



# FUGRO AUV, ECHO SURVEYOR II

**AUVs are the ultimate choice of instrument platform for deep sea and remote surveys. Based on a Kongsberg Maritime manufactured Hugin 3000 body, the Echo Surveyor II supports acquisition of multibeam echosounder, sidescan sonar, sub-bottom profiler and CTD profiler data for clients.**

The AUV offers numerous advantages over other offshore survey platforms. Fugro's fleet of Kongsberg Hugin AUV's have extensive track records in many deep water and often remote environments around the globe. Use of such a proven survey platform and experience will provide enhanced productivity, continuity and reliability ensuring optimum adherence to project schedules.

Deepwater rated AUVs supports surveys related to deepwater field developments, site clearances, pipeline/cable routes, regional mapping and archaeological surveys.

System features include:

- Efficient semi-fuel cell battery
- 55-60 hours dive endurance
- Nominal survey speed of 4 knots
- Inertial navigation system
- Flexible payload capabilities



Recovery of Hugin 3000 AUV.



# AUV, ECHO SURVEYOR II

## Technical Specifications

### Physical Data

Length	17'6" (5.35 m)
Weight (air)	3,190 lbs (1,450 kg)
Weight	Neutral
Diameter	3' (1.0 m)
Volume	84.8ft3 (2.4m3)
Max depth rating	3,000 m
Hull	Carbon fiber reinforced epoxy, titanium, and syntactic foam

### Power System

Battery type	Aluminium/hydrogen peroxide semi-fuel cell
Battery capacity	45 kWh
Propulsion	SmartMotor, rudders, and propeller

### Acoustic Navigation System

Navigation type	Aided Inertial Navigation System Simrad HIPAP 500 USBL
IMU system	iXSEA IMU 90
Depth pressure sensor	Parascientific Digiquartz
Doppler velocity log	RDI Workhorse Navigator WHN - 300, 307 kHz

### Acoustic Communication

Command link	Kongsberg 24 to 28kHz, 55 bps
ACL transducers	TP 324, TP331
Data link	LinkQuest 13.5 to 22.5 kHz, 420 bps
DCL transducers	UWM4010
Emergency link	Kongsberg 25 to 25.6 kHz, 10 bps

### Surface Communication

Radio frequency link	Wood & Douglas M971, UHF SX 450, 458 MHz
Receiver	Jupiter 12 channel DGPS

### Payload Sensors

Kongsberg EM2000 Multibeam Echosounder; 150 degree coverage, 200 kHz frequency
Edgetech Full Spectrum Sidescan Sonar; Triple Frequency Sidescan Sonar (TFS) 240, 540 and 1600 kHz frequencies
Edgetech Full Spectrum Chirp Subbottom Profiler; 1 to 12 kHz frequency
Falmouth FSI Micro CTD Sensor
Mesotech 1007, 675 kHz Altimeter Avoidance
Tritech LPA 200 Altimeter Height