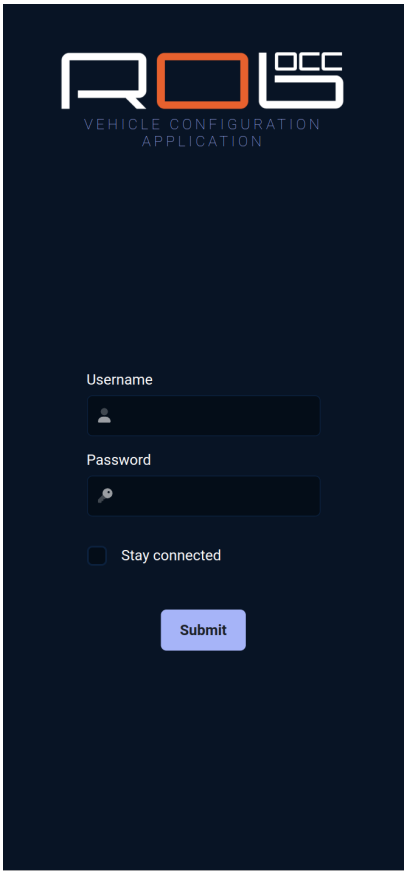
ROS OCC
Robotique Occitane

Noeme documentation

Version jujols-1

Table of Contents

Login

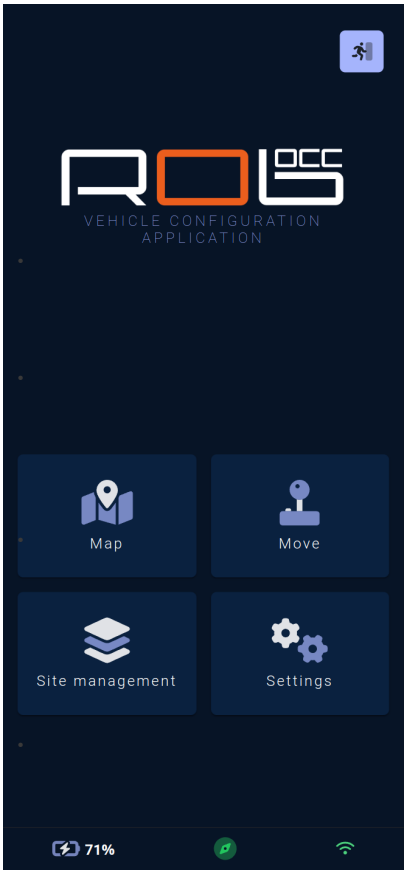


This page allows you to **log in** to the vehicle's configuration application.

The default login and password are provided on the **memo sheet** included with the vehicle.

The checkbox ☑️ allows you to **bypass this page** the next time you connect to your equipment.

Home Page



This home page serves as the starting point for navigation within the application.

The application is divided into four main pages or sub-menus:

The **active map** page 🗺️, which allows interaction with the vehicle's map.

The **movement** page 🕹️ which enables sending **movement commands** or moving the vehicle using the **virtual joystick** .

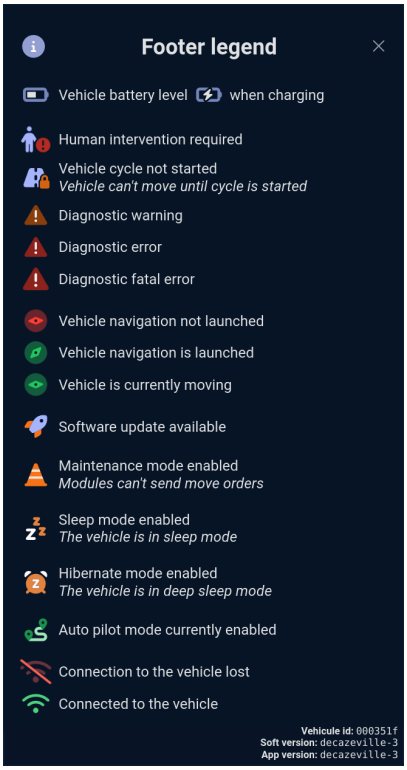
The **site management** sub-menu, providing access to pages for creating, editing, exporting, importing, and deleting **sites and their maps** , and configuring the vehicle's **autopilot sequence** .

The **settings** sub-menu ⚙️, offering access to pages for adjusting various **vehicle settings** , sounds, user accounts for the application, vehicle connectivity, and other settings.

The exit button in the top right allows **logging out of the application** and returns to the login page.

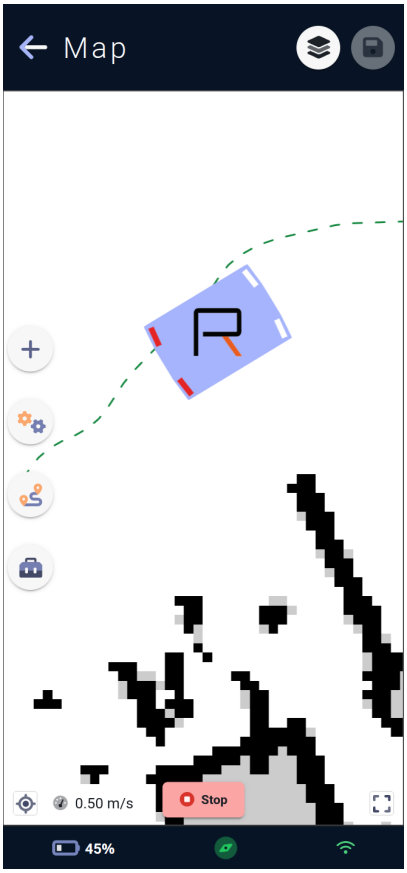
Footer

The footer displays the **real-time** general status of the vehicle, including its **battery** and state of charge 🔋, the status of the **autonomous navigation** 🧭, potential **problems** ⚠️ present on the vehicle etc...



The **legend** 🗒️ is available by clicking on the footer. It also includes the `Soft` and `App` **versions** of the vehicle, which can be very useful to the **Rob'Occ** team in the event of remote assistance 🛠️.

Map



This page allows you to configure the vehicle's active map and modify its movement, avoidance etc. behavior.

The **active map** is visible in the **background** of the page, with the white surface representing the **exploitable surface** for the vehicle, and the black surfaces representing the walls detected during the mapping stage (see ## Creating a new map). *Surfaces in grey are unknown (often behind a wall or obstacle, the vehicle was unable to determine what was behind it).*

The vehicle's current **speed** is shown at the bottom left of the map. *For better visibility, the speed bubble will not be displayed if the vehicle is stationary.*

The **vehicle** is represented on its map by a blue rectangle, with the Rob'Occ logo inside, and small white and red bars simulating car headlights to indicate the vehicle's current **orientation** . *White bars indicate front and red bars indicate rear .*

The **navigation path** is displayed in green and in motion when the vehicle is on a **movement mission** . *This is a theoretical path, which the vehicle may follow to a greater or lesser extent depending on the environment or configuration.*

The map's **save button** is located at the top right, and will turn green if map modifications have not yet been saved on the vehicle. *It is not possible to save the map when the vehicle is on a move mission .*

The **layers menu** is also located at the top right, next to the **save button** , and lets you show or hide certain layers or map elements, as well as **select** a map element.

Four other map action menus are available in the center left of the map:

- The **add** menu for **points of interest** (charging station, saved and docked poses).
- The **configuration** menu lets you add **forbidden** and **custom areas** , configure the vehicle's **overall behavior** on the map, and set up **traffic routes** .

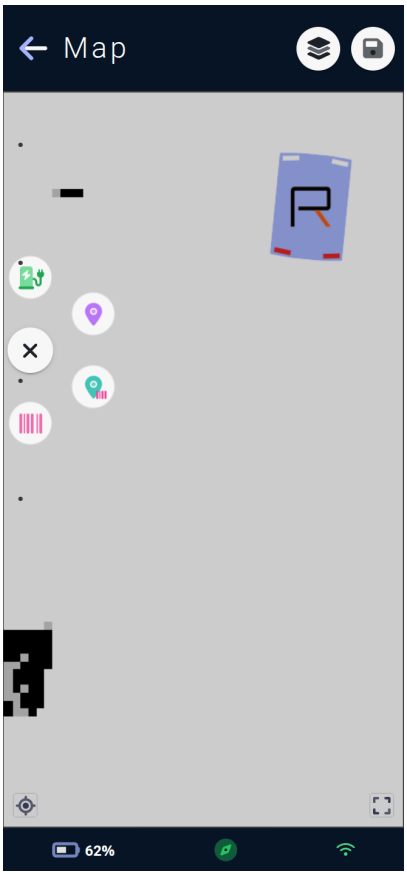
- The **move** menu allows the vehicle to move: **straight segments** , to its charging station, by clicking on the map, or to open a virtual joystick for teleoperation.
- The **toolbox** menu contains advanced map-editing tools such as the **eraser** , as well as vehicle-location tools for manually locating the vehicle on the map or asking it to perform a `relocation` .

In addition, **elements** drawn on the map are **selectable** when selection is active, and a menu corresponding to the actions available (delete, edit, translate etc.) on this element appears around the element's center.

A confirmation popup will be displayed if the page is exited and no changes have been saved.

Menus

Add Menu



This menu lets you add three types of element to the map.

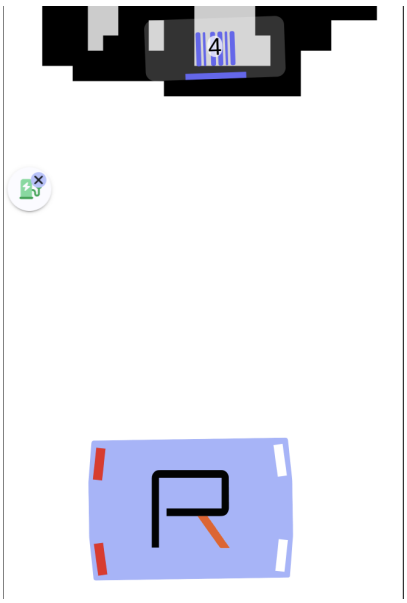
The charging station icon with its 🔌 plug starts the process of adding a `charging station` .

The map marker icon initiates the process of adding a `saved pose` .

The map marker with barcode icon initiates the process of adding a `docked pose` .

The barcode icon allows you to start the process of adding a `fiducial` .

Charging station



The `charging station` is a map element enabling the vehicle to **charge** itself by making contact with its dock and **charging pins** . The process of **docking** in order to make contact with its station is a special one, requiring precise guidance of the vehicle to the station marker, this **special move** starting at a certain distance from the station: the **approach distance** . Conversely, if the vehicle is docked, it must first undock before it can make autonomous movements. It will therefore have to reverse a distance called the **docking distance** . On the map 🗺️, this element is represented by a **gray solid rectangle** with the dimensions of the **station** , a **blue bar** representing the station marker, and a **rectangle footprint** the size of the vehicle in **green** , with a **charging station icon** corresponding to the vehicle's docked pose.

*If several charging stations are present, one must be set as the **preferred charging station** , allowing the vehicle to charge automatically at this one if the vehicle falls below its* `critical battery threshold` .

Once the add process has started, the vehicle will scan the surrounding area. If it finds a **marker** , it will be displayed on the map with its detected ID, and the view will zoom in on the vehicle and markers found. A **click** on a **marker** will complete the addition of the `charging station` and open directly its **edit form** so that you can modify the name, description or undock and approach distances, and define whether the station is the vehicle's preferred one.

The actions available via the menu for this item are **deleting** 🗑️, opening the **edit form** ⚙️, and triggering a **move** to the `charging station` .

The list of editable fields in the `charging station` edit form is organized as follows:

General

Here you'll find the general parameters of the `charging station` :

- UUID 🆔 : `UUID` , the station ID within the map.

This field is not editable, as it is generated by the vehicle when a map containing the element is saved; when created, elements all have UUID `-1` .

- Marker 🔢 : `Marker` , the marker associated with the `charging station` .

The marker is the visual identifier of the station on which the vehicle can be guided with great precision. This field is not editable.

- Name 🪪: `Name` , the name of the station.

Naming particular charging stations may come in handy for future configurations.

- Description 🗒️: A description of the `charging station` .

Parameters

These parameters modify the `charging station` configuration.

- Preferred charging station ⭐: `Preferred charging station` , the vehicle's **preferred** charging station is the charging station to which the vehicle will automatically go if its battery falls below the `critical battery threshold` . Checking a station **will uncheck the others** stations on the map, as the vehicle can only have one preferred station.

Checked or unchecked.

- Undock distance 🔙: `Undock distance` , the **undock distance** is the distance the vehicle travels backwards when undocking.

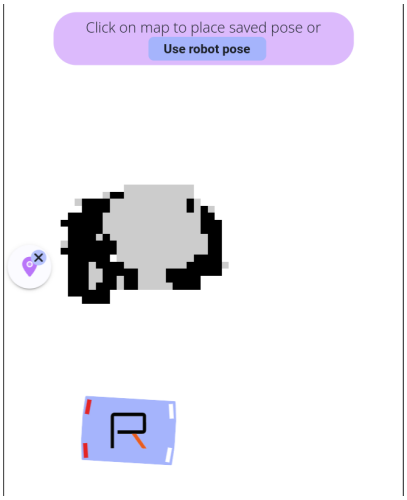
Between 0.5 and 1 m, 0.5 by default.

- Approach distance 🔜: `Approach distance` , the **approach distance** is the distance from the station at which the vehicle will start looking for the **marker** and will guide itself very precisely on it.

Between 0.5 and 1 m, 0.5 by default.

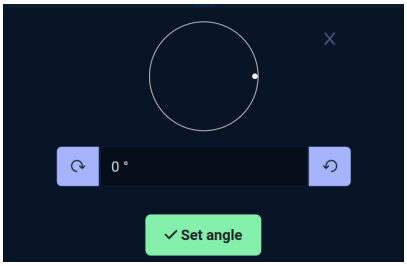
*Note: For all edit forms, it is possible to **show and hide** certain settings sections, and save this visibility state via the small **padlock** 🔒. When opening a form, sections with **values other than the default** will automatically be opened (unless a save on close via padlock has been set) as well as all sections that have been saved in the open position previously. Handy for identifying which setting has been configured, or for configuring several elements of the same type in sequence, for example.*

Saved pose



The `saved pose` is a map element that allows the vehicle to **save a position** in its map. It can then be used to trigger a move to it via a **move command** , a step in the **autopilot** sequence, or even via its **module** 's mission. On the map 🗺️, this element is represented by a **rectangle footprint** the size of the vehicle, in a customizable color, with a **icon** that can also be customized. To add a `saved pose` , simply click at the desired position on the map to define the location, and the second click will define the element's orientation.

