

Korea Opens up Its Marine Science: Opportunities for Shared Use of Research Vessels

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Outline

- A bit about myself
 - Mid-ocean ridges and West Pacific basins
 - Worked at KIOST (7 years) and know KIGAM and KOPRI
 - Became quadriplegic as a result of van rollover accident (July 2006)
 - Testify against the government under oath at National Assembly (October 2014)
 - **Ministry of Education, Ministry of Science Technology and ICT**
 - **Ministry of Oceans and Fisheries** (RV isabu)
- Shared Use Committee (2015), which for the first time academic communities are able to put in piggyback proposals (from Western Pacific to Central Indian Ridge)

A Bit of History

- RV Onnuri (1450 ton, 68 m long, built in Norway KIOST 1992)
- RV Tamhae 2 (2500 ton, seismic vessel, built in Norway KIGAM 1995)
- RV Araon (7000 ton, icebreaking research vessel, KOPRI 2007)



Premium Chosun

조선일보 지식Q&A
조선일보 09년차 기사에서 뽑아낸
알찬 정보를 이용하세요

닥터 조흥근의 당뇨·혈관 이야기

- 뉴스인사이드
- 2030 Life
- 건강 & 다이어트
- 경제 & 경제인
- 교육 & 과학
- 컬처 & 스포츠
- 오피니언

오피니언 전체 | 논설위원 | 조선일보 칼럼 | 전문가 칼럼 | 외부 기고

동서남북

그릇된 經濟 논리 꺾은 '한국의 스티븐 호킹'



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종학생도 이해할 만큼 쉽게 과학기사를
쓰라고 요구하는 데스크들... 더보기

입력 : 2015.01.12 08:05

스크랩 이메일 인쇄 크기



이명환 산림2부 차장담당

지난 8일 국제학술지 '네이처'에 "한국에서 올 3월부터 대학 연구자들도 해양과학조사선을 활용할 수 있게 됐다"는 기사가 실렸다. 국내 과학계에서 박사급 연구자의 80% 이상이 대학에 있다. 왜 그동안 대학 연구자들은 조사선을 활용하지 못하고 소외됐던 것일까.

1992년 취역한 1422급 해양과학조사선 '온누리'호(號)는 해수수산부 산하 한국해양과학기술원이 운영한다. 미국·영국·일본 등 해양과학 선진국에서는 국가기관과 대학 등 민간 연구자들이 공동으로 해양과학조사선을 활용하고 있다. 하지만 우리나라는 지난 23년간 민간 연구자가 온누리호 탑사를 지휘한 적은 한 번도 없다.

문제는 정부의 그릇된 경제 논리였다. 온누리호는 운항 시간의 5분의 3을 해양과학기술원의 심해저(深海底) 광물 탐사에 썼다. 대학에서 온누리호를 쓰려고 해도 하루에 수천만원씩 사용료를 내야 해서 엄두를 내지 못했다. 반면 해양과학기술원은 해수부로부터 해저 광물 탐사 명목으로 1년에 몇십억원씩 해양조사선 사용료를 따로 받았다.

그러나 네이처지는 "해저 광물 채굴에 대해서는 회의론이 널리 퍼져 있다"고 전했다. 해수부 관계자도 "현재로서는 해저 광물을 채굴하는 것이 육상 광물 채굴보다 경제성이 낮은 게 사실"이라고 인정했다. 이상목 서울대 지구환경과학부 교수는 "정부가 계속 해저 광물의 경제적 가치를 말하면 국민에게 거짓 말하는 것"이라고 했다.

그런데도 정부는 또다시 예전 방식을 고집했다. 그러자 이상목 교수는 작년 해수부 국정감사에 증인으로 나와 "새로 건조하는 5900t급 대형 해양과학조사선 '이사부'호의 소유권이 당초 계획과 달리 다시 해양과학기술원에 돌아갔다"고 폭로했다. 2008년 한국개발연구원(KDI)은 이사부호에 대한 예비타당성 평가에서 "사업성이 떨어진다"며 탈락시켰고, 2차 평가에서는 "대학과 선박을 공유해야 한다"는 조건을 달아 승인했다. 해수부가 이를 어긴 것이다. 이 교수의 폭로가 나온 뒤 해수부는 이사부호를 민간도 활용할 수 있게 하겠다고 약속했다.

http://premium.chosun.com/site/data/html_dir/2015/01/11/2015011102312.html

at Johns Hopkins University in Baltimore, Maryland. The data have yielded new ways to classify tumours and pointed to previously unrecognized drug targets and carcinogens. But some researchers think that sequencing still has a lot to offer. In January, a statistical analysis of the mutation data for 21 cancers showed that sequencing still has the potential to find clinically useful mutations (M. S. Lawrence et al. Nature 505, 495-501; 2014).

