



**SEASAM**  
**AUTONOMOUS**  
**DRONE™**

by  notilo plus

# EQUIPMENT PRESENTATION

April 22

Thank you for purchasing your Seasam drone.

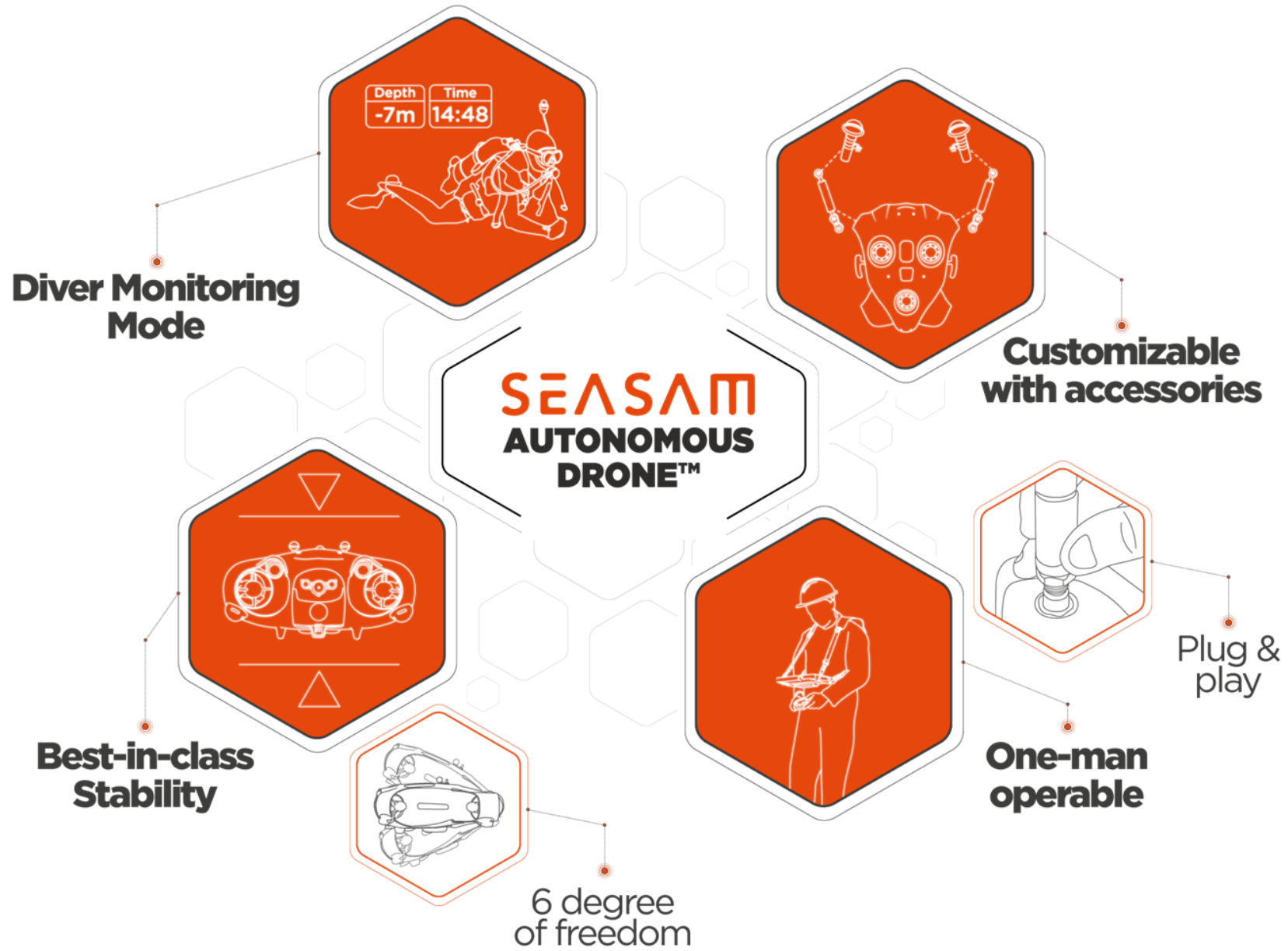
Before starting to use Seasam, we draw your attention to the fact that **the drone needs to be taken in hand before any operation.**

Please read this document carefully, it contains all the information about your drone, and the equipment that comes with it.

If you have any question do not hesitate to contact us via email [support@notiloplus.com](mailto:support@notiloplus.com).

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SEASAM DRONE

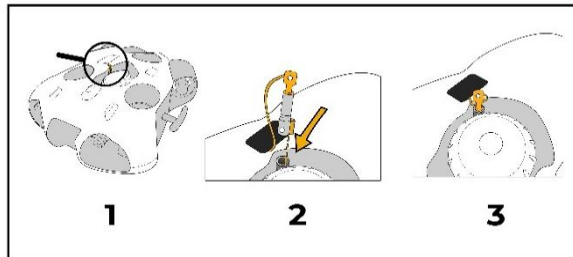
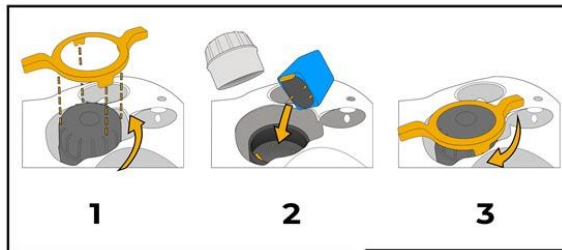
Features

Maximum depth: 100 M  
 Weight: 9kg  
 Size: 55cm x 45cm x 23cm  
 Buoyancy: Slightly buoyant  
 Add or remove the supplied weights and foams depending on the salinity of the water you are sailing in, and the batteries used (refer to « Buoyancy » section).

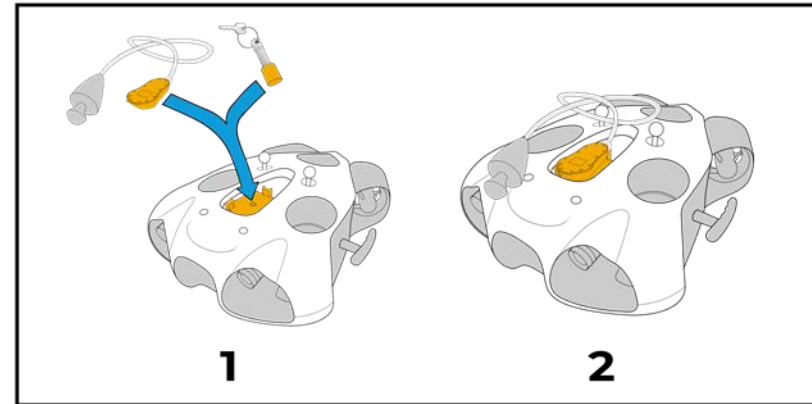
FUNCTIONING

Turning on the drone

Plug the battery into the drone (Refer to the “Battery Connection” section below). Close the battery compartment properly until contact using the disassembly tool without forcing.



Verify that the emergency stop is correctly depressed in its location next to the battery compartment (Refer to the “Emergency Stop” section below). Turn on the underwater remote control and place it on the drone at the dedicated location. (Refer to the "underwater remote control" section below). If you are using a magnet, place it on the underwater remote control location on the drone.



When activated, the drone lights up and performs a series of tests. It then emits sound and light signals and activates its engines. **Be careful that nothing hinders the engines.**

Once complete, the drone’s left front-mounted LED is fixed green. If you have started the drone with the underwater remote control, it displays “Disarmed - Ready” and

**i** *If you used a magnet to turn on the drone, only the green front LED of the drone tells you that the drone is started.*

*Turning off the drone.*

Turn off the underwater remote and place it on the drone at the dedicated location. (Refer to the “underwater remote control” section below)

If you use a magnet, place it at the underwater remote location on the drone.

After several seconds, the extinguishing process starts and the drone lights flash to warn you.

**Immediately remove the underwater remote control or magnet from the location** on the drone, otherwise the drone will restart.

The drone will flash its lights one or two more times and then turns off. The drone’s front green LED also turns off.

You can now safely remove the battery.



