

# MAKI LAB.

## [Future Platform Systems for Underwater Observation]

Center for Integrated Underwater Observation Technology

Underwater Platform Systems

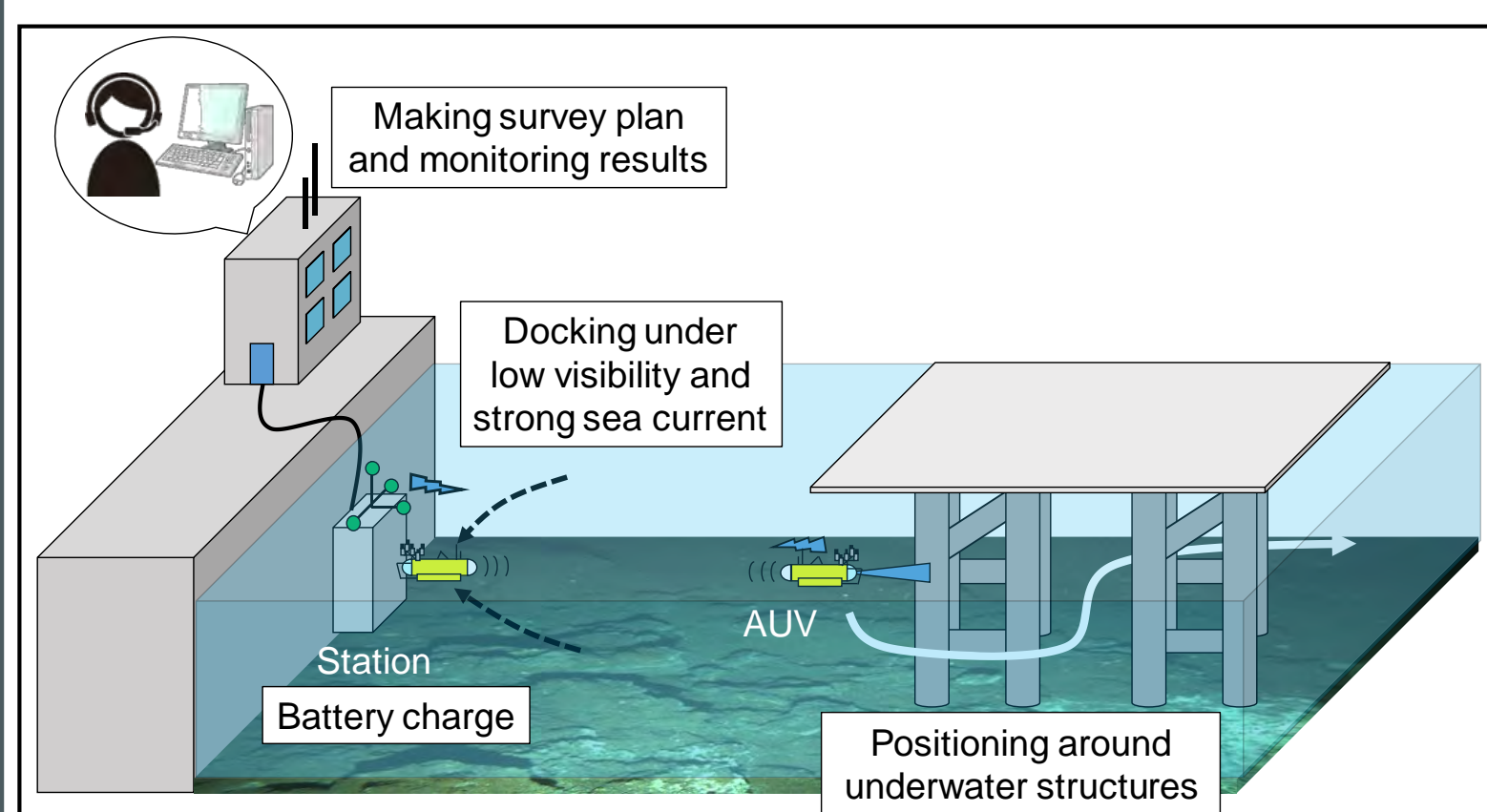
Graduate School of Frontier Sciences

Department of Ocean Technology, Policy and Environment

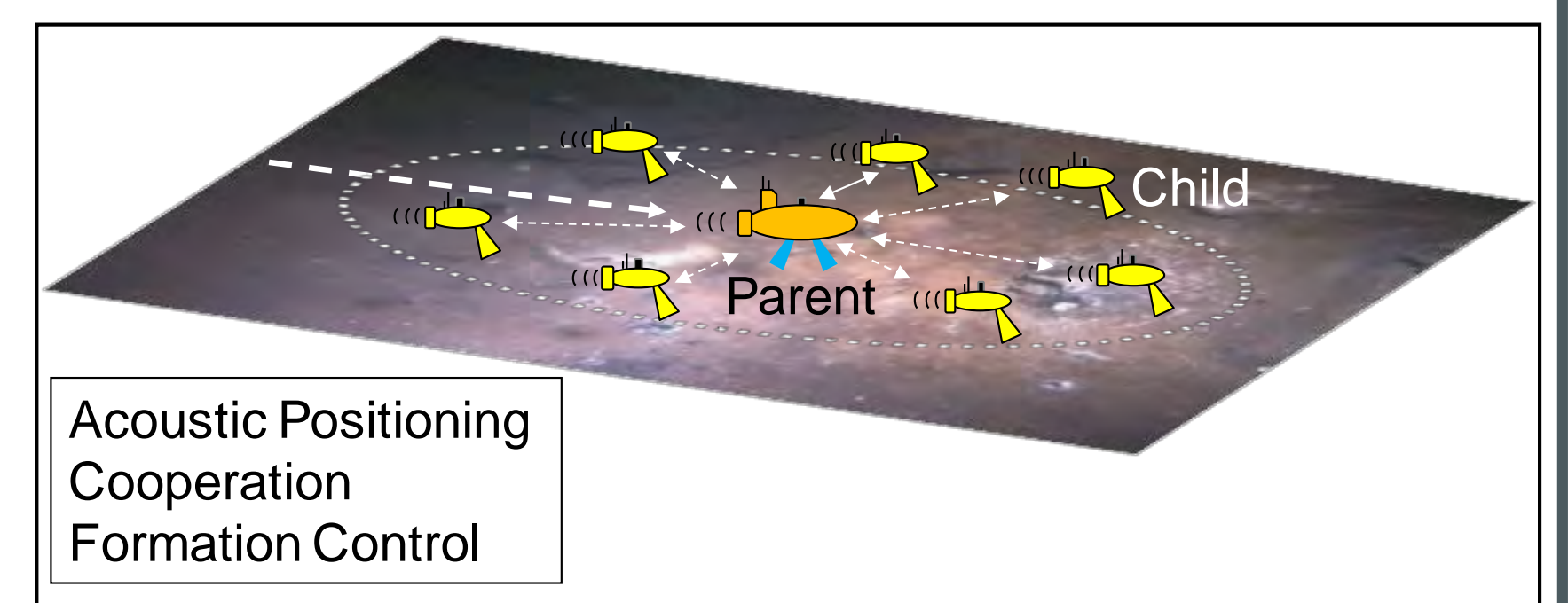
<http://makilab.iis.u-tokyo.ac.jp/>

### Future Platform Systems for Underwater Observation

We are developing new systems for underwater observation by means of latest techniques of robotics and informatics. These systems will be able to realize wide-area, high-accuracy, and long-term observation through collaboration of multiple autonomous agents, for example, autonomous underwater vehicles (AUVs).

