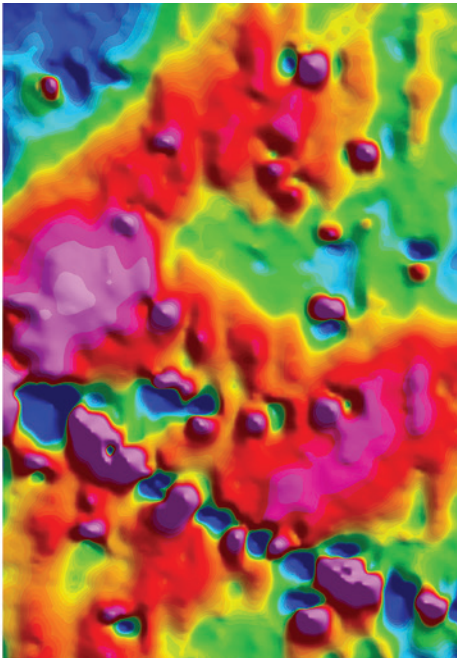


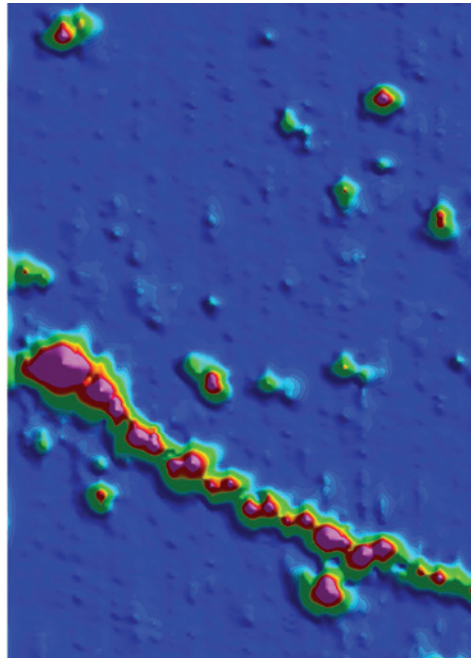
Explorer v.AUV

We've reengineered our total-field magnetometer for neutral buoyancy so it can follow the path your AUV takes without sinking or floating upwards. Explorer v.AUV offers precision control over positioning close to the sea floor and the ability to follow the bottom topography accurately.

Total Field Map



AS-Unseeded



AS-Seeded

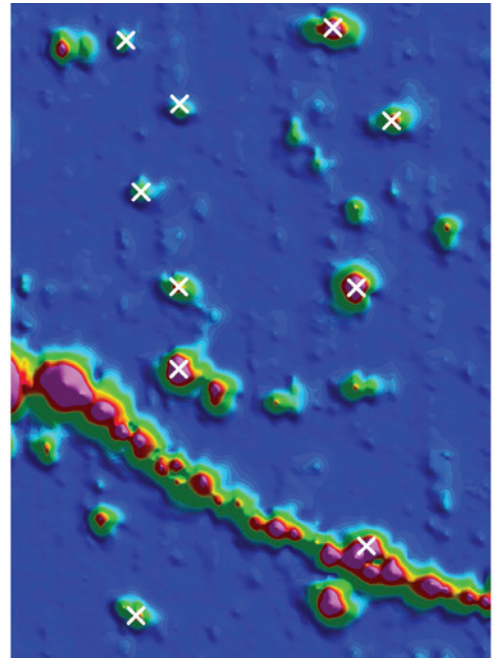


Figure 1: Magnetic maps -Total Field, before UXO seeding, and after UXO seeding; each "X" indicates unexploded ordnance detection. Data Courtesy of Geneva International Centre for Humanitarian Demining

UXO Trial San Diego Bay

We tested integration of Explorer v.AUV with the Iver2 AUV at a blind UXO trial for the Geneva International Centre for Humanitarian Demining, Switzerland, in San Diego Bay.

Survey Parameters

- Two 250m x 120m surveys conducted over the same area
- One before seeding with simulated UXO targets, and the second after seeding, on the following day
- Targets ranged in size from 60 mm to 160 mm
- The smallest target weighed 1 kg

Results

The total-field map (figure 1) shows significant geological background obscuring small near-surface targets and a small pipeline in the lower half of the block. The unseeded and seeded area's gradient map clearly show 10 UXO targets. It was confirmed that all ten UXO were reliably detected after seeding.

Gradient Data from a Single Explorer Sensor

Overhauser sensors have high sensitivity, no dead zones or heading bias, all of which make it orders of magnitude more accurate than any other magnetometer. These characteristics, complemented by Iver's great control of position, depth and altitude, yielded exceptional quality data.



Explorer AUV mag integrated with the Iver2 AUV

Specifications

Performance

Operating Zones	Worldwide. Explorer collects accurate results regardless of how it's pointed in relation to Earth's magnetic field.
Absolute Accuracy	0.1 nT
Sensor Sensitivity	0.02 nT
Counter Sensitivity	0.001 nT
Resolution	0.001 nT
Dead Zone	NONE
Temperature Drift	NONE
Power Consumption	2 W
Range	18,000 nT to 120,000 nT
Gradient Tolerance	Over 10,000 nT/m
Sampling Range	4 Hz - 0.1 Hz
Communications	RS-232, 9600 bps
Power Supply	9-30 VDC or 100-240 VAC

Neutrally Buoyant 1000 M Explorer Magnetometer

Length	86.5 cm (34 in)
Diameter	7.6 cm (3 in)
Weight in Air	3.7 kg (8.2 lbs)
Weight in Water	<10 g (0.4 oz)

Neutrally Buoyant Tow Cable

Conductors	Four + Shield + Floatation outer jacket
Breaking Strength	112 kg (250 lbs)
Outer Diameter	1.3 cm (0.51 in)
Weight in Air	139 g/m (9.3 lbs/100 ft)
Weight in Water	1% lighter than water
Min bend radius	140 mm (5.5 in)
Max depth rating	1000 m
Average lengths	5m - 10m (depending on AUV size or application)

System Consists of:

Neutrally Buoyant Explorer AUV Mag

- Overhauser sensor
- Electronics module with Larmour counter
- Leak detector
- Depth rating 1000 m

Additional Components

- Buoyancy trimming kit
- BOB data acquisition and visualization software
- Neutrally buoyant integration tow cable
- Custom reusable shipping case