Evo Logics®

SONOBOT

AUTONOMOUS HYDROGRAPHIC SURVEY VEHICLE

PRODUCT INFORMATION GUIDE

EvoLogics SONOBOT: Autonomous Surface Vehicle for Hydrographic Surveys

High Precision

- Differential GPS for high-accuracy cartography (GPS, GLONASS and Galileo)
- S2C ultra-broadband echosounder (depth measurement accuracy 6 mm, min. depth 0.5 m, max depth 60 m)
- Side-scan sonar option

Flexibility

- Front-view camera for operations in remote locations and surveillance
- Fast access to points of interest, accurate maneuvers and efficient area scanning with precisely controllable hydro jet thrusters
- Batteries for up to 10 hours of operation (at optimum operation speed)
- Software for field operation and data processing with visual georeferenced representation

Versatility

- Autonomous and radio controlled operation modes
- Wi-Fi communication (GPRS/UMTS)
- On-board data logging, wireless transmission on demand

Robustness

- Carbon fiber floaters, corrosion-free materials, resistant to seawater and industrial waste water

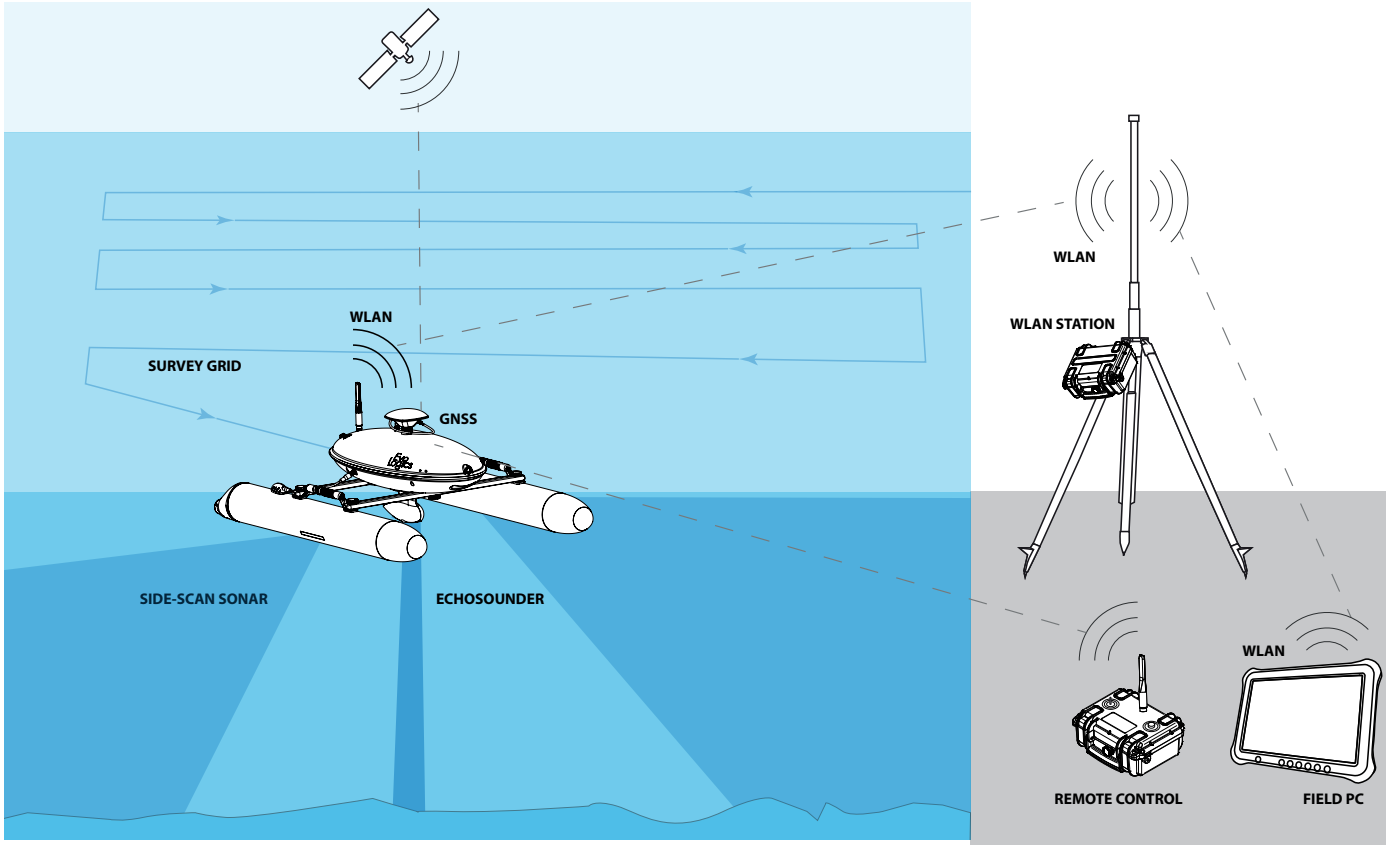
Easy Handling

- Fast assembly without special tools
- Can be handled by a single person
- Fits into a car trunk compartment for transport

THE SONOBOT SYSTEM

EvoLogics SONOBOT Platform

