Owner's Manual



Vitirover VR8

Commercial Autonomous i-GPS All Terrain Solar Robotic Mower

Please read carefully this user guide before using the VITIROVER robot for the first time.

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1 Introduction and safety

1.1 Introduction



Please read the user guide carefully and assimilate it well before using the VITIROVER mowing robot. Warnings and safety instructions in this manual must be carefully followed to ensure the efficient use of the VITIROVER mowing robot without compromising your safety or someone else's.



This warning icon indicated the risk of personal injury, including cases of non-compliance with instructions. An information box indicates the risk of property damage, especially in case of non-compliance with instructions. This frame is also used when there is a risk of user error.

Please do not hesitate to contact your retailer if you would like to have a printed copy of this document.
In addition to this manual, you can request additional information by contacting us on the VITIROVER website at www.vitirover.com.

VITIROVER SAS is continuously working to develop its products and reserves the right to modify, among other things, the design, appearance and functionality of its products without notice. Actual product may differ from pictures in this manual.
Make sure to read the manual and identify the discussed features on the actual robot – **most importantly the main switch**.

1.2 WARNING (Warning Icons on the product):



The VITIROVER mowing robot can be dangerous if used incorrectly. Please keep hands and feet away from the rotating blades. Never place hands or feet under or close to the body with the engine running. The VITIROVER mowing robot can be started only when the main switch is in position 1 and the correct PIN has been entered. Turn the main switch to 0 prior to any inspection and / or maintenance.



Stand at a safe distance from the VITIROVER mowing robot when in use. Keep hands and feet away from rotating blades.



Never clean the VITIROVER mowing robot with pressurized water tools or running water.



Do not stand or sit on the VITIROVER mowing robot.



This product complies with the applicable EC directives.



Noise emission on the environment. The sound emissions of the machine are specified in the chapter called "Technical data" and on the plate of the robot.



This product should not be disposed of with household waste at the end of his life. Be sure to recycle in accordance with local legal requirements.



The chassis contains components that are sensitive to electrostatic discharge (ESD). The frame is also an important part of the design of the VITIROVER mowing robot and must be closed in a professional manner as the product is used outdoors. That is why it should only be opened by technicians authorized by VITIROVER SAS. The VITIROVER robot opened without authorization may result in invalidity of warranty.

1.3 Safety:



- The VITIROVER mowing robot is designed for cutting grass on outer surfaces prepared so as to be nearly flat. It should only be used with the equipment recommended by the manufacturer. Any other use is incorrect. The manufacturer's instructions regarding the use, maintenance and repairs must be carefully followed.
- The VITIROVER mowing robot can be operated, examined, and repaired only by persons thoroughly familiar with its special features and fully aware of the safety recommendations.
- Please read the user guide carefully and assimilate it well before using the VITIROVER mowing robot.
- You are not allowed to change the original design of the VITIROVER mowing robot. All modifications made are at your own risk.
- Make sure that no objects such as stones, branches, tools, etc. are standing on the field where the robot will work because it could seriously damage the cutting blades and the cutting system. The objects on the ground can also get caught in the robot and you may need to manually remove the object(s) before mowing resumes.
- Turn the VITIROVER mowing robot on by following the instructions. When the main switch is turned ON, make sure to keep hands and feet away from rotating blades. Never place hands or feet below the VITIROVER mowing robot.
- When the main switch is in position 1, you should never try to pick up or carry the VITIROVER mowing robot.
- Do not let anyone that does not know how to operate properly the VITIROVER mowing robot use it.
- Do not leave or drop anything on top of the VITIROVER mowing robot.
- In any case, do not use the VITIROVER mowing robot if the blades are in any way damaged or if the fairing is defective. Also, do not use the device if any of its parts is defective - check the blades, screws, nuts and cables.
- Do not use the VITIROVER mowing robot if the power switch does not work.
- Always turn off the VITIROVER mowing robot with the main switch when you do not use it. The VITIROVER mowing robot can be started only when the main switch is in position 1 and the correct PIN has been entered. The VITIROVER mowing robot should never be used at the same time as a sprinkler system.

1.4 Content of the box

1: Vitirover VR8 Robot



2: Battery charger



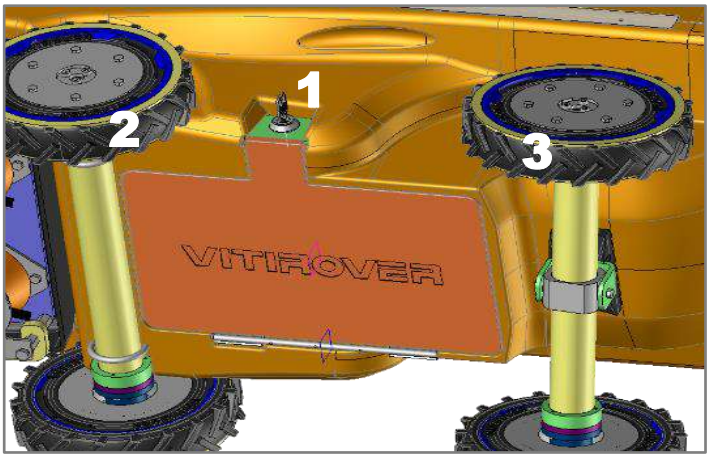
1.5 Overview of the Robot



Back of the robot.
1: Main On-Off Switch



Front of the robot.
1: GPS Antenna
2: Cameras
3: Cutting Height Adjustment
4: Cutting Shield
5: Cutting Blades

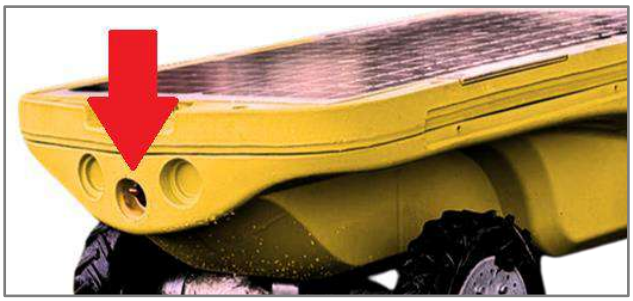


Underside of the robot.
1: Battery Access Lock
2: Front Wheels
3: Back Wheels

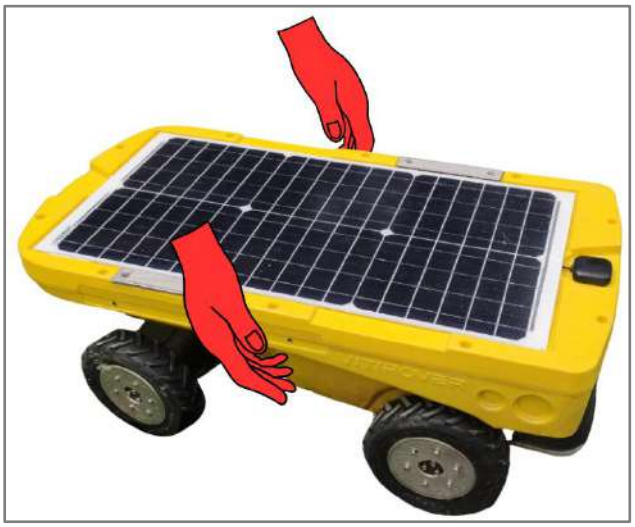
1.6 Transportation

When carrying the VITIROVER robot over long distances, put it back in its original packaging.

1. Push the main switch down to turn the robot Off.



2. Carry the VITIROVER mowing robot in a natural manner by placing both your hands under the solar panels on both side of the robot.



1.7 Maintenance

⚠ **WARNING :** The main switch always **has to be in the position 0 during all maintenance** work that you might have to do on the VITIROVER mowing robot - such as blade cleaning or blade replacement.

Inspect the VITIROVER mowing robot regularly. The following tasks must be realized during these inspections:

1. Place the main switch in position Off and put on protecting gloves.
2. Turn the robot upside down on a clean surface with no risk of damaging the solarpanel.
3. Verify the following points:
   - Clean the wheels and axes. Too much grass on the wheels can affect the operation on sloped grounds.
   - Clean the body, chassis and cutting system. The accumulation of grass, leaves and other objects can influence the robot and affect its performances.
   - Make sure the mower blades move freely. Even if they are intact, cutting systems must be replaced regularly to optimize the result of mowing and minimize energy consumption.

1.8 Basic Functions

Capacity
The VITIROVER robot is designed to mow parcels up to 1 hectare. It will maintain a permanently vegetated area as the grass grows and will cut the grass in order to keep it at an average height between 6 and 20 cm. It is not designed to occasionally cut grass that has reached an extreme height.
Recommendations:

- The robot is expected to start working in early spring (beginning of the growing season).
- If it is installed later in the season, the grass height must be reduced to a minimum prior to the robot deployment.
- The robot is 30 cm high, so it will not be able to pass under obstacles lower than 35 cm.
- VITIROVER is able to occasionally climb steep slopes. However it is not designed to permanently work on fields with a slope bigger than 15%.
- The field must be inspected for extreme obstacles or danger before Robot deployment.
- Flowers, puddles, streams, sensitive plants, flowers, gardens must be protected by physical/mechanical barriers with a height of at least 12cm.

Mowing Technique
VITIROVER robot is able to work in all types of weathers. However, it is more efficient in dry conditions because tires stick more easily to a dry ground. To reach the best mowing efficiency, the cutting blades must be in good condition. To keep them sharp as long as possible, the field must be kept free of branches, stones, rocks and other stiff obstacles. When the front shield of the VITIROVER robot hit against an obstacle, it will automatically reverse and move toward a new direction. When the VITIROVER Robot meets the edge of the plot, the robot will automatically redirect itself to the inside of the plot.

Autonomy
The VITIROVER robot is 100% autonomous and will automatically mow the plot defined in the Viticloud Web Application. The Vitirover robot will charge its battery thanks to its solar panel while working. In case of a lack of light or sun, it is recommended to install a VITIROVER Charging Dock Station within the limits of the defined plot.

Path of movement
While working, the VITIROVER robot will :
- Track and record its detailed path
- Measure and record the electrical current used by its mowing motors at each point of the plot. This will provide the density of vegetation at any position in the defined plot.
By combining these two parameters, the Vitirover Robot will define its next move and will maintain the vegetation at the same average height over the entire defined plot.
The VITIROVER robot will maintain a plot of land of one hectare in an average of 11 to 13 days.

1.9 Adjusting the cutting height.



The cutting height can be adjusted to 6, 8 or 10 cm.

