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## **Gavia Offshore Surveyor AUV**

**Bob Melvin**

Vice President of Engineering  
Teledyne Marine Systems

- **23** PRODUCT BRANDS
- **41** GLOBAL MANUFACTURING AND SERVICE CENTERS
- **2400** GLOBAL EMPLOYEES
- **24/7** GLOBAL SUPPORT
- **1** JOINT SOLUTION PROVIDER

# **A Sea of Solutions**





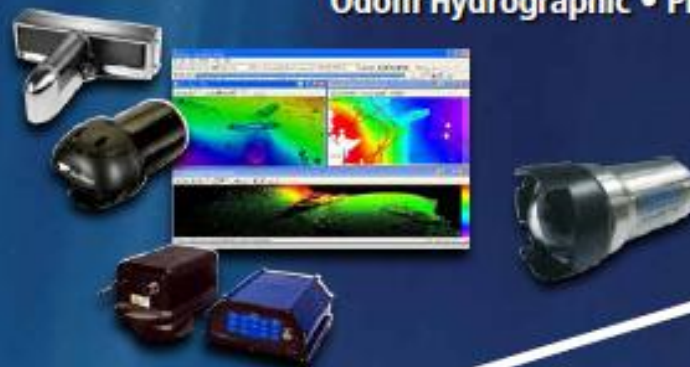
## INTERCONNECT

AG Geophysical • DGO • Impulse • ODI  
Storm Cable • VariSystems



## IMAGING

ATLAS Hydrographic • BlueView • Bowtech  
Odom Hydrographic • PDS • RESON



## INSTRUMENTS

Benthos • Bowtech • CDL • Cormon  
Oceanscience • RD Instruments • TSS



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## VEHICLES

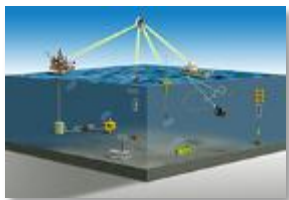
Benthos • Gavia • Oceanscience  
SeaBotix • Webb Research



## SEISMIC

AG Geophysical • Bolt • Geophysical Instruments • Real Time Systems





# Gavia Offshore Surveyor AUVs

## World Leader in Low-Logistics AUVs

- Fully modular design
- Wide variety of payload options
- 1,000m depth rating
- Widely used in O&G applications with numerous service providers

## *Low-Logistics High Performance AUVs*



GAVIA: Offshore Surveyor

FAL-1502

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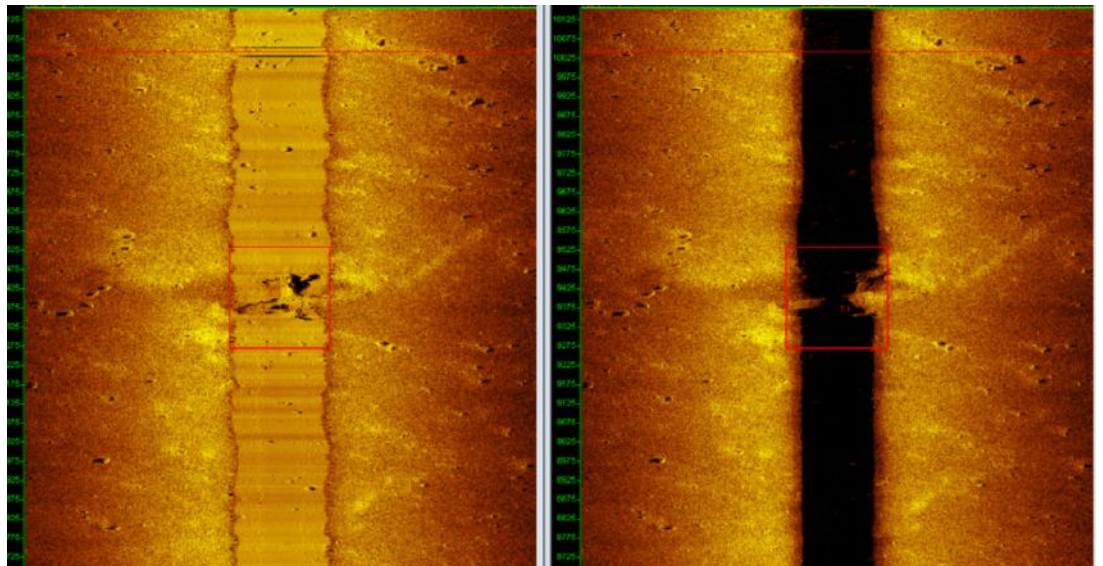
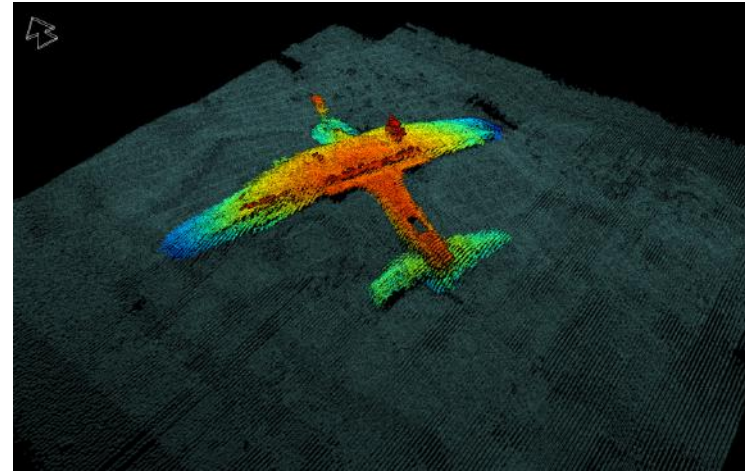


