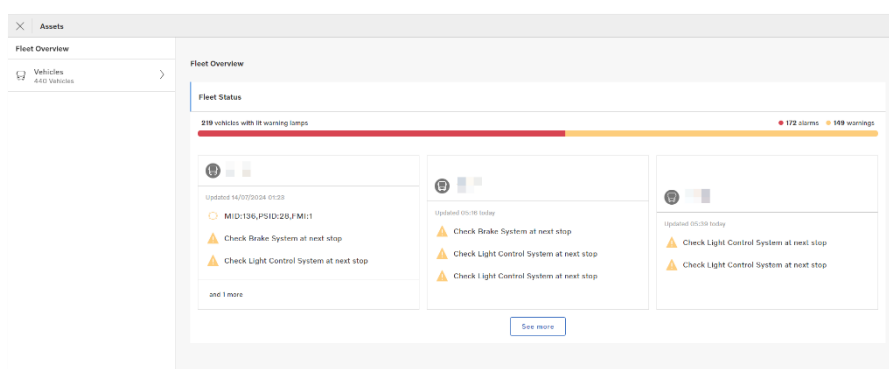

Figure 75: Fleet overview

The status bar gives you an overview with the current number of

- vehicles with lit warning lamps
- alarms
- warnings.

Under the status bar there is a list of vehicles with lit warning lamps, sorted by number and severity of the warning (first alarms, then warnings).

The card shows

- the vehicle name
- the last time the vehicle updated its fault codes status
- a list of max. 3 fault codes for the vehicle (red icons for alarms and yellow for warnings).

If no message exists for the fault code, we will display code for it.

Also visible on the card is the number of warning lamps lit if more than 3.

Hovering a card will make the cursor become a pointer and the border of the card will become blue to represent a link to that specific vehicle page.

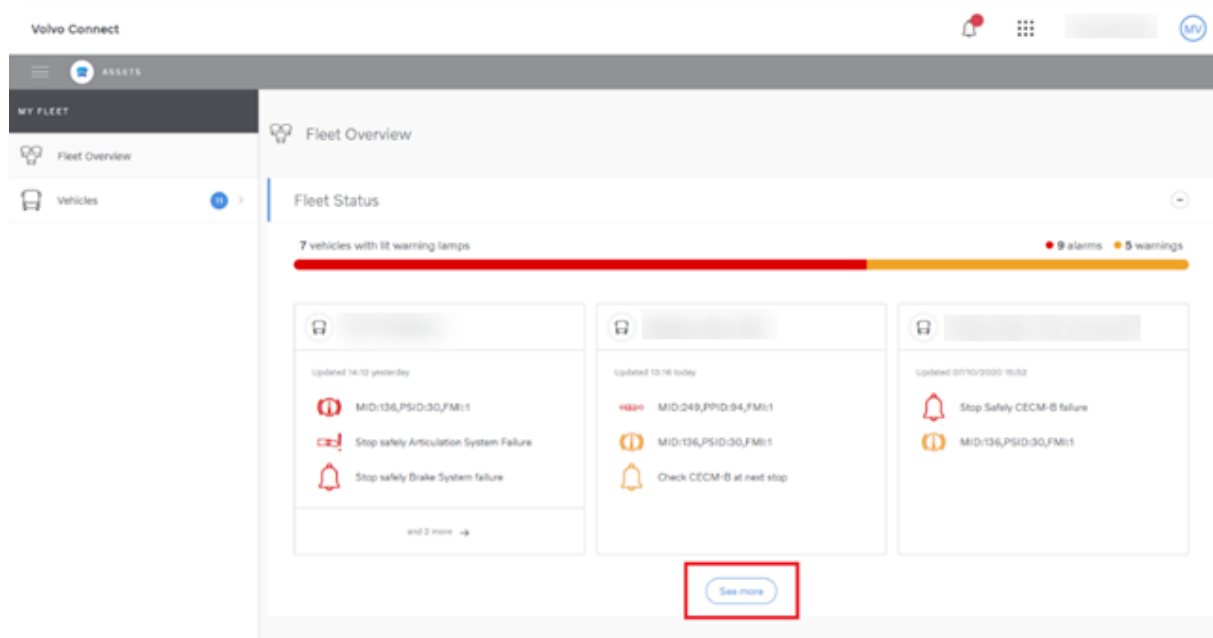| Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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Figure 76: See more vehicles

Click the **See more** button to show more vehicles with warning lamps (the number of vehicles displayed depends on the size of the screen).
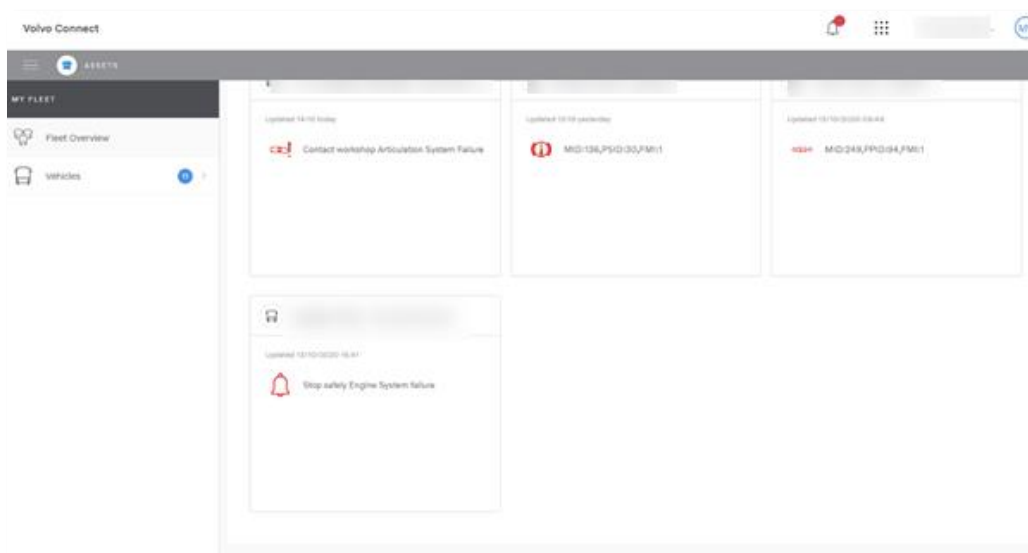

Figure 77: Active alarms/warnings on vehicle

When there are no more vehicles with warning lamps to display, the **See more** button disappears.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		56

1.9.1.2 Vehicle list with groups and statuses

The left menu includes the following:

- A search input field where you search for a vehicle, or some letters to filter the buses by vehicle name.
- A **My vehicles** group that contain all the vehicles in the fleet.
- A list of groups with the number of vehicles that are currently in each specific group.
- A **My previous vehicles** group that shows the vehicles that are no longer connected.
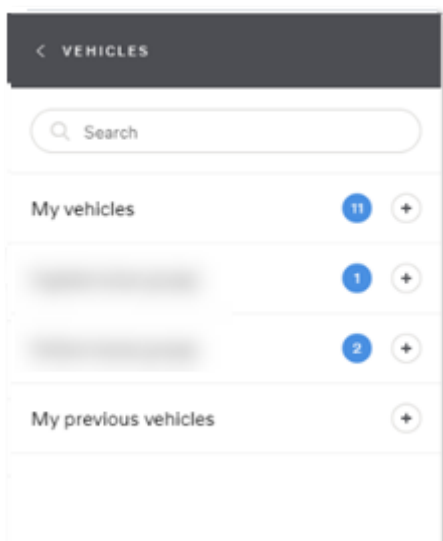

Figure 78: Vehicle groups

Clicking on a group will expand it and display the vehicles that are currently in that group.

Expanding the **My vehicles** group displays a list of vehicles. An icon before the vehicle name means that the specific vehicle has one or more alarms or warning lamps lit. The icon is yellow if the vehicle has a warning lamp lit, and red if it has any alarms.

Clicking on a vehicle will open the details page for a specific vehicle.

1.9.1.3 Vehicle page with status bar

Selecting a vehicle from the left menu will open that specific bus page. In the top part, the vehicle name along with a status bar is displayed.

If the vehicle doesn't have any active fault code, an information box will tell you that there are no active warnings for the current vehicle.

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If the vehicle doesn't have any historical fault codes, an information box will tell you that there are no historical fault codes. Historical fault codes older than 90 days will not be displayed.
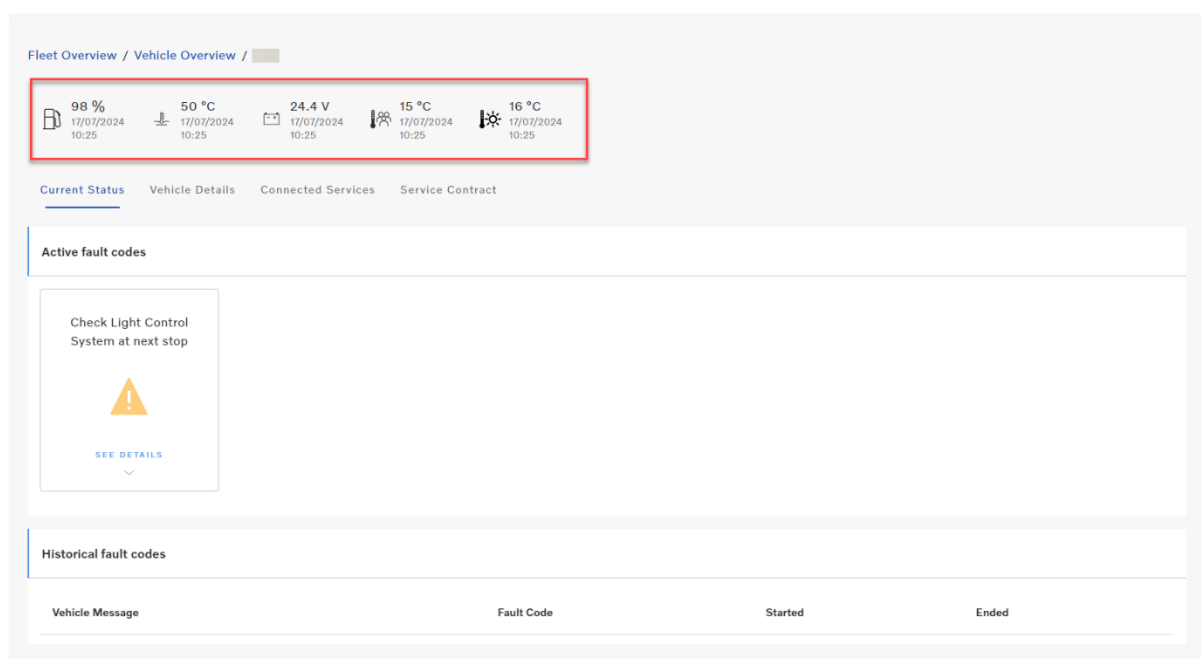

Figure 79: Information status bar

In the above picture, the name of the vehicle and the status bar with information is displayed. The status bar shows information about fuel level (both electrical and diesel fuel), the engine coolant temperature, the battery voltage, the interior temperature and the exterior temperature.

1.9.1.4 Active fault codes

The **Active fault codes** section is shown below the status bar. This section displays if there are no active fault codes for the vehicle, or the active fault code represented in a card. The following information is shown:

- Name of the fault code (if the name is missing, a code of the fault code is displayed).
- Icon representing the fault code in the center (red for alarms and yellow for warning).
- Button with "see details". Clicking on it will expand a section to show details for the specific fault code.

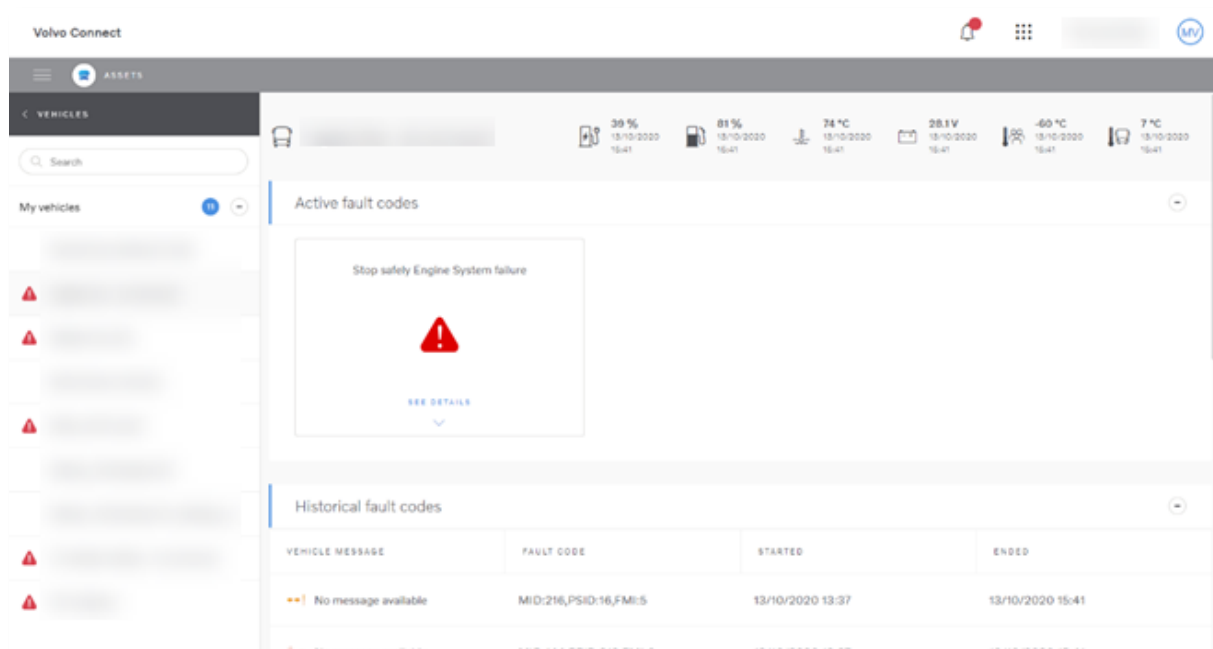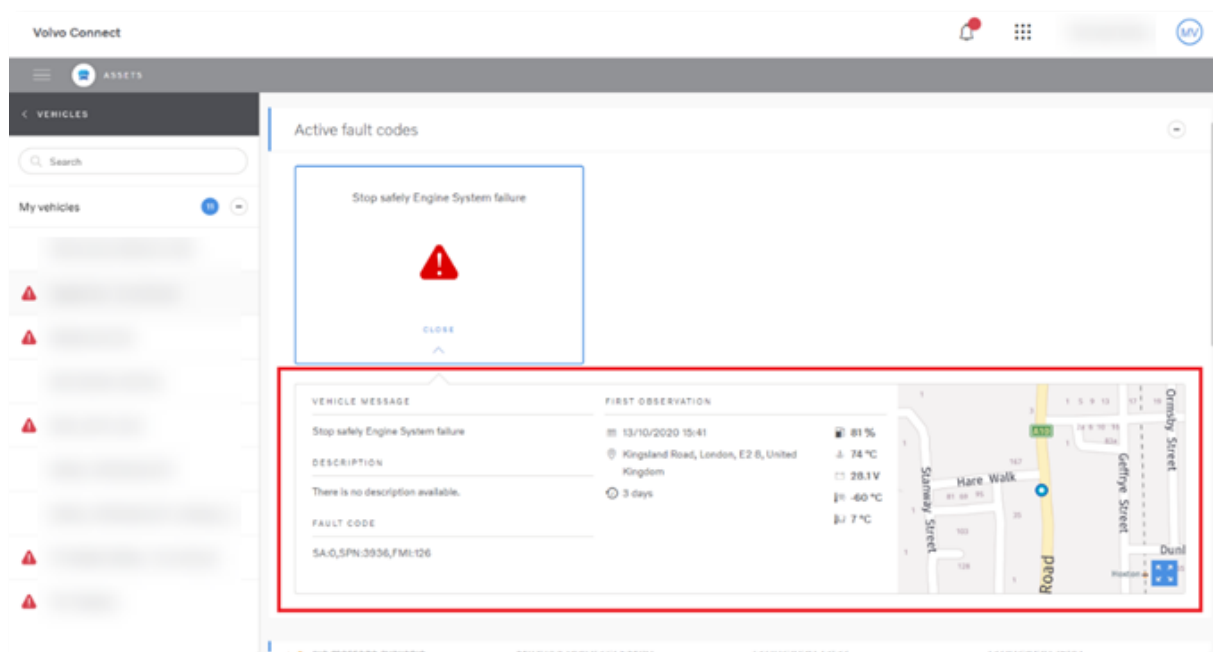| Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		58

Figure 80: Active fault codes

Clicking on a specific fault code will make its border blue to highlight that it is selected. When you click a specific fault code, a section with the fault code details will appear. It will show additional information, including the position where the vehicle was when the fault code occurred.

Company name	Type of document		
Volvo Buses	**Release Notes**		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	**1.0**		**59**

Figure 81: Fault code descriptions

1.9.1.5 Historic fault codes

In the **Historical fault code** section, the following information is displayed:

- The icon for the specific fault code (red for alarms, yellow for warnings).
- A vehicle message, if it exists together with the fault code.
- The code for the specific fault code.
- The date that the fault code started.
- The date that the fault code was fixed or ended.

