

AN OVERVIEW OF KIOST



41 Years of History

October 30, 1973
Establishment of
KORDI under KIST

1970s



February, 1988
Establishment of
the Antarctic King Sejong
Station
- King George Island

1980s



June, 1990
Separation from KIST,
Re-established as
incorporated foundation

1990s

May, 1995
Establishment of
the Korea-China Joint
Ocean Research Center
- Qingdao, China

May, 1997
Establishment of
The South Sea Research
Institute (SSRI) - Geoje

May, 2000
Establishment of
The Pacific Ocean
Research Center
- Chuuk, FSM

January 1, 2001
Reshuffling of the
organization and
adoption of a new C.I.



2000s

April, 2002
Establishment of
the Arctic Dasan Station
- Svalbard

April, 2004
Establishment of
the Korea Polar
Research Institute
(KOPRI) - Incheon

June, 2008
Establishment of
the East Sea Research
Institute (ESRI) - Uljin

July 1, 2012
Re-launch of
KORDI as KIOST



November, 2012
Establishment of
the Korea-Peru Ocean
Science & Technology for
Latin America
- Lima, Peru

2010s

February, 2014
Establishment of
the Antarctic Jang Bogo
Station - Terra Nova Bay

April, 2014
Establishment of
the Korea Research Institute of
Ships & Engineering
(KRISO) - Daejeon

KIOST : from Coast to Coast



KOPRI
Incheon



KIOST HQs
Ansan



KRISO
Daejeon



Jeju Research Center
(open in 2015)



**Ulleungdo-Dokdo
Research Station**



East Sea Research Inst.
Uljin



South Sea Research Inst.
Geoje



KIOST : Overseas Centers

KIOST-PML Lab.
Plymouth, UK



**Korea-China Joint
Research Center**
Qingdao, China



KIOST-NOAA Lab.
Washington DC, USA



**Pacific Ocean
Research Center**
Chuuk, Micronesia

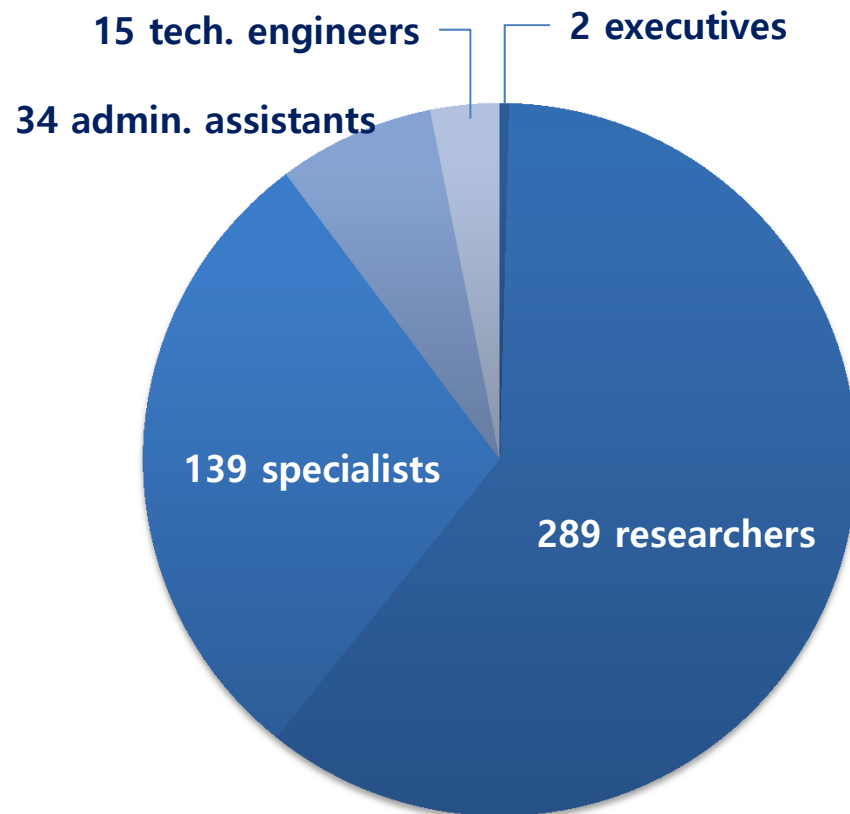


**Korea-Peru Joint
Ocean Research Center**
Lima, Peru

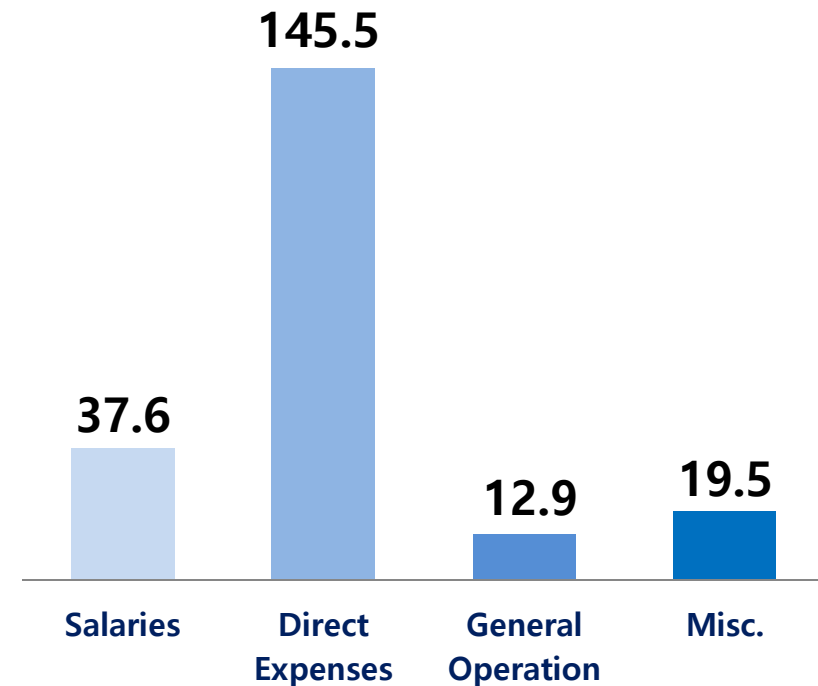
Personnel & Budget (2013)

