



Tan Kah Kee, the new RV of Xiamen Univ. China



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Marine Operations, Xiamen University

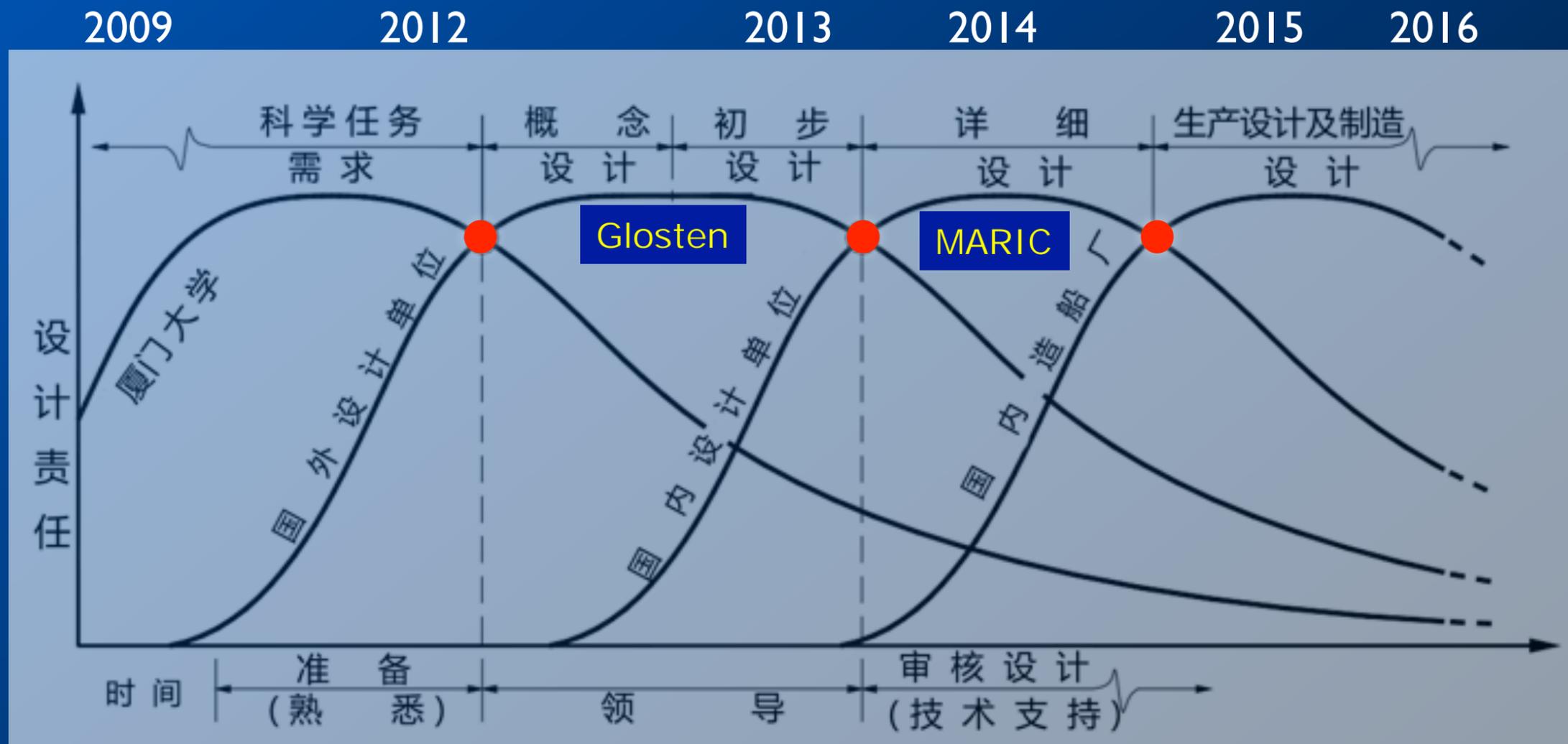
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<http://ships.xmu.edu.cn>

Overall vision – a highly capable RV

- Range: global, all non-ice covered area
- Highly flexible deck & lab arrangements for science missions
- "Hands-free" overboard (at least CTD) load and handling system
- Chemically & biologically clean, lab & sampling
- Outstanding seakeeping and station keeping capabilities
- Suite of acoustic systems for ocean bottom and sediment mapping
- Multi-parameter underway survey, integrated information system, and good internet connection to land
- Reasonably quiet, acoustically
- Ready to support new generation of autonomous platforms

Timeline



- Mar. 2015, Plate-cutting
- Nov. 2015, Keel laying
- May 2016, Launching
- Apr. 2017 Delivery

Preliminary: The **Glosten** Inc. (Seattle)

Detailed: MARIC, MArine design & Research Institute of China (Shanghai)

Building: Guangzhou Shipyard International Ltd. (Guangzhou)