On 2 December, Staudt announced that once TCGA is completed, the NCI will continue to intensively sequence tumours in three cancers: ovarian, colorectal and lung adenocarcinoma. It then plans to evaluate the fruits of this extra effort before deciding whether to add back more cancers.

EXPANDED SCOPE

But this time around, the studies will be able to incorporate detailed clinical information about the patient's health, treatment history and response to therapies. Because researchers can now use paraffin-embedded samples, they can tap into data from past clinical trials, and study how mutations affect a patient's prognosis and response to treatment. Staudt says that the NCI will be announcing a call for proposals



Marine biologist Sang-Mook Lee has pushed for academic involvement in South Korea's research ships.

OCEANOGRAPHY

Korea opens up its ocean science

...y for seabed surveys will expand in focus.

...n-going research ing tack. For more has focused on dis-minerals on the sea toot to expand the 0-tonne ship — the th the capability to water vehicles, per-seismic surveys and 0-40 metres long.

1,422-tonne *Onnuri*, of its time scouring deposits under the minerals group at the science and Technol-that heavy economic istry of Oceans and KIOST" as well as the

so complete that in academic researcher ed a cruise. "This is marine geophysicist National Univers- this university and elsewhere have been able to work aboard the ship, they have been frustrated by a near-complete lack of say in where the *Onnuri*

Securing marine mineral resources is "considered very important to the Korean people, because of the scarcity of land-based natural resources," says Jai-Woon Moon, the head of KIOST's deep-sea mineral research group. And rising prices for metals have renewed the world's interest. Nautilus Minerals of

of much of what we do in cancer research," he says. "Now we can ask questions in a more directed way."

elsewhere have been able to work aboard the ship, they have been frustrated by a near-complete lack of say in where the *Onnuri*



- > 오피니언 모든 콘텐츠
- 김대중 칼럼
 - 강진석 칼럼
 - 송희영 칼럼
 - 한상준 칼럼
 - 양성준 칼럼
 - 강창권 칼럼
 - 최보식 칼럼
 - 박두식 칼럼

오늘의 인기 프리미엄조선



어느 날 추위에도 정동우 회장, 덕분에 아이러직 특종 신년사



사장 명의로 연 35억 원씩 버는 신격호 회장 장녀 신명사

37년간 담배 피우다 금연 선언한 문형보 복지부 장관, 금연원상은?

