



PROSAS SURVEYOR PS60-6000

LONG-RANGE, HIGH-RESOLUTION SONAR SYSTEM: DEEP OPERATION

The PROSAS Surveyor PS60 is a 60-kHz synthetic aperture sonar system (SAS) capable of operating in water depths to 6,000 meters. The system is integrated onto a Williamson and Associates neutrally buoyant Deep Tow vehicle, which is towed behind a depressor weight. This new survey platform provides seafloor imagery at a constant resolution of 10 cm \times 10 cm at ranges out to 1,500 meters each side.

The PS60 system combines Applied Signal Technology's extensive SAS algorithm development and sonar design with Williamson's vast experience with deep ocean search and survey. It consists of two 3-meter arrays, an inertial navigation system, USBL, and DVL integrated onto a 4-meter-long deep-towed towfish. Topside processing consists of a commercial processor with four displays that allow users to view real-time port and starboard SAS waterfalls, bathymetry, multibeam sidescan, and to view and save contacts and regions of interest for further detailed analysis.

The system provides a new level of deep, long-range, high-resolution imagery that is ideal for wreck searches, cable route survey, pipeline route survey, and a wide variety of other deep ocean imaging requirements.



PROSAS SURVEYOR PS60-6000 SPECIFICATIONS

HIGHLIGHTS

- Towed 25m behind 910kg depressor weight
- 25m “decoupling” neutrally buoyant fiber optic umbilical
- 4m neutrally buoyant tow sled:
 - Aluminum tow frame structure
 - FOD molded syntactic foam
 - Acoustic release system
- 6,000m system depth rating
- Area coverage rate of 194 km²/day

SOFTWARE / DATA:

- Real-time topside SAS processing
- 3km swath imagery at 10 cm × 10 cm resolution
- Real-time georeferenced data
- Fully integrated high-accuracy navigation system
- XTF or raw data output including data storage
- Simultaneous processing of SAS, multibeam sidescan, and bathymetry
- Data replay with zoom capability
- Interfaces with industry-standard mosaicing and charting software

FEATURES	
Frequency of operation	60 kHz
SAS array length	3.3 meters
SAS receive aperture	3.2 meters
SAS transmit pulse	10mS chirp 52.5–67.5 kHz 220dB re 1μPa @ 1m
Data recording	30GBytes/hour
Topside processor	Windows XP64 8-Core Xeon Processor
Data output	Gigabit Ethernet
Auxiliary sensors	INS, CTD, USBL, DVL
Interface	Via dedicated GigE data link, files stored on host computer
Tow speed envelope	1.5–3 kts
Maximum operating range	1,500m per side
Bathymetry	Co-located and concurrent interferometric processing 30 cm vertical resolution
Sub-bottom profiler	2–10 kHz chirp



Example PROSAS Surveyor SAS image with 3-cm resolution

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