479 permanent employees
556 full-time contractors

~US \$215.6 million



(million USD)

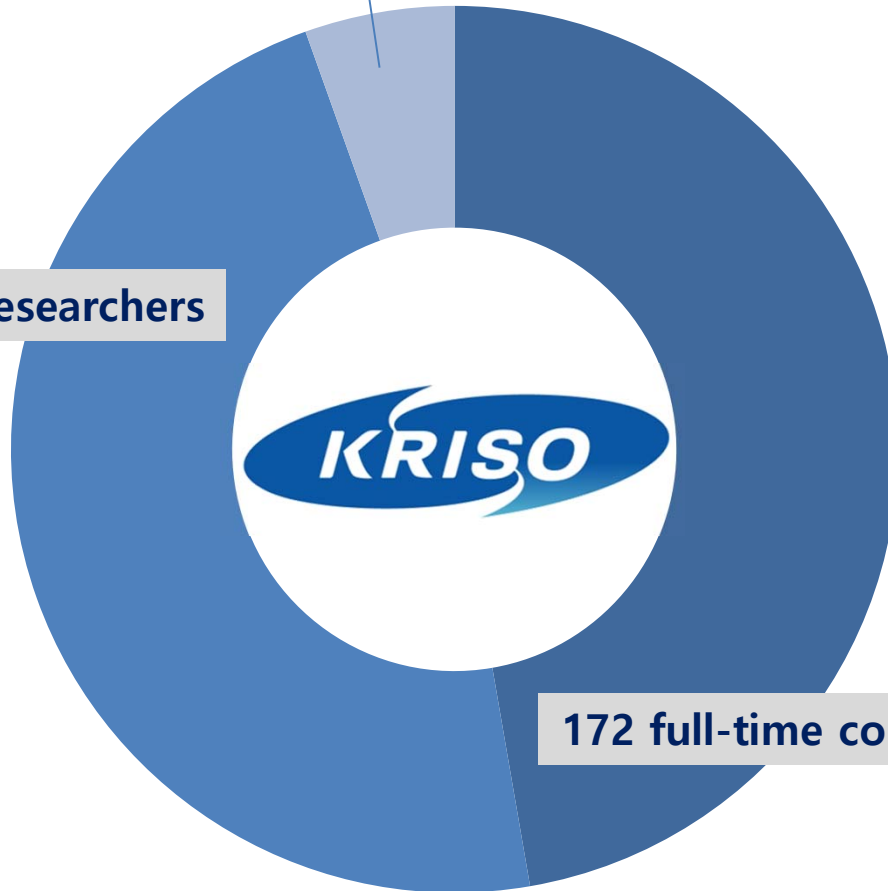


(KOPRI & KRISO not included)