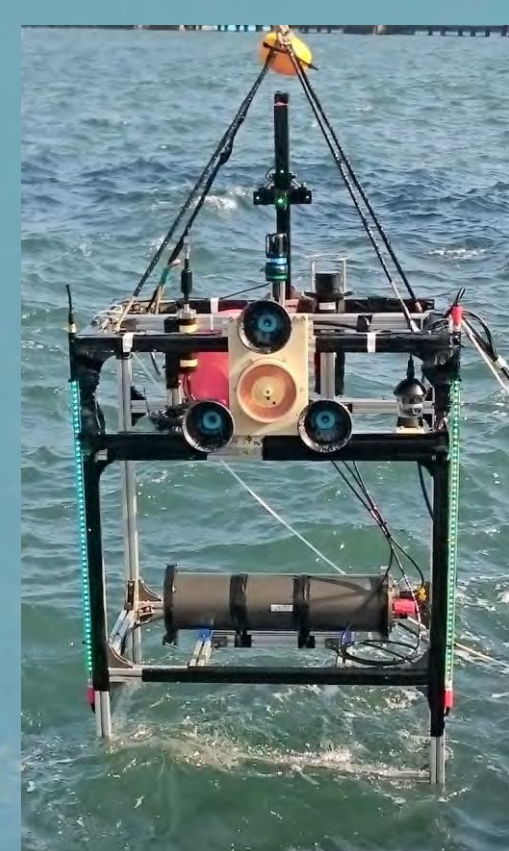


Long-term monitoring of underwater structures using a station and an AUV

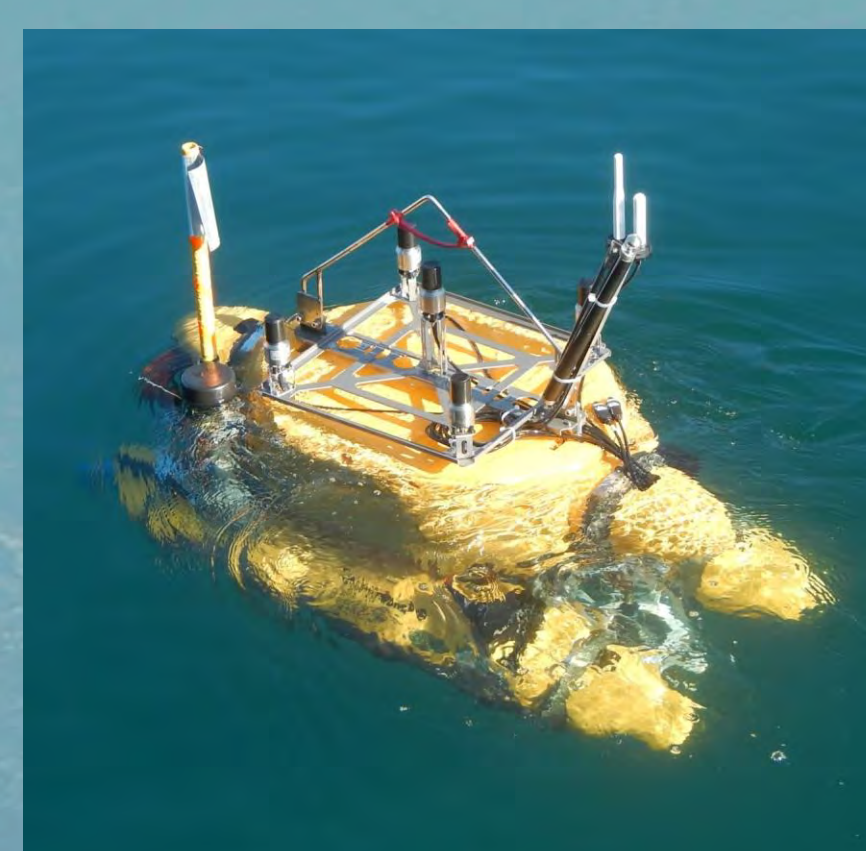


