

Gavia

Autonomous Underwater Vehicle

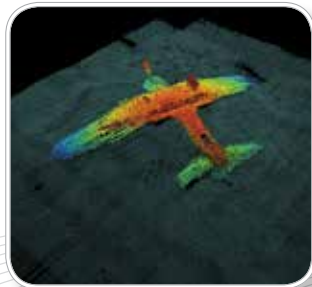
Complete Survey Solution in a Low Logistics AUV



AUTONOMOUS
LOW LOGISTICS
MODULAR
COMMERCIAL
DEFENSE/SECURITY
SCIENTIFIC



Gavia AUV



**TELEDYNE
GAVIA**
Everywhereyoulook™

Fully Modular, Multipurpose AUV

THE GAVIA AUTONOMOUS UNDERWATER VEHICLE (AUV) is a self contained, low logistics, modular survey platform capable of delivering high quality data while operating from vessels of opportunity or from the shore.

The AUV's modularity makes it easily reconfigurable, even between dives. The Gavia AUV's ease of use and versatility sets it apart from other systems on the market. One Gavia system can serve a multitude of purposes without sacrificing performance or data quality.



Image courtesy NCS Survey.

COMMERCIAL APPLICATIONS

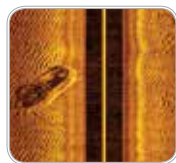
The Gavia AUV can be a productive asset to any commercial survey operation and has been proven in real world environments, providing cost effective data when compared to traditional means using surface vessels and ROVs. Multiple sonar options provide the customer with a full suite of survey sensors including side scan, swath bathymetry, sub-bottom profiling, and gap fill.



Side scan image of a mine-like object captured at 900 kHz.

DEFENSE AND SECURITY APPLICATIONS

The Gavia AUV can carry a variety of sensors that are especially well suited for military and security applications. The system is field proven for applications that include MCM, SAR, and ASW training. The field-changeable and easily transportable modules make it well suited for rapid response to emerging requirements.



Wreck of a small fishing boat captured on a 900kHz side scan.

SCIENTIFIC APPLICATIONS

The Gavia AUV has the ability to carry both user designed payload modules and an array of typical scientific standards, which makes it the ideal tool for researchers gathering a variety of data in depths up to 1000m. The Science Bay Module allows easy integration of common science sensors.



MARKET	COMMERCIAL (Recommended Vehicle Configurations)			
APPLICATIONS	Pipeline and Platform Inspection	Bathymetric/sub-bottom	Construction Support	Post Hurricane Inspection
BASE VEHICLE - 500M & 1000M				
Base Vehicle Includes: Nosecone module, Battery Module, Control Module, Propulsion Module	X	X	X	X
SONAR OPTIONS				
Klein Side Scan (separate module)	X	X	X	X
Edgetech Side Scan (on Control Module)	X	X	X	X
Interferometric Geoswath/Klein	X	X	X	X
Sub-bottom Profiling Module	O	X	X	O
BlueView MB-2250 Micro Bathymetry Module	X	X	O	O
POSITIONING				
DVL-Aided INS Module (various options)	X	X	X	X
USBL/LBL	O	O	O	O
SCIENTIFIC OPTIONS				
Science Bay w/ science sensor options	O			
CTD/SV (various options)	O			
Dissolved Oxygen	O			
ECO pucks (various config)	O			
ADCP				
Custom payloads				
COMMUNICATIONS Iridium & LAN/WLAN included on all systems				
Acoustic Modem	X	X	X	X
MISC OPTIONS				
Camera option	X	X	X	X
Magnetometer				
Sonar Training Module				
RECOVERY AIDS				
Nosecone release	O	O	O	O
LARS Cage	O	O	O	O
POST MISSION ANALYSIS				
Teledyne Caris	O	O	O	O
SonarWIZ	O	O	O	O
SeeByte SeeTrack				
SeeByte AutoTracker	O			

X = Recommended O = Optional

DEFENSE AND SECURITY (Recommended Vehicle Configurations)				SCIENTIFIC (Recommended Vehicle Configurations)				
Mine countermeasures (MCM)/Port Security	Anti-Submarine Warfare (ASW) Training	Rapid Environmental Assessment (REA)	Search and Recovery (SAR)	Oceanography, habitat assessment	Hydrography, bathymetric surveys, bottom classification	Archeology, wreck location & mapping	Current profiling & under ice surveying	
X	X	X	X	X	X	X	X	
X		X	X		X	X	X	
X		X	X		X	X	X	
O		X	O		X	O	X	
		O	O		X	O		
O		O	O		X	O	O	
X	X	X	X	X	X	X	X	
O		O	O	O	O	O	O	
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O						O		
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O								



TECHNICAL SPECIFICATIONS

Length:	1.8 - 4.5m (configuration dependent)
Weight in air:	50 - 130kg (configuration dependent)
Diameter:	200mm
Depth rating:	500m or 1000m
Battery module:	1.5kWh lithium ion rechargeable cells per module. Up to 3 battery modules can be used on the vehicle for enhanced endurance.
Max speed:	> 5.5 knots
Endurance:	Dependent on speed and exact configuration. Typical Defence or Scientific configuration 7-8 hours at 3 knots per rechargeable battery module. Typically 5-6 hours at 3 knots per rechargeable battery module with all sensors (including swath bathymetry). Vehicle can be operated with up to 3 batteries for increased endurance or batteries can be field swapped for continuous operations.

Communication

Wireless LAN:	IEEE 802.11g compliant
Satellite communications:	Full global coverage via Iridium link
Acoustic modem:	For tracking and status updates

Navigation

High accuracy DGPS ready receiver
 High-precision DVL-aided Inertial Navigation Systems (INS) from iXBlue and Kearfott with Teledyne RDI Doppler Velocity Log (DVL) and direct sound velocity meter.
 Positioning accuracy can be maintained over longer duration deployments by utilizing Ultra Short Baseline (USBL) or ranging to bottom-moored Long Baseline (LBL) transponders (optional).

Features

- 2-man portable/deployable
- Greatest depth rating in its class - rated to 1000m
- Operations from vessels of opportunity
- Compact, optimized for overnight shipping
- Modular construction, maximum flexibility
- High-accuracy survey-grade INS navigation with USBL and LBL aiding (non-ITAR configurations available)
- Chart-based graphical user interface
- Wide array of additional sensors available
- No installation or calibration of peripherals required
- Over the horizon communications through Iridium



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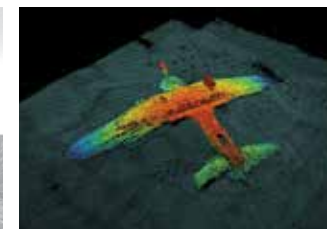
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Northrop Data Sets

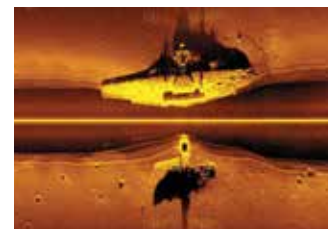
Crashed by Reykjavik Airport during WW2



Northrop N-3PB.



BlueView MBES image of target.



1800 kHz Side Scan Sonar image of target.



Detail of bottom hatch from the Gavia camera system.

Gavia AUV Modularity

The modular construction of the Gavia AUV allows the user to conduct a variety of missions with field-changeable modules. Additional Gavia AUV modules can be purchased at later dates to increase capability as mission requirements dictate.



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