KIOST Subsidiary : KRISO

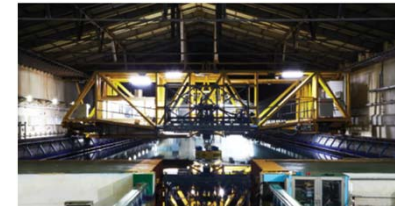
32 technicians/admin. assistants

104 researchers

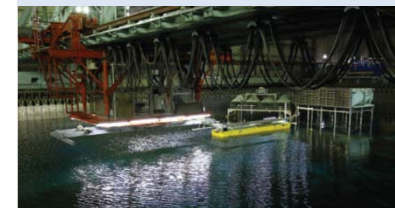


172 full-time contractors

Total : 308 employees (80 Ph.D.)
2014 Budget : US\$ 62.5 million



Towing Tank



Ocean Engineering Basin

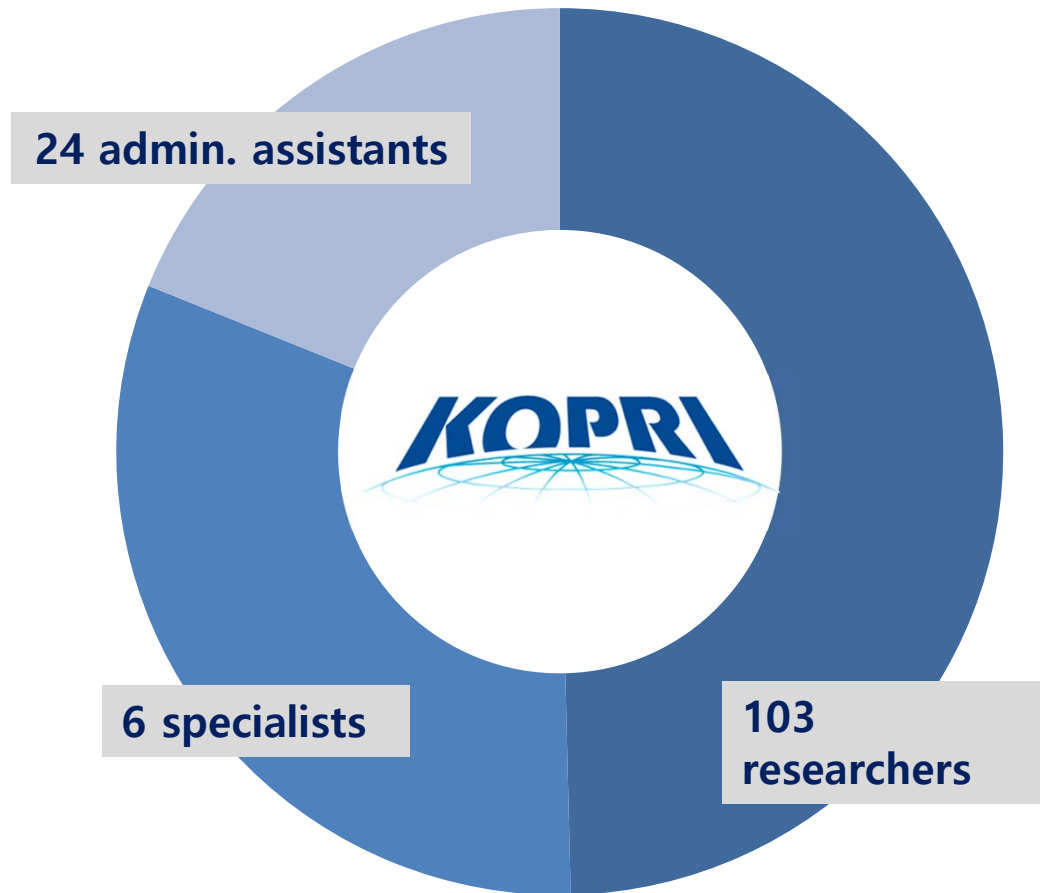


Bridge Simulator



Crabster CR200

KIOST Subsidiary : KOPRI



Total : 127 employees
2013 Budget : US\$ 29.2 million



Antarctic Jang Bogo Station
(Terra Nova Bay)



Antarctic King Sejong Station
(King George Island)



Arctic Dasan Station
(Svalbard)

KIOST Fleet



R/V Onnuri

Tonnage: 1,422 tons
Complement: 41 people



R/V Eardo

Tonnage: 546 tons
Complement: 32 people



Icebreaker R/V Araon

Tonnage: 6,950 tons
Complement: 60 people



R/V Jangmok 1

Tonnage: 41 tons
Complement: 15 people



R/V Jangmok 2

Tonnage: 35 tons
Complement: 12 people

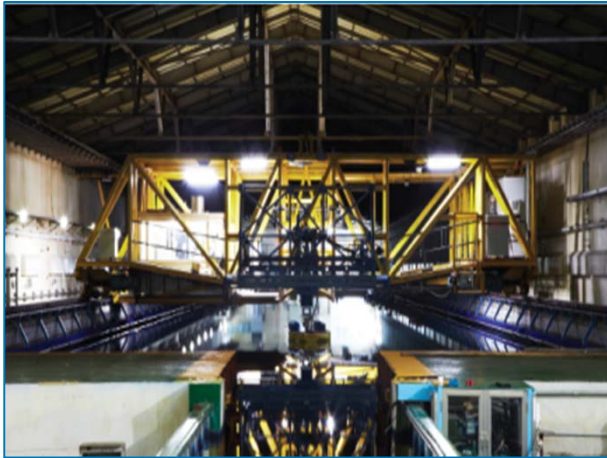
New 5,500T R/V (to be commissioned by 2015)



