



RV issues of interest outside the USA

- Ocean Facilities Exchange Group (OFEG)
- European Research Fleet Developments
- Recent new builds in Europe
- Developments in China and India

RVOC 2006



OFEG
Ocean Facilities Exchange
Group



The OFEG partners:

- NERC:** Natural Environment Research Council
- BMBF:** Federal Ministry of Education and Research
- IFREMER:** French Institute of Research and Exploitation of the Sea
- NIOZ:** Royal Netherlands Institute for Sea Research
- CSIC:** Spanish Council for Scientific Research
(observer status)

The OFEG fleet

- Alkor
- Charles Darwin*
- Discovery
- Heincke
- James Clark Ross

Ocean Facilities Exchange
Group



- L'Atalante
- Pelagia
- Le Suroit
- Poseidon
- M.S. Merian
- Sonne
- Meteor
- Pourquoi Pas?
- Thalassa
- James Cook*

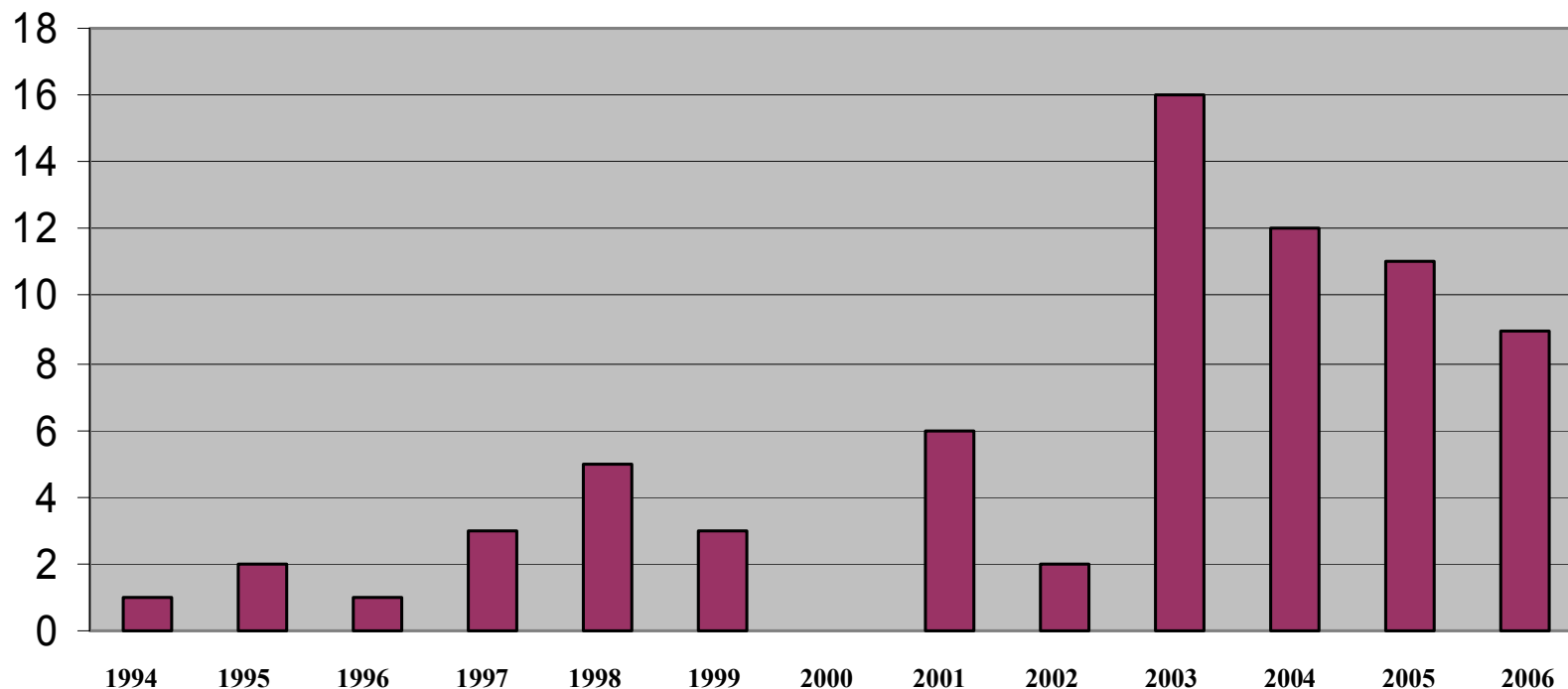
OFEG marine

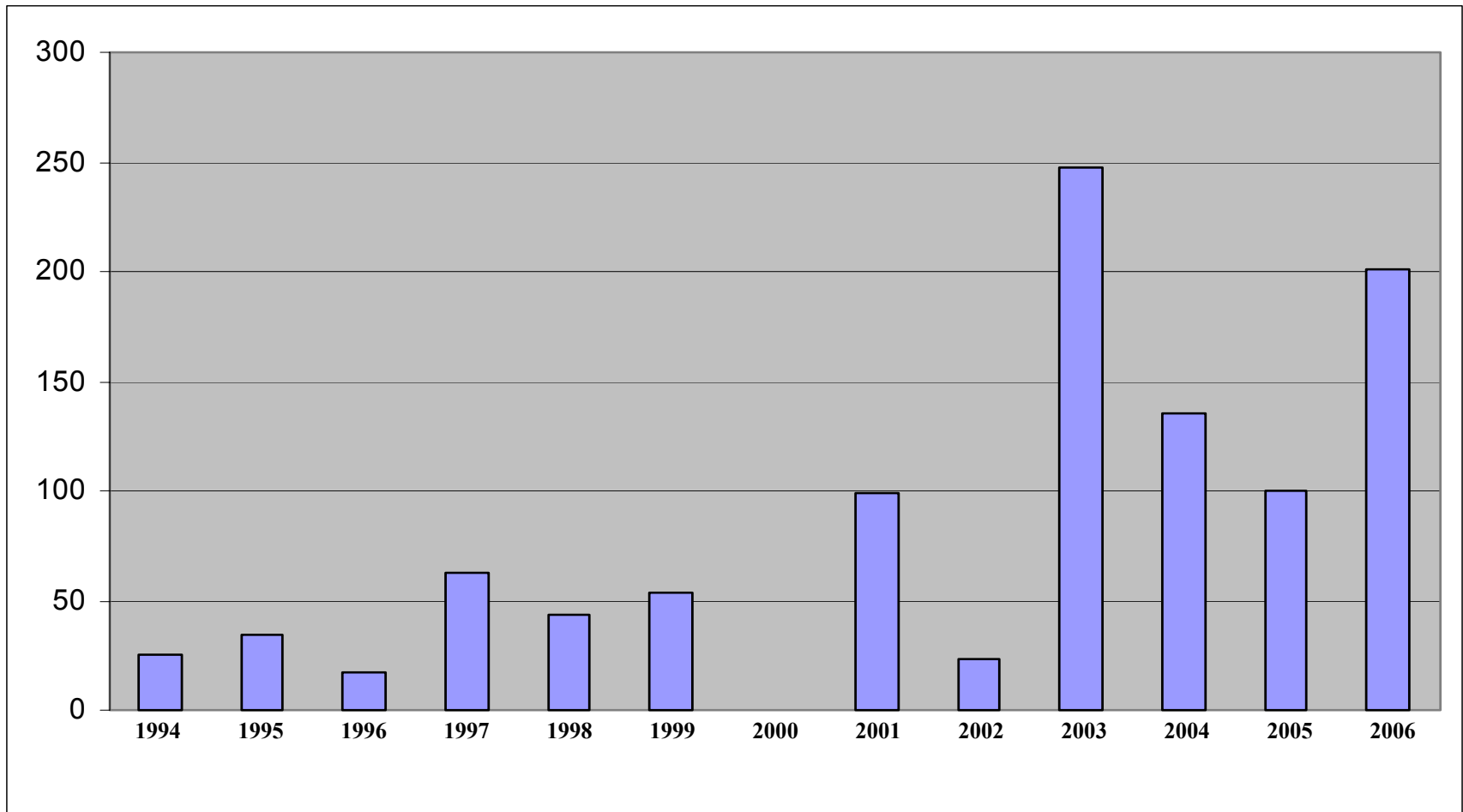
