

## 2. Developing Technologies for Ocean Resources Exploration

### ④ Developing Technologies to Establish High-Speed Satellite Communications

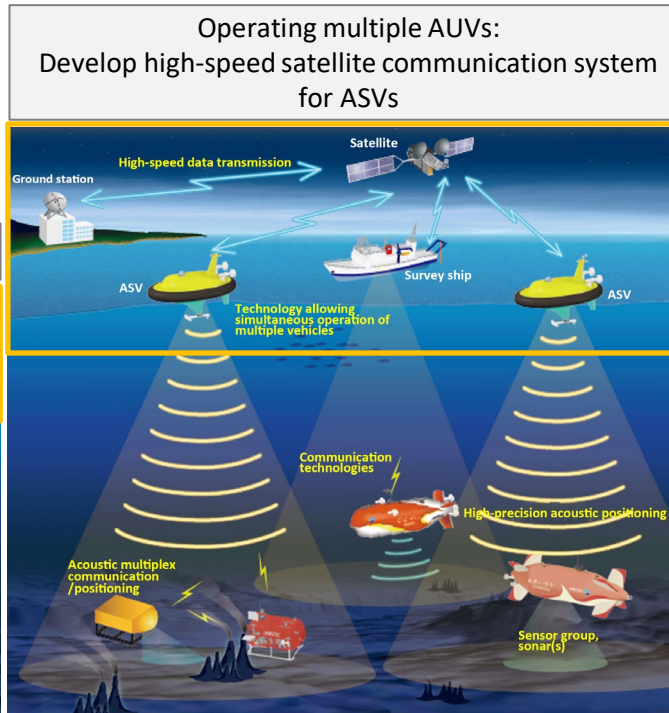
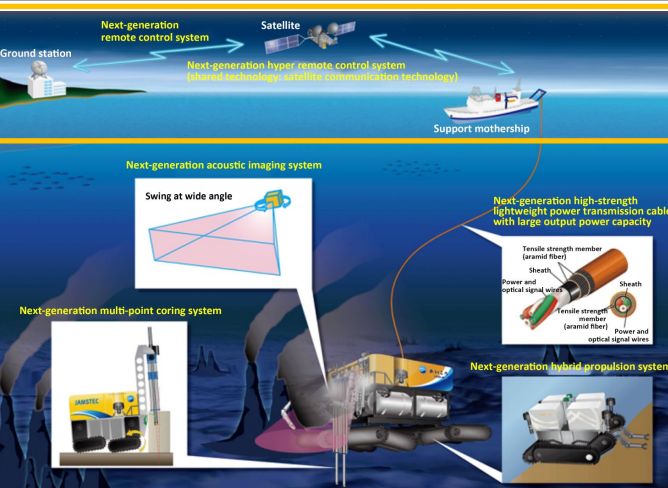
**Overview:** R&D of high-speed satellite communication technologies to establish high-speed satellite communication networks among survey ships, ASVs, and onshore sites for **the purpose of transmitting high-volume data generated from undersea exploration and for operating multiple AUVs.**

(Associated with 2. ②R&D of multiple AUV operating system and 2. ③R&D of highly efficient underwater work system by ROV)

**[Problem]**  
The poor communication environment impedes the transmission of high-volume data over the sea.



Transmit ROV data at high speed



**[Target]**

Development of high-speed satellite communication system for loading on ASVs and ships that operate ROVs.

- Securing the transmission speeds required to operate multiple AUVs

**Step 1: System design**

- Downsizing
- Preventing communication disruptions
- Capacity to transmit HD images and high-volume data
- Maintenance-free, low power consumption

**Step 2: Trial production**

- Trial production using part of elemental technologies based on design results of Step 1.

**Step 3: Actual production and practical use in surveys**

- Actual production and practical use in surveys based on trial production results of Step 2.

**[Schedule]**

Target	FY26	FY27	FY28	FY29	FY30
High-speed satellite communication technologies	Design	Trial production /development		Testing/surveys	

**[Target progress in five years]**

Goal	Before	After
High-speed communications by satellite	Low-speed transmission at around 500 kbps	High-speed transmission on the order of Mbps



**Next-generation remote control system**

**Satellite**

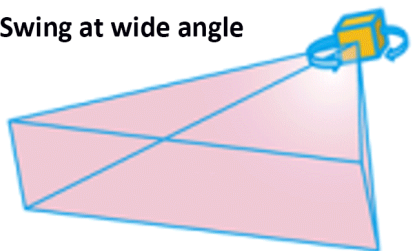


**Next-generation hyper remote control system (shared technology: satellite communication technology)**

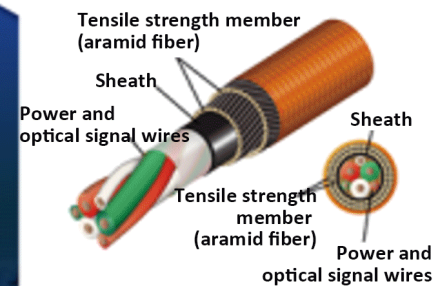
**Support mothership**

**Next-generation acoustic imaging system**

**Swing at wide angle**



**Next-generation high-strength lightweight power transmission cable with large output power capacity**



**Next-generation multi-point coring system**



**Next-generation hybrid propulsion system**