Figure 82: Historic fault codes

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		60

1.9.2 Service Contract

In the Assets tool, there is a **Service Contract** tab. If an asset has a service contract, its contract information and additional details are shown on this page. If an asset doesn't have a contract, the page will display an information window and a button that directs you to the Volvo Buses website for service contracts.
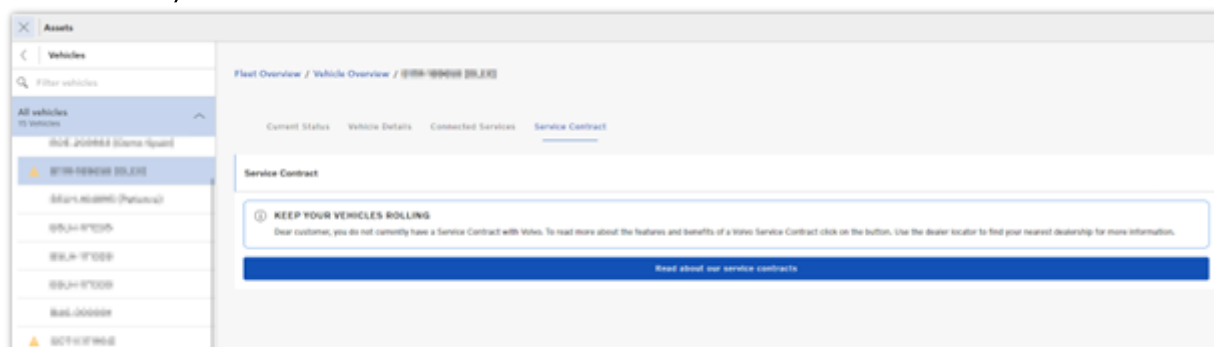

Figure 3: Service Contract page for an asset without a contract.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		61

1.9.3 Vehicle Details

In the Vehicle details, technical information about the vehicle is shown.
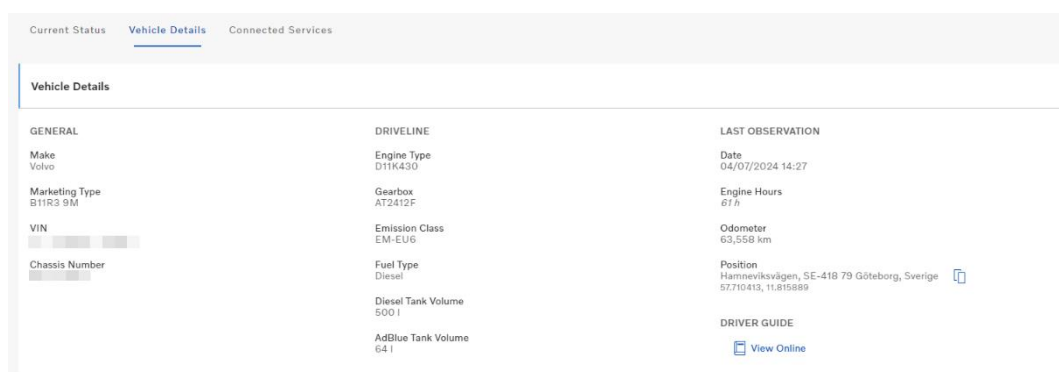
Figure 3: Vehicle Details tab in Assets

Vehicle Details > General

- Make
- Display Name
- VIN
- Chassi number
- Registration number
- Age
- Build year
- Vehicle profile
- Marketing Type
- MAC address (for electric vehicles)

Vehicle Details > Driveline

- Engine type
- Energy Type
- Motor Type
- Gearbox
- Emission class
- Emission profile
- Fuel type
- Diesel tank volume
- AdBlue tank volume
- Battery capacity (for electric vehicles)

Company name	Type of document		
Volvo Buses	Release Notes		
Name of document	Version	Reg. No.	Page
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Vehicle Details > Last Observation

This section is populated by data from Event service.

- Engine hours
- Odometer
- Position
- Timestamp

1.9.4 Connected Services

This tab displays all connected services that are currently active on the vehicle.
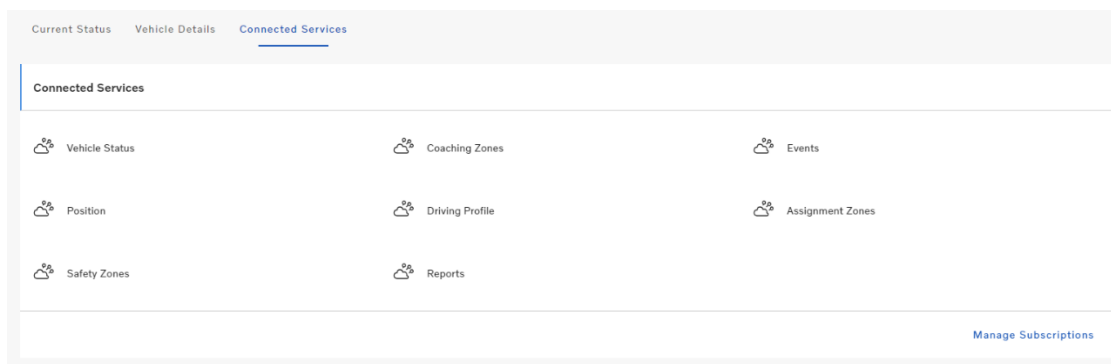

Figure 83: Connected Services tab in Assets

1.9.5 Equipment

If you have any equipment that is associated with your vehicle, you can easily add them in Volvo Connect. To add equipment, select a vehicle in the Assets tool and click the **Equipment** tab. Then click **Add new.**
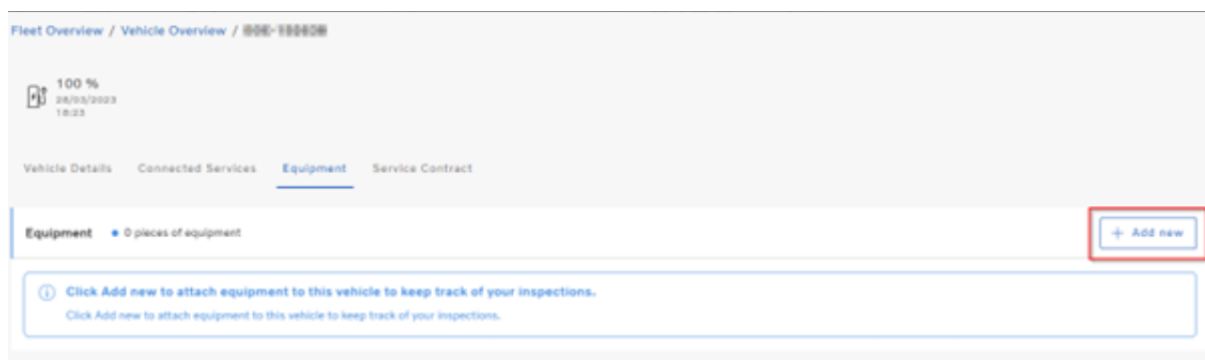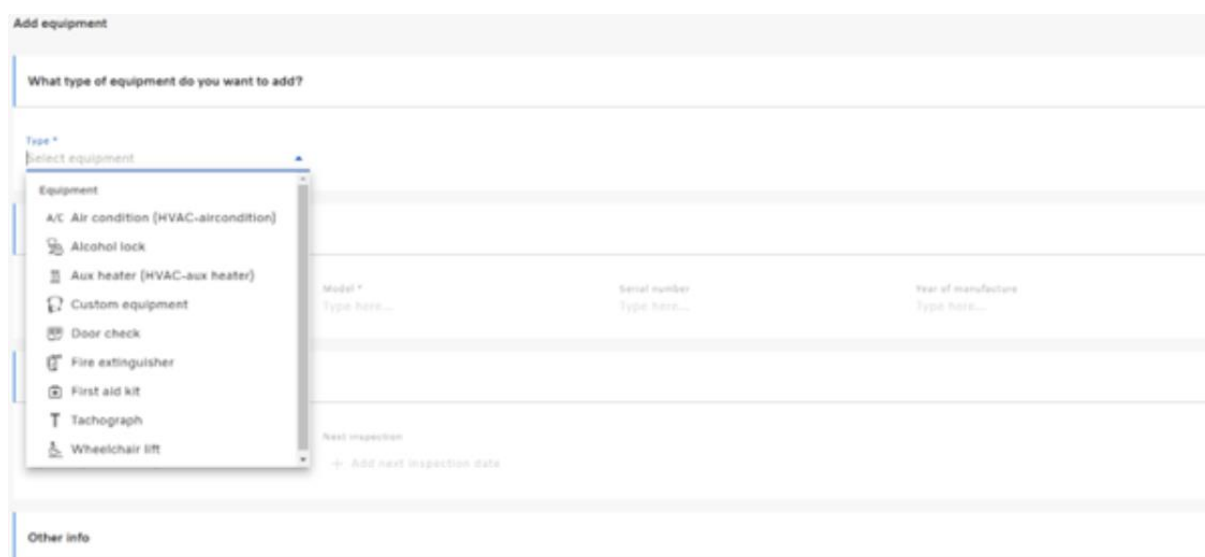

Figure: Equipment tab in the Assets tool, with Add new highlighted.

Company name		Type of document			
Volvo Buses		Release Notes			
Name of document		Version	Reg. No.		Page
Volvo Connect Release Notes		1.0			63
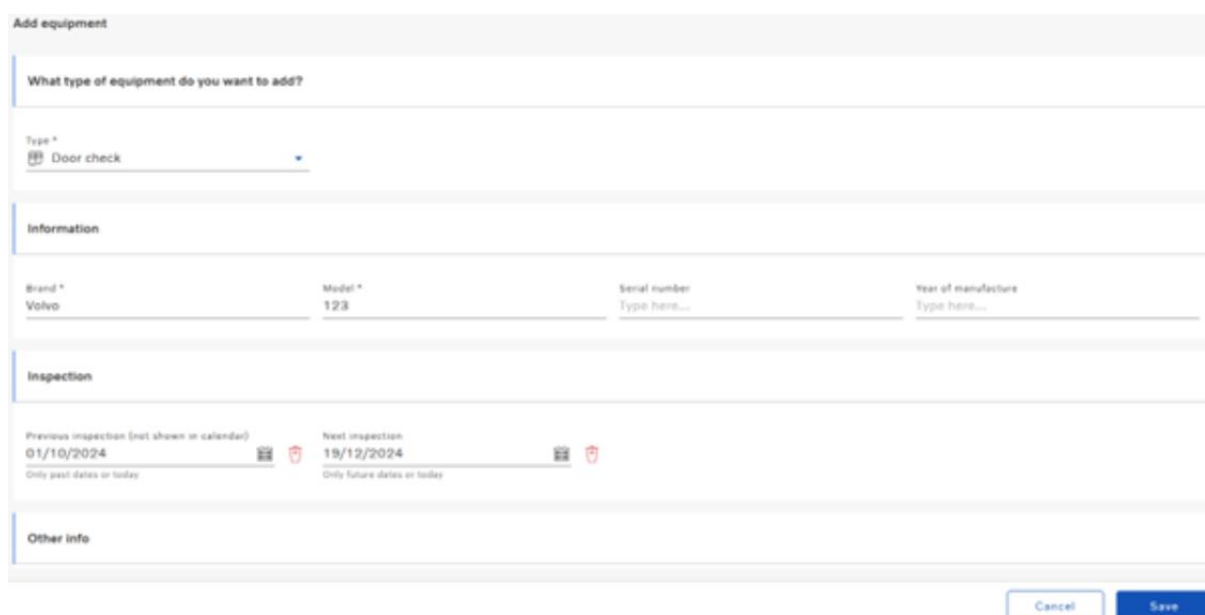
In the drop-down list, select the type of equipment you want to add. Brand and model are mandatory input information, while serial number and year of manufacture details are optional.

Figure: Add equipment page.

You can add a previous inspection date, as well as the next inspection. The next inspection date will be added as a task in the Calendar tool. Once you have added the information, click **Save.**

Figure: Add equipment page.

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Figure: Example of an added equipment.

Figure: Example of an inspection due date in the Calendar tool.

If you want to edit or delete the equipment, click the three vertical dots. When multiple equipment items are added to a vehicle, they will be conveniently listed in the **Equipment** tab dedicated to that vehicle.

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Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		65

1.10 Digital Tools – Reports

Reports are using data from services Reports, Events and Electromobility Data.

The Report tool consists of a set of standard reports as well as possibilities to define your own reports. Each report can be filtered on time, assets and parameters.

The standard reports depend on what vehicles and services the fleet has. Available reports are

- Performance Report (Reports service)
- Fuel & AdBlue report (Reports service)
- Environmental report (Reports service)
- Odometer report (Reports or Events service)
- Summary report (Reports service)
- Safety Report (Reports service)
- I-Coaching report (Reports service)
- Energy Usage report (Electromobility data service)
- Electric Performance Report (Electromobility data service)
- Tracking report (Events service)
- Passenger Load Report (Events service)

1.10.1 Customizing reports

Each report can be filtered on time, assets and parameters in the **Filter.**

The reports can be customized and created as a new report to meet your needs, combining parameters from different standard reports. Apart from the parameters listed by default in each standard report, there are other parameters to choose from in the parameter selection.

From the **Options** menu in the top-right corner, you can save the report as a custom report and export the report to PDF and Excel.

An existing report can be modified and saved as a custom report.

1. Open the report.

2. Go to **Filter** and select time span, vehicle/drivers and parameter to include in the report.

3. Apply the selection.

4. Go to **Options** menu and select **Save as.**

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Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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5. Fill in name and description (optional) and if you want to share your report with other fleet users.

6. Save the report.

Time span and asset will be displayed if you click the (i) icon.

You can also create a new report from scratch by clicking the **+** button on top of the left hand menu. In **Create New Report** you can select timespan, trend view, assets and parameters. Once applied, the report can be saved in the same way as a modified report.

You find your Custom reports under a specific heading below the Standard reports.
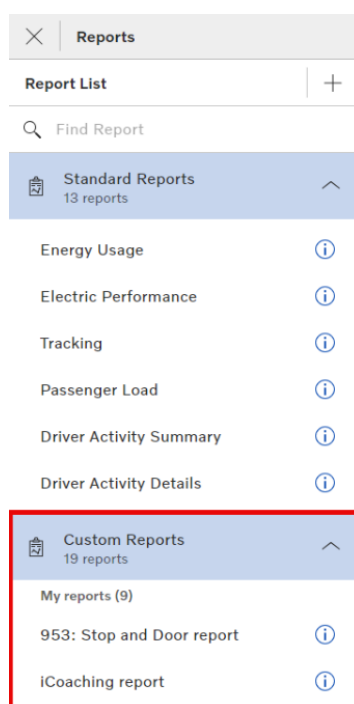
Figure: Location of custom reports highlighted

1.10.1.1 Managing Custom reports

All stored Custom Reports are located below the Standard Reports in the menu to the left. The menu is divided into two sections: **My reports** and **Shared by others.**

Company name	Type of document		
Volvo Buses	Release Notes		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	1.0		67
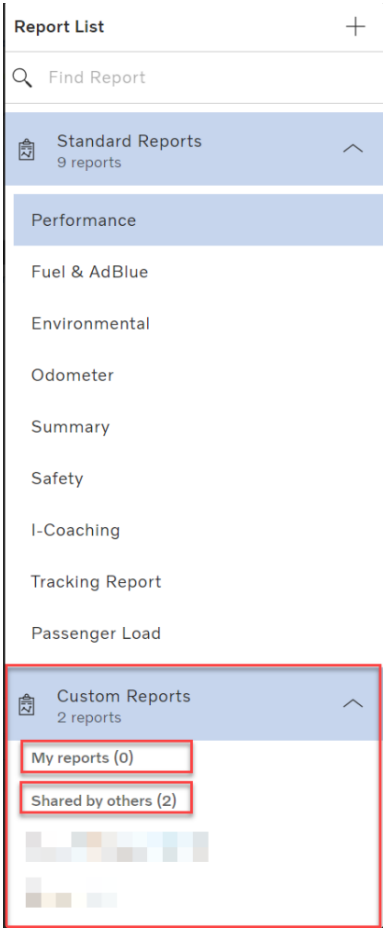
Figure: Custom reports menu with My reports and Shared by others

My reports are reports you have created. This list contains both reports that are private to you and that you have shared with the fleet.

Shared by others are reports that other fleet users have created and that they have chosen to share with the fleet.

When you open a report, you can click on the information sign next to the report name to open more information.
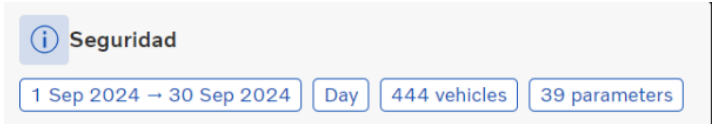
Figure: Click Information (i) sign to open more information

This will open a menu to the right. Here you can see if the report is shared to the whole fleet or not and if it's being shared on e-mail. This is also where you can remove your report.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		68
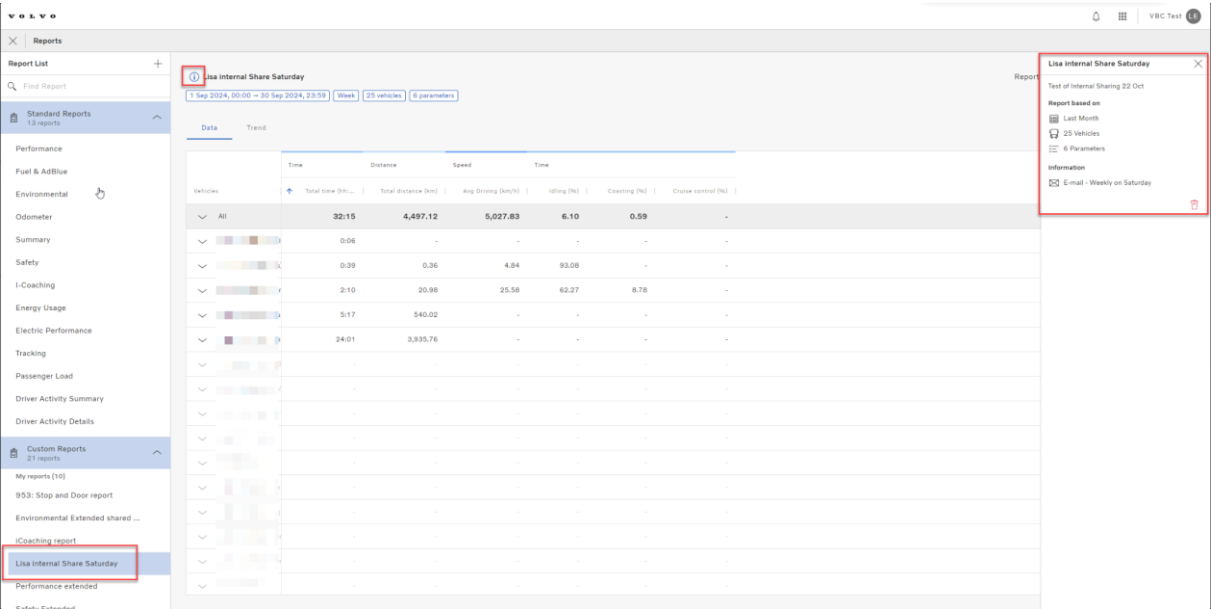
Figure: Click the information sign to see if report is shared on e-mail and with fleet

1.10.1.2 Share reports on e-mail

There are two ways of sharing reports on e-mail. Both are accessed from the Options menu in the upper right corner.