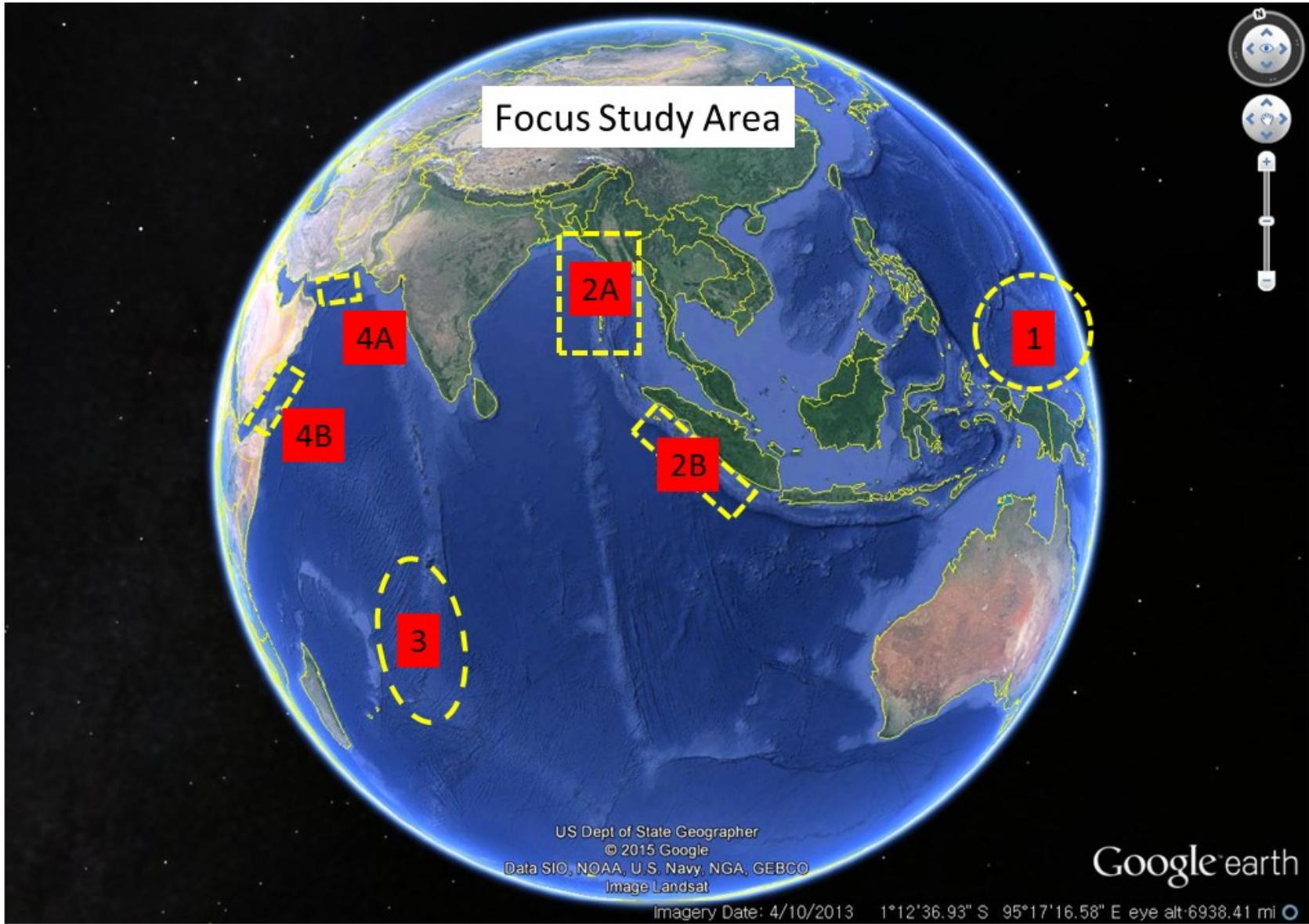
가전제품 전쟁에서 참 골 겨논 윤봉근 삼성전자 사장과 조성진 LG전자 사장

3형제 분란 속 아버지 조석래 회장의 눈물겨운 장남 사랑

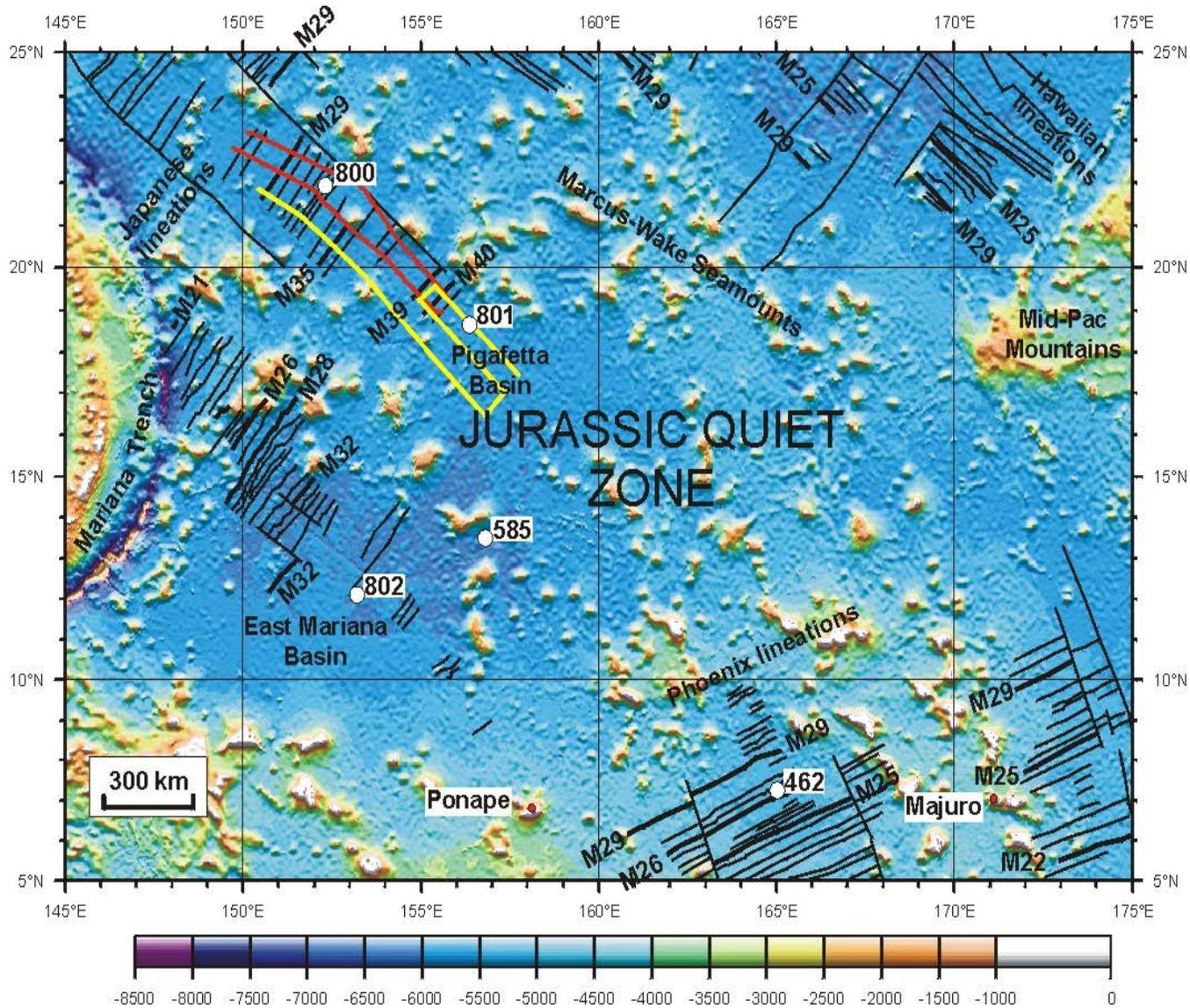
효성그룹 조석래 회장이 꼽은 '장남' 사랑들 보려고 있다. 첫째 아들...