1. Switch the robot Off thanks to the main On/Off Switch.
2. Locate the access hole on the front of the robot.
3. Hold the cutting block (**WARNING: do not stretch the electrical wires**)
4. Loosen up and remove the CHC M8 screw with a 6mm hex. screwdriver.
5. Adjust the height of the cutting block as wanted.
6. Align the CHC M8 screw with the closest hole.
7. Put the CHC M8 screw back in and tighten.

2 Operating the Robot

2.1 Preamble

This document will guide you through the basic and advanced usage of the Vitirover robot. All Vitirover robots have internet connectivity through a SIM card and communicate with an online Web App, the Vitirover Cloud also called Viticloud. This Web App allows for the supervision of the robots' work and for remote take over when needed. As seen in Part 1 of this manual, the only physical interface on the Vitirover Robot itself is the main Power Switch. The robot will thus exclusively be managed through the Viticloud Web App that is designed to be used on all devices : computer, smartphone or tablet.
The Viticloud can be accessed on the internet at **cloud.vitirover.eu.**

2.2 Basic Description and Operation

On the top shell, the **solar panel** allows the robot to collect energy when exposed to sunlight, whether it is in operation or stopped. The energy is stored in the **battery** and then supplied to the robot as needed.
The Robot **GPS antenna** enables precise positioning on the terrain, preventing it from leaving its mowing area, and recording mowed zones.
The front cutting block includes 2 mowing engines and allows the robot to trim grass as close to obstacles as possible. The cutting height is adjustable as seen in Part 1 of this Manual. The black shell and aluminum shield prevent the robot from damaging plants or trees with its blades.
The Vitirover robot is a **four-wheel-drive robot**, with each motor positioned in line with the wheel in the aluminum axle tube. The front axle is fixed, while the rear axle is free. By varying the speed of the wheels, the robot steers its axle to the desired direction. The rear axle is also longitudinally free, ensuring that all four wheels remain on the ground, even in the most chaotic terrains.
The **battery access** hatch is located underneath and can be opened with a lock in order to replace the battery. Keys are provided with the robot.
The **switch** at the back of the robot cuts the main power off. The Robot will however continue to communicate its position every twenty minutes via its anti-theft GPS tracker.
Vitirover robots are **robust** and can remain outdoors throughout the year. They are designed for **agricultural** or **industrial** use and can withstand numerous impacts. However, in order to lengthen their lifetime, it is recommended to store them in a garage or dry room during winter while the vegetation does not grow.
Vitirover robots are designed to operate in **groups**. They regularly communicate with a Cloud to report mowed areas and those yet to be mowed. Vitirover robots are interchangeable and well aware when a new robot enters the field or when a robot is under maintenance.
The robots are named with the **[letter][letter]xxx** format, for example, **AA045**, **AA065**, **AB034**, etc. Your robot's name can be found on a label located on the side of the robot.

2.3 Starting the robot

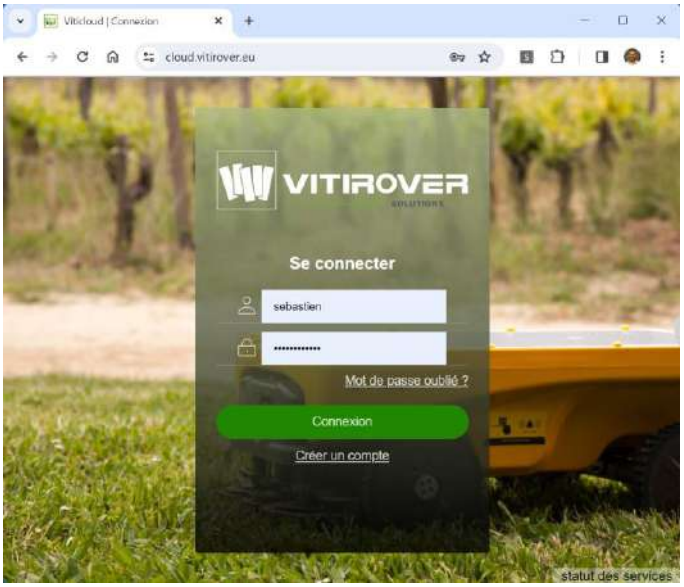
- Ensure you have a fully charged battery. (Batteries are charged to approximately **24** Volts and discharged around **20.6** Volts.) To check the battery status, the simplest method is to place it in the robot and turn the main Power switch On (upward).

- Wait for the robot to connect to the Viticloud (this may take a few minutes as it identifies the best available mobile network and initiates its operating system).

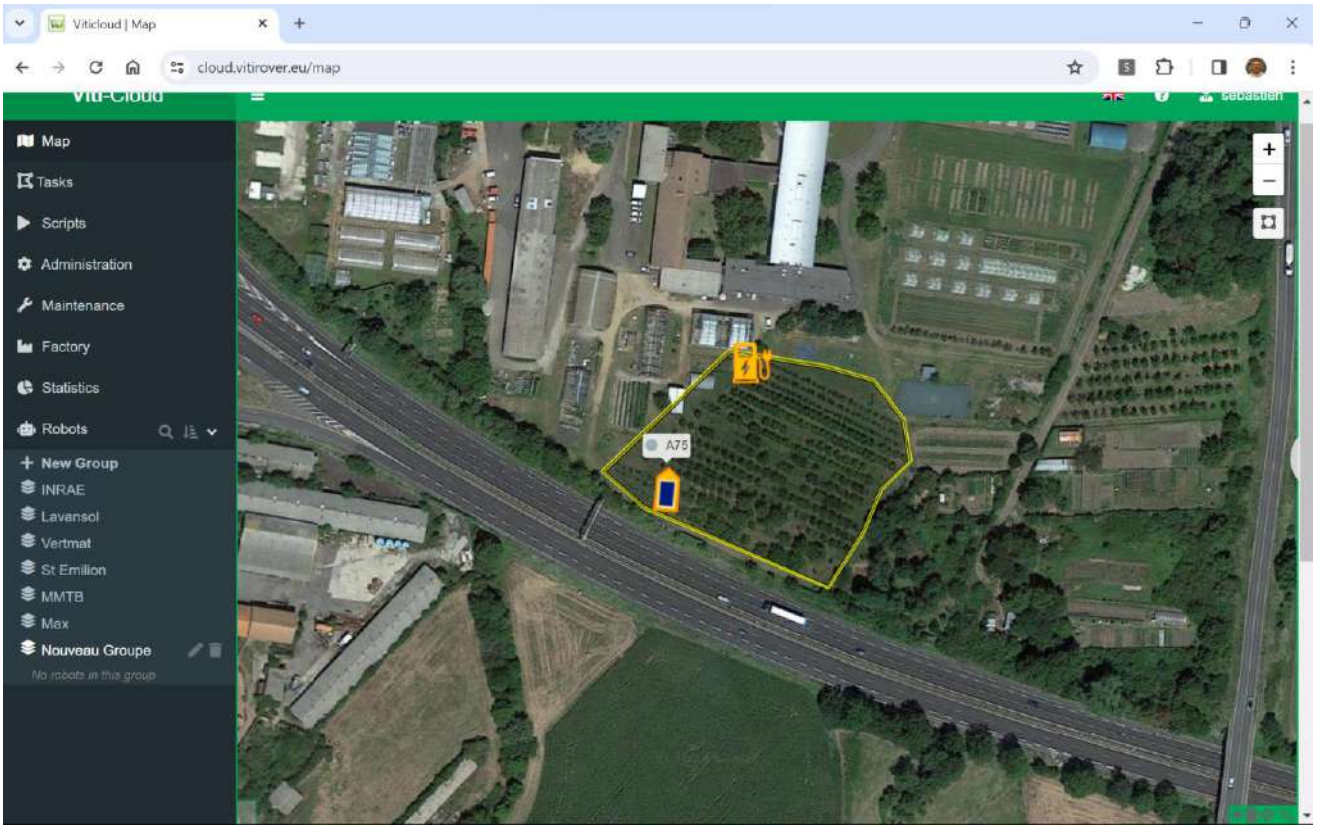
3 Web Application : Viticloud

3.1 LOG IN

- Open your internet browser and navigate to cloud.vitirover.eu
- Log in to your account using the credentials provided by Vitirover.

