



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



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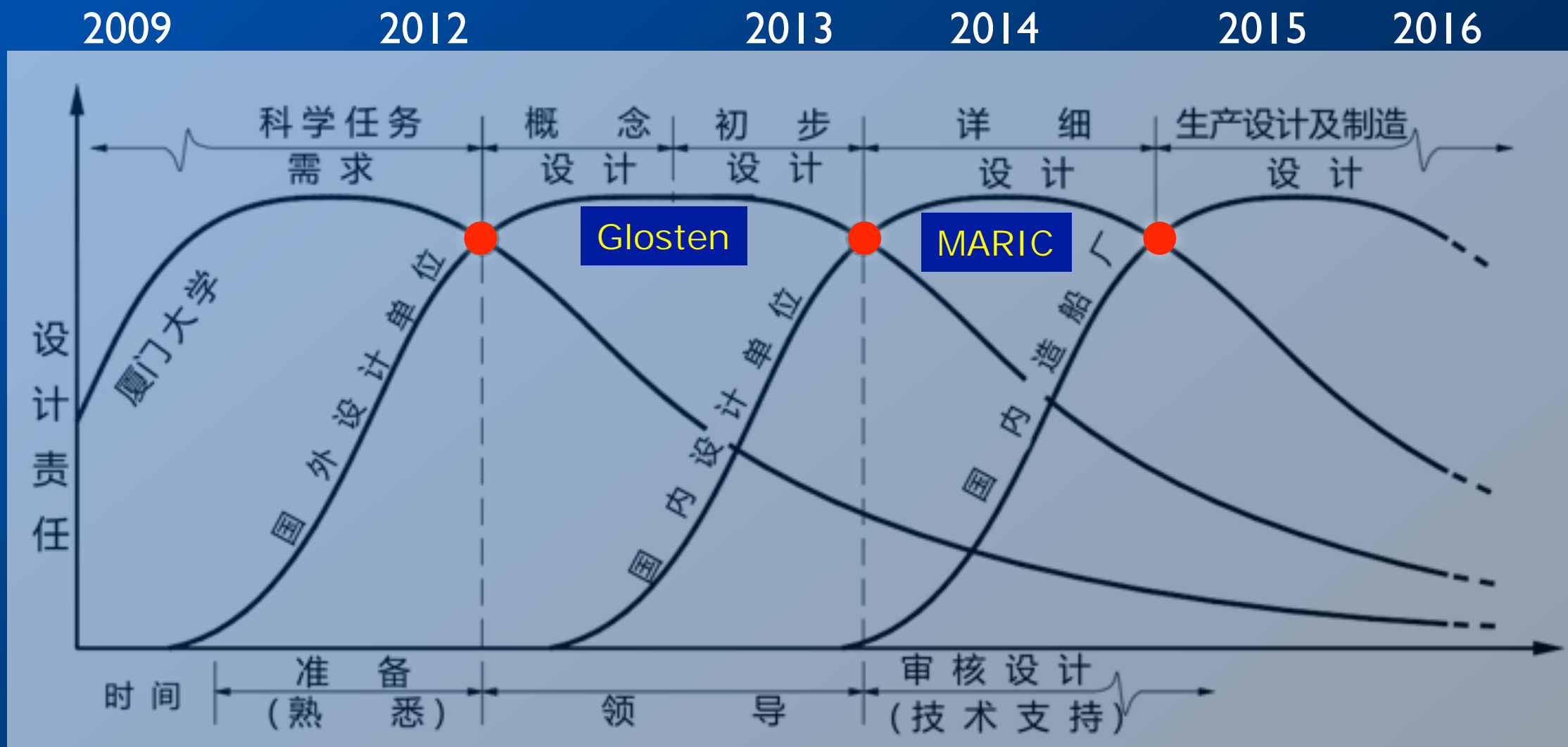
<http://ships.xmu.edu.cn>



