



SOLUTION SHOWCASE  
NOTILO PLUS

## AI at the Edge with NVIDIA Jetson

### Challenge

- > Develop underwater drones that are cost-effective and autonomous
- > Allow divers to spend more time exploring and less time behind camera lenses
- > Enable connected devices to thrive underwater where traditional technologies don't function

### NVIDIA Solution

- > High performance compute capability
- > Complete module with integrated feature set
- > Advanced multimedia processing capabilities

### Results

- > Introduced new levels of performance for fully autonomous underwater drones
- > Delivered more efficient performance for applications like maintenance of ship hulls
- > Boosted creative freedom for underwater film crews

## NOTILO PLUS TAKES UNDERWATER EXPLORATION TO NEW LEVELS WITH AUTONOMOUS DRONES

*"When it comes to building solutions for AI at the edge, you have to go with NVIDIA. The benefits in terms of computing power, combined with the ease of getting started thanks to the built-in resources, are incomparable."*

- Nicolas Gambini, CEO.

### Autonomous Underwater Drones

Notilo Plus creates autonomous drones that serve everyone from diving enthusiasts and oceanographers to underwater maintenance crews, boat owners, and defense departments. To meet these diverse needs, they use a combination of data-heavy training and processing power provided by the NVIDIA® Jetson™ platform.

iBubble is a recreational autonomous underwater drone that allows divers to have their surroundings filmed or have themselves captured while exploring from a range of different positions. They can also communicate with the drone to call the iBubble to them and change the filming focus.

Notilo Plus' also leverages Jetson TX2 and scales the solution to their Seasam, an autonomous underwater drone for industrial and commercial applications. Seasam enables safe, autonomous inspection of underwater infrastructure and ship hulls.

### NVIDIA Platform

Technologies that are typically used to connect devices, such as Wi-Fi, GPS, and Bluetooth, don't function underwater. Most companies have tried to make up for this with expensive acoustic technology.

But Notilo Plus' underwater drones rely on cost-effective sensors coupled with powerful machine learning algorithms. They merge

## Products Used

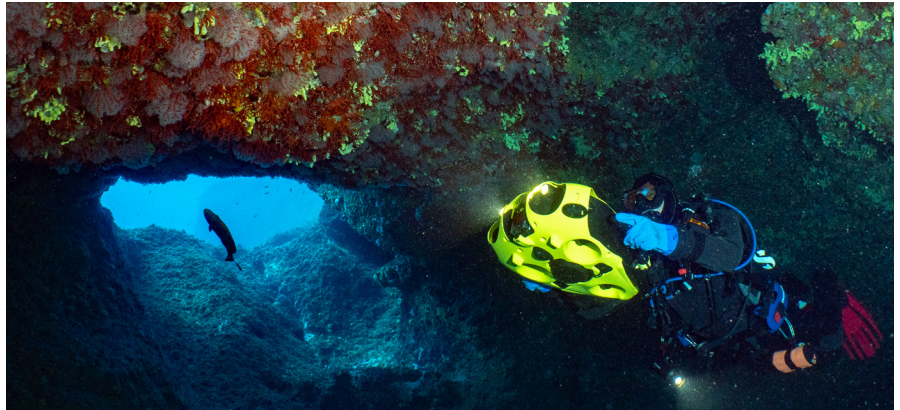
- > Jetson TX2

## Processing Engines Used

- > GPU
- > ARM CPUs
- > Camera Processing

## Software Used

- > SqueezeNet
- > JetPack SDK



acoustic data with computer vision to create fast, reliable tracking systems capable of handling the most difficult environments.

The Jetson TX2 AI supercomputer makes it all possible with advances in deep learning technology. It can perform convolutional neural network-powered detection in real time and uses long short-term memory networks to predict acoustic signals and drastically reduce delays in signal processing.

## Notilo Plus Results

iBubble enables divers to spend more time exploring and less time behind the lens—providing a much better driving experience.

For large freighters needing regular hull inspections, a traditional wire-connected drone isn't a feasible option. Seasam can roam the entire length and breadth of a vessel and capture every inch in high-quality video. When potential trouble is spotted, an optional wire can be connected to feed live footage to the surface. This helps crews above make decisions about the state of the hull faster and more effectively.

## About Notilo Plus

Notilo Plus is a French start-up created in 2016 and based in Marseille. It provides leading expertise in intelligent underwater exploration, with the preservation of underwater environments a top priority.

All the autonomous underwater devices under development can be adapted to the practical needs of consumers, as well as to the most demanding requirements of scientific, industrial, and defense sector professionals.



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Learn more: [www.nvidia.com/robotics](http://www.nvidia.com/robotics)

Learn more about Notilo Plus at: [www.notiloplus.com](http://www.notiloplus.com) , [www.ibubble.camera.com](http://www.ibubble.camera.com) ,  
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