If you share a report to yourself or other fleet users with access to Volvo Connect, select Save as/share.
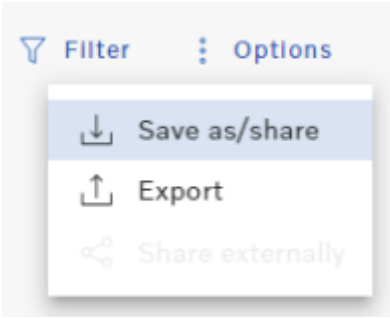
Figure: Save as/share to share internally

If you share a report to external e-mail address without Volvo Connect access, select Share externally

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		69
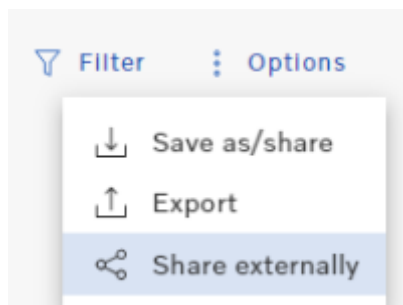
Figure: Share externally

1.10.1.2.1 Save as/share | Share to yourself or other fleets users

Click **Options** and **Save as/share.** You will see a pop-up with information to fill out.

Save as/Share pop-up

In the save process, the report will be stored as a Custom report that you access via the Custom Reports heading.

Fill out the table by giving the report a name that will be shown under Custom reports and in the e-mail, then

1   select **E-mail notification**

2   choose **Sendout interval,** Weekly or Monthly

3   optionally select **End date**

4   enter the e-mail address of yourself or another user of this fleet.

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Volvo Buses	Release Notes		
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Volvo Connect Release Notes	1.0		70

5   Press **Save**

After saving, your report will be visible under Custom Reports
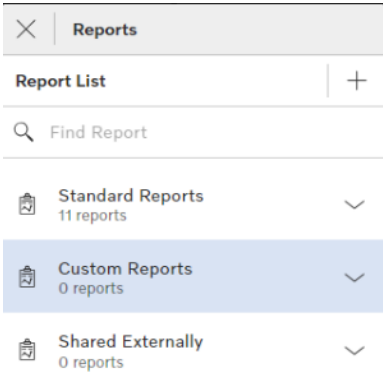
Figure: You find the report under Custom Reports

After saving, the subscription will be started and an e-mail with a link to Volvo Connect will be sent on the decided send out interval. The user needs to log on to Volvo Connect to access the report.
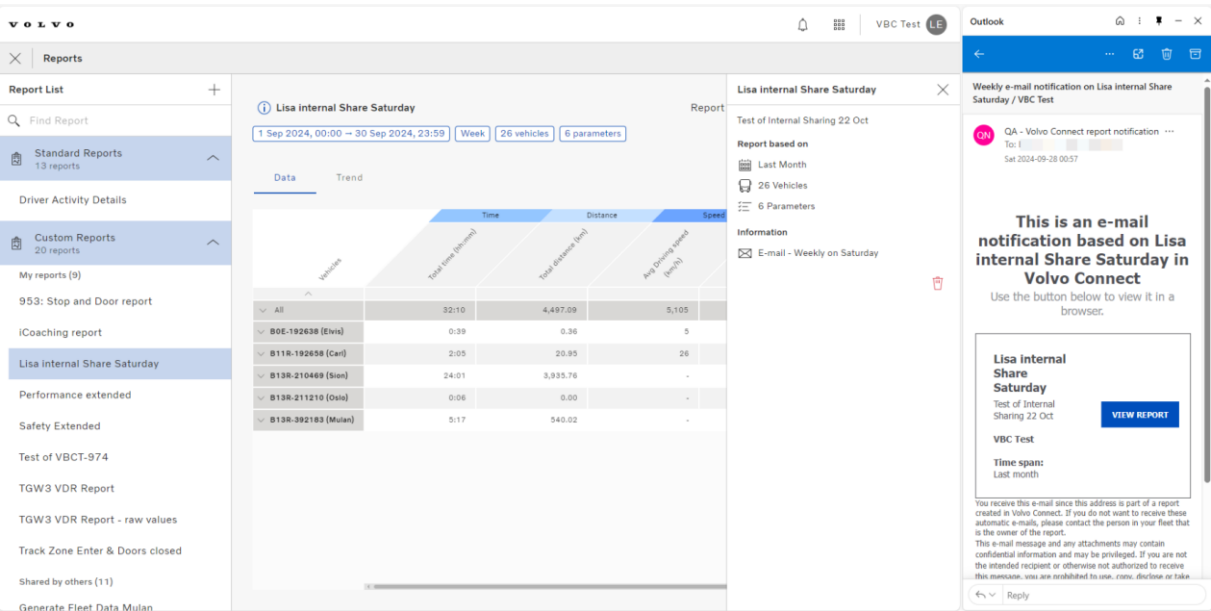
Figure: E-mail sent with link to access Custom report

If you have created a report and would like to remove a recipient e-mail address, you have to delete the Custom report and start over again. We would like to improve this process.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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If you don't check the "E-mail notification" checkbox, but you check the "Share your custom report with all fleet users", the report will be shown to all fleet users under Custom Reports, but it will not be sent on e-mail.

1.10.1.2.2 Share externally | Share to e-mail addresses that don't have Volvo Connect

It is possible to share your reports externally by email to others who are not users within the fleet where the report is created. You find the 'Share externally' option in the Options drop down menu in the upper right corner of the report view.

Figure: Share externally

To be able to share your report externally you first need to save it as a custom report. You find that option in the Options drop down menu.

Additional information about the report such as name, send intervals and recipients are required, and it is possible to set an end date.

When shared, the shared reports are found listed at the bottom of the report list under Shared Externally.

Company name	Type of document		
Volvo Buses	Release Notes		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	1.0		72
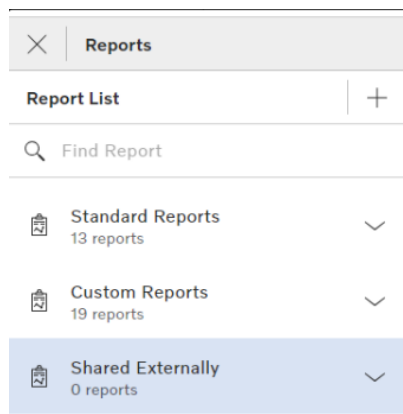
Figure: Location of Shared Externally

You can delete or edit your externally shared report after it has been created and saved, by clicking the report in the **Shared Externally** report list and then click edit or delete.

As receiver of a shared report, you get an e-mail with a link to where the report can be viewed.
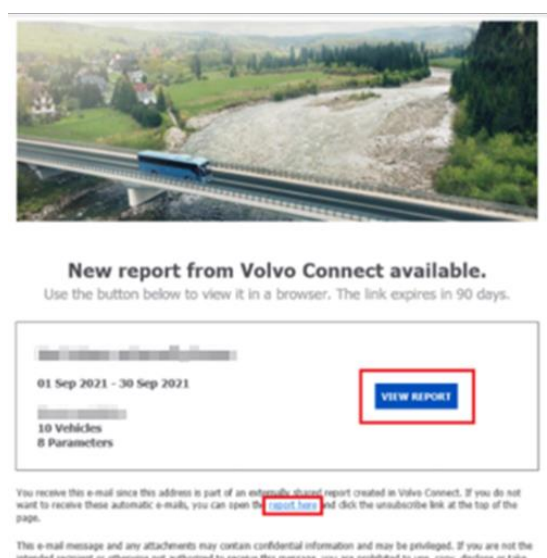
Figure: E-mail with link to report

When you click the link in the e-mail, the report is opened in a web browser from where you also can export or unsubscribe to it.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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Figure: Export or unsubscribe

1.10.2 Filters in Standard Reports

1.10.2.1 Time filter

The filter feature for all standard reports includes the following filters:

Today, Yesterday, Last 7 days, Last 30 days, Current week, Last week, Fortnight, Current month, Last Month, Current quarter, Current year, Custom time span.

Note: Summary report only includes Current week and Current month.
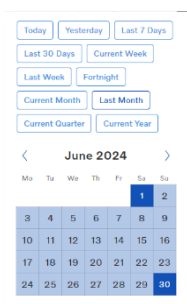
Figure: Example of filters

You can also set your own start and end time down to a time frame of four hours.

1.10.2.2 Trend resolution

Every report has a Data view and a Trend view

The Data view will show values summarized for the whole Time Period you have chosen.

The Trend view will break down the values with the resolution of your choice: Day, Week or Month.

Company name	Type of document		
Volvo Buses	**Release Notes**		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	**1.0**		**74**
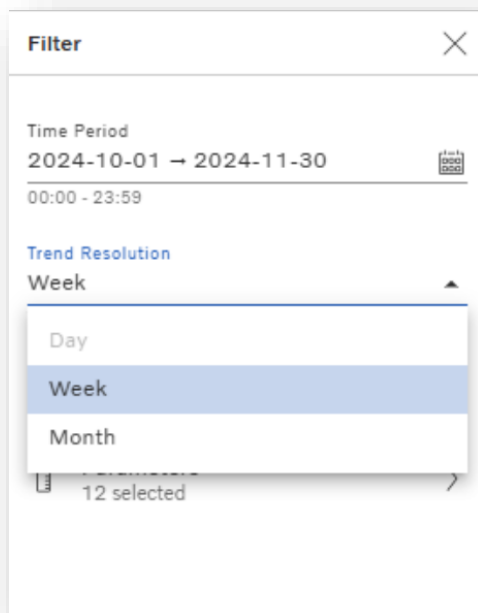
Figure: Trend resolution in Report filter

Which resolution is available depends on the Time Period in your selection.

The Trend view also shows a trend graph with one to two selected parameters, summarized for the whole fleet.

Trend view is useful for tracking daily, weekly or monthly progress.

1.10.3 Performance Report

The **Performance** report gives you a performance overview of a vehicle or driver. This will help you analyze why a vehicle or a driver uses a lot of fuel.

The parameters included in the performance report default view are:

- Total time (hh:mm)
- Total distance (km)
- Avg speed (km/h)
- Idling (%)
- Coasting (%)
- Cruise control (%)
- Diesel engine on (l)
- Avg diesel engine on (l/100km)

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		75

By default, electric vehicles are excluded from this report, but they can be added by using the Vehicle filter.
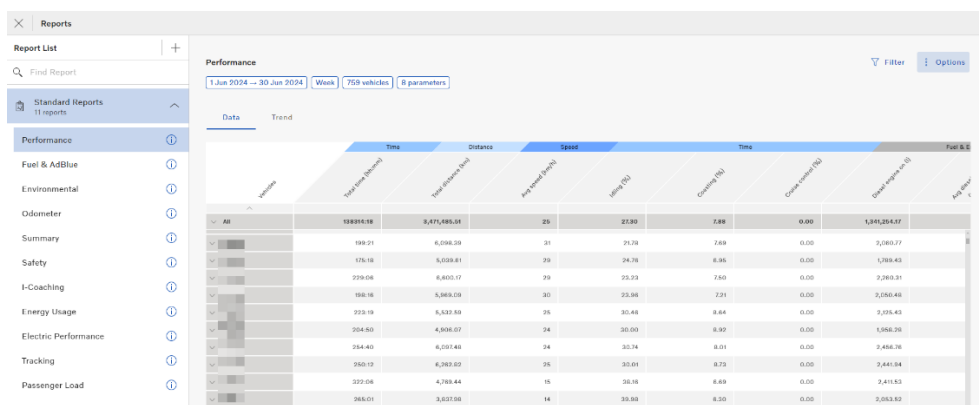
Figure: Performance report

1.10.4 Fuel & AdBlue Report

The **Fuel & AdBlue** report gives you an overview of the fuel consumption over time, for both diesel and AdBlue.

The parameters included in the Fuel & AdBlue report default view are:

- Diesel engine on (l)
- Avg diesel engine on (l/100km)
- Driving (l)
- Idling (l)
- Total AdBlue (l/km)
- AdBlue Ratio with fuel (%)
- Avg Adblue (l/100km)
- Avg Speed (km/h)
- Total driven distance (km)

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		76
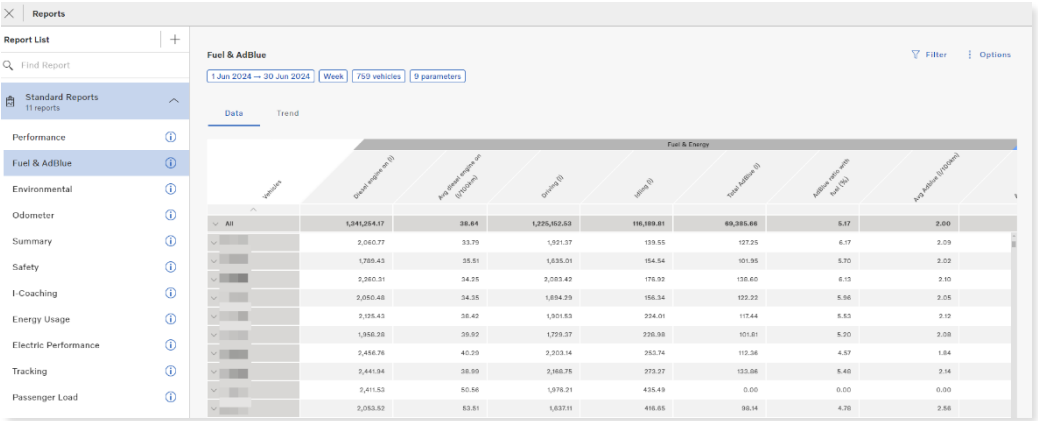
Figure: Fuel & AdBlue report

The Fuel & AdBlue report also has two Histograms parameters. To run a report with histogram parameters, go to **Filter** and click **Parameters**. Click **Histograms** and select one or both parameters.
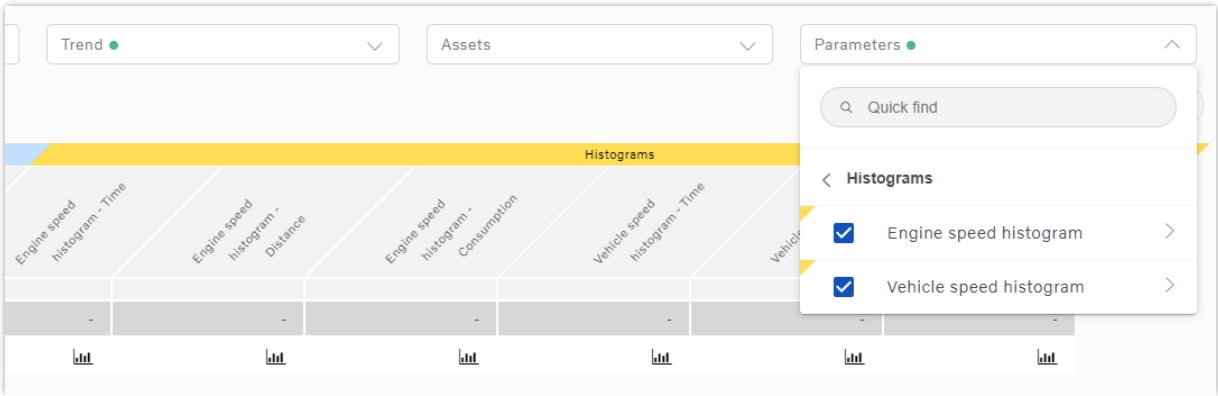
Figure: Histograms parameters in the Fuel & AdBlue report.

By default, electric vehicles are excluded from this report, but they can be added by using the Vehicle filter.

1.10.5 Environmental Report

The **Environmental** report gives you an overview of the environmental impact for a vehicle or driver in terms of how much emissions the vehicle creates. Parameters include information about emissions and the impact of the surrounding environment.

The parameters included in the Environmental report default view are:

- Euro class

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- Emission profile
- Total (km)
- Total energy used (kWh)
- CO_2 (t)
- NO_x (t)
- PM (kg)
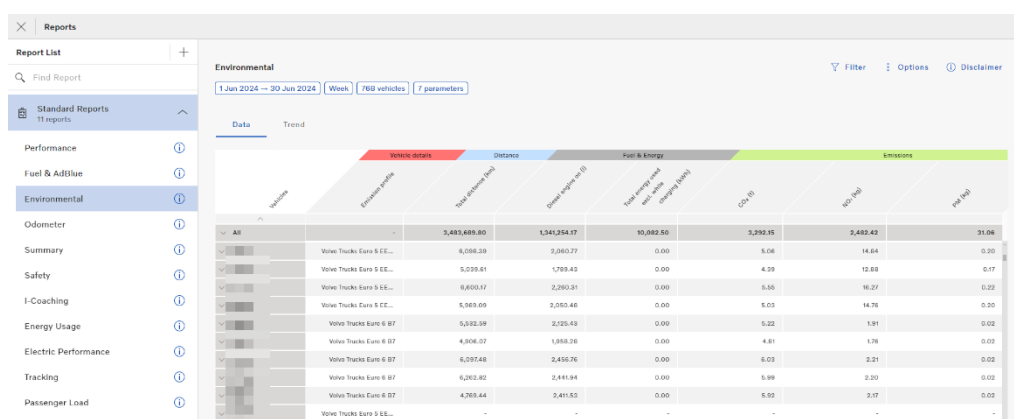
Figure: Environmental report

In the **Environmental** report you can also find a disclaimer in the top-right corner on the report.
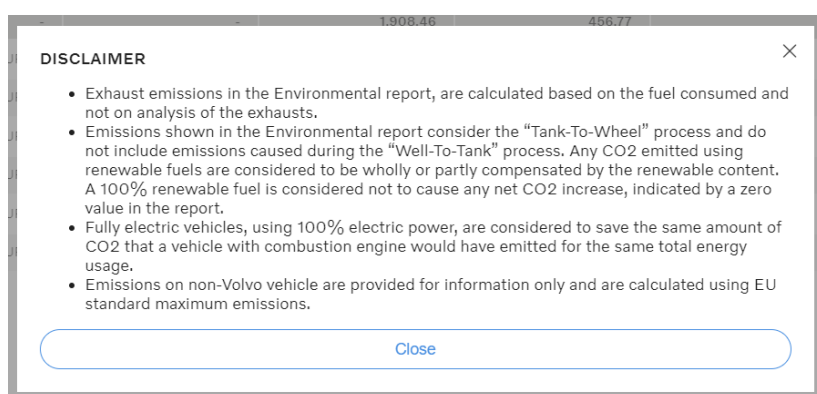
Figure: Environmental report disclaimer

1.10.6 Summary Report

The **Summary** report gives you a quick summarized view regarding time, distance, fuel level and speed for the vehicles in the fleet. In the **Summary** report you can only view one vehicle at the time.