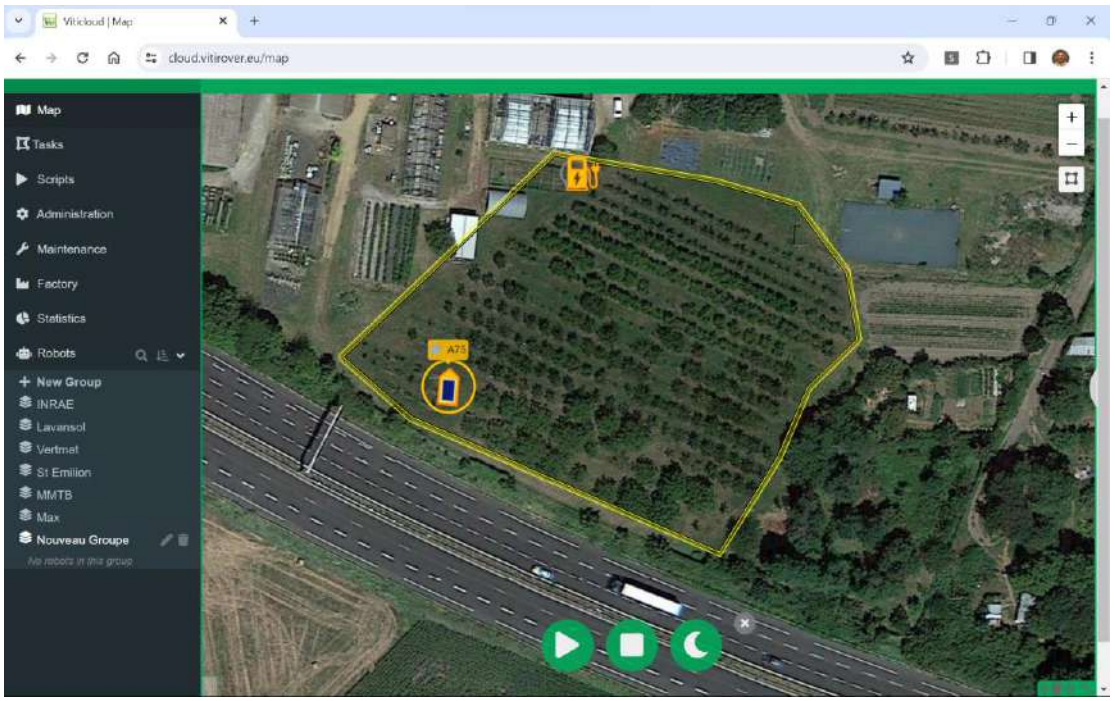


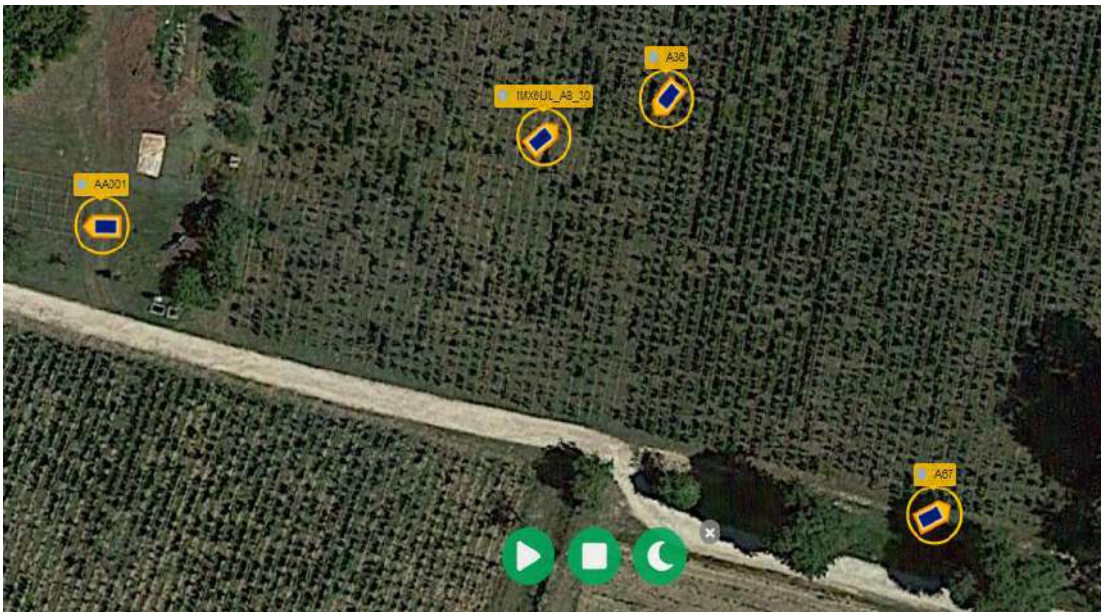
3.2 GENERAL HOME SCREEN



3.2.1. MAP

This window displays multiple robots on the same satellite view and let you control them.





Selection: The button at the top right enables the activation of robot selection. Once your robots are selected, several buttons appear at the bottom of the page.

Start : Initiates your selected robots in their designated mowing areas.

Stop : Halts all selected robots.

Sleep : Puts all selected robots to sleep at the chosen date/time.

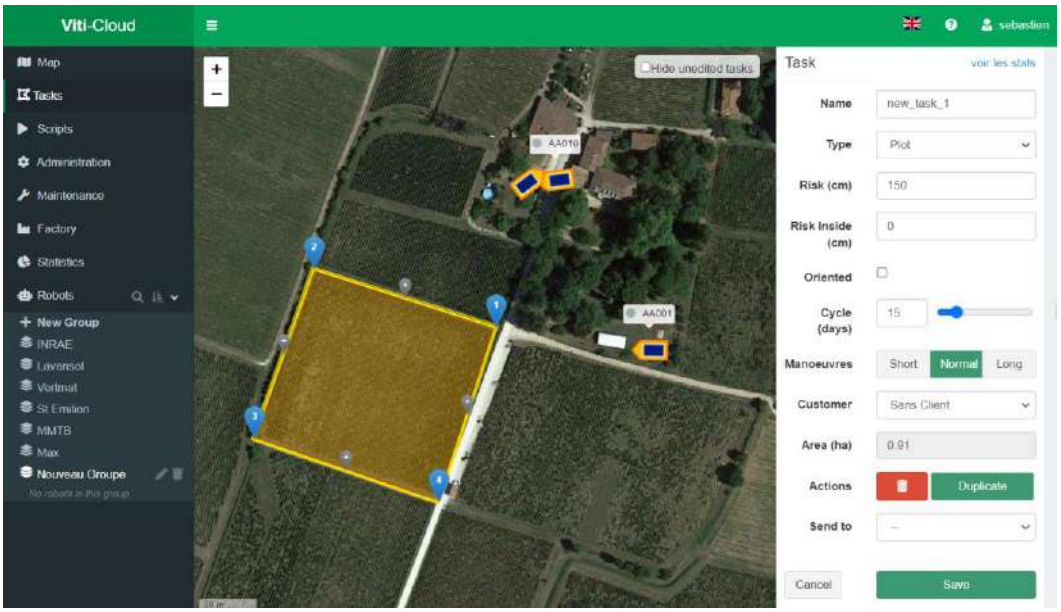
Cancel : Cancels the selection.

3.2.2. TASKS

Click on the “Task” item in the Main Menu
This tab allows you to create and modify permanent tasks. These tasks will be saved in the Cloud, making them accessible on all your available robots.

a. Creating a Plot

- Click the  icon.
- Click the satellite view on the location of the “corners” of the plot you want to draw.
- Blue markers will appear at each “click” location.
- “+” will appear in between the Blue Markers. Click on a “+” to add an additional intermediate Blue Marker. To move a Blue Marker, click on that marker and do not release your click until the marker is moved.
- Click on any Blue Marker to remove it from the map.
- Once the plot is defined, its parameters can be set-up



Name : Choose a name for the new task
Type : Specify the type of the task you are creating (Plot is what we are setting up)
Risk : Width of the authorized maneuvering zone outside the plot (recommended 150cm).
Internal Risk: Width of the maneuvering zone inside the plot (recommended 100cm).
Oriented : Check if the obstacles are aligned and regular to define a linear pattern for the mowing work.
Orientation : (only available if Oriented is checked) Define the direction of the rows for the robot to follow.
Cycle : Set the recurrence time between passes (recommended every 15 days).
Maneuver : Length of the maneuvers depending on the density of obstacles in the work area. Select short if obstacles density is high (vineyard) or select Long if obstacles density is low (orchards).
Customer : Used only by Vitirover employees.
Area : Specify the area of the task.
Actions : Choose to delete or duplicate your task
Send : Send the task to the selected robot
Cancel or **Save** modifications.

b. Creating a Track

- Click the  icon.
- Click the satellite view on the starting point of the track and on the following points defining the track.
- Blue markers will appear along the Track.
- “+” will appear in between the Blue Markers. Click on a “+” to add an additional intermediate Blue Marker. To move a Blue Marker, click on that marker and do not release your click until the marker is moved.
- Click on any Blue Marker to remove it from the map.
- Once the Track is defined, its parameters can be set-up



Name : Choose a name for the new task
Type : Specify the type of the task you are creating (Track is what we are setting up)
Width : Define the authorized mowing zone.
Risk : Set the authorized maneuvering zone along the track. (Recommended 150cm)
Row Mode : Reserved for Vitirover.
Customer : Reserved for Vitirover
Length : Calculates the length of the track
Actions : Delete or duplicate the task.
Send : Send the task to the selected robot.
Cancel or **Save** modifications.

c. Modifying a Task

- Right click on the Task you want to edit.
- All available parameters can be adjusted



>>>

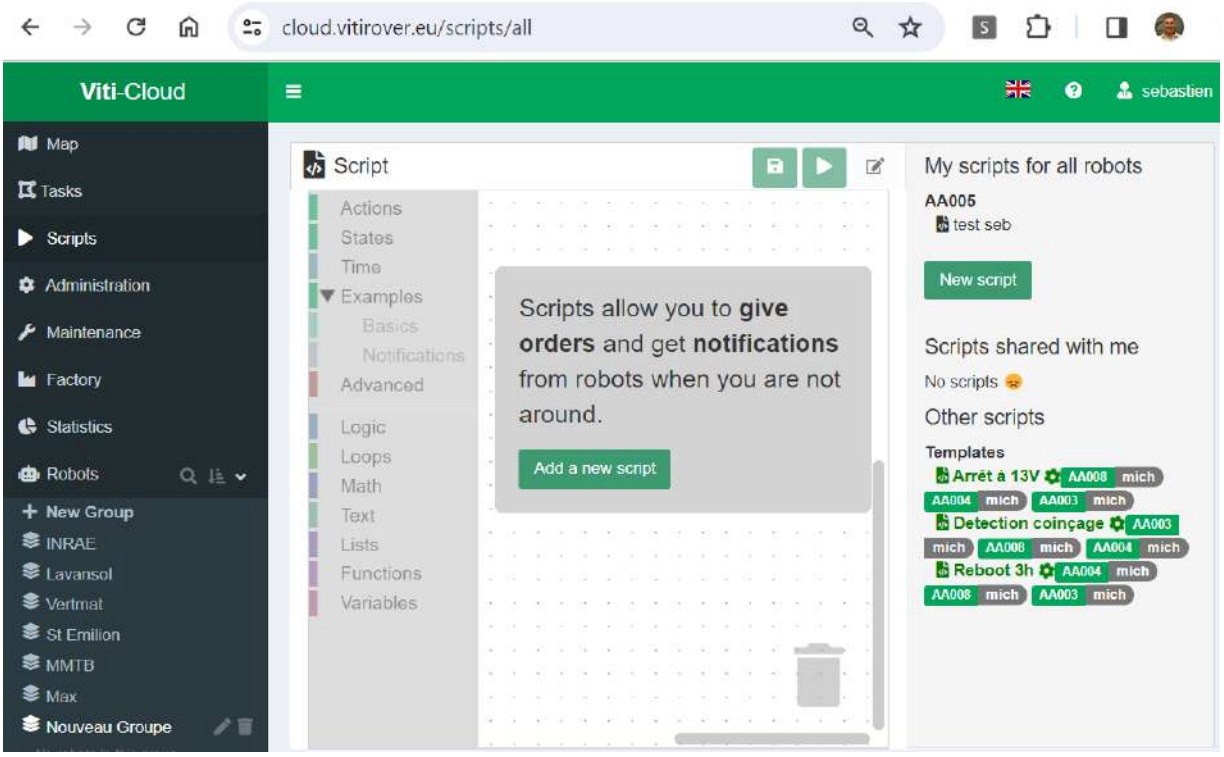


3.2.3. SCRIPTS

“Scripts” allow to :

