

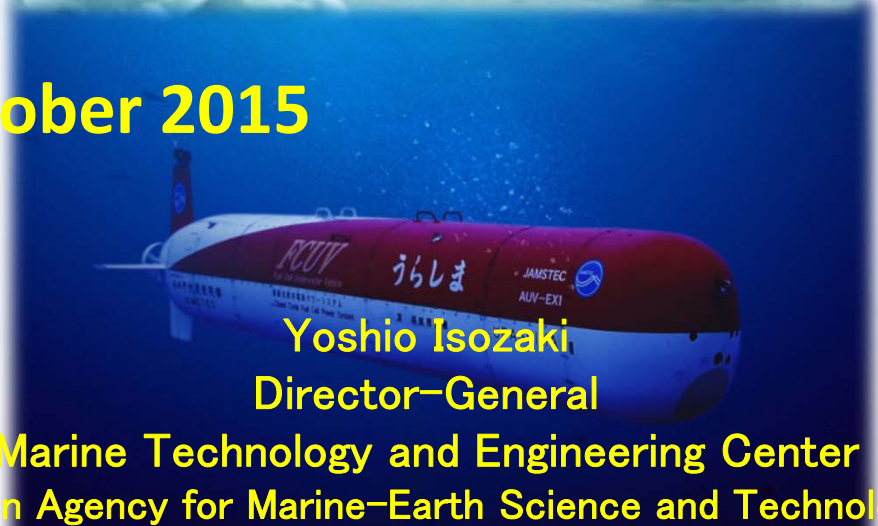
International Research Ship Operators meeting



JAMSTEC Activities and International Cooperation



23rd October 2015



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Marine Technology and Engineering Center
Japan Agency for Marine-Earth Science and Technology



Name

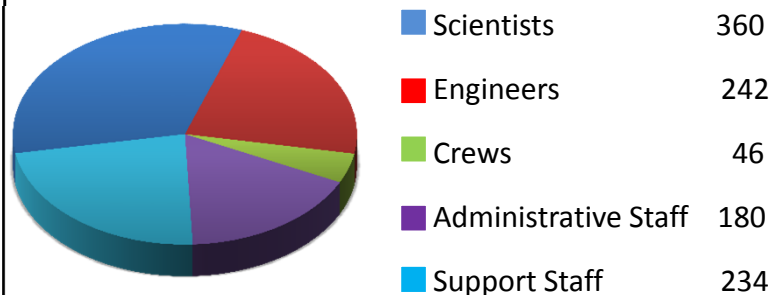
**Japan Agency for Marine-Earth
Science and Technology
(JAMSTEC)**

Foundation

October 1971

Personnel

Total: 1,062 employees



As of April 1st, 2015

Organization

National Research and Development Agency
under the umbrella of
the Ministry of Education, Culture, Sports, Science
and Technology (**MEXT**) of Japan

**Main seven R&D targets
during the third mid-term**

Submarine Resources

Ocean and Global Climate Changes

Seismogenic Zones

Marine Bioscience

International Ocean Discovery Program (IODP)

Cutting-Edge Integrated Information Science

**Development of Technologies to explore
the Ocean Frontier**



Main seven R&D targets during the third mid-term plan

During the third mid-term plan, JAMSTEC sets and addresses seven R&D issues with all its strength to promote strategic and focused R&D based on the national and societal needs.



Submarine Resources

The image shows a dark underwater scene with several vertical, mineral-rich structures, likely hydrothermal vents or seafloor deposits, illuminated by a light source from above.

Promotion of integrated ocean drilling science

The image shows a large white research vessel with a tall drilling rig structure on its deck, sailing on a blue sea under a clear sky.

Ocean and Global Climate Change

The image shows a white research vessel with a red funnel, sailing on a blue sea with white waves.

The cutting-edge integrated information science

The image shows a view of the Earth from space, with the blue and white clouds of the planet against the blackness of space.

Seismogenic Zone

The image shows a satellite-style map of the Earth's surface, highlighting a specific region with a blue and green color scheme, likely representing a seismogenic zone.

Marine Bioscience

The image shows a close-up view of a vibrant, green and blue underwater ecosystem, possibly a coral reef or a hydrothermal vent.