The parameters included in the report default view on the horizontal level are:

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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- Time (hh:mm)
- Time (%)
- Distance (km)
- Distance (%)
- Fuel (l)
- Fuel (%)
- Fuel (l/100km)
- Avg speed (km/h)

And the parameters included in the report default view on the vertical level are:

- Total
- Driving
- Within economy
- Above economy
- Coasting
- Cruise control
- Vehicle overspeed
- Idle

Figure: Summary report

1.10.7 Safety Report

The **Safety** report helps you understand the driver behaviour in terms of driving in a safe way for both the driver and surrounding environment.

The parameters included in the report default view are:

- Total distance (km)
- Total time (hh:mm)
- Total brake use (amount)
- Emergency brakings (amount)

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
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- ESP (amount)
- Harsh brakings (amount)
- Overspeedings (amount)
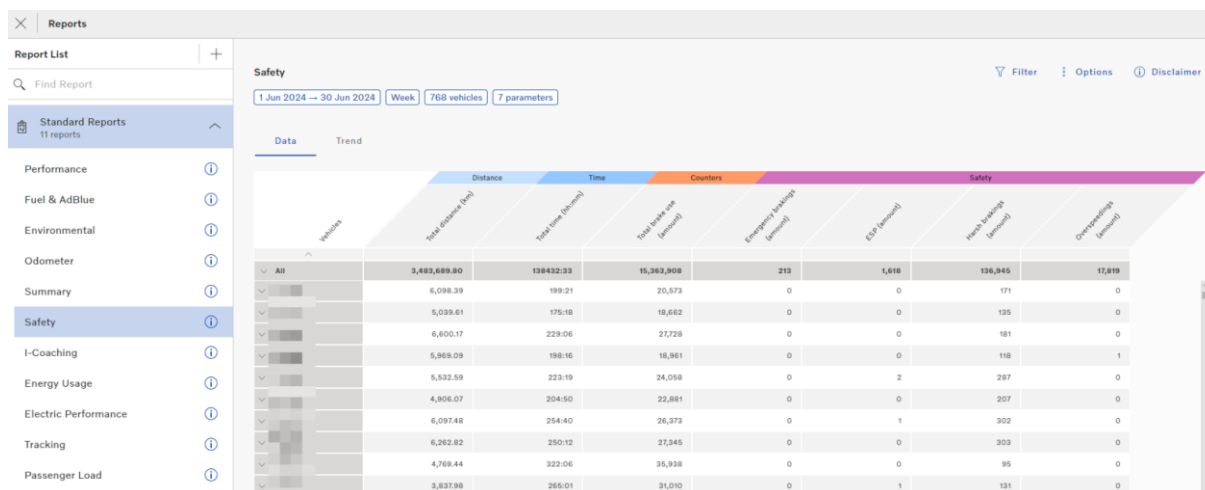
Figure: Safety report

1.10.8 Odometer Report

The **Odometer** report is a standard report that allows you to read the odometer values for one or more vehicles, as well as view the known odometer values for one or more vehicles at a specific date. The report includes two parameters, **Odometer (km)** and **Odometer readout date.** Data updates occur every hour.

To get the odometer data you need to subscribe to either the Report service or the Events service, or both.

Company name		Type of document		
Volvo Buses		**Release Notes**		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		80
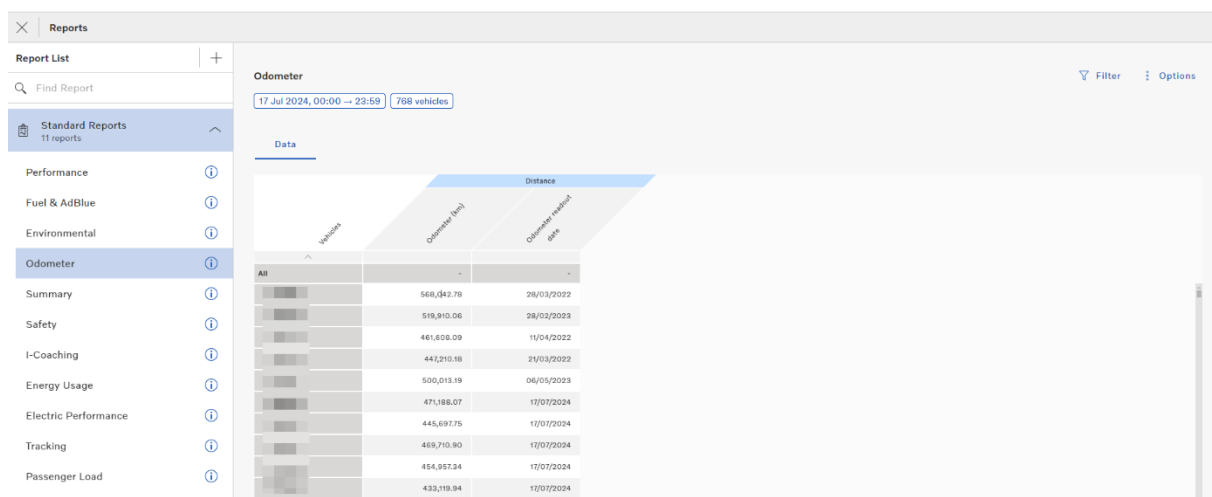
Figure: The Odometer report.

In the filter section for the Odometer report you can filter on **Time span** and **Assets.** For time span, you can choose either **Last known date** or **Custom date.**

1.10.9 I-Coaching Report

The **I-Coaching** report is a standard report to improve driver performance and assist drivers to adopt a more efficient driving style. It displays the same parameters as the I-Coaching display that can be installed in the instrument cluster for drivers to get instant feedback.

The report includes the following parameters:

- Total (hh:mm)
- Avg diesel engine on (l/100 km)
- Harsh brakings (amount)
- Harsh accelerations (amount)
- Harsh curvings (amount)
- Overspeedings (amount)
- Excessive idling (amount)
- Engine overrev (amount)

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		81
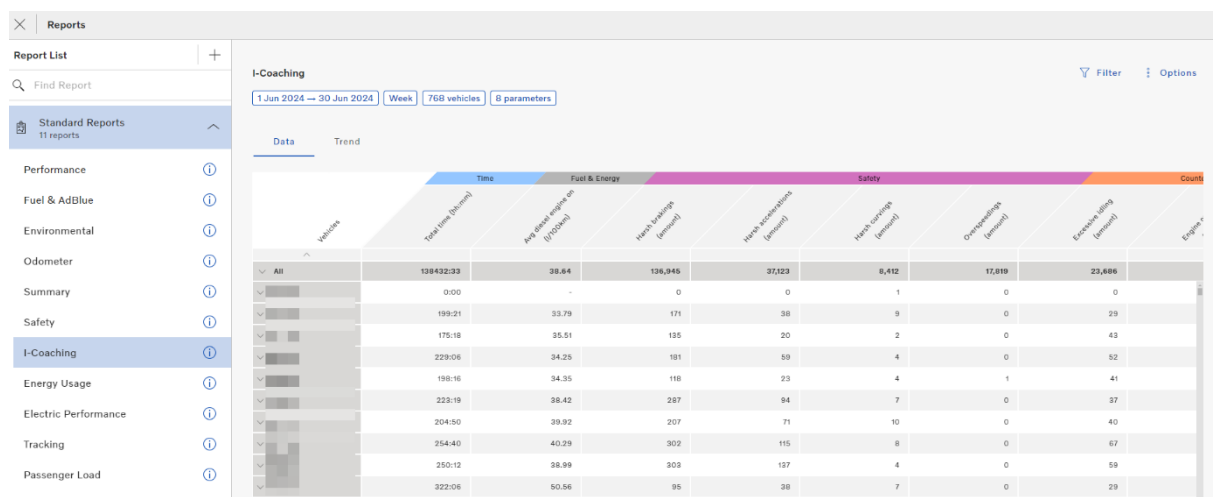
Figure: The I-Coaching report.

1.10.10 Energy usage report

The Energy Usage report gives information about the energy used for buses. By default, this report is showing the following parameters:

- Total time (hh:mm)
- Total distance (km)
- Total energy used incl. while charging (kWh)
- Total energy used excl. while charging (kWh)
- Motor (kWh)
- Energy used by 600V system (kWh)
- Energy used by 24V system (kWh)
- Recuperation (kWh)
- Total energy charged (kWh)
- ACD charging (kWh)
- DC charging (kWh)
- AC charging (kWh)
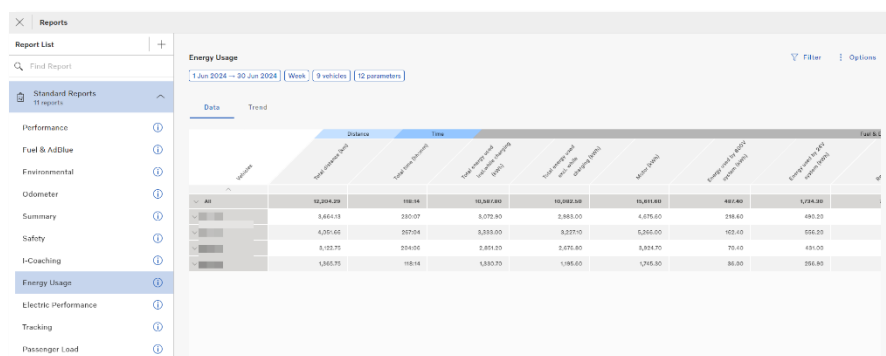
Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		82

Figure: Energy usage report

1.10.11 Electric performance report

The Electric Performance report displays the performance of the vehicle for a specific time span. By default, it shows the following parameters:

- Total (hh:mm)
- Driving (km)
- Cruise control (%)
- Avg energy used (kWh/100km)
- Standstill (%)
- Avg Speed (km/h)
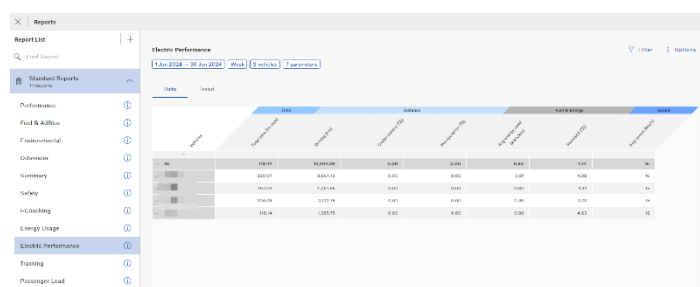
Figure: Electric performance report

1.10.12 Tracking Report

With the **Tracking** report you can view historic tracking information, both as events and as accumulated trips. This will help you analyze tracking information, both for internal use and external reporting.
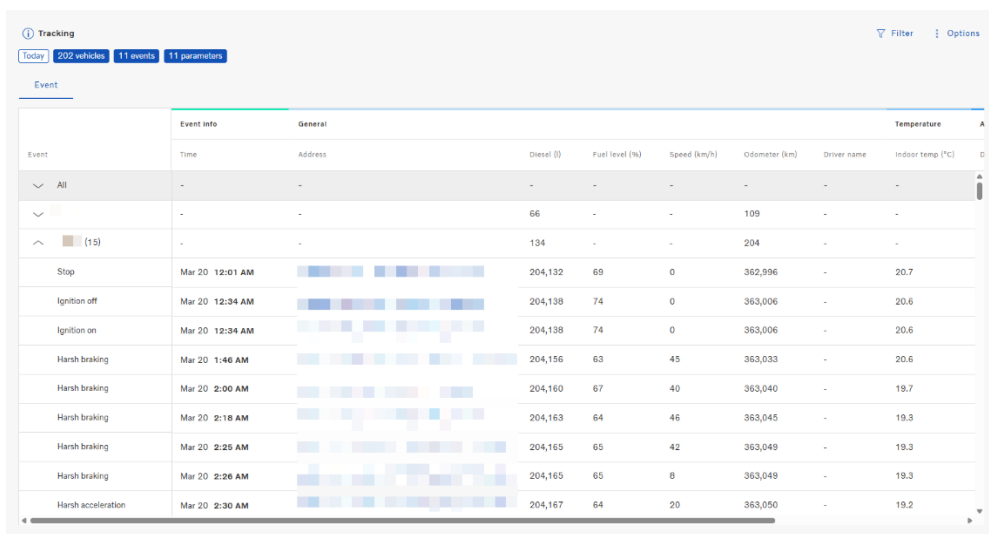
Figure: Tracking report

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Volvo Buses		Release Notes		
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The events included in the Tracking Report are:

*is default selected when opening the report

Auxiliary
- Retarder position
- SoC

Driver
- Login*
- Logout*
- Overspeeding ended
- Overspeeding started
-

Driving behavior
- Doors closed
- Doors open
- Over rev cleared
- Over rev exceeded

Fault code type
- Info
- Warning*
- Alarm*
- Cleared

First & last event
- First & Last event (within the selected report time period)*

Geofence
- Arriving*
- Leaving*
- Battery level deviation arriving (for Charge Monitoring Zone)
- Battery level deviation leaving (for Charge Monitoring Zone)
- Combustion engine started (For Zero Emission Zone)
- Electric mode started (for Battery Saving Zone)
- Excessive idling (for Coaching Zone)
- Harsh curving (for Coaching Zone)
- Over rev (for Coaching Zone)
- Over speed (for Coaching Zone)

Safety
- Harsh acceleration (inside and outside Coaching Zone)
- Harsh braking (inside and outside Coaching Zone)

Vehicle
- Driving

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- Idling started
- Ignition off*
- Ignition on*
- Position
- Stop

The parameters included in the Tracking report default view are:

Accumulated
- Consumption (l)
- Distance (km)
- Driveline active (h)
- Duration (hh:mm)
- Energy Usage (kWh)
- Engine hours (h)

General
- Address
- Altitude
- Battery level (%)
- Battery voltage (V)
- Chassis number
- Diesel (l)
- Door
- Driveline active (h)
- Driver name
- Energy (kWh)
- Engine hours (h)
- Fuel level (%)
- Latitude/Longitude
- Odometer (km)
- Speed (km/h)

Fault codes

- Description
- Vehicle message
- Fault code

Temperature

- Engine coolant temperature (C)

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Volvo Buses	Release Notes		
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- Indoor temp (C)
- Outdoor temp (C)

Weight

- Axle 1 (t)
- Axle 2 (t)
- Axle 3 (t)
- Axle 4 (t)

The following trips can be selectable for the report:

- Ignition On/Off

To generate the report for multiple vehicles, select either one or more groups or individual vehicles in the **Filter** options.

The **Trip** view of the report is not available when running a report with more than one vehicle. Report generated for a single vehicle still have both **Trip** and **Event** views available.

Figure: A generated Tracking report, with Event highlighted.

When a report has been generated, the vehicle data is collapsed. To show the data, either click the arrow next to the vehicle or click **All** to expand data for all vehicles. Only 100 events are loaded per vehicle. Click **Load more** to load more events.

To set a time span, click **Filter** in your Tracking report. Select **Custom time span** in the date drop-down list, and set the desired start and end date. The time span can be up to 90 days.

Note: Vehicles without any data are shown in red at the bottom of the report.

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Figure: A Tracking report, with expanded events and All and Load more highlighted.

On each vehicle row, total values are presented within the generated time span, where applicable. The totals are calculated from the first to the last event and should be equal to the accumulated values. Values may differ sometimes if the first and/or last event is missing data. When events are missing data, the data is enriched with values from previous events.

The totals for all vehicles in the report are calculated and presented on the top row.

When you export data from the Tracking report to Excel, the export is now running in the background. This allows you to run large exports and still perform other tasks in Volvo Connect. Once the export is ready, a message appears that indicate that the file is ready for download.

To view this feature, first search for the data you want to export and click Export in the Options menu. Select Excel and click Export. A message is displayed with information that an export is being prepared.

Figure: Export message

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Volvo Buses	Release Notes		
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A red dot appears to indicate that an export activity has started. Go to Export activities in the Options menu to view the progress of the export. Once it is completed, a new message will appear, and you can now download the export in the same menu.
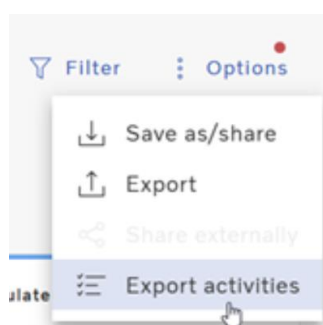
Figure: Export activities option

Note: Created exports will be removed from the Export activities menu after seven days.

1.10.13 Passenger Load Report

The purpose of the Passenger Load report is to track passenger load information for buses. The report uses the current vehicle weight, fuel level, fuel tank volume, vehicle weight (without passengers) and average passenger weight parameters to calculate the number of passengers. Weight information is compiled from data received at the triggered Door Closed event.

To view the report, go to the Reports tool and click **Passenger Load.** The default time displayed when loading the report is 7 days.

Figure: Passenger Load report.

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The passenger load is dependent on the average passenger weight, which is set to 70 kg. You can adjust the weight by clicking **Filter** or clicking the blue filter chips at the top of the page. Time interval and vehicles can also be changed in the filter options.
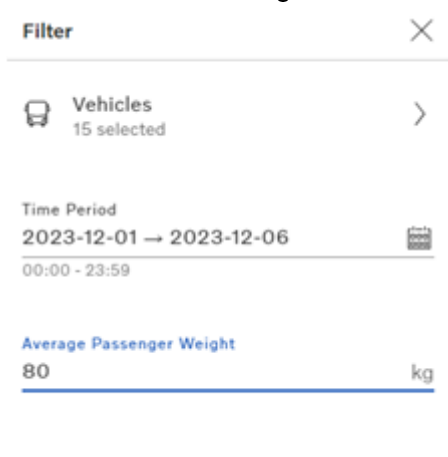
Figure: Filter options in the Passenger Load report.