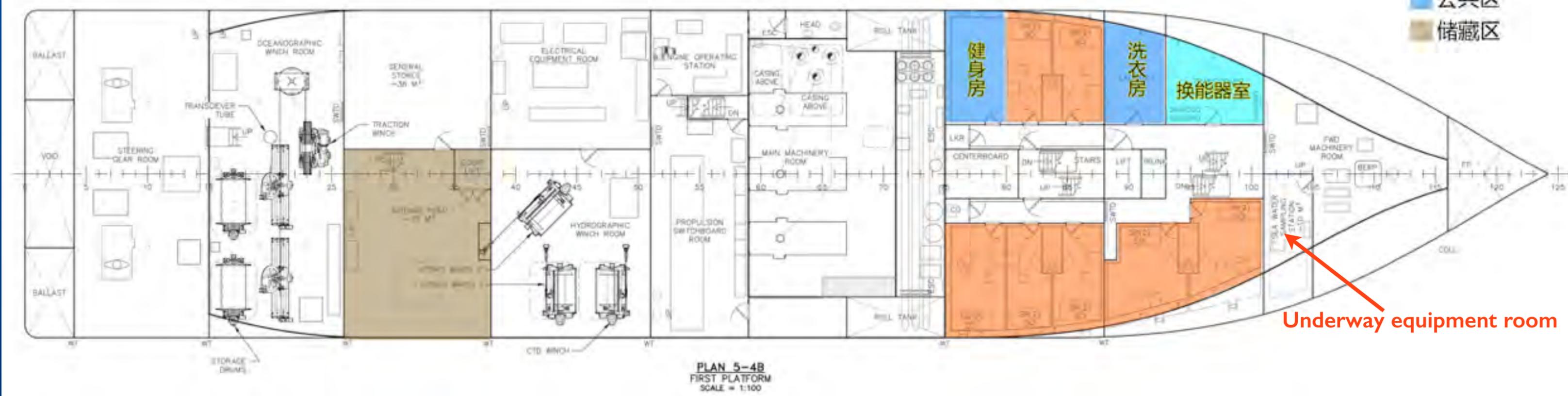


General Characteristics

Overall length :	77.70 m
Beam:	16.24 m
Depth:	8.00 m
Draft (designed):	5.00 m
Displacement @: designed draft	3432 t
Gross tonnage:	~ 3611
Cruise speed:	11 knots
Maximum speed:	> 14 knots
Range:	>10,000 nm
Endurance:	>50 day
Capacity:	54 (18/36)
Working deck:	432 m ²
Lab space:	407 m ²