The SONOBOT unmanned surface vehicle offers a usable platform for planning and executing a hydrographic survey, delivering accurate geo-referenced bathymetric measurements and high-quality imagery with minimum transport, launch and recovery efforts. The concept of SONOBOT is to offer the end user a modular system with several configuration options and deliver a ready-to-use USV with all the on-board equipment installed and ready for immediate action.



The autonomous SONOBOT was developed to provide surveyors, service providers and researchers with a smart lightweight solution for hydrographic surveys and other applications in harbors and inland waters.

Specifically for the SONOBOT, EvoLogics utilized the patented S2C broadband communication technology to build an advanced single-beam echo sounder, capable of delivering precise and accurate depth measurements even in very shallow waters. The side-scan sonar, GNSS system and other equipment options were pre-selected among commercial off-the-shelf products to best fit the SONOBOT platform and offer the user the optimal configuration for his particular requirements.

Hydrographic survey

- Bathymetry and seafloor imaging in ports, harbors and inland waters

Search and recovery

- Locating objects, such as archeological artifacts, wrecks etc.

Survey missions

- Exploring shallow waters, natural reserves, restricted and hard-to-reach areas

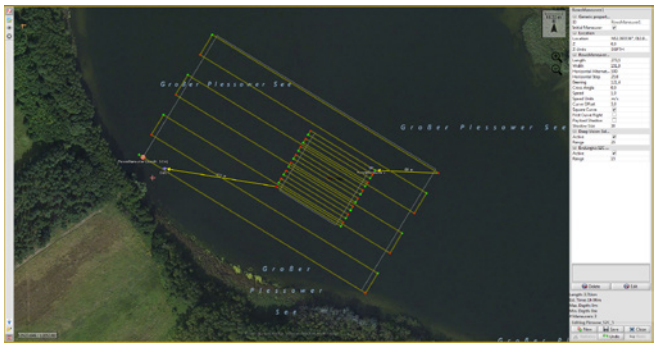
Monitoring

- Regular examinations of underwater infrastructure

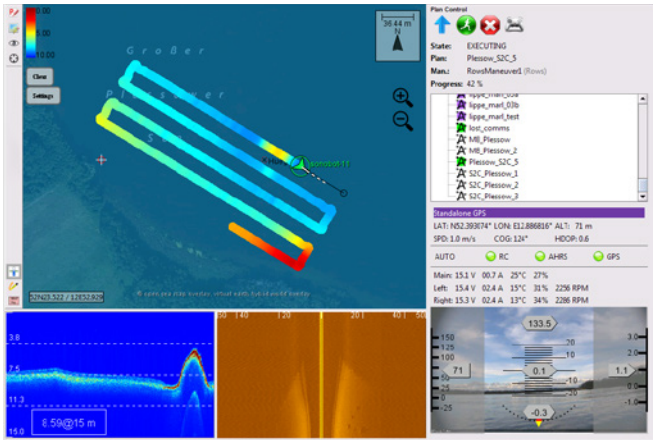
SPECIFICATIONS AND CONFIGURATION OPTIONS