# Enhanced Productivity: Blueview MB 2250

- High resolution bathymetry (2250 kHz)
- Low power and compact
- Side Scan Sonar nadir gap fill improves operational efficiency
- Downward looking, ideal for tying into pipe tracking and co registering with camera

Ideal for a variety of applications including:

- Pipeline inspections and Site survey
- MCM
- Search and Salvage
- Bottom imaging



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# Operational Excellence Case Study: UTEC Survey AUV Operations for Quadrant Energy Australia Limited

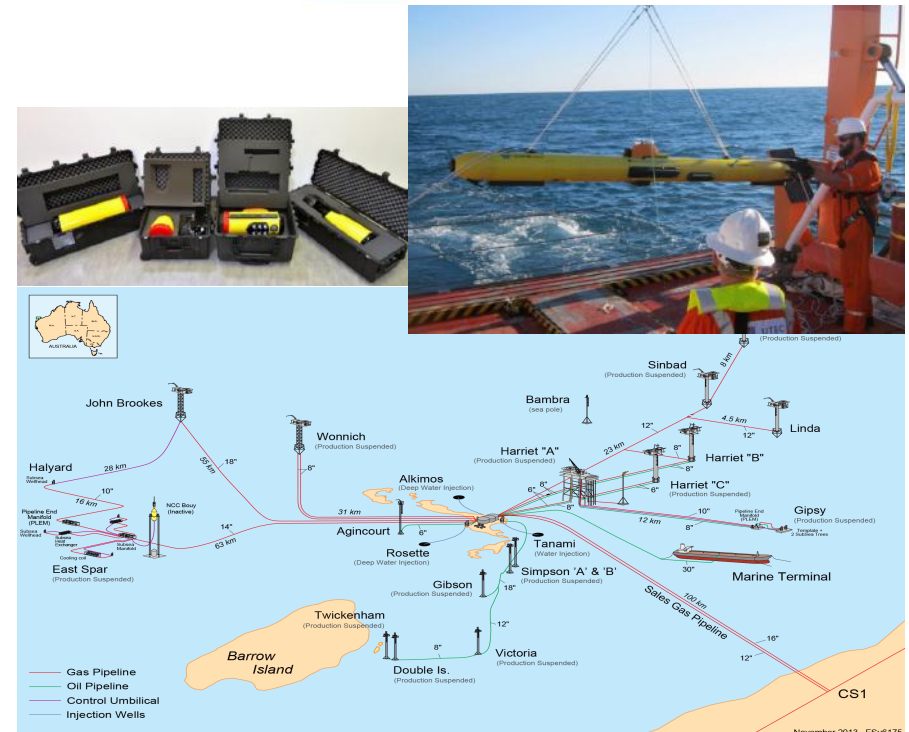


UTEC

- From June 12, 2014 to July 27, 2014, UTEC Survey performed pipeline inspection and platform site surveys for Quadrant Energy Australia Limited (Quadrant) off the northwest coast of Western Australia

## Survey Areas

- Near shore operations, which allowed the AUV to work in as shallow as 2m water depth, totaling 571km of pipeline with 1 pass each side (1,142km of AUV track-line).
- A 500m x 500m site survey was completed around 20 platform.



