

INNOVATUM

SMARTSEARCH



A NEW SYSTEM FOR LOCATING FERROUS OBJECTS IN THE SEABED



SMARTSEARCH may be used for:

- Magnetic debris searches.
- Pipeline & Cable Route clearances.
- Munitions/UXO location.
- Pipeline & Cable positioning.
- Wreck location.
- Archaeological survey.

PRICES start @

GB£ 92,350.00 for **SMARTSEARCH 12**

GB£ 72,850.00 for **SMARTSEARCH 7**

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INNOVATUM Ltd

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SMARTSEARCH

SMARTSEARCH is a underwater survey system providing highly detailed magnetic mapping both in marine and land environments. **SMARTSEARCH** consists of an array of magnetic sensors mounted on a frame, which may be mounted on an ROV, or towed over the seabed or on land. The tracking swath may be adjusted from a single sensor to a maximum of twelve sensors, with spacing varied to suit the search criteria. A wide array allows an ROV to search along a linear target such as a pipe or cable. High speed data acquisition gives high productivity.

SMARTSEARCH uses an array of very sensitive magnetic gradiometers which measure magnetic field gradient in the vertical (Z) plane. The normal ROV array is 3 sensors, with expansion available up to 12 sensors, which with a 50 cm sensor spacing can give a survey swath of 6.5 metres. Data is collected by an electronic system on the ROV. The system is lightweight and requires very little power.

SMARTSEARCH requires a positional data input. This is normally provided by a combination of surface (above water) and subsurface underwater positioning devices.

With a survey speed of up to 4 knots, and a data point acquired on each sensor around 6 to 10 times per second, **SMARTSEARCH** can map a survey area faster than any other current system. The real time data acquired is monitored by a "waterfall" display, which allows an immediate assessment of features of interest and simple tracking of linear features such as pipeline and cables. Array configuration, update rate and sensitivity may be selected on line. Positional data may be accepted from almost any survey positioning system. Data is continuously logged for post processing and report generation.

The **SMARTSEARCH** post processing software combines the measured fields from each sensor to form a field gradient map. This allows the generation of charts and a variety of graphical outputs, giving excellent visualisation of the mapped fields. Items of interest may be selected from the on screen map, and shown in a 3D graphical format. This will often allow an assessment of the size and orientation of the object to be made.

The **SMARTSEARCH** may be carried by almost any ROV except the very smallest observation vehicles, or towed by almost any slow speed land vehicle, or small vessel in a marine environment. Smartsearch has been proved operationally on various object location tasks, with excellent results, and has located targets unseen by other systems.

SMARTSEARCH is supplied as a complete system, ready to mount on the ROV. All components except the mounting frame are packed into two transit cases weighing only 32 Kg, allowing rapid deployment by almost any transport. The **SMARTSEARCH** unit may be upgraded to **SMARTRAK** in order to perform Depth of Burial surveys on submarine pipelines and cables.

SMARTSEARCH is one of the new suite of marine survey tools from **INNOVATUM Ltd.**

Contact Terry Slater & Rob Nunn at **INNOVATUM Ltd.** for further information

SMARTSEARCH may be used for:

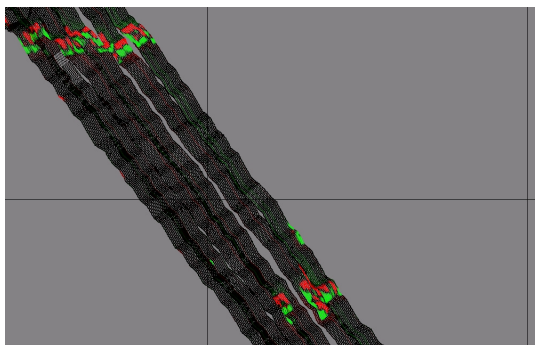
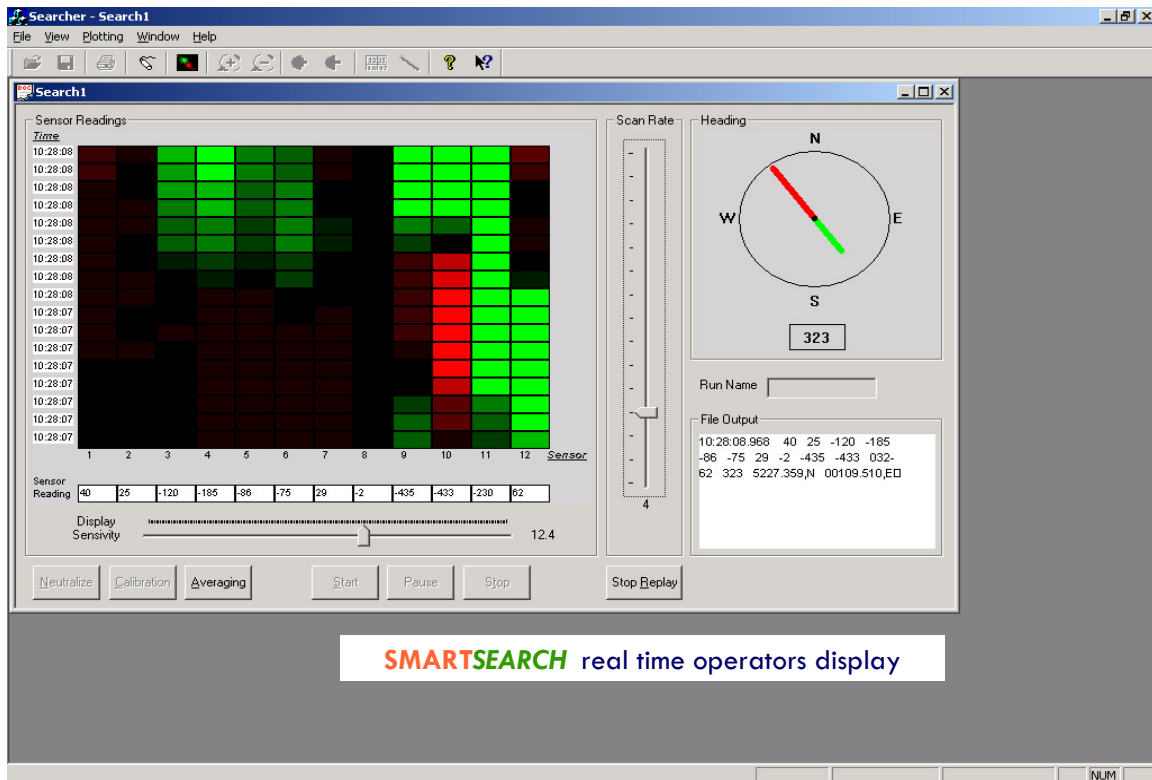
- Magnetic debris searches.
- Pipeline & Cable positioning.
- Route clearances.
- Explosive ordnance location
- Wreck location
- Archaeological survey

