

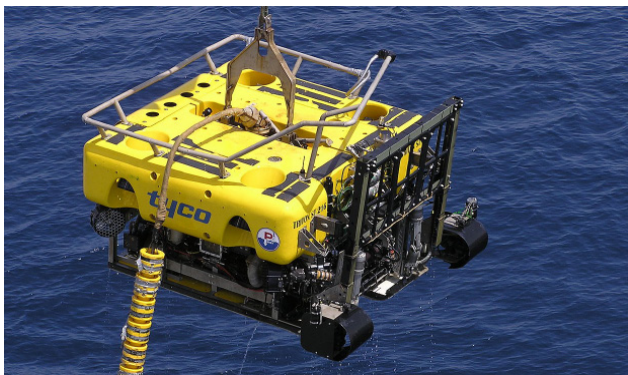
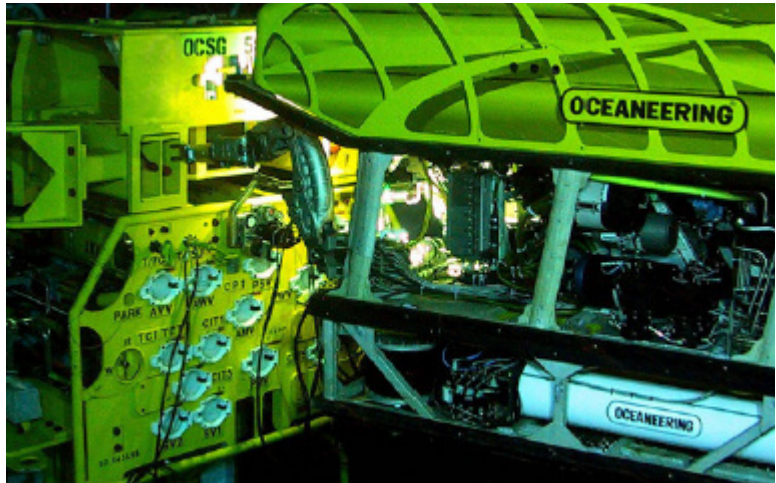
Inertial Sensing for Underwater ROVs and UUVs

MicroStrain Applications Note: Precision Miniature Sensors

for control, stabilization and pointing

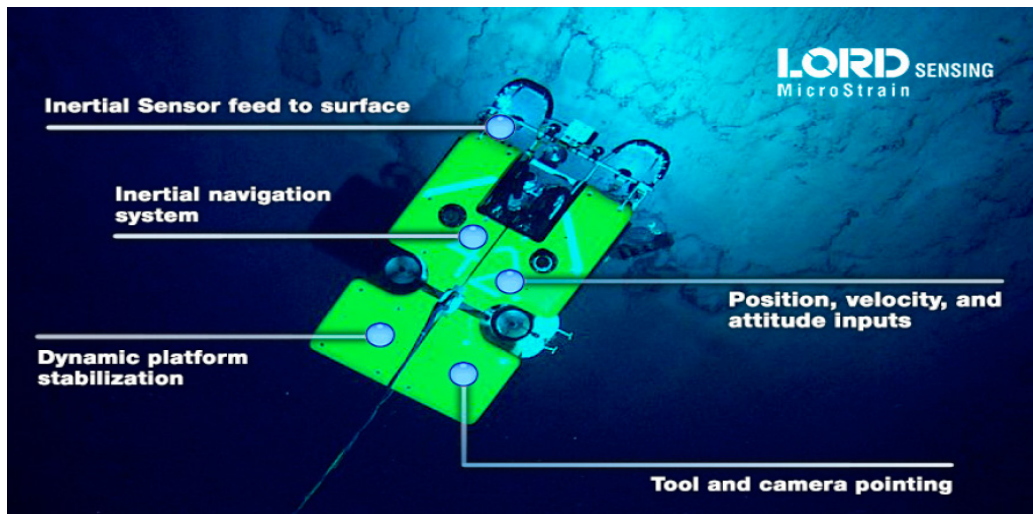
The Challenge

Underwater Remotely Operated Vehicles (ROVs) and Unmanned Underwater Vehicles (UUVs) operate in extremely demanding environments that require precise and reliable feedback. Inertial navigation solutions must be very accurate as well as small, lightweight, low power, and easy to integrate.



The Solution

MicroStrain® inertial sensors provide high performance in a very small package. MEMS technologies, including very low-noise gyroscopes, combined with sophisticated Kalman filtering offer accurate data quantities to provide precise control, stabilization, and pointing at the best value.



Benefits

Small, light, easy-to-integrate on new and existing platforms

Best-in-class industrial and tactical MEMS inertial systems

Precise information for control, navigation, and georeferencing is delivered via fusion of inertial data with information from DVL, GPS, depth, and sound velocity sensors



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MicroStrain Application Note: Underwater Systems

Ease of Integration: MicroStrain provides tactical and high-end industrial grade miniature inertial sensors to the aerial, terrestrial, and sub-surface markets. Our user implementation procedure is streamlined to support rapid evaluation and integration with little development overhead, and low barriers to incorporate the latest sensor models and capabilities.



3DM-GX5-45™ GNSS/INS

Global Navigation Satellite System
Inertial Navigation System

8°/hr gyro bias instability
±75, 150, 300*, 900°/sec gyro range
±5*, 16 g accel range
USB or RS232 interface

-40 °C to 85 °C temperature range

20 grams, 44.2 x 36.6 x 11.1 mm

The MicroStrain suite of sensors offers a variety of performance and price-points. The CX5 and CV5 series are appropriate for mounting on client PCB's, and provide TTL communications, and lower cost. For applications where GPS/GNSS is not required, there are INS, AHRS, and IMU models available in each of these product families. Visit MicroStrain.com for product detail, or consult a sales-applications engineer at the number below.

3DM-CX5-45™ GNSS/INS

Global Navigation Satellite System
Inertial Navigation System

8°/hr gyro bias instability
±75, 150, 300*, 900°/sec gyro range
±8*, 20, 40g accel ranges
USB or TTL interface

-40 °C to 85 °C temperature range

8 grams, 38 x 24 x 9.7 mm



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