## 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)

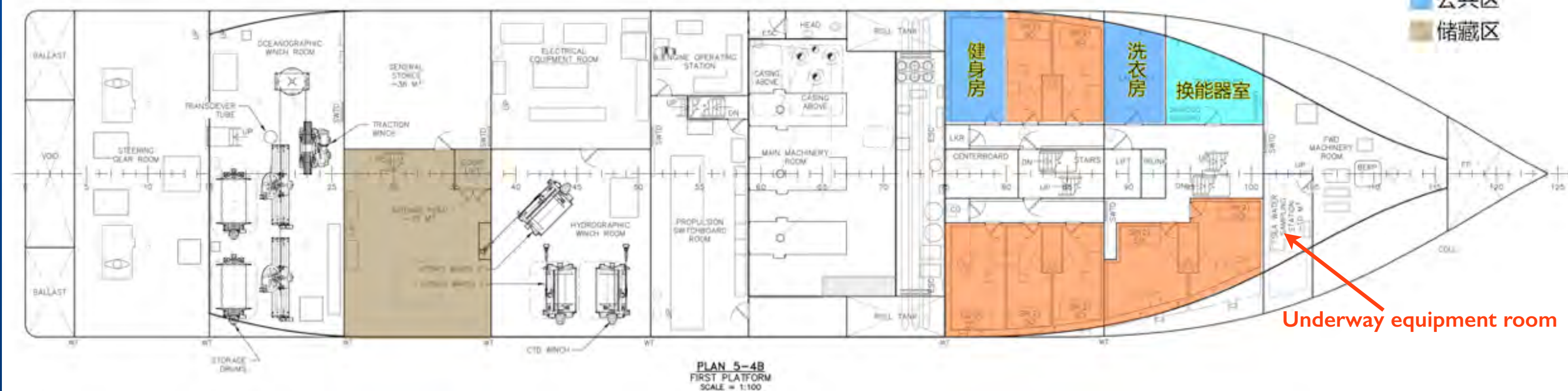
Building: Guangzhou Shipyard International Ltd. (Guangzhou)



## General Characteristics

Overall length :	77.70 m
Beam:	16.24 m
Depth:	8.00 m
Draft (designed):	5.00 m
Displacement @:	3432 t
designed draft	
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 <sup>2</sup>
Lab space:	407 m <sup>2</sup>