facilities

- ROV Victor
- Submersible Nautille
- TOBI
- Multichannel seismics
- Mobile compressors
- containers



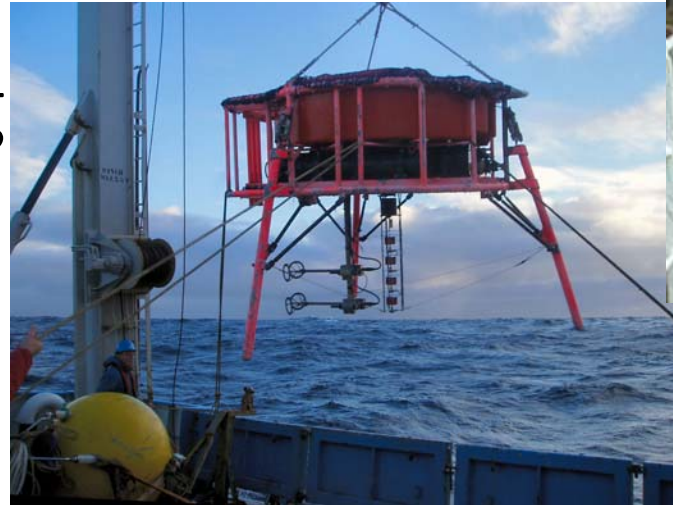
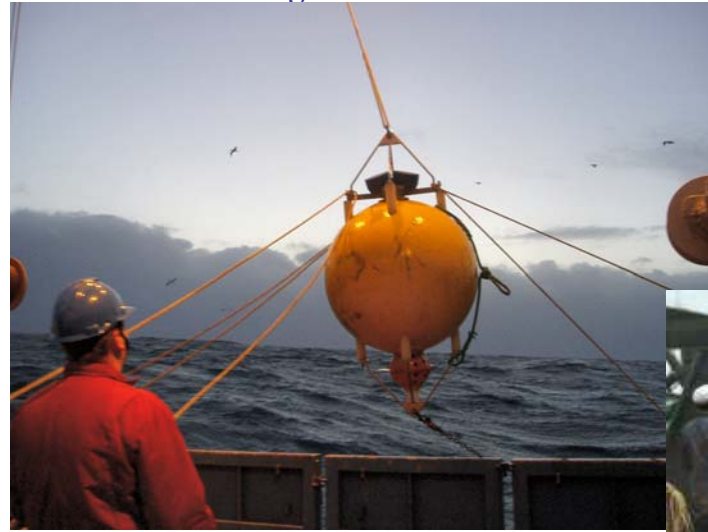
Activity (no. of exchanges)





Opportunistic interventions

This is of growing
importance now use
of long term mooring
is increasing



More information on OFEG can be
found at:

<http://ofeg.nerc.ac.uk>

European Research Fleet Developments

OFWG (Ocean research Fleets Working Group)



European Ocean Research Fleets

Approach for a Common Strategy and an Enhanced Use on the European Scale



Report delayed until May 2006

Choice made to describe the

Academic Research Fleet,

**only including RVs that are open for academic research
- over 35 m length.**

Class description

Following the USA a classification has been introduced, derived from main working area:

