

Updates of Japan's Arctic Research Vessel "MIRAI II"



Japan Agency for Marine-Earth Science and Technology
Mitsui O.S.K. Lines, Ltd.

Main Specifications

- ✓ Shipowner: **JAMSTEC**
- ✓ Builder: Japan Marine United (JMU)
- ✓ Construction Supervisor /Expected Operator: **Mitsui O.S.K. Lines (MOL)**
- ✓ Preparation for research observation support/Expected research observation supporter: Marine Works Japan (MWJ)

Specifications	
Length	128m
Beam	23m
Depth	12.5m
Draft	8.0m
Gross tonnage	13,000 tons

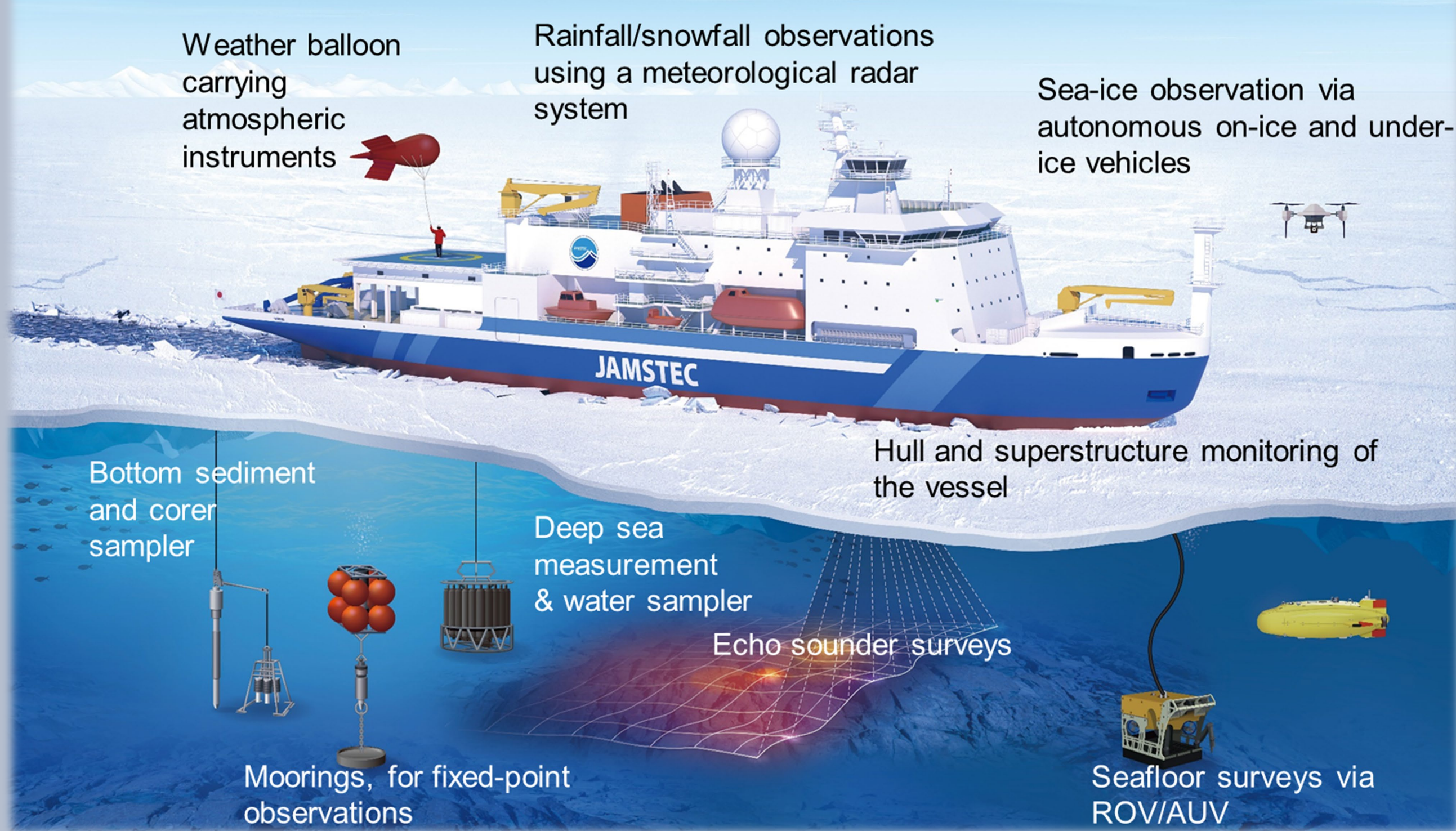
International Workshop on Arctic Ocean Observation

- ✓ The first International Workshop on Arctic Ocean Observation was held in Tokyo on 17 - 18 November 2023.
- ✓ A total of **118 participants from 12 countries** (Canada, China, Denmark, France, Germany, India, Korea, Norway, Portugal, UK, USA, and Japan) attended the two-day workshop with 42 participants from overseas organizations.