The `Use robot pose` *button is available in the help at the top of the page, so simply move the vehicle to the desired position and use its current position to place the* `saved pose` .



On a touch screen 📱, orientation is set via an angle selector. Once the creation process is complete, the **edit form** opens, allowing you to modify the name, description, icon and color, as well as setting the element's angle again.

The actions available via the menu for this element are **delete** 🗑️, open the **edit form** ⚙️, `saved pose` **clone** process, **translate** process and trigger a **move** to the `saved pose` .

The list of editable fields in the `saved pose` edit form is organized as follows:

General

Here you'll find the general parameters of the `saved pose` :

- UUID 🆔 : `UUID` , the saved pose ID within the map.

This field is not editable, as it is generated by the vehicle when a map containing the element is saved; when created, elements all have UUID `-1` .

- Name 🪪 : `Name` , the name of the station.

Naming particular saved poses may come in handy for future configurations.

- Description 🗒️: A description of the `saved pose` .

Display

These parameters modify the display of the `saved pose` .

- Color 🟦 : `Color` , the color in which the saved pose will be drawn on the map.

A color selector appears to facilitate color selection.

- Icon ❔ : `Icon` , the icon to be drawn on the map.

An icon selector will appear to facilitate icon selection.

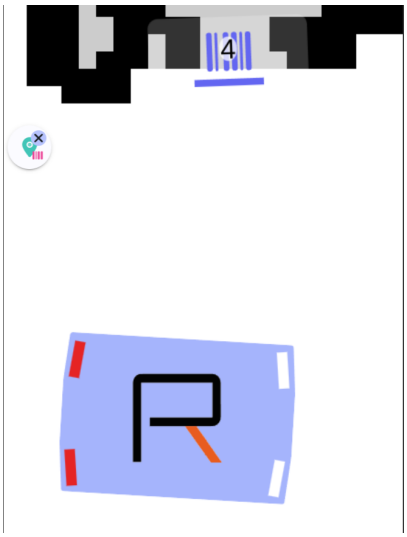
Orientation

- Angle 🧭 : the orientation of the `saved pose` .

The angle can be configured using the wheel and the two buttons which add or subtract 5 degrees.

*Note: For all edit forms, it is possible to **show and hide** certain settings sections, and save this visibility state via the small **padlock** 🔒. When opening a form, sections with **values other than the default** will automatically be opened (unless a save on close via padlock has been set) as well as all sections that have been saved in the open position previously. Handy for identifying which setting has been configured, or for configuring several elements of the same type in sequence, for example.*

Docked pose



The `docked pose` is a map element that allows the vehicle to **position itself very precisely** in relation to a marker (> 1 cm). It's the perfect fusion between a `saved pose` and a `charging station` on the marker side. Like the `charging station` , the vehicle will perform a **docking** process on the marker when moving to a `docked pose` . This element is used if the vehicle needs to go very precisely, for example to the end of a conveyor to receive an object coming out of operation, in cases where the precision of autonomous navigation (> 5cm) would not be sufficient. On the map 🗺️, this element is represented by a **rectangular footprint** the size of the vehicle in a customizable color, with a **icon** also customizable, and a **blue bar** representing the marker.

Once the add process has started, the vehicle will scan the surrounding area. If it finds a **marker** , it will be displayed on the map with its detected ID, and the view will zoom in on the vehicle and markers found. A **click** on a **marker** will complete the addition of the `docked pose` and directly open its **edit form** , where you can modify its name, description, icon and color, or its undock and approach and safety disabling distances. The latter allows you to deactivate obstacle safety and dock close to an object normally considered an obstacle.

The actions available via this item's menu are **delete** 🗑️, open the **edit form** ⚙️, and trigger a **move** to the `docked pose` .

The list of editable fields in the `docked pose` edit form is organized as follows:

General

Here you'll find the general parameters of the `docked pose` :

- UUID 🆔 : `UUID` , the docked pose's ID within the map.

This field is not editable, as it is generated by the vehicle when a map containing the element is saved; when created, elements all have UUID `-1` .

- Marker 🔢 : `Marker` , the marker associated with the `docked pose` .

The marker is the visual identifier of the station on which the vehicle can be guided with great precision. This field is not editable.

- Name 🪪 : `Name` , the name of the docked pose.

Naming particular docked poses may come in handy for future configurations.

- Description 🗒️: A description of the `docked pose` .

Parameters

These parameters modify the `docked pose` configuration.

- Undock distance 🔙 : `Undock distance` , the **Undock distance** is the distance the vehicle travels backwards when undocking.

Between -2m and 2m, a negative value is equivalent to a forward distance.

- Approach distance 🔜 : `Approach distance` , the **approach distance** is the distance from the station at which the vehicle will start looking for the **marker** and will guide itself very precisely on it.

Between 0 and 2 m, 0.8 by default.

- Disable safety distance ⚠ : `Disable safety distance` , the **disable safety distance** is the distance from the position at which the vehicle will deactivate safety to come very close to an obstacle which is impossible under normal circumstances, equal to the approach distance which may be different for particular configurations.

Between 0 and 2 m.

Advanced settings

These advanced settings allow further modification of the vehicle's `docked position` behavior. Some of these parameters can have potentially dangerous effects on vehicle safety, and should be used with caution.

- Guided distance ⬆️ : `Guided distance` , the **guided distance** is the distance beyond which the vehicle is only allowed to go **straight ahead** , e.g. if there is an alignment rail.

Between 0 and 2 cm, 0 by default.

- Maximum speed 🚗 : `Max speed` , the **maximum speed** is the maximum speed at which the vehicle is allowed to carry out its **docking** process.

Between 0.1 and 0.3 m/s, 0.3 by default.

- Contact allowed 🤳: `Contact allowed` , the **contact allowed** . By default, the vehicle considers the **docking** process as a failure if it pushes on something. This parameter allows you to tell the vehicle to consider this case as a **success** , for example if the robot has to hook onto an external element.

On or off.

- Contact success tolerance ✅ `Contact success tolerance` , the **contact success tolerance** defines the tolerance margin for considering the **docking** process successful. If the vehicle is allowed to make contact with a structure, this value represents the maximum distance between its current position and the docked position for the docking process to be considered successful.

Between 5 and 50 mm, default 5.

- Motors amperage threshold ⚡: `Motors amps threshold` , the **motors amperage threshold** . This is the amperage limit allowed on the vehicle's motors during a **docking** process, if the robot comes into contact with something the **amperage on the motors** may increase, this parameter limits the value.

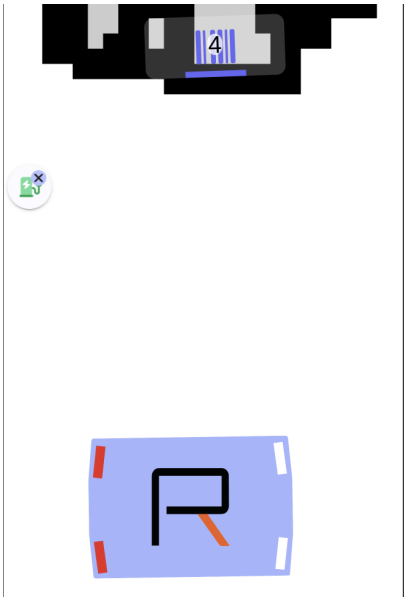
Between 5 and 8 amps, 5 by default.

- Motors amperage threshold time ⏱️: `Motors amps timer threshold` , the **Motors amperage threshold time** . This is the time limit during which the permitted amperage on the vehicle's motors may be exceeded, the permitted amperage is defined by the previous parameter.

Between 0.5 and 1 s, 0.5 by default.

*Note: For all edit forms, it is possible to **show and hide** certain settings sections, and save this visibility state via the small **padlock** 🔒. When opening a form, sections with **values other than the default** will automatically be opened (unless a save on close via padlock has been set) as well as all sections that have been saved in the open position previously. Handy for identifying which setting has been configured, or for configuring several elements of the same type in sequence, for example.*

Fiducial



The `fiducial` is an element on the map that lets the vehicle know that a marker (the same type as those for charging stations and docked pose) is located at a certain point on its map. This element is used by the vehicle to relocate itself if it gets lost, without having a recorded position or a charging station with this marker. It can therefore be easily installed in an area of the map where the vehicle is likely to get lost more frequently. On the map 🗺️, this element is represented by a **pink barcode** and a **blue bar** representing the marker.

Once the addition process has started, the vehicle will scan its surroundings. If it finds a **marker** , it will be displayed on the map with its detected ID, and the view will zoom in on the vehicle and the markers found. A **click** on a **marker** will complete the addition of the `fiducial` and directly open its **edit form** where you can modify its name and description.

The actions available via the menu for this element are **delete** 🗑️ and open the **edit form** ⚙️.

The list of editable fields in the `fiducial` edit form is organized as follows:

- UUID 🆔 : `UUID` , the fiducial's ID within the map.

This field is not editable, as it is generated by the vehicle when a map containing the element is saved; when created, elements all have UUID `-1` .

- Marker 🔢: `Marker` , the marker associated with the `fiducial` .

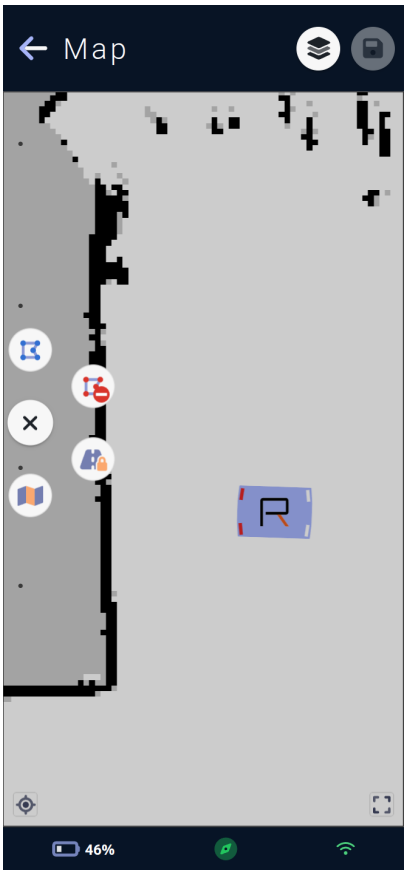
The marker is the visual identifier of the station on which the vehicle can be guided with great precision. This field is not editable.

- Name 🪪: `Name` , the name of the fiducial.

Naming particular fiducials may come in handy for future configurations.

- Description 🗒️: A description of the `fiducial` .

Configuration menu



This menu lets you configure the vehicle's movement and other behavior on the map:

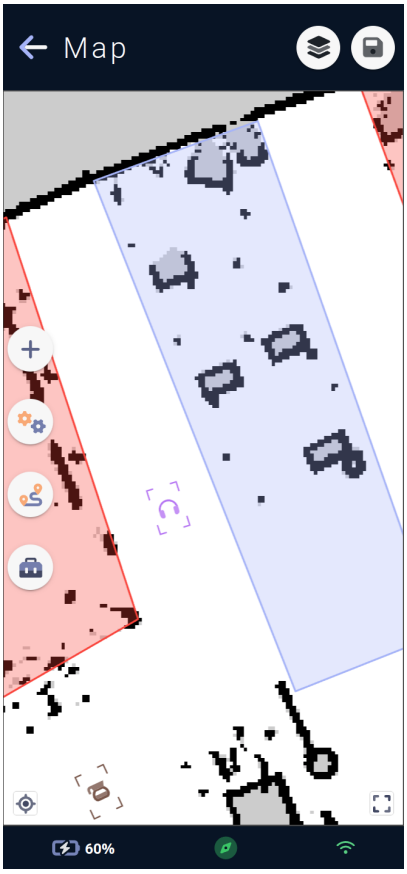
By adding `custom areas` , represented by the blue polygon icon. Clicking on this button will start the process of adding a area.

By adding `forbidden areas` , represented by the red polygon icon with the ⛔ forbidden icon. Clicking on this button will start the process of adding a area.

By configuring `traffic routes` via the road and padlock icon 🔒. A click on this button will open the routes menu.

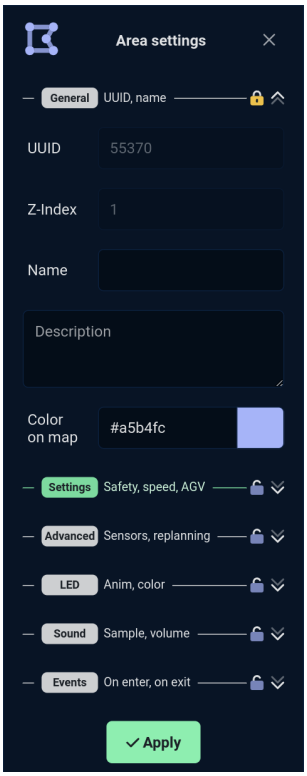
By configuring the vehicle's **global behavior** on the map via the map icon 🗺️. Clicking this button will open the map behavior edit form.

Custom area



The `custom area` is a map element that lets you configure special behaviors ⚙️ of the vehicle when inside it, but also when entering or leaving it. On the map 🗺️, this element is represented by a **polygon of configurable shape** via its edges, in a customizable color. To add a `custom area` , simply click on the desired position on the map to create the **first edge** of the polygon, and each click will add a new edge. To complete the polygon, simply **click on the first point** previously drawn.

Note : the polygon must have at least 3 edges.



Once the creation process is complete, the **edit form** for the behavior associated with the area opens.

A `custom area` can influence vehicle behavior in a number of ways. The list of editable fields in the `custom area` edit form is organized as follows :

General

Here you'll find the general parameters of the `custom area` :

- UUID 🆔 : `UUID` , the area ID within the map.

This field is not editable, as it is generated by the vehicle when a map containing the element is saved; when created, elements all have UUID `-1` .

- Name 🪪 : `Name` , the custom area name.

Naming particular areas may come in handy for future configurations.

- Description 🗒️: A description of the area.

- Color 🟦 : The color in which the area will be drawn on the map.

A color selector will appear to facilitate color selection.

Parameters

These parameters modify the vehicle's behavior.

- Maximum speed 🚗 : `Max speed` , the **maximum speed** of the vehicle moving in the area. This can be useful for reducing speed in a dense area or increasing it in a lightly trafficked area.