***This is the normal extinguishment procedure. Do not turn off the drone by removing the battery or pulling the emergency stop, which may damage it eventually.***

*Battery Connection*

Return the drone to a flat surface. Do not hesitate to place a polystyrene plate or a towel under the drone to protect and keep it stable during the opening and closing of the battery’s compartment.

**i** *If you have a hardcase, you can leave the drone inside.*

Open the compartment using the opening tool to unscrew the compartment. Press down while turning counter clockwise.

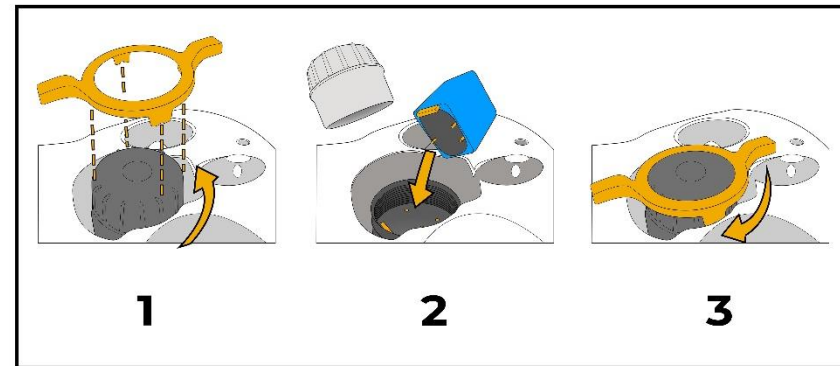
Connect the battery by aligning its connector with the one located in the bottom of the battery compartment.

(A slight “bip” confirms the correct battery connection)

On the battery bell, check that there is no sand, salt, or other material that would interfere with the sealing of the bell thread, seal, and other rubbing parts.

Screw back the battery bell without forcing and until contact, using the disassembly bell tool.

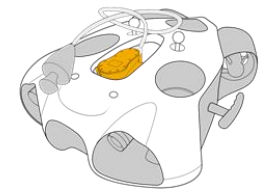
Use the stickers on the bell and the drone.



*Synchronization of underwater remote control (Supervised and autonomous Modes)*


When the underwater remote control is placed on the drone, it communicates with it in infra-red and they synchronize.

This synchronization is performed at the start of the drone and ensures good communication between the drone and the underwater remote control during the dive when using Follow Mode or Supervised Mode.



It is therefore advisable to start the drone 5 minutes before the dive and not to use the magnet to start the drone.

If an error message is displayed on the underwater remote control during synchronization, please contact [support@notiloplus.com](mailto:support@notiloplus.com) with the nature of the error.

 *If you are using multiple drones at the same time in Follow Mode or Supervised Mode, select a different channel for each underwater remote control at the start of the drone.*

If during the dive the communication is lost between the drone and the underwater remote control, you can replace the underwater remote control on the drone to restart a synchronization.

 ***It is strictly not advisable to turn on the drone underwater.***

### GOOD TO KNOW

#### *Use*

The drone being designed to work in water, it is strongly advised not to leave the drone switched on out of water for a very long period (one to several hours).

Like any electrical device, the drone can heat up when it is left on for too long, especially in direct sunlight, and this can lead to malfunctions.


#### *Diving with the drone*

Synchronize the remote control with the drone before the dive. (Refer to the “underwater remote control synchronization” section)


**The drone should never be placed in the water alone.**

Place it in the water, close to a diver. Do not throw it into the water!

In case of swell, it is recommended to bring the unarmed drone to a depth of at least 5m, and to activate it at that time. This will reduce the risk of the drone's operation being disturbed by the swell.

 *If you are diving in an environment with a lot of terrain and coral, it is recommended that you arm the drone at a minimum distance of one meter from potential obstacles.*  
*If you find yourself in an area with many divers and terrain, it may be best to turn off obstacle avoidance.*

When you are ready, begin the descent. Keep an eye on your companions and the drone, keeping them in the same field of vision.

 ***Always respect the diving rules when diving with the drone, the safety of the divers is the priority!***

You can then change scenarios at will and use all the drone's features. (Refer to the section "Scenarios and Modes of the underwater remote control")

When returning from the dive, keep in mind that the drone is not necessarily visible to the boat coming towards you. The captain must already be aware of the divers, the drone is smaller than them, so be extra careful.

This is why it is advisable to take the drone disarmed by the handles once you are on the surface and keep it visible.

Once the area is safe and you are ready to get back on the boat, check that the drone is unarmed and pass it to the crew on the boat, then get back on board.

### Position of the drone in the water

The drone positions itself according to the position it has triangulated between the transmitter placed at the end of the underwater remote control cable and the pressure sensor on the underwater remote control. It also respects the following distances and the height previously defined on the application between 50cm and 1m from the diver.

This height has priority over obstacle avoidance. (Refer to the section "Obstacle avoidance").

### Arming the drone

The arming of the drone (activation of the motors) must be done in the water. The motors are not designed to work out of the water.

Once the drone is positioned in the water, you can arm the motors by pressing the propeller symbol on the Seasam Control application screen in ROV Mode. Or by activating a scenario (preferably Follow) with the underwater remote control in Supervised or Autonomous Mode.

When armed, the drone dives into the water at a depth of 50/70cm to 1m deep.



**We therefore encourage you to arm the drone in an environment with a minimum depth of 2 meters.**

This is to prevent the drone from colliding with the sea floor or rocks.



**Don't forget that the drone is always your responsibility.**

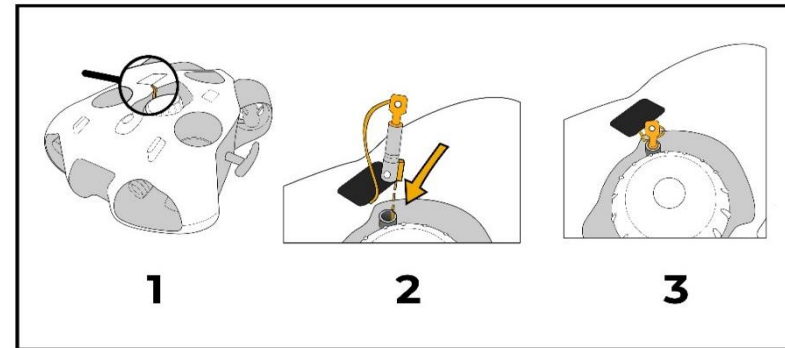


*If you dive with the drone, take some distance before arming it.*

### Emergency Stop

The emergency stop is a plastic cylinder with a magnet at its end. Next to the battery bell, a wrist strap is attached to one of the drone weights fixing screws.

In the event of an underwater emergency, if you are unable to disarm the



Seasam drone via the underwater remote control, you can pull the emergency stop by pulling on the wrist strap under the drone.

You will have to replace the emergency stop before to turn the drone back on.



**It is strictly not advisable to turn on the drone underwater.**

*This will cause the pressure setting to be incorrect, and the drone will attempt to descend rapidly in depth.*

If for some reason you turn the drone off underwater during a dive, do not attempt to turn it back on.

Finish your dive by attaching it to your equipment or bringing it to the surface.

Always check that the emergency stop is properly positioned. If this is not the case, the drone may have difficulty starting.

Also check that it is greased to facilitate its extraction.



### Connection Loss

In case of loss of connection

- Between the drone and the underwater remote control in Supervised or Follow Mode
- Between the tablet and the WiFi reel in ROV Mode

The drone will activate its emergency mode;

Its lights will flash, it will emit sound noises and will deactivate itself to surface (if the buoyancy is correctly adjusted).

### Buoyancy

The Seasam drone has a slightly positive buoyancy which allows it to rise to the surface in the event of a problem.

The salinity of the water has an impact on this buoyancy, which is managed by the addition of weight or foam.

The type of battery used with the drone also impacts the buoyancy of the drone. Therefore, it is important to use the weight and foams corresponding to the battery inserted in the drone.

This will allow the drone not to force more than necessary to maintain its position deep (and therefore not to consume too much energy) and to return to the surface in case of emergency.

The location of the weights and foams is on the bottom hull next to the battery compartment.

### M Battery

The M battery is the standard battery used with the drone. The drone comes with the corresponding weights.

- Freshwater Navigation: No weights used.
- Saltwater Navigation: Using weights.