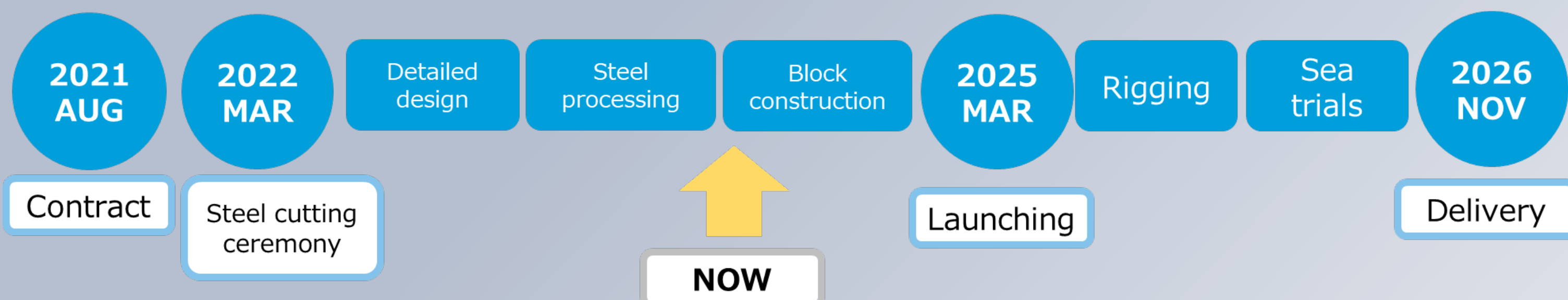
Functions and Facilities

All-round observation and research functions in various sea areas including sea ice areas



Timeline

- ✓ Construction is currently underway for completion in 2026.

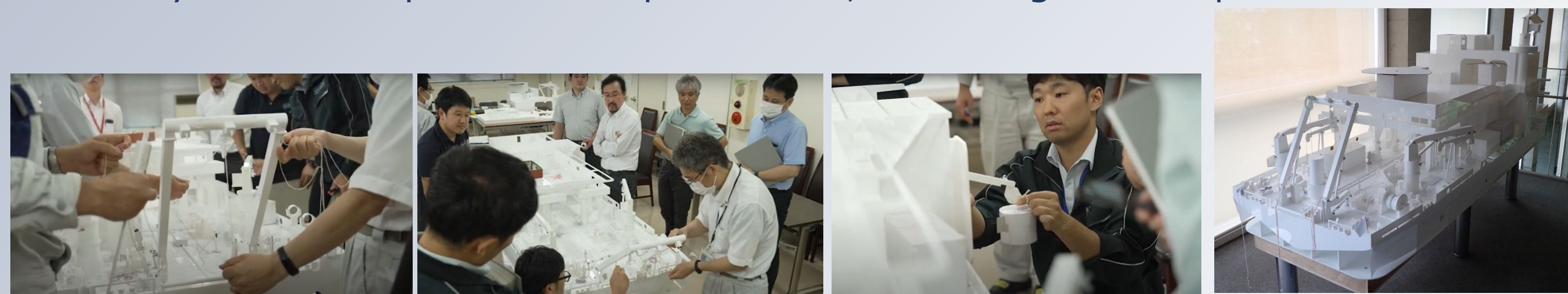


- ✓ Construction dock at JMU Isogo works in August 2026.



Study Using Mock-up Model

- ✓ 1/25th scale acrylic resin model of the ship's observation deck and other observation facilities were used to check whether there were any defects or points for improvement, assuming actual operation.



International Cooperation

- ✓ To operate "MIRAI II" as an international research platform, we are committed to international research projects and fostering domestic and foreign early-career scientists.

