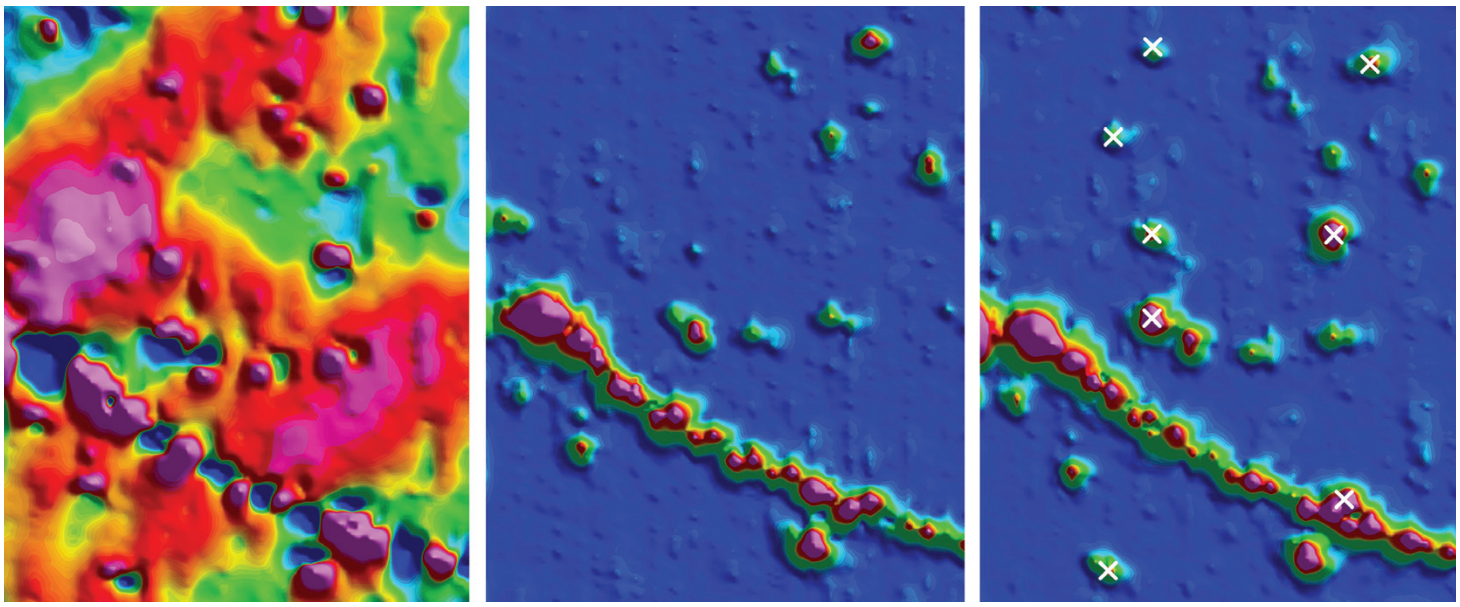
# Explorer v.AUV

We've reenginered 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**



## 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 (above) shows significant geological background obscuring small near-surface targets and a small pipeline in the lower half of the block. The total gradient maps eliminate deeper geological signal and highlight near-surface sources. Seeded gradient map clearly shows 10 UXO targets. It was confirmed that all ten UXO in the area were reliably detected after seeding.

### Gradient Data from a Single Explorer Sensor

Our specialized algorithms convert total field to total gradient data that:

- Improves target definition
- Suppresses background noise

And with Iver's precise control of position: yields unparalleled analysis.

**Above:** Magnetic maps –Total Field, and Total Gradient (AS) before and after UXO seeding; each "X" indicates detection of unexploded ordnance. Data Courtesy of Geneva International Centre for Humanitarian Demining.

Marine Magnetics

# 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 | 24 VDC (120-240 VAC compatible) (Acceptable range 9-30 VDC) |

## 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

**Above:** Explorer AUV mag integrated with the Iver2 AUV

Marine Magnetics

info@marinemagnetics.com +1 905 479 9727 | marinemagnetics.com