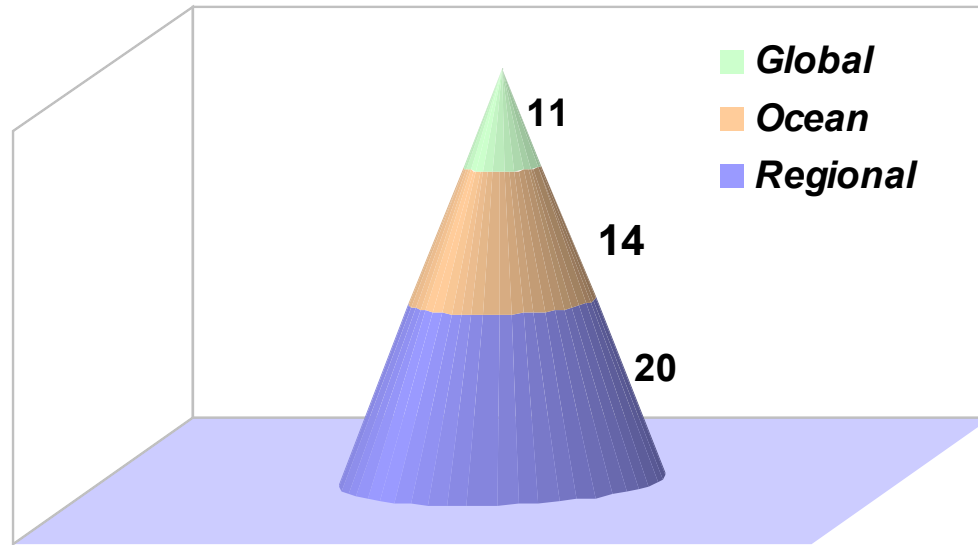
Global Class: World wide, Polar

Ocean Class: (outer) Oceans

Regional Class: regional seas, continental shelf

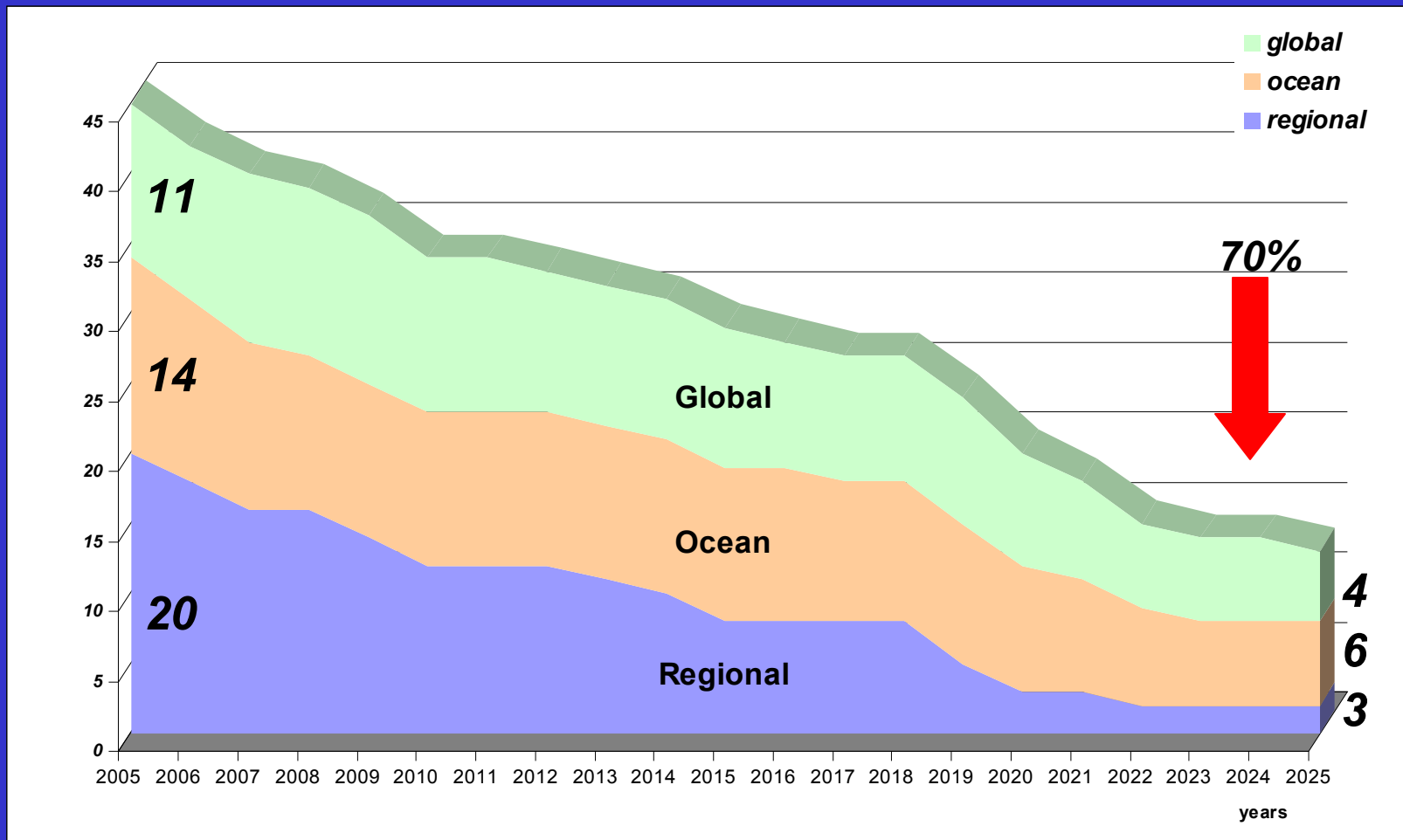
BELGICA A962	51	Belgium
AKADEMIK	56	Bulgaria
ARANDA	60	Finland
L'ATALANTE	85	France
LE SUROIT	56	France
MARION DUFRESNE	121	France
POURQUOI PAS?	105	France
ALKOR	55	Germany
HEINCKE	55	Germany
M.S. MERIAN	95	Germany
METEOR	98	Germany
POLARSTERN	118	Germany
POSEIDON	61	Germany
SONNE	98	Germany
AEGAEO	62	Greece
BJARNI SÆMUNDSSON	56	Iceland
ÁRNI FRIÐRIKSSON	70	Iceland
CELTIC EXPLORER	65	Ireland
CELTIC VOYAGER	31	Ireland
EXPLORA	73	Italy
UNIVERSITATIS	45	Italy
URANIA	61	Italy
VEJAS	56	Lithuania

