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WIDE SWATH BATHYMETRY UNMANNED SURFACE VEHICLE

GeoSwath USV offers efficient simultaneous swath bathymetry and side scan mapping from an unmanned surface vehicle. The market leading wide swath sonar system has been closely integrated with ancillary sensors and communication links into a proven remote controlled platform for quick and easy deployment. It allows surveying in locations and situations in which deployment of conventional platforms is not practicable.

Sonar and ancillary sensors

GeoSwath Plus is a phase measuring bathymetric sonar that delivers high resolution wide swath bathymetry data with bottom coverage of up to 12 times the water depth. Accuracies have been shown to exceed IHO standards for hydrographic surveys. In addition co-registered and geo-referenced side scan data is acquired that allows easy object detection and bottom characterisation. It is integrated with a GPS position and heading sensor, a motion reference unit and a sound velocity sensor.

USV platform

The Echo Boat remote hydrographic survey boat serves as a proven and reliable platform. Its dimensions and weight allow for easy mobilisation with minimal infrastructure. Its electric motors provide a survey speed of up to 6 knots with 6 hours endurance on an interchangeable battery pack. Optionally Kongsberg offers bespoke integrations for customer supplied platforms.

Communications and system operation

The USV is radio controlled up to a range of 2 km. The sonar is operated using GS4 software installed on a laptop connected via a radio modem with a data rate exceeding 100 Mbps. The software package has been specifically developed for GeoSwath. It serves for mission planning and execution as well as data acquisition and processing of the final bathymetry maps and side scan mosaics. The data is broadcast and saved on the local USV hard drive to ensure uninterrupted data files for post processing.



FEATURES

- Fully integrated and calibrated USV survey solution
- Easy to mobilise and operate
- Radio control and data telemetry for remote operation
- Up to 6 knots survey speed
- 6 hours endurance, exchangeable battery pack
- Ultra high resolution wide swath bathymetry
- Co-registered geo-referenced side scan
- Frequency: 500 kHz
- Coverage of up to 12 times water depth
- Dual transducer, 240° view angle
- Operation from laptop PC

OPTIONS

- Bespoke solution for customer supplied USV (AUV, ROV) platforms available
- Advanced side scan processing software packages - normalisation, calibration and segmentation for bottom classification
- 250 kHz and 125 kHz sonar frequency for 100 m and 200 m maximum depth performance



TECHNICAL SPECIFICATIONS

GeoSwath Plus USV	
Hull length / width	168 cm / 81 cm
Weight	55 kg
Propulsion / max speed	dual brushless DC outdrive / 6 knots (3 m/s)
Remote control / range	Futabu 2.4 GHz FHSS / 2 km line of sight
Data telemetry / rate	5 GHz radio modem 10/100 BaseT
Battery pack / endurance	4 x 14.8V 16 Ah / 64Ah
Sonar frequency	500 kHz
max Water Depth Below Transducers	50 m
max Swath Width	190 m
max Coverage	up to 12 x depth
Field of view / beam opening angle (two way)	240° / 0.5°
Motion compensation roll & pitch / heave accuracy	0.03° / 5 cm or 5% (sensor dependent)
Positioning / heading accuracy	SBAS (WAAS) 0.3 m / 0.3° (sensor dependent)

Specifications subject to change without any further notice.