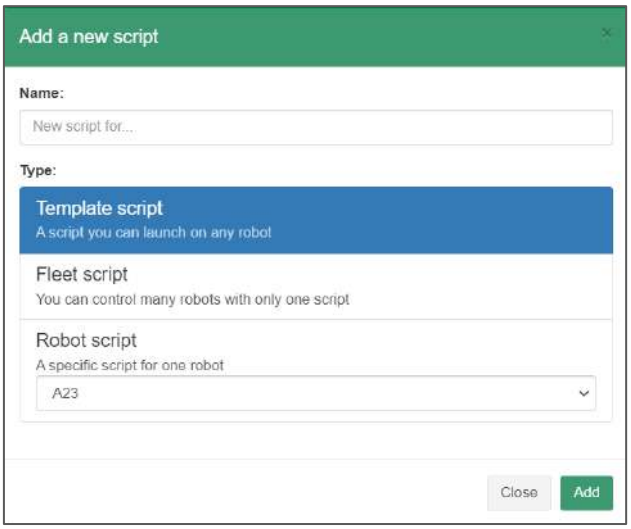
- Program some specific/tuned/precise instructions for the robot to execute
- Program some recuring behaviors for the robot to follow
- Define some notifications to be received in case of specific events
- Answer any specific needs you may have regarding your robot operation

To access the Scripts Home Page, click on Scripts



CREATE A NEW SCRIPT

1-Click on New script. The following Window will appear



2-Choose and fill-out a Name for your New Script

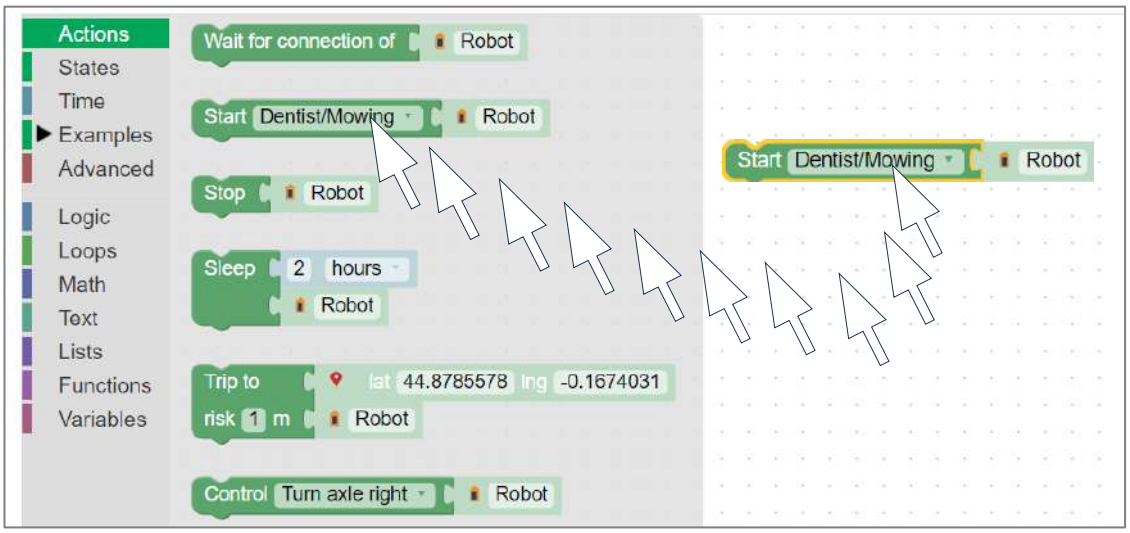


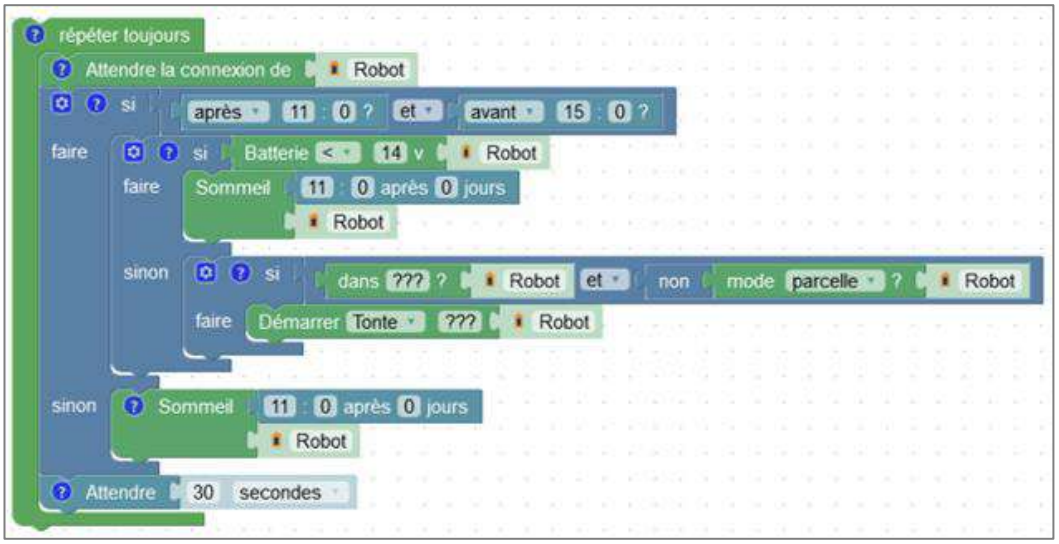
3-Select the Option that applies to your script :

- Template Script (if you want it to be available for any of your robots)
- Fleet Script (if you want it to be available only for some of your robots)
- Robot Script (if you want it to be applied right away to only one robot)

4-Go to the Script Tools Menu to Select the components you want to insert in your script. You can click and hold any component, to slide it onto the “White paper” part on the right.

NOTE : The Vitirover SCRIPTS module is Powered with a standard SCRATCH PROGRAM Application. You can refer to any general online trainings or glossaries regarding “SCRATCH Programming” to get details about all available functions and tools displayed in the Vitirover SCRIPTS Menu.



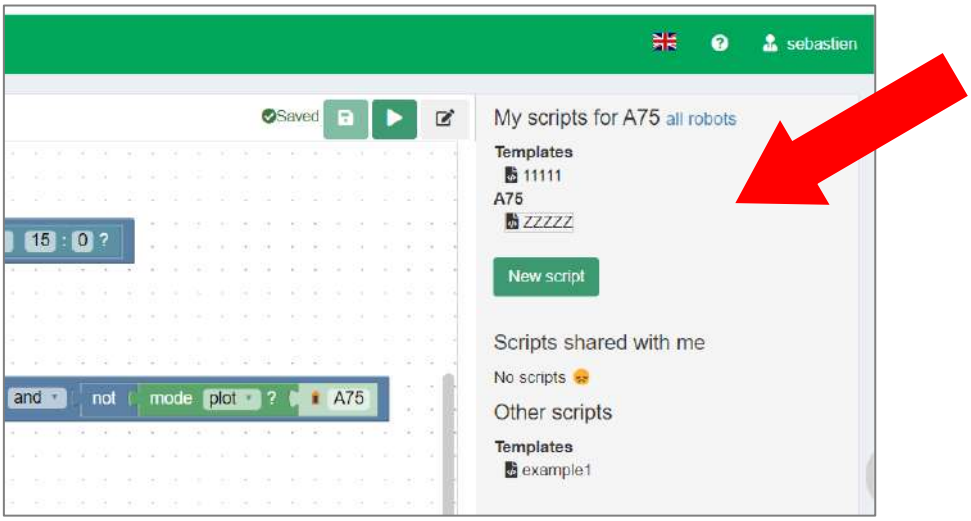


5-Once you Script is completed, make sure to save it by clicking

6-Transmit your script to the selected Robot(s) and launch it by clicking the play Button

EDITING A SCRIPT

You can find the list of all your scripts on the right side of the SCRIPTS Home Page



1-Click on the name of the Script 11111 to start editing your script.

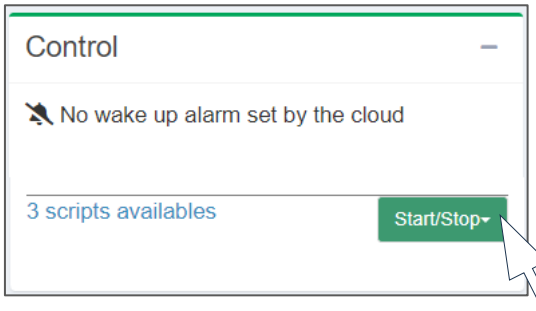
2-Once your Script Modifications are completed, make sure to save your updated Script by clicking

3-Transmit your updated script to the selected Robot(s) and launch it by clicking the play Button

RUNNING AN EXISTING SCRIPT

1-Go to the robot's page.

2-Look at the “CONTROL” Section



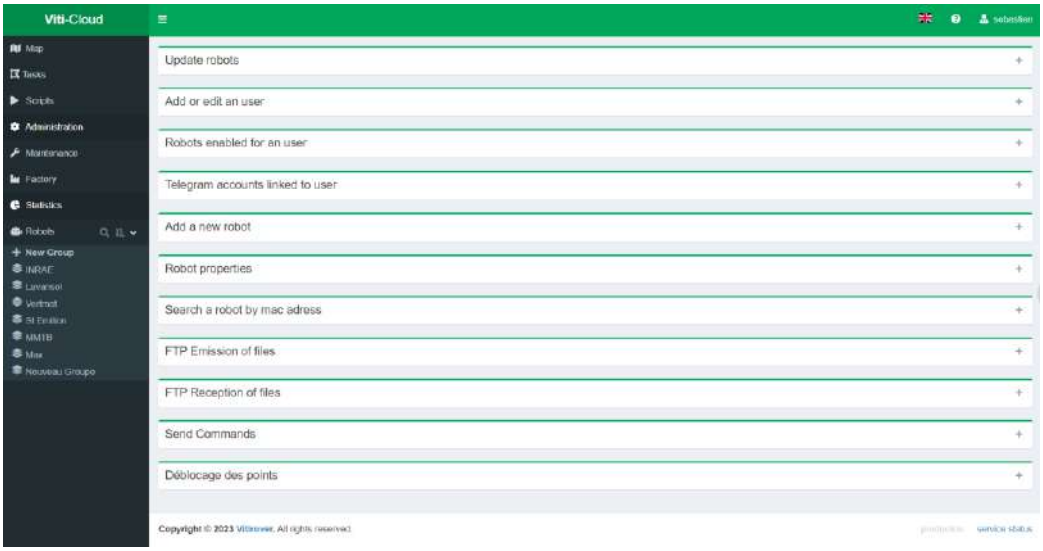
3-Click on the Start/Stop icon to see all SCRIPTS available for the selected Robot.

