

MBARI 1000m ROV System

Concept/Requirements
Review

Mission Capabilities

- Conduct a 2012 Return Mission to Arctic
- Future Polar cruises / Ship of Opportunity
- Video transects
- Small Instrument deployment / recovery
- Carry small instrument payloads
- Limited sampling
- Inspection / maintenance
- AUV rescue vehicle (1000 m limit)

High Level Requirements

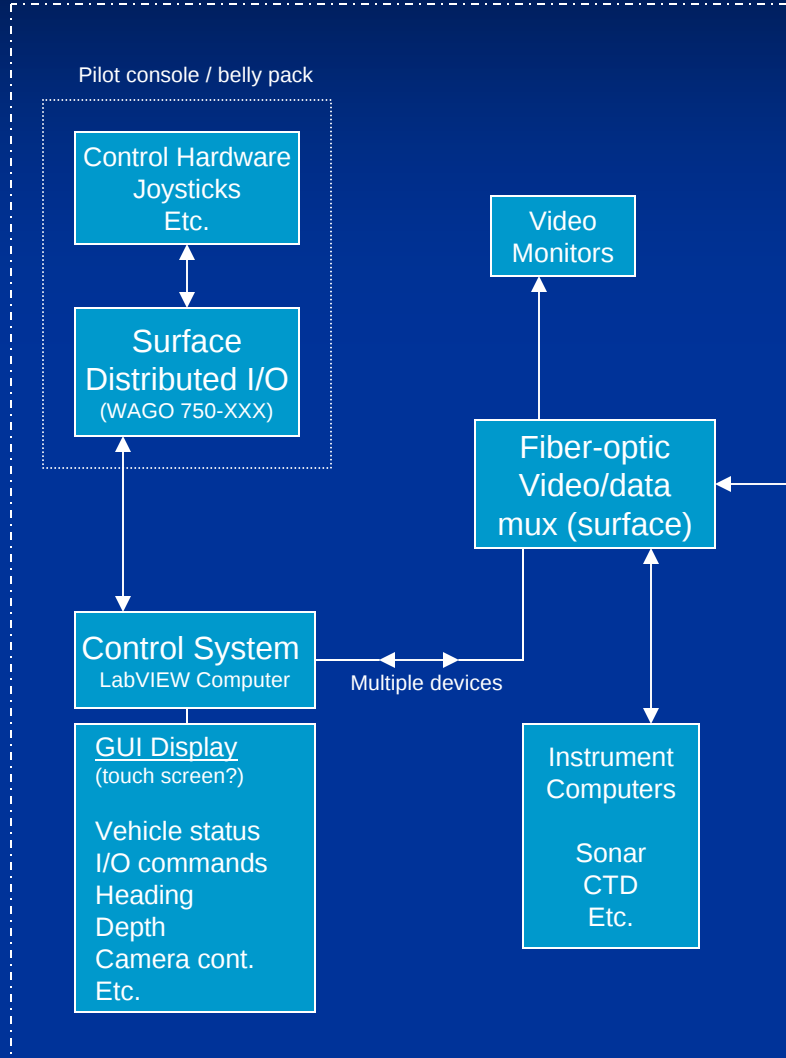
- Portable / small deck foot print
- Operates from surface down to 1000m
- 1-2 man crew
- Quality real time video (HD w/upgrade)
- Flexible control system / instrument interface
- +30 pound payload
- Limited sampling (1-3 function grabber)
- Power = $\sim 3.5\text{kW}$
- Simple to operate / low maintenance cost