Between 0.1 and 1.0 m/s, by default the vehicle travels at 0.5m/s.

- Safety margins ↔️ : `Safety margin` , the **distances** at which the vehicle avoids approaching **obstacles** . This can be useful when the vehicle has to pass through restricted spaces such as a narrow corridor or a door.

Between -0.15 and 0.8 m, a negative value will reduce the default safety margins.

- AGV mode 🛤️ : `AGV mode` , the vehicle mode with **constrained guidance** . By default, the vehicle is allowed to deviate from its initial trajectory to avoid an obstacle and continue its progress. AGV mode **prohibits** the vehicle from **deviate** from its trajectory, and it will stop in the event of an obstacle and drive off once the obstacle has disappeared.

On or off.

Advanced settings

These advanced parameters allow further modification of the vehicle's behavior. Some have the potential to modify trajectory planning or safety, and should be used with caution.

- Replanning timeout ⏱️ : `Replanning timeout` , the **replanning timeout** . This is the time in seconds before the vehicle can re-plan a trajectory towards its goal. During a journey, the

vehicle may encounter an obstacle that it **cannot avoid or bypass** . It will then **replan** to see if there is another way to reach its goal despite the obstacle, and this parameter influences the time within which it decides to replan.

Between 0 and 60 seconds.

- Minimum obstacle height ↕️ : `Min obstacle height` , the **minimum obstacle height** . This is the minimum height at which the vehicle will consider a detection to be an obstacle when planning its trajectory.

Between 0 and 0.2m or 20cm.

- 3D camera filter 📷 : `3D camera safety` , the **3D camera safety filter** . This is a filter for reducing the safety of 3D cameras if the proportion of environment-related false positives is too high. ❗ A value below **100** has a direct impact on vehicle safety, which **will** ignore a greater or lesser proportion of **obstacles** seen by the vehicle's cameras. **USE WITH CAUTION** ⚠️.

The application uses a slider with 4 available values to set this parameter:

- 0 *No protection*
- 70 *Low protection*
- 85 *Medium protection*
- 100 *Total protection*

Between 0 and 100, default 100.

- Airplane mode ✈ : `No connection in area` , the **no connection mode** . Used to indicate to the vehicle that this **area** has no connection whatsoever. This can be useful if the vehicle module needs to send information via an external network. The vehicle can then find out if it is in an area covered by the network, or search for one in its map using this parameter.

Activated or not, to be coupled with the card's general no connection mode.

- Ultrasonic sensors 🔊 : `US sensors` , the **disabling of ultrasonic sensors** . Allows you to tell the vehicle not to take into account feedback from its ultrasonic sensors in this **area** . Can be useful if an area is subject to ultrasonic disturbance. ❗ Disabling ultrasonics has a direct impact on the safety of the vehicle, which will potentially **ignore obstacles** only detected by the vehicle's ultrasonic sensors. **USE WITH CAUTION** ⚠️.

On or off.

- Disable LiDAR self-relocation 🚨: `Disable self relocation` , **disabling LiDAR self-localization** . Allows you to tell the vehicle not to locate itself using its LiDAR data and therefore to rely solely on its odometer in this **area** . This can be useful if an area has a lot of configuration changes (pallets, storage, etc.) and if the vehicle tends to get lost there. **USE WITH CAUTION** ⚠️.

On or off.

LED

Allows you to set the animation and color of the vehicle's LEDs while in the `custom area` .

- LED animation 🚥 : `LED Anim` , the **animation** of the vehicle's LEDs.

If no animation is selected, the next LED parameters will be hidden.

- LED Color 🟦 : `LED Color` , the **color** of the LEDs.

Some animations, such as the French flag , do not require a color setting, and this drop-down menu will be hidden if one of these animations is selected.

Sound

Allows you to set the sound played in a loop by the vehicle while it is in the `custom area` .

- Sound 🎶 : `Sound` , the **jingle sound** to be played among all those available on the vehicle.

If no jingle is selected, the next sound settings will be hidden.

- Volume 🔊 : `Volume` , the volume at which to play the jingle while the vehicle is present in the area.

The application uses a volume knob with 3 available values to set this parameter:

- `Low` *Low volume 10*
- `Medium` *Medium volume 55*
- `High` *High volume 100*

*Between 0 and 100, by default 100, will then be limited by the value of the vehicle's **sound scenario** `Area` .*

- Loop delay ⏳ : `Loop delay` , the wait in seconds between two jingles played by the vehicle as long as it is in the area.

0 or more seconds, default 0.

Events

Allows you to set the sound played and LEDs displayed by the vehicle when it enters or exits the `custom area` .

The two events for entering the `On enter` area and exiting the `On exit` area can be set as follows:

LEDs

- LED animation 🚥 : `LED Anim` , the **animation** of LEDs from among those available on the vehicle.

If no animation is selected, the next LED parameters will be hidden.

- LED Color 🟦 : `LED Color` , the **color** of the LEDs.

Some animations, such as the French flag , do not require a color setting, and this drop-down menu will be hidden if one of these animations is selected.

- LED duration ⏳ : `LED duration` , the **duration** for which the LEDs will be displayed once the event has been triggered.

1 or more seconds, default 5.

Sound

- Sound 🎶: `Sound` , the **jingle sound** to be played among all those available on the vehicle.

If no jingle is selected, the next sound parameters will be hidden.

- Loop count ⏳: `Loop count` , the number of times the jingle will be played.

A value of less than 2 on this parameter will logically render the loop delay parameter useless.

- Volume 🔊 : `Volume` , the volume at which to play the jingle once the event has been triggered.

The application uses a volume knob with 3 available values to set this parameter:

- `Low` *Low volume 10*
- `Medium` *Medium volume 55*
- `High` *High volume 100*

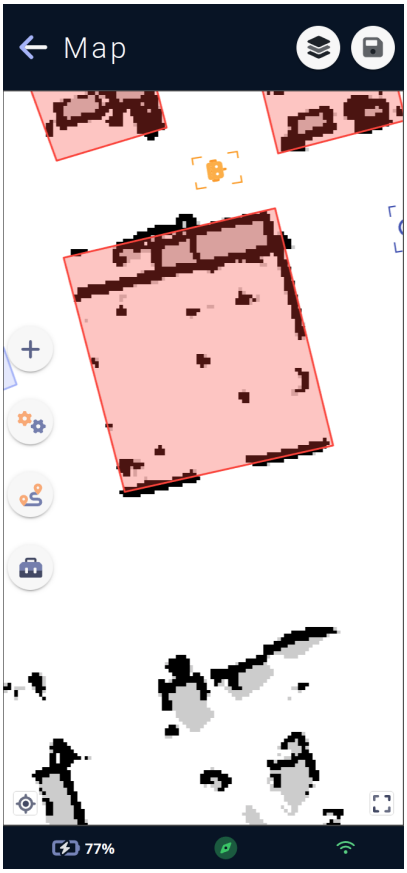
Between 0 and 100, by default 100, will then be limited by the value of the vehicle's ***sound scenario*** `Area` .

- Loop delay ⏳ : `Loop delay` The wait in seconds between two jingles played by the vehicle tune once the event has been triggered.

0 or more seconds, default 0.

*Note: For all edit forms, it is possible to **show and hide** certain settings sections, and save this visibility state via the small **padlock** 🔒. When opening a form, sections with **values other than the default** will automatically be opened (unless a save on close via padlock has been set) as well as all sections that have been saved in the open position previously. Handy for identifying which setting has been configured, or for configuring several elements of the same type in sequence, for example.*

Forbidden area



The `forbidden area` is a map element used to indicate areas **forbidden to navigation** ⛔ to the vehicle. The vehicle will not be able to cross or exit these areas if it finds itself in them via physical displacement or via `Teleop` joystick in free mode. It will refuse any orders that would force it to encounter it in its trajectory.

⚠️ **Please note that adding forbidden areas is a critical operation for the vehicle** ⚠️

Certain specific areas must be "protected" by a forbidden area (e.g. Escalator...) and the operator 👷 modifying these areas on the map must be **trained** by the **Team Rob'Occ or equivalent** .

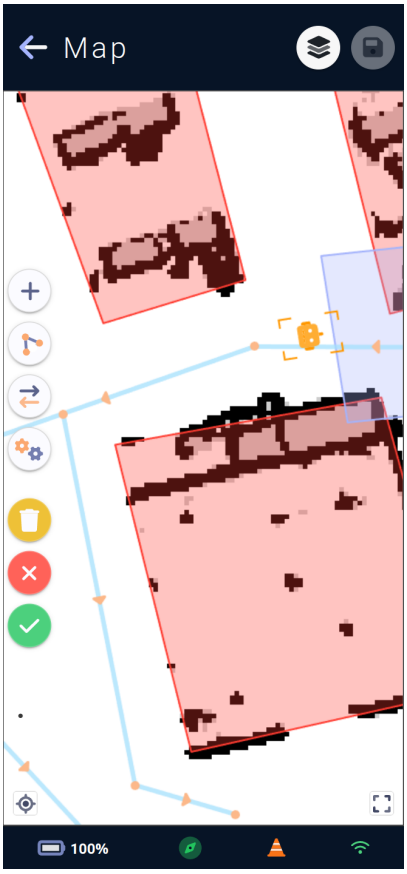
On the map 🗺️, this element is represented by a **polygon of configurable shape** via its edges, in a red color 🟥. To add a `forbidden area` , simply click on the desired position on the map to create the **first edge** of the polygon, and each click will add a new edge. To complete the polygon, simply **click on the first point** previously drawn.

Note : the polygon must have at least 3 edges.

Once the creation process has been completed, it is possible to recreate another polygon, thus creating the `forbidden area` in the chain.

An edit form is available for the `forbidden zone` , allowing you to set a name and description.

Traffic routes



`Traffic routes` indicate to the vehicle **how to move** in its active map. They can be used to define **one-way** traffic zones, or to specify how a vehicle should **run along a wall** in one direction, then along the other wall in the opposite direction, for example.

On the map, roads are **green** if they are configured as **two-way** , **blue** if they are **one-way** . The triangles show in which direction they are set.

You can select a route by clicking on it, and a button appears for deleting the route. *Route selection is only possible if the route menu is open and no route operating mode (adding, editing...) is in progress.*

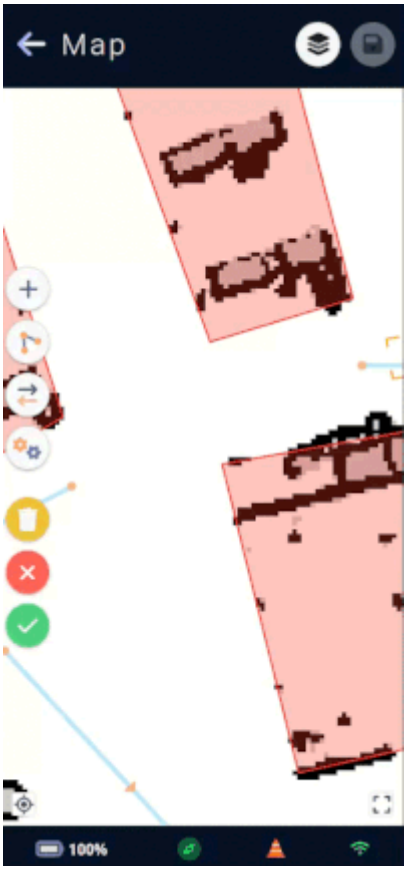
The route menu is divided as follows:

The plus icon ➕ starts the process of creating new routes, the first click sets the origin of the route, subsequent clicks steps on that route, to end the creation simply either re-click the last point, or re-click the plus icon.

- The drawing icon lets you modify routes already created by moving a vertex, or by adding a step to a route by clicking directly on the route segment to add a point. Clicking this button again exits the route editing mode.
- The double-arrow icon lets you change the direction of a route by clicking on all routes requiring a change of route. The route will then alternate between straight, reverse and double direction. Clicking this button again exits the route direction change mode.
- The double gear icon ⚙️ opens the route parameters edit form.
- The yellow trash can icon 🗑️ is used to delete all routes and return to a map without any routes.
- The red cross icon ❌ cancels route modifications made since last opening the route menu.
- The green tick icon ✅ saves route modifications made since last opening the route menu.

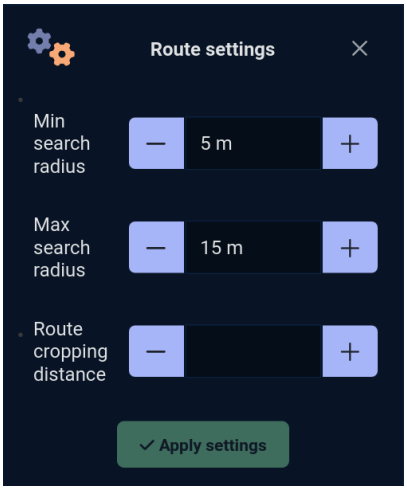
Note : Changes will only be applied the next time the map is saved.

Creating and editing routes



When creating a new vertex or moving an existing one, if its location is validated on another vertex already present, the moved or created vertex is merged with the existing vertex.

Route parameters



Three parameters influence vehicle behavior:

Min search radius: `Min search radius` , the minimum distance at which the vehicle searches for a route from its position.

Between 1 and 20 meters, default 5.

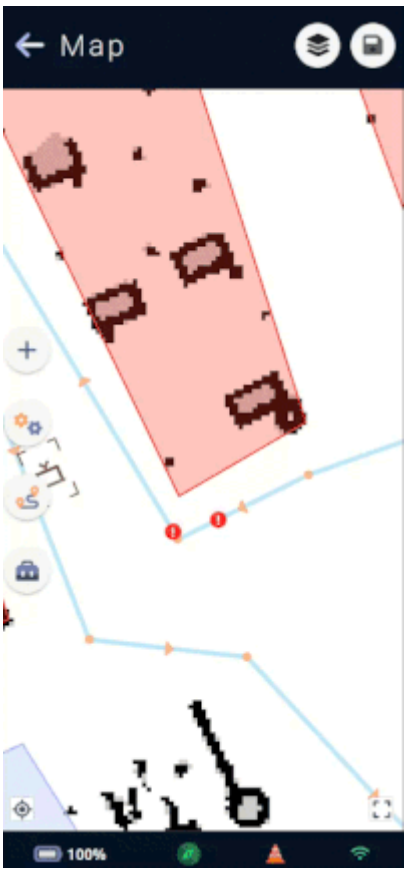
Max search radius: `Max search radius` , the maximum distance the vehicle will search for a road from its position.