You can also select a specific vehicle using the drop-down menu above the report result. Either select a vehicle under a group, or search for the vehicle name. Once a vehicle is loaded, switch between vehicles by clicking the arrows next to the vehicle name.
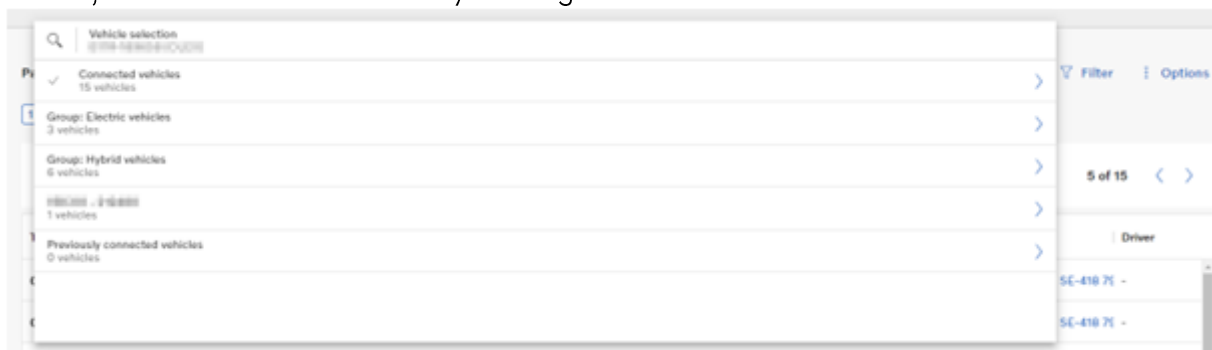
Figure: Vehicle selection drop-down menu.

1.11 Digital Tools – Calendar

1.11.1 Overview

Calendar is a digital tool that provides a visual overview of coming events for your assets. Events are booked in and collected from GDS (Global Dealer System) through VOSP (Volvo Service Program), a system that helps the dealers calculate the most suitable service program for each individual bus.

You can view and manage asset events in the Day, Week, Month and Agenda view. The default view is the calendar month.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		89
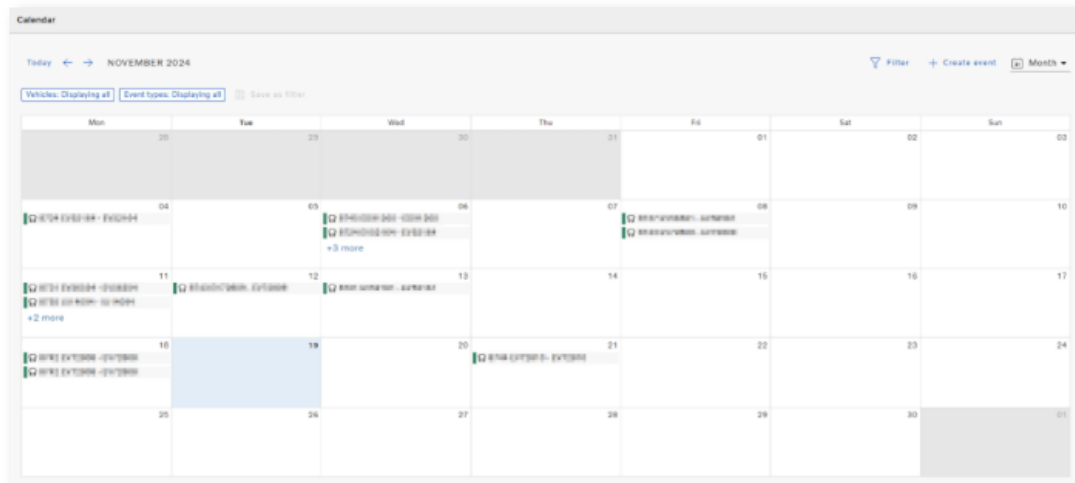
Figure: Calendar tool, with Monthly view selected.
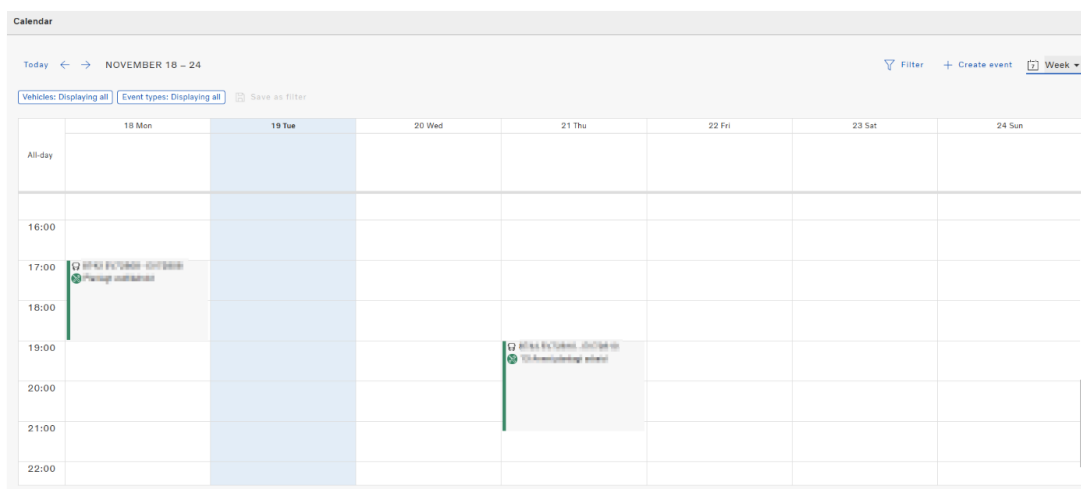
Figure: Example of the weekly view.

Events appear in the calendar based on their booked time. Events that are planned for a whole day or more are visible in the **All-day** section at the top, both in the weekly and daily view. Click on an event in the calendar to get more information about that specific event.

Company name	Type of document		
Volvo Buses	Release Notes		
Name of document	**Version**	**Reg. No.**	**Page**
Volvo Connect Release Notes	1.0		90
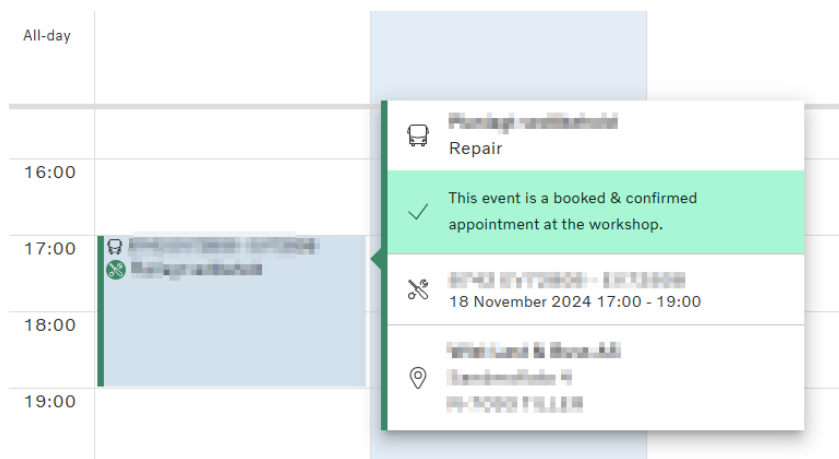
Figure: Example of a specific event.

Events have different colours, depending on their function. Descriptions about different events are shown in the **Legend** pop-up, top right in the Calendar tool. There are four different event types in the calendar, each with their own colour and icon.

Inspection due dates, inspections that should be performed before a certain date. Failing to inspect the vehicle might result in fines or driving bans. The dates are fetched from either the Assets tool or from your national transport agency, if applicable.

Planned maintenance, maintenance interval activities that were agreed upon with the dealer when buying the vehicle. A yellow symbol will appear on the icon if you have not booked a maintenance and it is due in 7 days. A red symbol appears if the due date for the maintenance has passed.

Booked events, confirmed workshop visits for maintenance or repair. These are events that fall outside of any planned events.

My events, local events that have been created in Volvo Connect for the fleet.

You can filter on these events in the filter option, where you can also view the subevents for Planned maintenance and Booked events.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		91
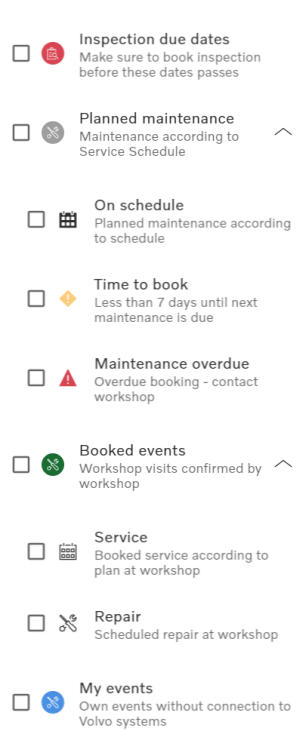
Figure: Event types in the filter option.

1.11.2 Calendar filters

You can filter on vehicles and equipment, as well as event types. The filter can be accessed by clicking the **Filter** option or click a chip to adjust a specific filter.
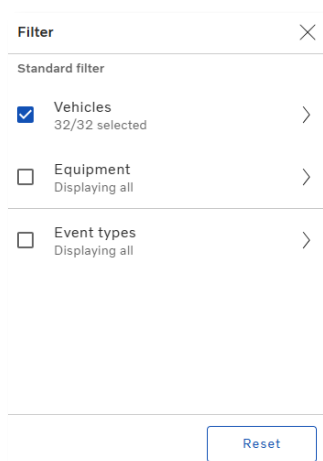
Figure: Filter option, with the Vehicle chip selected.

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Volvo Buses			Release Notes		
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Volvo Connect Release Notes			1.0		92

When you have filtered on specific topics, you can save your customized filter by clicking **Save as filter**. Name your filter and click **Save** in the pop-up window, and the filter will appear as a chip. It will also appear at the bottom of the **Filter** option.
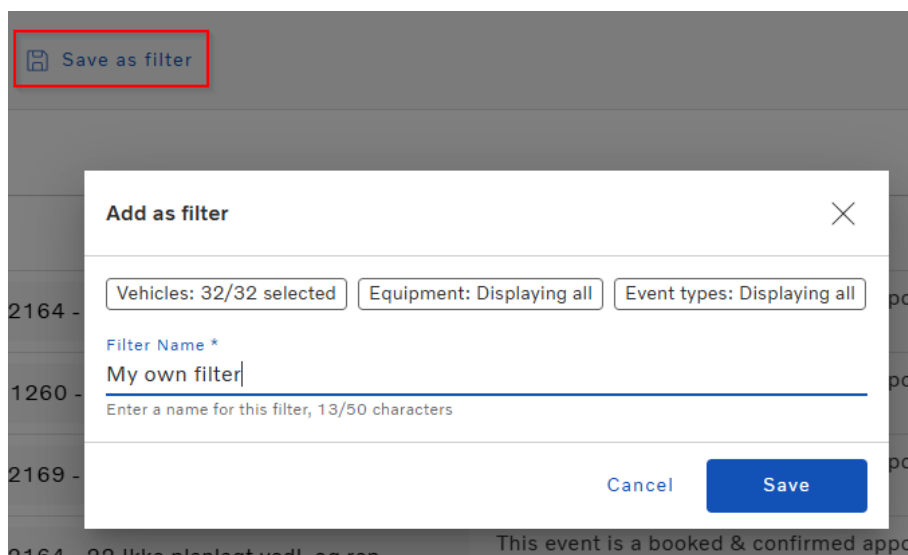
Figure: Add as filter window, with Save as filter highlighted.
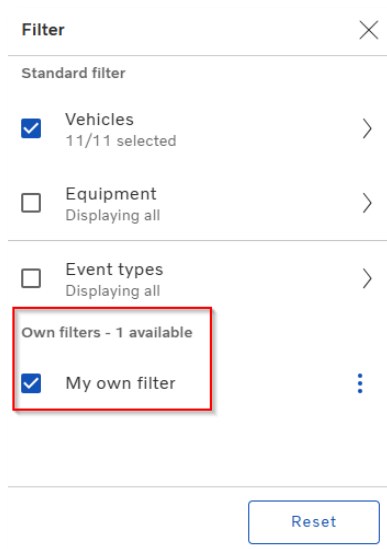
Figure: Customized filter, with Own filters highlighted.

You can edit or remove a customized filter by clicking the three vertical dots. To reset the currently customized filter, click **Reset** in the filter option.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		93
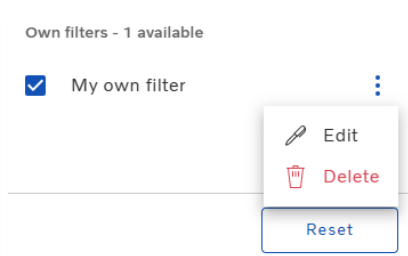
Figure: Own filters options.

1.11.3 Create an Event

It is also possible to create your own event. These events are not online bookings at your dealer, but personal events/reminders.

Click **+ Create event** and then enter the mandatory fields, Event title, Vehicle and Date. When selecting a date interval, first select the start date and then end date. For a single day event, click twice on the day to select it.

To make a recurring event, toggle **Recurring event.** Select how often you want to repeat the event and select an end date for the recurring event. Then click **Save.**

Figure 84: Create new event

1.11.4 Events in the Calendar View

All events, booked by the dealer or by yourself, are shown in the calendar as icons. Information about the event will appear if you hover over or click the event.

Company name		Type of document			
Volvo Buses		Release Notes			
Name of document		Version	Reg. No.		Page
Volvo Connect Release Notes		1.0			94
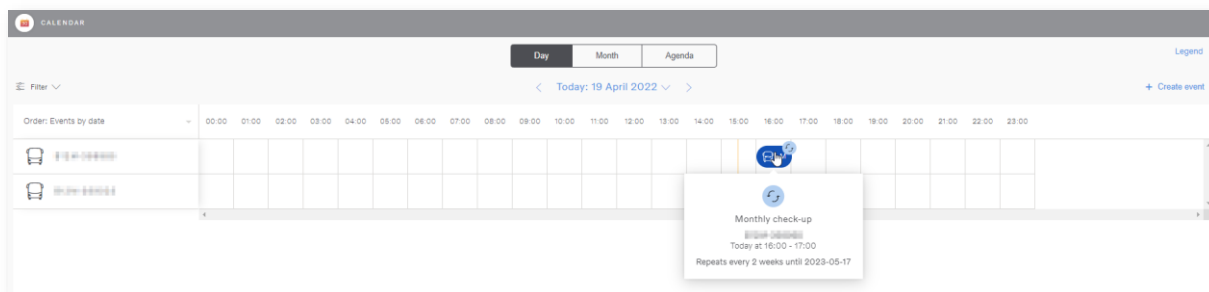
Figure 85: Example of hover over on an event, with the Recurring symbol.

By clicking the event and then the three dots, you can edit or delete the event. If you want to remove the recurrence of an event, but keep it as a one-time event, click **Edit** and then toggle **Recurring event** to inactivate the recurrence.
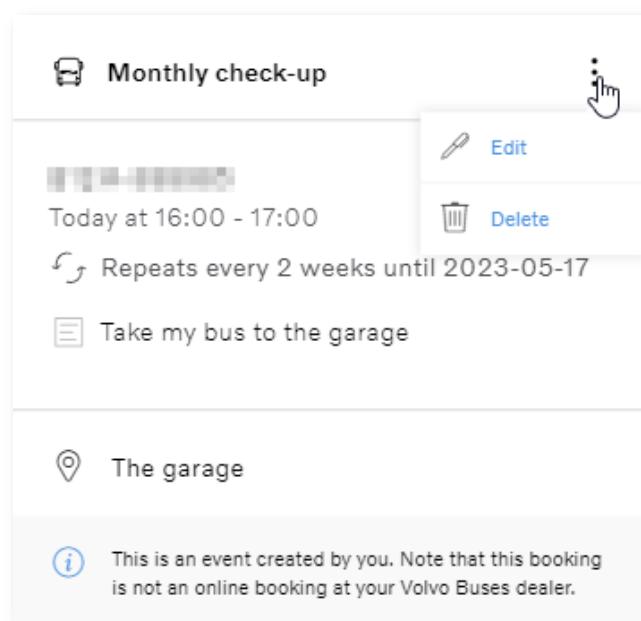
Figure 86: Event information, including Edit and Delete options.

The **Agenda** view will list all your events in a list view. You can select a preferred start date, and toggle the next 14 days. In the **Agenda** view, any gaps are closed, displaying only planned events. This enhancement simplifies the process of reviewing your schedule. Date & Time and Event details are always visible. To view locations and descriptions, simply toggle these options via the **Columns** feature.

While the default view spans two weeks ahead, you have the flexibility to choose a custom time span by adjusting the dates in the date selection option.

Company name		Type of document		
Volvo Buses		**Release Notes**		
Name of document		Version	Reg. No.	Page
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Figure: The agenda view, with the Column option selected.

You can export the agenda to a CSV file or print the list of events. Simply **click Export** and proceed with your preferred option.
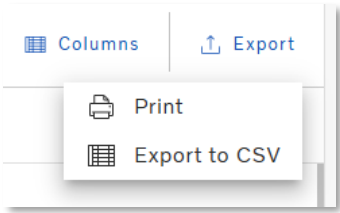
Figure: The Export options.

1.11.5 Event Confirmation Pop-up

When a new event is created, or current one is updated, in the Calendar tool, a green popup will appear at the bottom of the screen to confirm that an event has been successfully created/updated.
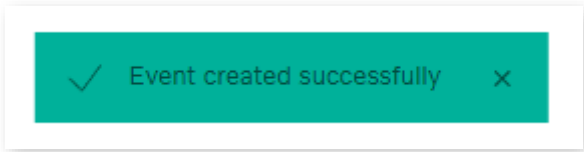
Figure 87: Event confirmation popup.
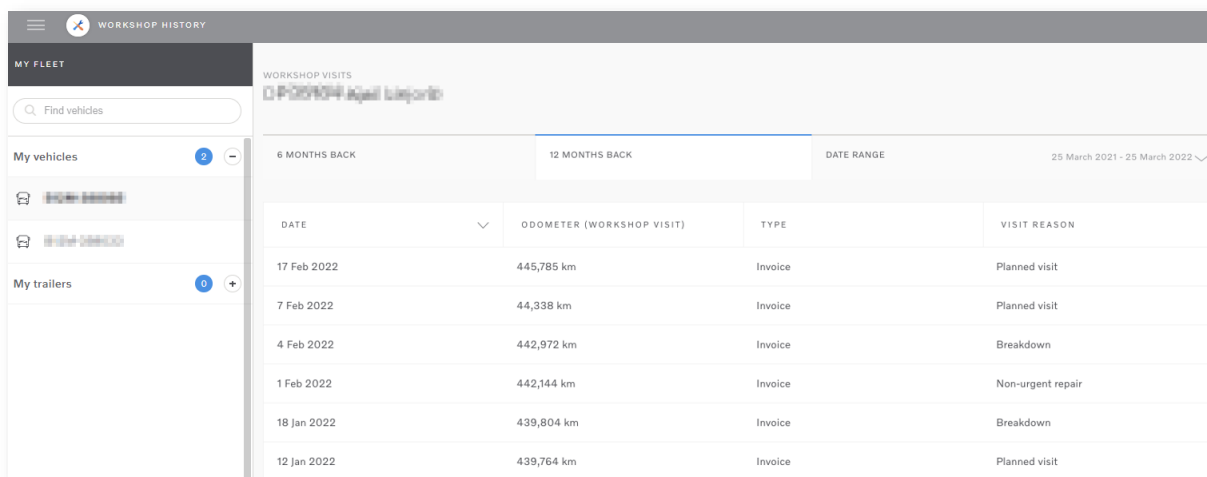
Company name	Type of document		
Volvo Buses	Release Notes		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	1.0		96

1.12 Digital Tools – Workshop History

1.12.1 Overview

Workshop History displays data that is collected from Volvo Service Record (VSR), an application that record work carried out on an asset in a workshop. It gives you the ability to see an overview and details about work that has been carried out on each asset by the workshop. The detailed service record becomes available in Workshop History after your dealer has completed the invoicing.