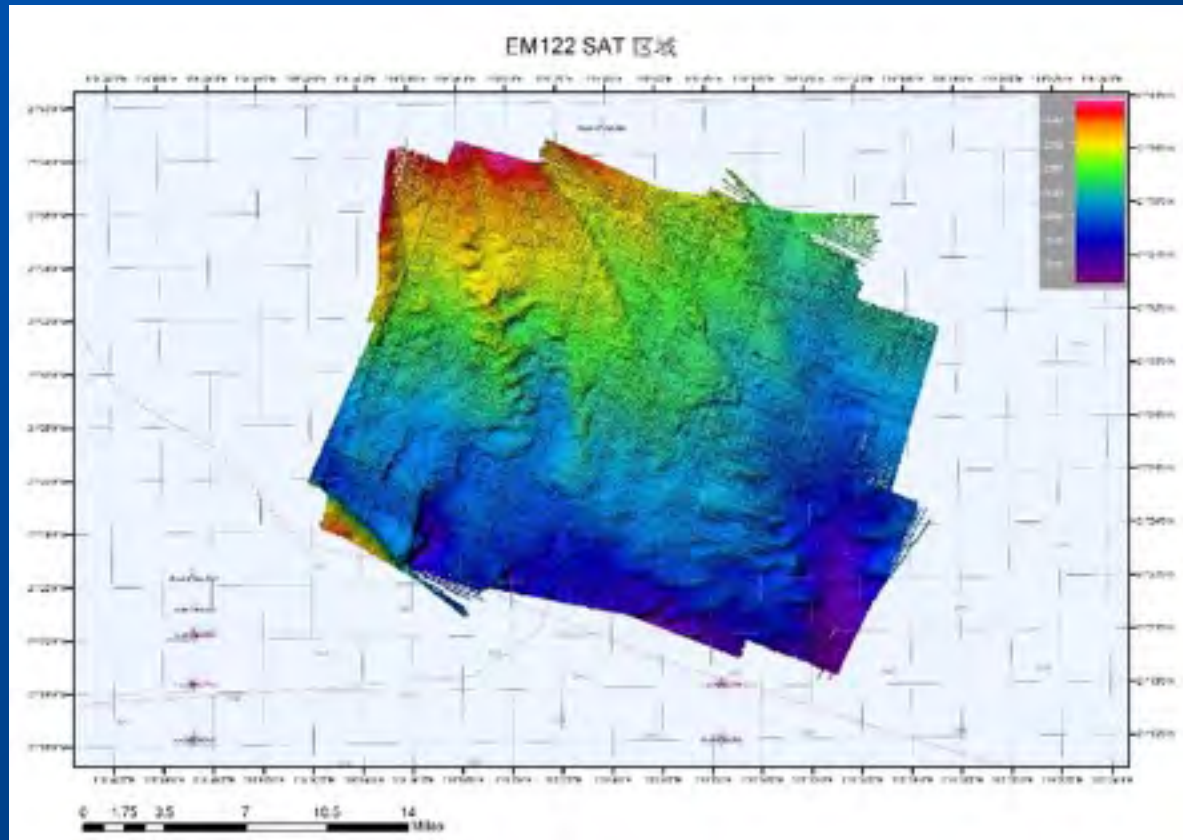
# Science Handling System



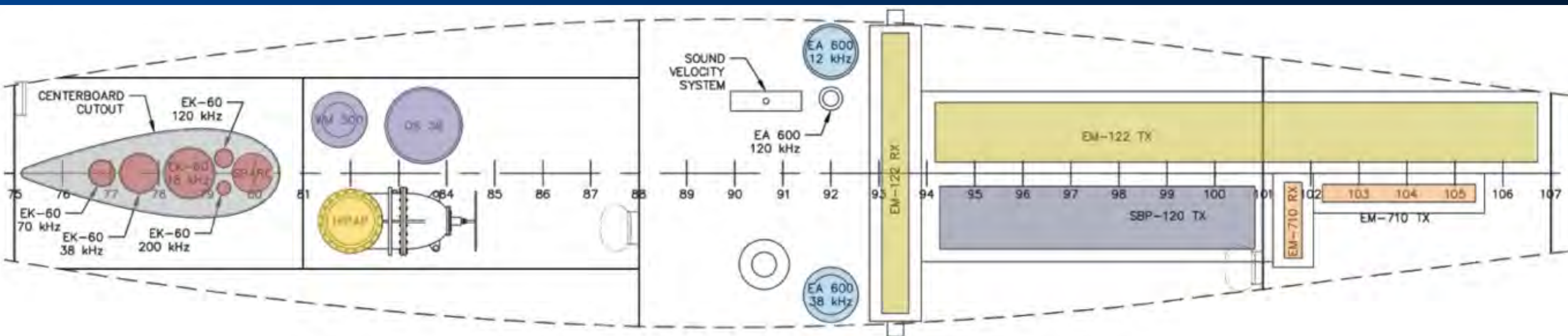
A-Frame, stern (15T)	1 set
Hydroboom (6T)	1 set
Geological winch (15000m)	1 set
Hydro winch (8000m)	2 set
CTD winch (10000m)	1 set
EO, traction (10000m)	1 set
Main crane (15T)	1 set
Aft crane (5T)	1 set
CTD LARS (AHC):	1 set
Long corer (18m)	1 set