Cooperative survey using acoustic network of AUVs

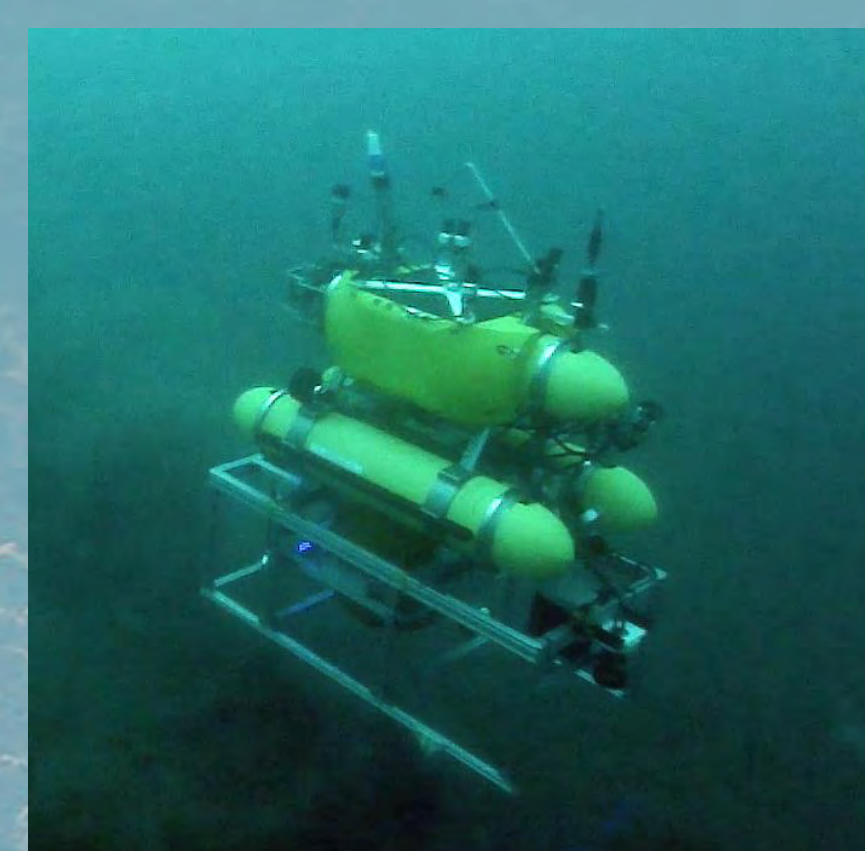
**Biological Observation**



Seafloor Station

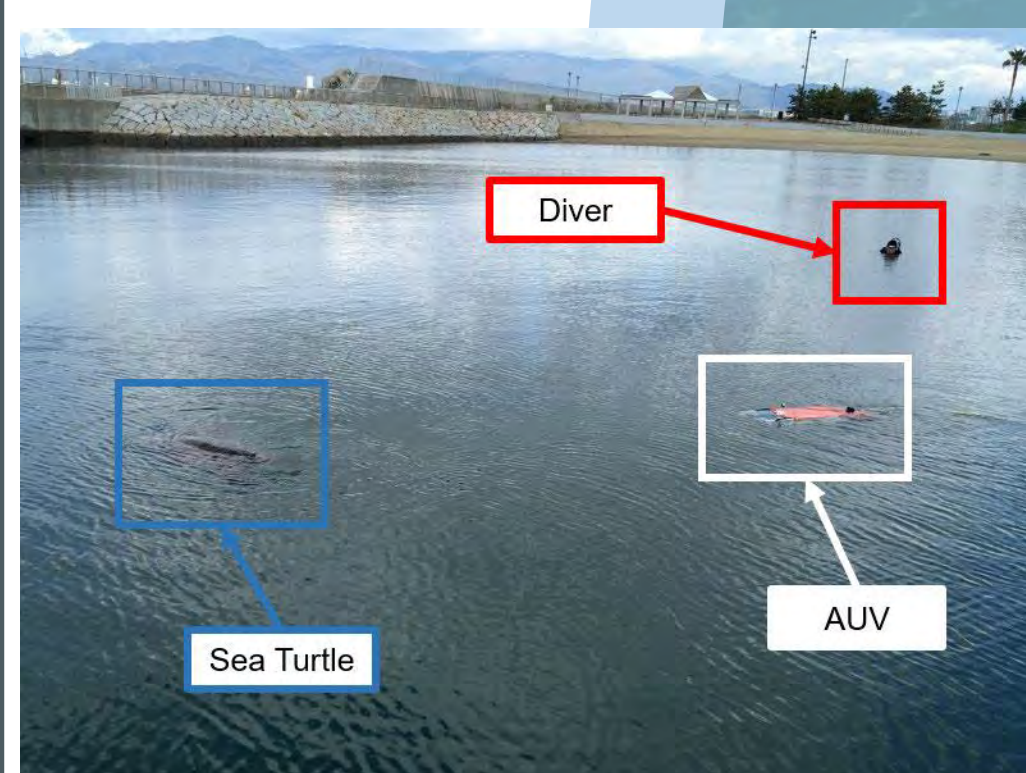


