



Underwater Robots are displayed at Test Tank (De-103)

URA LAB.

[Abyssal Sea Adventure with Underwater Robots !]

AE2000a



Underwater Technology Research Center
IIS, The University of Tokyo
<http://underwater.iis.u-tokyo.ac.jp/>

Underwater Robotics

Department of Ocean Technology, Policy and Environment



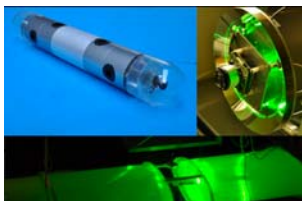
Tuna-Sand

Research, Development, and Application of Underwater Robots

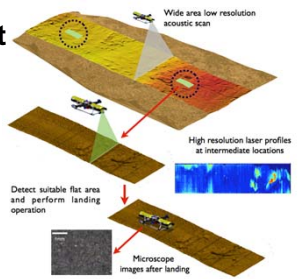
Underwater Robotics and Application

In URA Lab., we research, design, and develop Autonomous Underwater Vehicles (AUVs) as an unmanned platform for the survey and development of sea areas. By deploying our AUVs in several sea areas in the world, we have achieved undersea survey missions of various purposes. We are also developing underwater robots working in pipelines.

- ◆ [Ocean Resource] Hydrothermal Vents, Under-ice Survey
- ◆ [Navigation] Simultaneous Deployment of Multiple AUVs
- ◆ [Undersea Sensing] Acoustic Measurement of Cobalt-rich Crust Layer
- ◆ [Undersea Sensing] In-situ Elemental Analysis by LIBS
- ◆ Automatic Survey and Sampling of Deep-sea Organism
- ◆ Pipeline Inspection
- ◆ Underwater Robot Contest



Pipeline inspection (PICTAN)



Landing AUV Bottom Skimmer



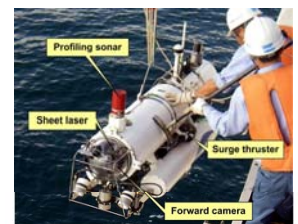
Jellyfish catcher T-pod



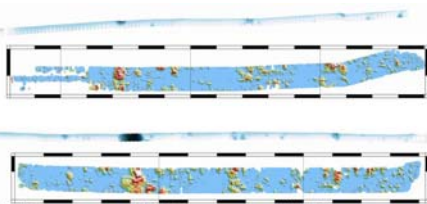
r2D4 for Intelligent Underwater Robotics



AUVs for underwater robot contest (YebisUra, HAL-urabo)



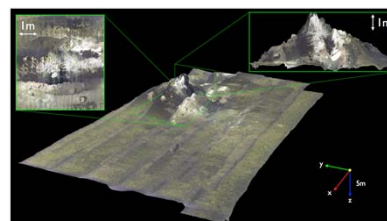
Hovering AUV Tri-dog1



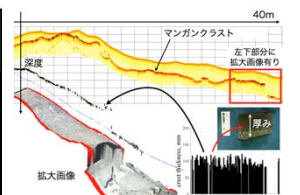
3D Bottom configuration and photo mosaic of ice-floes (AE2000a)



Visual survey of marine benthos (Tuna-Sand)



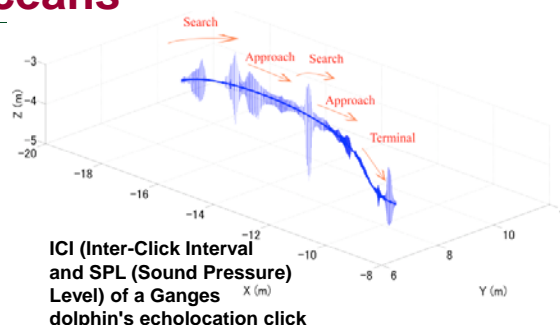
Hydrothermal chimney in Kagoshima Bay (Tuna-Sand)



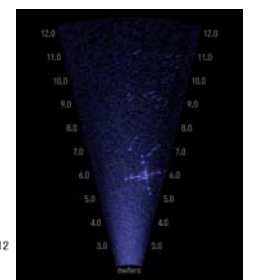
Acoustic measurement of cobalt-rich crust layer thickness

Acoustic Monitoring of Cetaceans

Based on the acoustic signal processing technology, we are conducting long-term monitoring of cetaceans in motion, such as sperm whale, Irrawaddy dolphin and Ganges dolphin, known to be in danger of extinction. Aiming at elucidation of the veiled mysteries of cetacean behaviors, we are now enhancing our sound-based database by incorporating the acoustic camera images of cetaceans.



ICI (Inter-Click Interval) and SPL (Sound Pressure Level) of a Ganges dolphin's echolocation click



Acoustic camera image of two Ganges dolphins and hydrophone array