

Introduction to Korean Ocean Research Stations (KORSs) of the Korea Hydrographic and Oceanographic Agency

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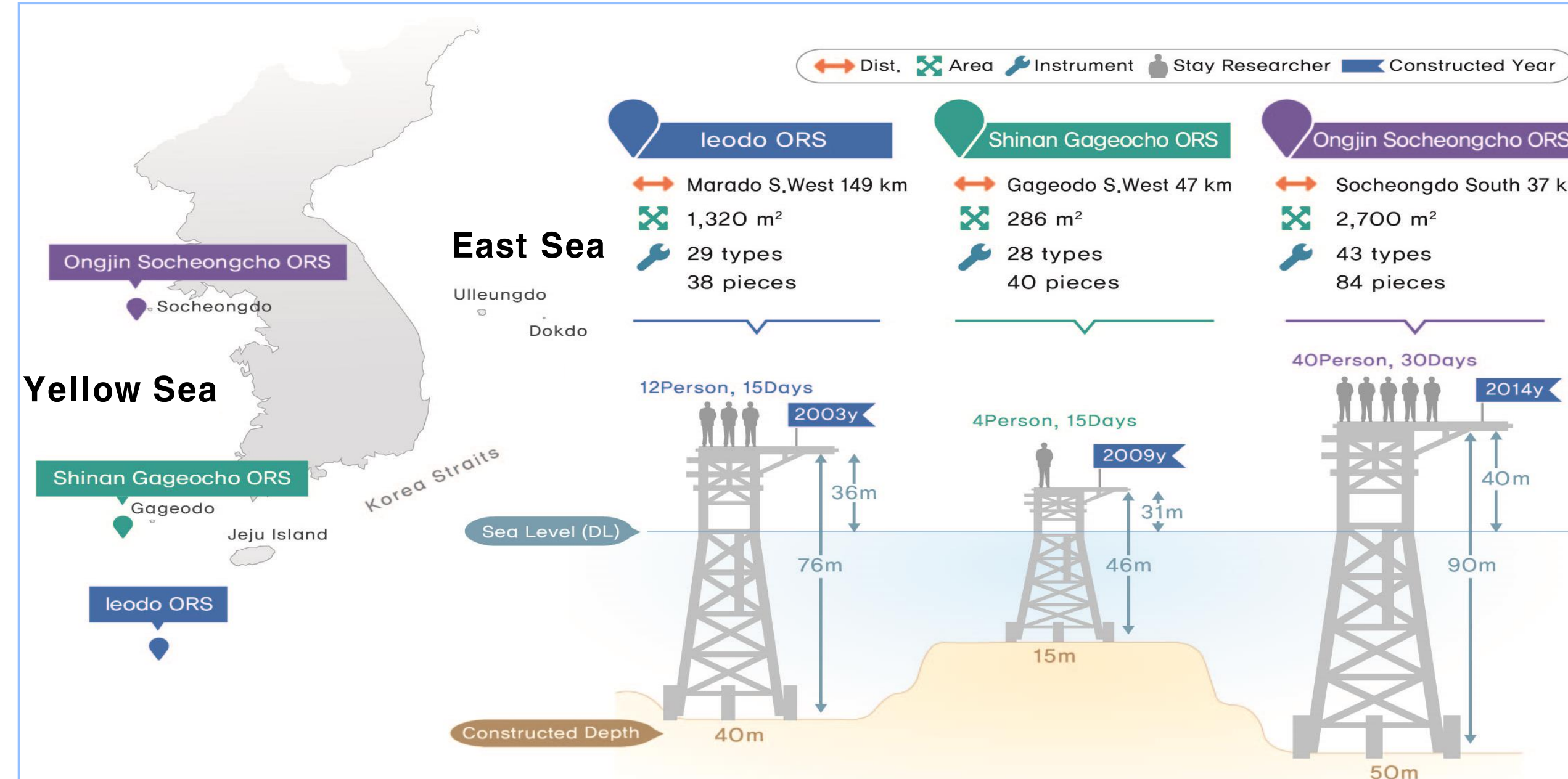


Introduction

The Korean Ocean Research Stations (KORSs) of the Ieodo, Shinan Gageocho and Ongjin Socheongcho were constructed in 2003, 2009 and 2014, respectively, which are located in the open seas including jurisdictional sea areas of Korea, and are used to conduct oceanographic, meteorological and environmental observations.