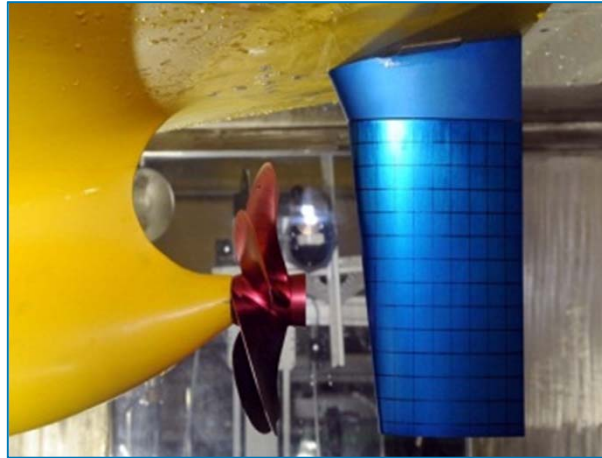
KNRV5000

**Tonnage: ~5,500 tons
Complement: 60 people**

Research Facilities & Instrumentations



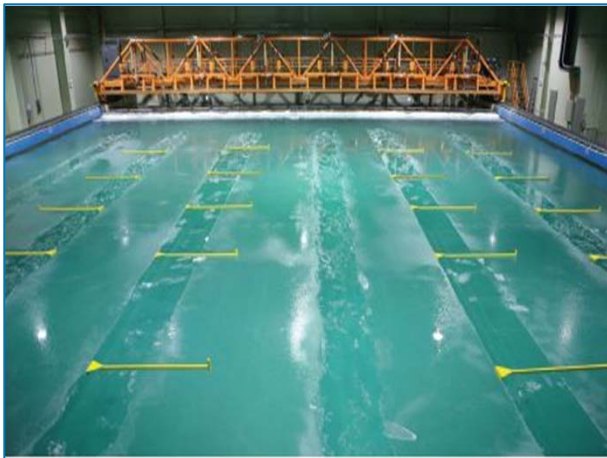
Towing Tank



Large Cavitation Tunnel



Ocean Engineering Basin



Ice Tank



FMB Simulator

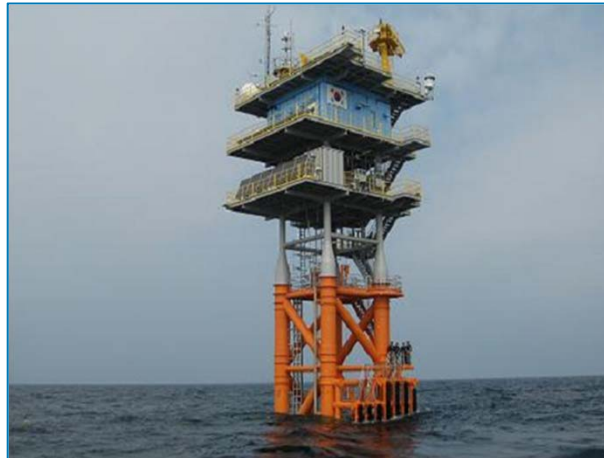


Hyperbaric Chamber

Research Facilities & Instrumentations



Jeodo Research Station



Gageocho Research Station



AUV *Isimi*



Multi-legged Robot *Crabster*



Mining Robot *MineRo*



ROV *Hemire*

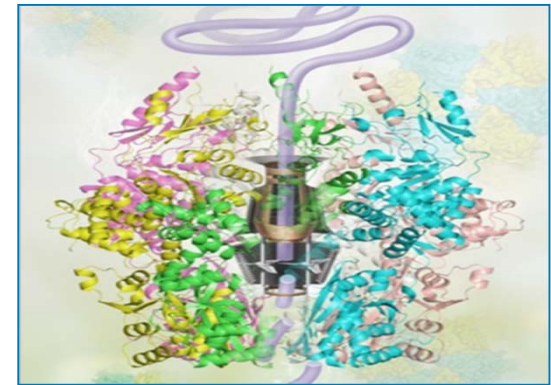
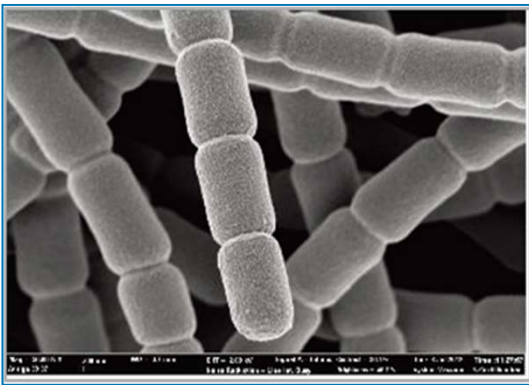
Ocean-Climate Change

- Monitoring and numerical modeling of ocean circulation in the marginal seas around Korea, the Pacific and Southern Ocean



Marine Biotechnology

- Bio-resources & Bio-informatics
- Extracting new bio-materials and bio-energy



- Microalgae for Biodiesel

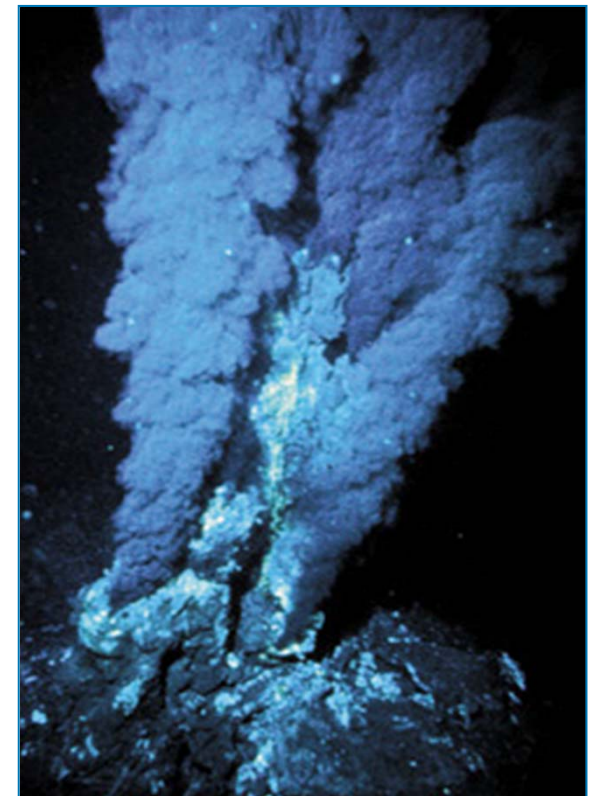


Pacific Ocean Research Center



Deep-sea & Seabed Resources

- Exploration & development of hydrothermal deposits, manganese nodules/crusts in the Indian Ocean, the Pacific (C-C Zone), and EEZs of Tonga & Fiji



Map of Exploration and Research for Deep-sea mineral resources by KIOST



Deep-sea & Seabed Resources

- Development of pilot mining robot,

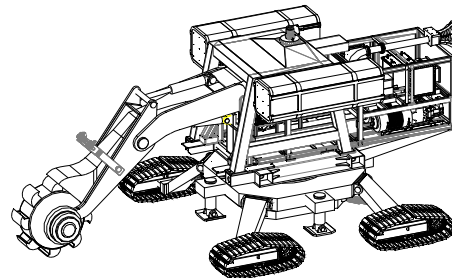
“ MineRo ”

- Pre-pilot mining tests in shallow water & deep-water (WD 1,370m)