프리미엄 기획·특집

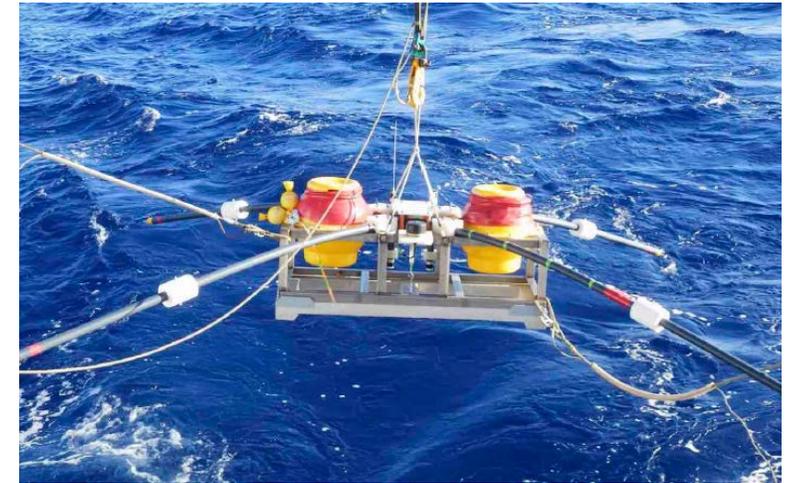




With The University of Tokyo ERI (Pacific Array)



OBEM



BBOBS



KIGAM GERV New Building Project

Research Vessel Building Project Unit
2019. 12.



Contents

- 1. Overview of Vessel**
- 2. Project Schedule**
- 3. Summary of Basic Design**
- 4. Equipments**

1. Overview of Vessel



Description	Specification	Description	Specification
L x B x D x d	92 x 21 x 9 x 7.3(6.5)m	Complement	50P (crew :22 + scientiss: 28)
Speed (trial/cruising)	15.2 / 14 knots	Max. Towing Capacity	85 ton at 4~5 knots (Max. B.P:120ton)
Propulsion System	4 Elec. motors x 2 CPP	Streamer	8 x 6,000m
Propeller	CPP 3.7m Dia. with duct	Seismic Compressor	3 x 1,800 cfm (for 6 Gun-Array)
	4 x 1,800 kW with		30ton for oceanographic