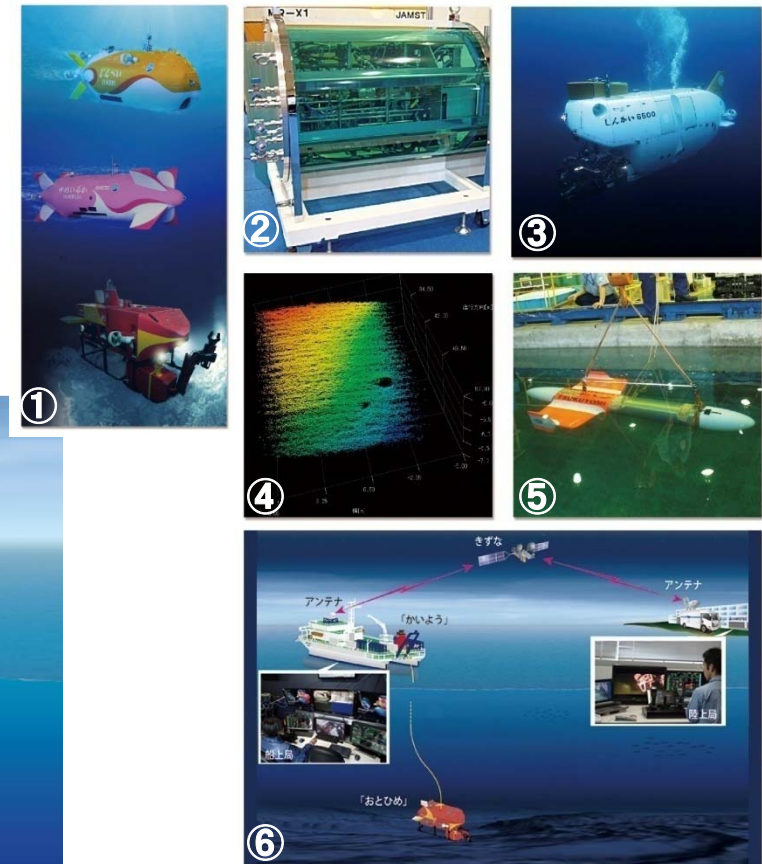
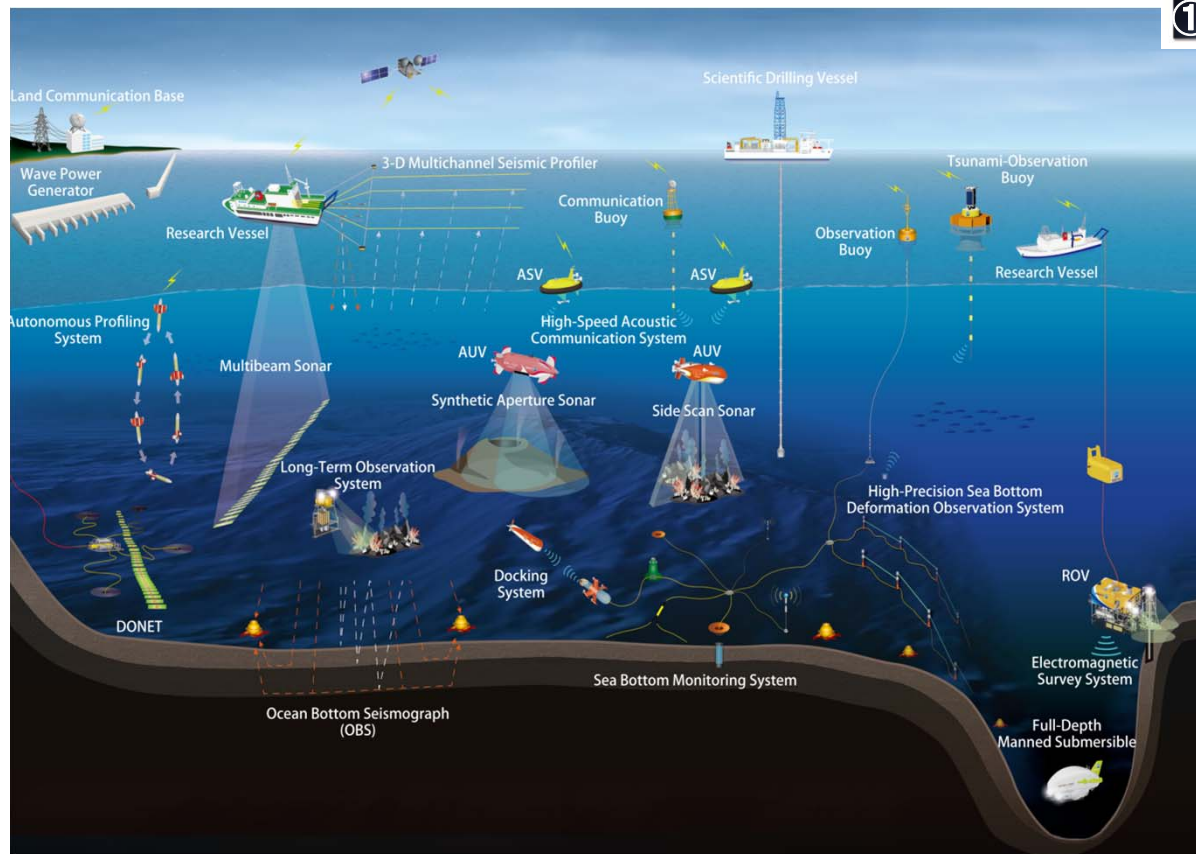
Construction of research base to explore the ocean frontier