- 居住区
- 实验区
- 工作甲板
- 公共区
- 储藏区



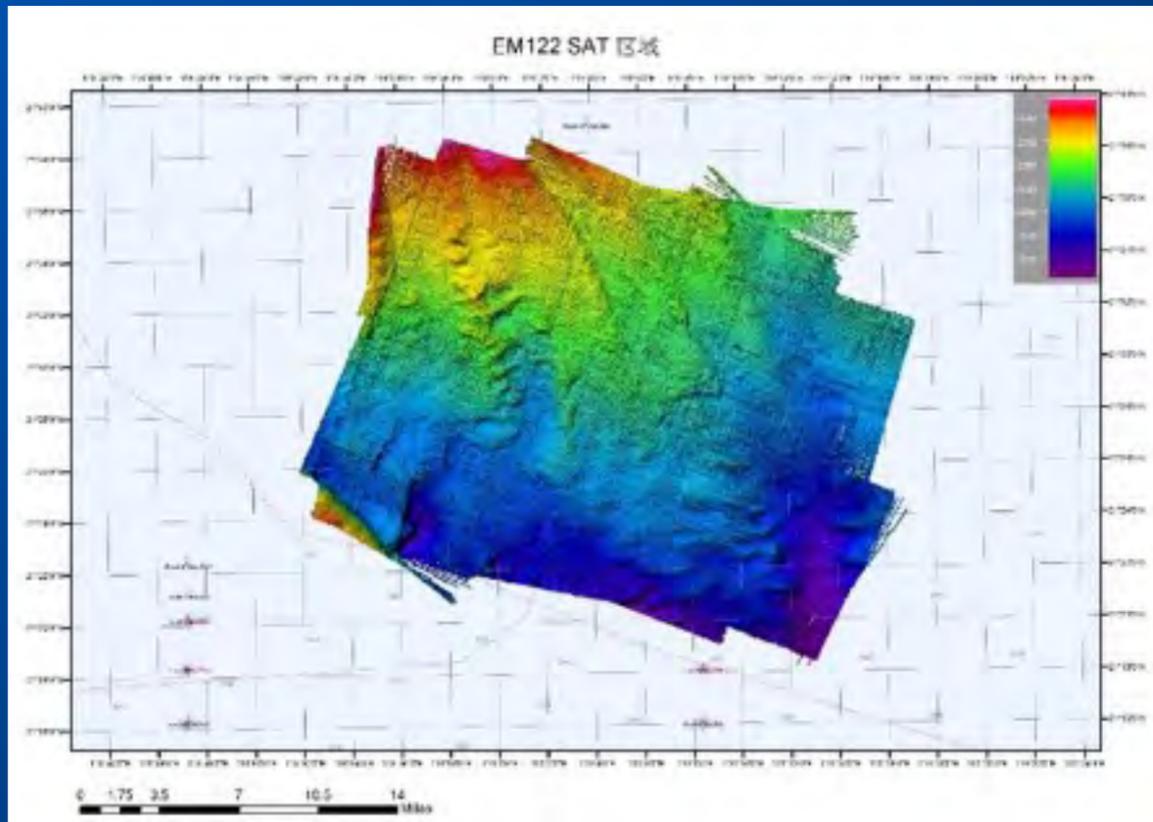
Underway equipment room

Science Handling System

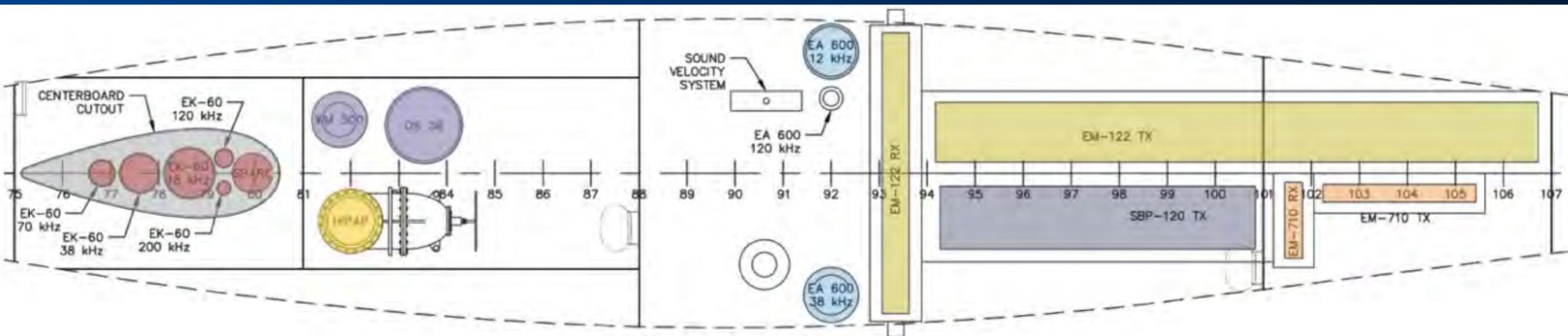


A-Frame, stern (15T)	1 set
Hydroboom (6T)	1 set
Geological winch (15000m)	1 set
Hydro winch (8000m)	2 set
CTD winch (10000m)	1 set
EO, traction (10000m)	1 set
Main crane (15T)	1 set
Aft crane (5T)	1 set
CTD LARS (AHC):	1 set
Long corer (18m)	1 set