- ❖ Nodule recovery performance test
- ❖ Seabed driving performance test
- ❖ Path tracking performance test

- Preparation of pilot mining test

- ❖ Construction & manufacturing of buffer, lifting pump and flexible hose



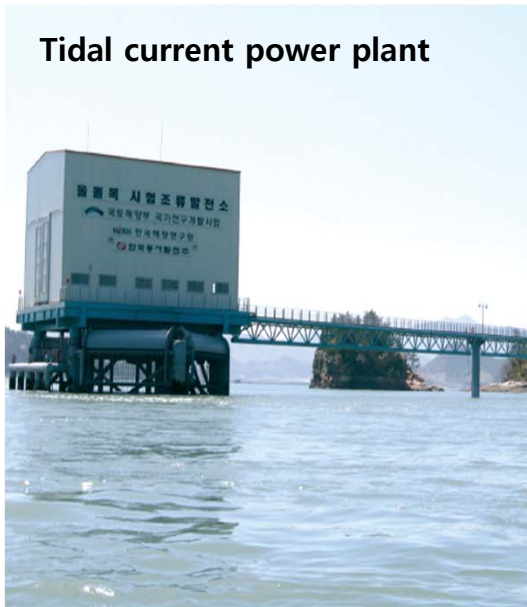
Marine Renewable Energy

- Tidal/current power
- Wave power
- Offshore wind farm
- OTEC, etc.