The Ieodo Ocean Research Station (IORS) is situated on submarine rock called Ieodo in the East China Sea. The Korea Hydrographic and Oceanographic Agency (KHOA) has been running these KORSs after taking over control of IORS from the Korea Institute of Ocean Science and Technology (KIOST) in 2007, followed by the Gageocho and Socheongcho Stations in 2016. The KHOA has been conducting a program of "IORS field trip" since 2014 in order to further enhance it to be an international observation station and being made to conduct field trips at the Shinan Gageocho and Ongjin Socheongcho ORSs.

Korean Ocean Research Stations (KORSs) Location



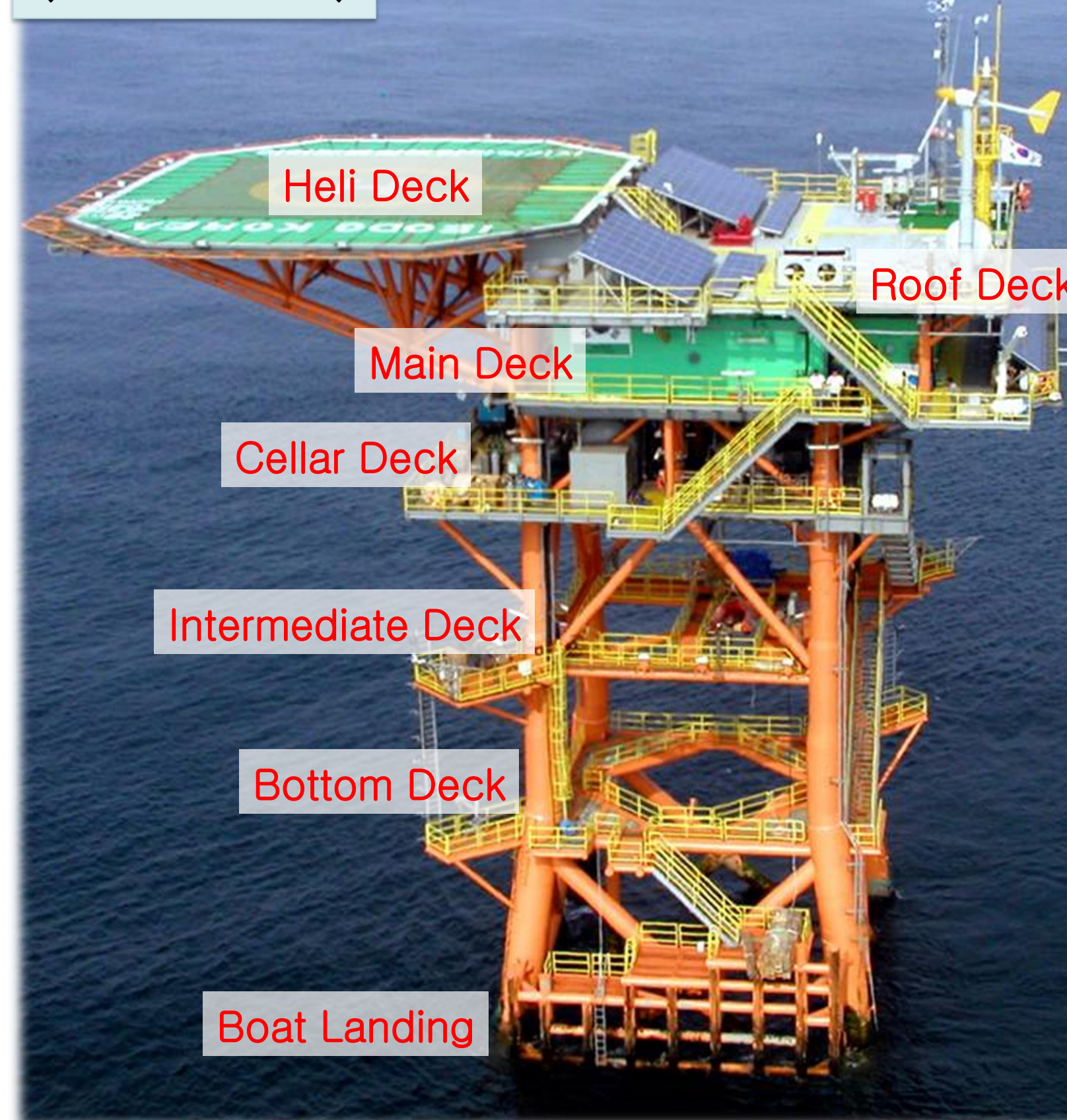
International Co-operation

NEAR-GOOS	AERONET-OC	GOA-ON	OceanSITES	DBCP	BSRN
North - East Asian Regional Global Ocean Observing System	Aerosol Robotic Network	Global Acidification Observing Network	Ocean Observation Network	Data Buoy cooperation panel	Baseline Surface Radiation Network
Object of Observation					
Marine and Marine Meteorology	Sea Surface and Atmospheric radiation	Sea Water Acidity (pH)	Long Term Observation of Marine and Marine Meteorology	Marine and Marine Meteorology	Solar Radiation
Promotion Status					
Participating	Participating (Ieodo, Ongjin Socheongcho)	Preparing Participation	Participating (Ieodo, Ongjin Socheongcho)	Preparing Participation	Preparing Participation
KHOA	KIOST	KHOA KIOST	KHOA KIOST	KHOA	KHOA