# Major Science Mission Equipment

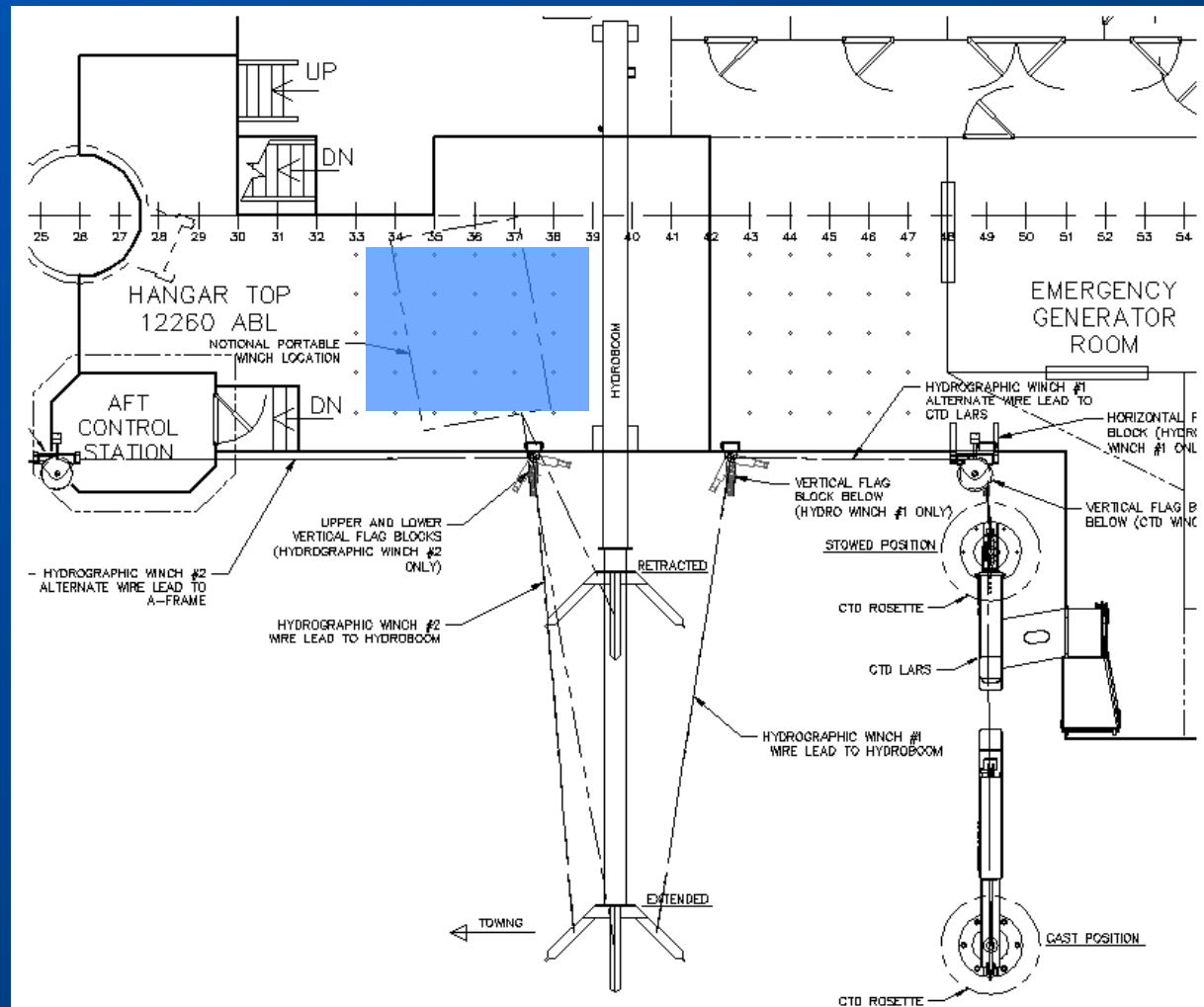


- Multibeam, whole water depth -- Kongsberg EM122 (1 x 2°)
- Multibeam, mid-water depth -- EM710 (1 x 1°)
- Subbottom profiler -- SBP120 (6°)
- Multi-frequency ecosounder -- EA600 (12/38/200kHz)
- Sonar Synch Unit (SSU) -- K-sync
- Split-beam ecosounder -- EK80 (18/38/70/120/200/333 kHz)
- USBL -- HiPAP 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