### L Battery

The L battery is wider than the M battery and requires the addition of foams and weights are not used.

- Freshwater Navigation: Using Foams.
- Saltwater Navigation: No weights or foams used.

### XL Battery

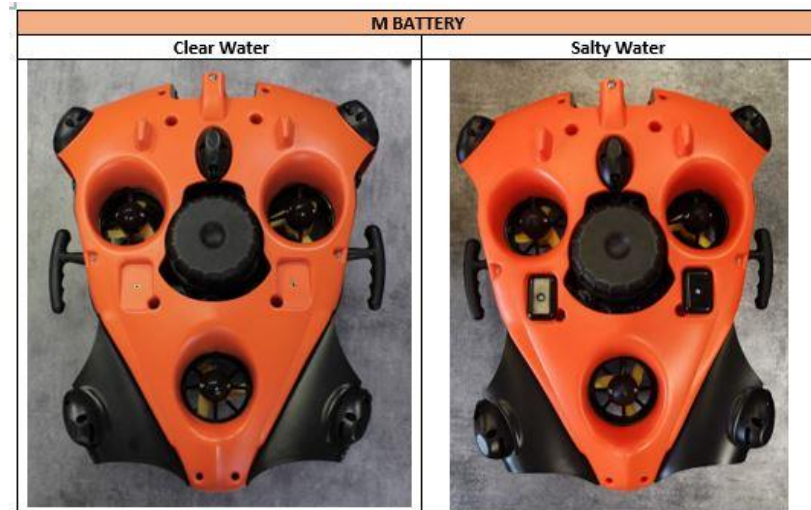
The XL battery is much larger than the other batteries. It requires the use of a foam in addition to the standard pellets.

- Freshwater Navigation: Using Foams.
- Saltwater Navigation: Using standard foam **and** weights.



**The Emergency Stop rope is attached to the Weights/Foams Mounting Screw.**

**Always fix the rope when changing.**





Maintenance

To guarantee the longevity of your drone it is important to respect certain rules.

Cleaning

After each dive it is necessary to rinse the drone well with clear water by insisting on the engines to clean all deposits and impurities that could eventually lead to corrosion and alter the proper functioning of the drone. This is especially important when diving in salt water.

The ideal is to immerse the drone in a water tank by turning the propellers by hand.

**i** *Be careful to ensure that the drone is turned off and disarmed when cleaning.*

Storage

- Drone

After each dive and after having rinsed the drone, let it dry a few hours before storing. Then place it in a dry space away from light.

If you own a hardcase or a softcase, make sure that the drone is completely dry before storing it inside to prevent moisture.

- Batteries

Batteries are not water resistant and are sensitive to moisture.

- Store them dry between uses.
- After each dive, do not carry the batteries with the drone wet to avoid waterlogging.
- Do not leave a battery connected inside the drone when not in use.



***If a battery has been in contact with water and seems to swell, it is imperative to put it away, if possible outside a building to avoid any risk of thermal runaway.***

***It is also not recommended to recharge your battery.***

After 48 hours, it will be inert, you can throw it away at the dump.

### Seal

Make sure that the battery cover gasket is always greased to facilitate opening and closing and to ensure that this sensitive part is waterproof. It is recommended to grease the gasket every 20 dives and to change it every 50 dives.

The drone is delivered with a battery cover directly screwed on.

If you have ordered different sizes of battery you will have two sizes of bell.

A greased seal is systematically installed on the bells.

In order to protect the seal of the bell not mounted on the drone, we provide a protective cap.



***Be sure to always screw this cap onto the unused battery bell (regardless of size) to protect the seal because if it is damaged, the seal will no longer be guaranteed.***

## SEASAM DRONE MODES OF OPERATION

The SEASAM drone offers three different modes of operation.

### *ROV Mode*

You can control the drone from the surface with the WiFi Reel while having the live video feedback on the SEASAM Control App.



### *Follow Mode*

The drone follows a diver autonomously thanks to the underwater remote control of the drone. There is no connection to the surface or the Seasam Control App and no video feedback.



### *Supervised Mode*

The drone is controlled from the surface and can also follow the diver autonomously thanks to the underwater remote control of the drone.

The drone is connected to the WiFi Reel and broadcasts the video live on the Seasam Control App.



WiFi REEL

**Features**

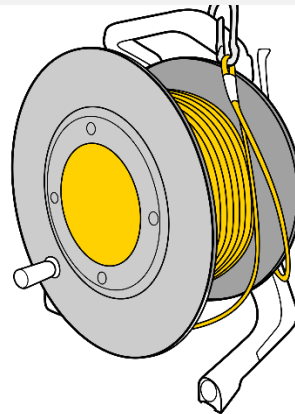
- Waterproof: No, IP66, can withstand water but is not intended to be submerged
- Weight : 5kg
- Size: 40cm x 40cm x 30cm
- Reel: WiFi relay to connect with the control tablet
- Cable: To connect to the drone
- Charging time : 16 hours for the first versions, 6 hours for the new versions.
- Time of use : 8h



If you have a Navigator this can replace the use of the WiFi Reel. Please refer to the Navigator manual to follow the instructions for connection and use with the Seasam drone.

The WiFi Reel consists of a WiFi relay and a cable to connect to the drone to control the drone remotely from the surface.

Connect the reel cable to the drone and connect the control unit with the Seasam Control Application to the WiFi Reel. Then drive the drone remotely with video feedback from the drone camera live on the control unit.



**i** There are several generations of WiFi Reel. Depending on the versions, some features may change.

*Turning on the WiFi Reel*

Press the "On" button once.

Version 1: The LED will flash once white then quickly blue.

Version 2 and 3: After several seconds the LED flashes rapidly in blue.

**i** There is no need to press the button long or press it several times. Wait until the LED starts to flash.

*WiFi Network*

Version 1 and 2: The WiFi network of the reel is in the form "notilo-beacon-XXX".

To retrieve the WiFi Reel connection password, you must first connect to the drone with the Seasam Control Application.

Refer to page 12 "Connecting the control tablet to the drone."

Version 3: The reel's WiFi network is in the form of "Seasam-WiFi Reel-XXX".

**The login password is @Notilo+.**

**i** The password only needs to be saved once on the tablet.

*Turning off the WiFi Reel*

Press and hold the "On" button until the LED flashes red and then goes out.

*Meaning of the status LED*

Version 1 and 2:

- Fast Blue Blink: The WiFi Reel is on. No drone is detected.
- Slow blue flashing: The WiFi Reel r is on. A drone is detected.

- Fixed Blue: The WiFi Reel is on. A drone is detected and the WiFi connection is established with the control unit.
- Flashing orange: Low battery level.
- Red flashing: Critical battery level.

### Version 3:

- Rapid blue flashing : The WiFi Reel is on.  
**i** *On version 3 the status LED never changes state and blinks constantly fast.*
- Flashing orange: Low battery level.
- Red flashing: Critical battery level.

### Meaning of the status LED during charge

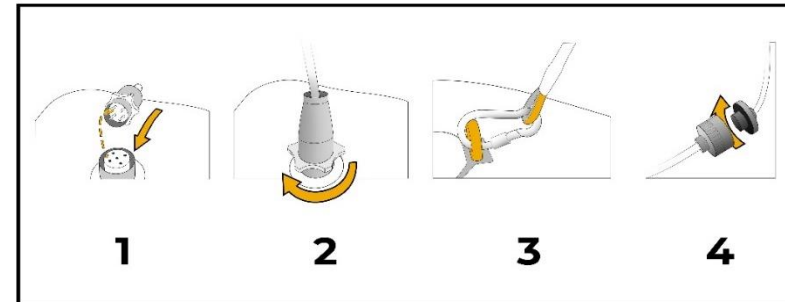
- Fixed orange: The WiFi Reel is charging.
- Fixed green: The WiFi Reel is fully charged.

### Connecting the WiFi Reel to the drone

#### Standard connector

To connect the WiFi Reel to the drone, first remove the black protective cap on the drone and the connector of the WiFi Reel cable. Screw the two caps together to prevent them from hanging and getting stuck in the engines. And thus avoid any damage to the drone.