1st International Workshop on Arctic Ocean Observation

- Call for early-career scientists' proposals for the MIRAI research cruise
13 early-career scientists on board from Japan, USA, UK, Denmark, Norway and Portugal

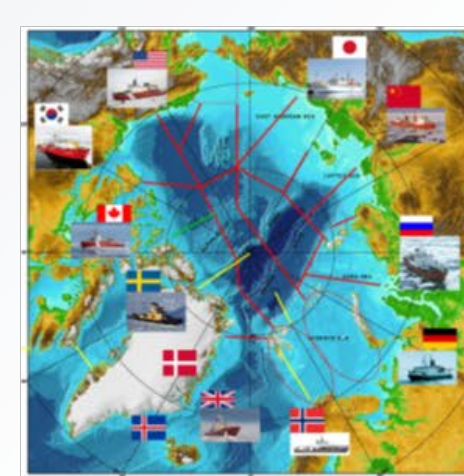
- Took over the secretariat of the Synoptic Arctic Survey (SAS)

- New Arctic research projects using MIRAI and MIRAI II scheduled to start from 2025

2nd International Workshop on Arctic Ocean Observation in 2025

- Bid and host ASSW 2027 at Hakodate

- International Conferences
- Research Observation



The 2nd International Workshop on Arctic Ocean Observation in 2025

- ✓ Involving various stakeholders in icebreaking research vessel operations
- ✓ There will be an agenda item on operations in the polar regions.
- ✓ For more details, please contact JAMSTEC.

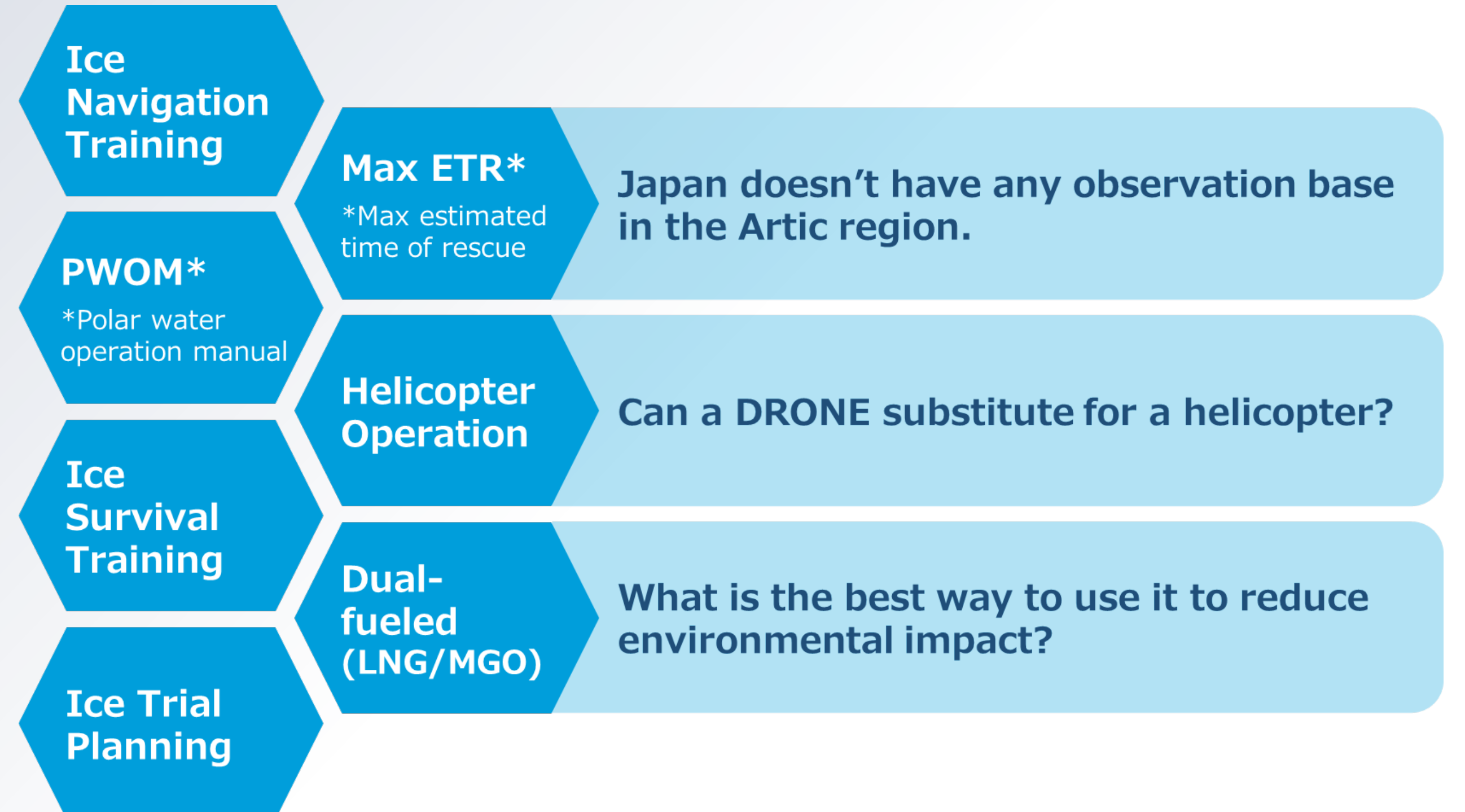
The 2nd international workshop is planned for 27th October or 1st November next year!