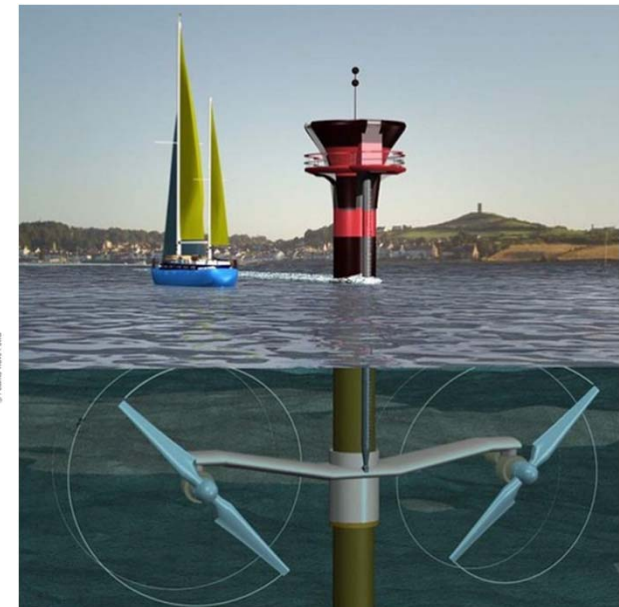
Shiwha tidal power plant



Tidal current power plant



Wave power plant

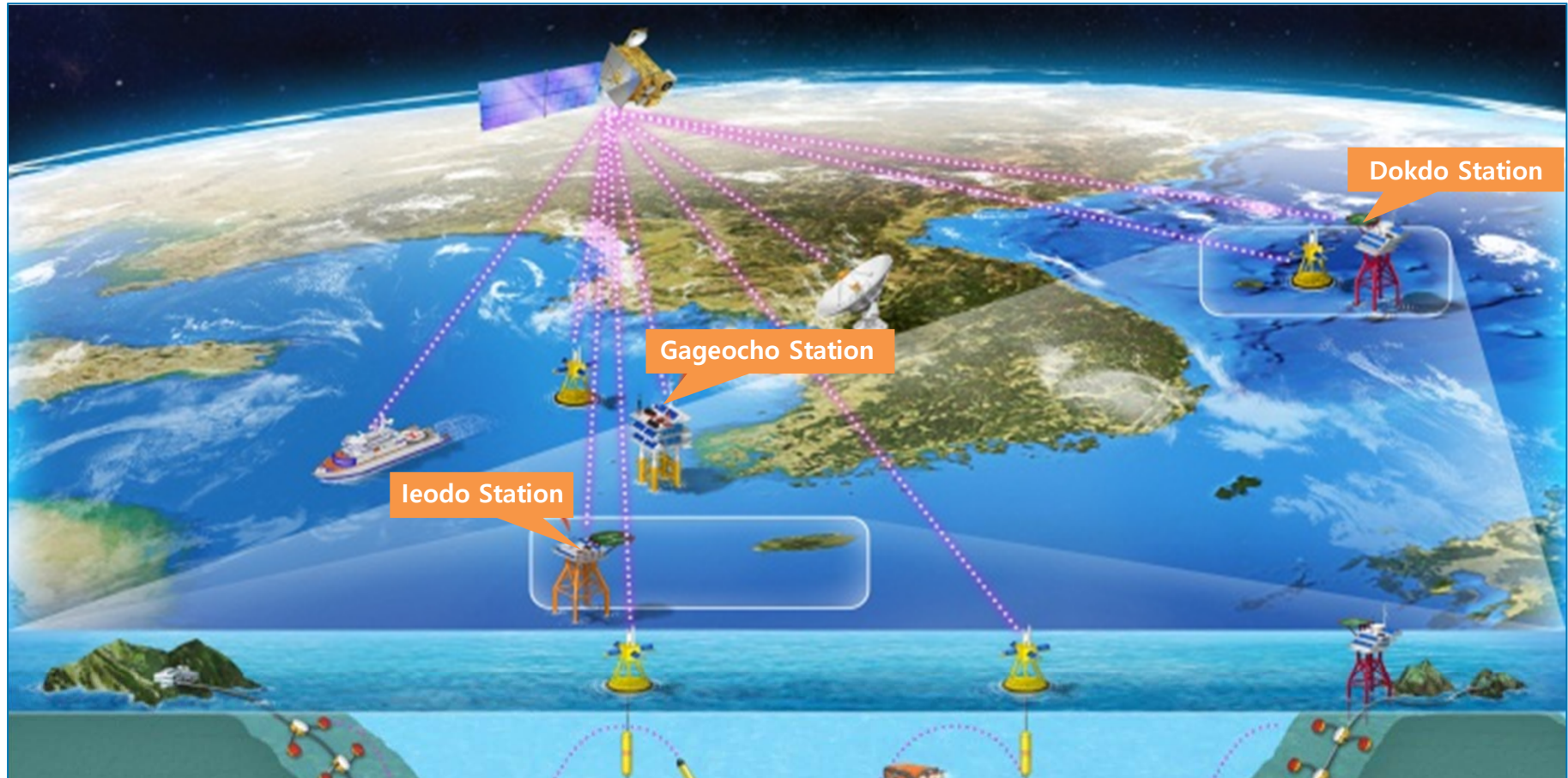


Coastal Development

- Smart harbor & artificial island
- Marine spatial planning
- Safe waterfront & coastal erosion
- Prediction of coastal hazards



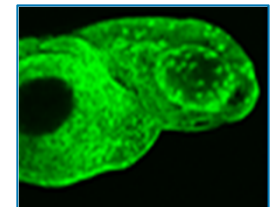
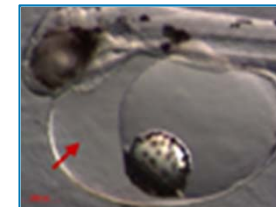
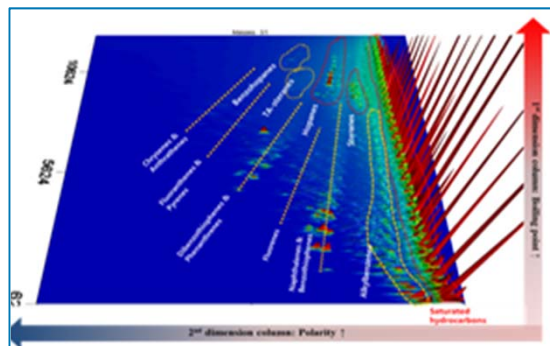
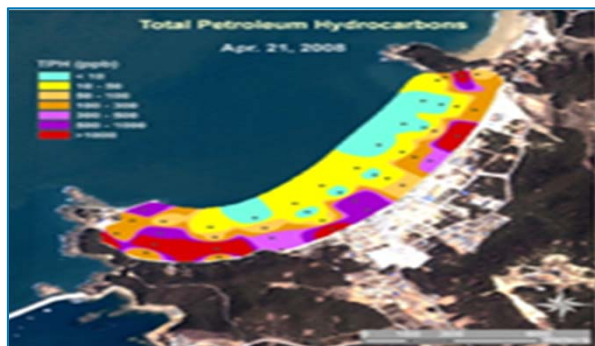
Korea Ocean Observation System