		BASIC	UPGRADES
MODULES AND OPTIONS	VEHICLE	2 carbon fiber floaters with jet thrusters, body with payload PC	
	ECHOSOUNDER	Basic third-party echosounder. 0.1 m accuracy, depth measurement results only	• EvoLogics broadband single-beam echosounder • Multibeam echosounder
	SIDE-SCAN SONAR	Not included	• 340 kHz side-scan sonar (6 cm resolution, 150 m range) • 670 kHz side-scan sonar (2 cm resolution, 50 m range) • 1200 kHz side-scan sonar (1 cm resolution, 40 m range)
	GNSS	DGPS receiver with EGNOS	• DGPS receiver with RTK (SIM not included) • Integration of own receiver (after assessment) • RTK Base/Rover for Sonobot
	ON-BOARD DATA STORAGE	32 GB	128 GB SSD drive
	AUTOPILOT	Only map-based navigation and real-time measurement results	Software-based mission planning, integrated with the measurement system. Real-time measurement results
	RECHARGEABLE BATTERY	Up to 10 hours at optimal operating speed	
	FRONT-VIEW CAMERA	Not included	Front HD-camera with software integration
	REMOTE CONTROL UNIT	IP68 waterproof, omnidirectional antenna	Directional antenna with tripod
	COMPASS	Standard compass	High-precision compass with AHRS
	WLAN STATION	WLAN shore station with separate power supply, tripod, omnidirectional 15 dBi antenna	22 dBi directional antenna.
	FIELD PC	Rugged handheld PC with touchscreen, long battery life, software package.	
	TRANSPORT CASES	2 cases for the equipment.	Transport cart.
OPERATION	WLAN RANGE	Up to 1.5 km with omnidirectional antenna, up to 2 km with directional antenna	
	OPERATING RANGE	Up to 40 km	
	OPERATING SPEED	Optimal 3.6 km/h, maximum 12 km/h	
	OPERATING TIME	Up to 10 hours at optimal speed	
	WIND/WAVE	Wind up to 5 Bft (10 m/s) / non-breaking waves	
DIMENSIONS	HEIGHT	450 mm	
	WIDTH	920 mm	
	LENGTH	1320 mm	
	WEIGHT	Mission--ready Sonobot - appr. 30 kg, total weight of the system incl. transport cases - appr. 90 kg	

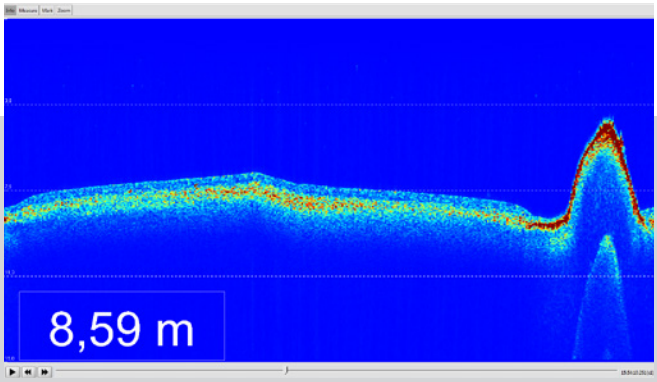
For pricing and configuration information contact us at sales@evologics.de or call +49 30 4679 862 - 0