AUV Tri-TON 2



AUV Tri-TON

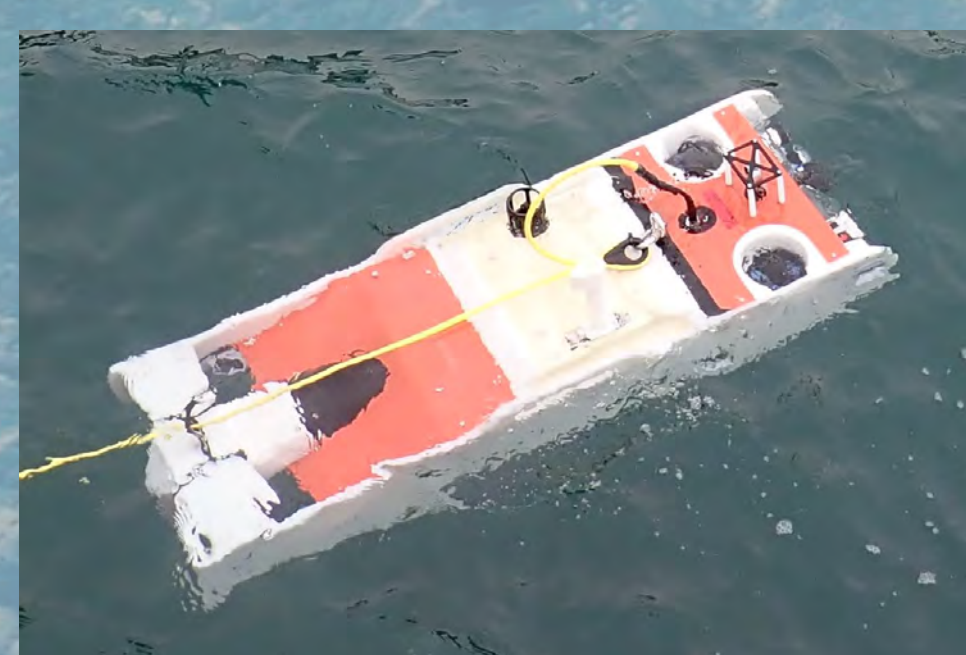
**Multiple AUVs**



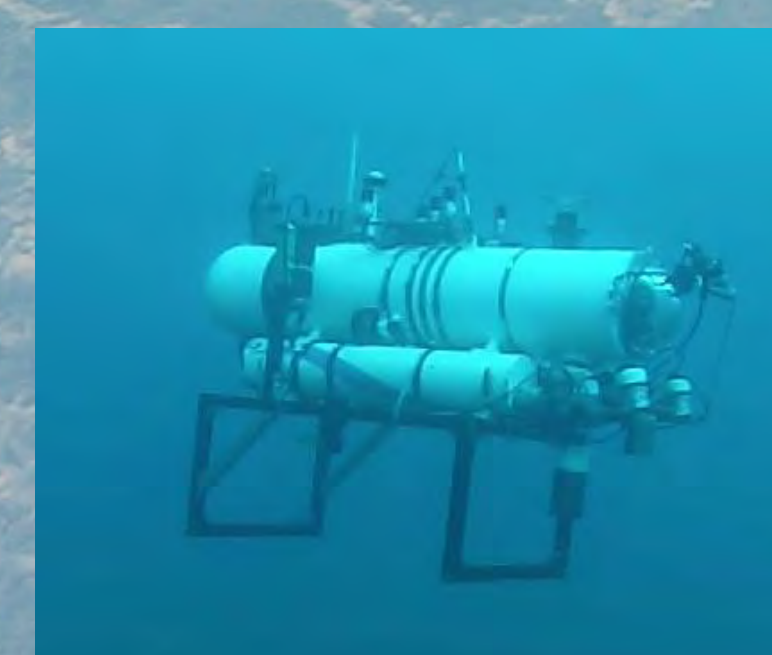
Detecting and tracking underwater animals