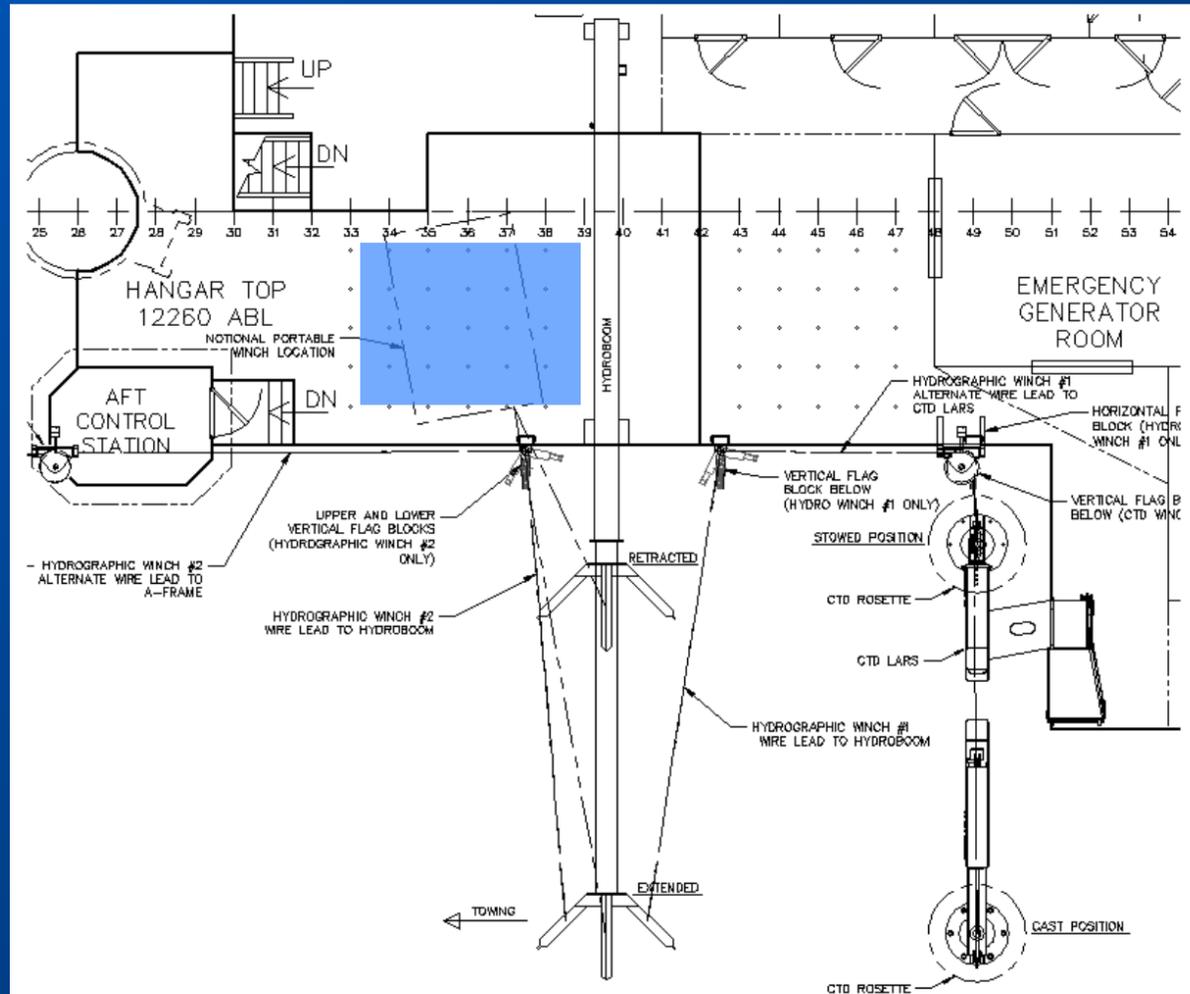
Major Science Mission Equipment



- Multibeam, whole water depth -- Kongsberg EM122 (1 x 2°)
- Multibeam, mid-water depth -- EM710 (1 x 1°)
- Subbottom profiler -- SBP120 (6°)
- Multi-frequency ecosounder -- EA600 (12/38/200kHz)
- Sonar Synch Unit (SSU) -- K-sync
- Split-beam ecosounder -- EK80 (18/38/70/120/200/333 kHz)
- USBL -- HiPAP 101
- ADCP -- TRDI, OS38/OS150/WHS300
- CTD -- SBE 911plus, two sets: 24 x 12L & 36 x 10L rosette