4-Click on the Script you want to Run to Launch it on the selected Robot.

Several SCRIPTS can be run simultaneously on the same robot. This can help conducting several actions at the same time (camera, dentist, track, etc). Watch out for Scripts giving opposite directions to the Robot. This may result in ERRORS messages and malfunctions.

3.2.4. ADMINISTRATION

For Vitirover and its distributors/installers use only



3.2.5. MAINTENANCE

Module to record and look at all maintenance work conducted on the robots

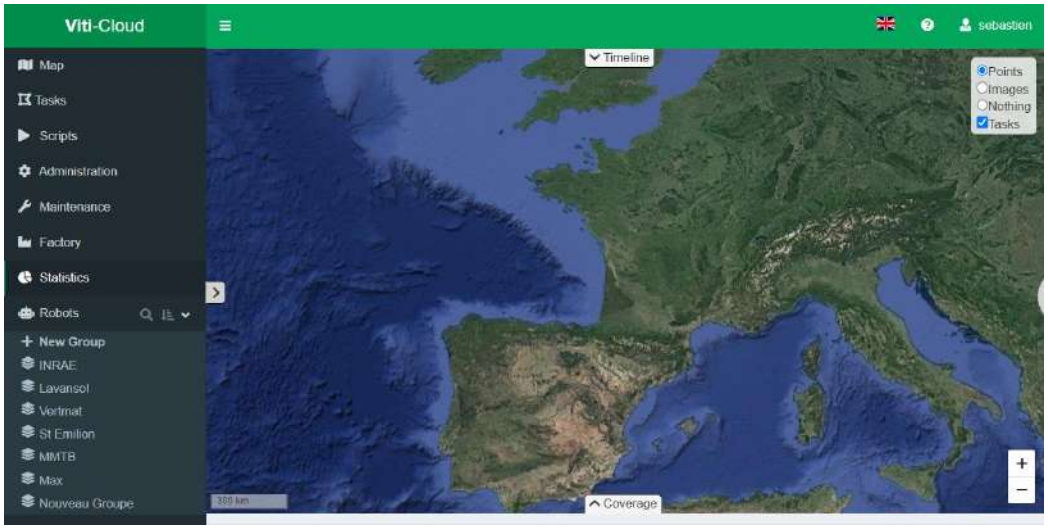
3.2.6. FACTORY

For internal Vitirover use only.

3.2.7. STATISTICS

The Statistics module provides very useful information about your Robot Work and efficiency.

VIEW OPTIONS

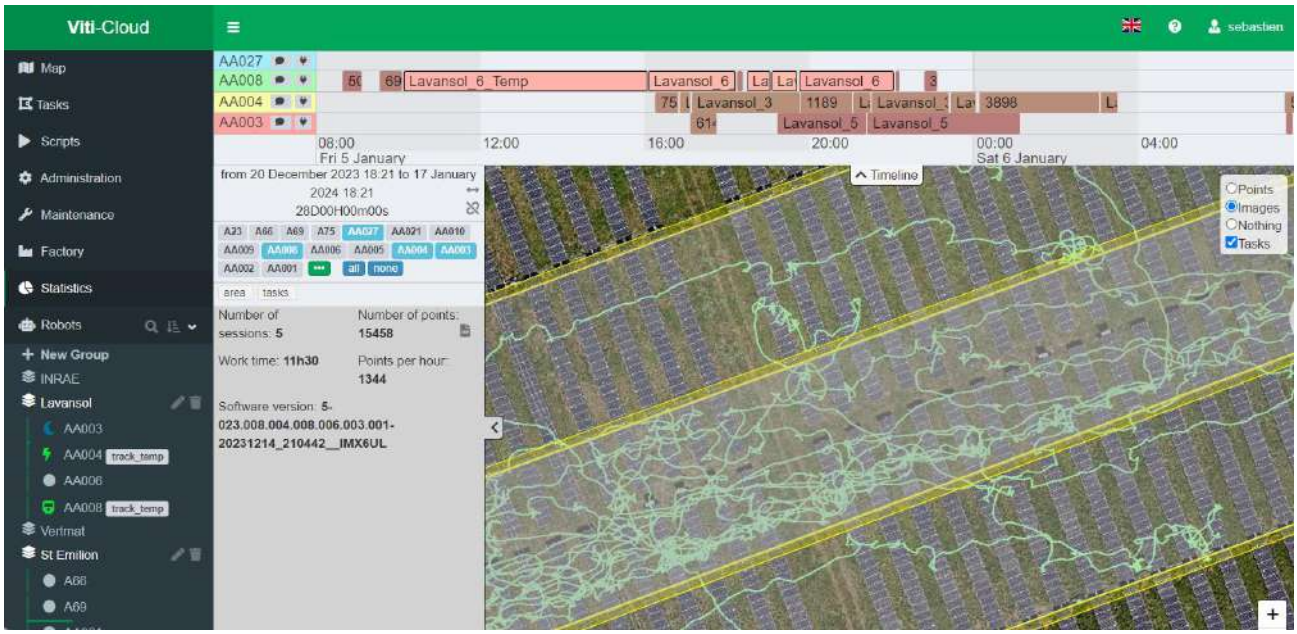


1/ Click on the Left Arrow  to show the Dashboard

2/ Click  to display all work sessions for the selected robots.

3/ Click  to display efficiency report data

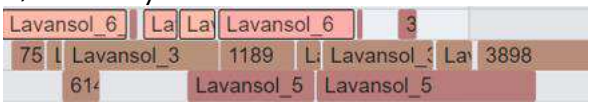
WORK SESSIONS



1/ Select which Robots you want to check (blue = selected / grey = not selected) :

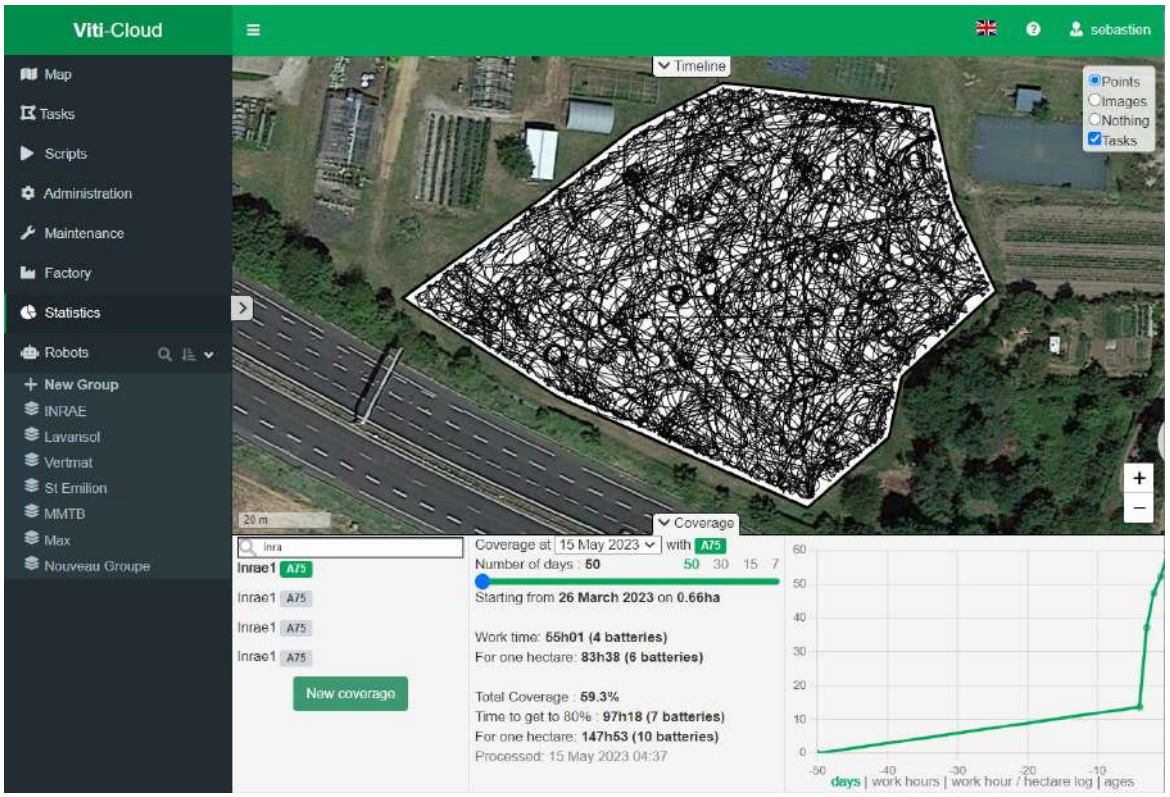


2/ Click any session in the TIMELINE area



The path of the Robot (green line below) during that Work Session is displayed

COVERAGE DATA

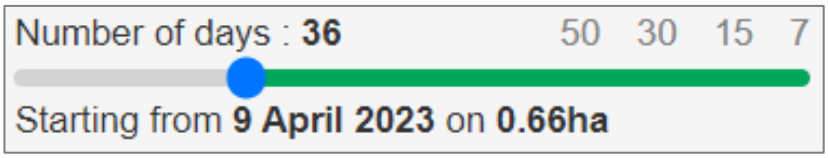


1/ Search and Select your TASK in the Search Bar

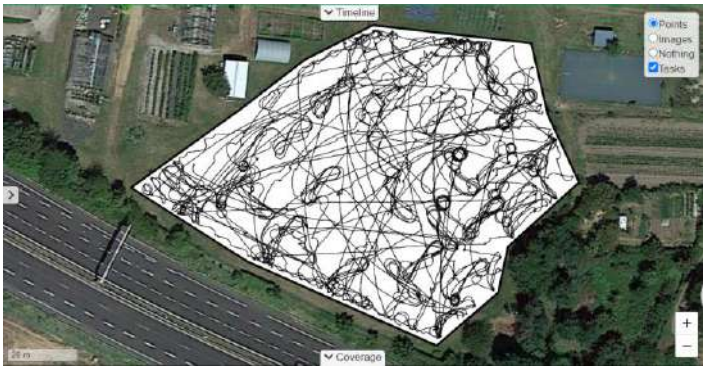


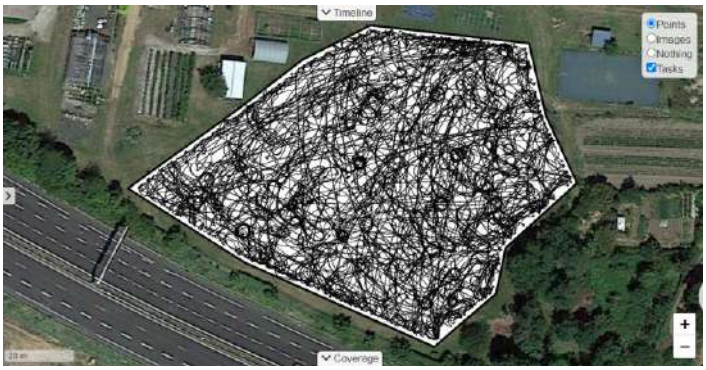
The coverage History report will show on the Map