Operation Preparation

- ① **Crew Training**
 - ✓ Dispatch of captains and officers to cable ships and a research vessel for familiarization with offshore operations & Dynamic Positioning System and accumulation of observation operation know-how.
- ② **Visiting Research Vessels**
 - ✓ Learning about operations, equipment and best practices.
 - ✓ Enormous cooperation by various ship operators and owners enabled the visits.

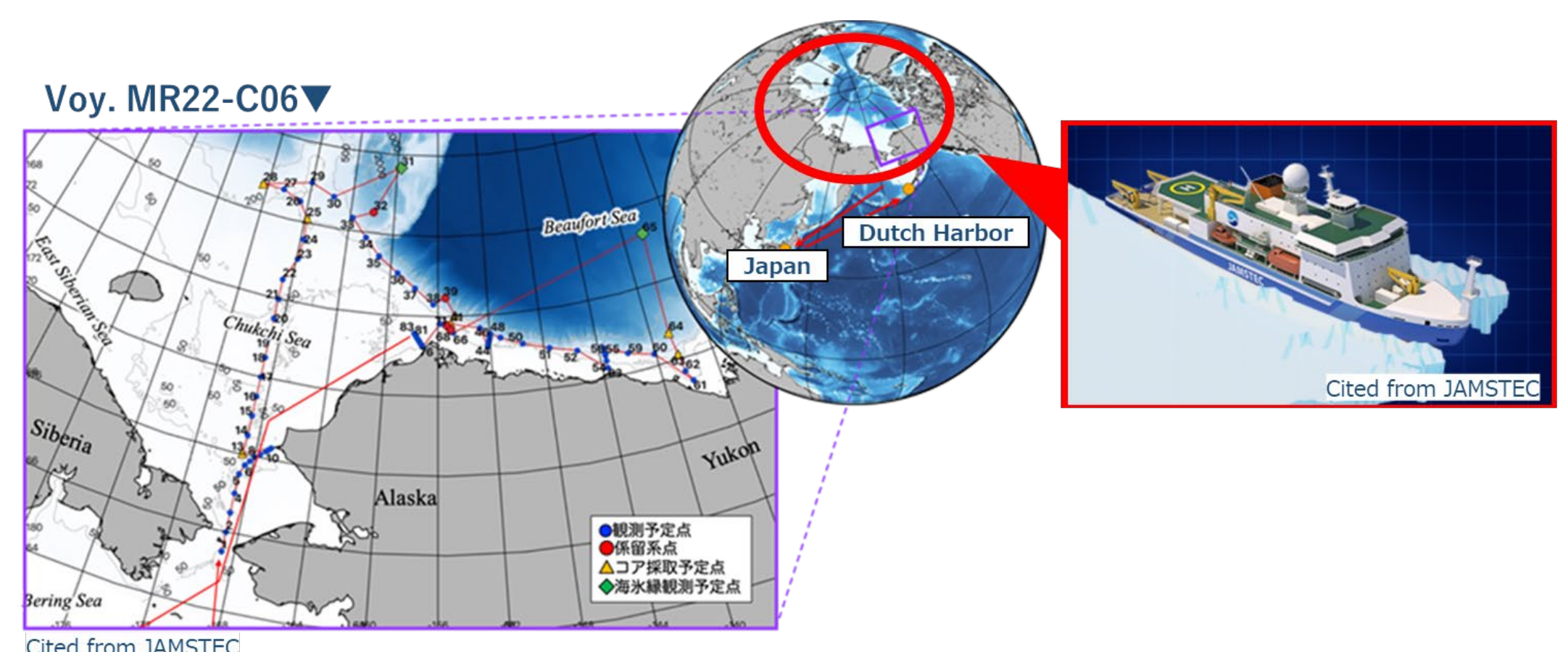
Issues under Consideration on the Operation



Beyond "MIRAI" as the Successor

- ✓ Icebreaking capacity: Observation in a wider range of Arctic waters
- ✓ Environmental performance: Dual-fuel generator reduces environmental impact.
- ✓ Ice resistance: PC4 hull enables observation in ice.
- ✓ Equipment: ROV, Helicopter, DPS enabling a wide range of observations.

>"MIRAI II" is expected to be more efficient and environment friendly!



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