Between 1 and 100 meters, default 15.

- Cropping distance: `Route cropping distance` , the ignored distance cropped by the vehicle when using `traffic routes` , to facilitate navigation.

Between 0 and 300 centimetres, default 0.

Road obstacles



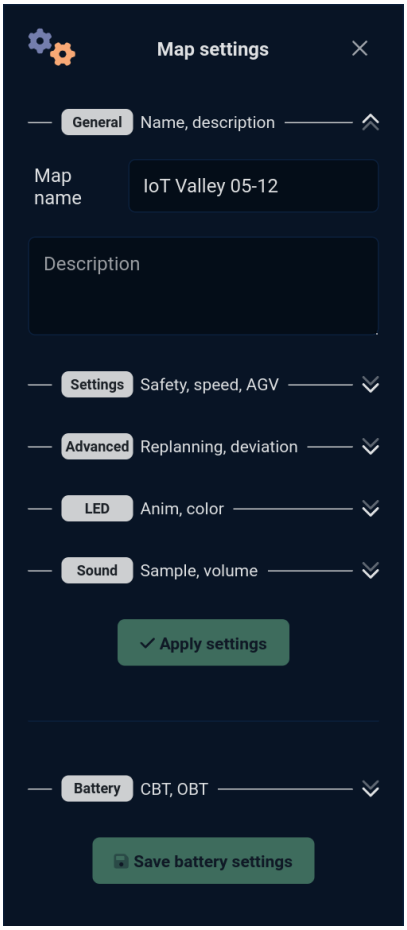
When configuring `traffic routes` , it is possible that some routes are too close to a wall, a `forbidden area` or a `custom area` with safety margin settings that are too restrictive.

The vehicle will then deem some of these roads unusable and create a road obstacle.

On the map, these obstacles are easily identified by an exclamation mark ❗ in a red circle. It is then necessary to correct the problem, so that the vehicle can use its `traffic roads` without problem.

Note : the vehicle can only detect and remove road obstacles if `autonomous navigation` *is activated.*

Map settings



Global map settings allow you to configure special ⚙️ vehicle behaviors across the entire map without having to create a custom area across the map extent.

Coupled with `custom area` , the vehicle's behavior can be modified across the entire map, and if it enters a `custom area` , a new value can be applied to one of the fields.

This allows you, for example, to tell the vehicle to go at a maximum speed of 0.7m/s on the map, and to reduce it again in specific (densely populated) areas.

This form can also be used to modify the name and description of the active map.

The list of editable fields on the global map edit form is organized as follows:

General

Here you'll find the general parameters of the active map:

- Name 🪪 : `Name` , the name of the active map.

By default, the map will have the same name as the site in which it was created.

- Description 🗒️ : A description of the active map.

Parameters

These parameters modify the vehicle's behavior.

- Maximum speed 🚗 : `Max speed` , the **maximum speed** of the vehicle, applied to the entire map outside a `custom area` where the maximum speed would have been configured with a different value.

Between 0.1 and 1.0 m/s, by default the vehicle travels at 0.5m/s.

- Safety margins ↔️ : `Safety margin` , the **distances** at which the vehicle avoids approaching **obstacles** , applied to the entire map outside a `custom area` or the safety margins would have been configured with a different value.

Between -0.15 and 0.8 m, a negative value will reduce the default safety margins.

- AGV mode 🛤️ : `AGV mode` , vehicle mode with **constrained guidance** . By default, the vehicle allows itself to deviate from its initial trajectory to avoid an obstacle and continue its progress. AGV mode **prohibits** the vehicle from **deviate** from its trajectory, and it will stop in the event of an obstacle and drive away once the obstacle has disappeared..

On or off.

- Preferred charging station 🔌 : `Preferred charging station` , the vehicle's **preferred charging station** , the station to which the vehicle will **automatically** go if it falls below its `critical battery threshold` .

UUID of a station on the map.

Advanced settings

These advanced parameters allow further modification of vehicle behavior. Some have the potential to modify trajectory planning or safety, and should be used with caution.

- Replanning timeout ⏱️ : `Replanning timeout` , the **replanning timeout** . This is the time in seconds before the vehicle can re-plan a trajectory towards its goal. During a journey, the vehicle may encounter an obstacle that it **cannot avoid or bypass** , so it will **replan** to see if there is another way to reach its goal despite the obstacle. This parameter influences the time within which it decides to replan, applied to the entire map outside a `custom area` where the planning timeout would have been configured with a different value.

- Minimum obstacle height ↕️ : `Min obstacle height` , the **minimum obstacle height** . This is the minimum height at which the vehicle will consider a detection as an obstacle in its trajectory planning, applied to the entire map outside a `custom area` where the minimum obstacle height would have been configured with a different value.

Between 0 and 0.2m (20cm).

- Airplane mode ✈ : `No connection in area` , the **no connection mode** . Indicates to the vehicle that this **map** has or has not connection of any kind. This can be useful if the vehicle module needs to send information via an external network. The vehicle can then find out if it is in an area covered by the network, or search for one in its map via this parameter.

Activated or not, to be coupled with the connectionless mode of the map's custom areas.

- Disable LiDAR self-relocation 🚨: `Disable self relocation` , **disabling LiDAR self-localization** . Allows you to tell the vehicle not to locate itself using its LiDAR data and therefore to rely solely on its odometer throughout the **map** . This can be useful if the entire map moves around a lot (pallets, storage, etc.) and the vehicle repeatedly loses its location. **USE WITH CAUTION** ⚠️.

Activated or not, this should be combined with the deactivation of LiDAR self-relocation for custom areas of the map.

LED

Allows you to set the animation and color of the vehicle's LEDs applied to the entire map outside a `custom area` where the LEDs have been configured with different values.

- LED animation 🚥 : `LED Anim` , the **animation** of the LEDs among all those available on the vehicle.

If no animation is selected, the next LED parameters will be hidden.

- LED Color 🟦 : `LED Color` , the **color** of the LEDs.

Some animations, such as the French flag , do not require a color setting, and this drop-down menu will be hidden if one of these animations is selected.

Sound

Allows you to set the sound played in a loop by the vehicle applied to the entire map outside a `custom area` where the sound would have been configured with different values.

- Sound 🎶 : `Sound` , the **jingle sound** to be played among all those available on the vehicle.

If no jingle is selected, the next sound settings will be hidden.

- Volume 🔊 : `Volume` , the volume at which to play the jingle.

The application uses a volume knob with 3 available values to set this parameter:

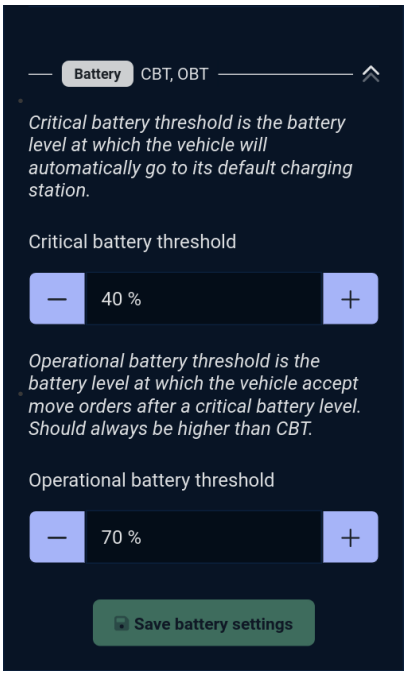
- `Low` *Low volume 10*
- `Medium` *Medium volume 55*
- `High` *High volume 100*

Between 0 and 100, by default 100, will then be limited by the value of the vehicle's ***sound scenario*** `Area` .

- Loop delay ⌛ : `Loop delay` , the wait in seconds between two jingles played by the vehicle as long as it is in the area.

0 or more seconds, default 0.

Battery



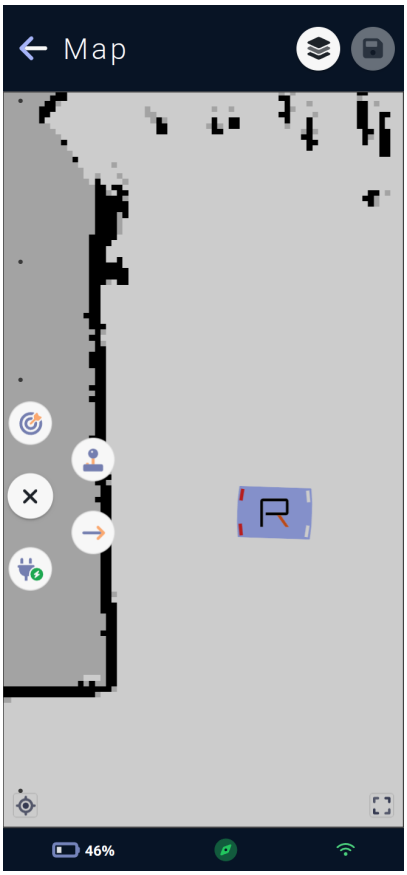
Sets the two battery values linked to the active map.

CBT 🪫 : `Critical battery threshold` . This is the battery level at which the vehicle will automatically go to its default charging station to recharge. Depending on the size of the map, this threshold can be set to ensure that the vehicle can reach its station no matter where on the map this threshold is reached.

OBT 🔋 : `Operational battery threshold` . This is the battery level at which the vehicle accepts travel commands after a battery has reached the **critical battery threshold** . It must always be higher than the CBT. This threshold can be more or less distant from the CBT to guarantee the vehicle a more or less durable use after having reached a **critical battery threshold** .

Note : Some modules ***charge*** *automatically the vehicle, i.e. send it to charge if no mission is in progress, leaving it to recharge throughout use, and these two thresholds can be unused.*

Move menu



This menu is used to move the vehicle.

The target icon 🎯 sends the vehicle to the **position clicked on the map** , orientation is set via an angle selector.

The joystick icon 🕹️ opens the map's **virtual joystick** (see #Move).

The ➡️ arrow icon is used to draw a **navigation segment** which will be carried out directly by the vehicle.

*It will move in autonomous navigation until the start of the segment, and then follow a **fully straight path** until the end of the segment. A straight-line travel behavior where the vehicle does not deviate from its line (it will stop in the event of an obstacle but will not go around it) can be useful for certain use cases.*

The electrical plug icon 🔌 sends the vehicle to its **preferred charging station** .

Toolbox menu

This menu allows you to use **tools** available for the map or for the vehicle.

The radar icon 📡 asks the vehicle to perform a `relocation` : the vehicle will scan the surroundings and, if it finds a **marker** in memory in its **map** , it will reposition itself perfectly in relation to this **marker** .

*This process also initiates the vehicle's **autonomous navigation** if it has not already been started.*

The compass icon 🧭 allows you to manually **locate** the vehicle by clicking on the map at the point where the vehicle is **physically located** . The vehicle will then believe itself to be in that position. Once located, the vehicle will recall itself according to the elements it sees and the position at which it was manually located.

⚠️ **Warning: manual localization is a critical operation for vehicles** ⚠️

The vehicle could get totally lost and ignore `forbiddens areas` for example if its location is not good and the 👷 operator using this process must be **trained** by the **Rob'Occ team or equivalent** .

*This process also launches the vehicle's **autonomous navigation** if it has not yet been started.*

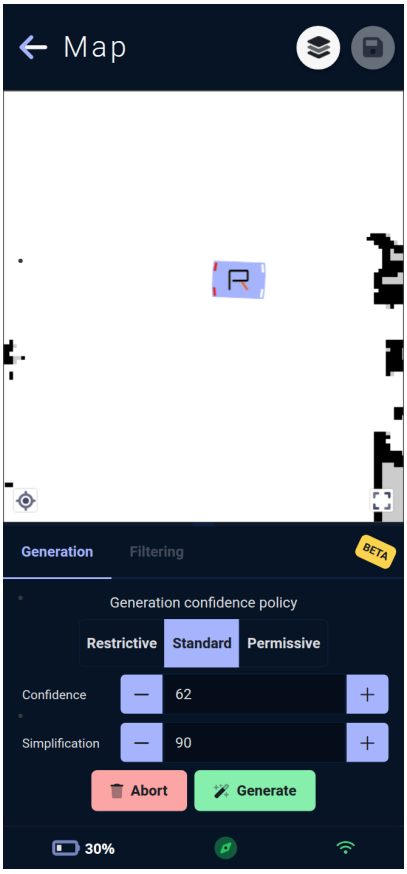
- The LiDAR icon 🚨 enables the display of real-time **LiDAR scans** from the vehicle. The vehicle's LiDAR scans will be visible on the map around the vehicle's footprint, which is useful for checking what the vehicle “sees.”

If the LiDAR scan display is enabled, the markers seen by the vehicle will also be visible.

- The eraser icon 🧽 opens the eraser menu, allowing you to erase impure leftovers of cartography directly from the map, or remove obstacles that are no longer physically present. Erasing can improve vehicle localization and autonomous navigation.

⚠️ **Warning, erasing the map is a critical vehicle operation** ⚠️

Automatic generation of forbidden areas



This form allows you to request that the vehicle **automatically add forbidden areas** ⛔ to the map.

To start generation, **two parameters can be customized** , as well as the policy used to generate **restricted areas** .

The first parameter, **Confidence** , will influence the number, size, and quality of the areas generated. The higher the score, the more areas that appear to be of high quality to the vehicle will be retained, thereby reducing their number and size. Conversely, a value that is too low may restrict the vehicle's movement with large *forbidden areas* ⛔.

Between 0 and 100, with the most effective values around 62, the default value*

The second parameter, **Simplification** , will affect the number of points and therefore the complexity of the shape of the **forbidden areas** ⛔ generated. A high value will tend to make the areas rectangular and therefore easily modifiable later on. The lower the value, the more precise the areas will be, with complex shapes composed of many points and therefore difficult to edit.

