

SUBNERO WATER ASSESSMENT NETWORK



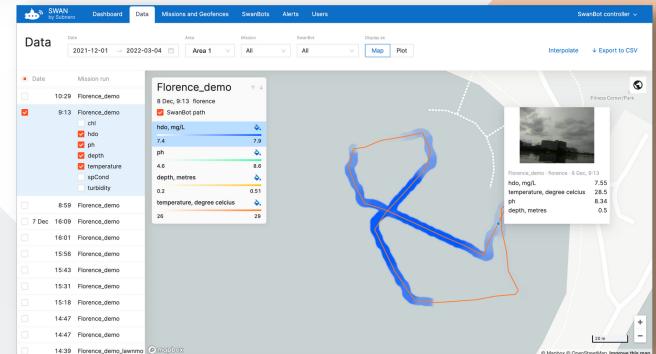
SMART MONITORING OF THE WORLD'S MOST PRECIOUS RESOURCE

SAFE & SUSTAINABLE

- Fully autonomous water quality sampling using a network of smart robots.
- Deployable in adverse conditions, such as wastewater and poor weather.
- Simultaneous coverage over large areas using networked operations powered by SWAN's *Bevy Intelligence*.
- Carbon-free and eco-friendly. Runs on rechargeable batteries.

HIGH COST SAVINGS

- Up to 10x cost savings per sample.
- Minimal need for human intervention.



Note: All data shown are for illustrative purposes.

DENSE DATASETS IN REAL-TIME

- Dense datasets in real-time provide users with a holistic view of the health of water bodies.
- Large datasets enable advanced data analytics methods for preventive controls.
- Faster identification of hotspots leads to quicker response times on tackling potential issues.

SWAN CAPABILITIES

- Autonomous & Intelligent Monitoring
- Real-time Dense Datasets
- Multi-modal Heterogeneous Networks
- Disruption-Tolerant Network (DTN)
- Centralized Data management
- Scalable Operations
- Customizable Sensor Payload



USE CASES

Water quality Data Collection

Monitoring of Hotspots & Events

Identification of Latent Phenomena

Surveillance & Inspection

Bathymetric Mapping



SWAN COMPONENTS

SwanCloud

The cloud-based intelligent decision support system, powered by *Unetstack* (unetstack.net).



SwanBots

Unmanned Surface Vessels (USV) in the form of a swan supporting a variety of sensors:



HD camera for surveillance



SwanSampler that collects 2 bottles of 1 litre water sample



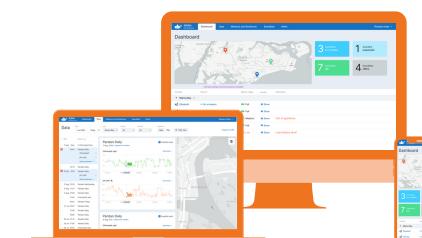
Support for multi-parameter probes for monitoring of critical water quality parameters



Robust communication links using 3G/4G and WiFi

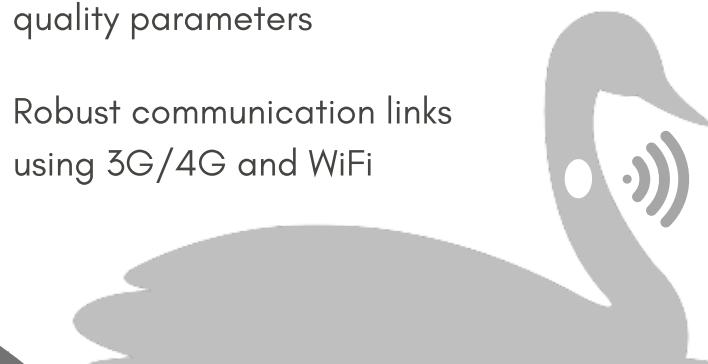
SwanViz

User Interface for planning missions and visualizing water quality data in real-time on a desktop or mobile device.



SwanNodes

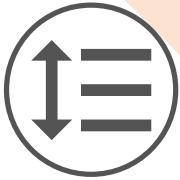
Third party nodes linked to SwanCloud for centralized data collection and visualization on **SwanViz**.



SWANCLOUD FEATURES



Modular Framework
Streamlines deployment in resource-constrained environments



Extensible Architecture
Supports integration with third-party systems



Intuitive User Interface
Visualizes real-time data and SwanBot mission progress



Flexible Usage Options
Provides flexibility of data plans and subscription periods



Secure Solution
Keeps data secure with state-of-the-art access control methods

SWANBOT TECHNICAL SPECIFICATIONS

FEATURES	DETAILS
Supported Water Quality Probes*	Eureka Manta 2, YSI 6000
Monitored Parameters**	Temperature, pH, Conductivity, Chlorophyll, Dissolved Oxygen (DO), Turbidity, Depth
Depth of Monitoring	0 - 4 m
Water Sampler	2 bottles of 1 liter capacity each
Supported Sensors	Camera, Echosounder
Endurance	6 - 8 hours
Battery	Lithium-ion Chemistry, Rechargeable
Storage	Cloud Storage
Communication Interfaces	3G/4G, Wi-Fi
Control & Navigation	Autonomous (GPS based), 2.4 GHz Radio Transceiver
Dimensions	0.8 m x 0.5 m x 0.8 m (L x B x H)
Weight	18 kg

* Other probes may be integrated upon request.

** List of parameters are not exhaustive and are dependent on the probe selection.