Screw the WiFi Reel cable to the drone, making sure to align the cable guide in the plug on the drone. Hold the connector straight and screw the cable to the drone, using the screw ring provided for this purpose. **There is no need to force.**



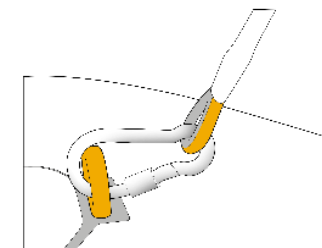
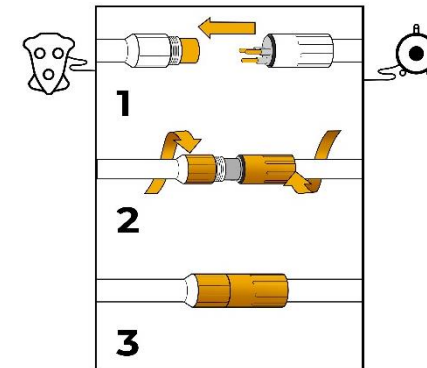
### Subconn Connector

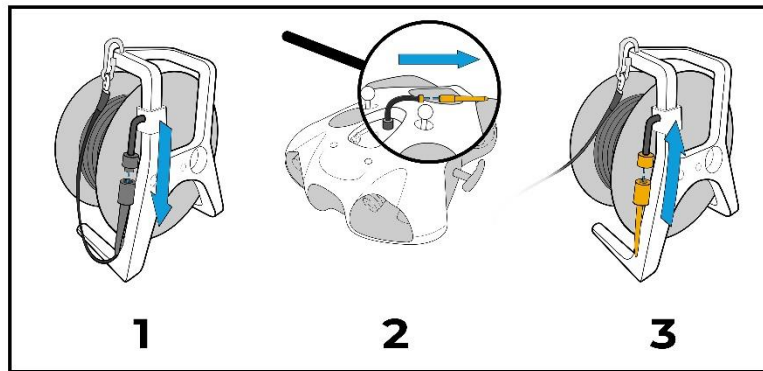
On the drone and on the WiFi Reel, unscrew the red nuts and separate the nuts.

Connect the cable connector to the drone connector and screw back the red nut.

**i** *Systematically grease the female connector on the drone side to preserve the connector from corrosion.*

Make sure to reconnect the tip of the drone connector to the connector of the WiFi Winder so as not to lose it.





Once the cable is properly connected to the drone, secure it by attaching the carabiner to the ring on top of the drone.

**i** *The security loop must be long enough to protect the connectors.*

**Charging the WiFi Reel**

To charge the WiFi Reel, remove the connector protection on the front and use the mini-usb charger. When the WiFi Reel is fully charged, the battery LED is green.

Version 1 of the WiFi Reel requires 16h of loading. You cannot use the WiFi Reel when its running.

Version 2 requires 6 hours of charge.

If you charge the WiFi Reel at the same time as you use it, the charge is faster than the discharge.

**The usage time for both versions of WiFi Reel is 8h.**

THE NAVIGATOR AND THE GROUND STATION

**Features**

Navigator

Waterproof: Yes, make sure to close the connectors properly  
 Weight: 5kg  
 Size: 42cm diameter x 20cm height  
 Antenna: WiFi relay to communicate with the antenna of the Earth Base  
 Cable: To connect to the drone  
 Charging time: 2h

Ground Station

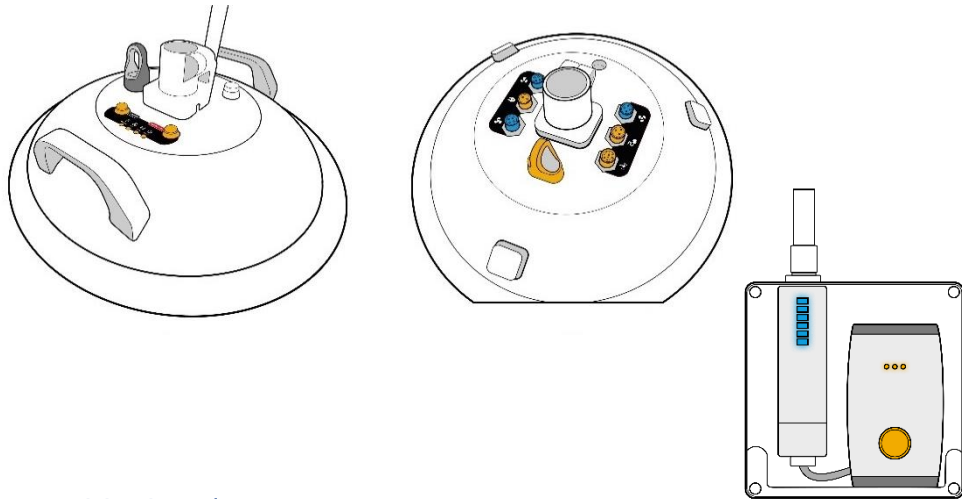
Waterproof: No, can support some drops but not intended to be submerged  
 Weight : 1kg  
 Size: 20cm x 20cm x 10cm  
 Antenna: WiFi relay to connect with the control tablet and the Navigator antenna  
 Charging time: 2h

The Navigator system is composed of the Navigator and the Ground Station and allows to get rid of the cable of the WiFi Reel, when using the drone in ROV Mode, and thus operate the drone in more remote and complex places.

An antenna on the Navigator and an antenna on the Ground Station allow the communication of the system. The signal range between the two antennas is 300m.



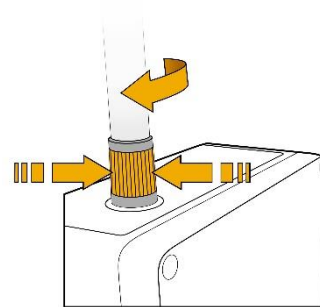
The Navigator is connected to the drone by a cable and placed in the water with it. It receives the commands from the operator and sends them to the drone. It is towed by the drone during its movements  
The Ground Station remains next to the operator and allows to make the connection between the operator and the Navigator.



### Positioning the antennas

Screw the antennas onto the Navigator and the Earth Base. Hold the screw ring while screwing the antenna on.

**i** Handle antennas with care.



### Starting the Navigator

Press the ON/OFF button once. The LEDs will light up on the "GPS" and "WiFi" indicators. After a few seconds, the "Power" and "Battery" LEDs will also light up.

**i** There is no need to press the button for a long time or to press it several times. Wait for the LEDs to light up.

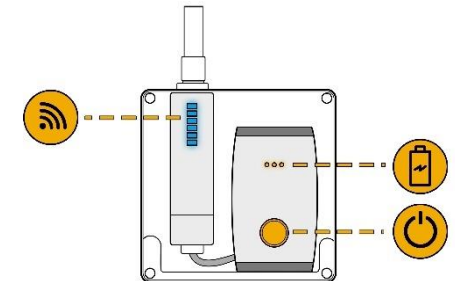
### Starting the Ground Station

Press the ON/OFF button once. The orange LEDs representing the battery level will light up. Two blue LEDs will light up on the WiFi part.

### Connection between the Ground Station and the Navigator

The Navigator and the Ground Station connect automatically.

When properly connected, the blue LEDs on the WiFi portion of the Land Base are all lit..



**i** Check that the antennas are properly screwed in.

### Connecting the tablet to the Ground Station

The WiFi network of the Ground Station looks like "Seasam-GroundStation-XXX".

**The connection password is @Notilo+.**

**i** The password only needs to be saved once on the tablet.

### Turning off the Navigator

Press and hold the "ON/OFF" button until the "Power" LED goes out. After several seconds, all other LEDs will turn off.

### Turning off the Ground Station

Press and hold the "On" button until all LEDs go out.

**i** Do not forget to remove the antennas at the end of use

### Meaning of the LEDs during charging Navigator

The Navigator uses the same type of charger as the batteries. However, when the Navigator is fully charged, the LEDs are completely off on the charger.

### Connecting the Navigator to the drone

To connect the Navigator to the drone, use the dedicated cable. The cable has a double connection, on one side the connector corresponding to the drone. On the other side, the connector corresponding to the Navigator with a blue tip.

