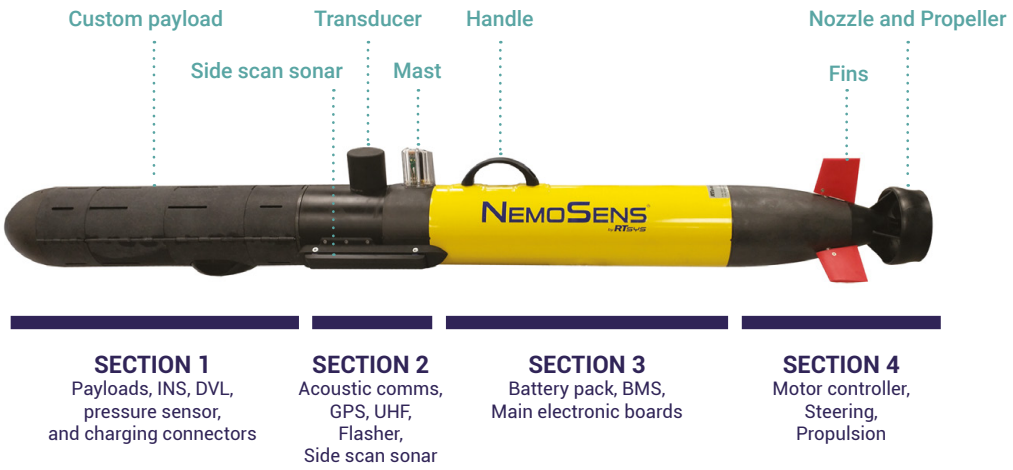
NEMOSENS

A NEW GENERATION OF AFFORDABLE & MODULAR MICRO AUV FOR HIGH-END DATA ACQUISITION

RTsys
Underwater Acoustics & Drones

NEMOSENS

NEMOSENS is an affordable and compact autonomous underwater vehicle designed for scientific, industrial and military applications up to 300 m depth. Lightweight and modular, this micro AUV is a multi-mission vehicle thanks to its swappable payloads and sensors. Besides, its open architecture software offers the possibility for users to develop their own navigation algorithm and payload integration for greater flexibility and optimal use.



SECTION 1
Payloads, INS, DVL, pressure sensor, and charging connectors

SECTION 2
Acoustic comms, GPS, UHF, Flasher, Side scan sonar

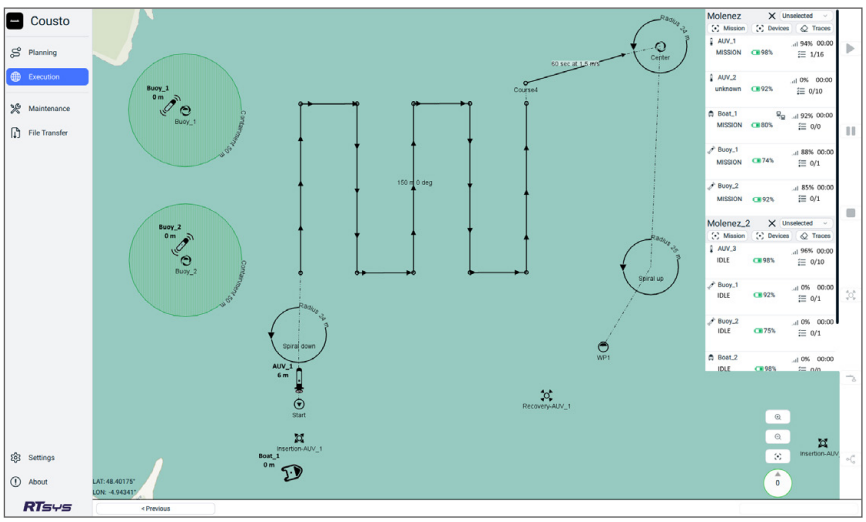
SECTION 3
Battery pack, BMS, Main electronic boards