Images and text courtesy of UTEC Survey

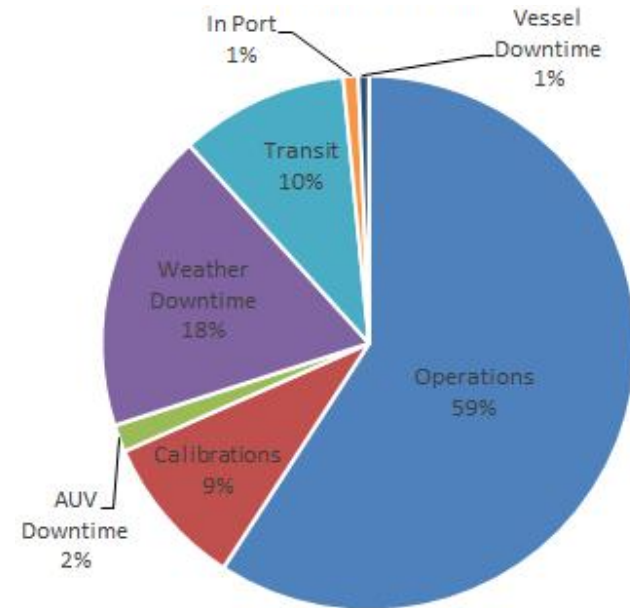
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## Case Study: UTEC Survey AUV Operations for Quadrant Energy Australia Limited

- Survey duration was 27 days during the winter; including mobilization and demobilization,
- Experienced less than 2% operational AUV downtime and only experienced 18% downtime due to the winter weather associated with Launch and Recovery.
- On a pipeline per kilometer basis, AUV surveys may be less than 50% the cost of a ROV survey.



