Dorado

A Program Overview

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TIMELINE

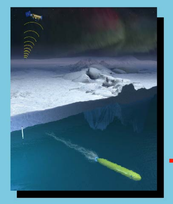
1999 | 2000 | 2001 | 2002 | 2003

Applications

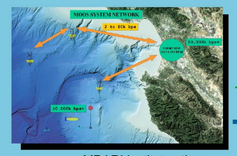
Technical Concepts

Vehicle systems and Subsystems

Science and Technical Results

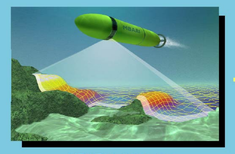


The ALTEX proposal was awarded creating the drive for a new class of vehicles

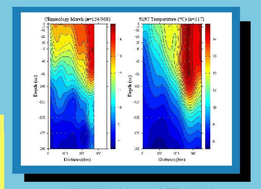


MBARI institutes the MOOS program (MBARI Ocean Observing System)

MBARI joins with the AOSN program and coordinates MUSE

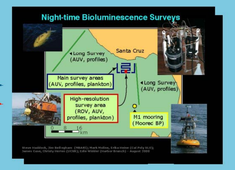


MBARI intiates the Multibeam Project to develop a unique sensor and platform combination for science

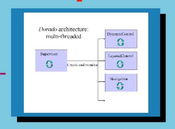


MBARI initiates CTD-AUV program to replace costly ship CTD runs in the next two years

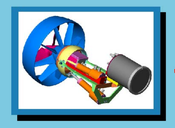
MARS test bed proposal is submitted, eventaully AUVs are to be docked as part of the Neptune system MARS is a testbed for



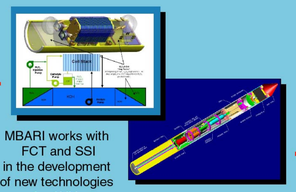
MBARI approves the SPOKES cruise for August 2002 with the Dorado AUV operations



MBARI modernizes AUV software using the lastest in technology

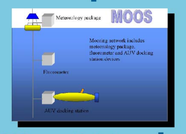


MBARI concept for propulsion and control is developed



MBARI works with FCT and SSI in the development of new technologies for AUVs

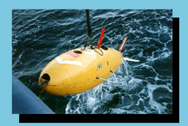
MBARI designs a custom science nose with new flow sensors and includes the ISUS instrument from MBARI science



MOOS concept includes AUVs as permanent docked systems for observatories

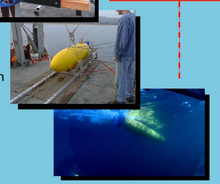
AUV Team layouts in design for long endurance AUV to accomplish transects to and from the M2 mooring

- Preparations underway for August cruise using the MBARI AUV hardware
- Final designs and purchasing are in process for build of the first operations vehicle for CTD runs to and from the M2 mooring
- Engineering Post Doc begins work on the MOOS docking system in mid-July. MARS and Neptune compatibility will be studied with the potential for MBARI technology adoption by those national assets
- MBARI will deliver the pressure housing to Reson mid-summer of 2002. Expecting delivery of the multibeam and integration to start in late 2002 into early 2003
- MBARI AUV team will return to the Arctic to complete the ALTEX experiment, dates still to be deteremined but 2004 or 2005 are anticipateed with cruise in spring or summer of either year



Odyssey IIb from MIT was the foundation used to start the Dorado and ALTEX configured vehicles

The first MBARI AUV uses the MBARI internal computer and software to perform the MUSE cruise

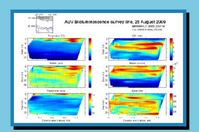


The first MBARI AUV platform is assembled and taken through sea trials

MBARI integrates and tests new payloads for power and remote data transmission

MBARI completes the engineering test cruise for ALTEX while also gathering science data

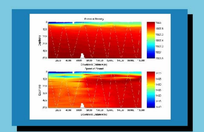
The Multibeam pressure housing passes testing to 6000 meters working depth



The first data sets are created using MBARI AUVs

MBARI applies for patent on the tailcone

MBARI licenses the tailcone technology to Bluefin Robotics of Cambridge Mass. which is used in support of an industrial application for surveys



MBARI s AUV team has a successful Arctic mission data sets include CTD and Ice profiler along with INS navigation results

KEY:

- Odyssey IIb - MIT
- ALTEX vehicle
- MUSE cruise vehicle
- Multibeam vehicle
- AUV CTD vehicle
- MOOS Docking vehicle
- SPOKES cruise vehicle

Note: timeline is not to scale

- Committed or completed
- In planning or proposed
- development path
- feedback path

Special thanks is given to the The David and Lucile Packard Foundation

MBARI's community of collaborators, government agencies, and industry

National Oceanographic Partnership Program — Promoting Partnerships for the Future of Oceanography; ONR; NSF; Pacific Marine Environmental Laboratory; SSL Scientific Solutions, Inc. — Innovative Research, Development, & Engineering; Bluefin; AUV Laboratory at MIT Sea Grant; Northrop Grumman formerly LITTON

Created by: W. Kirkwood, MBARI AUV Team: June 20, 2002