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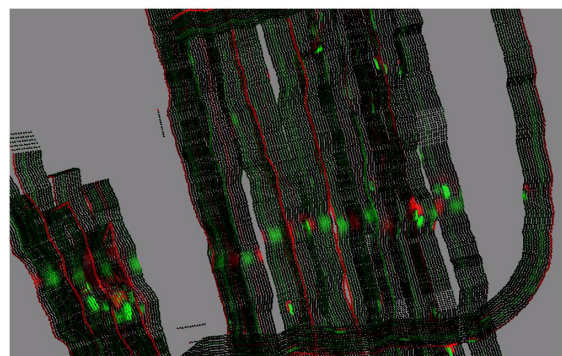
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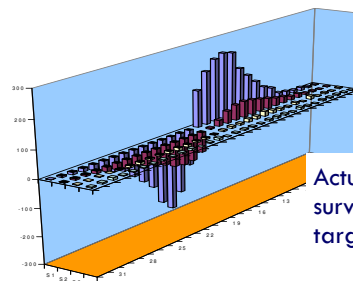
SMARTSEARCH plot showing linear targets



SMARTSEARCH plot showing underground pipeline



SMARTSEARCH fitted to ROV



Actual data from underwater survey using 4 sensors showing target under left sensors.
Courtesy of Subsea 7

SMARTSEARCH 3D plot of buried object

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SPECIFICATIONS & PRICES

SYSTEM COMPONENTS

SMARTSEARCH consists of components mounted on the vehicle, and a PC at the surface. The system is supplied with 14 sensors (12 operational plus 2 spare). Normal operation would be with sensors mounted on a linear array across the front of the ROV. If systems are ordered with fewer sensors the unused ports will be fitted with blank plugs.

Sensor spacing may be varied to suit the search task, with the sensors being mounted closer together to locate small targets. Typical sensor spacing will vary between 30 cms to 1 M. The system may be used with a minimum of 2 sensors if necessary.

Data transmission to the surface is via the ROV umbilical using RS485 or via a Multiplexer using RS232

The system is powered from the ROV, requiring 24 volts DC @ 1A

DIMENSIONS & WEIGHTS

SMARTSEARCH SIP (Subsea Unit)

Length	24 cms
Diameter	19 cms
Weight in air	7 Kg
Weight in seawater	3.8 Kg
Depth Rating	1000 msw
(Note: standard altimeter 700 msw)	

SMARTSEARCH Sensor

Length	36 cms
Diameter	4 cms
Weight in air	1.1 Kg
Weight in seawater	0.3 Kg

PRICES

- **SMARTSEARCH (Passive Magnetic Searching only)**
Complete system, with Sensor Interface Pod, 14 sensors (12 + 2 spare), Altimeter, PC, all necessary connecting cables and interfaces, packed in wheeled transit cases:
GB£ 92,350.00
- **SMARTSEARCH SPARE PARTS**
SMARTSEARCH Sensor complete GB£ 3,900.00
1 set SIP circuit boards, assembled and tested GB£ 6,600.00
- **SMARTSEARCH OPTIONS**
Titanium SIP housing GB£ 3,800.00
Titanium Sensor housing—per unit addition GB£ 450.00

SMARTSEARCH units will be upgradeable to later versions for the life of the product line
Software updates (not upgrades!) will be free of charge for 5 years from purchase of unit.

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