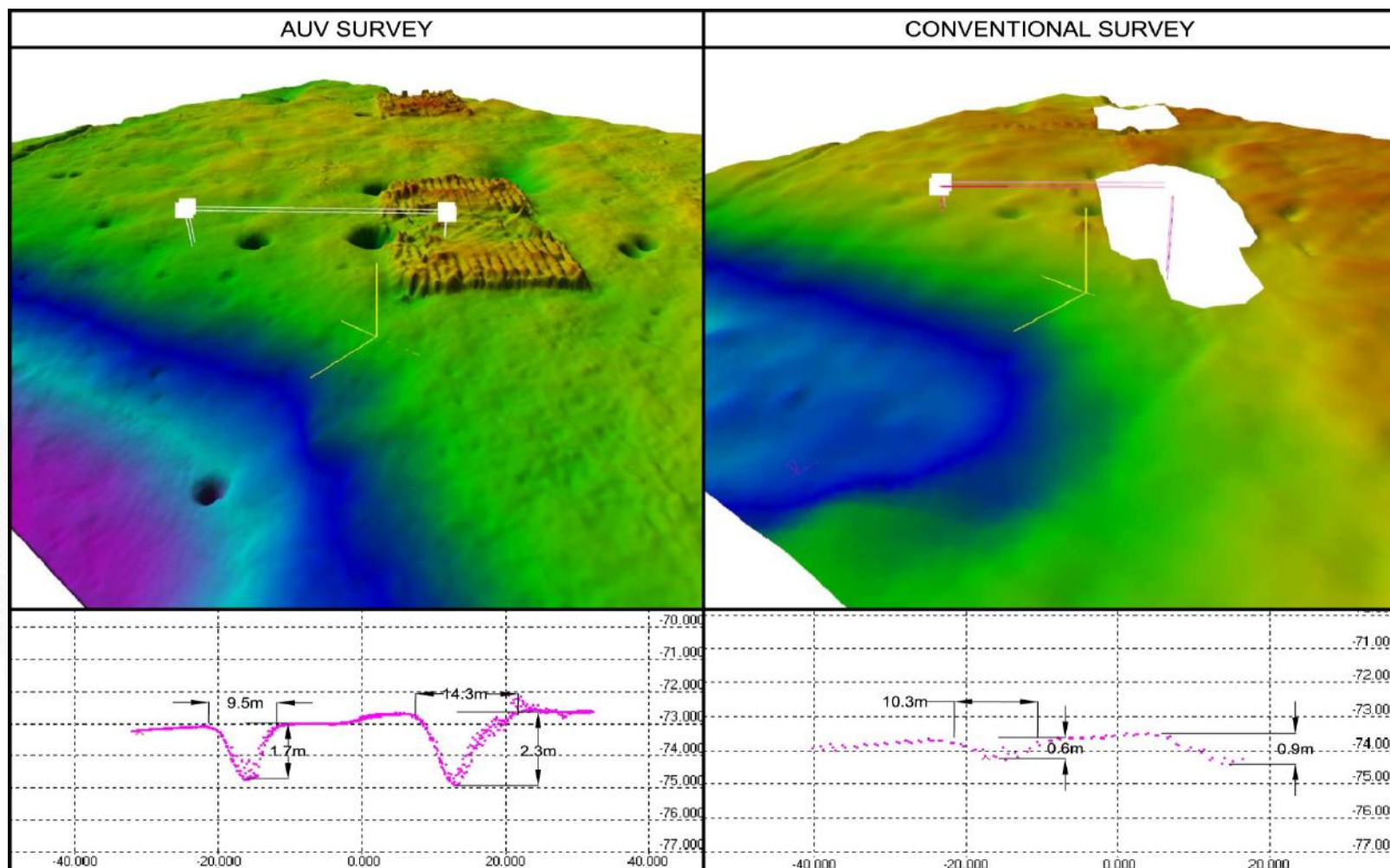
UTEC

Images and text courtesy of UTEC Survey

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# AUVs Provide Better Data Quality



Images and text courtesy of Java Offshore

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## **Slocum G2 Glider**

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# **A Sea of Solutions**





# Teledyne Marine Systems

*Highly engineered, proven  
solutions for ocean research,  
defense, and offshore  
markets:*



**Certifications:** ISO 9001:2008

## **HEADQUARTERS N. Falmouth, MA**

**49 Edgerton Drive  
North Falmouth, MA 02556  
Manufacturing, Admin, Sales,  
Engineering and Support  
ISO:9001  
Main office for Teledyne  
Benthos and Teledyne Webb  
Research**

## **WEST COAST OFFICE San Diego, CA**

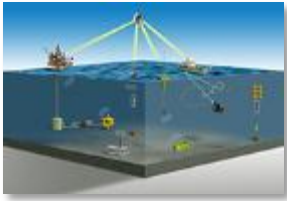
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Engineering and Support  
Main office for Teledyne  
SeaBotix**

## **ICELAND OFFICE Kópavogur, IS:**

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Manufacturing, Engineering,  
and Support  
ISO:9001  
Main office for Teledyne  
Gavia**

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# Slocum G2 Gliders

## World Leader in Long-Endurance Glider AUVs

- Over 570 delivered
- Over 40 demonstrated payloads
- 300 - 1,000m depth rating
- Endurance over one year
- Hybrid option provides thruster for demanding environments
- Currently in use with Oil and Gas Service Providers



***Fleet leading long endurance AUV***

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## Sensor Suites: Over 43 Acoustic, Optic, and Chemical Sensors Integrated



Rockland Scientific Microrider Turbulence Sensor



Wet Labs Fluorometer with CDOM



RDI Explorer ADCP



VEMCO Fish Tracker



Three puck bay with Satlantic Irradiance and  
Wet Labs Eco Puck, Sea Bird Pumped CTD



Satlantic SUNA Nitrate

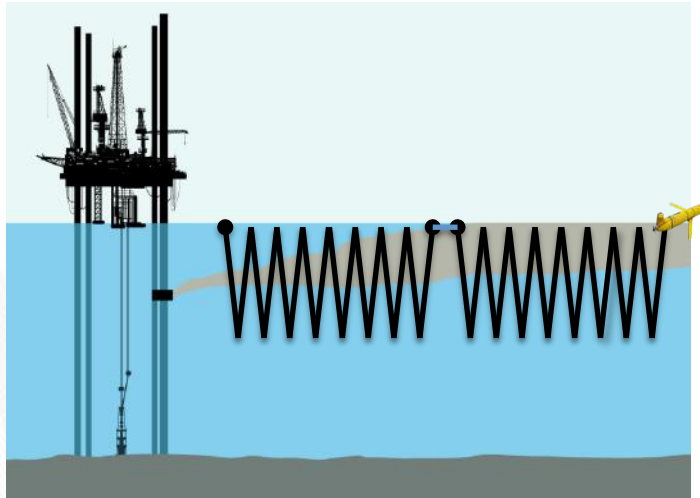
**What do you need to detect? The solution you require may already be available. If not, we are experts at new sensor integrations.**