- Between 0 and 100, the most effective values are around 90, the default value*

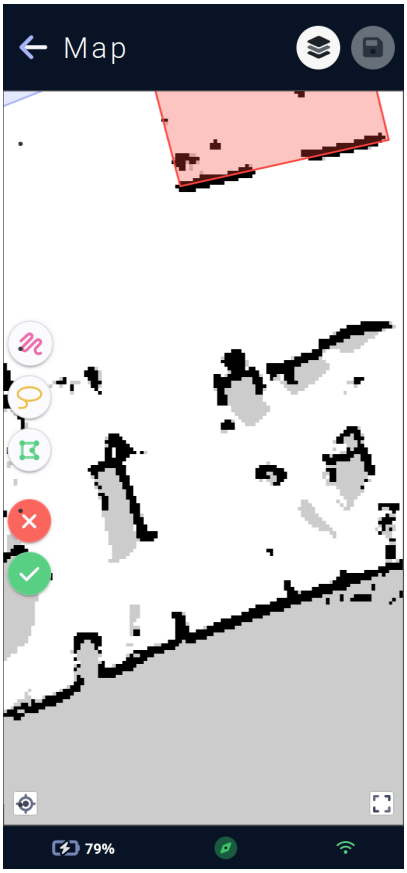
A selection button with 3 preset values is available to test 3 standard generation policies.

- Restrictive: `Restrictive` a **restrictive** generation policy that will tend to **limit the vehicle's movements** with large **forbidden areas** sometimes blocking paths that can be used by the vehicle, etc.
- Standard: `Standard` a **classic** generation policy, used in particular at the end of mapping.
- Permissive: `Permissive` a **permissive** generation policy, which will therefore tend to **less restrict vehicle movement** with multiple small **forbidden areas** .

Once the **forbidden areas** ⛔ have been generated, only the forbidden areas will be selectable on the map for modification, cloning, translation, or deletion. A slider will allow you to keep only the forbidden areas that are most relevant to the vehicle.

*NB: The first generation of **forbidden areas** requires a large amount of calculation by the vehicle to estimate the areas. Once the first generation has been completed, subsequent generations, including those with different values, will be extremely fast.*

Menu Eraser



The `eraser` menu lets you add areas to be erased in three different ways:

The **freehand drawing** icon lets you create erasers **freehand** . This will draw as long as the mouse, or finger if accessing the app via a phone 📱 or tablet, remains pressed down on the map.

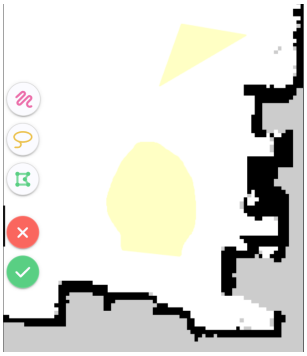
The **lasso** icon lets you create erasers by **surrounding** the area to be erased. Once the mouse (or finger) is released, a polygon will form inside the area drawn on the map.

The **polygon** icon can be used to create erasers in the same way as `forbiddens areas` or `customs areas` . Simply click on the desired position on the map to create the **first edge** of the polygon, and each click will add a new edge. To **terminate the polygon** , simply click on the **first point** previously drawn.

The red **button** with a cross ❌ cancels all unsaved eraser modifications and allows you to return to an eraser-free **map** (all erasers visible on screen will be deleted).

- The green **button** with a checkmark ✔️ allows the vehicle to **delete** areas drawn on its map. This allows it to remove elements from its trajectory planning, but can also **affect its location** , as there may be less correspondence between what it sees and what it knows is normally present on the map.

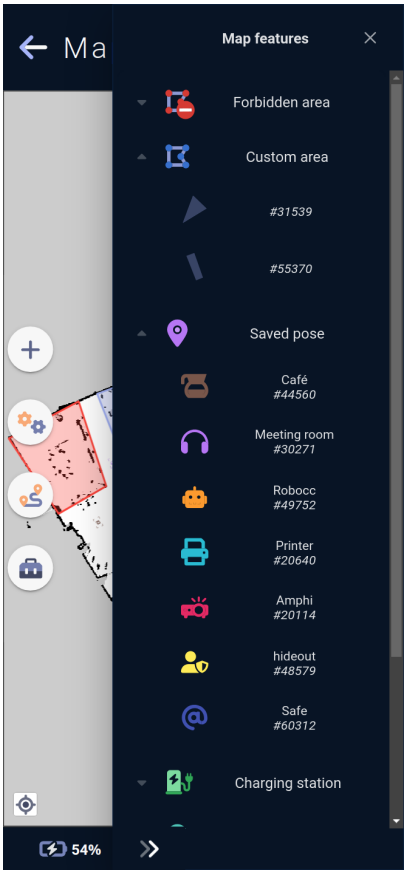
These last two buttons will require **confirmation** before deleting or applying the erasers present on the map.



Once the erasers have been drawn, they are **visible in yellow** on the map and represent the areas that will be cleaned by the vehicle. They can be **removed** by selecting them on the map and using the trash can icon 🗑️.

Selection is **possible** only if **no creation mode** is currently selected. The current creation mode is indicated in yellow by its button on the menu, and can be cancelled by clicking on the same button again.

Menu layers



This menu allows you to hide or show certain **layers or elements** on the map, as well as to **select an element** on the map.

A **click on the icon** hides or shows the group of elements on the map.

Lists can be opened to list elements.

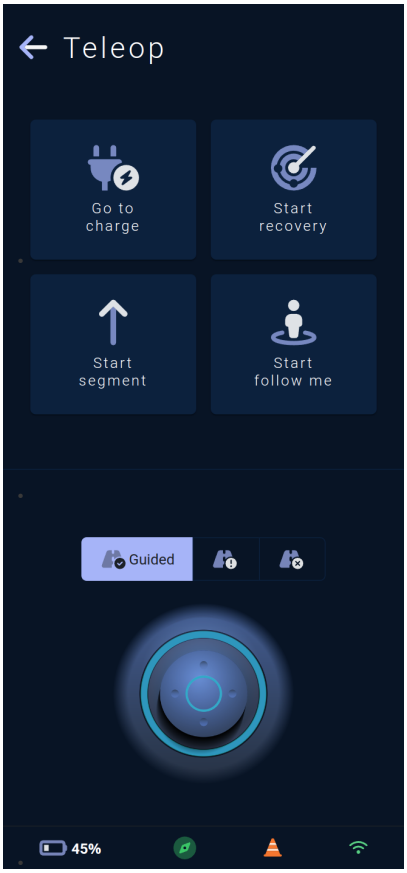
In the case of an element with an icon and a customizable color (saved pose, docked pose, etc.), the element will have the corresponding icon in its color. In the case of a customizable zone or forbidden zone, a drawing of the zone's shape will be present.

Clicking on an element **icon** hides or displays the element, while clicking on its **name selects** it.

When selected, the map view will be centered on the newly selected element.

Note: On PCs, for ease of use, the element is preselected by hovering the cursor over it.

Move



This page allows you to send **movement** and **relocation** commands to the vehicle.

At the top of the page, 4 functions are available via buttons:

The first, symbolized by a plug 🔌, allows you to send the vehicle to its default **charging station** .

This button will be grayed out if the map does not contain any charging stations.

The second, symbolized by a radar 📡, requests the vehicle to perform a `relocation` : the vehicle will scan the surroundings and, if it finds a **marker** stored in its **map** , it will reposition itself perfectly relative to that **marker** .

*This process also initiates the vehicle's **autonomous navigation** if it was not already started.*

The third, symbolized by an arrow ⬆️, allows you to send a **segment** type movement order: during a segment type movement, the vehicle will move **straight ahead** without deviating from its trajectory. It will stop if it detects an obstacle and will resume its straight path once the obstacle is gone. A window to set the **distance of this segment** will open upon clicking the button.

A negative distance will order the vehicle to perform the maneuver backward.

- The last movement function, symbolized by a person 🧍, starts and stops the vehicle's **FollowMe** mode. The vehicle will detect the operator' s legs and follow the operator' s movements at close range.

*Feedback will be displayed below the button to track the status of the **FollowMe** mode. Handy for finding out if the vehicle has lost track of the operator.*

The **virtual joystick** 🕹️ at the bottom of the page allows you to send movement commands to the vehicle. If the vehicle detects no obstacle, it will move in the direction indicated by the joystick. The **joystick** has three operating modes:

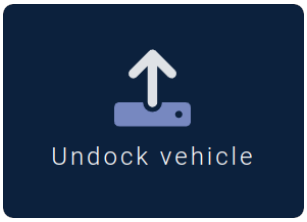
- `Guided` : The vehicle will safely follow the walls and `forbiddens areas` , which is the default mode of the joystick.
- `Assisted` : The vehicle will safely follow the walls but can enter or exit `forbiddens areas` .

⚠️ *The vehicle may get stuck in a restricted area and may not be able to exit via autonomous navigation.*

- `Free` : The vehicle will not follow the walls and can enter or exit `forbidden area` .

⚠️ *The vehicle may get stuck in a restricted area and may not be able to exit via autonomous navigation.*

*For simpler teleoperation, the vehicle will turn on its corner LEDs to indicate its front and rear. The **front** corners will be lit in **white** and the **rear** corners will be lit in **red** .*

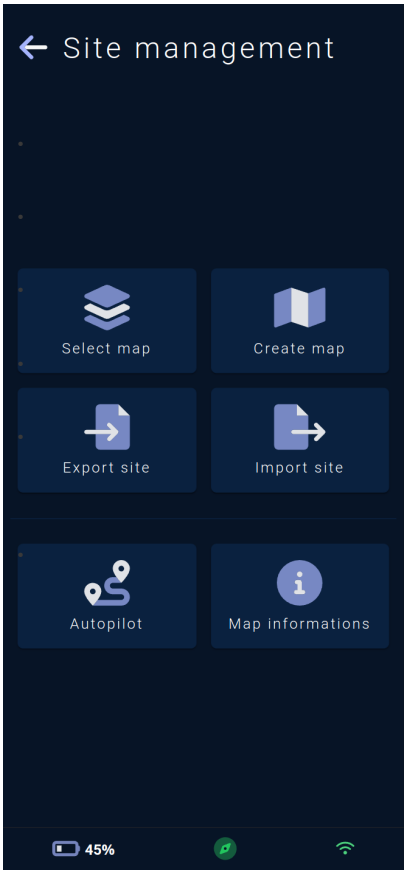


*If the vehicle is currently **docked** , the joystick will be replaced by an undocking button.*

Teleoperation supports the use of the application's **virtual joystick** 🕹️ and/or a **physical controller** 🎮. The **joysticks** 🔴 and **buttons** on the controller can be used to send commands to the vehicle. Simply **connect** (Bluetooth, USB, etc.) the controller **to the device** running the application.

*A **controller icon** 🎮 will be visible at the center of the joystick if operational and will **pulse** if **movement commands** are currently being **sent** by the controller.*

Site and map management



The **Site management** menu allows access to various configuration pages for the site and map :

Selection of the **active map** 🗺️.

Creation of a **new map** ➕.

Export of sites 🗃️.

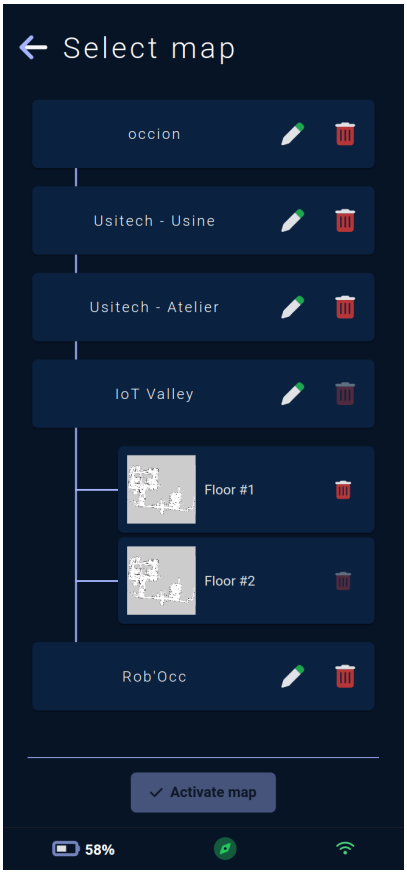
Import of sites 📂.

Configuration of the `autopilot` , a sequence of **automatic movements** on elements of the active map.

Map informations 🪪.

*Note : Autopilot settings and map informations only apply to the **active map** .*

Select active map



This page allows you to change the vehicle's **active map** 🗺️ among the maps **created** or **imported** on the vehicle.

It also allows renaming and deleting sites, as well as deleting maps.

In this "tree" view, the **sites** (containing the maps) are visible on the left side of the tree, and the **maps** , their names, and their **previews** are located under the parent site.

The current site will be open, and the active map will be selected by default. The map change button will remain grayed out until another map is selected.

The pencil button ✏️ allows you to modify the **name** and **description** of a site. The trash button 🗑️ allows you to delete, with **confirmation** required.

It is not possible to delete the active site or the active map.

Once the selection is complete, the button at the bottom of the page allows you to initiate the **map change** .

The vehicle will start by replacing its **active map** , then it will perform a **relocation** to start **autonomous navigation** on its new map.

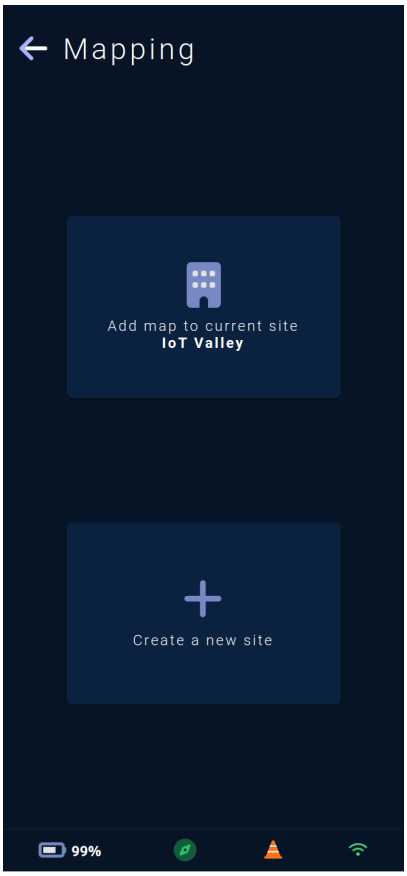
*Note : Changing the active map requires **maintenance mode** to be activated. If it is not, a pop-up will appear to activate it.*

Creating a New Map

⚠️ Warning, mapping is a critical operation for the vehicle ⚠️

The operator 👷 must be **trained** by the **Rob'Occ team or equivalent** to perform mapping.

Site Selection

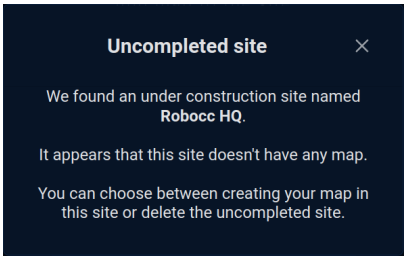


This page allows you to start a **new mapping** . The vehicle **automatically creates its map** by moving around its new environment and detecting walls 🧱 and navigable spaces using its LiDAR sensor 🚨.