PELAGIA	66	Netherlands
DR FRIDTJOF NANSEN	57	Norway
G.O.SARS	77	Norway
HAKON MOSBY	47	Norway
JAN MAYEN	64	Norway
JOHAN HJORT	64	Norway
OCEANIA	48	Poland
DON CARLOS I	68	Portugal
CAPRICORNO	47	Portugal
NORUEGA	47	Portugal
MARE NIGRUM	82	Romania
CORNIDE DE SAAVEDRA	66	Spain
GARCIA DEL CID	37	Spain
HESPERIDES	83	Spain
SARMIENTO DE GAMBOA	70	Spain
VIZCONDE DE EZA	53	Spain
ARGOS	61	Sweden
BILIM	40	Turkey
CHARLES DARWIN	69	UK
DISCOVERY	90	UK
JAMES CLARK ROSS	99	UK
PRINCE MADOG	35	UK



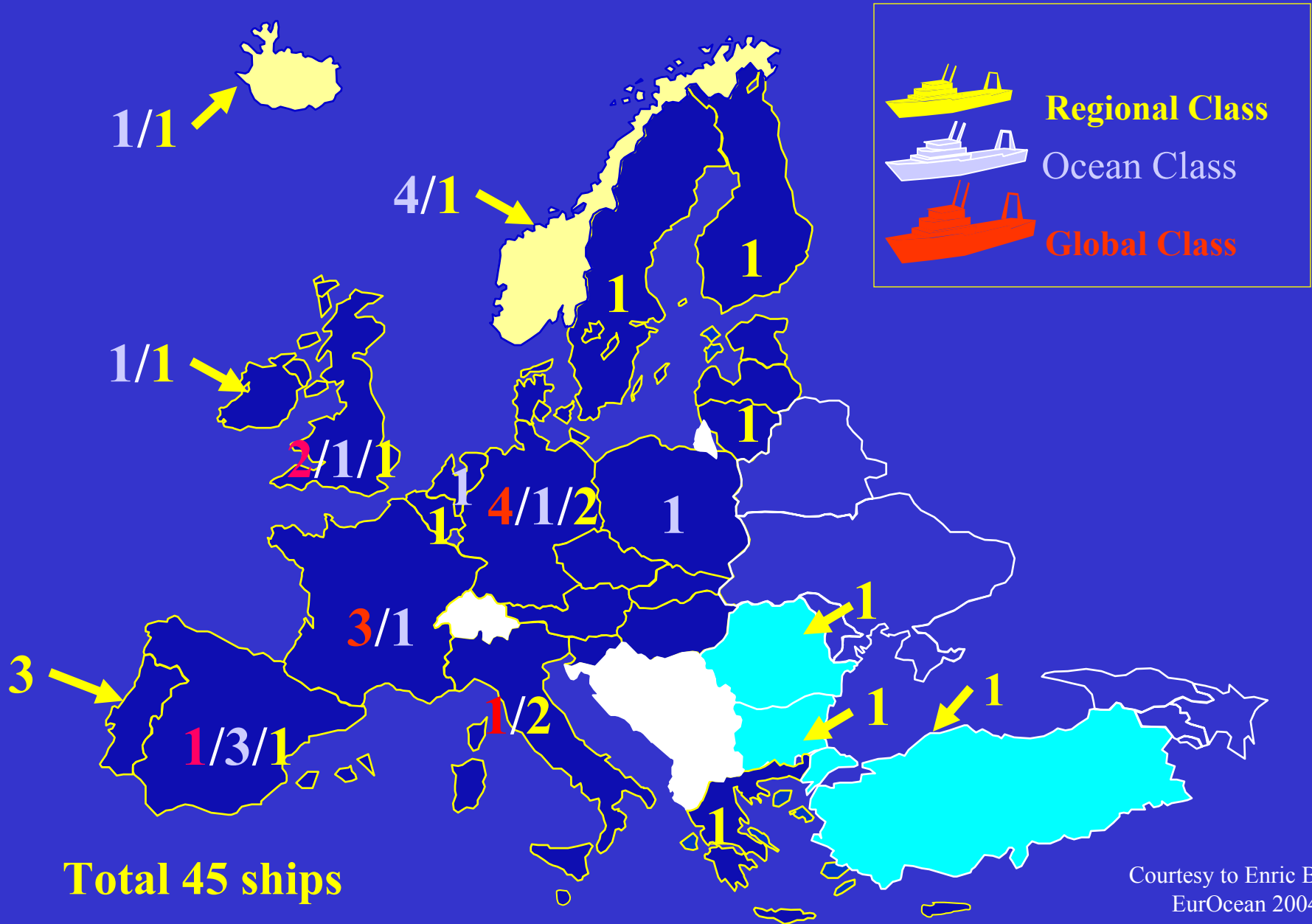
Total RVs in Europe (26 countries) for Academic research: 45

Evolution European Academic Research Fleet 2005 - 2025



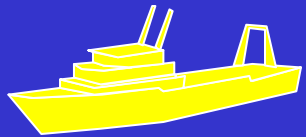
★ Without any yet planned new builds, within 20 years the fleet will be reduced by 70%.
 In 2006 James Cook (UK) will replace Charles Darwin (Ocean Class becomes Global Class) and in 2007 new Spanish RV Sarmiento de Gamboa (Ocean Class).