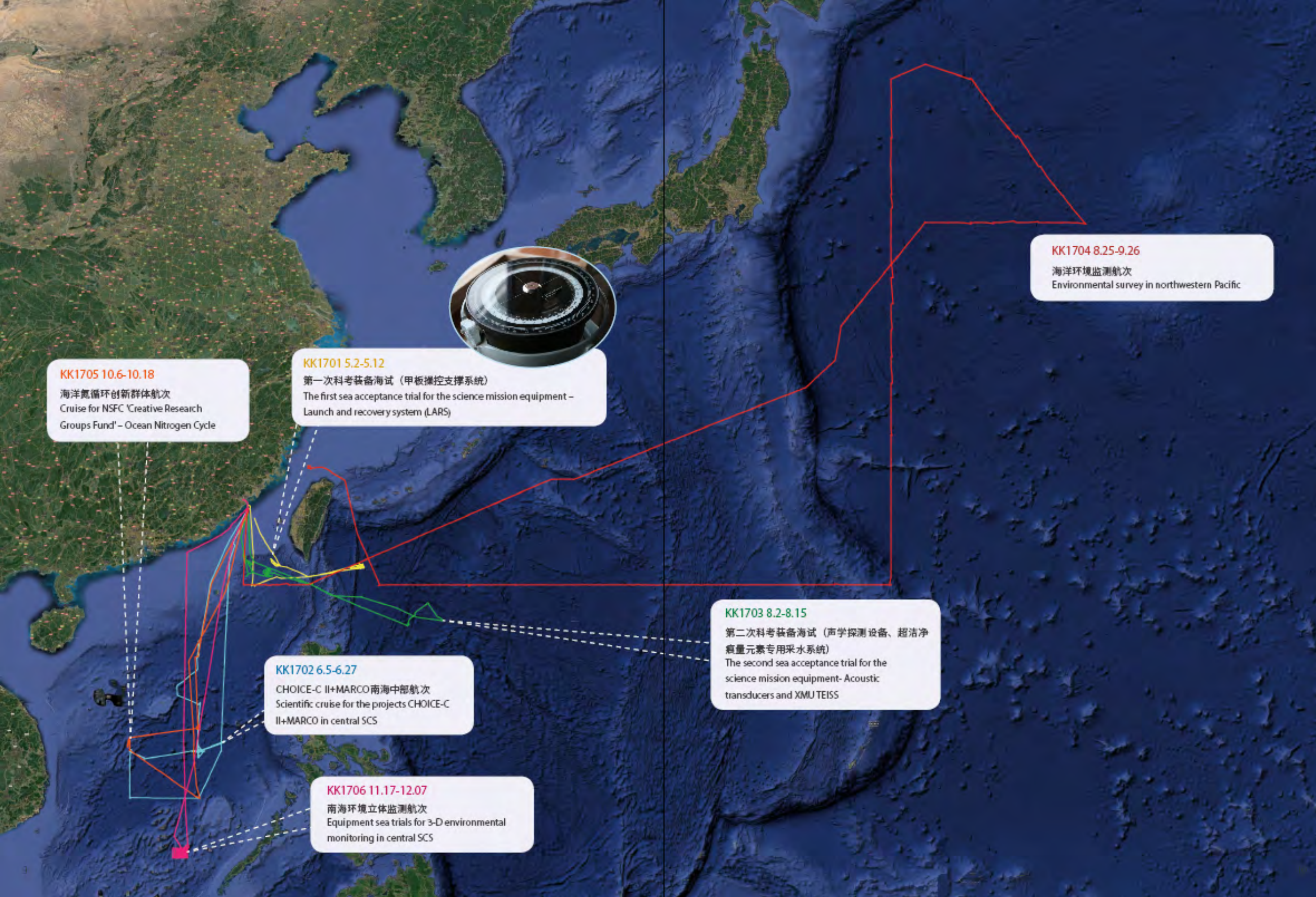
- One frame winch and one 10 feet container for power and control system
- 8000m φ 15.25mm Vectran conducting cable
- Carousel 32G sampler with CTD, DO, Chla, C-Star sensors; 24 10L Niskin-X bottles; 24 12L OTE C-free bottles
- One subsampling clean van; One analyzing clean van.