1. Overview of Vessel

❖ General Specification

	TAMHAE 2(Current Vessel)	NEW VESSEL
3D Streamers	3 km × 2	6 km × 8
2D Streamers	Up to 6 km	Up to 12 km
Sound Source	4,000 in ³	> 6,000 in³
Tonnage (GRT)	2,085 ton	6,497 ton
Overall Length	64.4 m	92.0 m
Breath	15.0 m	21.00 m
Draft	5.5 m	6.5 m 내 외
Max. Speed	14 knot	17 knot
Cruise Distance	12,000 nautical miles	20,000 nautical miles
People	37	50
Sea State	Level 4 (1.25~2.5 m)	Level 5 (2.5~4 m)
Multi-component Survey	Small Scale OBS/OBC	OBN
Ice Class	x	Ice-1B
Dynamic Positioning	x	DP-2

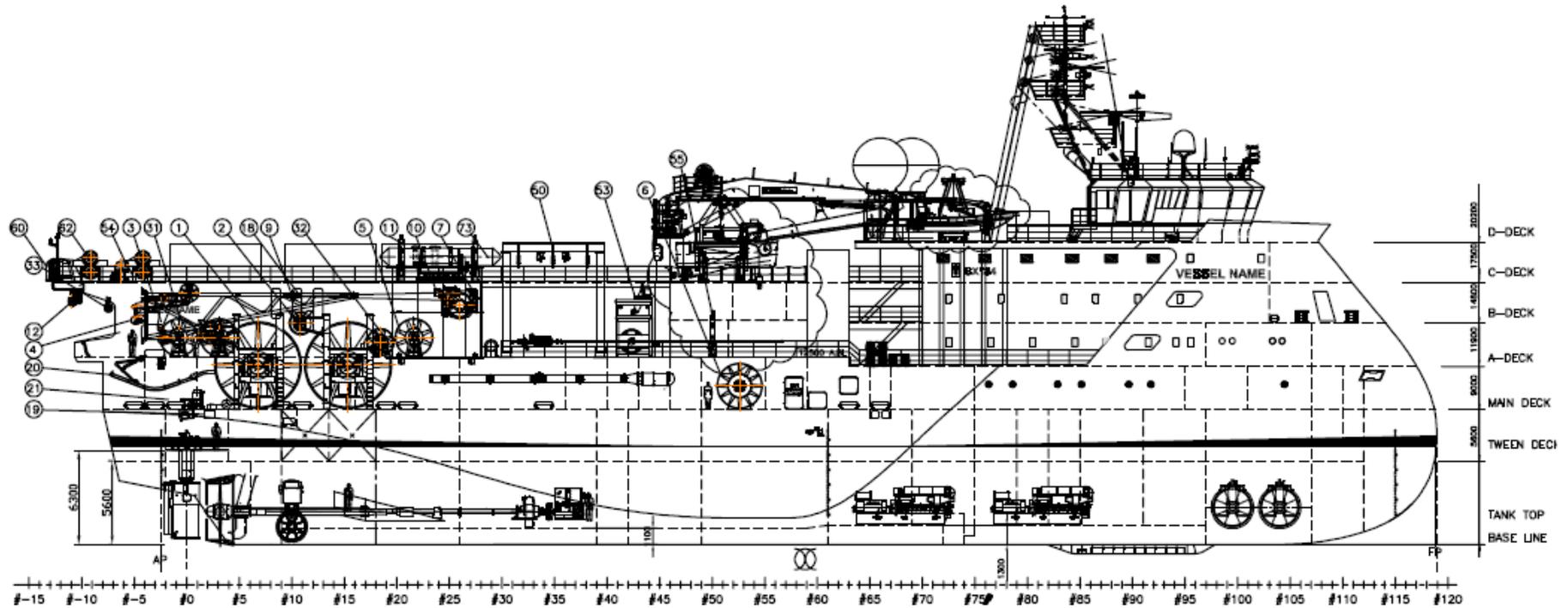
2. Project Schedule

[Expected Master Schedule]

1. **2019. 05 : Concept & Basic Design Completed**
2. **2020. 03 ~ 2021. 03 : Detail Design**
3. **2021. 04 : Steel Cutting**
4. **2022. 04 : Launching**
5. **2022. 11 : Test & Trial**
6. **2023. 06 : Delievery**