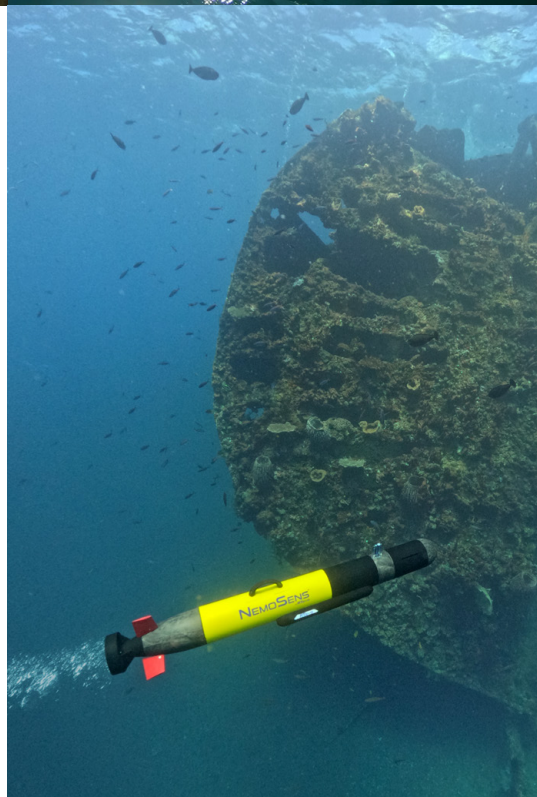
SECTION 4
Motor controller, Steering, Propulsion

Easy launch

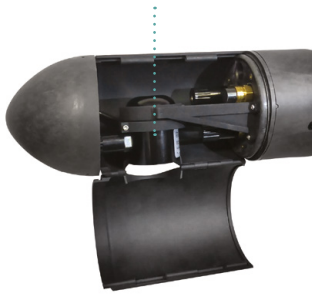
Live tracking

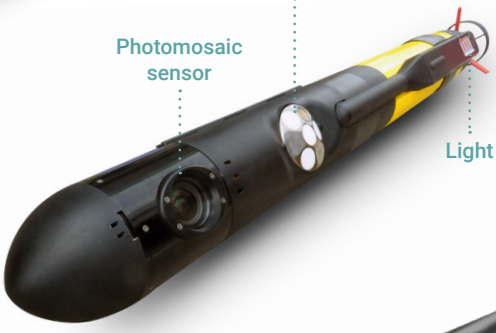
Program, track and monitor in real time any mission from the surface with COUSTO software.





Configure according to your needs!



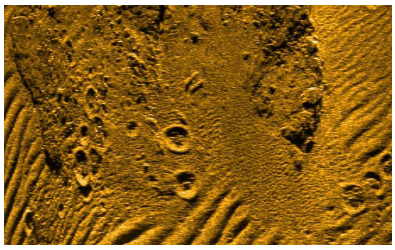


NEMOSENS is a modular vehicle that can embed a large range of plug-and-play payloads:

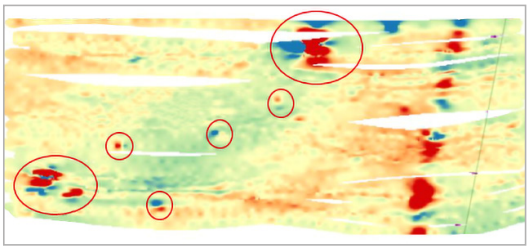
- Side scan sonar
- CTD, O^2, T°, turbidity, hydrocarbon probe, multiparameter sensors
- DVL, INS, GPS, Sparse-LBL
- Magnetometer, HD video camera,
- Customer payloads

High-resolution data acquisition

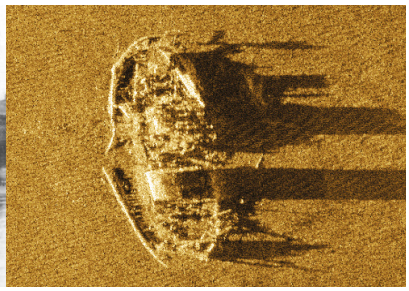
High-resolution still image
© NOAA



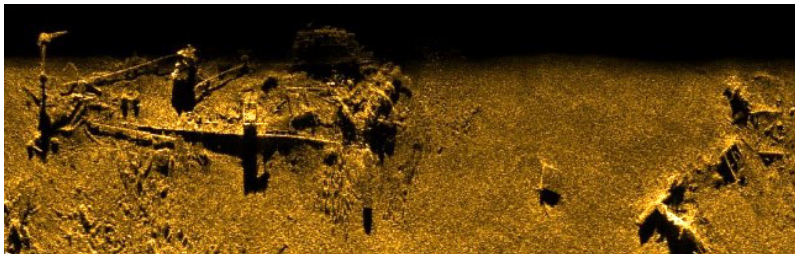
Seabed survey with 900 kHz Side Scan Sonar
AUV altitude: 5 m