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







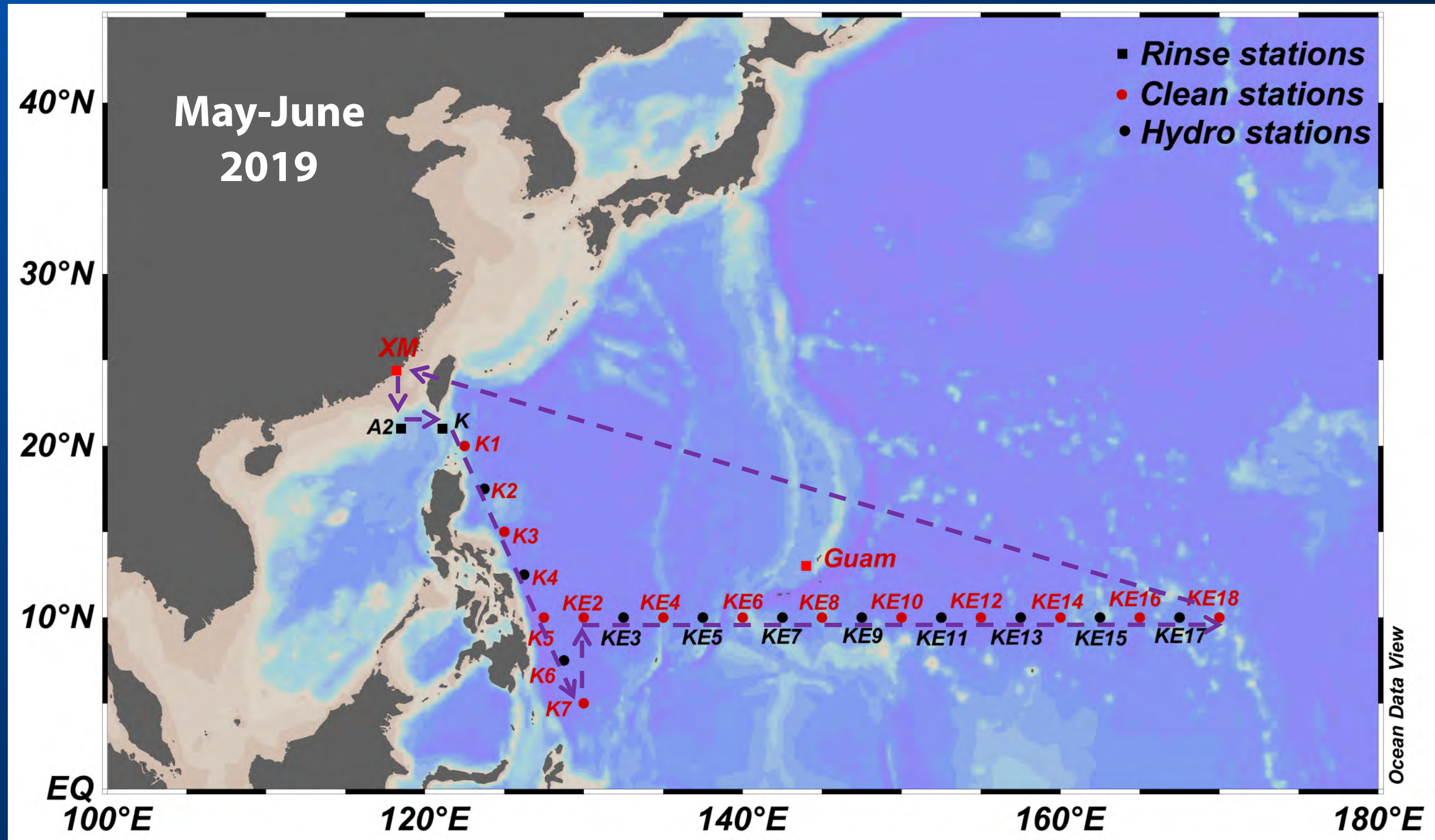


## RVTKK's 2017

- 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 <sup>2</sup>
Area of Laboratories .....	430 m <sup>2</sup>
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 <sup>2</sup>
Area of Laboratories .....	600 m <sup>2</sup>
Capacity .....	110

(28 Crew, 82 Scientists)



# Zhong Shan

Sun Yat-Sen University (SYSU)