MISSION PLANNING
The measurement grid

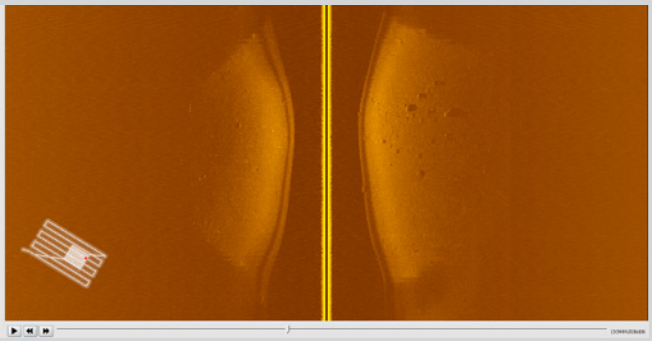


DURING THE MISSION
Bathymetric survey, Side-Scan Sonar mapping

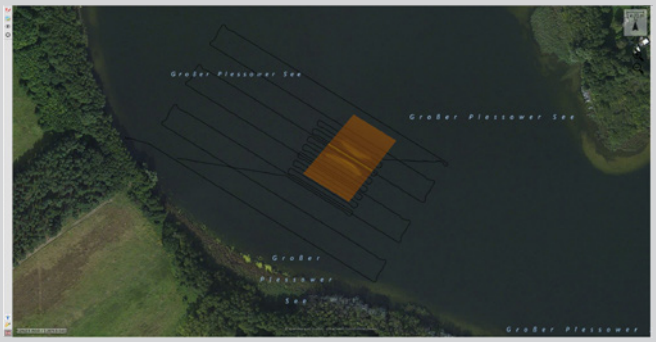


DURING THE MISSION
The depth profile

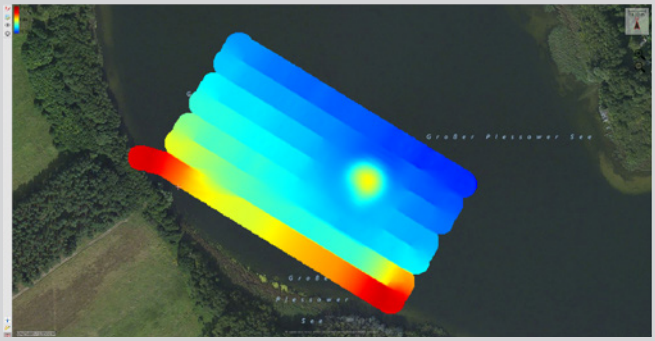
DURING THE MISSION
The camera view



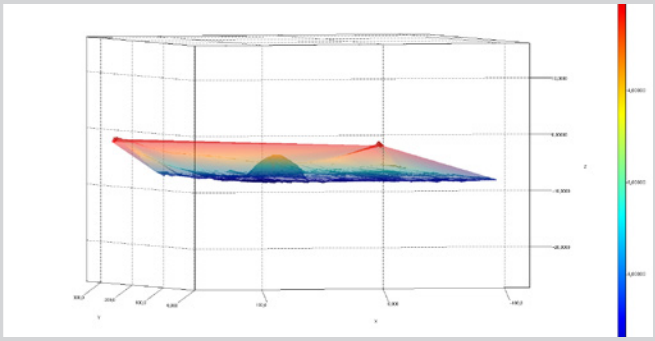
DURING THE MISSION
Side-Scan Sonar live view



