



Maki Lab.

[Seafloor imaging innovation]

Institute of Industrial Science
Underwater Technology Research Center

<http://underwater.iis.u-tokyo.ac.jp/>

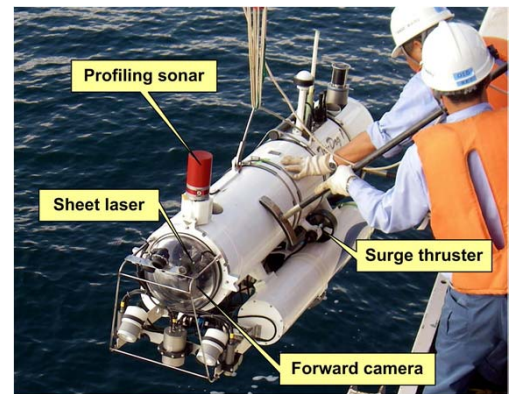
Underwater platform systems

Graduate School of Frontier Sciences
Department of Ocean Technology, Policy and Environment

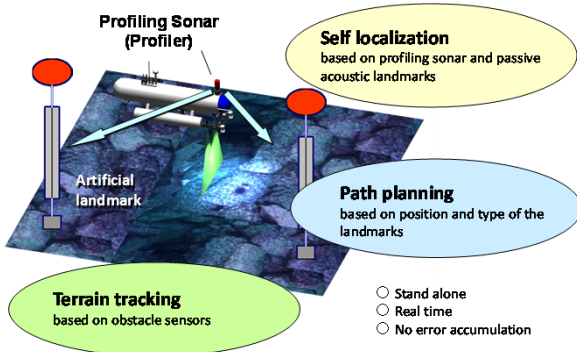
3D visualization of seafloor

The aim of this research is to develop a comprehensive method for large-area seafloor imaging by an Autonomous Underwater Vehicle (AUV), which contain both the real-time part (AUV navigation) and post-processing part (image alignment).

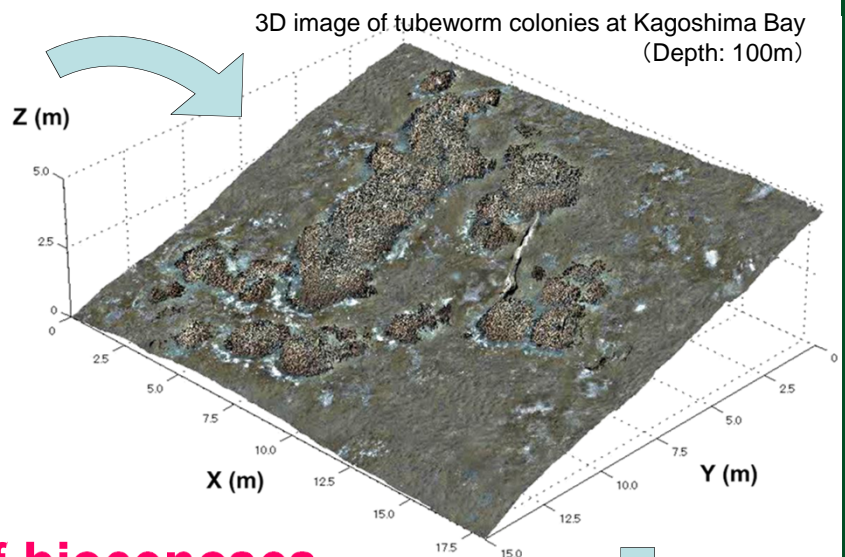
We have implemented the method to the AUV Tri-Dog 1 and mapped the seafloor of Kagoshima Bay in Japan over the area of 3,000 square meters, where unique tubeworm colonies exist.



AUV Tri-Dog 1



AUV navigation algorithms



Automatic detection of biocenoses

Automation of data processing is quite important to handle large data sets obtained by AUVs. We are developing an autonomous method to detect tubeworm colonies from the 3D shape and color information of seafloor.

We have applied the method to the data obtained by Tri-Dog 1 and succeeded in quantitative estimation of tubeworm colonies.

Estimated tubeworm colonies (Right: seafloor image for comparison)