Mapping is a necessary step when deploying on a **new site** or when **adding a map** to a site, such as a new floor.

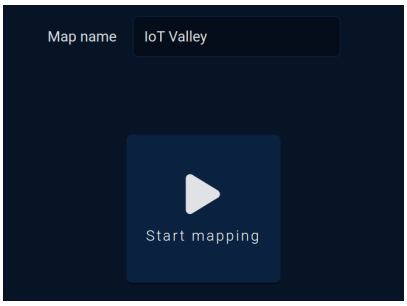
Once mapping is complete, the vehicle will be able to **locate itself** on its map and **move** freely in an **autonomous** manner ✔.

The first step in mapping is to **select the site** where the new map will be added. By default, the vehicle's **current site** is proposed via the top button, but if the mapping is for another site, the creation of a **new site** ➕ is available via the bottom button.



*Note : If the vehicle has a **site without a map** (due to an error during a previous mapping or a map deletion), you must choose to either **use** it or **delete** it to avoid keeping unnecessary sites.*

Map name



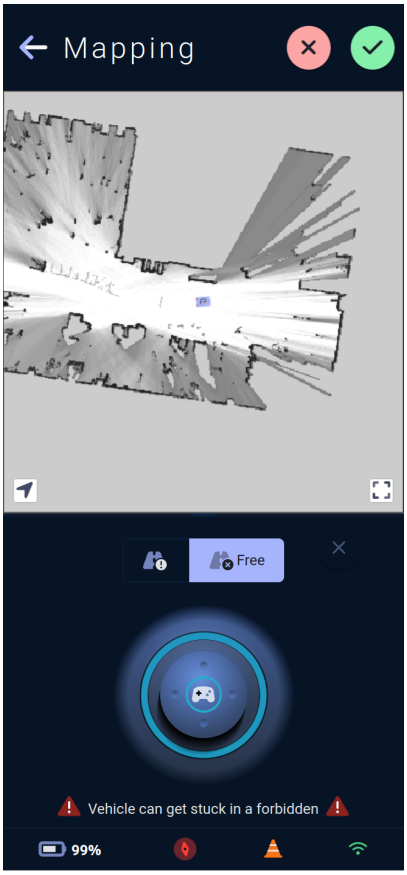
Once the site is selected, you need to choose the **name of the map** . By default, it will be pre-filled with the name of the previously selected site.

If the site already has one or more maps, it is better to rename the new map to differentiate it from the others already recorded on this site.

A **joystick** (cf. #Move) is also available to drive the vehicle to its starting point.

Once everything is prepared, the `Start mapping` ▶️ button will launch the mapping process.

Mapping



Once mapping has started, the **map under construction** will be **visible** on the page and regularly updated. Detected walls will be shown in black ⬛ , and open spaces in white ⬜ .

The vehicle's icon indicates its position within the map under construction, and the corner buttons allow you to adjust the view.

For successful mapping, all **physical walls** 🧱 should be correctly displayed in **black** on the map, and all **navigable spaces** should be in **white** . The vehicle must navigate around poles and other obstacles to "see" behind all obstacles in its 360° field of view.

The operator 👷 must follow the **best mapping practices** taught during training to avoid any issues or incidents ⚠️.

Once mapping is complete, you can **cancel** it via the red cross button ❌ or **save** the map via the green check button ✅. Saving or canceling can take some time on the vehicle.

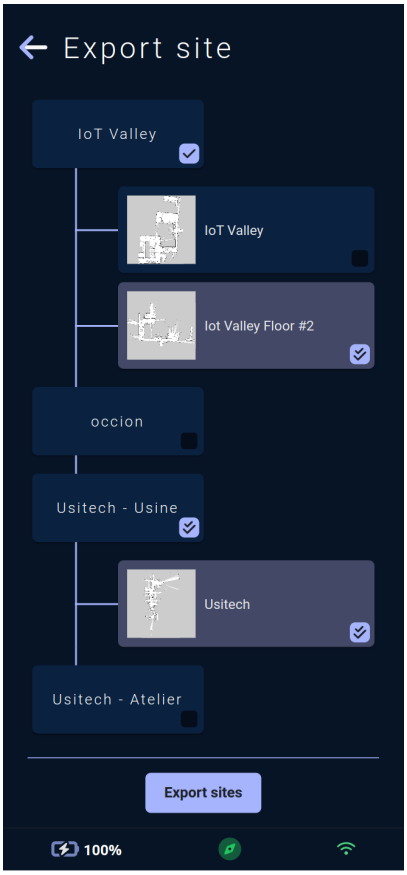
If an internal error is detected during mapping, a pop-up will appear indicating the error and allowing you to still try to **save** the map as it is. This can prevent the loss of an entire map, particularly on a large site.

If the process was **canceled** , return to the *Site Selection* step (see above) to restart mapping. If it was **completed and saved** , proceed to the map editing page to add `saved poses` , `custom areas` , `charging stations` , etc., necessary for the vehicle's mission.

A pop-up will allow you to launch **automatic generation** of **forbidden areas** ⛔, and the vehicle will automatically add the forbidden areas. This may take some time depending on the size of the map. Once the **forbidden areas** ⛔ have been generated, only the forbidden areas will be selectable on the map for modification, cloning, translation, or deletion. A slider will allow you to keep only the **forbidden areas** that the vehicle considers **most interesting** .

*Note : Starting a mapping requires **maintenance mode** to be activated. If it is not, a pop-up will appear to activate it.*

Export Sites



This page allows you to **export** 🗃️ the vehicle's sites.

In this "tree" view, the **sites** (containing the maps) are visible on the left side of the tree, and the **maps** , their names, and their **previews** are located under the parent site.

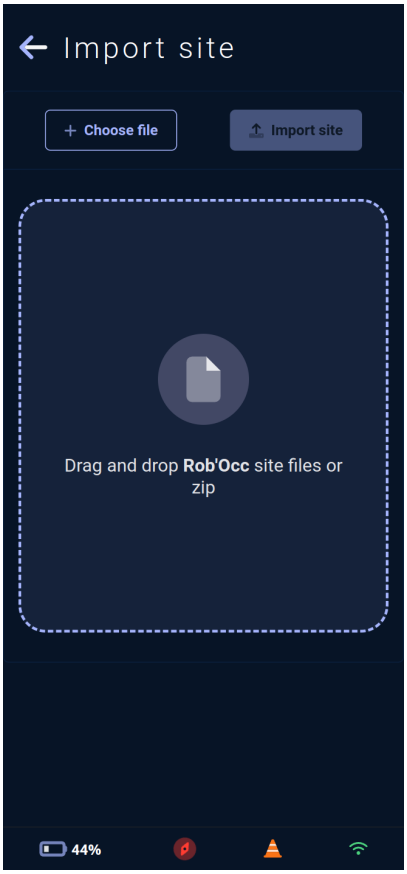
The current site with all its maps will be pre-selected .

You can choose to export only **certain maps from a site** , in this case, the site will be marked with a single checkmark ☑️.

A site marked with a double checkmark will be exported with all its maps.

Once the selection is complete, the button at the bottom of the page allows you to start the **export** . If only one site is selected, a single **.robocc file** 🗒️ will be created. If multiple sites are selected, a **.zip archive** 🗃️ containing the .robocc files of each site will be created.

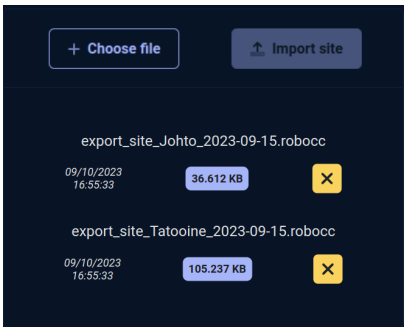
Import Sites



This page allows you to **import** 📂 the vehicle's sites.

.robocc site files can be uploaded using the ➕ button or by dragging and dropping them into the designated area.

*It is possible to upload a **.zip** archive containing multiple site files or upload multiple files to import them in sequence.*



Once the files are correctly uploaded, the list is visible, and a button allows you to remove a site before importing.

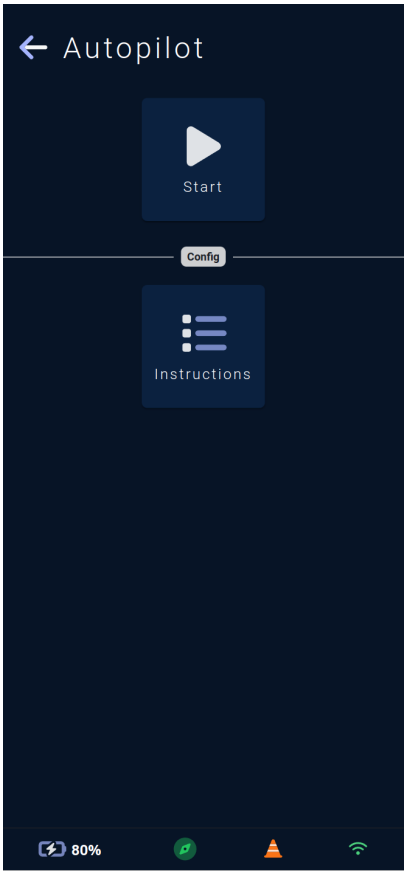
After starting the import via the ⬆ button, the vehicle will begin the sequential import of the selected sites.

With each successful site import, the vehicle will ask if the **active map** should be changed.

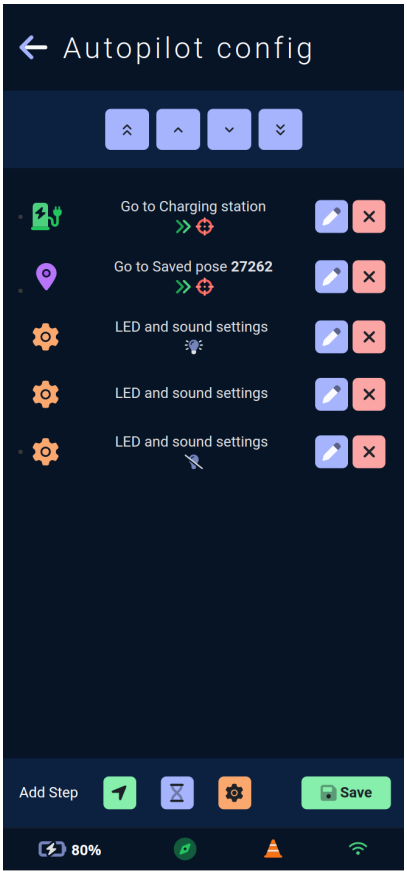
If the imported site includes multiple maps, a new pop-up for **map selection** from this site will appear. Once the map is selected, or if the imported site includes only one map, the vehicle will change its active map and start a **relocation** to begin **autonomous navigation** on its new map.

*Note : Importing a site requires **maintenance mode** to be activated. If it is not, a pop-up will appear to activate it.*

Autopilot



This page allows you to configure and start or stop the **autopilot sequence** 🔁 of the active map.



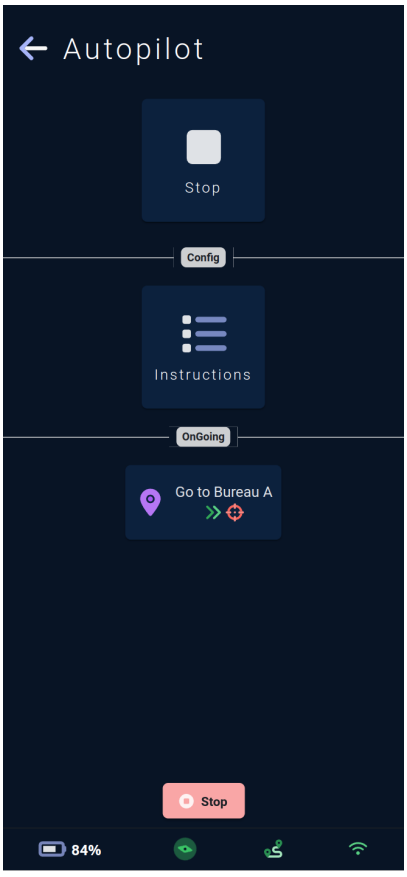
The `Instructions` button allows you to enter the sequence configuration.

Autopilot sequence steps are divided into 3 types:

Vehicle movement steps.

Behavior steps ⚙️ that affect the LEDs and sounds played by the vehicle. These steps are executed instantly by the vehicle.

Waiting steps ⏳ that will require the vehicle to stop for the specified number of seconds.



If the autopilot is active on the vehicle, the ongoing action is visible in the `OnGoing` section.

During a waiting action, an hourglass icon ⏳ and the waiting time in seconds will be visible.

During a movement action, an icon and text indicate the movement target.

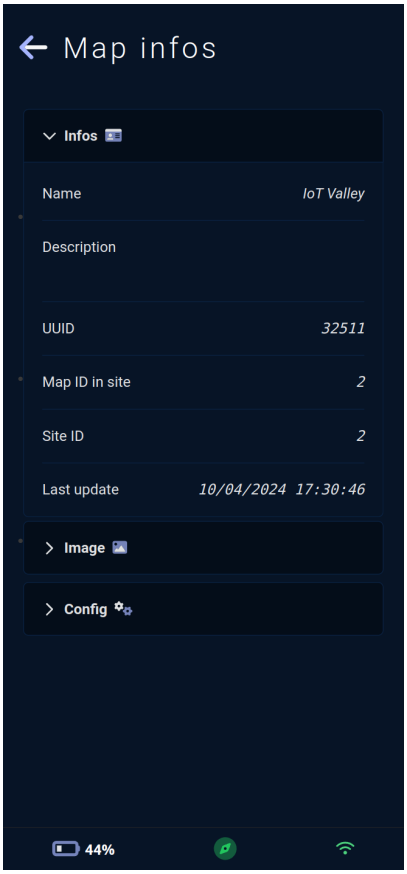
Additional information is available via the small icons under the text.

The first icon indicates the **behavior** of the step if a **movement error** occurs. A **double arrow** icon ⏩ indicates that in case of an error, the vehicle will proceed to the **next step** . A **repeat** icon 🔁 indicates that the vehicle will **retry the erroneous step** .