3. Summary of Basic Design

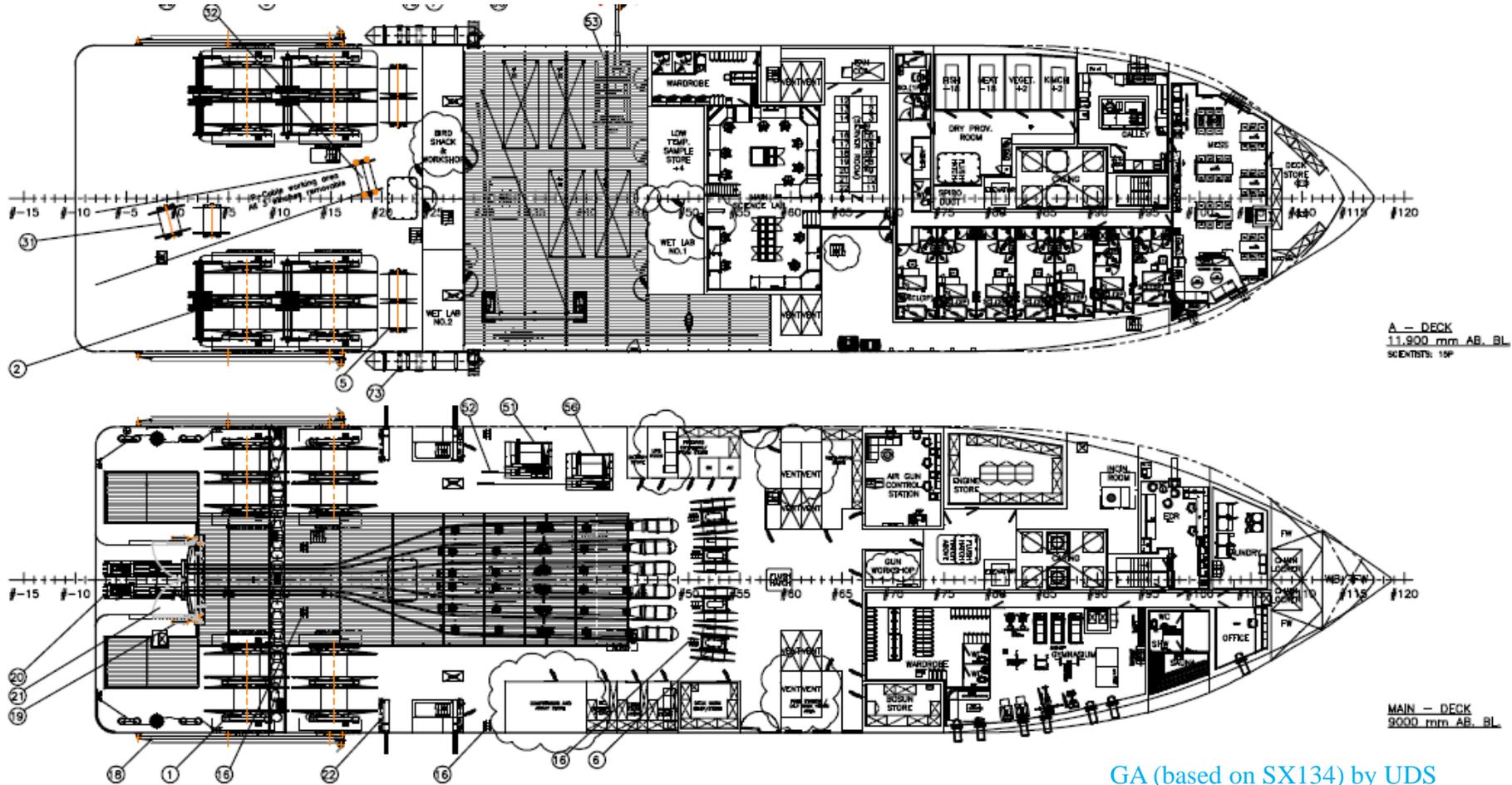
❖ General Arrangement



GA (based on SX134) by UDS

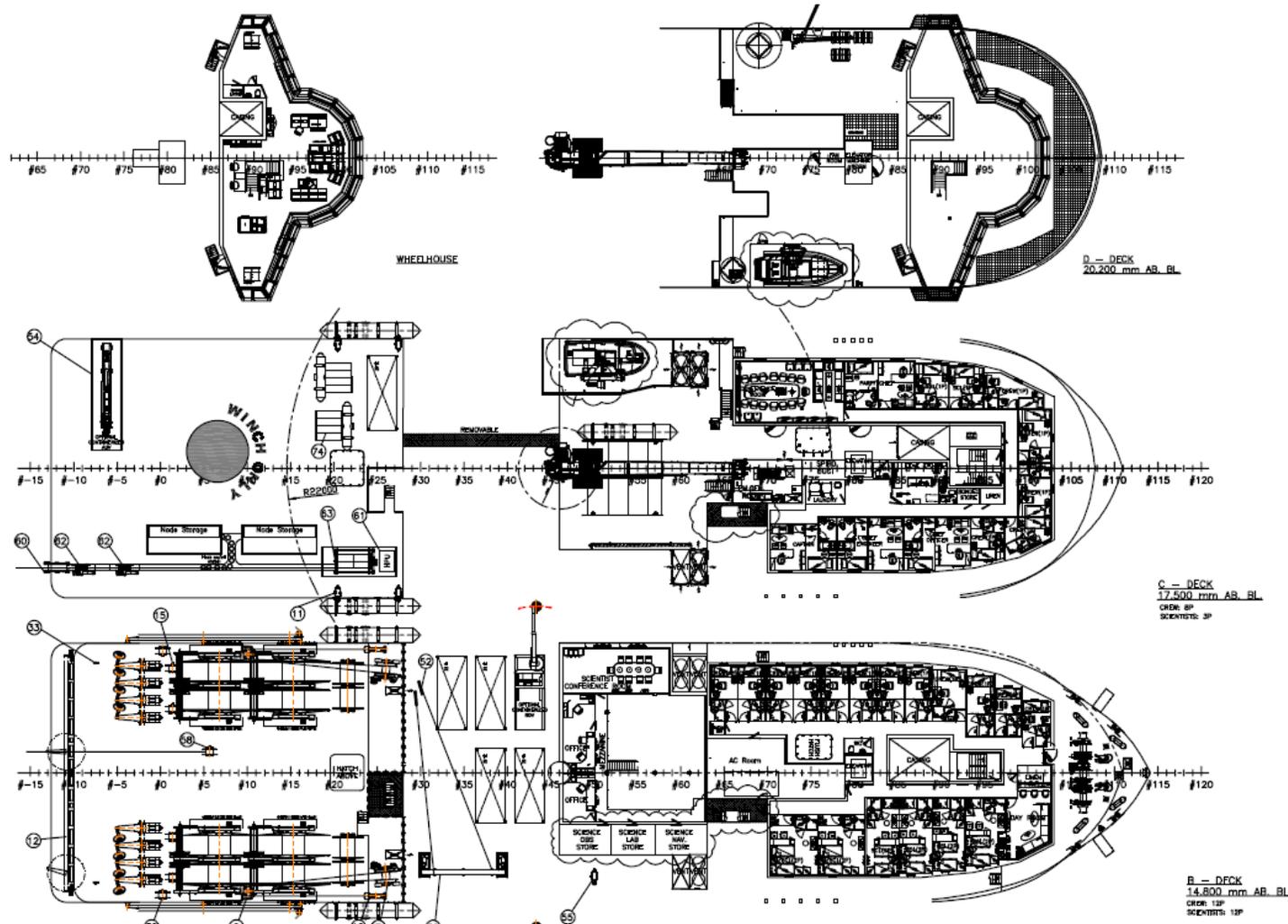
3. Summary of Basic Design

❖ General Arrangement



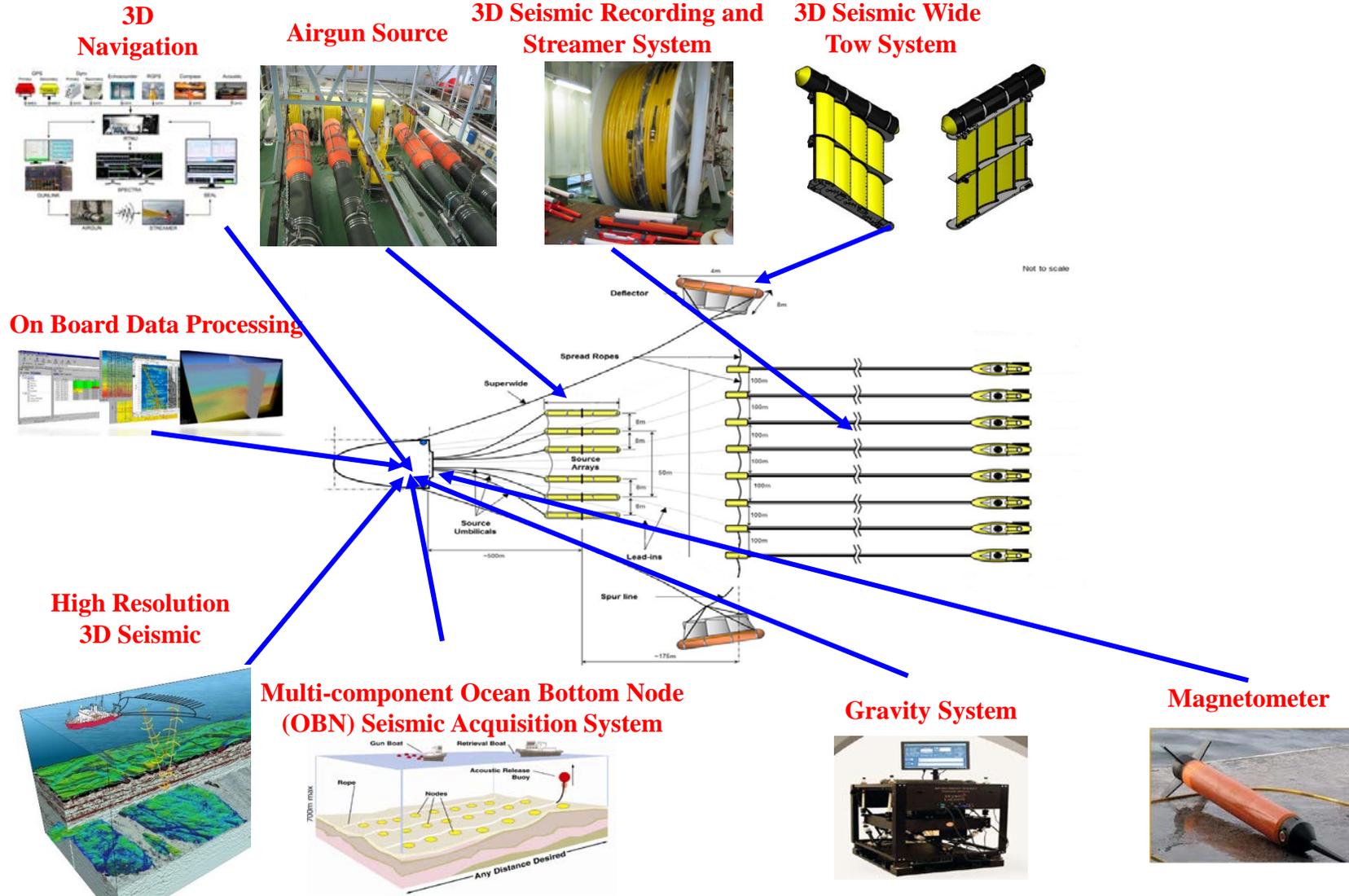
3. Summary of Basic Design

❖ General Arrangement



4. Equipments

❖ Equipments for Geophysical Survey

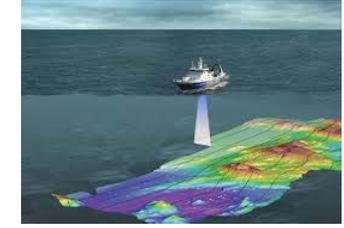


4. Equipments