Trace Metal Clean (TMC) sampling and analysis - A portable solution



US GEOTRACES Compatible clean sampling system

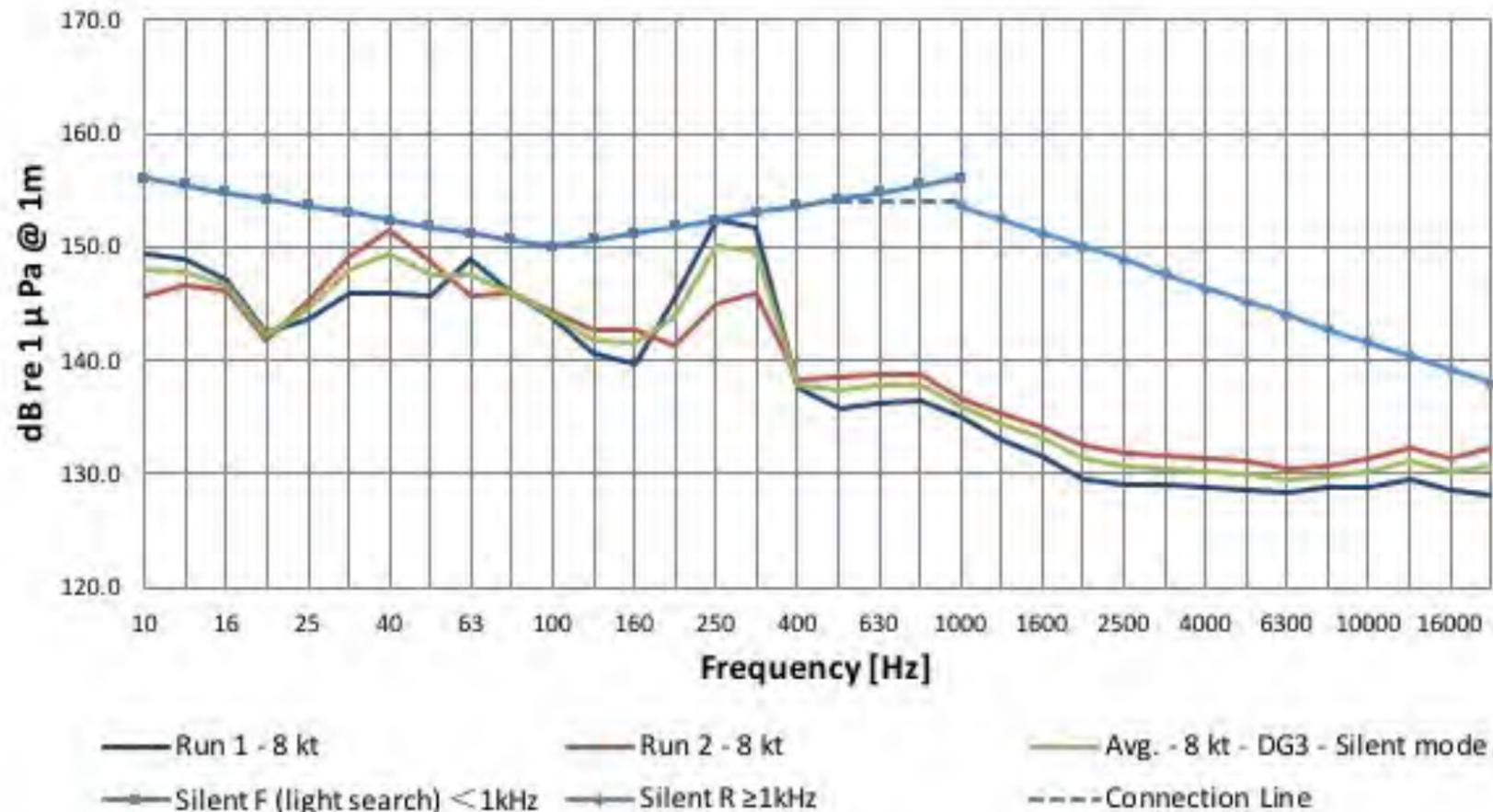
- One frame winch and one 10 feet container for power and control system
- 8000m φ 15.25mm Vectran conducting cable
- Carousel 32G sampler with CTD, DO, Chla, C-Star sensors; 24 10L Niskin-X bottles; 24 12L OTE C-free bottles
- One subsampling clean van; One analyzing clean van.

Portable winch on hangar-top, rosette deployed from the hydro-boom

The quietest RV in China

— fully compatible with DNV Silent-R (>1000Hz) and Silent-F (light search <1000Hz)

8kt - Silent Mode - DG3



DNV-GL

SILENT DECLARATION

Date of issue:
2017-10-11

Particulars of ship

Name of Ship:	JIA GENG
Builder:	Guangzhou Shipyard International Co. Ltd.
Yard No:	13130076
Type of Ship:	Research Vessel
Owner:	Xiamen University
IMO Number:	9776640

This is to confirm:

That underwater noise measurements have been carried out for the Research Vessel JIA GENG in accordance with the DNV-GL's rules for classification of ships, part 6, chapter 7, section 6 UNDERWATER NOISE EMISSION - SILENT, July 2016.

Based on the verification measurements, it is confirmed that the ship complies with the following SILENT CLASS notation on underwater noise for a free sailing condition up to and including 8 kts.:

SILENT(F) Fishery (for the frequencies between 10 - 1000 Hz)
SILENT(R) Research (for the frequencies above 1000 Hz)

Additionally the vessel complies with the following SILENT CLASS notation on underwater noise for a free sailing condition up to and including 11 kts.:

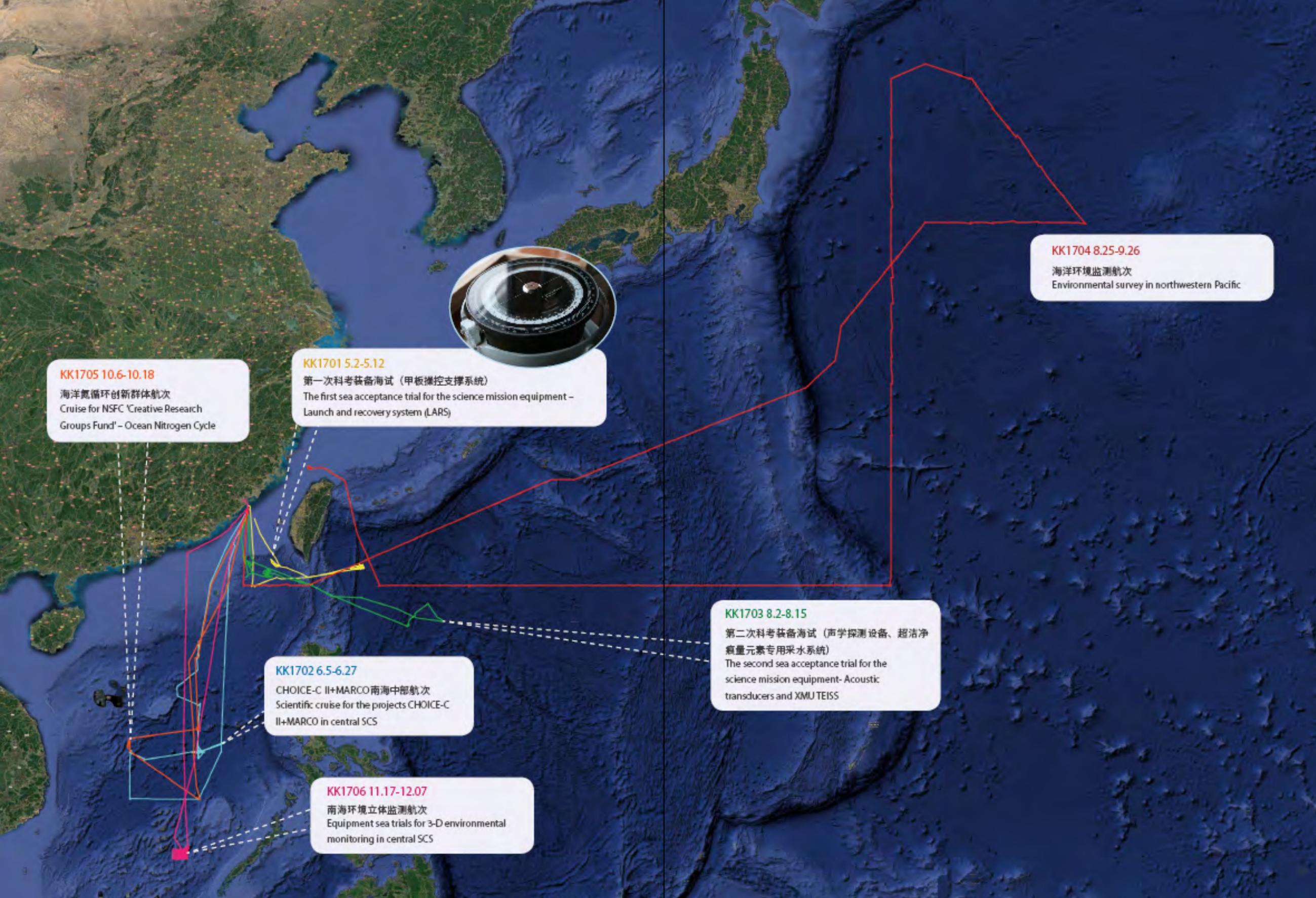
SILENT(A) Acoustic
SILENT(S) Sonar

Issued at Høvik on 2017-10-11

for DNV-GL

 Stian Andreassen
 Head of Section for Noise and Vibration

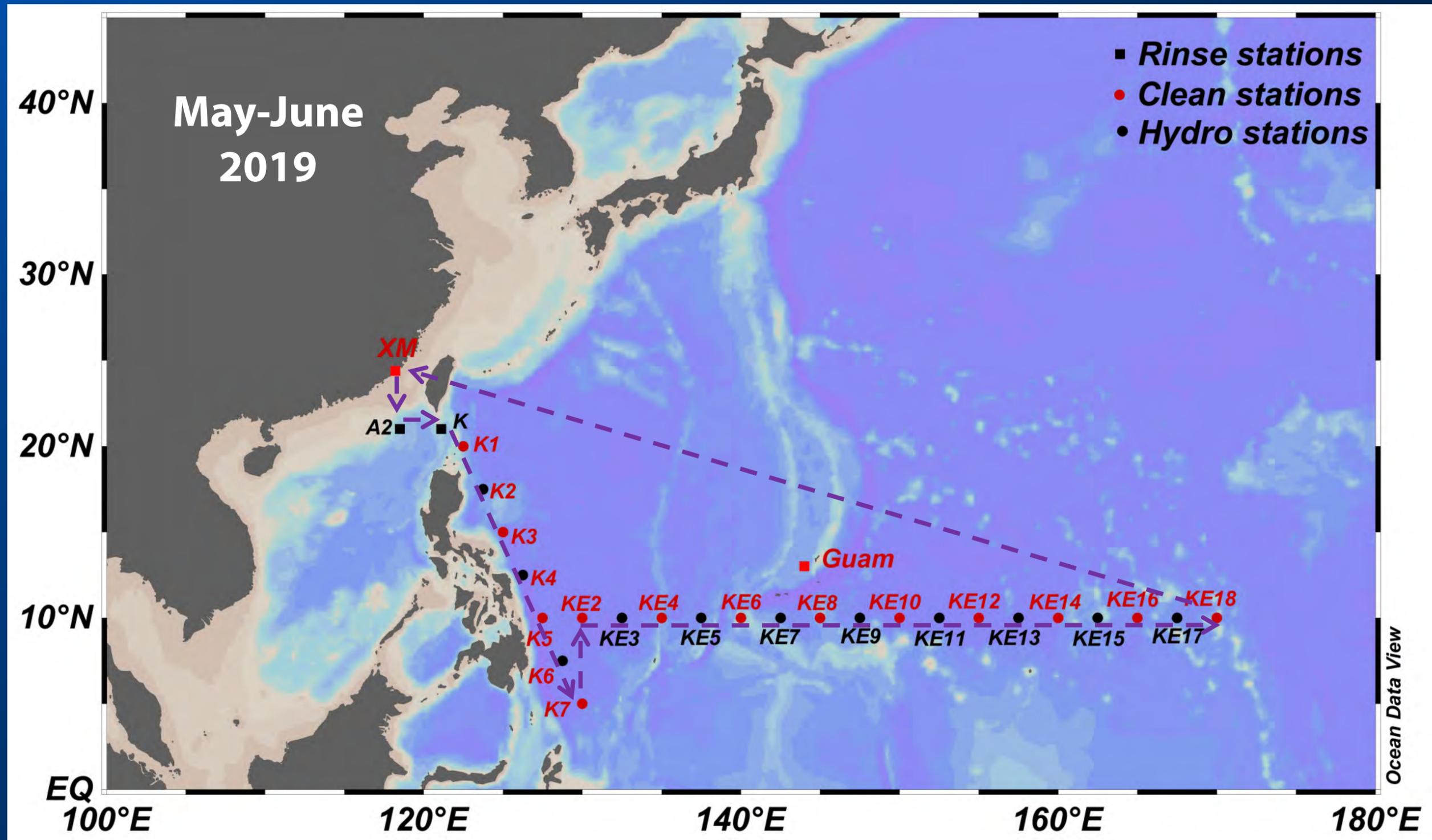
DNV-GL Høgskolens Verftsvæveri 1, P.O. Box 300, 1322 Høvik, Norway, Tel: +47 67 57 99 00, www.dnvgl.com
 DNV-GL AS SILENT DECLARATION JIA GENG



RVTKK's 2017

- 2 sea trials;
- 4 science cruises;
- > 14000 nm.
- > 115 days at sea.

2019 Geotraces China Cruise Plan



New RVs of Chinese Academic Fleet



Ke Xue (Science)

General specifications

Overall length.....	99.8 m
Beam	17.8 m
Draft	5.60 m
Gross Tonnage.....	4711
Cruise speed	12 knots
Maximum speed	15.8 knots
Range	15,000 nm
Endurance	60 days
Area of Working Deck	540 m ²
Area of Laboratories	430 m ²
Capacity	80 (30 Crew, 50 Scientists)



**Institute of Oceanology,
Chinese Academy of Sciences
(IOCAS)**



DONG FANG HONG 3

Ocean Univ. of China (OUC)

General specifications

Overall length.....	103 m
Beam	18 m
Draft	5.70 m
Gross Tonnage.....	~5650
Operational speed	12 knots
Maximum speed	15 knots
Range	15,000 nm
Endurance	60 days
Area of Working Deck	610 m ²
Area of Laboratories	600 m ²
Capacity	110

(28 Crew, 82 Scientists)