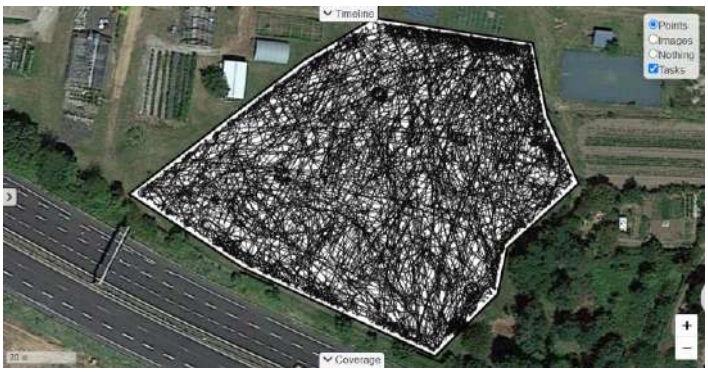
2/ Adjust the date at which you want the report to start (number of days)



The coverage History Report and the report data below will vary accordingly.







3.2.8. ROBOTS



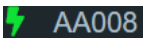
>> This list displays all robots you have access to.

>> The name of each robot is built according to the following structure : XX-nnn (X= letter / n=number). Example : AA003, BX134, etc

>> Once the robots list is visible, if your robot can still not be found, please request access to your robot from a Vitirover administrator.

>> If the list cannot be seen on the left of the screen, click the following icon : 

>> Robots can be gathered in “Groups of Robots” in the list that is displayed. Example : Lavansol. To create a new group, click “New Group” and give it a name.

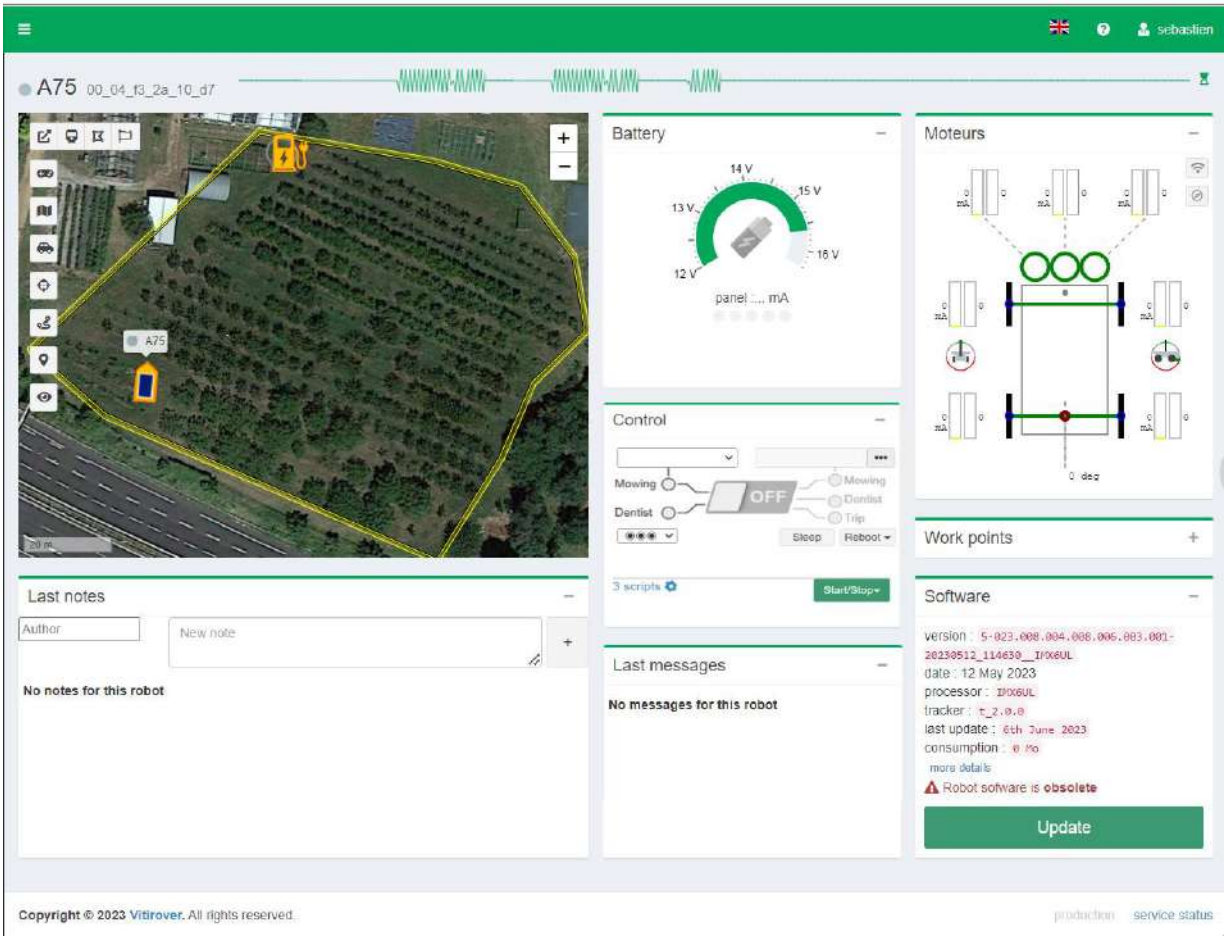
The list of robots shows status icons next to each Robot Name : 

Here is the meaning of those icons :

	STANDBY	The robot is connected and available. It can be activated at any time.
	MOWING	The robot is mowing and sending data (GPS coordinates, working area, motors consumption). MOWING must be deactivated before sending any other directions.
	ERROR	An error has been detected. Read your messages on the ROBOT PAGE to identify the root cause.
	DISCONNECTED	The robot is disconnected. The GSM network is not available or the batteries are too low to communicate.
	ASLEEP	Either : - The robot has been put to sleep through the Web Application - The main On/Off mechanical switch located at the back of the robot has been turned off - The main robot battery is totally empty However, the GPS Tracker battery has still enough energy to provide the robot position.
	FULL BATTERY	The robot battery is full and the robot is connected, active and communicates
	CHARGING	The robot battery is charging.
	MOWER JAM	One of the Cutting Motors is consuming too much energy due to a jam. Motor has automatically stopped to avoid a current overload.
	DENTIST	The Robot is self-cleaning its cutting block (cutting blades and support discs)
	RISK	The robot has stopped after detecting a potential Risk around its current location.
	TRIP	The robot is following a TRACK that has been programmed.
	TRACK	The robot is following a PATH that has been programme.
	EMPTY BATTERY	The main battery is discharged and does not allow the robot to work. The robot still provides its location.
	UPSIDE DOWN	The Robot is upside down and must be helped

3.3 ROBOT PAGE

Click on your robot's name to access your robot's dedicated page. This page will allow you to manage your robot.



A75 is a reminder of your Robot Name and Status

is the Life Line of your Robot. It shows that the Robot is communicating with the VitiCloud. The robot is regularly transmitting information to the VitiCloud. Click on the Hourglass icon to get more frequent updates to/from the Robot.



This is a satellite view of your field. It shows :

> The location of the robot

> The location of the charging dock station

> The limits of the robot working area

> Useful ACTION Icons

> Useful SUPPORT Icons

ACTIONS

All actions are temporary : if one is sent to the robot, it will cancel the previous one.

	Trip	Click on the map to give a target point to the robot. *Parameter*: Width of the possible path zone.
	Track	Click on the map to give a target point to the robot; it will create a path between this point and itself and should follow it as precisely as possible. Parameter: Width of the possible path.
	Plot	Click on the map to create a polygon around the robot. *Parameter*: Authorized maneuvering zone.
	Stake	Draws a polygon around the robot. *Parameter*: Diameter of the polygon.

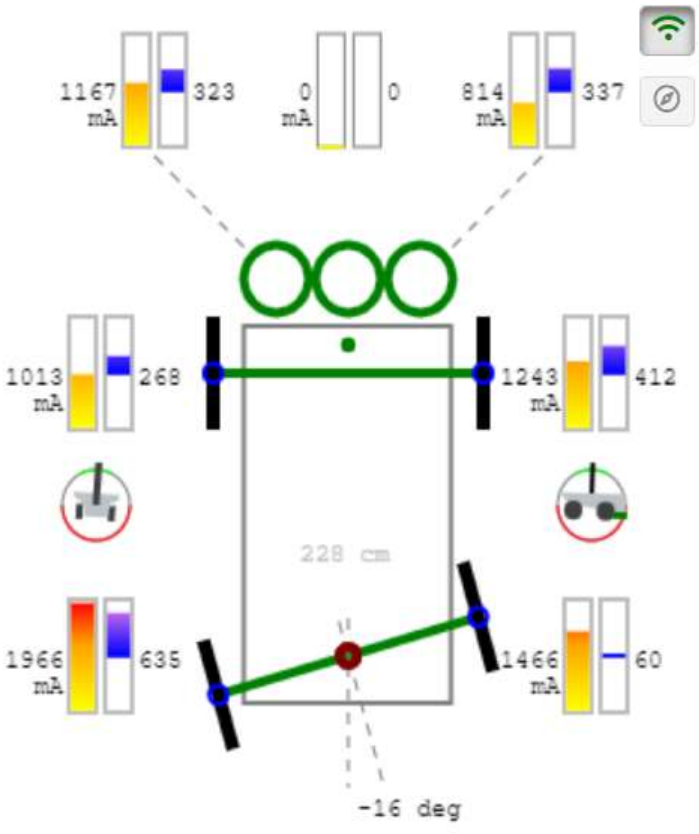
SUPPORT FEATURES

Various icons located on the satellite view will help the user to operate the robot.

