

12. Development of Innovative Technologies for Exploration of Deep Sea Resources

Goal

Overview

This program will establish survey and retrieval technologies for basic and applied researches at the depth deeper than 2,000m below sea level as leading pioneer in the world, expanding the results of the 1st period SIP program, "Next-generation technology for ocean resources exploration (Zipangu in the Ocean)".

Objective

Improving survey speed 30 times faster than that of current technology, developing survey system of the world's most advanced at the area shallower than 6,000m below sea level (equivalent to 94% of the EEZ), and transfer the technologies to industries.

Exit Strategies

We formulate a business model with integration of the elemental technologies and transferring them to the industry after verification. After finishing our program, industrial companies will win contract for deep sea survey, etc.

Impact for socio-economy

- The first development of deep sea mineral resources in the Japanese exclusive economic zone
- Contribution for secure the interest of foreign marine mineral resources with national security
- Creating spin-off technologies and applying to variety fields
(e.g., For AUV technologies: underwater communication, positioning, guiding, electric charging, sampling and lifting, etc.)

For Achievement

Contents of Research and development

- **Theme 1 : Survey and analysis of marine mineral resources**
⇒ Narrowing down of potential area of deep sea mineral resources development by detail research and analysis
- **Theme 2 : Development of survey and production technologies of deep ocean resources at deeper than 2,000m below sea level**
⇒2-(1) : **Development of survey technologies**
(Operations of multiple AUVs and a terminal system to recharge AUVs in Deep Ocean Resources)
Technology development of implementable survey system of deep sea mineral resources
⇒2-(2) : **Development of production technologies**
(Sampling and lifting of rare-earth deposits)
- **Theme 3 : Verification of survey and development system**
⇒ Verification of survey and development system, promoting implementation, mineral resources and development, and utilization of the result of theme 1, 2 and first period SIP