Note : the vehicle will pause for the number of seconds specified in the `error timeout` *before performing the next action, whatever it may be.*

The second icon provides information about the **accuracy to the target** . A **crosshair** icon indicates that **no tolerance** has been set for this movement step, and the vehicle will make a precise movement to the requested point. A **target** icon indicates that a **distance tolerance** has been **set** , and the vehicle may stop before reaching its precise target.

Map information



This page summarizes the **information** of the **active map** 🗺️.

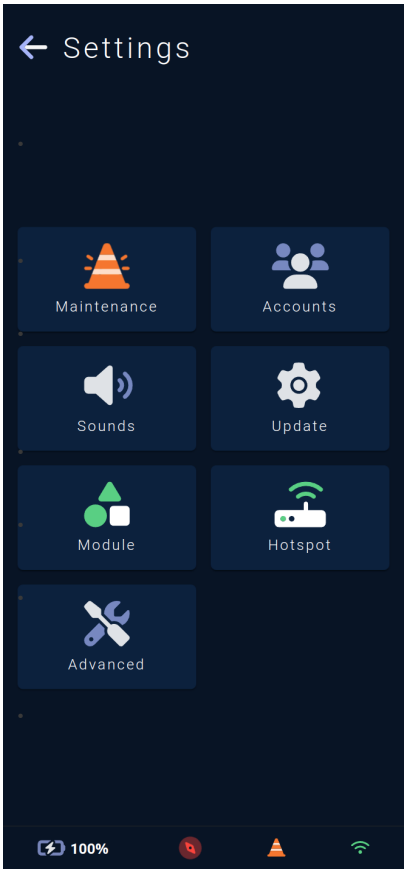
It is divided into three sections:

`Infos` Section 🪪 : A summary of the map's **general information** , including its **name** , various **IDs** , and the date of its **last modification** .

`Image` Section 🗾 : A summary of the **map image** , a preview of it, its **size** in pixels and meters, as well as the **navigable area** for the vehicle.

`Config` Section ⚙️ : A summary of the **map configuration** , including the number of **points of interest** , the general behavior of the vehicle on this map, and the number of **configured routes** .

Settings



The **Settings** menu provides access to various configuration pages for vehicle usage.

Management of **maintenance mode** , which blocks movement commands from the module.

Management of **user accounts** 👷, for this application.

Adjustment of **sound scenario volumes** 🔉 for the vehicle.

Management of vehicle **updates** ⚙️.

Information about the **active module** 🧠.

Management of the `hotspot` , WiFi network 🛜 emitted by the vehicle.

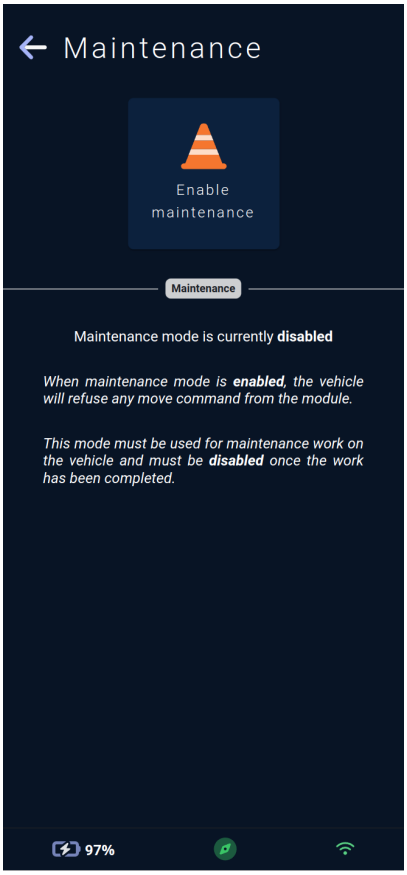
Advanced settings 🛠️ for the vehicle.

Note : The maintenance icon will be lit in orange if maintenance mode is currently active.

The WiFi router icon will be lit in green if the vehicle is emitting its WiFi network and gray if this functionality has been disabled.

The active module icon will be lit in green if a module is detected on the vehicle.

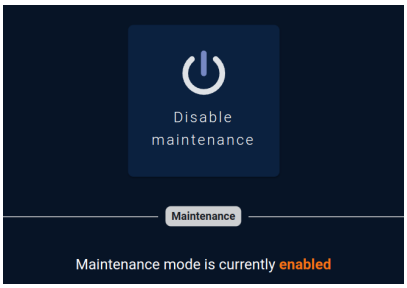
Maintenance



This page allows you to activate or deactivate **maintenance mode** on the **vehicle** .

Maintenance mode **blocks** movement **commands** from the **module** 🧠, enabling maintenance operations on the vehicle.

The display will change when maintenance mode is enabled.



This mode is **persistent** across restarts. If a vehicle is powered off while in maintenance mode, it will remain in maintenance mode when powered back on, facilitating maintenance operations that require a restart.

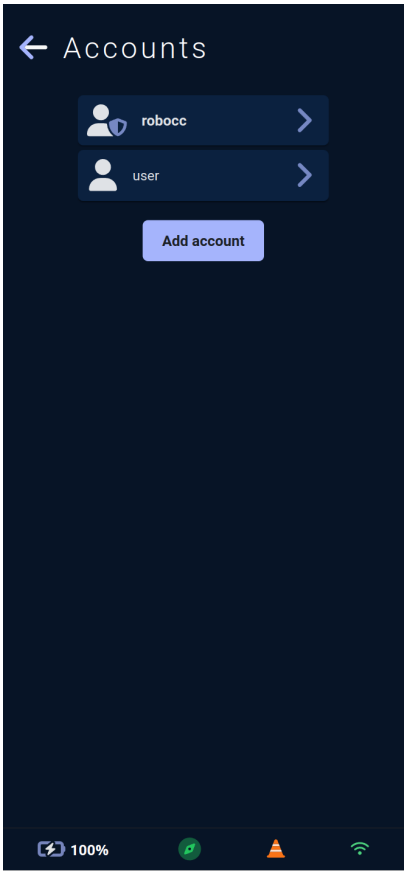
Maintenance mode **must be disabled** for the vehicle to resume accepting movement commands from the module.

Once maintenance mode is disabled, the vehicle will require one final **human action** to return to autonomous operation.

You need to start the **operating cycle** via the **application button** or by **quickly clicking** the **wheel release button** on the vehicle.

*Note : When maintenance mode is enabled, the **maintenance icon** in the footer provides direct access to this page.*

User Accounts

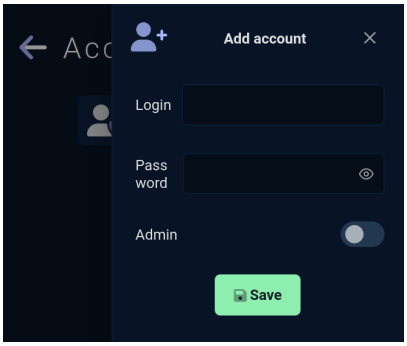


This page allows you to **create** and **delete user accounts** 👷 for the application.

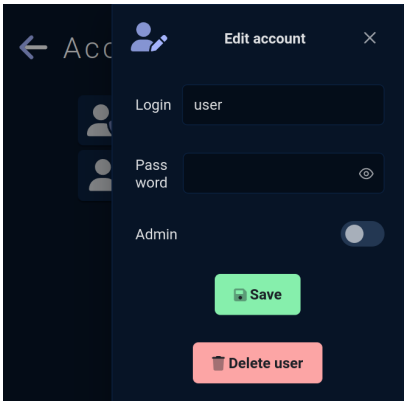
It also enables **modification** of **passwords** and **roles** for existing accounts.

Users marked with a **shield** 🛡️ have an **administrator** 🤴 role and can create, modify, or delete other administrators.

Other users can create or modify only non-administrator users.

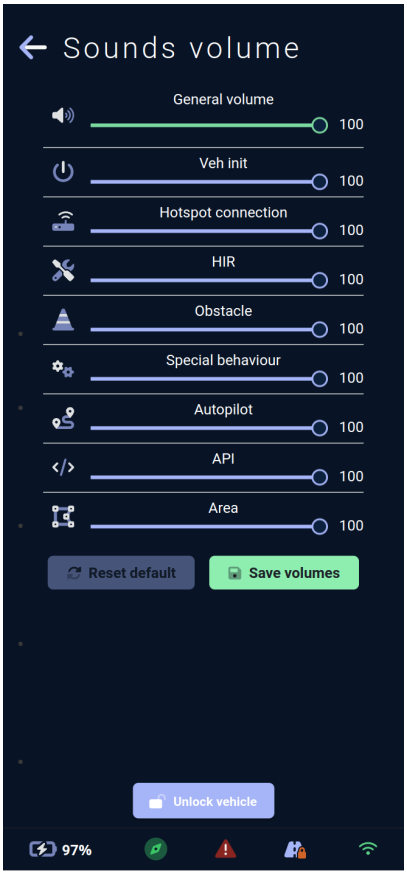


The `Add account` button opens a form to create a **new account** .



When editing a user, the form also includes the `Delete user` 🗑️ button to delete that user.

Sound scenario volumes



This page allows configuring a maximum volume 🔊 for each sound scenario emitted by the vehicle.

The general volume acts as an upper limit for all other values. *If set to 30, other volumes cannot exceed 30.*

The configurable scenarios include:

`Veh init` : Sounds emitted at **vehicle startup** .

`Hotspot connection` : Sounds emitted when a device connects to the vehicle's **WiFi hotspot** .

`HIR` (Human Intervention Required): Sounds emitted when the vehicle is **awaiting human intervention** .

`Obstacle` : Sounds emitted when the vehicle detects an **obstacle** during movement.

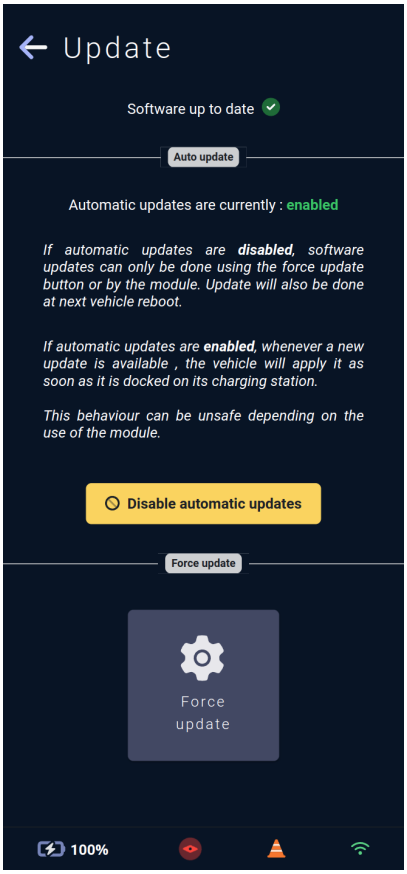
`Special behaviour` : Sounds emitted during a specific state of the vehicle.

`Autopilot` : Sounds emitted during the **sound steps** of an autopilot mode sequence of the vehicle.

- `API` : Sounds emitted through **API** calls, encompassing all sounds from the **vehicle configuration application** or from the **module** .
- `Area` : Sounds emitted when the vehicle enters, exits, or is within a **custom area** where sound behaviors have been set.

These maximum volumes should be considered as upper limits. If the volume for the `API` *scenario is set to 50 and an API sends a sound command with a volume of 75, the vehicle will execute it with a volume of 50 .*

Update



This page allows you to check the status of the vehicle's ⚙️ **software updates** , set the strategy for **automatic updates** , and launch a **manual update** .

The first section informs you of the current status, whether the software is **up to date** or whether an update is **downloading** or **available** .

If the vehicle is not connected at all, no update can be downloaded automatically .

The second section `Auto update` allows you to set the strategy for automatic updates.

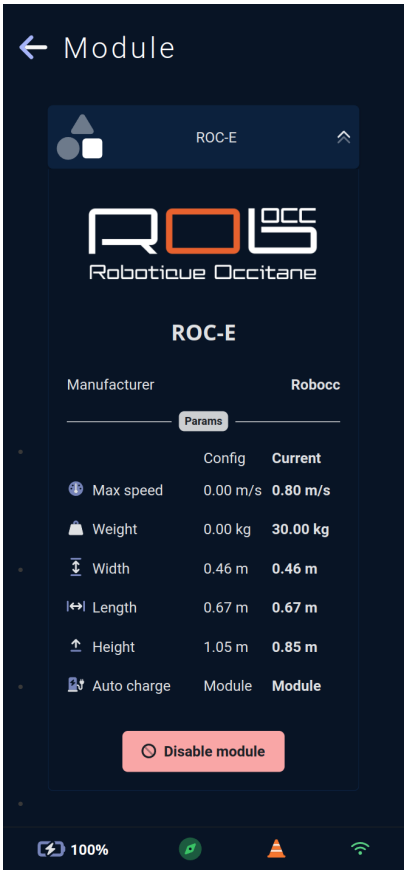
*If automatic updates are **disabled** , software updates can only be performed using the* `Force update` *button, or via the module. The update will be performed the next time the vehicle is restarted.*

*If automatic updates are **enabled** , whenever a new update is available, the vehicle will apply it as soon as it is docked at its charging station.*

Note: This behavior can be dangerous, depending on how the module is used.

The button in the last section allows you to manually **trigger** an update if one is available.

Active module



This page summarizes information about the **active module** 🧠 on the **vehicle** .

The first section of the summary displays the **name** , an **image** , and the **manufacturer** of the module.

Usage parameters of the module are visible in the second `Params` section.

The list of configurable parameters is as follows:

The **maximum speed** ⏱️ allowed by the module in meters / seconds.

The **maximum weight** ⚖️ reachable by the module in kilograms.

The **maximum width** ↕️ reachable by the module in meters.

The **maximum length** ↔ reachable by the module in meters.

- The **maximum height** 🔝 reachable by the module in meters.

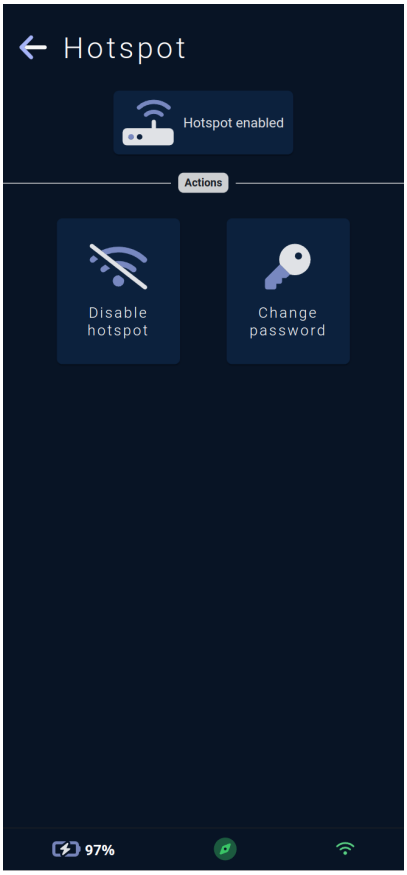
It is also specified whether the module or the vehicle handles automatic return to charge when the battery reaches a critical threshold.