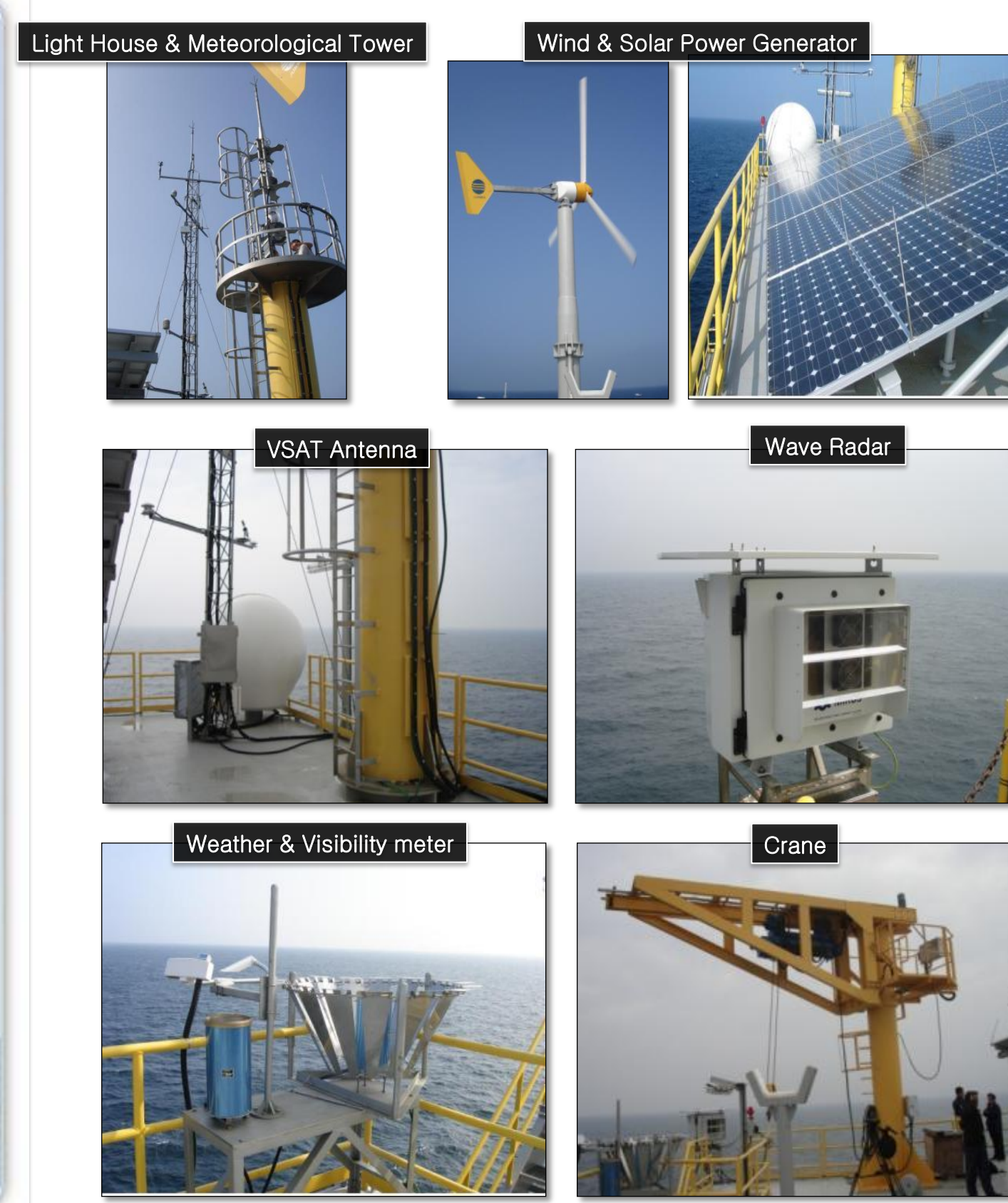
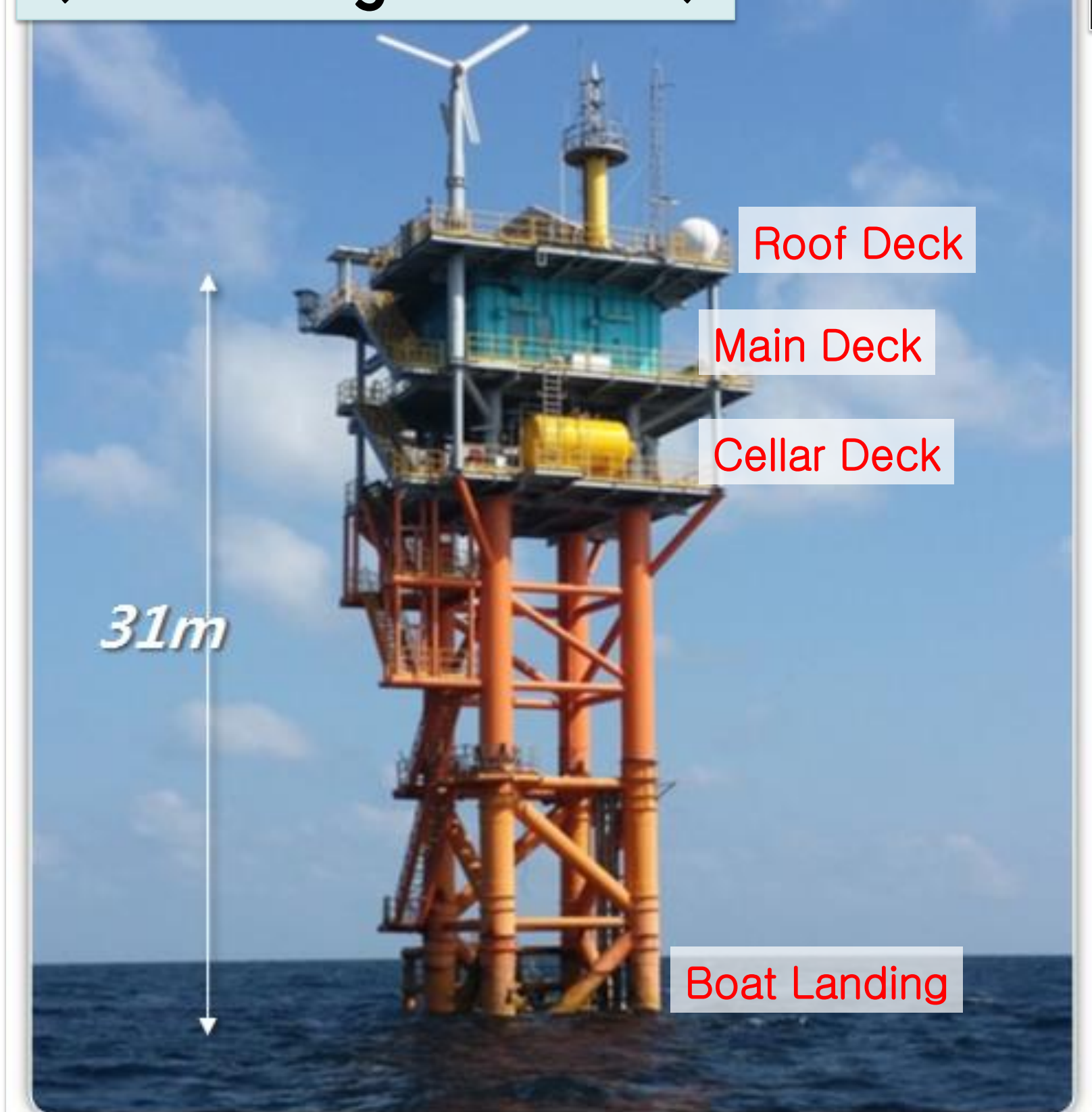
Please feel free to contact us if you have any question or request on research or collaborative research using our KORSs.