Vehicle Design Concept

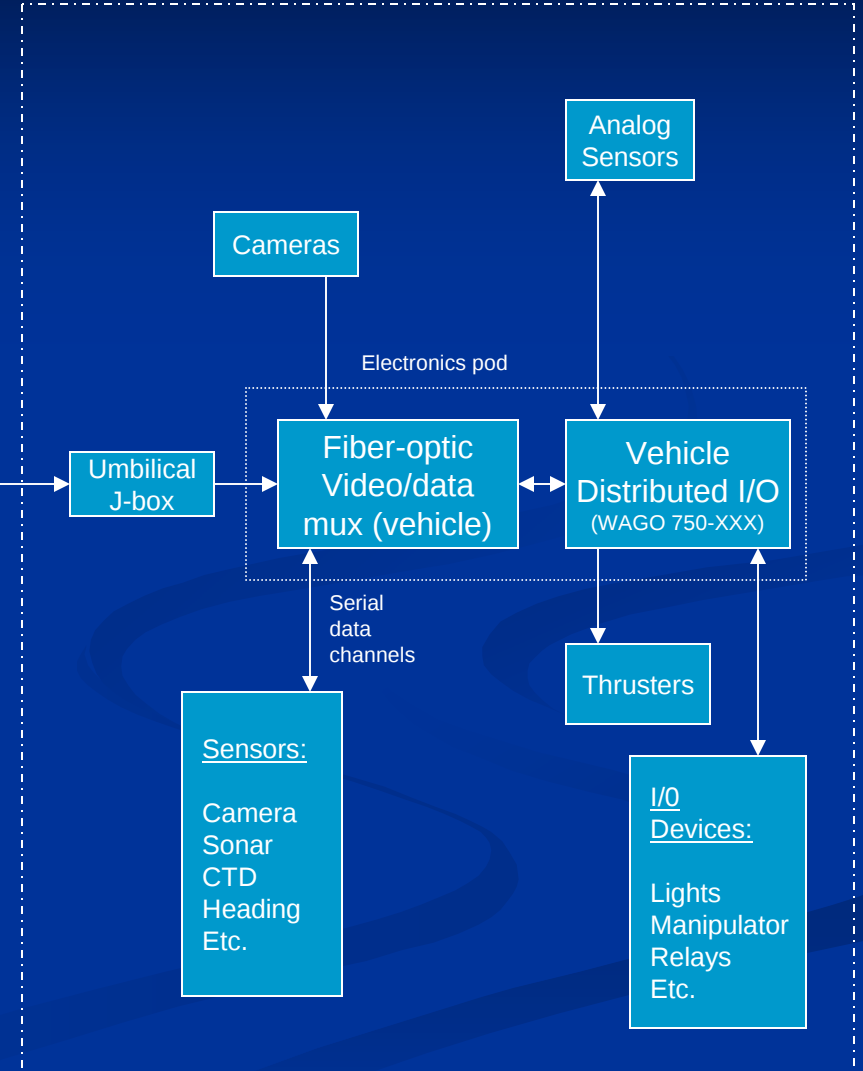
- Serial network node architecture (Ricketts)
 - WAGO I/O system
- 4 vectored horizontal / 1-2 vertical thrusters
 - DC brushless motors
 - ELMO controller
- 1-atm subsea electronics pod
 - Focal Fiber MUX (3 video – 6 serial ch)
- LabVIEW software design
- Neutral tether
- Powered storage drum w / slip ring

Vehicle Design Concept (Block Diagram)

Surface



ROV



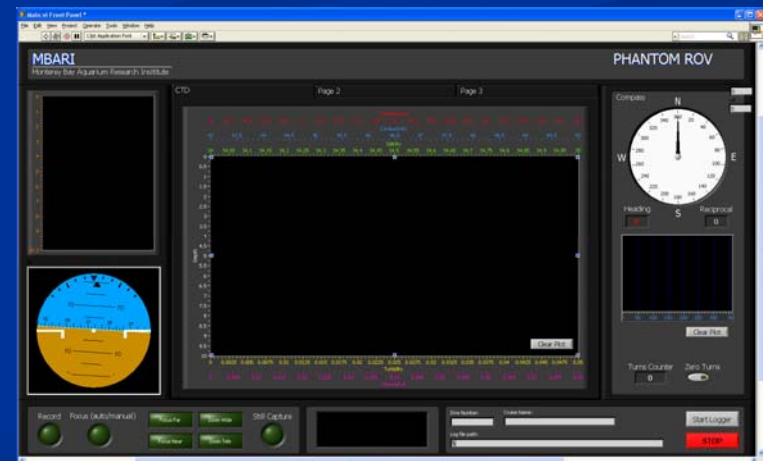
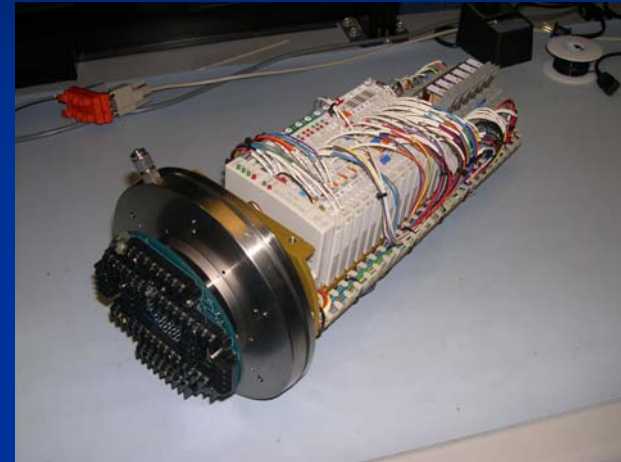
Existing Instrumentation

- Sony HD camcorder
- B&W aux. camera
- Camera tilt
- CTD + fluorometer
- Grabber
- Gulper
- 2x LED lights
- Sonar

Future Enhancements

- Vision based station keeping (Rock)
- Smart Clump / Birds eye view
- Doc Ricketts control software
 - Will contact SMD to see if this is possible.
- Real time HD video, GigE, additional data ch's
- Enhanced sampling gear
- Greater depth range (if designed into system upfront)

Components



Schedule

01/2011

07/2011

01/2012

06/2012