European Academic Research Fleet: RVs over 30m

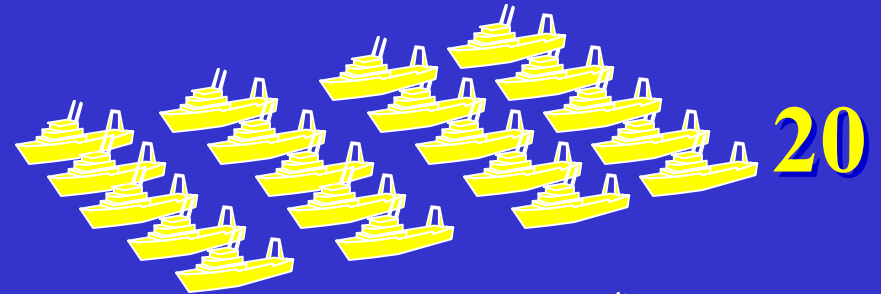


Academic Research Fleet in Europe

RVs over 30 m : total 45



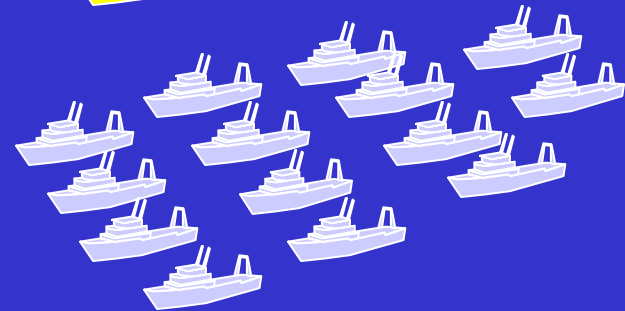
Regional Class



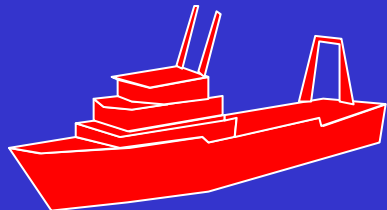
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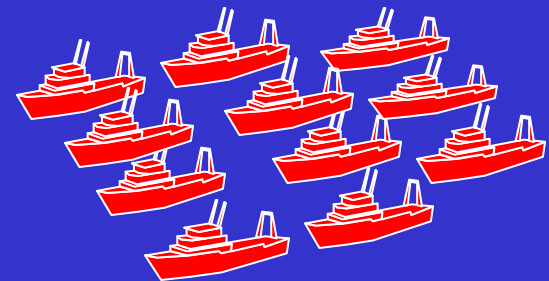
Ocean Class



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Global Class

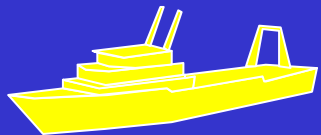


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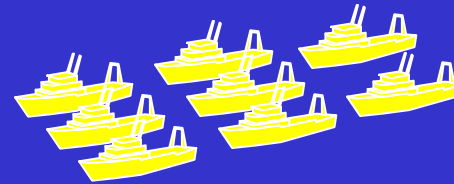
Including a few RVs also involved in ICES stock assessment

Academic Research Fleet within UNOLS

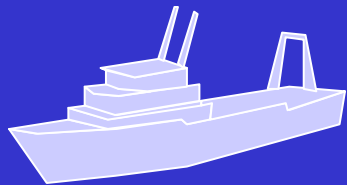
RVs over 30 m (100 ft) Total 26



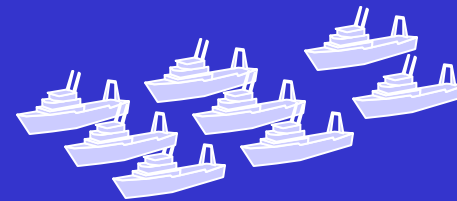
Regional Class



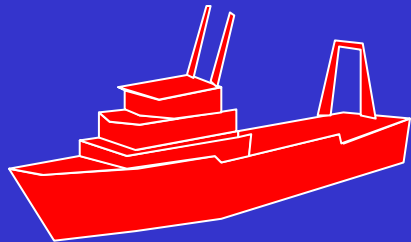
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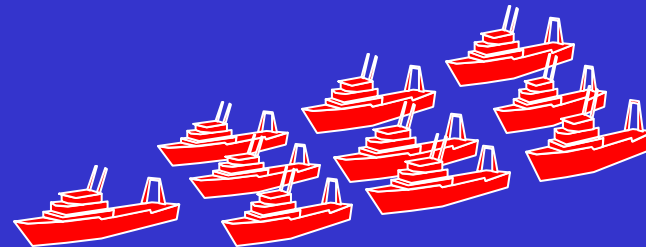
Ocean Class