#### Standard drone connector

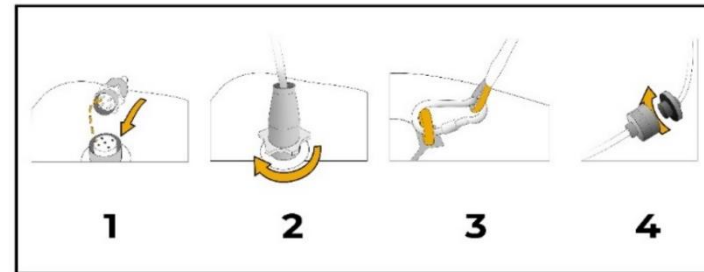
First, remove the black protective caps on the drone and the Navigator cable connector.

Screw the two plugs together tightly to prevent the plugs from hanging down and getting stuck in the motors. This will prevent damage to the drone.

Screw the Navigator cable connector to the drone, making sure to align the cable guide with the socket on the drone.

Hold the connector straight and screw the connector to the drone, using the screwing ring provided.

**There is no need to force it.**



#### Subconn drone connector

On the drone and on the Navigator cable unscrew the red nuts and separate the ends.

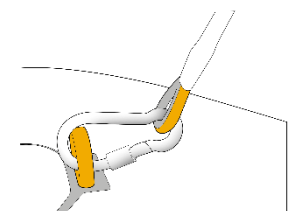
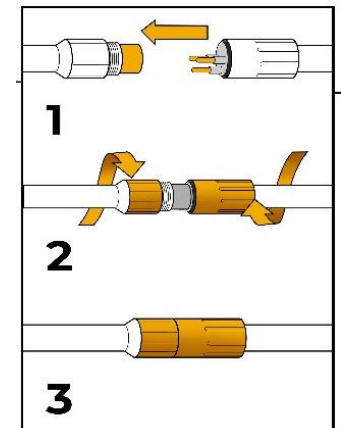
Connect the cable connector to the drone connector and screw the red nut back on.

**i** Always grease the female connector on the drone side to protect the connector from corrosion.

Be sure to reconnect the end of the drone connector to the Navigator cable connector so as not to lose it.

Once the cable is properly connected to the drone, secure it by attaching the carabiner to the ring on top of the drone.

**i** The safety loop should be long enough to protect the connector..





*Navigator Connector*

Unscrew the blue cap from the cable. On the Navigator, also remove the cap on the connector with the drone symbol.

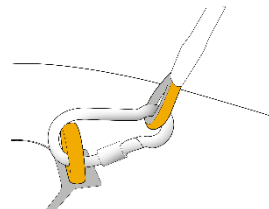
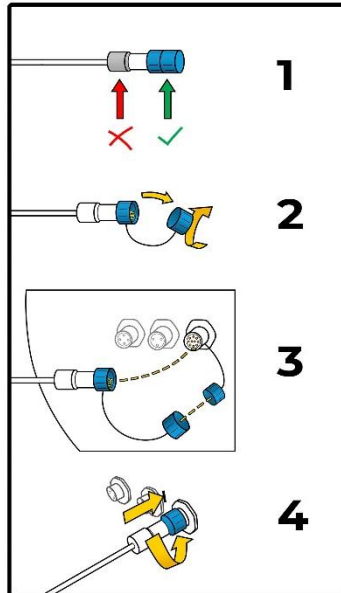
Connect the cable connector to the Navigator. Use the guide to position it in the correct direction.

**i** There is a safety catch that must be engaged when closing the connector..

**!** Be sure to engage this safety catch to prevent the connector from coming off during use and/or water from entering the connector..

Once the cable is properly connected to the Navigator, secure it by attaching the carabiner to the ring on the bottom of the Navigator..

**i** The safety loop should be long enough to protect the connector.



CONTROL DEVICES

The Seasam drone comes with control devices to remotely fly the drone from the surface. The control devices include:

- A control unit with the Seasam Control App
- A controller



*Connecting the control unit to the drone.*

The control unit connects in WiFi with the WiFi Reel. The WiFi reel requires a password at the first connection.

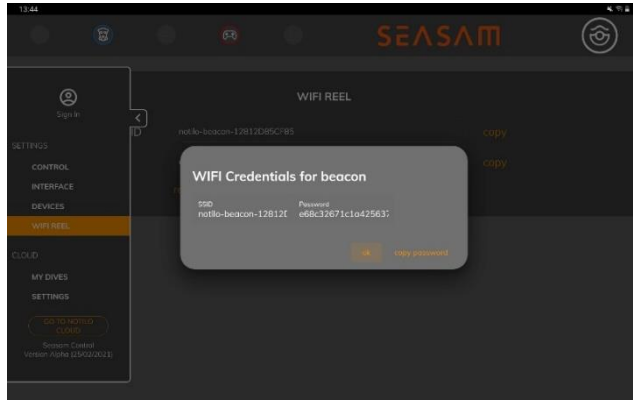
**If the WiFi signal of the WiFi Reel is in the form of notilo-beacon-XXXXXXXXXXXX.**

To obtain the password, first connect to the drone which emits a WiFi signal of type «Seasam-0044BXXXXXX».

**i** If you do not detect a WiFi signal, approach the drone.

Turn on the Seasam Control App on the control unit.

During the first connection with the drone, when the WiFi Reel is connected to the drone and turned on, a pop-up window with the WiFi Reel connection information is displayed, regardless of which screen you are on.



Copy the password and come back to the connection settings of the control unit to connect to the WiFi of the WiFi Reel.

Paste the password when requested.

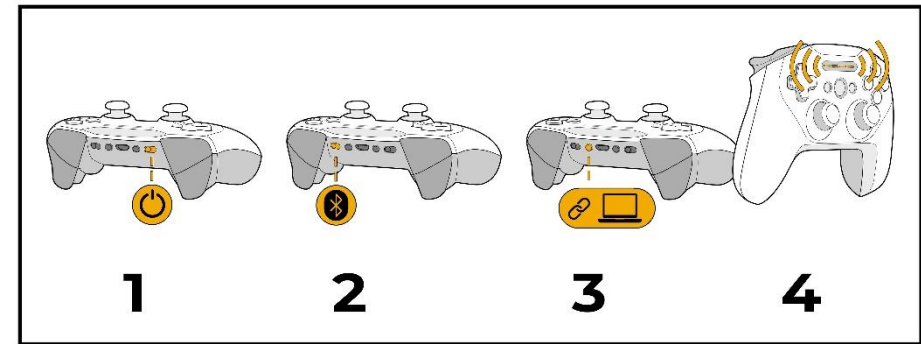
**i** *The password must be entered only once. At the next connection, the control unit will automatically connect to the WiFi Reel*

**If the WiFi signal from the WiFi Reel is in the form "Seasam-WiFiReel-XXXXXXXXXXXX" the login password is @Notilo+.**

Go to the connection settings of the control unit to connect to the WiFi of the WiFi Reel.

Paste the password when requested.

**i** *The password must be entered only once. At the next connection, the control unit will automatically connect to the WiFi Reel.*



Controller connexion

There are two types of controllers.

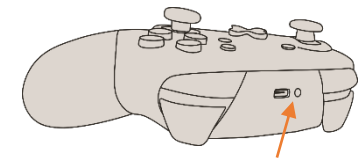
- Switch controller
- Steelseries controller

**i** *Regardless of the model, the controller connects via Bluetooth with the control unit.*

Switch controller

Activate Bluetooth on the control unit and turn on the Controller by pressing the button at the top of it.

The 4 LEDs at the bottom of the controller light up.



In the Bluetooth settings of the control unit, connect to the device named «Pro controller» to pair it.

**i** *Before use, calibrate the controller with the Seasam Control Application.*

## Steelseries Controller

Turn on the Bluetooth on the control unit and turn on the joystick by sliding the right button to "On".

Slide the left button on "Bluetooth" and press the pairing button.

The 4 front LEDs light up.

In the Bluetooth settings of the control unit, connect to the device named "Steelseries status duo" to pair it.



*Before use, calibrate the controller with the Seasam Control Application.*

## Calibrate the controller

Once the controller is connected, open the Seasam Control App, move a Joystick for the app to detect the controller.

Then open the settings by selecting the Notilo Plus Logo at the left corner.