KORSs present condition and instruments

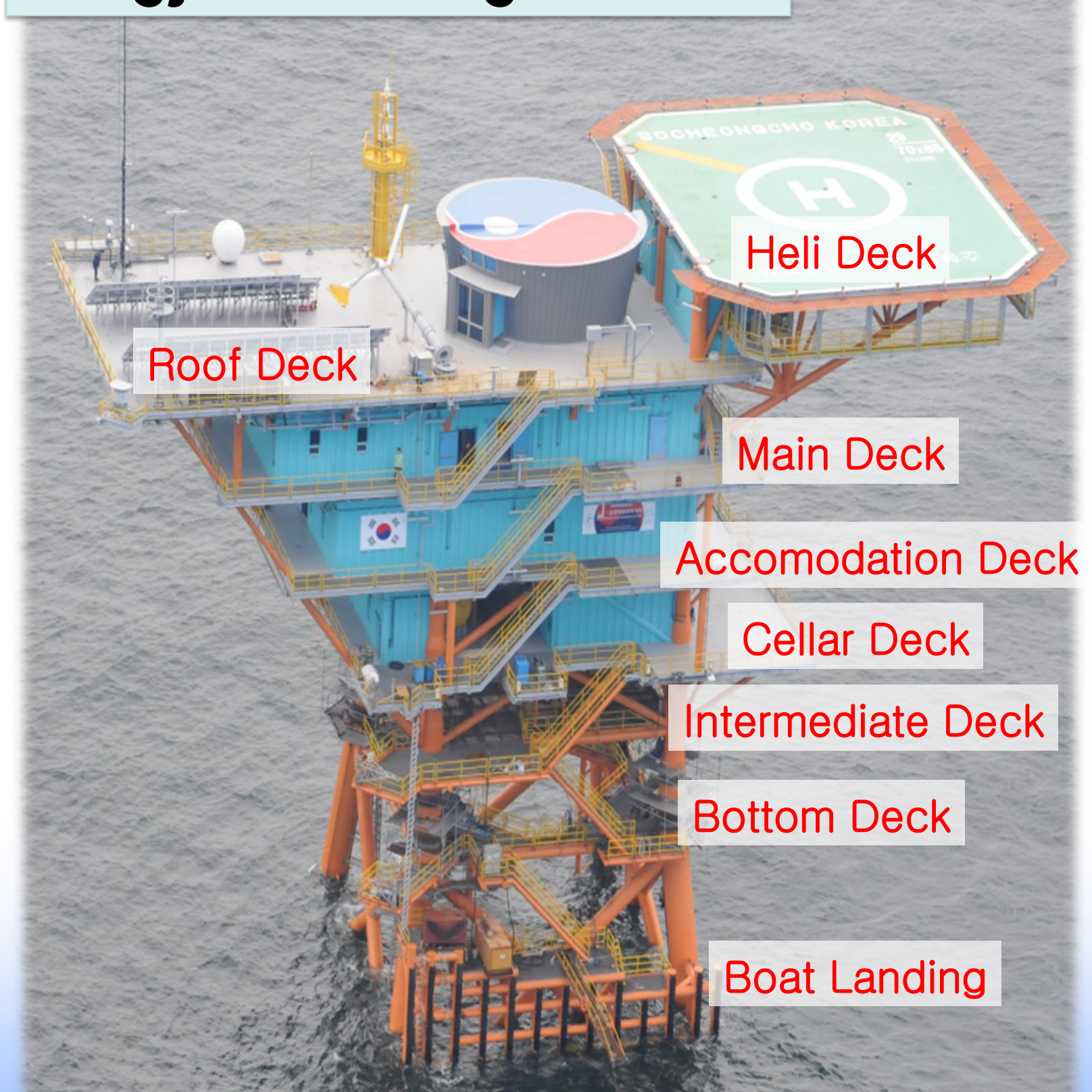
<Ieodo ORS>



<Shinan Gageocho ORS>



<Ongjin Socheongcho ORS>



Field trip at Ieodo ORS

Ieodo ORS entry procedure



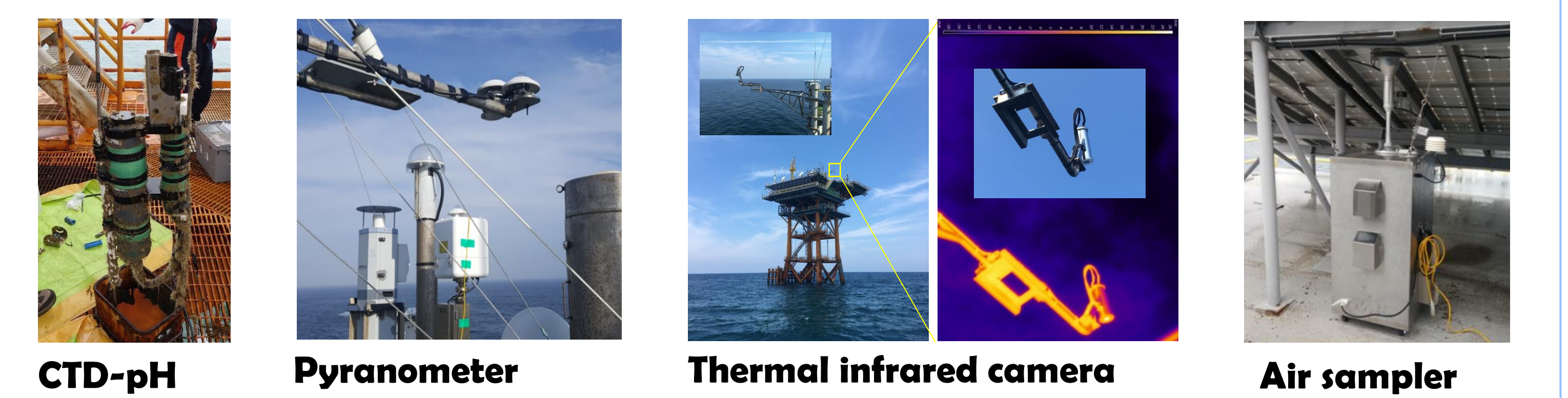
Living facilities (Main Deck)



Field research activities (Intermediate & Bottom Decks)



- Verification observation of thermal infrared based SST observation data for time-series sea surface temperature extraction
- Environmental improvement of the IORS's radiation observatory
- Temporal variations in elemental concentration in aerosols (PM_{10-2.5}) at IORS
- Monitoring ocean acidification around IORS
- Change in mixed layer depth
- Wave observation and application technology development using CCTV
- Phytoplankton diversity and productivity of Ieodo area
- Analysis on the marine ecosystem structure using Marine floating animals and eDNA in seawater
- Calibration of the GOCI ocean color satellite using AERONET-OC
- Marine biological resources around IORS



Summary

- The Korea Hydrographic and Oceanographic Agency (KHOA) has been operating three Ocean Research Stations (i.e., Ieodo (2007), Shinan Gageocho (2016) and Ongjin Socheongcho (2016)).
- There are many types of marine, meteorological and environmental monitoring instruments installed.
 - Ieodo ORS has 29 types 38 pieces, Shinan Gageocho has 28 types 40 pieces and Ongjin Socheongcho has 43 types 84 pieces instruments.
 - Observed data from KORSs are provided in real-time via Korea Real-time Database for NEAR-GOOS (http://www.khoa.go.kr/koofs/eng/observation/obs_real.do)
- The KHOA has been conducting field trip projects since 2014.
 - Being conducted 12 Projects in 2016, 13 Projects in 2017 and 11 projects in 2018
- The KORSs were newly included into OceanSITES as a shallow water pilot observatory in Aug. 31, 2018. The KHOA ultimately aims to establish these three stations as global scientific stations through a variety of academic research.