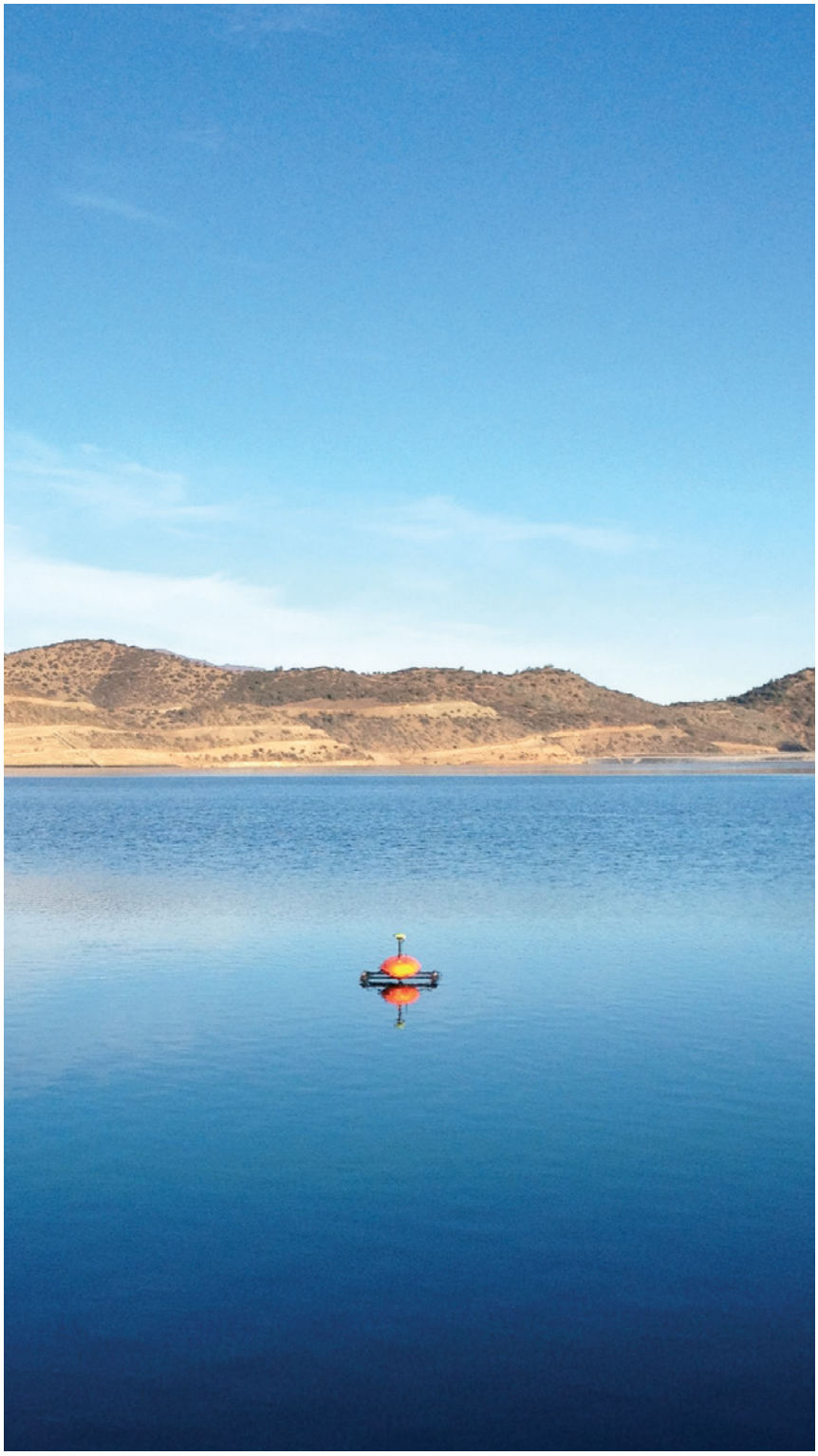
MISSION RESULTS
Side-Scan Sonar image



MISSION RESULTS
Bathymetry in 2D



MISSION RESULTS
Bathymetry in 3D



EvoLogics GmbH
Ackerstrasse 76
13355 Berlin, Germany
tel.: +49 30 4679 862 - 0
fax:+49 30 4679 862 - 01
sales@evologics.de
evologics.de

Survey support:
Geo-DV GmbH
Hoher Weg 7
39576 Stendal, Germany
tel.: +49 39 3121 2797
fax: +49 39 3179 4851
geo-edv@t-online.de
www.geo-dv.de