To view your past workshop visits, select an asset in the left menu. At the top of the screen, you can select to display the history from 6 or 12 months ago. Or select a specified date interval.

Figure 88: Workshop History, showing asset history 12 months back.

Clicking a specific event will display the visit details. The **Detailed Description** column can include free text that has been entered manually by the workshop and could be in a local language.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		97
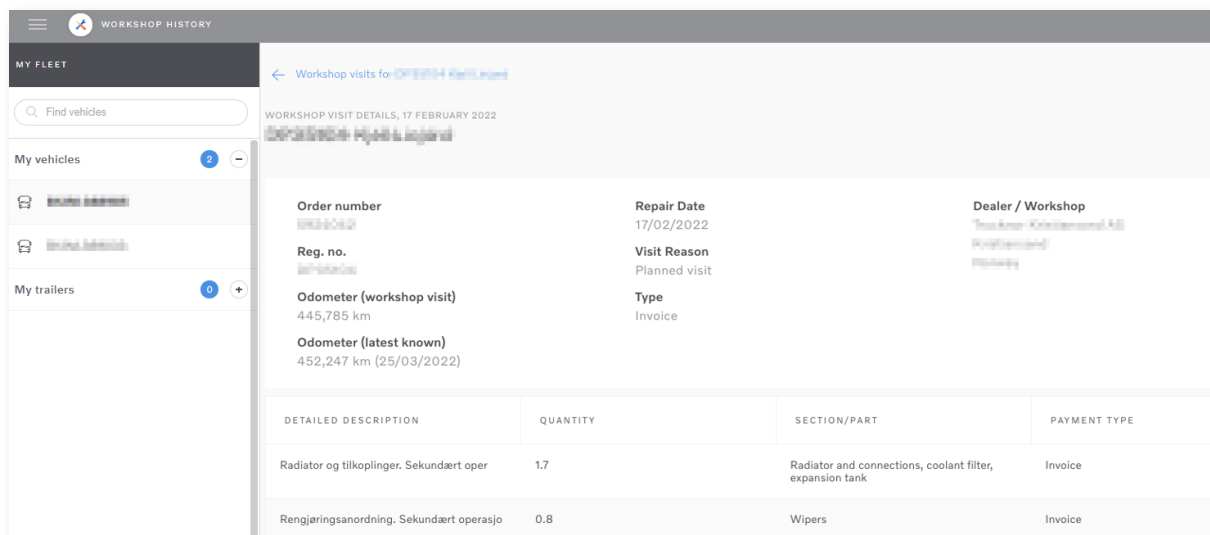
Figure 89: Detailed view of a workshop visit.

Note: Workshop History data cannot be shared and will only be visible for the owner of the fleet.

1.13 Digital Tools – Administration

1.13.1 Public groups

Public Groups are groups with selected drivers or vehicles created by a Fleet Administrator. All Fleet Administrators can create new groups and edit existing groups in the Admin menu. The groups can be viewed by Fleet Users, if the Fleet User has access to the group. Fleet Users with no limitation can view all groups.

When selecting Public Groups in the Admin Menu, the Fleet Administrator can manage both driver groups and vehicle groups.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		98
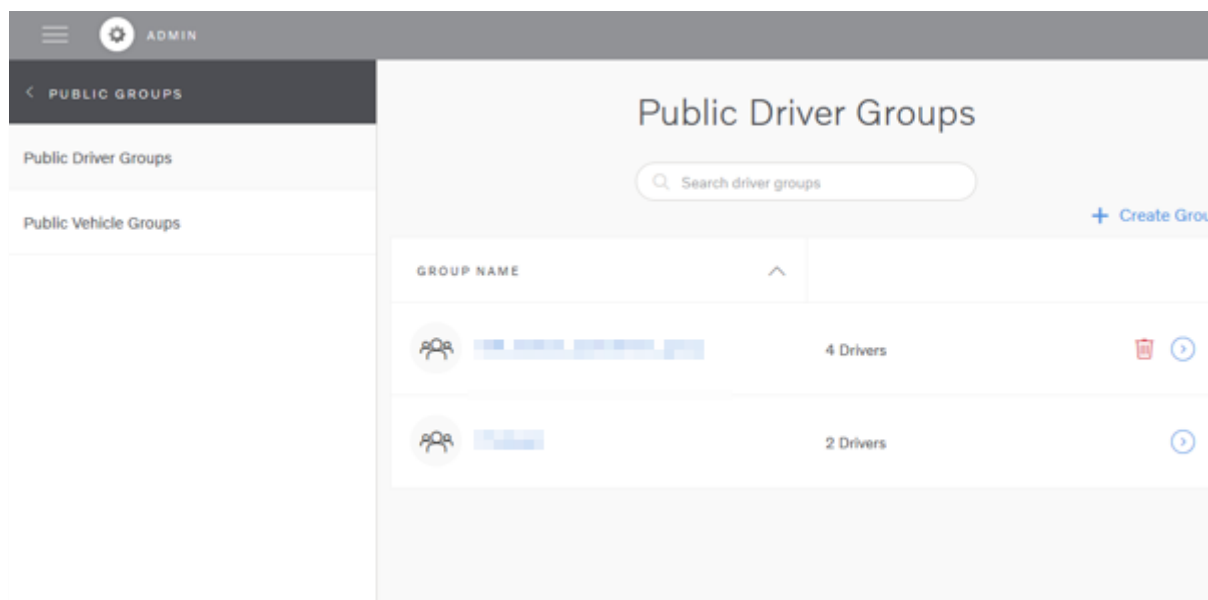
Figure 90: Public groups

New groups can be created by clicking **+ Create group** and then select either drivers or vehicles. Existing groups can be updated by selecting the group and then select **Edit Group.**
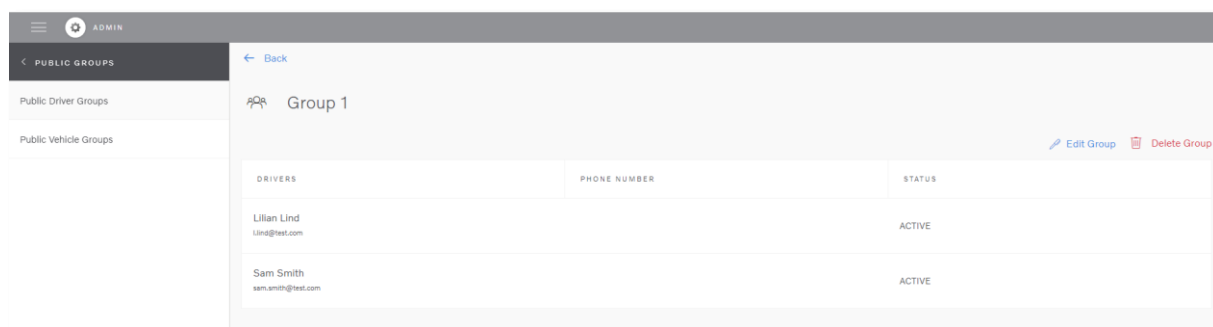
Figure 91: Display the content of a Public Driver Group.

When a group is created, the user with access to the group can see the groups in the different tools, for example in the Map tool.

1.13.2 API Manager

In the API manager the Fleet Administrator can add, update and delete API accounts used for providing data access to an external fleet management system. The overview pane lists all existing accounts and their creation date. It is also possible to search for specific API accounts. To create a new API account, click **+ Add API Account.**

Company name	Type of document		
Volvo Buses	**Release Notes**		
Name of document	Version	Reg. No.	Page
Volvo Connect Release Notes	1.0		99
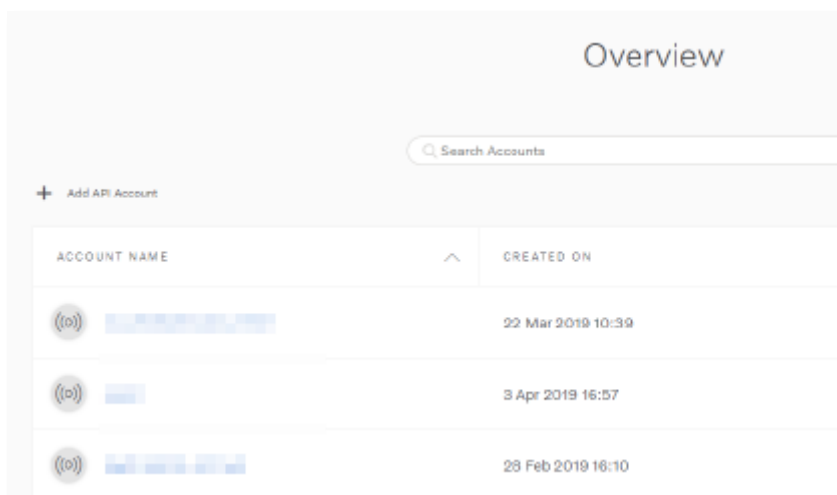
Figure 92: API Manager overview

Enter a new API account name, scroll down and select the API parts to retrieve vehicle data from by using the toggle controls. Then select those vehicles in the fleet that need to be included in the API account.

Figure 93: Account details

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Figure 94: Vehicle position & status APIs

Figure 95: Select vehicles to include

When clicking the **Add account** button, username and password are automatically generated and displayed under **User Details** for the new API account. It is possible to regenerate the password for the API account. You can create several API accounts for the same fleet.

To update an existing account, click the account name in the **Overview** list. Here you can toggle which API parts to retrieve vehicle and/or driver. In the list of vehicles, you can select which vehicles to include in the API account. You can include all displayed vehicles in the list at once by selecting the checkbox at the top of the vehicle list. It is possible to limit the number of displayed vehicles by searching for parts of the vehicle name, chassis number or VIN (the feature for filtering vehicles based on services is under development). To apply the changes, click the **Update** button at the bottom right. The corresponding functionality is available under the DRIVERS tab.

To delete an account, click **Delete Account** in the top-right corner of the account details view.

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Volvo Buses		**Release Notes**		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		**1.0**		**101**

To return to the overview list with all API accounts for the fleet, click **Overview** in the left pane, **Back** at the top of the account details view or the **Cancel** button at the bottom. These options return you to the overview list without saving your changes.

It is possible to automatically include any new vehicles that have been added to your fleet without having to update the API account manually. It is also possible to see how many vehicles that are included in the API Account.

Go to **Admin → API Manager** and select one of the API accounts. Scroll down to the section with **Included Vehicles**.

Figure 96: Single vehicles added

In the vehicle list, enable the switch called **Include All Current and Future Vehicles** and click **Save** to include all current vehicles in your fleet as well as any future vehicles automatically.

Figure 97: Include all current and future vehicles

When you switch to include all current and future vehicles, no individual vehicles are listed in this view anymore.

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If you want to include all current vehicles but you don't want to include any potential new vehicles added to your fleet, then disable **Include All Current and Future Vehicles.** From now, select the checkbox located above the list of vehicles.

Figure 98: Include all current vehicles

Note: To be able to access Public groups and API manager you need to have the Fleet admin role, and to be able to access the User admin you need to have the User admin role.

1.13.3 Users

In the user administration you can view and delete users. All users are listed in the navigation menu to the left, as well as in the main view.

Figure 99: Users Overview

The user roles are presented in two columns, with descriptions. To add or remove specific roles, click a user in the left menu and then toggle the roles you want to change.

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Volvo Buses	Release Notes		
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Figure 100: Example of user roles

1.13.4 Driver Administration

In the driver administration you can view, create, edit and delete drivers. All drivers are listed in the navigation menu to the left as well as in the main view. There is also a button to export the overview to Excel.
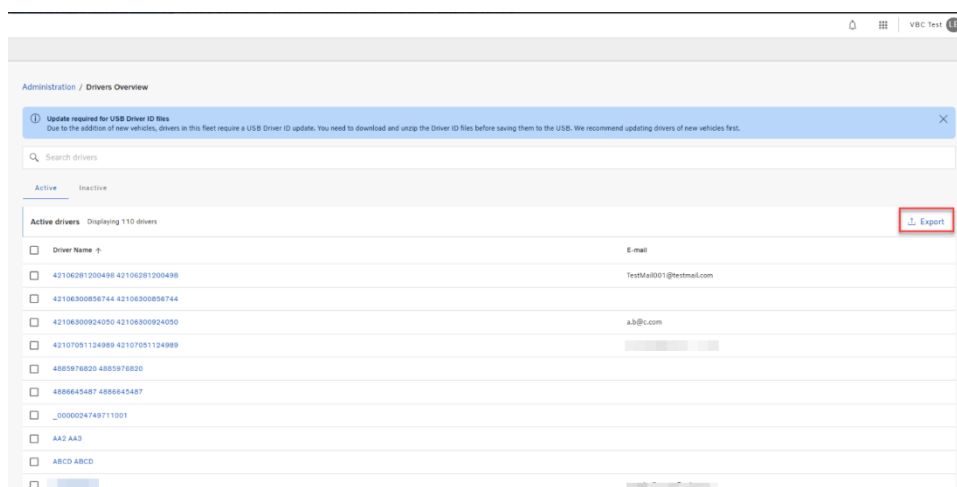
Figure: Drivers Overview, with Export button highlighted

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Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		104

To create a new driver, select **+ New** in the top-right corner of the navigation list to the left. Then enter the information for the driver you want to add.

Figure 101: Add driver details

If you select the box **USB Driver ID** when you create the driver, you can download the Driver ID file to USB.

Figure 102: Driver information

To edit an already existing driver, select the driver you want to edit and then click **Edit** in the top-right corner. You can also choose to remove the driver by selecting the trash bin. If you remove a driver, the driver will appear in **My Previous Drivers** in the left-hand menu.

1.13.5 Vehicle Administration

In the Vehicles section you get a list of all the vehicles in the fleet. There are two default groups visible to all users, **My Vehicles** and **Previous Vehicles**. If a group has been created, either public or by the user, it will appear as well between the two default groups. The number to the right shows the number of vehicles within each group.

Company name		Type of document		
Volvo Buses		Release Notes		
Name of document		Version	Reg. No.	Page
Volvo Connect Release Notes		1.0		105
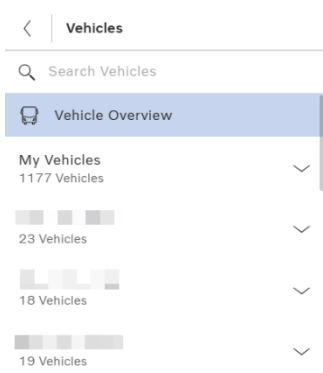
Figure 103: My vehicles and groups

When expanding a group, you get a list of all vehicles within that group. By clicking one of the vehicles, you will be able to see its details.

1.13.6 Vehicle Overview
On the right-hand side you will find the list of all vehicles in your fleet.
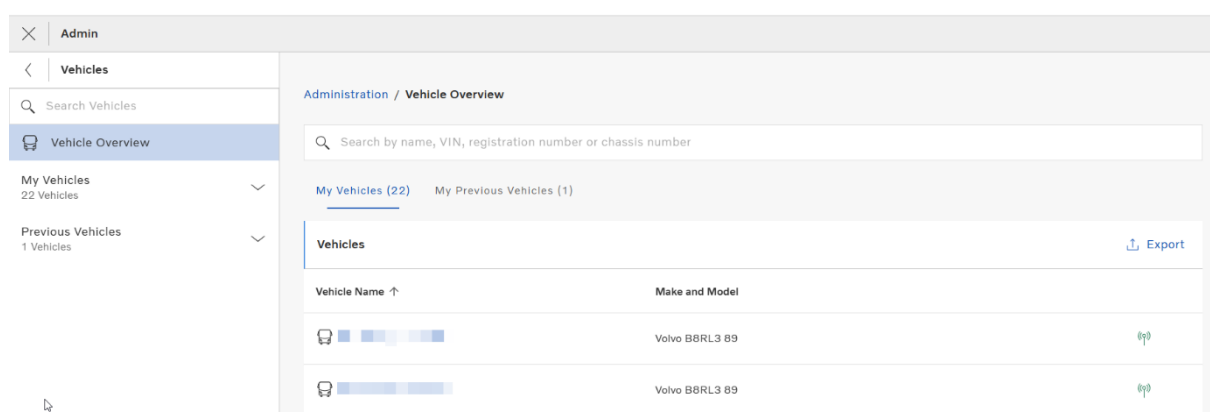
Figure 104: Vehicle Overview

On this page you will see two tabs, **My vehicles** (displayed by default) and **My previous vehicles.** You can also see an indication of the total number of vehicles in each tab. There is also a button to export the overview to Excel

1.13.6.1 Search Vehicles
In the top, you have the possibility to search for a specific vehicle. You can search for a vehicle using the vehicle's display name, VIN, registration number or chassis number. This will filter out all other vehicles and display the one that matches the search criteria.

Figure 105: Search field

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Volvo Buses		Release Notes		
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Volvo Connect Release Notes		1.0		106

1.13.6.2 My Vehicles

In **My Vehicles** you will find information of the vehicles that are currently assigned to your fleet. For each vehicle displayed you will see the following vehicle information:

- The vehicle display name.
- The vehicle's make and model.
- Visual indication if the vehicle is operational.
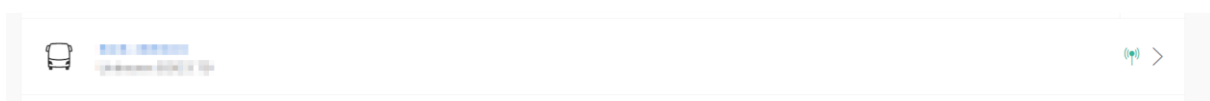
Figure 106: Communicating vehicle

The operational status has two statuses:

Icon	Status
	The grey icon indicates that the last communication activation attempt failed and therefore the vehicle is considered as non-operational. Even though the vehicle is considered as non-operational in Volvo Connect, it doesn't mean that the vehicle is not communicating to the portal. It just indicates that the last communication activation configuration has failed.
	The green icon indicates that the last communication activation attempt was successful and therefore the vehicle is considered as operational.