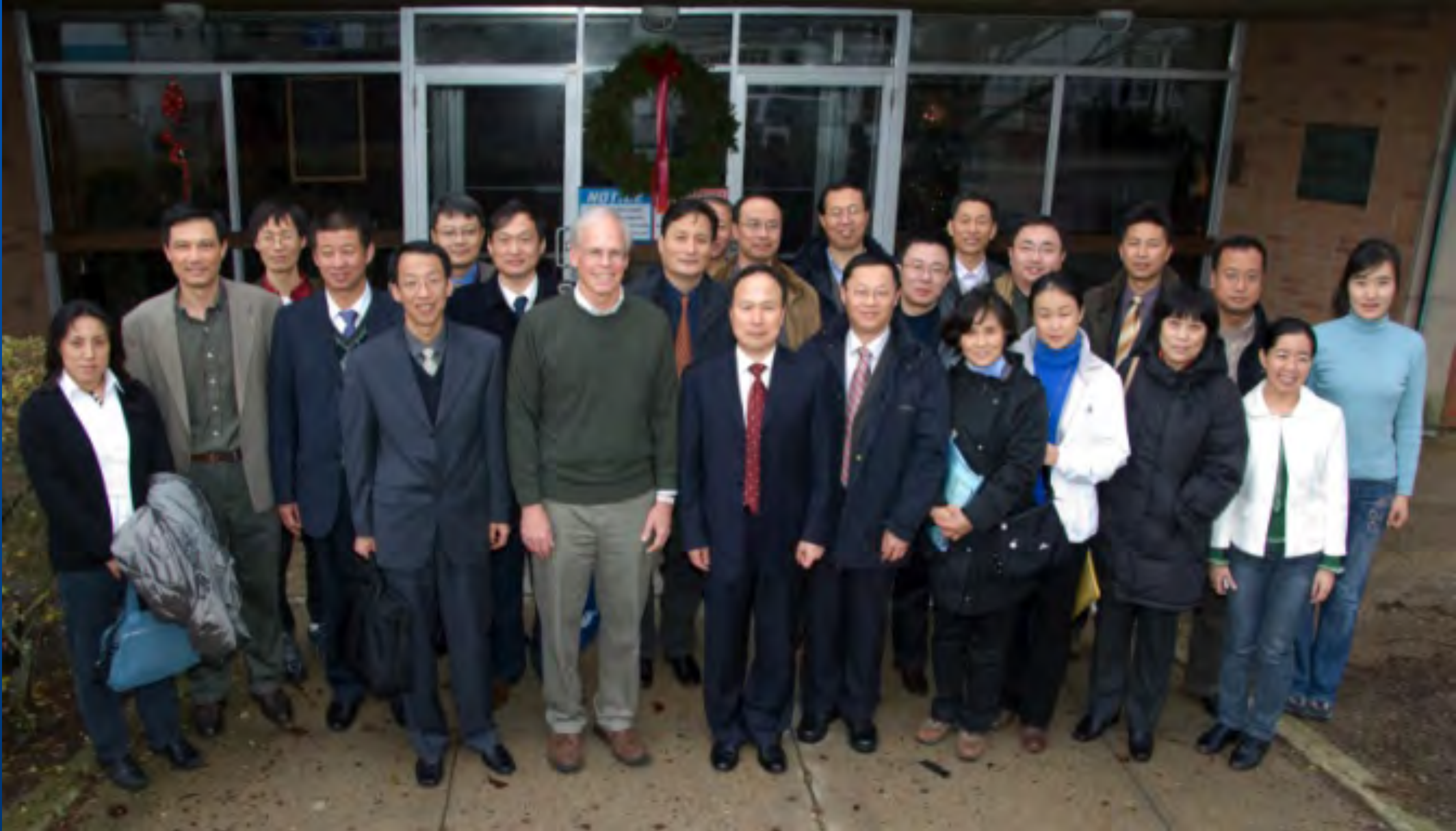


## General specifications

Overall length.....114.3 m  
Beam .....19.3m  
Draft .....6.00 m  
Gross Tonnage.....> 6000  
Displacement @ designed draft... 6800T

Cruise speed .....12 knots  
Maximum speed .....> 15 knots  
Range .....15,000 nm  
Endurance .....60 days  
Capacity .....120 (30 Crew, 90 Scientists)



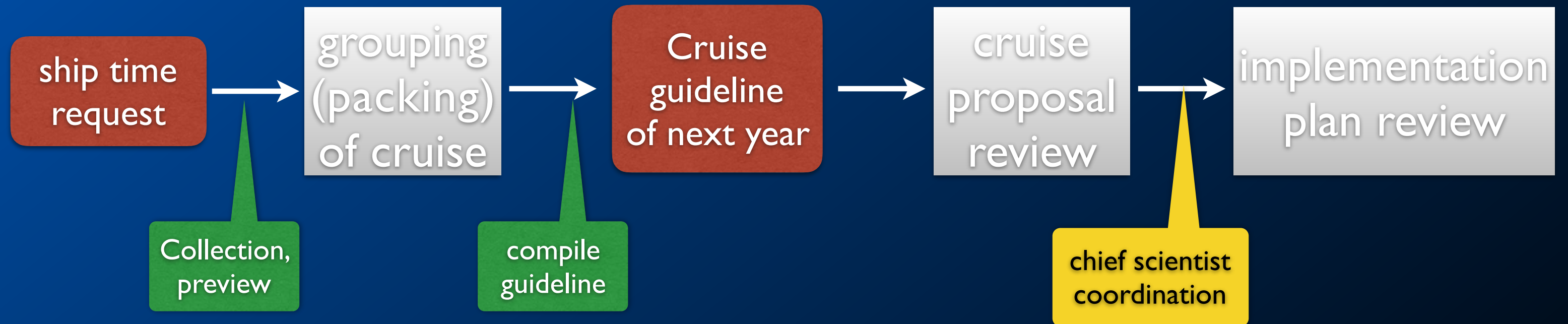


NSFC's delegation @ WHOI, Dec. 12, 2008



# Ship time Sharing Program of NSFC

- to support Open Research Cruises (NORC)



Process of reviews



Thanks!