The image shows a yellow and white research vessel with a large, complex structure on its deck, sailing on a blue sea.

Construction of a research and development base for opening up ocean frontiers

Opening up the future by technological development

Technology for the basis of national existence, and technology required for a total understanding of the vast ocean, are being developed from the aspects of both hardware and software. In order to promote this, we are developing fundamental technology to build an innovative research infrastructure for opening up unexplored domains, and doing basic research and development which would be instrumental to build new systems.



- ① Developing autonomous underwater vehicles (AUVs)
- ② New fuel cell systems for operation in the sea
- ③ Application technology for manned research submersibles
- ④ Acquisition of submarine surface 3D data by underwater laser scanning
- ⑤ Development of underwater gliders
- ⑥ Remote control technology of ROVs from land using a super high-speed Internet satellite



Research Vessels

GT: Gross tonnage

R/V NATSUSIMA

GT 1,739 t



Commissioned : 1981

R/V KAIYO

GT 3,350 t



Commissioned : 1985

R/V HAKUHOMARU

GT 3,991 t



Commissioned : 1990

R/V YOKOSUKA

GT 4,439 t



Commissioned : 1990

R/V MIRAI

GT 8,687 t



Commissioned : 1997

R/V KAIREI

GT 4,517 t



Commissioned : 1997

DN CHIKYU

GT 56,752 t



Commissioned : 2005

R/V SHINSEIMARU

GT 1,629 t



Commissioned : 2013

R/V KAIMEI

GT 5,800 t
(approx.)



Planned to be operated from 2016



Manned/Unmanned Underwater Vehicles

Deep Submergence Vehicle **Shinkai6500**



Max. Operation Depth : 6,500m

Shinkai2000(Retired)



Max. Operation Depth : 2,000m

AUV URASHIMA



Max. Operation Depth : 3,500m

AUV YUMEIRUKA



Max. Operation Depth : 3,000m

AUV JINBEI



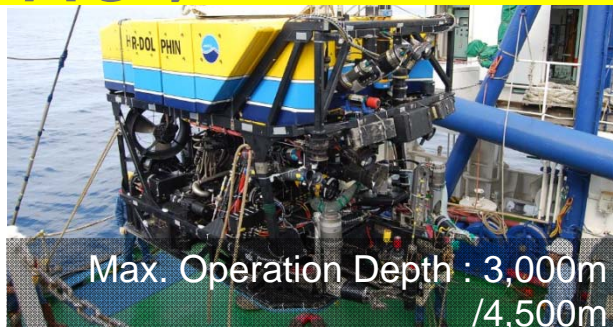
Max. Operation Depth : 3,000m

AUV OTOHIME



Max. Operation Depth : 3,000m

ROV HYPER-DOLPHIN



Max. Operation Depth : 3,000m / 4,500m

ROV KAIKO 7000 II



Max. Operation Depth : 7,000m

ROV KAIKO Mk-IV



Max. Operation Depth : 7,000m



Why we need International Cooperation ?