1.13.6.3 My Previous Vehicles

In **My Previous Vehicles** you will find information of the vehicles that have been assigned to your fleet but are now removed. For each vehicle displayed you will see the following vehicle information:

- The vehicle display name.
- The vehicle's make and model.
- The date when the vehicle was removed from the fleet.

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Figure 107: Previously connected vehicle

1.13.7 Vehicle Details

If you click on one vehicle in the **Vehicle Overview** page you can see the following areas:

Section	Details
Vehicle Details	• Display Name • Make & Model • Registration Number • VIN • Chassis Number
Available Services	In this section you can find information about the services that are currently available in the vehicle.
Vehicle Settings	• Driver Coaching • Fuel & Economy • Driver Specification

Figure 108: Vehicle details

In the vehicle details you can edit the display name of the vehicle, which is the name that is visible in all the tools of Volvo Connect.

1.13.7.1 Vehicle Settings

The vehicle settings are divided into three main sections.

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Section	Details
Driver Coaching	In this section you can find driver coaching related vehicle settings, such as: • Over Rev (rpm) • Over Speed (km/h) • Excessive Idling (min) • Harsh acceleration • Harsh braking • Harsh curving • I-Coaching/I-Coaching Buzzer
Fuel & Economy	In this section you can find fuel and economy related vehicle settings, such as: • Economy from (rpm) • Economy to (rpm)
Vehicle Specification	In this section you can find vehicle specific vehicle settings, such as: • Emission Profile * • Road Speed Limiter (km/h) * • Neutral Gear • Top Gear • Kerb Weight (kg) • Vehicle Overweight (kg) • Fuel tank volume (l)

These settings are read only and cannot be edited.

You can edit and save the settings values by clicking the **Save** button on the blue ribbon at the bottom of the screen.

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Figure 109: Driver coaching settings

Figure 110: Fuel economy settings

Figure 111: Vehicle specification settings

If you change a setting, it can be reverted to its default values by clicking the blue arrow that will appear on the right-hand side of the setting title.

Figure 112: Revert setting

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1.13.7.2 Vehicle Refresh

In **Vehicle Details** you can also refresh the vehicle's configurations by clicking **Refresh Vehicle** at the top-right corner of the page. This action triggers a new communication setup for the vehicle, and should therefore be used with caution.
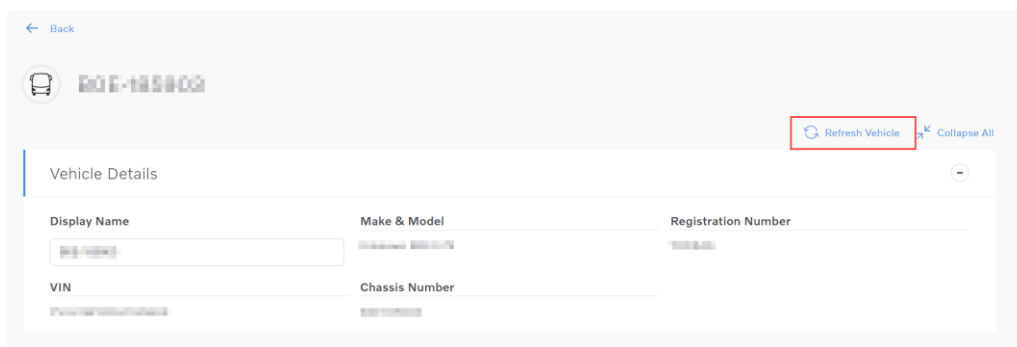
Figure 113: Refresh vehicle

1.14 APIs

1.14.1 Electromobility APIs

Documentation about the electromobility APIs can be found in the Developer Portal at https://developer.volvobuses.com

1.14.1.1 Vehicle API v1.2

The new version 1.2 introduces new triggers and data items for vehiclestatus and vehicleposition. For example, snapshot objects for charging, charging connection and device status are now available, as well as details about estimated charging target time. The following is a list of new parameters:

Parameter	Description
batteryPackChargingStatus	Indicates the charging status of the battery pack.
batteryPackChargingConnectionStatus	Indicates the charging connection status of the battery pack.
batteryPackChargingDevice	Device used to charge the battery pack.
chargingStatusInfo	Gives additional information if the trigger type is BATTERY_PACK_CHARGING_STATUS_CHANGE.
chargingConnectionStatusInfo	Gives additional information if the trigger type is BATTERY_PACK_CHARGING_CONNECTION_STATUS_CHANGE.
chargingEnergy	Total electric energy coming from a charger, in watt hours.
ambientAirTemperature	The ambient air temperature in Celsius.
passengerCompartmentTemperature	The temperature in Celsius of air inside the part of the vehicle that encloses the passengers.

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Read more about the API and its technical documentation in Developer Portal.

1.15 Map Download

1.15.1 Overview

The Map Download feature allows you to download the latest map from Volvo Connect and later install it on your vehicle. To access Map Download, click the Map Download widget on the dashboard.

If a vehicle in your fleet requires a download, you will receive a notification in Volvo Connect. Clicking the notification will redirect you to the download.

The Map Download tool will list vehicles and their current map version and status.
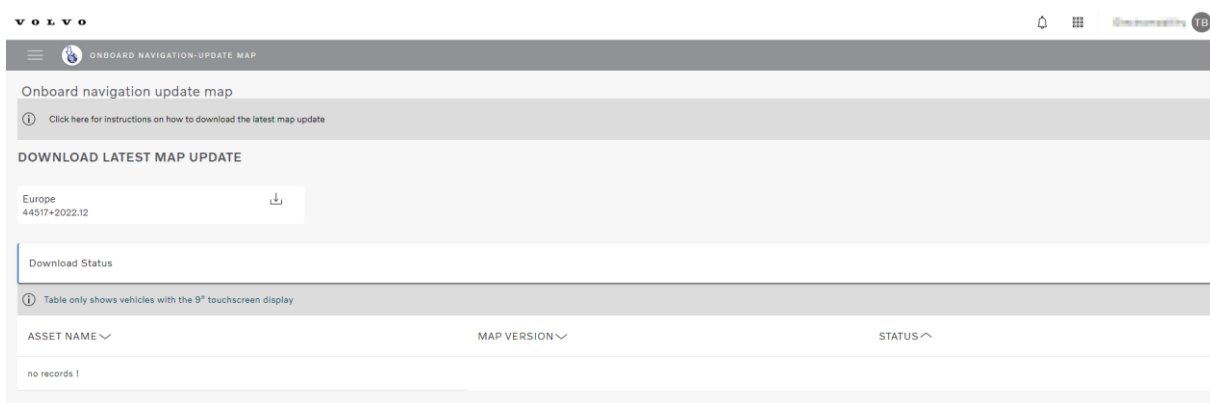
Figure 114: Map Download tool

Here you can see the number of vehicles that need to be updated in the fleet. The latest maps available to download are displayed and you can view the version name.

For more information on how to download and install a map, click the information banner in Map Download.
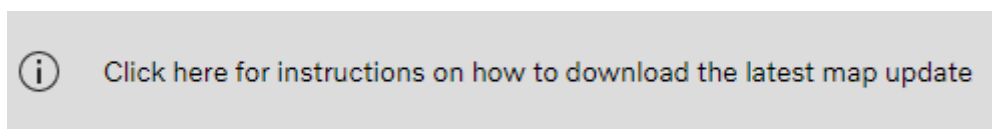
Figure 115: More information about Map Download

The installation status for the vehicles is shown in the Map Download and can show the following statuses.

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Status	Description
Success and latest version is installed	Map Up to Date
Success and older version is installed	Download needed
Map is not installed in the vehicle	Vehicle without navigation system
Map version code is 0	Map version unknown, please start onboard navigation and wait
Map is not installed in the vehicle and sends '-1' as the version code	Download needed

1.15.2 Map Download Widget

The Map Download widget is located on the Volvo Connect dashboard. It provides a link to the Map Download feature.

Figure 116: Map Download widget

1.16 Workshop Services Widget

1.16.1 Overview

The Workshop Services widget is located on the Volvo Connect dashboard. It provides a link to the Global Diagnostic Service Platform, where you can plan maintenance, get an overview and more.

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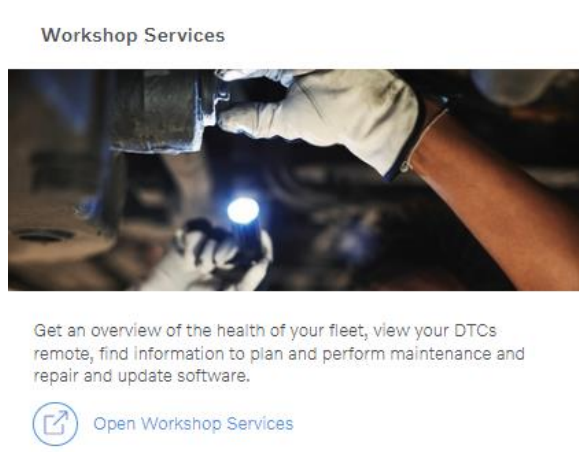
Figure 117: Workshop Services widget

1.17 News Widget

1.17.1 Overview

The News widget is located on the Volvo Connect dashboard. The latest news are visible at a glance on the widget. Clicking a headline will let you read the article. Clicking **See all news** will let you view past news articles.
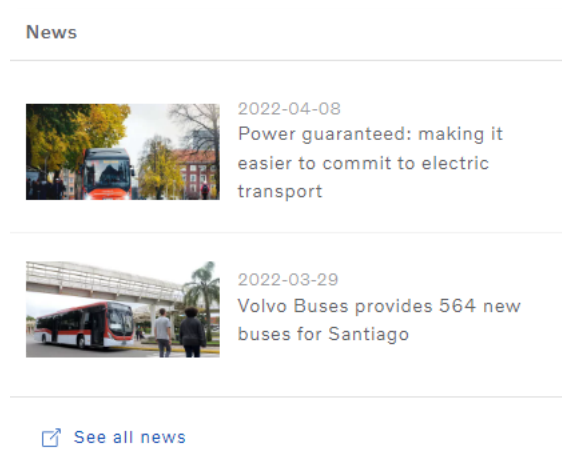
Figure 118: News widget

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1.18 Appendix

1.18.1 Available services

1.18.2 Data readouts

The following lists are based on a full-service scope. Newer vehicles may not support the full set of data at delivery. Contact your market representative or dealer for full details.

1.18.2.1 Available report parameters

Report data is shown per vehicle, aggregated over time with minimum time frame of 4 hours. Data is sent every 60 minutes and on Ignition On and Off.

If a driver is logged the data will be connected to the driver as well as the vehicle

Driveline	Parameter	Description
Diesel, Hybrid, Electric	Avg brake use (Amount/100km)	Average number of pedal brake activations
Diesel, Hybrid, Electric	Avg number of stop (Amount/100km)	Average number of stops
Diesel, Hybrid, Electric	Stops (Amount)	Total number of stops
Diesel, Hybrid, Electric	Total brake use (Amount)	Total number of brake activations
Diesel, Hybrid, Electric	Stops with door open (Amount)	Total number of stops with door opening
Diesel, Hybrid, Electric	Stops with door open (%)	Number of stops with door open in percent of total number of stops
Diesel, Hybrid, Electric	Stops with door closed (Amount)	Total number of stops without door opening.
Diesel, Hybrid, Electric	Stops with door closed (%)	Number of stops without door opening in percent of total number of stops
Diesel, Hybrid, Electric	Avg stops with door closed (amount/100km)	Average number of stops without door opening
Diesel, Hybrid, Electric	Avg stops with door open (amount/100km)	Average number of stops with door opening
Diesel, Hybrid	Excessive idling count (Amount)	Number of excessive idlings. Triggered when idling (motor running and vehicle standing still) more the configured number of minutes
Diesel, Hybrid	Avg excessive idling (amount/100km)	Average number of excessive idlings. Triggered when idling (motor running and vehicle standing still) more than the configured number of minutes
Diesel, Hybrid	Engine overrev (Amount)	Number of engine overrev. Triggered when vehicle rpm is above configured limit.

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	Avg engine overrev (amount/100km)	Average number of engine overrev. Triggered when vehicle rpm is above configured limit.
Diesel, Hybrid		
Diesel, Hybrid	Above economy (km)	Total distance above economy rpm range/green zone
Diesel, Hybrid	Above economy (%)	Distance above economy rpm range/green zone in percent of total distance
Diesel, Hybrid, Electric	Driving (km)	Total driving distance
Electric	Recuperation (%)	Distance during driving when energy has been recuperated to battery in percent of total distance
Electric	Recuperation (km)	Total distance during driving when energy has been recuperated to battery
Diesel, Hybrid, Electric	Total (km)	Distance with engine running
Diesel, Hybrid, Electric	Coasting (km)	Total distance the vehicle is moving without acceleration or cruise control
Diesel, Hybrid, Electric	Coasting (%)	Distance the vehicle is moving without using accelerator or cruise control in percent of total distance
Diesel, Hybrid, Electric	Cruise control (km)	Total distance with cruise control activated
Diesel, Hybrid, Electric	Cruise control (%)	Distance with cruise control activated in percent of total distance
Diesel, Hybrid	Engine overrev (km)	Total distance at engine overrev/red zone
Diesel, Hybrid	Engine overrev (%)	Distance driven at engine overrev/red zone in percent of total distance
Diesel, Hybrid	Within economy (km)	Total distance within economy rpm range/green zone
Diesel, Hybrid	Within economy (%)	Distance within economy rpm/green zone range in percent of total distance
Hybrid	Hybrid electric driving (km)	Total driving distance when vehicle is powered by electric motor and diesel engine turned off (rpm=0).
Hybrid	Hybrid electric driving (%)	Driving distance when vehicle is powered by electric motor and diesel engine turned off (rpm=0) in percent of total distance
Diesel, Hybrid	CO (kg)	Mass of carbon monoxide emitted
Diesel, Hybrid	CO_2 (t)	Mass of carbon dioxide emitted
Diesel, Hybrid	HC (kg)	Mass of hydrocarbon emitted
Diesel, Hybrid	High emissions distance (km)	Distance driven with above normal emission level
Diesel, Hybrid	NO_x (kg)	Mass of nitrogen oxide and nitrogen dioxide emitted
Diesel, Hybrid	PM (kg)	Mass of particulate matter emitted
Diesel, Hybrid	Above economy (l)	Total fuel consumed above economy rpm range/green zone
Diesel, Hybrid	Above economy (%)	Fuel consumed above economy rpm range/green zone in percent of total fuel

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Diesel, Hybrid	AdBlue ratio with fuel (%)	AdBlue consumed in percent of total fuel consumed
Diesel, Hybrid	Avg above economy (l/100km)	Average fuel consumption above economy rpm range/green zone
Diesel, Hybrid	Avg Adblue (l/100km)	Average Adblue consumed by engine
Diesel, Hybrid	Avg cruise control (l/100km)	Average fuel consumption with cruise control activated
Diesel, Hybrid	Avg diesel (km/l)	Average distance per liter diesel consumed
Diesel, Hybrid	Avg diesel (l/h)	Average liter diesel consumed per hour
Diesel, Hybrid	Avg diesel engine on (l/100km)	Average diesel consumed by engine
Diesel, Hybrid	Avg driving (l/100km)	Average fuel consumption while vehicle in motion
Electric	Avg energy (km/kWh)	Average distance per kWh consumed
Diesel, Hybrid	Avg engine overrev (l/100km)	Average fuel used above engine allowed engine rpm/red zone
Diesel, Hybrid	Avg idling (l/h)	Average fuel consumption within idling RPM while not using power take-off (PTO)
Diesel, Hybrid	Avg standstill (l/h)	Average fuel consumption during standstill with engine running at any RPM
Diesel, Hybrid	Avg vehicle overspeed (l/100km)	Average fuel consumption above the fleet speed limit set by fleet manager
Diesel, Hybrid	Avg within economy (l/100km)	Average fuel consumption within economy rpm range/green zone
Diesel, Hybrid	Cruise control (l)	Total fuel consumed with cruise control activated
Diesel, Hybrid	Cruise control (%)	Fuel consumed with cruise control activated in percent of total fuel
Diesel, Hybrid	Diesel engine on (l)	Total fuel consumed by engine
Diesel, Hybrid	Driving (l)	Total fuel consumed while vehicle in motion
Diesel, Hybrid	Driving (%)	Fuel consumed while vehicle in motion in percent of total fuel
Diesel, Hybrid	Engine overrev (l)	Total fuel used above engine allowed rpm/within red zone
Diesel, Hybrid	Engine overrev (%)	Fuel used above engine allowed rpm/within red zone in percent of total fuel
Diesel, Hybrid	Idling (l)	Total fuel consumed within idling RPM while not using power take-off (PTO)
Diesel, Hybrid	Idling (%)	Fuel consumed within idling RPM while not using power take-off (PTO) in percent of total fuel
Diesel, Hybrid	Standstill (l)	Total fuel consumed during standstill with engine running at any RPM
Diesel, Hybrid	Standstill (%)	Fuel consumed during standstill with engine running at any RPM in percent of total fuel
Diesel, Hybrid	Total AdBlue (l)	Total AdBlue consumed while engine running