	Camera	Shows the view from the front camera.
	Remote	Take over the Robot control thanks to a digital pad displayed on your screen.
	Map	Shows other Robots located in the same area.
	Route	Provides the itinerary to the selected Robot.
	Centering	Centers the satellite view on the selected Robot.
	Work points	Show the path taken by the Robot for the past 30 minutes.
	Geolocation	Shows your current satellite location (if your browser has accurate permissions)

MOTOR STATUS

The below picture represents the Robot as seen from above (Robot front is up).



The blue bar provides the actual speed of each motor (in Approx. RPM unit).

The yellow bar provides the electrical current going through each motor (in Milliamperes).

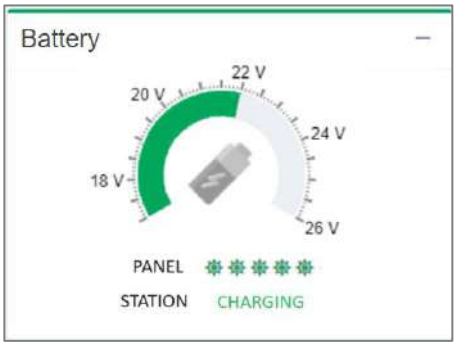
Any bar turning Red means a temporary very high and abnormal consumption.
If any bar stays Red for a while, the Robot may send an ERROR message.

The 3 green circles represent the Motors of the Cutting Block. Vitirover robots only have 2 motors (left and right). The central circle/motor is not used.

The 2 following Icons indicate the inclination/tilting of the robot (left to right and front to back).

The angle shows the orientation of the rear axle of the robot and provides the current direction of the robot.

BATTERY STATUS



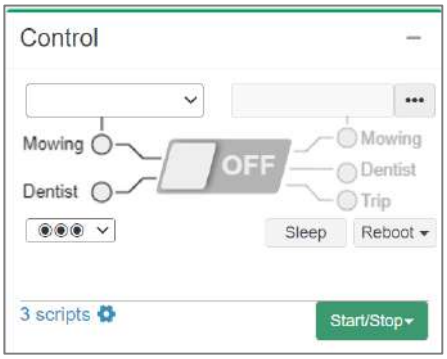
This screen provides :

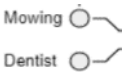
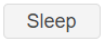
>The charge level of the Robot battery based on its needs to be able to mow.

>The quality of the current charge from the Solar Panel from 1 start (low) to 5 stars (best).

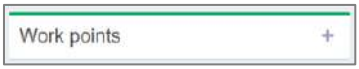
>The status of the Charging Station (is the station correctly charging the Robot Battery?)

CONTROL PANEL



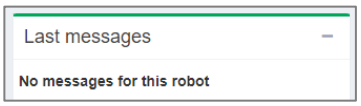
	Select a Task already programmed on the Robot
	Mowing: Select and Activate/Deactivate the mowing mode Dentist: Select and Activate/Deactivate the cutting blades cleaning (Dentist). Will let you select which cutting blade must be cleaned-up
	Start/Stop the Robot from Remote from a remote location
	Displays the current operating mode of the robot.
	Select Sleep to deactivate the robot and set a time when it will wake up
Wake-up	When in Sleep mode, click wake-up to manually wake the robot up.
	Restart the Robot in case of issue, either at the software level (soft) or at the main level (hard) as if the Main On/Off Power is turned Off and back On.
	See the Scripts available for the robot and select the one you need.

WORK POINTS



This module displays the communication between the Robot and the Cloud. The Robot sends data regarding its path and the work done. The App adjusts the targets of the Robot based on the data it (and potentially other robots working in the same zone) sent. That data can be shared with all the Robots working in the same PLOT.

LAST MESSAGES



This is where all messages and alerts sent by the robot, will appear.
Below is the list of potential messages :

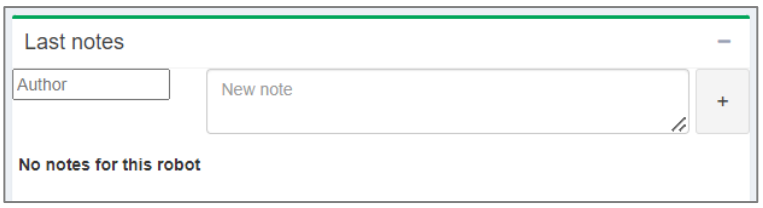
MESSAGE	DETAILED MEANING
ASLEEP BY CLOUD	The Robot was turned to Sleep Mode by a script (VitiCloud).
AUTO MOWING	The Robot is in Auto Mode, conducting Mowing.
BATTERY EMPTY	The main battery of the Robot is empty. Robot has stopped and won't resume until the battery is recharged.
DENTIST	The Robot is sensing a potential MOWER JAM. It is trying to self-clean its cutting block by turning the cutting block motors at a higher speed and back and forth in both directions.
DENTIST END	DENTIST mode ends. The electrical consumption of the cutting block motor is back to normal. The Robot can resume its task.
GPS DEFAULT	GPS is not working properly. Connection between the GPS Antenna and the PC Board or the GPS PC Board may be damaged.
IMU DEFAULT	IMU Sensors are not working properly. Connection between the IMU and the PC Board or the IMU may be damaged.
MOWER ACCESS	The Robot cannot communicate with one of the cutting block motors. Connection between the cutting block motors and the PC Board must be checked. Motors must be checked.
MOWER JAM	The Robot has detected an electrical current overload at the cutting block motors level. A foreign object is probably stuck in the blades. User help needed.
OVER ROLL	The Robot has stopped because it has detected an abnormal Roll or Pitch
POWER OFF	The Robot turns Off after the Main Switch was turned off or because the battery was disconnected.
RESTART AFTER UPDATE	The Robot Software has been updated and the Robot can resume its regular activity.
ROBOT STUCK	After trying to get out of a trap several times, the Robot believes it can get out. User Help needed.
STARTING	The robot is starting.
STEERING ERROR	After multiple attempts, the Robot can't move its rear axle anymore. User help needed.
STOP BY USER	The robot was manually turned off by a user.
STOP BY CLOUD	The robot was automatically turned off by a script (VitiCloud).
TARGET CHANGED	The robot has switched to a new Target point after completing its previous Task.
TARGET REACHED	The robot has reached the target point defined in its path.
TRACK	The Robot is in Auto Mode, following a path defined as a TRACK.
TRIP	The Robot is in Auto Mode, following a path defined as a TRIP.
WAIT : BATTERY	The Robot is waiting for the battery to recharge.
WAIT : RISK	The Robot has doubts about its location (GPS Accuracy to be checked/adjusted).
WAIT : RISK END	The Robot has checked its location (GPS Accuracy adjusted).

SOFTWARE



This window displays notifications from Vitirover Company about Robot Software Update. As same as for a computer, when UPDATE is clicked, the software downloads onto the Robot and the Robot will restart. The software updates last usually approximately 5 minutes.

NOTES



Thie window let you add personal comments and information regarding the Robot, its operation, its functions, how to use it, etc.
Only authorized users can have access to your personal notes.

3.4 Remote control

When using Remote Control mode, the full capacities of the Robot are released.
Motors or Electronic Boards of the Robot may be damaged if Robot is not driven carefully.
Do not force Robot through tough obstacles, extreme vegetation, water accumulation, etc.

Description of the controls :



 CUTTING BLADES
1st Click : Turns the Cutting Blades On
2nd Click : Increases rotating speed of the Cutting Blades
3rd Click : Stops the cutting blades

 MOVE
Click and hold the gray bar towards the direction you want the robot to go towards. Example : To turn right, slide the gray bar forward then right.

 To define specific “Power Mode”, please contact your Vitirover Technician.



To define specific “Program Mode”, please contact your Vitirover Technician.

3.5 Autonomous work

AROUND A STAKE :

1/ Click the icon.
2/ Select the radius of the circle (in meters) you want the robot to work in around the Stake Point.
3/ Hit “SEND”
A green plot will appear, with the Robot in the center of it.
The Robot will start moving and mowing within the defined “Stake” area.
To Stop the Robot, click the “On/Off” Button

INSIDE A PLOT or ALONG A TRACK

1/ Refer to Section 3.2.2 to draw the edges of the PLOT or to define the path of the TRACK.
2/ Make sure the robot is located inside the defined area.
3/ Hit SEND
A green plot will appear with the Robot inside.
The Robot will start moving and mowing within the defined area.
To Stop the Robot, click the “On/Off” Button

3.6 GPS Anti-Theft Safety Tracker



When the Robot is in Standby Mode or Turned-Off or when its battery is empty, a secondary GPS Safety Tracker will still be communicating with the VitiCloud in order to know the actual Robot location.

When activated, this feature will show the icon at the actual and current location of the robot.

In the meantime, the Robot Icon will turn Grey and show the last known position for the robot before it was moved.

The Secondary GPS has an autonomous battery with an autonomy of several weeks.

This feature will be automatically activated if the Robot is manually moved (stolen) out of its defined PLOT

3.7 Automated Notifications from the Robot

In order to receive automated Notifications/Messages/Alerts from your Vitirover Robot, you must install the TELEGRAM Application on your mobile device (Smartphone / Tablet) as follow :

1-Go to Google Playstore or Apple Appstore

2-Download the TELEGRAM App

3-Open the TELEGRAM App and set-up your account with your Name and Phone Number

4-Go to settings to add a username. Example: Robertotic

5-Start a new conversation with the following user : @VitiroverBot

6-Send a simple message such as “hello” to @VitiroverBot

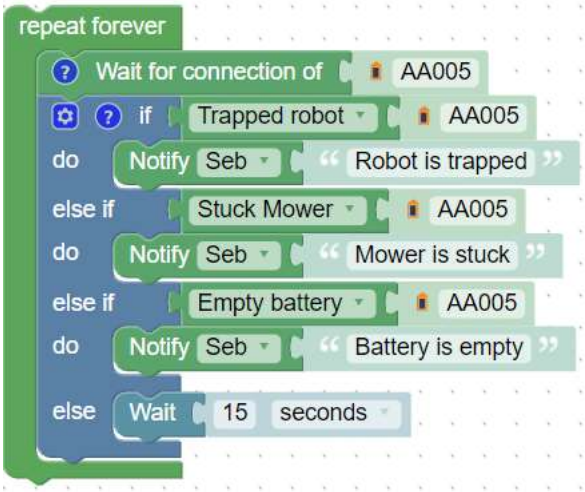
You will receive a confirmation that your profile has been added to the “Notifications Receivers”.



7-Send an email to contact@vitirover.com to confirm your registration as a Vitirover Notifications Receiver.