❖ Equipments for Geological Survey



Multi-beam Echo Sounder (Deep Water)



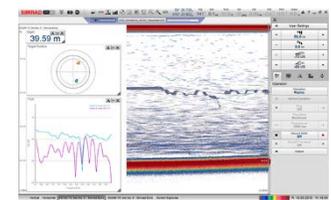
Multi-beam Echo Sounder (Shallow Water)



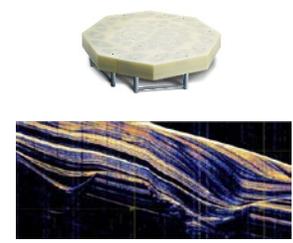
Single-beam Echo Sounder



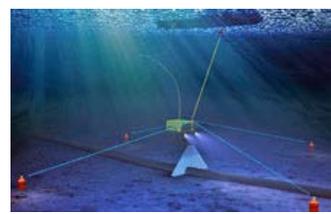
Wide Band Split Beam Transceiver



Sub-bottom Profiler



Under Water Positioning System



Multi Corer



Piston Corer



Acoustic Doppler Current Profiler





Summary

- Shared Use with academic community is becoming the new norm in Korea
- RV Isabu and other KIOST research vessels operate annually in the Western Pacific and Indian Oceans. The Icebreaking Research Vessel is part of shared use system
- KIGAM is somewhat concerned about good use of their seismic vessel because Korean EEZ is very small
- KIGAM is also part of IODP
- Hopefully Korea will become an important contributor in global marine sciences