Zhong Shan

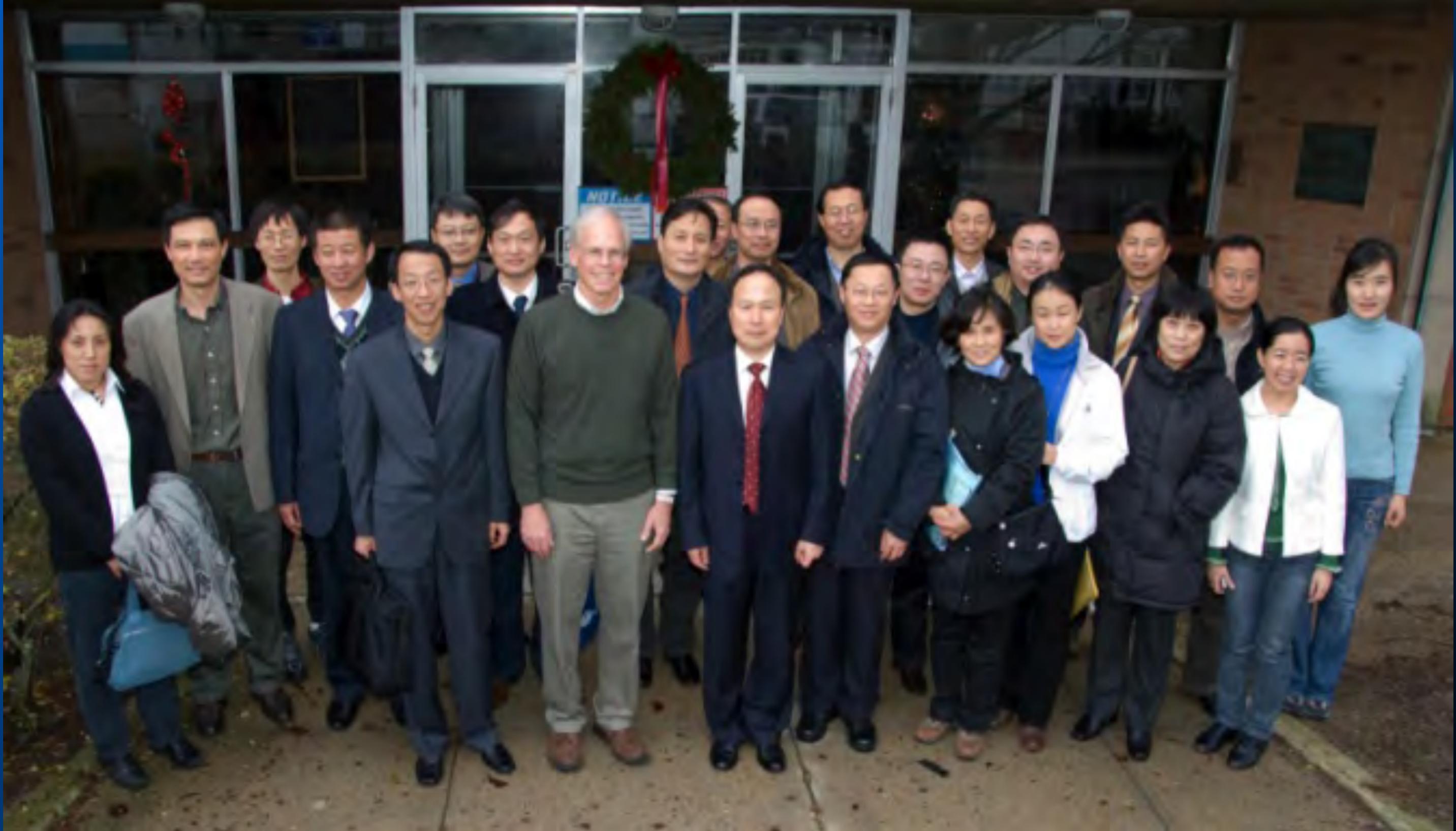
Sun Yat-Sen University (SYSU)



General specifications

Overall length.....114.3 m
Beam19.3m
Draft6.00 m
Gross Tonnage.....> 6000
Displacement @ designed draft... 6800T

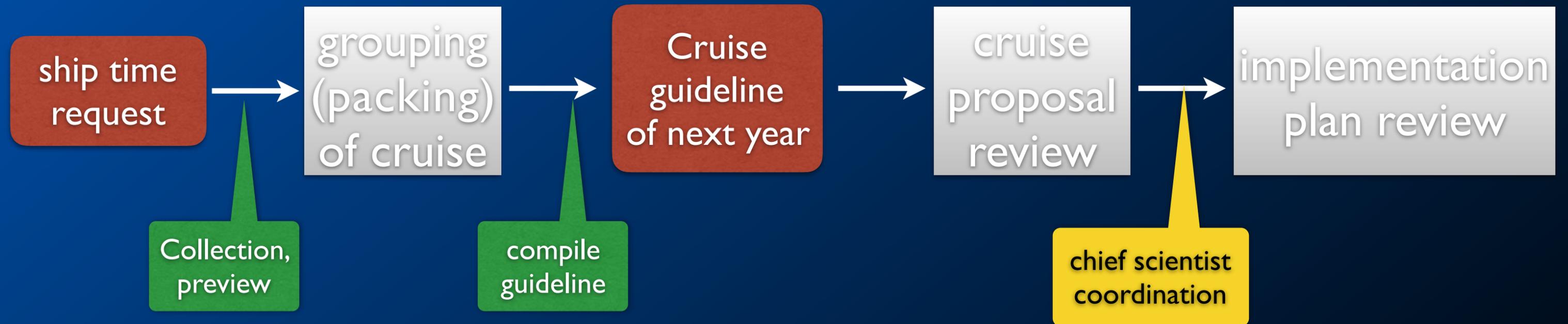
Cruise speed12 knots
Maximum speed> 15 knots
Range15,000 nm
Endurance60 days
Capacity120 (30 Crew, 90 Scientists)



NSFC's delegation @ WHOI, Dec. 12, 2008

Ship time Sharing Program of NSFC

- to support Open Research Cruises (NORC)



Process of reviews

Thanks!