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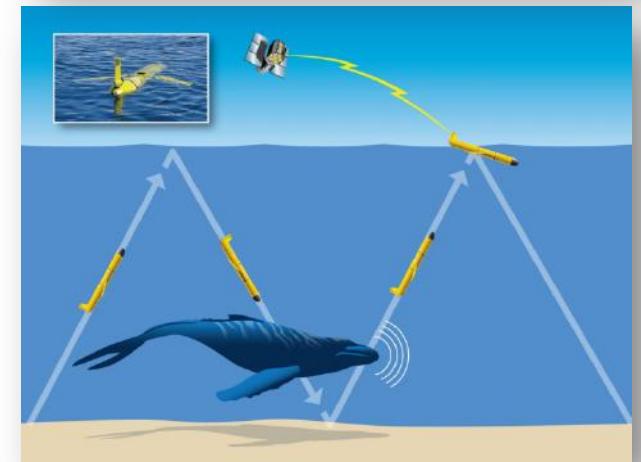
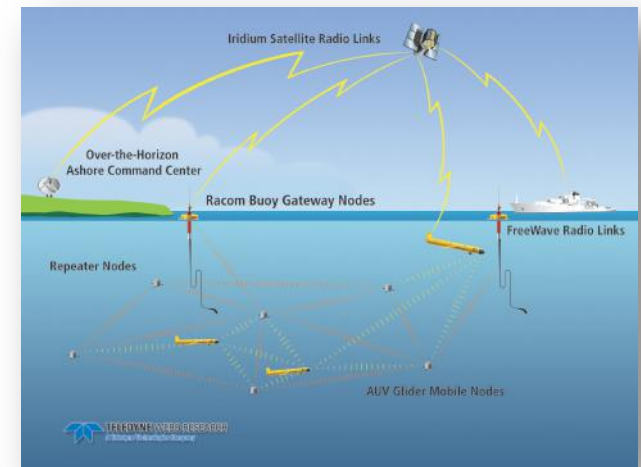
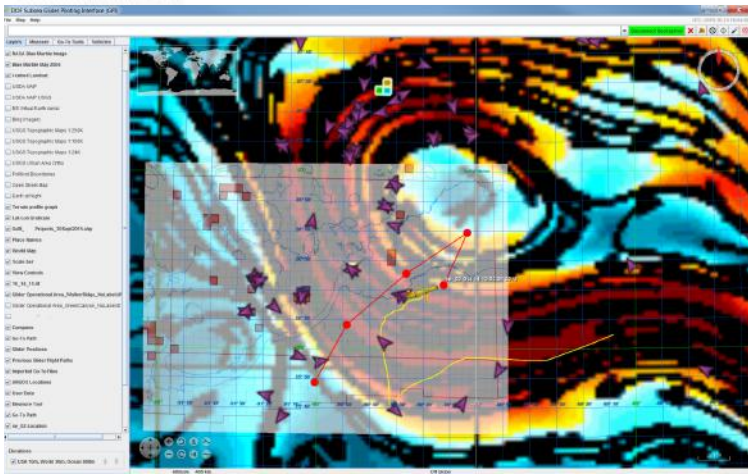
Teledyne Webb Research images



# What can you do with a Slocum Glider?



- **Plume Tracking to meet Environmental Regulations**
- **Loop Current Monitoring**
- **Ocean Observation, Environmental Monitoring, and Data Harvesting from Subsea Nodes**
- **Marine Mammal Mitigation**

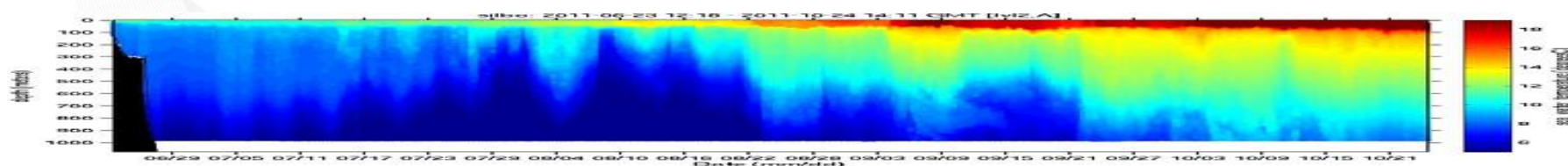


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# ... or a Tran-Oceanic Crossing



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