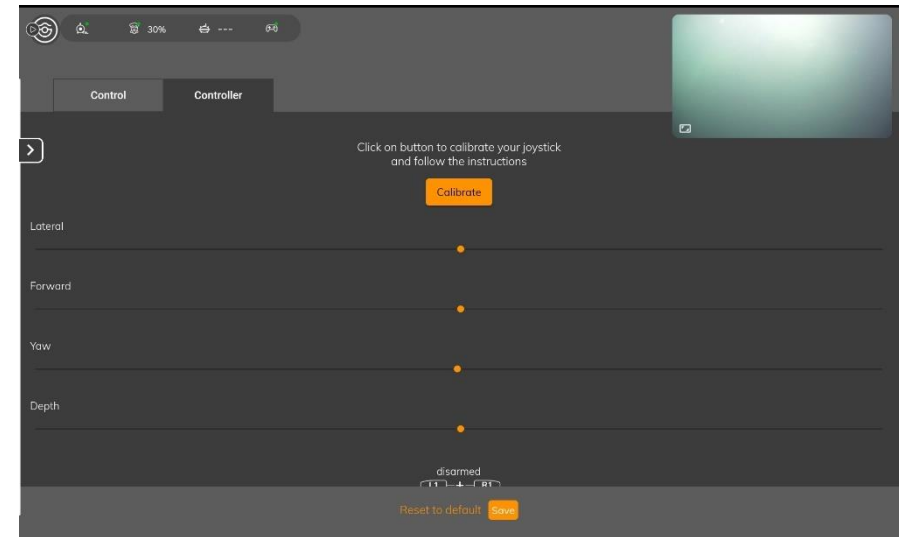
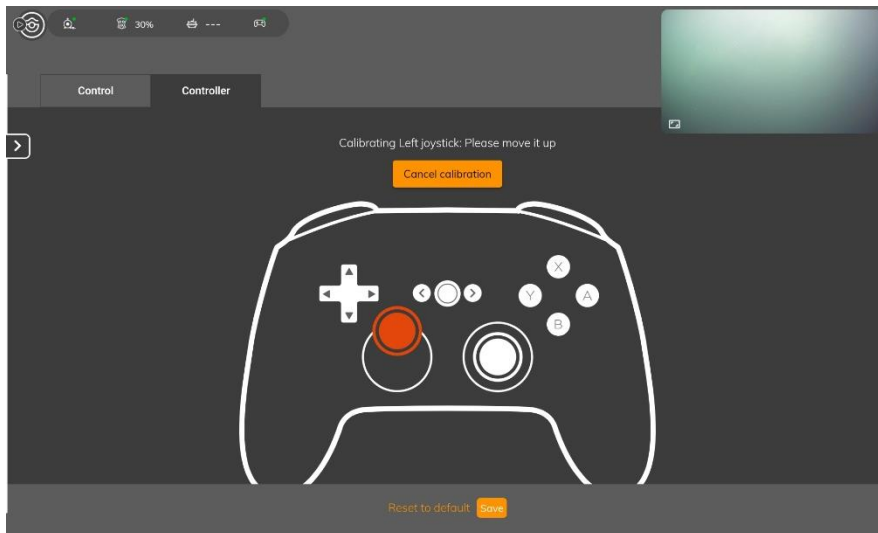
Access "Control", then the Controller tab to calibrate the controller.

Follow the indications on the screen.

**Keep each joystick in position for several seconds each.**

Check how to calibrate the controller here

[https://www.youtube.com/watch?v=DoMQFGWDGfQ&feature=emb\\_imp\\_woyt](https://www.youtube.com/watch?v=DoMQFGWDGfQ&feature=emb_imp_woyt)



## THE UNDERWATER REMOTE CONTROL

### Features

Maximum depth of dive: 100 M

Weight : 200g

Size: 11cm x 7cm

Main case: with selector button display screen and pressure sensor.

Acoustic transmitter: composed of a ceramic and communicating information to the drone.

Loading time: 2 hours

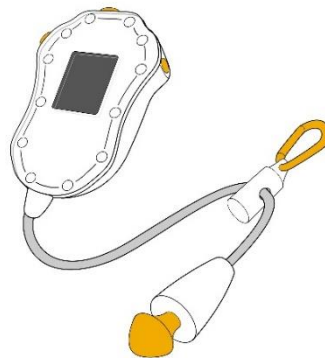
The underwater remote control of the drone makes it possible to control the drone underwater when it follows a diver in Follow Mode or Supervised Mode.

It is composed of:

- A main housing containing a pressure sensor.
- An acoustic transmitter at the end of the cable.
- A float placed on the transmitter.

The commands and actions (scenario activation, activation of the lights, change of distances, etc.) are sent to the drone during the dive thanks to the acoustic signals of the transmitter.

The underwater remote control has an information screen that shows the battery level, the dive time, the depth, and the current scenario.



The transmitter located at the end of the cable and the pressure sensor located in the underwater remote control allow the drone to triangulate the position of the diver to locate it in the water and thus position itself in relation to it.

**It is therefore important that the transmitter remains visible from the drone throughout the dive.**



*Any external elements such as obstacles, marine animals, other divers or even air bubbles between the diver and the drone can alter the acoustic reception of information by the drone and lead to latencies or slowness.*

*It is therefore important to always check that the drone follows the diver during his movements.*



***The transmitter at the end of the cable is made of ceramic that can be damaged during a shock. Make sure that the transmitter does not shock when you operate the underwater remote control.***

### *Synchronization of underwater remote control*

When the drone starts, when the remote control is placed on the drone, it communicates with the drone in infra-red and they synchronize.

This synchronization is performed at each start of the drone and makes it possible to ensure good communication of the drone and the underwater remote control during the dive during use in Follow Mode or Supervised Mode.

It is therefore advisable to start the drone 5 minutes before the dive and not to use the magnet to start the drone.



If you are using multiple drones at the same time in Follow or Supervised Mode, select a different channel for each underwater remote at the start of the drone.



If during the dive the communication is lost between the drone and the remote control, you can put the underwater remote control back on the drone to restart a synchronization.



**It is strictly not advisable to turn on the drone underwater.**

If an error message is displayed on the remote during synchronization, please contact [support@notiloplus.com](mailto:support@notiloplus.com) with the nature of the error.

### Turning on the underwater remote control.

Press the Select button for a few seconds to turn on the underwater remote control. There is no need to hold the button.

### Turning off the underwater remote control.

Press and hold the Select button. A drop-down menu appears with the following indications:

- OFF
- Works
- Supervise

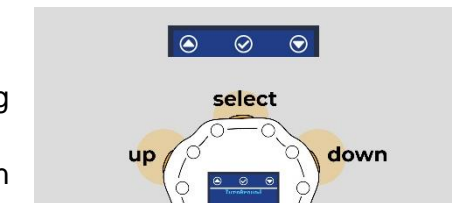
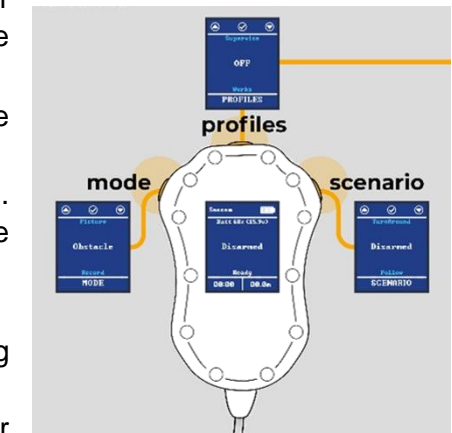
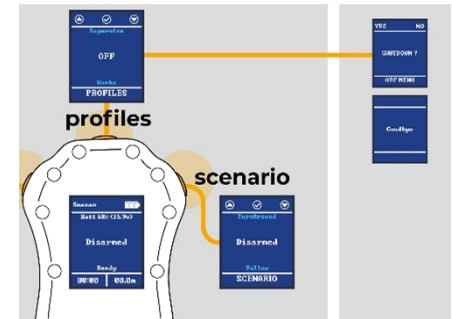
Select “OFF” to display the “Shutdown” menu Then select “Yes” with the left button to confirm the shutdown.

**Shortcuts:** To quickly turn off the underwater remote control, simultaneously press the three buttons.

### Using the underwater remote control

The three buttons on the underwater remote control allow you to navigate through the various menus.