1) Cooperation on Cruise Operation

<Background>

- Decreasing Budget
- Increasing Operation Cost

➡ Difficulties of Long distance cruises

- ➡
- Berth Exchange
 - Cruise Exchange

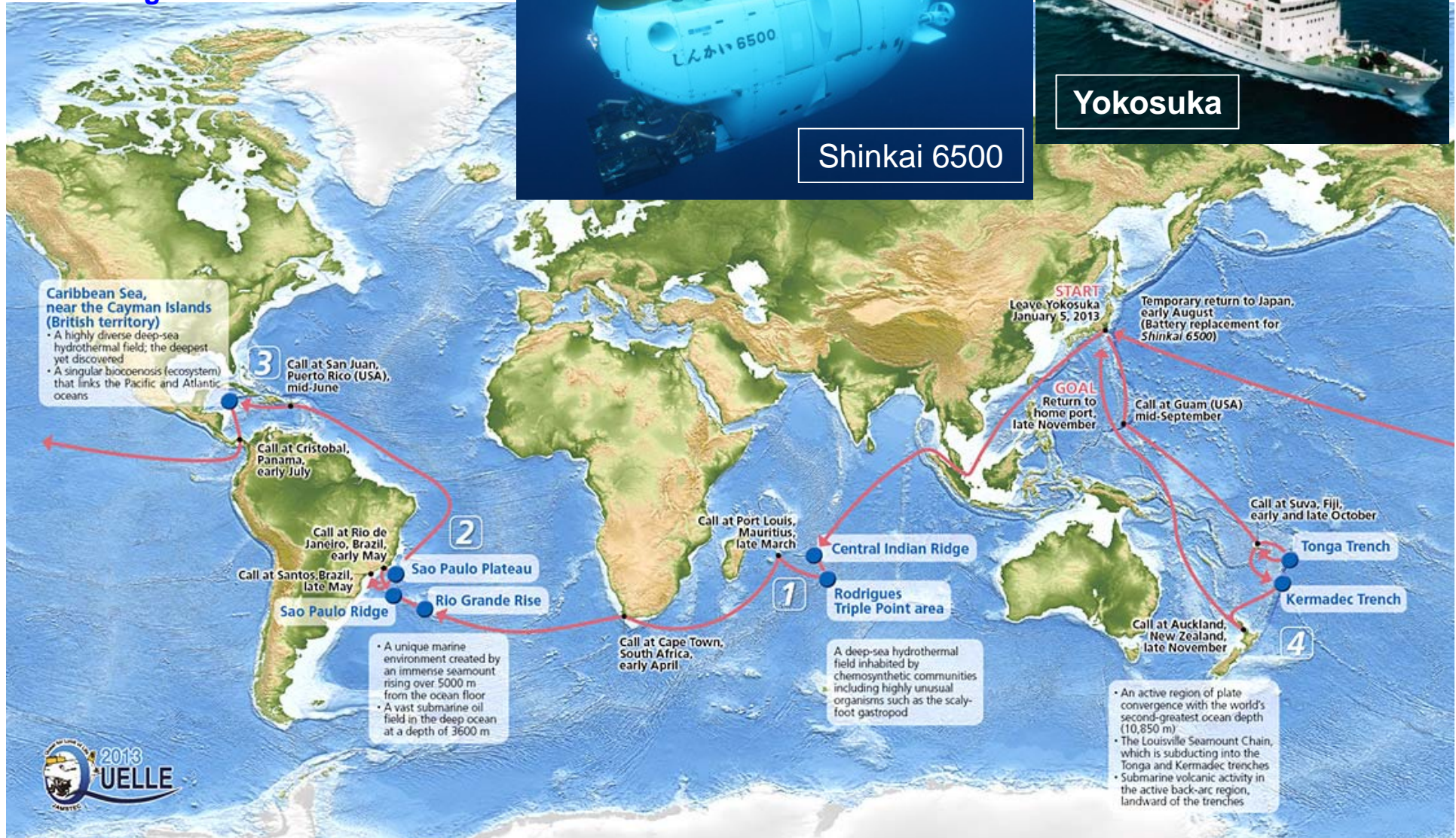


A Round-the-World Voyage "QUELLE 2013"

Quest for the Limit of Life

Jan. 2013 – Aug. 2013

Aug. 2013 – Nov. 2013





Why we need International Cooperation ?

2) Cooperation on Information Exchange System

<Background>

Increasing concern on marine environment protection

➔ Difficulties for addressing the coastal state regulations due to poor information

➔ Information Exchange System