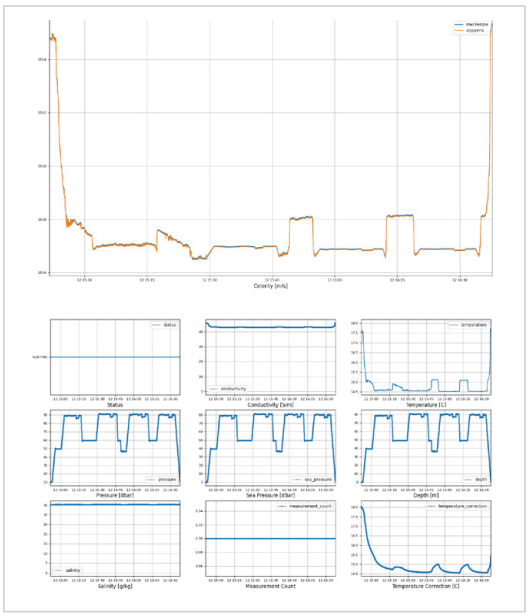
Object detection by vector magnetometry



Tug boat wreck detection with 450 kHz Side Scan Sonar
AUV altitude: 8-10 m



Wreck detection with 900 kHz Side Scan Sonar. AUV altitude: 3m



Water quality monitoring with RBR*legato*³ C.T.D

NEMOSENS

A NEW GENERATION OF AFFORDABLE MODULAR MICRO AUV FOR HIGH-END DATA ACQUISITION

CHARACTERISTICS

- Length: 895 mm nominal (sensor dependent)
- Hull diameter: 124 mm
- Height: 183 mm
- Weight: 8.5 kg nominal (sensor dependent)
- Open and flexible architecture, with a Linux operating system for user software implementations.

SUPPLIED HARDWARE

- GPS, UHF, Wifi, Flasher
- Inertial Navigation System (INS)
- RTsys Acoustic Modem

NAVIGATION CAPABILITIES

- Depth rating: 300 m
- Speed: 2 to 6 knots
- Endurance: more than 10 hours
- RACAM® sparse-LBL repositioning
- Operational T°: 0 °C / +50 °C
- Up to Sea State 4

Navigation sensors

- INS (Inertial Navigation System), which measures the AUV's route, pitch, and roll
- GPS, for locating the target when it rises to the surface
- Pressure sensor to measure the immersion (depth)

NEMOSENS integrates the RACAM® protocol, a native underwater acoustic modem.

It provides a very accurate positioning based on Sparse-LBL array. RACAM® is implemented within every RTsys equipment, thus enabling a full compatibility and communication between each asset. Up to 7 micro-AUVs can operate and communicate together in swarm mode.

COUSTO SOFTWARE

COUSTO MISSION PLANNER

- Add and program the assets that will take part in the mission (AUV, Surface Communication Module, positioning buoys...).
- Create and program payload sets (Side Scan Sonar, magnetometer, CTD...).
- Plot the navigation path(s) that will be followed by the AUV(s) during the mission.
- Define restricted zones, confinement zones and restricted sea layer areas (from the surface to a given depth, or from the bottom to a given altitude).

COUSTO MISSION EXECUTION

- Import a mission from an asset
- Launch a mission
- Track the AUV's navigation in real-time
- Check the status of the internal sensors
- Recover the AUV's recorded data.

STARTER KIT

- Micro AUV NEMOSENS
- GEOSYS UHF remote for AUV recovery
- Spare fins
- 110 - 230 AC battery charger
- Holding rings
- A laptop or tablet (optional)
- User Manual and Quick start guide
- A complete set of development for the open-architecture unit
- A software installer (Linux and Windows compatible) including a mission planner, system configuration and AUV real time tracking.

APPLICATIONS

- Marine biology
- Harbor & offshore surveillance
- Pipe tracking
- Plume monitoring during dredging operations
- Seabed mapping
- Sonar imagery
- Coastal water quality monitoring
- Very Shallow Water operations
- Rapid Environmental Assessment
- Search and Locate
- Harbor protection
- MCM operations
- Intelligence Surveillance Reconnaissance
- Special Operation Forces missions

RTSYS' MANNED-UNMANNED TEAMING ECOSYSTEM FOR MCM OPERATIONS

RTsys

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