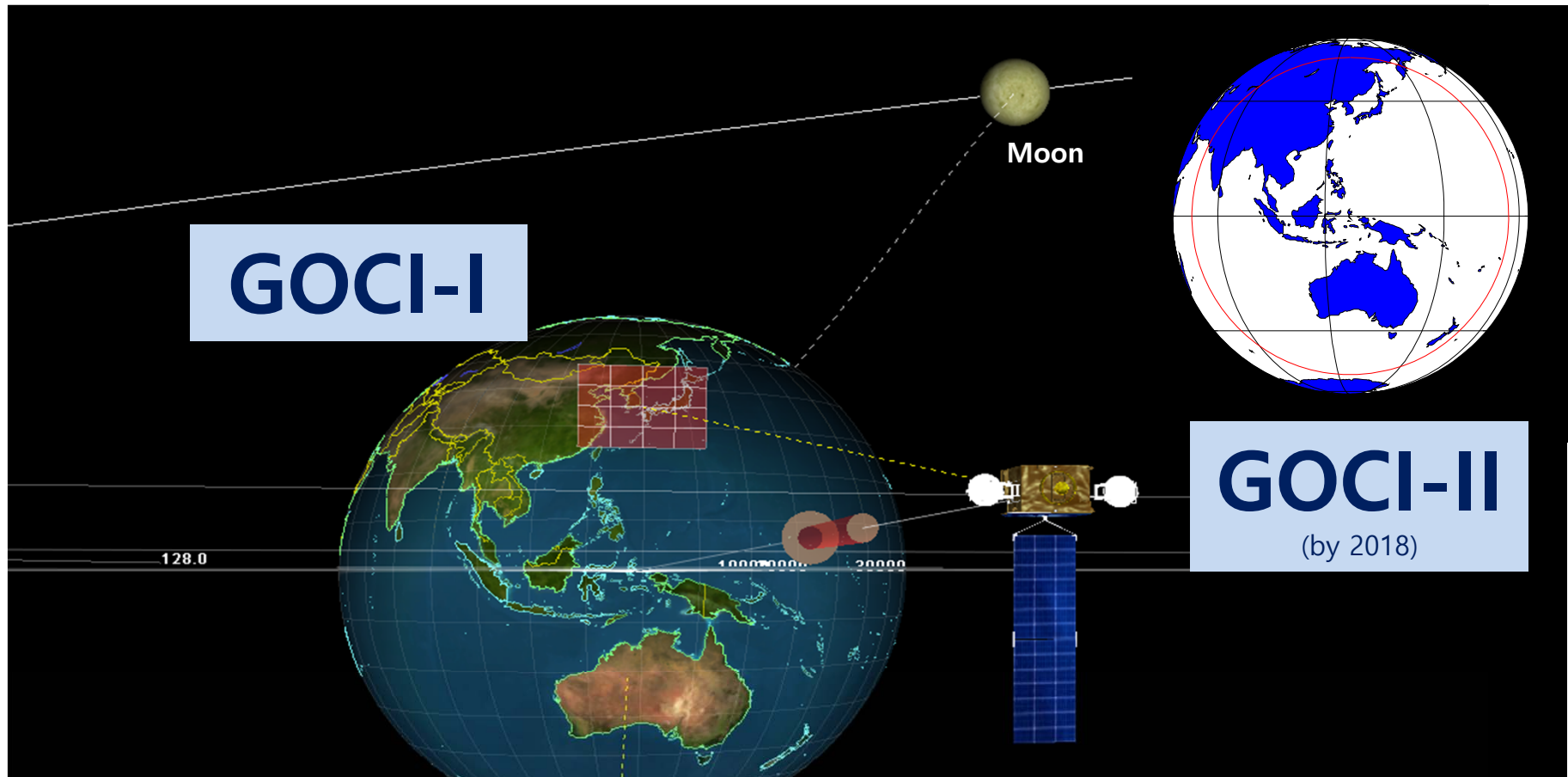


- KOOS provides nowcasts and forecasts of sea status to prevent coastal hazards and coastal disasters

Marine Environment Conservation

- Assessment of the impact of marine pollutants & debris
- Response to oil, hazardous & noxious substance (HNS) spills
- Marine Ecosystem Health Index

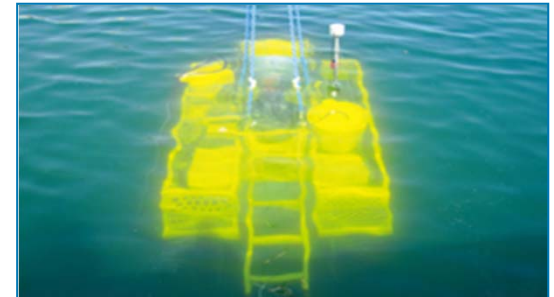




- Monitoring of coastal waters by observing ocean color from a geostationary orbit

Ships, Offshore Plants, Robots, etc.

- Smart ships
- Offshore plants
- Underwater robots
- Unmanned/manned deep-sea submersible vehicles