8-Allocate the below NOTIFICATION SCRIPT to your selected Robot(s) by going to the SCRIPTS Page or directly to your selected Robot Page.

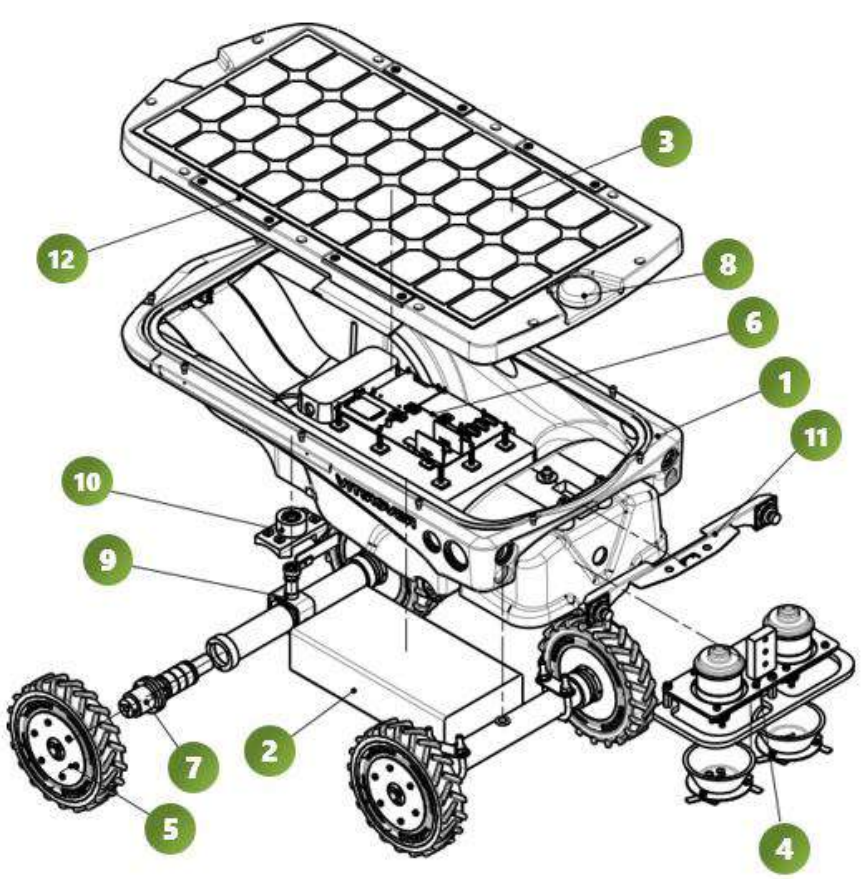
SCRIPT NOTIFICATION



Your Robot is ready to let you know when it is having difficulties.

4 Maintenance and Cleaning

4.1 Exploded view of the Robot



1. Overall shell
2. Battery
3. Solar panel
4. Cutting block
5. Custom wheel
6. Motherboard
7. Landing box
8. GPS antenna
9. Rear Axle
10. Custom stop
11. 2x cameras
12. Charging bars

4.2 Cleaning

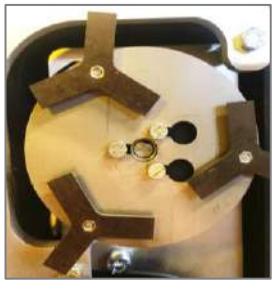
Do not use High Pressure Washer to clean your robot.
Do not use solvents to clean your robot.
Use of High Pressure Washer or Solvents could result in irreversible damages for your robot.

It is important that the VITIROVER robot stays as clean as possible.
A robot on which a big amount of dust or grass is stuck will not mow as well as it supposed to, its performances will be diminished.
Dirt can result in a quicker wear of the robot.
For an enhanced efficiency and a longer lifetime, clean your Vitirover Robot regularly and replace worn parts as necessary.
It is recommended to use a soft brush to clean the robot.
To reduce the risk of damaging electrical components, Vitirover Robots should be stored inside and turned Off in case of alert of severe weather conditions.

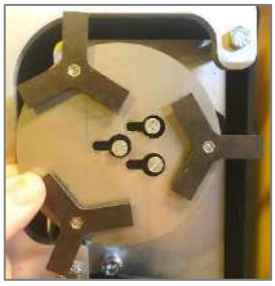
4.3 Blades Support Disc Replacement

1- Bend the Robot over on its side
2- Loosen the 3 central screws (6 turns max to avoid removing them completely)
3- Slide the disc aside to get the screws in the corresponding round holes and remove the disc.
4- Repeat the opposite actions (reversed) to mount a new disc.

PICTURES **2**



3



4.4 Cutting Blades Replacement

1- Loosen the screw holding the cutting blade to the cutting support disc (the screw head is located on the opposite side of the disc from the screw).
2- Watch out for the Screw Washer. It is needed to put it back together with the replacement Blade.
3- When mounting the replacement Blade, make sure to add some strong "Thread Lock" on the screw thread before tightening it.

4.5 Battery Replacement

A 24V Lithium-Ion rechargeable battery is already installed in your Vitirover Robot.
The Vitirover Robot battery can be charged either by :

- Having the Solar Panel of the Robot exposed to the Sun Light (either while running or turned off)
- Having the Vitirover Robot parked underneath its Charging Dock Station
- Removing it from the Vitirover Robot and plugging it in the Battery Charger included in your Vitirover Robot Carton Box.

To take the battery out of your Vitirover Robot to recharge it with the battery charger, follow these steps :

1. Turn the Vitirover Robot Off with the main switch.
2. Bend the Vitirover Robot over on its side.
3. Open the battery hatch located underneath the robot with the provided key.
4. Remove the battery and disconnect it from its wire connector.
5. Plug the battery in to the Battery Charger and wait for approximately 8 hours for a full charge.
6. Disconnect the battery from the battery charger and
7. Connect the battery back to the Vitirover Robot wire connector (you will hear a "click").
8. Put the battery back into its location underneath the Robot, close the hatch and remove the key.

PICTURES **3**



4



7



5 Manufacturer Warranty

VITIROVER SAS guarantees the operation of the Vitirover Robot for 2 years from the date of purchase.
The warranty covers serious failures related to materials or production.
During the warranty period, VITIROVER SAS will repair the Vitirover Robot at no additional charge if the following conditions are met:

- The VITIROVER mowing robot must only be used in the conditions described in this Owner's Manual.
- The user must not try to disassemble and/or repair the Vitirover Robot by himself.

Warranty Extension programs up to 5 years and 10 years are available.
Maintenance/Service Plans are also available and include : Annual Robot check-up, Robot mechanism and electronics cleaning, check for worn parts, mechanical lubrication, capacity test of solar panel and batteries, software update, functions, performance and safety tests and any other maintenance work as needed.
Please contact your local retailer or installer for details about Warranty Extension and Maintenance/Service plan.

Damages resulting from the following root causes are not covered by the Manufacturer Warranty :

- Lighting conditions.
- Inappropriate storage.
- Using batteries other than Vitirover specific batteries

Compatibility between the Vitirover Robot and other devices such as remote controllers or radio transmissions is not guaranteed by the Vitirover Manufacturer Warranty.

The cutting parts (disks and blades) as well as the Robot Tires are wearing supplies that are not covered by the warranty.

In case of malfunction or questions, please contact your local support, installer or retailer to try to resolve the issue via Remote Assistance before further actions.
In order for the support to be as efficient as possible, please be ready to :

- Provide Robot Name / Serial Number (XX-nnn with X=Letters and n=Numbers). Example "AA008"
- Provide Location and date of purchase
- Run Guided Test via your VitiCloud Account. Please identify your LOGIN & PASSWORD prior to the call.

6 Insurance

The Vitirover Robot is subject to a comprehensive "Theft and Vandalism" insurance.
It is considered as an exploitation tool, at the same level as irrigation systems, sprayers or pumps.
The Vitirover Robot must thus be declared into the Civil Liability Insurance of the company that owns it.

7 Technical specifications

Actual Specifications may vary based upon field conditions (number and type of obstacles, type of ground, weather, driness of the ground, cleanliness of the robot, maintenance, etc.)

DIMENSIONS [cm] (L x l x H)	75 cm x 40 cm x 30 cm
DIMENSIONS [in] (L x W x H)	29"1/2 x 15"3/4 x 11"3/4
WEIGHT (kg / lbs)	23 kg - 51 lbs
CONSUMPTION	1 W/kg - 0.45 W/lb
AUTONOMOUS MOVEMENT	YES
MAX SPEED	900 m/h - 0.55 MPH
WHEEL DRIVE	4 WD
DRIVE MOTORS	4 (1 per wheel)
SOUND LEVEL (dBA)	40 dBA
MAX SLOPE (based upon soil)	15 to 20%
WEB BASED DASHBOARD	YES
CUTTING BLOCK	2 Rotating Grinders
CUTTING HEIGHT (cm / in)	5 to 10 cm - 2" to 4"
CUTTING WIDTH (cm / in)	30 cm - 11"3/4
PRECISION TO OBSTACLE	< 1cm - < 1/2"
FRONT CAMERAS (RGB)	2
INERTIAL SENSOR	IMU
POWER SUPPLY	Solar Panel
CHARGING DOCK STATION	Solar / Direct
GEOLOCATION (GNSS)	GPS, GLONASS BEIDOU, GALILEO
GEOLOCATION (RTK)	YES
SECURITY GEOLOCATION	Security Battery
ANTI-THEFT / SAFETY SHUT-OFF	Remote / Auto
SAFETY FEATURE	Auto Shut Off
EMISSIONS (CO2/Chemicals)	0

8 Declaration of conformity

Declaration of conformity CE

We, VITIROVER SAS, Based in “Lieu-dit Simar, La Gare, 33330 Saint Emilion”, declare, under our only responsibility that the Vitirover VR8 Commercial Autonomous i-GPS All Terrain Solar Robotic Mower, holding the serial numbers of the year 2024 and after (the year of fabrication is clearly written on the robot followed by its serial number) are true to the dispositions of the Council Directive :

- Directive « Machines » **2006/42/CE**.
- Directive **2011/65/UE** « relative to the limitation of the usage of certain dangerous ».
- Directive **2000/14/UE** « relative to the noise emissions and of the outdoor materials ».
- Directive **2004/108/CE** relative to the electromagnetic compatibility including the actual amendments in vigor. These norms have been followed:
  - **EN 61000-6-3** (emission)
  - **EN 61000-6-1** (immunity)

CE

VITIROVER SAS, January 1st, 2024



Arnaud de la Fouchardière, Président of VITIROVER SAS