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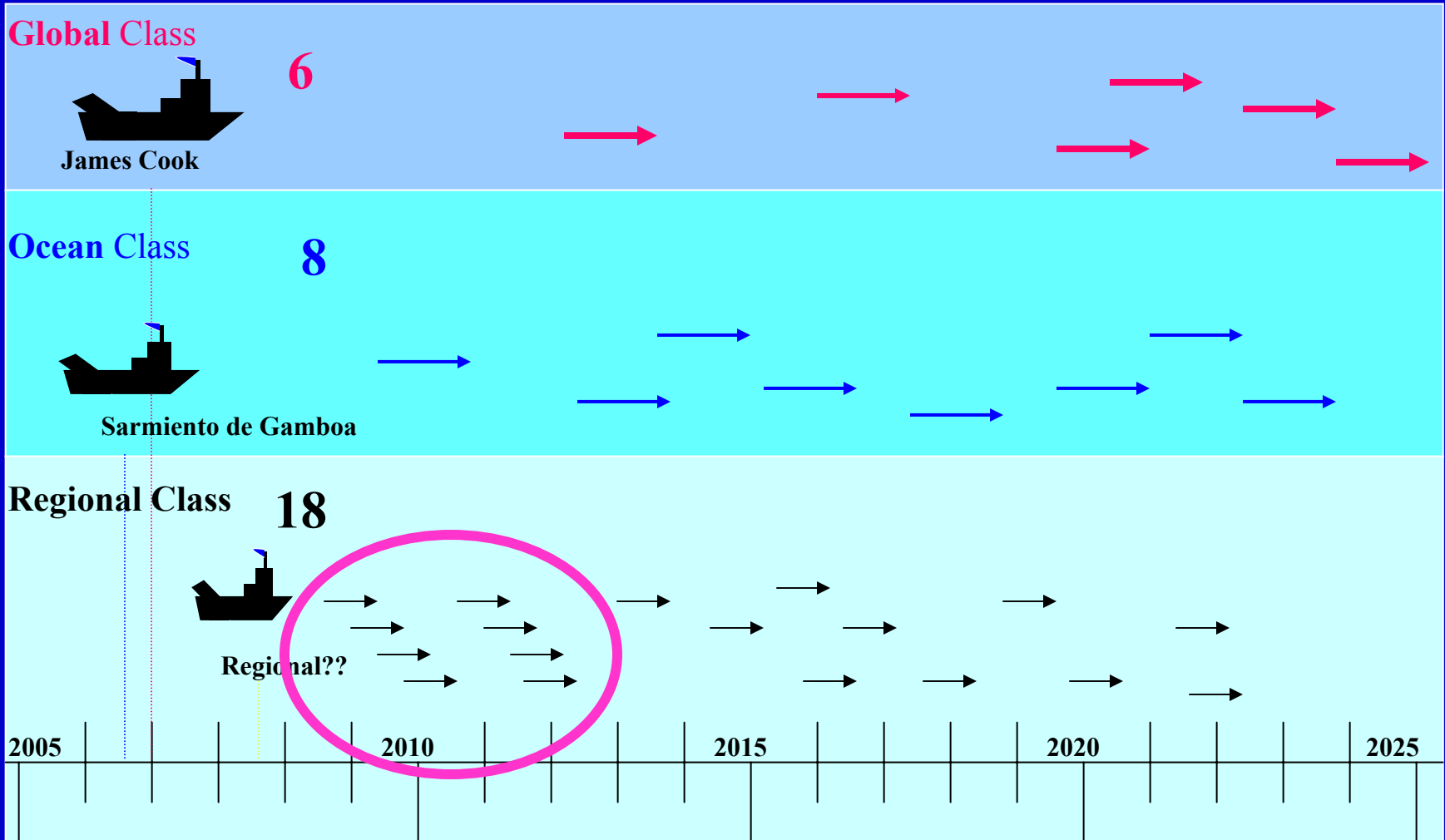


Global Class



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Including 3 USCG Ice breakers and NOAA Ron Brown
Excluding 5 small RVs < 30 m (100 ft)



The number of replacements needed to keep the fleet updated

Recent new builds in Europe:

Year	Ship's name	Class	Country
2004	RV G.O. SARS	(O)	- NORWAY
2005	RV POURQUOI PAS?	(G)	- FRANCE
2005	RV MARIA SIBYLLA MERIAN		- GERMANY (G)
2006	RV SARMIENTO DE GAMBOA		- SPAIN (O)
2007	RV JAMES COOK	(G)	- UNITED KINGDOM

No recent new builds for Regional Class RVs !!

RV POURQUOI PAS?



Main characteristics

- Length overall : 107,6 m
- Breadth : 20 m
- Maximum Draught : 6,9 m
- Full load displacement : 6 600 t
- Maximum speed : 14,5 knots
- Autonomy : 64 days at 11 knots
- Special vessel, French flag, Bureau Veritas class
- Multibeam echosounder and scientific equipments in a gondola under the hull
- Deployment of Nautilie, ROV Victor 6000 and hydrographic motorboats
- Scientific party : 40
- Diesel-electric propulsion associated to a dynamic positioning system (DP class II)