- **The “Select” button** at the top of the remote control allows to:
  - Turn on and off the remote control.
  - Confirm Scenario and Mode selection
- **The right “Scen” button** allows to:
  - Access the Diver Tracking Scenarios menu with long press.
  - Scroll down on the Scenarios or Modes screen.
- **The left “Mode” button** allows to:
  - Access the Modes menu with long press.
  - Scroll up Scenarios or Modes on the screen.



### Select a Diver Tracking Scenario

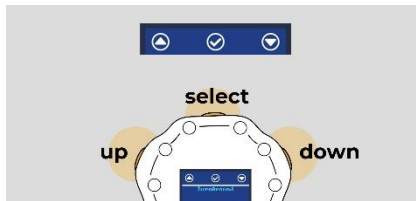
Press and hold the “Scen” button to access the Scenarios drop-down menu. Then use the right and left buttons on the underwater remote to



navigate between the scenarios and press “Select” to activate the selected scenario.

### *Choose a Mode*

Press and hold the “Mode” button to access the Modes menu. Then use the right and left buttons to navigate between modes and press “Select.” to activate the selected mode.



### *Underwater Remote Control Shortcuts*

Press the top Select button twice.

→ Activation of the Follow Scenario

Press the left button “Mode” twice.

→ Activation of the "360" Scenario

Press the right “Scen” button twice.

→ Activation of the Come to Me Scenario

Simultaneously press the two side buttons “Mode” and “Scen.”

→ Activation of the Disarmed Scenario

Simultaneously press the 3 buttons

→ Shutting down the underwater remote control.

**i** Refer to the “Scenarios” and “Modes” sections for details of scenarios and modes available on the underwater remote control.

### *Charge the underwater remote control*

The remote control comes with a charging station and a mini usb cable.

The remote control displays the load level when properly connected.

The loading time is about 2 hours.

### *Maintenance*

The transmitter on the underwater remote is sensitive.

Do not carry the underwater remote control by holding it by the cable to avoid damage. Do not pull the cable either.

**i** Also be careful not to shock the transmitter, at the end of the cable, by dropping it for example.

## SCENARIOS AND MODES OF THE UNDERWATER REMOTE CONTROL

When you dive with the Seasam Drone in Follow Mode or Supervised Mode, you have access to diving scenarios and modes thanks to the underwater remote control of the drone.

### SCENARIOS

A scenario corresponds to how the drone will follow the diver. The position of the drone relative to the diver depends on the selected scenario.

#### Choose and activate scenario

To access the Scenarios menu, press the right button "Scen." for a few seconds. The Scenarios list is displayed.

Navigate between the scenarios with the "Scen." and "Mode" buttons to the right and left of the underwater remote control.

To select a scenario, press the Select. button at the top of the underwater remote control.

**i** *The underwater remote control must be in the water with the drone to activate a Scenario.*

#### Disarmed

This scenario is launched automatically when the drone is started and synchronized with the underwater remote control.

When this scenario is activated, the drone is on but inactive; standby. The engines do not work, and the drone can be safely handled underwater or in the air.

**i** *When diving with the drone, activate this scenario to immediately disable the drone in case of an emergency.*

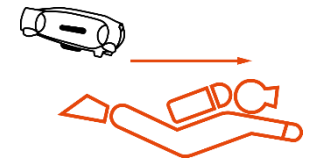


**The "Disarmed" scenario must be activated when handling the drone, when launching and before taking the drone out of the water. This is also the scenario to activate in the event of an emergency or distress situation.**

Shortcuts: Simultaneously press the two side buttons on the remote control to quickly activate the "Disarmed" scenario.

#### Follow

When the "Follow" scenario is activated, the drone starts to follow the diver who has the underwater remote control.



When the diver approaches the drone, the drone moves back. If the diver moves away, the drone follows him.

Shortcuts: Press twice the « Select » button to activate the "Follow" scenario.

#### Come to me

The scenario allows the diver to bring the drone back to him. At the activation of the scenario "Come to me", the drone moves in the direction of the diver then stops and disarms when it is about 30cm from the diver.



For security it is advisable to then activate the scenario "Disarmed".

Once disarmed, the drone can be safely manipulated to film specific locations or travel in hard-to-reach locations.

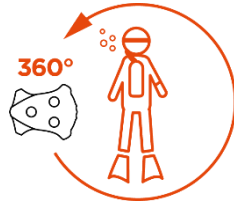
To reactivate the drone, select a new scenario.

 **Be careful not to hold the drone when reactivating.**


 **Each time the drone reactivates it emits an audible signal.**

**360**

Scenario “360” asks the drone to circle around the diver while filming it. The front of the drone is always facing the diver.



*The drone will approach the diver at a distance of 2 meters before performing the scenario, regardless of the distance set in the Seasam Control App.*

 **If obstacles are present around the diver, it can hinder the realization of the scenario.**


*For a better experience it is best to activate the scenario when you are stopped.*

**Stay**

When the “Stay” scenario is activated, the drone remains in place, maintaining its depth while the diver can move freely.

The drone rotates on itself to continue filming the diver.

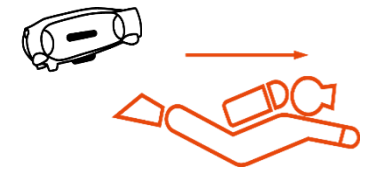


 **Be careful not to get too far away from the drone, otherwise it may lose the signal and come to the surface.**

**Turn Around**


When the “Turn Around” scenario is activated, the drone makes a U-turn to turn its back on the diver.

It will then follow him in the same way as the “Follow” scenario while filming opposite to the diver.



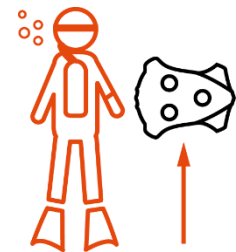
**Surface**


When the “Surface” scenario is activated, the drone goes up to the surface alone and no longer follows the diver. Once it arrives, it will stabilize 50 cm below the water level while waiting for new indications. You can activate this scenario at the end of the dive for ease during the ascent.

 **It is always recommended to monitor the drone and keep in mind that once on the surface the drone can be carried away by the swell and drift.**

**Side Left/Right**

When the “Side L” or “Side R” scenario is activated, the drone is placed perpendicularly to the diver on the right or left to film him in profile during the movements.



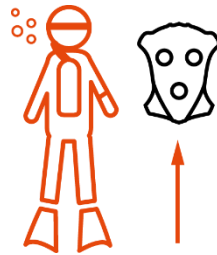
 **Before activating this scenario, it is preferable to be in a “Follow” scenario with the drone behind the diver.**

*In lateral movement the drone moves more slowly, do not forget to adapt your speed.*



## Buddy Left/Right

At the activation of the scenario “Buddy L” or “Buddy R” the drone will now place itself to the right or left of the diver to follow him like a diving companion. It will film right in front of it.



*Before activating this scenario, it is preferable to be in a “Follow” scenario with the drone behind the diver.*

## Ride

Before activating this scenario, first activate the “Come to me” scenario to bring the drone closer to the diver. **Then disarm the drone.**

Activate the “Ride” scenario, if the drone is not already disarmed, the underwater remote control will ask you to do so.

The drone waits for you to grab it by the handles, give a slight impulse down and the drone drives you like a sea scooter.

Stop the scenario by turning the drone on itself at 180 degrees.



### Be careful when using this scenario

Check your air stock and adjust the depth you will descend to accordingly.



**Do not place your hands too close to the front and rear motors.**



*In case of problem, you can release the handles of the drone, it will stop automatically after a few seconds.*

## MODES

A mode is a drone feature that can be activated or deactivated at your discretion.

To access the Modes menu, press and hold the “Mode” button on the underwater remote control.

To navigate between modes, use the right (“Scen”) and left (“Mode”) buttons. Activate the desired Mode with the “Select” button.



*The underwater remote control must be in the water with the drone to activate a Mode.*

## Lights

The “Lights” mode allows you to turn on and off the drone lights to illuminate the area facing the drone.

## Far / Close

The Far/ Close mode allows you to choose the tracking distance of the underwater drone. The distances are configurable before the dive in the Seasam Control App.