Underwater construction vehicle



Artificial intelligent robot

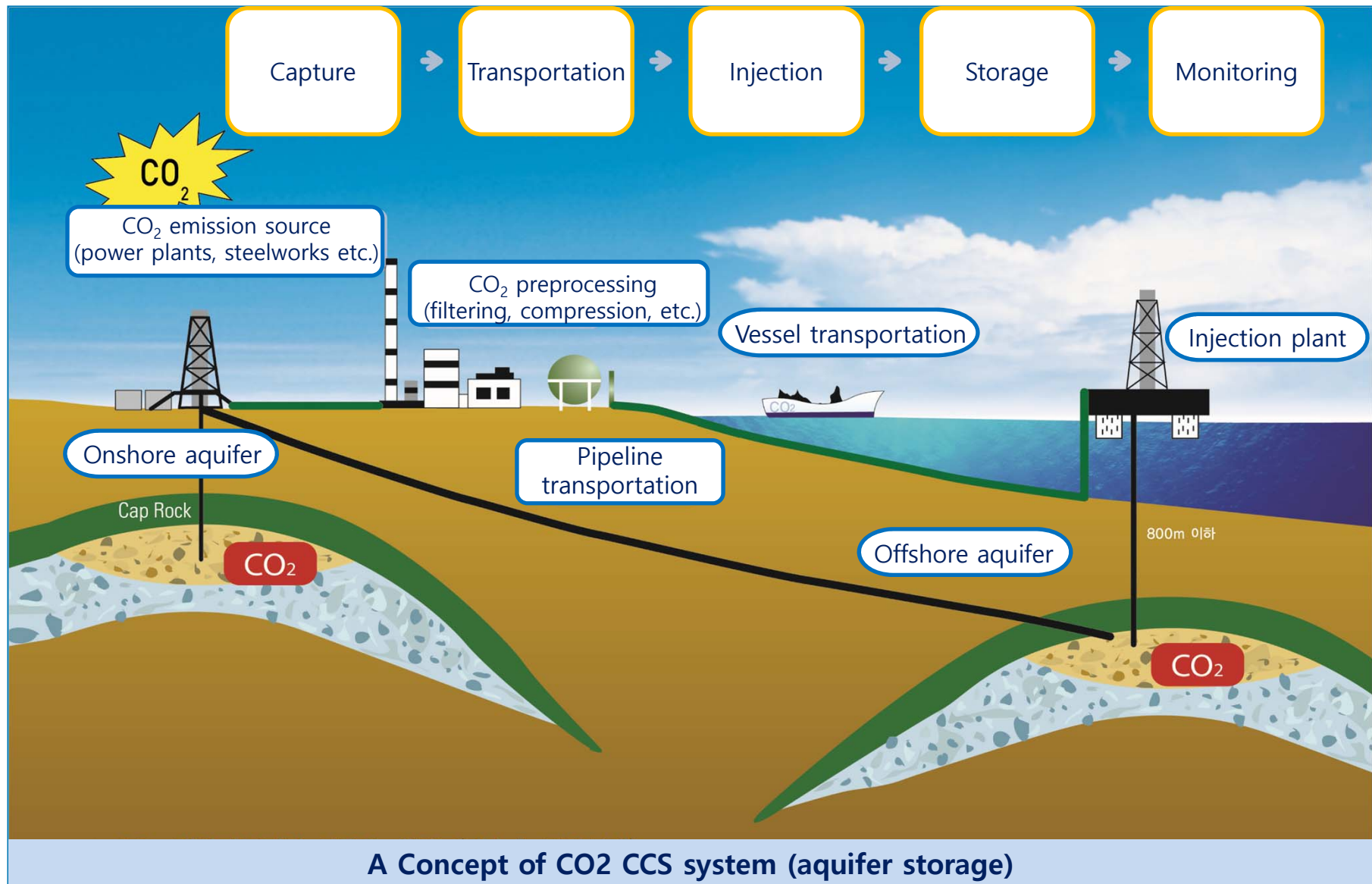


Multi-legged robot

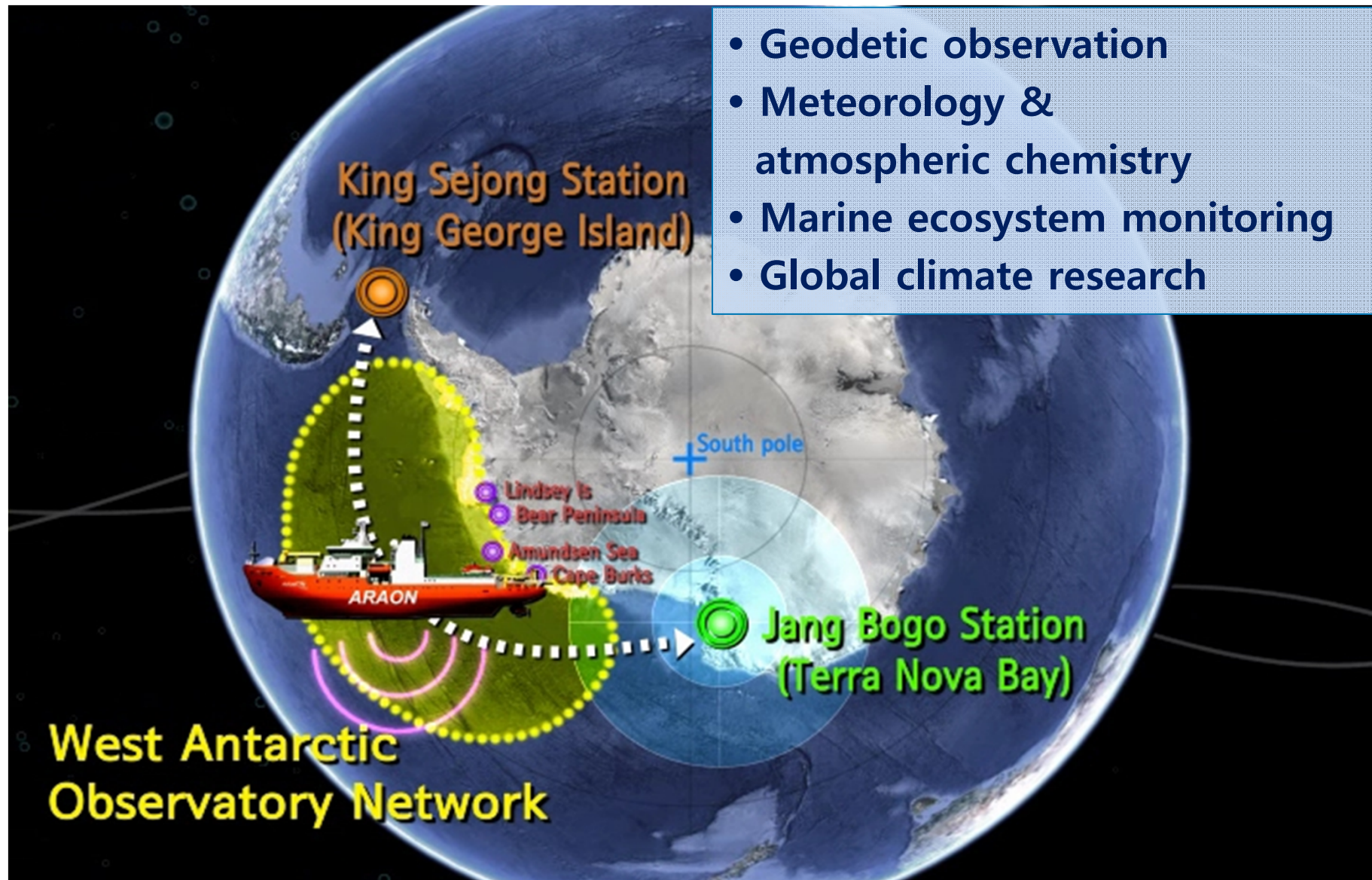


Underwater wireless communication

Carbon Capture and Storage (CCS)



Antarctic/Arctic Stations



An aerial photograph of the research vessel Araon, a red-hulled ship with a white superstructure, sailing on a dark blue sea. The ship is viewed from an elevated rear-quarter perspective. In the background, a vast, flat, white ice shelf stretches across the horizon under a clear sky. The text 'Thank you' is overlaid in the upper left quadrant in a large, white, sans-serif font with a blue outline.

Thank you

감사합니다
(gamsahamnida)