*For certain uses, the module may want to handle automatic return to charge when the battery reaches a critical threshold. The module will manage the **detection** of this **threshold** and send the vehicle to the charging station.*

The values specified by the module and its **description file** are entered in the **first column** , while the values in the **second column** are the parameters **actually applied** to the vehicle. *For certain uses, the module may want to indicate a weight or other value different from the value in its description file, to be able to indicate to the vehicle that it is currently loaded, for example.*

If **no module** is active, a **cross** ❌ will replace the module information display.

WiFi Hotspot Configuration

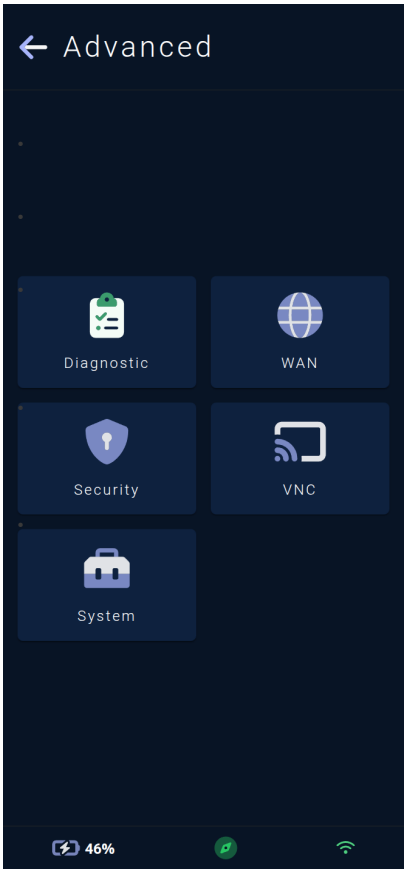


This page allows you to disable or enable the WiFi hotspot 🛜 emitted by the vehicle and modify the WiFi network password 🔑.

⚠️ *Attention, only the **module** can **re-enable** the hotspot if disabled.*

Please consult your **IT service** for internal best practices regarding password definition.

Advanced settings



The **Advanced parameters** menu provides access to other vehicle operating parameter pages.

Vehicle **diagnostics** 📋.

Management of the vehicle's **external connection** 🌐.

The **security** 🛡️ management page for connecting to the robot.

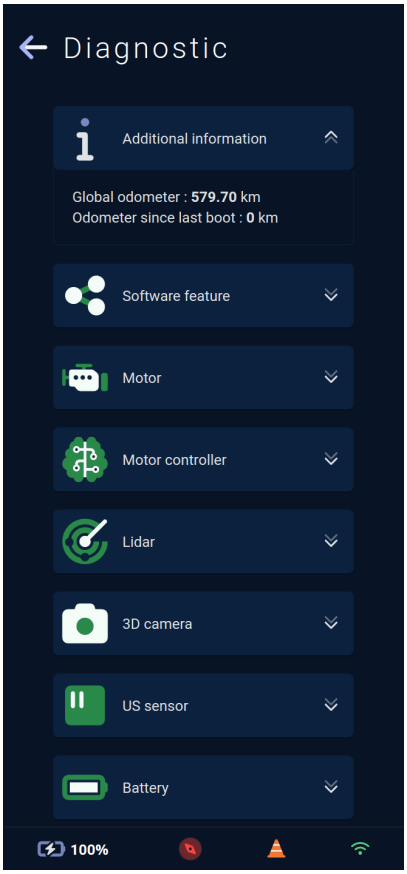
The **advanced maintenance** page 🖥️ for the Rob'Occ team.

The advanced **system tools** page 🧰 including **reset** to factory settings.

*Note : The diagnostic icon will be lit in **red** if an internal error is in progress.*

*The external connection icon 🌐 will be lit in **green** if the vehicle has an **external connection configured** , and **gray** if this feature has been **disabled** .*

Diagnostic



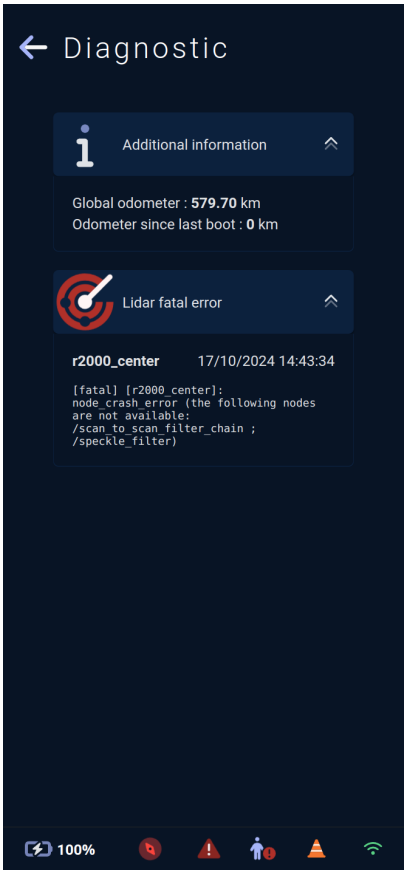
This page shows the status of the vehicle's **various components and software bricks** 📋 as well as the vehicle's mileage information.

The first section shows the vehicle's overall **odometer** 🚗 as well as the number of kilometers traveled since the vehicle's **last startup**

All components and software packages are listed in green ✅ if the vehicle has no issues.

Opening a **category** reveals the **list of components** within it.

In case of an **internal error** , the listing is replaced with a list of **faulty components and/or software modules** 🟥.

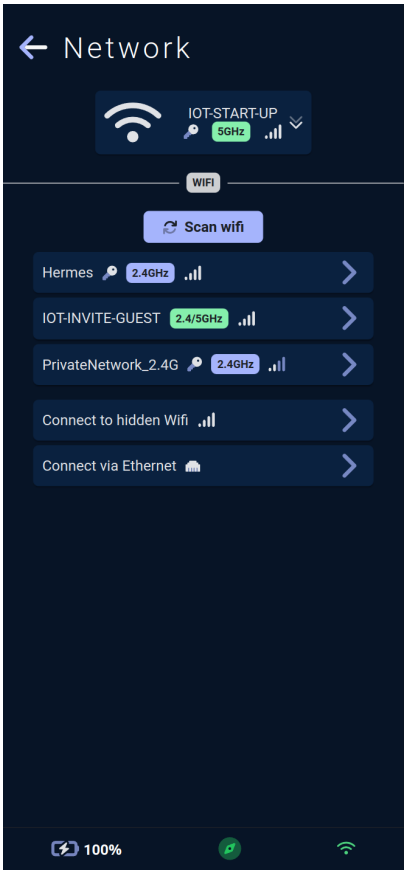


Details of the error are provided, showing the **affected component** and the **time** when the error occurred.

A **summary** of the error is also described, helping the Rob'Occ team understand what happened.

*Note : When an internal error occurs, the **warning triangle** ⚠️ icon in the footer allows direct access to this page.*

External connection configuration



This page allows configuring the **external connection** of the vehicle.

The badge at the top of the page summarizes the status of the external connection, displaying a WiFi icon 🛜 or Ethernet icon based on the WAN configuration.

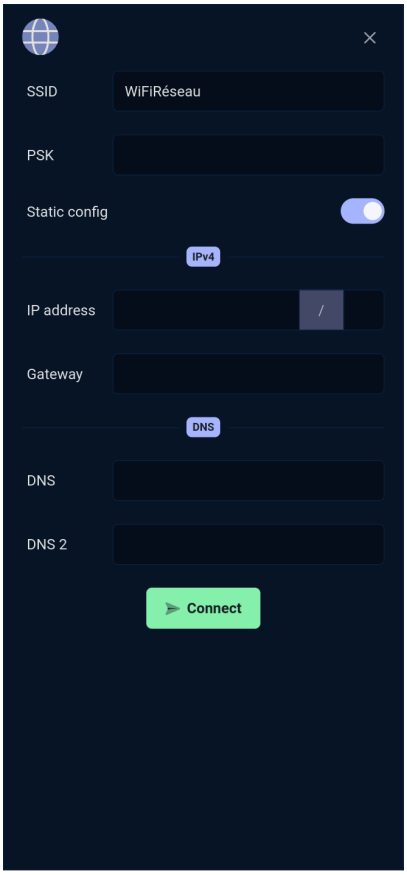
For WiFi connection 🛜, a key icon 🔑 indicates if the WiFi network is secure, a `5Ghz` *or* `2.4Ghz` *badge denotes its frequency, and an antenna bars icon 📶 shows the signal strength.*

Opening it reveals additional network information (IPv4, DNS) and a button 🚫 to disable the external connection.

⚠️ *Disabling the external connection will make the vehicle reachable only via the* ***hotspot*** *or through the* ***module*** *, and will prevent any* ***remote maintenance*** *.*

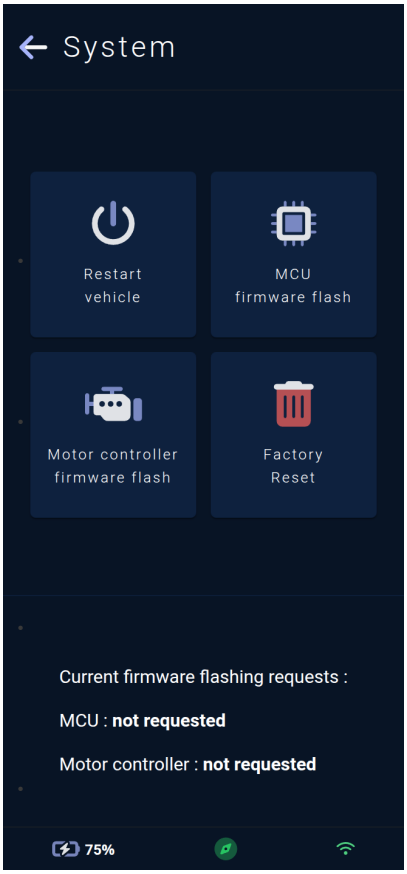
A `Scan WiFi` button lists the WiFi networks detected by the vehicle. Beneath the listing, options to connect the vehicle to a hidden WiFi network or via Ethernet are available.

Note : To use WiFi connection externally 🛜 , the vehicle needs its WiFi USB key to be plugged in.



Once a WiFi network is selected, a **form** to connect to it will appear. The **pre-shared key** (WiFi network password) is **required** , and a checkbox allows specifying network rules (IPv4, DNS) if necessary.

System



This page allows you to configure fields related to vehicle connection security.

The editable fields are grouped together in the first section as follows:

The first field allows you to enable or disable the unsecured **HTTP server** and Websocket (enabled by default) by checking the box.

The second field allows you to enable or disable the **SSH server** (enabled by default), which is used by the Rob'Occ team to take control of the robot and maintain it remotely.

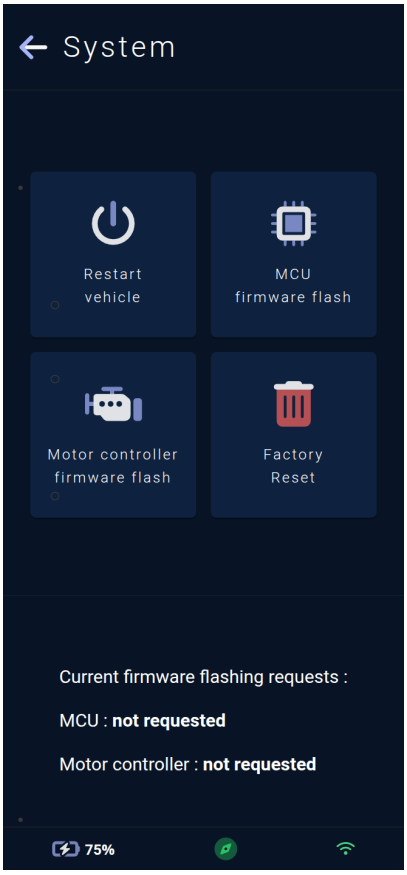
The third field allows you to configure the **maximum number of failed connection attempts** to the vehicle configuration application *default 5* .

The fourth field allows you to configure the **timeout period before a new connection attempt** after reaching the maximum number of errors *default 5 min* .

The changes will only take effect the next time the vehicle is restarted. A pop-up window to restart the vehicle is located at the bottom of the page.

VNC

This page enables the Rob'Occ team to perform advanced maintenance.



This page allows **advanced actions** on the vehicle, including **restart** the vehicle, requesting a **flash** of certain components, or a **reset** 🗑️ to factory settings.

The first icon, representing a start logo, opens the **restart vehicle** pop-up, where three options are available:

`Soft` : only restarts the vehicle software.

`Hard` : also restarts the container where the vehicle software is launched.

`Reboot` : completely restarts the vehicle's central processing unit.

NB: A pre-checked box allows you to save the vehicle's current position and automatically restart navigation at that position upon restart, which is useful if the vehicle is restarted far from one of these relocation points.

The second icon, representing a computer chip, allows you to request the **reprogramming of the microcontroller** responsible for LEDs, ultrasonic sensors, sounds, and communication with the vehicle's battery. **USE WITH CAUTION** ⚠️.

- The third icon, representing an engine, allows you to request **reprogramming of the engine controller** that communicates directly with the vehicle's engines. **USE WITH CAUTION** ⚠️.
- The fourth icon, representing a trash can 🗑️, allows you to **reset** the vehicle to its factory settings.

This will delete 🗑️ :

- all **sites** and **maps** created on the vehicle, these being exportable via the `Export sites` page to keep a copy.
- all **settings** ⚙️ made on the vehicle (sounds, networks, autopilots...).
- all **accounts** 👷 created/modified.

Only the **mileage** will be **conserved** .

⚠️ *Warning: this will automatically log you out of the application, and you will be able to* ***reconnect*** *via the* ***default account*** *and its* ***default password*** *. .*

A summary of the **flash** requests can be viewed in the second section. Flash will be carried out the next time the vehicle is restarted.