RV MARIA S. MERIAN

LOA: 94,80 m

Beam: 19,20 m

Draught: max. 6,50 m

Speed: max. 15 kn

Gross Tonnage: 1345 t

Endurance: 7500nm

/35 days

Science team: 20

Crew: 20

Propulsion: diesel-electric

2 x 1900 KW POD

1 x 1600 KW Pumpjet



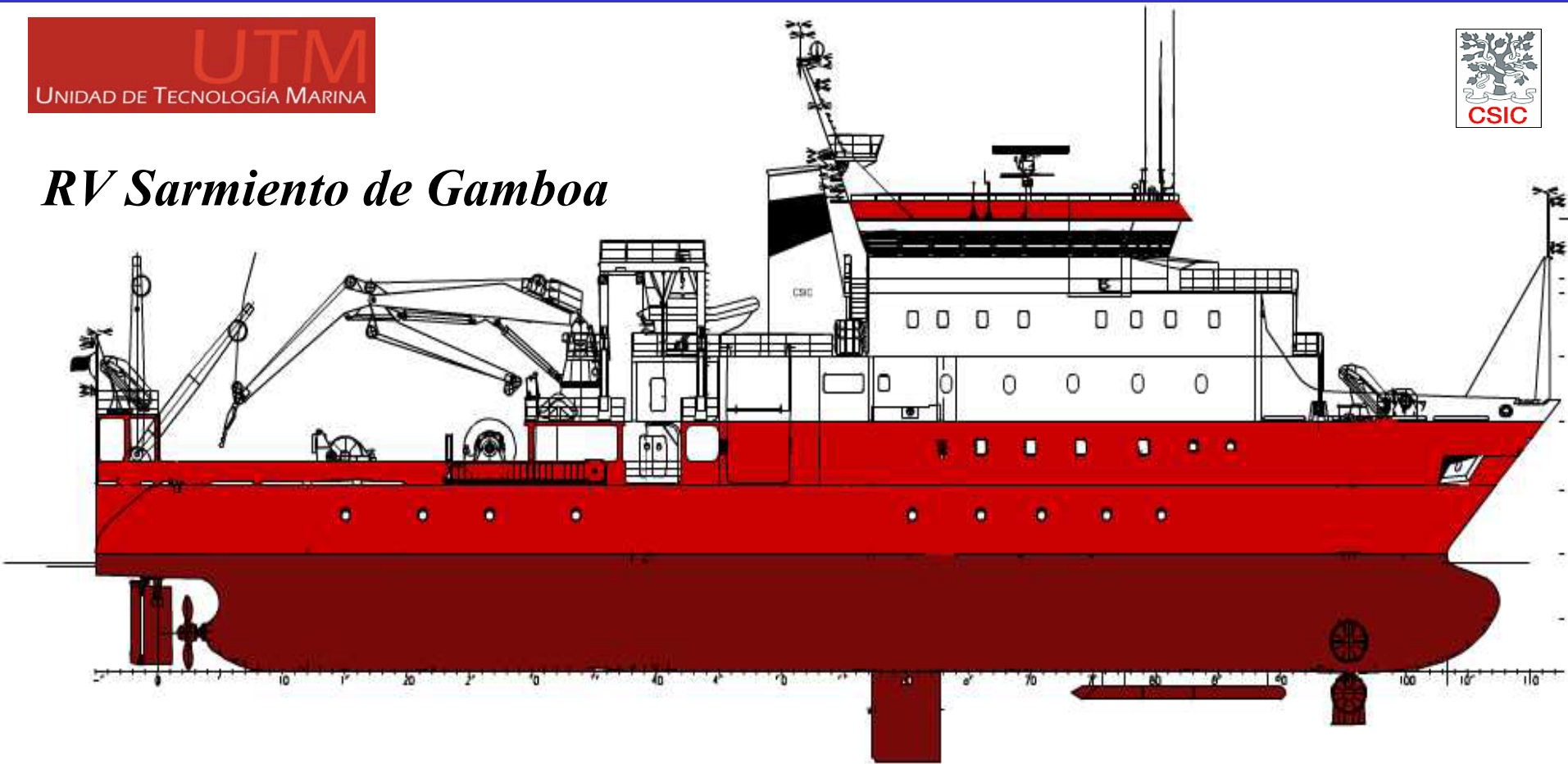
Leaving Rostoc harbour on her maiden trip February 2006

Polar Class PC 7



On station mid March 2006

RV Sarmiento de Gamboa



Overall length: 70.50 m **Beam:** 15.5 m

Draught: 4.90 m **Depth to design load-line:** 7.90 m

Gross Tonnage: 2.979 GT

Total Power: 3 x 1400 diesel w Propulsion twin engines DC electric 2 x 1200 kW fixed propeller

Service speed: 15 knots

Range of operation: 11500 miles / 12 knots /40 days

RV Sarmiento de Gamboa

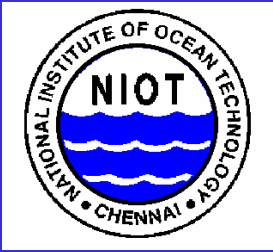
- **Multidisciplinary RV with diesel propulsion twin engines (DC)**
- **Transverse tunnel/azimuthally “combi” bow thruster of 590 kW and a 350 kW stern tunnel thruster for Dynamic Positioning (DP) specification SP1, as well as a unique high-performance Becker-type rudder.**
- **Low vessel-noise radiated into the sea fully in compliance with ICES report No 209**
- **Supports different disciplines (oceanography, fishery, seismic, geology, Rov’s, etc).**
- **Designed to support deep sea unmanned vehicles, (cooperation with IFREMER for handling the ROV Victor-6000).**



Launched and christened at Vigo by Queen Sofia of Spain

30 January 2006

DEVELOPMENTS in INDIA and CHINA



INDIA

**At present: 2 RVs LOA 71.5 and 100 m (1982 and 1983)
4 coastal RVs (1996 and 2000)**

New building plans:

SAGAR MANJUSHA 60 m launched 2005

SAGAR GAVESHANI II 80 m

SAGAR NIDHI 103 m



New all season ocean going RV capable of supporting inter-disciplinary research



SAGAR NIDHI





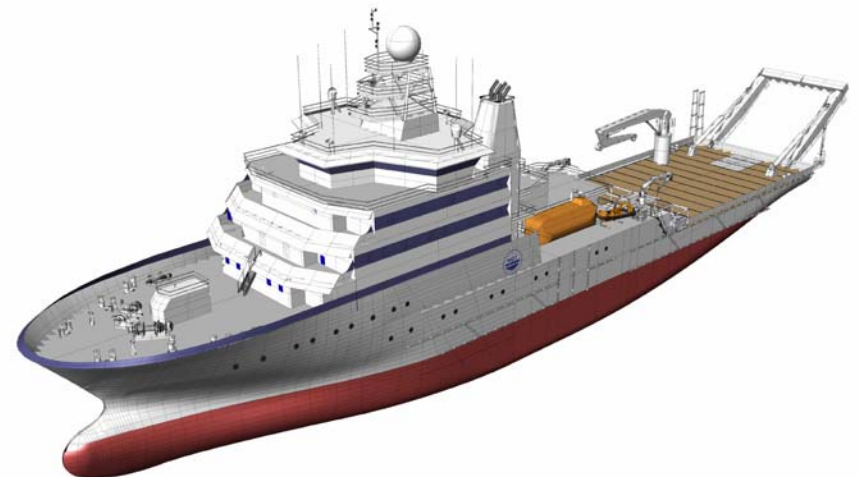
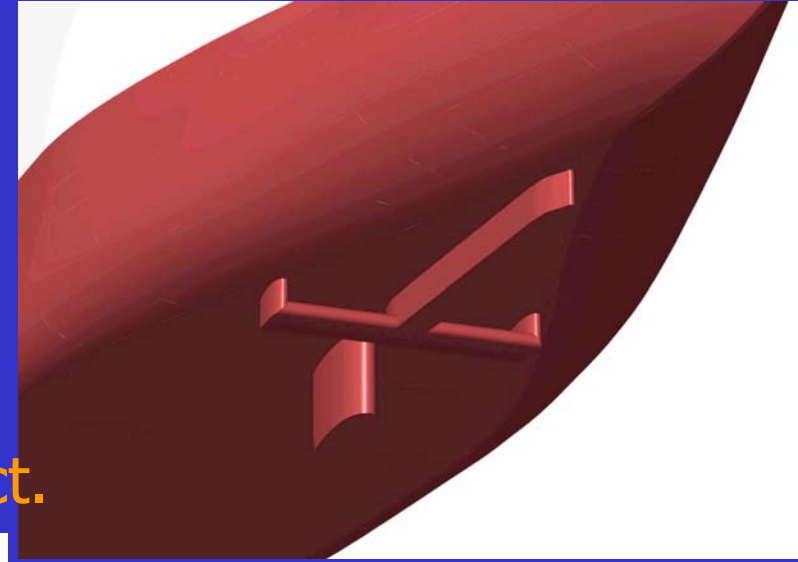
SAGAR NIDHI