*The activation of the Close/Far tracking is indicated by the blinking of the drone lights. Two flashes for Close Mode activation and 3 flashes for Far Mode activation.*



**When changing the tracking distance consider the environment.**

**In this situation, obstacle avoidance is not a priority when the drone is moving, so it can collide with its environment.**

## Obstacle

Obstacle avoidance allows the Seasam drone to detect and avoid obstacles. It is activated by default from 2m depth when used in Follow Mode and Supervised Mode when the diver controls the drone.



Note that between zero and 2 meters deep, obstacle avoidance is never active.

Also, when using the drone in ROV mode, obstacle avoidance is disabled.

**In both case you are responsible for the movements of your drone.**

To avoid the collision between the drone and its environment, it is recommended to activate the "Obstacle" mode.

However, if you are diving into a complex and narrow environment, or an environment with lots of relief and high traffic, it is best to disable obstacle avoidance to avoid drone confusion.

*Record*

"Record" mode allows you to start or stop recording a video with the drone's internal camera.



When the video recording is activated, the drone's front green LED flashes a few seconds.

In Supervised Mode, the indication "Record on drone" with a timer is also displayed on the Seasam Control App screen.

*Picture*

The "Picture" Mode allows you to take photos with the drone's internal camera.

In Supervised Mode, the indication of the recording of a photo is also displayed on the screen of the Seasam Control App.



All photos and videos taken with the drone are recorded on an SD card inside the drone and will be recovered when uploading the dives. (Refer to Seasam Control section)

*Summary of scenarios and modes available depending on the use of the drone.*

SCENARIOS	Follow Mode	Supervised Mode Control from the tablet	Supervised Mode Control from the underwater remote
Disarmed	X		X
Follow	X	X	X
360	X	X	X
Come	X	X	X
Surface	X		X
Side L	X		X
Side R	X		X
Ride	X		X
Stay	X	X	X
Buddy R	X		X
Buddy L	X		X
Lead		X	
Let the Diver Choose		X	

MODES	Follow Mode	Supervised Mode Control from the tablet	Supervised Mode Control from the underwater remote
Obstacle	X	X	X
Record	X	X	X
Far/Close	X	X	X
Lights	X	X	X
Picture	X	X	X



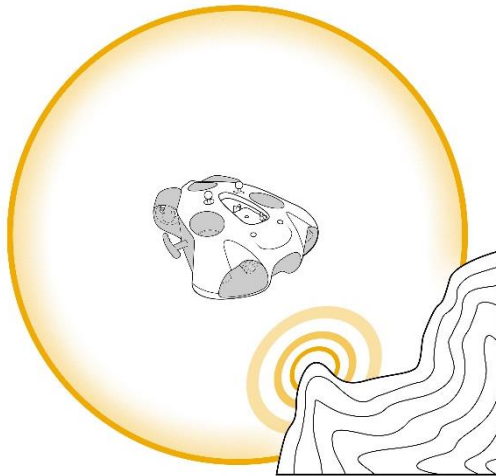
## OBSTACLE AVOIDANCE

### *Obstacle avoidance*

The obstacle avoidance is done by means of an acoustic signal. The drone detects obstacles in a radius of 1 meter to 1.5 meter around it; it can be represented as a sphere of about 3 meters in diameter with the drone in its centre.



***Obstacle avoidance therefore only activates from a depth of 2 meters to avoid detecting the water surface as an obstacle.***



When the drone detects an obstacle, its reaction is to slow down or stop, to take height and start again.

This loop will repeat itself as many times as the drone detects the obstacle.



*Sand, landforms, algae, air bubbles, another diver, an object floating in the water etc. can be considered as obstacles by the drone.*

During the obstacle avoidance action, the green LED on the front of the drone flashes to show you the obstacle detection.

If the diver moves forward while the drone slows down following an obstacle detection, the distance between the drone and the diver will increase and may reach a threshold where communication between the transmitter of the underwater remote control and the drone will no longer be operational - The drone will no longer receive a valid signal from the underwater remote control.

If the absence of a valid signal continues for more than 90 seconds, the drone will enter a protective mode, and will engage the “surface” scenario to return to the surface automatically.

Once it reaches the surface, it will disarm and stabilize at a depth of about 50 cm, waiting to be recovered or to receive a new order.



***It is always recommended to monitor the drone and keep in mind that once on the surface the drone can be carried away by the swell and drift.***

### *Bottom detection*

The operating principle of the drone makes it follow the remote control placed on the diver at a given distance, maintaining a depth almost identical to that of the remote control (a little above by default).

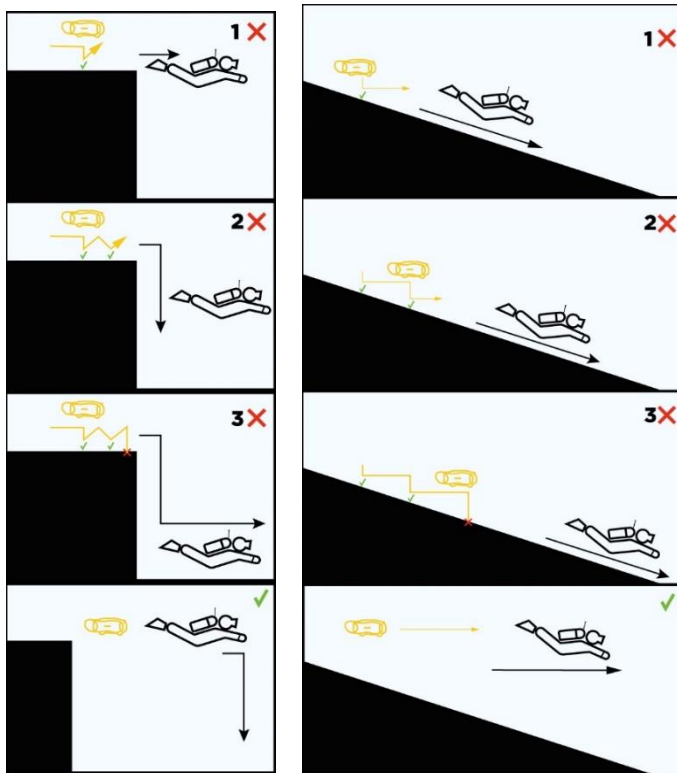
If, during the dive, the seabed is sloping, slanted or there are drops, the diver must ensure that the drone passes the “obstacles” and stages of the course after it.

Indeed, the drone always tries to keep up with the diver even if it detects an obstacle (the seabed): the depth instruction has priority over obstacle avoidance.

Therefore, if the diver makes a descent along the seabed and without considering the follow distance with the drone, the drone will make a downward movement to follow the depth of the diver and can thus be stuck on the seabed.

In this case of seabed detection, the drone stops, and its engines are disarmed; its lamps start to flash quickly, and sound signals are emitted. It will then try to rearm his engines to resume tracking if it still detects a valid acoustic signal (and therefore the distance between the drone and the underwater remote control is not too important).

If the diver continues his descent without paying attention to the drone, the drone can begin to “plow” the ground while advancing.



*Advices*

The obstacles avoidance may occasionally not be in line with the type of dive performed (diving by razing the seabed) or unsuitable for the environment in which the dive is performed (complex and/or narrow environment, and/or with many reliefs).

We therefore advise you, in these cases, to:

1. Deactivate the obstacle avoidance

Obstacle avoidance is automatically activated during a dive but can be activated or deactivated at will.

Dividing in Follow mode: drone and diver

With the underwater remote control, press and hold the “Mode” button and navigate through the menu until “Obstacle” is displayed. Press the Select button to validate.

Dividing in Supervised mode: drone and diver with video feedback on the Seasam Control App

When controlling the drone via the Seasam Control App, obstacle avoidance can be activated and deactivated via the control screen.

When the control of the drone is given to the diver, obstacle avoidance can be activated and deactivated with the underwater remote control the same way as explained in Follow Mode.

2. Increase vertical tracking distance of drone.

In the Seasam Control App and control menu, access the “settings” tab and “dive settings”

In the Supervised section, increase the vertical distance. The drone will then be higher than the diver and can more easily avoid obstacles at ground level.



notilo plus

[support@notiloplus.com](mailto:support@notiloplus.com)

<https://support.Seasam.notiloplus.com>