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Diesel, Hybrid	Vehicle overspeed (l)	Total fuel consumed above the fleet speed limit set by fleet manager
Diesel, Hybrid	Vehicle overspeed (%)	Fuel consumed above the fleet speed limit set by fleet manager in percent of total fuel
Diesel, Hybrid	Within economy (l)	Total fuel consumed within economy rpm range
Diesel, Hybrid	Within economy (%)	Fuel consumed within economy rpm range in percent of total fuel
Electric	Avg Cruise control (kWh/100km)	Average energy used with cruise control activated
Electric	AC charging (kWh)	Total energy charged from all types of AC charging
Electric	AC charging (%)	Energy charged from AC charging in percent of total energy charged
Electric	CCS AC charging (kWh)	Total energy charged from Vehicle coupler AC
Electric	CCS AC charging (%)	Energy charged from Vehicle coupler AC in percentage of total energy charged
Electric	CCS DC charging (kWh)	Total energy charged from Vehicle coupler DC
Electric	CCS DC charging (%)	Energy charged from Vehicle coupler DC in percentage of total energy charged
Electric	DC charging (kWh)	Total energy charged from from all types of DC charging
Electric	DC charging (%)	Energy charged from DC charging in percent of total energy charged
Electric	ACD Charging (kWh)	Total energy charged from ACD (Automatic Connection Device) DC charging, e.g. panto up or OppCharge
Electric	ACD Charging (%)	Energy charged from ACD (Automatic Connection Device) DC charging, e.g. panto up or OppCharge in percent of total energy charged
Electric	Total energy charged (kWh)	Total energy charged (both high and low power charging)
Electric	Avg driving (kWh/km)	Average energy used while vehicle in motion
Electric	Avg driving (kWh/100km)	Average energy used while vehicle in motion
Electric	Coasting (kWh)	Total energy used while coasting
Electric	Cruise control (kWh)	Total energy used with cruise control activated
Electric	Cruise control (%)	Energy used with cruise control activated in percent of total energy used
Electric	Avg energy (kWh/h)	Average kWh energy consumed per hour while driving
Electric	Avg energy used by motor (kWh/km)	Average energy used by the motor for vehicle propulsion
Electric	Avg energy used by motor (kWh/100km)	Average energy used by the motor for vehicle propulsion
Electric	Driving (kWh)	Total energy used while vehicle in motion

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Electric	Driving (%)	Energy used while vehicle in motion in percent of total energy used
Electric	Energy used by 24V system while driving (kWh)	Total energy used by auxiliary equipment from 24 volt system while driving
Electric	Energy used by 600V system while driving (kWh)	Total energy used from 600 volt electrical system while driving
Electric	Motor (%)	Energy used by the motor for vehicle propulsion in percent of total energy used
Electric	Motor (kWh)	Total energy used by the motor for vehicle propulsion
Electric	Avg recuperation (kWh/km)	Average energy recuperated to batteries while driving
Electric	Avg recuperation (kWh/100km)	Average energy recuperated to batteries while driving
Electric	Recuperation (kWh)	Total energy recuperated to batteries while driving
Electric	Energy used by 600V system (%)	Energy used by 600 volt electrical system in percent of total energy used
Electric	Recuperation per motor (%)	Energy recuperated to the battery in percent of total energy used by the motor
Electric	Recuperation per total energy used (%)	Energy recuperated to the battery in percent of total energy
Electric	Avg Idling (kWh/h)	Average energy used during standstill while not using power take-off (PTO)
Electric	Avg Standstill (kWh/h)	Average energy used at standstill
Electric	Energy used by 24V system at standstill (kWh)	Total energy used by auxiliary equipment from 24 volt system during standstill
Electric	Energy used by 600V system at standstill (kWh)	Total energy used from 600 volt electrical system during standstill
Electric	Idling (kWh)	Total energy used during standstill while not using power take-off (PTO)
Electric	Idling (%)	Energy used during standstill while not using power take-off (PTO)in percent of total energy used
Electric	Standstill (kWh)	Total energy used during standstill
Electric	Standstill (%)	Energy used during standstill in procent of total energy used
Electric	Avg energy (kWh/h)	Average kWh energy consumed per hour
Electric	Avg energy used (kWh/km)	Average energy used excluding consumption while charging and recuperated energy
Electric	Avg energy used (kWh/100km)	Average energy used excluding consumption while charging and recuperated energy
Electric	Avg energy used by 24V system (kWh/km)	Average energy used by 24 volt auxiliary systems

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Electric	Avg energy used by 24V system (kWh/100km)	Average energy used by 24 volt auxiliary systems
Electric	Avg energy used by 600V system (kWh/km)	Average energy used by 600 volt electrical system
Electric	Avg energy used by 600V system (kWh/100km)	Average energy used by 600 volt electrical system
Electric	Avg energy used incl. while charging (kWh/km)	Average energy used including consumption while charging
Electric	Avg energy used incl. while charging (kWh/100km)	Average energy used including consumption while charging
Electric	Energy used by 24V system (%)	Energy used by 24 volt auxiliary systems in percent of total energy used
Electric	Energy used by 24V system (kWh)	Total energy used by 24 volt auxiliary systems
Electric	Energy used by 600V system (kWh)	Total energy used by 600 volt electrical system
Electric	Total energy used excl. while charging (kWh)	Total energy used excluding consumption while charging and recuperated energy
Electric	Total energy used incl. while charging (kWh)	Total energy used including consumption while charging
Diesel, Hybrid	Engine speed histogram - Consumption (Chart)	Histogram over fuel consumed during different engine RPM.
Diesel, Hybrid	Engine speed histogram - Distance (Chart)	Histogram over distance driven using different engine RPM.
Diesel, Hybrid	Engine speed histogram - Time (Chart)	Histogram over time spent using different engine RPM.
Diesel, Hybrid	Vehicle speed histogram - Consumption (Chart)	Histogram over fuel consumed during different vehicle speeds.
Diesel, Hybrid, Electric	Vehicle speed histogram - Distance (Chart)	Histogram over distance driven during different vehicle speeds.
Diesel, Hybrid, Electric	Vehicle speed histogram - Time (Chart)	Histogram over time spent during different vehicle speeds.
Diesel, Hybrid, Electric	Avg emergency brakings (Amount/100km)	Average number of anti-lock braking system engagements

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Diesel, Hybrid, Electric	Avg harsh acceleration (Amount/100km)	Average number of harsh accelerations. Triggered when acceleration is above the configured harsh acceleration limit
Diesel, Hybrid, Electric	Avg harsh braking (Amount/100km)	Average number of harsh brakings
Diesel, Hybrid, Electric	Emergency brakings (Amount)	Number of anti-lock braking system engagements
Diesel, Hybrid, Electric	Harsh acceleration (Amount)	Number of harsh accelerations. Triggered when acceleration is above the configured acceleration limit
Diesel, Hybrid, Electric	Harsh braking (Amount)	Number of harsh brakings. Triggered when retardation (de-acceleration) is above the configured retardation limit
Diesel, Hybrid, Electric	ESP (Amount)	Number of electric stability program engagements
Diesel, Hybrid, Electric	Overspeeding (Amount)	Number of overspeedings. Triggered when vehicle speed is above the configured vehicle speed limit
Diesel, Hybrid, Electric	Avg overspeeding (amount/100km)	Average number of overspeedings. Triggered when vehicle speed is above the configured vehicle speed limit
Diesel, Hybrid, Electric	Avg ESP (amount/100km)	Average number of electronic stability program engagements
Diesel, Hybrid, Electric	Harsh curving (amount)	Number of harsh curvings. Triggered when angle velocity is above the configured limit
Diesel, Hybrid, Electric	Avg harsh curving (amount/100km)	Average number of harsh curvings. Triggered when angle velocity is above the configured limit (in m/s2)
Diesel, Hybrid	Above economy (km/h)	Average speed while driving above economy rpm range/green zone
Diesel, Hybrid, Electric	Coasting (km/h)	Average speed of vehicle moving without acceleration or cruise control
Diesel, Hybrid, Electric	Cruise control (km/h)	Average speed with cruise control activated
Diesel, Hybrid	Engine overrev (km/h)	Average speed above allowed engine rpm/red zone
Diesel, Hybrid, Electric	Avg Driving speed (km/h)	Average driving speed excluding time while idling
Diesel, Hybrid, Electric	Avg Speed (km/h)	Average speed with engine on including time while idling
Diesel, Hybrid, Electric	Vehicle overspeed (km/h)	Average speed above the configured vehicle speed limit
Diesel, Hybrid	Within economy (km/h)	Average speed while driving within economy rpm range/green zone
Diesel, Hybrid	Above economy (hh:mm)	Total time above economy rpm range/green zone
Diesel, Hybrid	Above economy (%)	Time above economy rpm range/green zone in percent of engine running time

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Diesel, Hybrid, Electric	Coasting (hh:mm)	Total time the vehicle is moving without using accelerator or cruise control
Diesel, Hybrid, Electric	Coasting (%)	Time the vehicle is moving without using accelerator or cruise control in percent of engine running time
Diesel, Hybrid, Electric	Cruise control (hh:mm)	Total time with cruise control activated
Diesel, Hybrid, Electric	Cruise control (%)	Time with cruise control activated in percent of total engine/motor running time
Diesel, Hybrid	Engine overrev (hh:mm)	Total time at engine overrev/red zone
Diesel, Hybrid	Engine overrev (%)	Time at engine overrev/red zone in percent of total time engine running
Diesel, Hybrid	Idling (hh:mm)	Total time spent within idling RPM while not using power take-off (PTO)
Diesel, Hybrid	Idling (%)	Time used within idling RPM while not using power take-off (PTO) in percent of engine/motor running time
Diesel, Hybrid, Electric	Driving (hh:mm)	Total driving time
Diesel, Hybrid, Electric	Driving (%)	Time spent driving in percent of engine/motor running time
Electric	Recuperation (hh:mm)	Total time during driving when energy has been recuperated to the battery
Electric	Recuperation (%)	Time during driving when energy has been recuperated to the battery in percent of total time
Electric	Standstill (hh:mm)	Electric vehicle: Total time during standstill
Electric	Standstill (%)	Electric vehicle: Time during standstill in percent of motor time
Diesel, Hybrid, Electric	Total (hh:mm)	Total time engine/motor running
Diesel, Hybrid, Electric	Vehicle overspeed (hh:mm)	Total time above the Vehicle overspeed limit
Diesel, Hybrid, Electric	Vehicle overspeed (%)	Time above the fleet speed limit set by fleet manager in percent of engine/motor running time
Diesel, Hybrid, Electric	Vehicle utilization (%)	Time with engine on in percent of total calendar time indicating how much the vehicle is in operation
Diesel, Hybrid	Within economy (hh:mm)	Total time within economy rpm range/green zone
Diesel, Hybrid	Within economy (%)	Time within economy rpm range/green zone in percent of engine running time
Diesel, Hybrid, Electric	Any door open (hh:mm)	Total time when any of the vehicle's doors are open
Diesel, Hybrid, Electric	Any door open (%)	Time when any of the vehicle's doors are open in percent of engine/motor running time

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	Hybrid electric driving	Total driving time with vehicle powered by electrical
Hybrid	(hh:mm)	motor and diesel engine turned off (rpm=0).
		Driving time with vehicle powered by electrical motor
	Hybrid electric driving	and diesel engine turned off (rpm=0) in percent of
Hybrid	(%)	total time
	Hybrid electric idling	Total idling time with vehicle powered by electrical
Hybrid	(hh:mm)	motor and diesel engine turned off (rpm=0).
		Idling time with vehicle powered by electrical motor
	Hybrid electric idling	and diesel engine turned off (rpm=0) in percent of
Hybrid	(%)	total time
	Total hybrid electric	Hybrid vehicle: Total time when vehicle is powered by
Hybrid	time (hh:mm)	electrical motor and diesel engine turned off (rpm=0).
		Hybrid vehicle: Total time when vehicle is powered by
	Total hybrid electric	electrical motor and diesel engine turned off (rpm=0)
Hybrid	time (%)	in percent of total time.
Diesel, Hybrid, Electric	Emission profile Static info	Assigned emission profile for vehicle
Diesel, Hybrid, Electric	Brand name Static info	Vehicle brand
Diesel, Hybrid, Electric	Emission class Static info	Vehicle emission classification
Diesel, Hybrid, Electric	Engine type Static info	Vehicle engine type
Diesel, Hybrid, Electric	Euro class Static info	Vehicle Euro classification
Diesel, Hybrid, Electric	Make Static info	Vehicle make
Diesel, Hybrid, Electric	Marketing type Static info	Vehicle marketing type
Diesel, Hybrid, Electric	Profile name Static info	Vehicle profile name
Diesel, Hybrid, Electric	Reg. country Static info	Registration country
Diesel, Hybrid, Electric	Reg. number Static info	Registration number/Vehicle-ID
Diesel, Hybrid, Electric	VIN Static info	The vehicle identification number. A unique number given to each vehicle when manufactured.

1.18.3 Available Events

Events are transferred in real-time when they occur in the vehicle. Events are displayed in Map Tool, Position History or in Reports, Tracking Report. If a driver is logged in the data will be connected to the driver.

Service Required	Event	Driveline

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Events or Electromobility Data	Ignition on	Diesel, Electric, Hybrid
Events or Electromobility Data	Ignition off	Diesel, Electric, Hybrid
Events	Doors open	Diesel, Electric, Hybrid
Events	Doors closed	Diesel, Electric, Hybrid
Events or Electromobility Data	Driving	Diesel, Electric, Hybrid
Events or Electromobility Data	Stopped	Diesel, Electric, Hybrid
Events	Over revving started	Diesel, Hybrid
Events	Over revving ended	Diesel, Hybrid
Events	Over speeding started	Diesel, Electric, Hybrid
Events	Over speeding ended	Diesel, Electric, Hybrid
Events	Harsh acceleration	Diesel, Electric, Hybrid
Events	Harsh braking	Diesel, Electric, Hybrid
Events	Harsh curving	Diesel, Electric, Hybrid
Events	Excessive idling	Diesel, Hybrid
Events	Battery level	Electric, Hybrid
Events	Retarder position change	

1.18.4 Available Events signals

Signals are shown for each historical event and/or updated live in the map from the latest received event. Event Signals are displayed in Map Tool, Position History or in Reports, Tracking Report. If a driver is logged in the data will be connected to the driver

Service Required	Signals for Event	Driveline	For historical event	Map Live View
Events or Electromobility Data	Position (Address of the vehicle)	Diesel, Electric, Hybrid	x	x
Events or Electromobility Data	Altitude	Diesel, Electric, Hybrid	x	
Events or Electromobility Data	Speed	Diesel, Electric, Hybrid	x	x
Events	Fuel level	Diesel, Hybrid	x	x
Events or Electromobility Data	Battery level	Electric, Hybrid	x	x
Electromobility Data	Remaining range	Electric		x
Events or Electromobility Data	Total distance (odometer)	Diesel, Electric, Hybrid	x	x
Events or Electromobility Data	Total engine/motor hours	Diesel, Electric, Hybrid	x	x

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Events or Electromobility Data	Total consumption of fuel/energy	Diesel, Hybrid	x	
Events	Any door open	Diesel, Electric, Hybrid	x	x
Events	Weight (Axle 1, Axle 2, Axle 3, Axle 4)	Diesel, Electric, Hybrid	x	
Events	Inside passenger temperature	Diesel, Electric, Hybrid	x	x
Events	Outside temperature	Diesel, Electric, Hybrid	x	x
Events	Engine coolant temperature		x	x
Events	Battery Voltage	Diesel, Electric, Hybrid	x	x

1.18.5 Invitation E-mail

The e-mail to invite a new user to Volvo Connect, as well as the e-mail sent when a user has been added to a fleet.

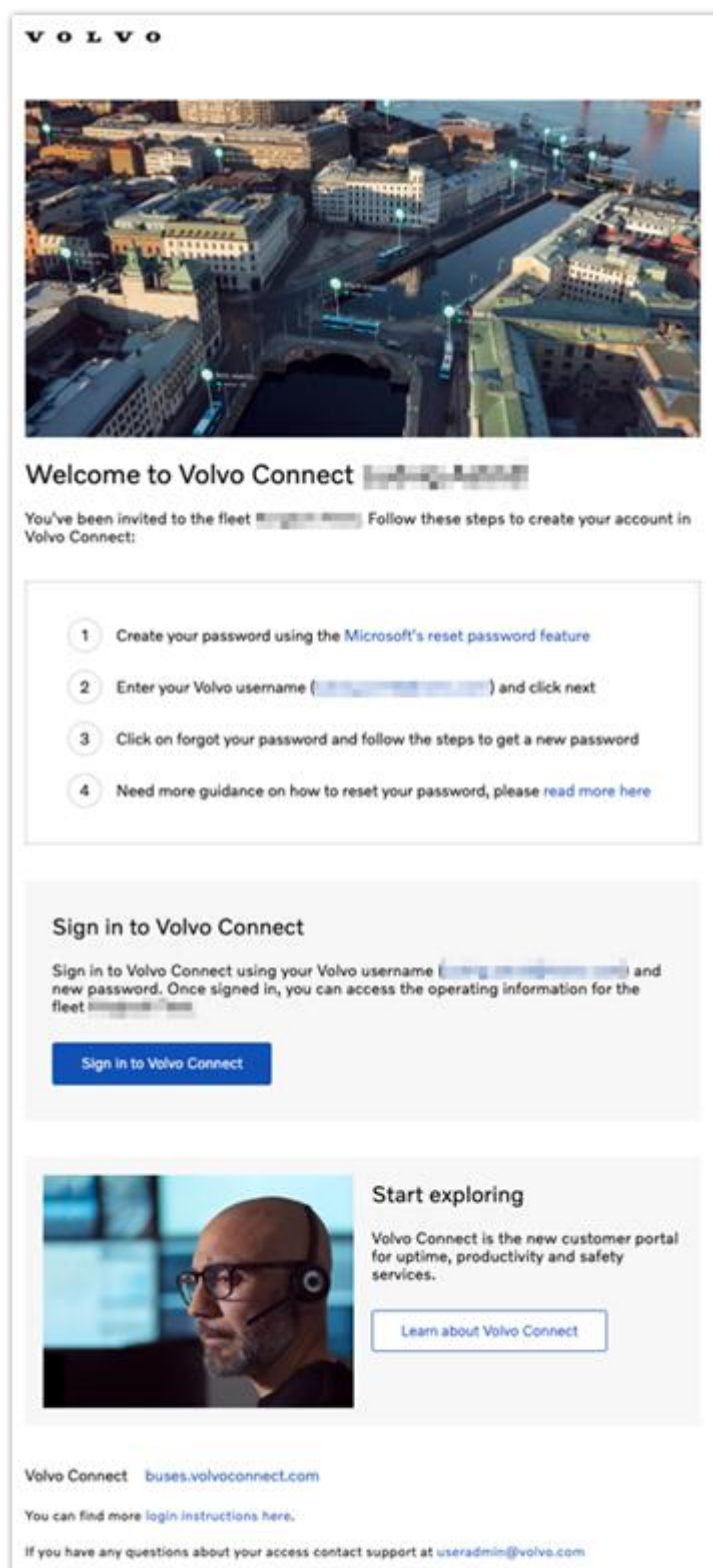| Company name		Type of document		
Volvo Buses		**Release Notes**		
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Figure 5: New e-mail design for a new user.