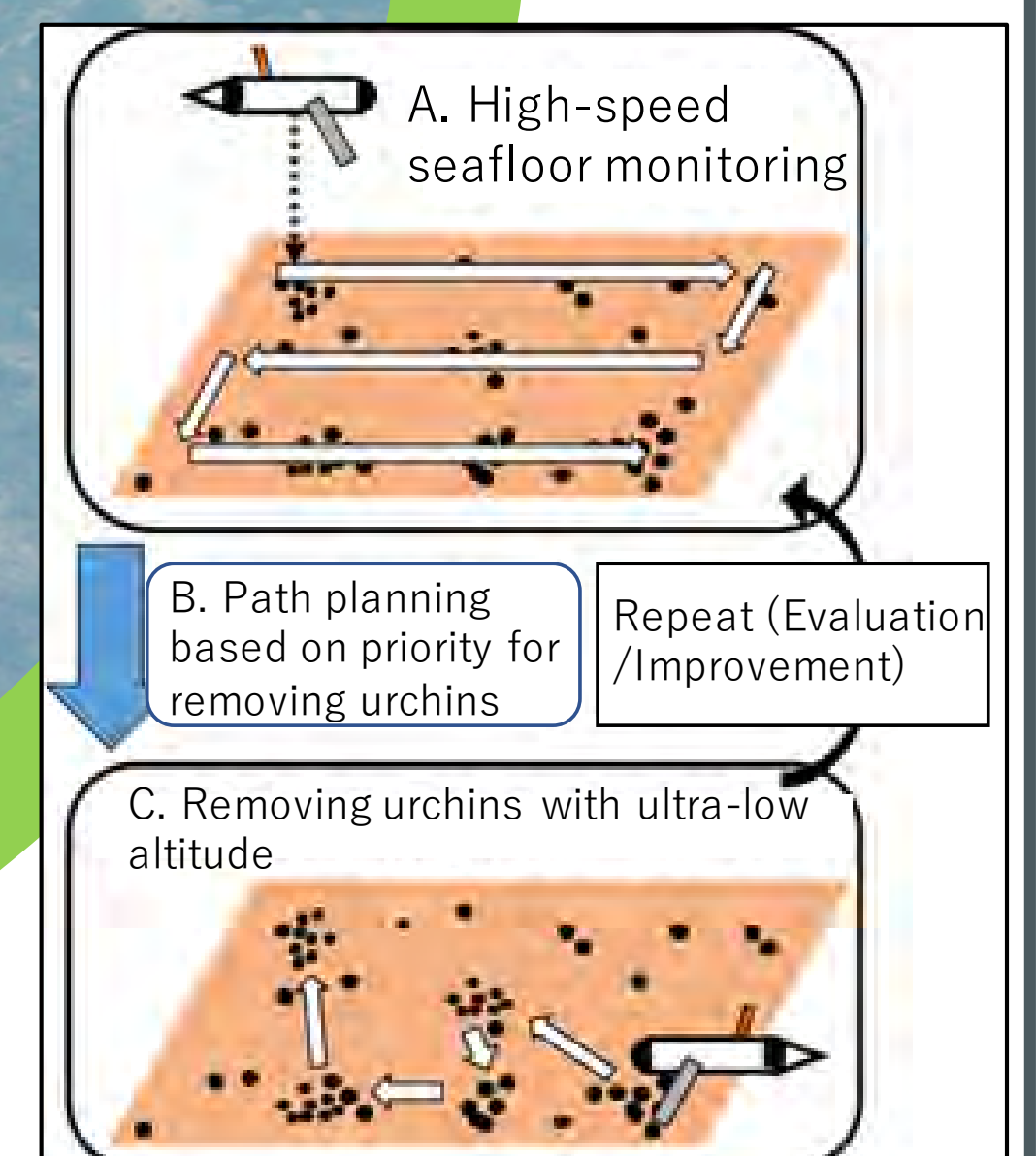
AUV HATTORI



AUV HATTORI 2

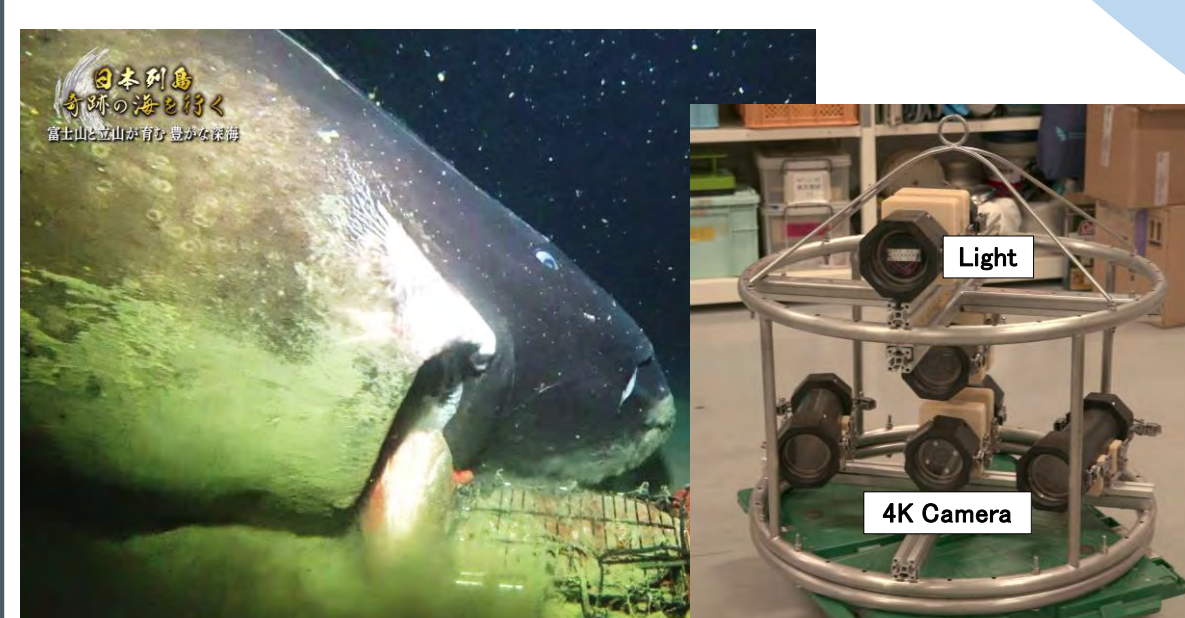


AUV Tri-Dog 1

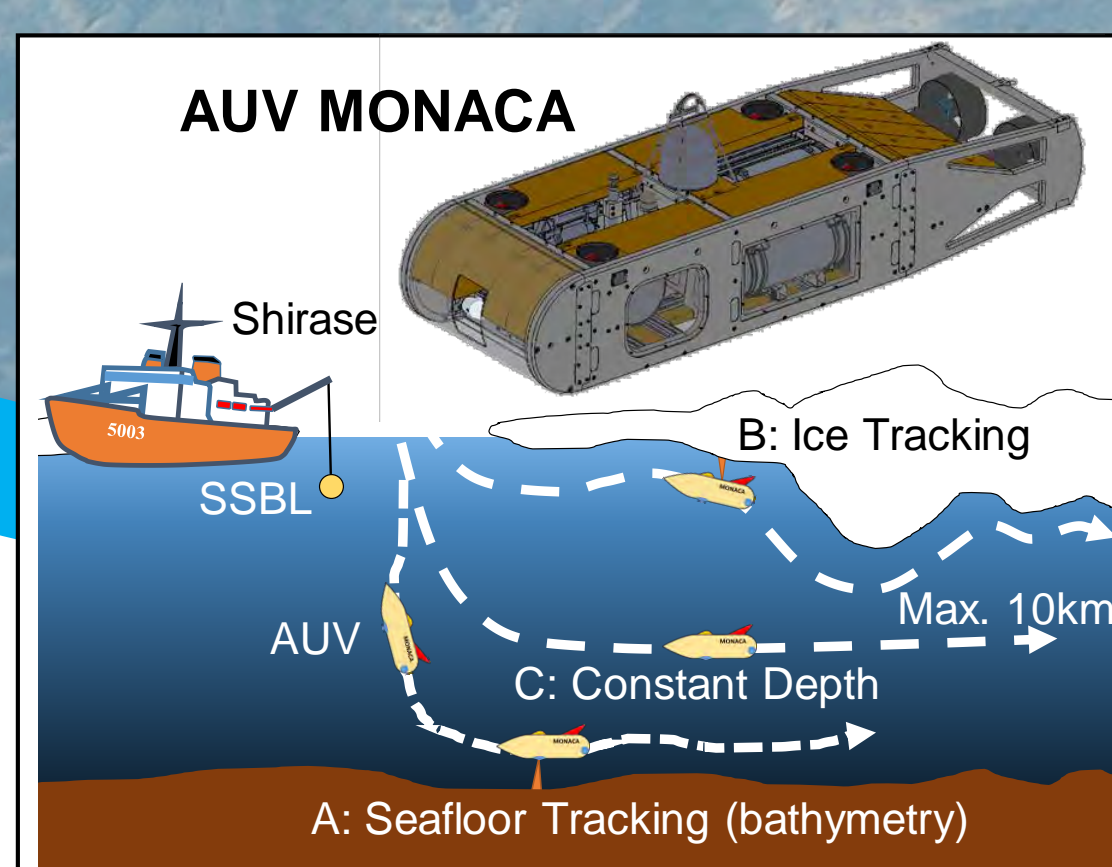


Intervention AUV Removing urchins for improving the environment of a sea desert

**Polar Survey**



In-situ biopsy system of deep sea top predators



Antarctic survey with an AUV

**Low-cost AUV**