Current status

Model test completed

Design and technical specifications drawn.

Negotiations with the yard for contract.





FUTURE FLEET PLANS

- POLAR VESSEL – 2010????
 - Antarctic Logistics and Polar RV
- Swath vessel with Geo technical capability
 - to replace coastal vessel – 2011???



IOCAS, Qingdao

CHINA

At present: 2 RVs LOA 68 - 104 m (1974 and 1980)

New building plans:

KEXUE SAN HAO (Science 3) 74 m - launch 2006

New 99 m RV

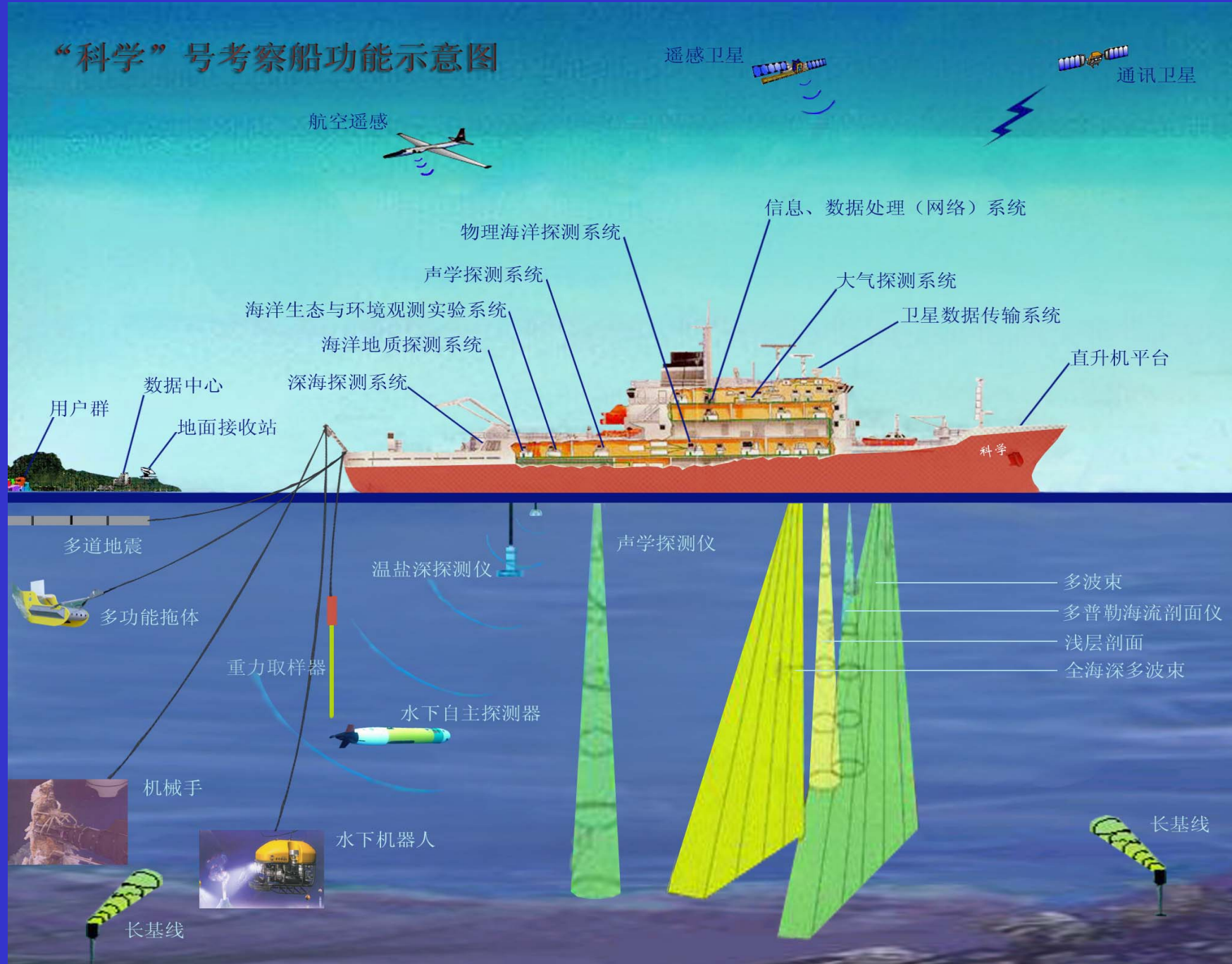


海洋科学综合考察船



Technology demonstration platform, ROV, seismics

“科学”号考察船功能示意图





Royal NIOZ and KONGSBERG sign multibeam contract

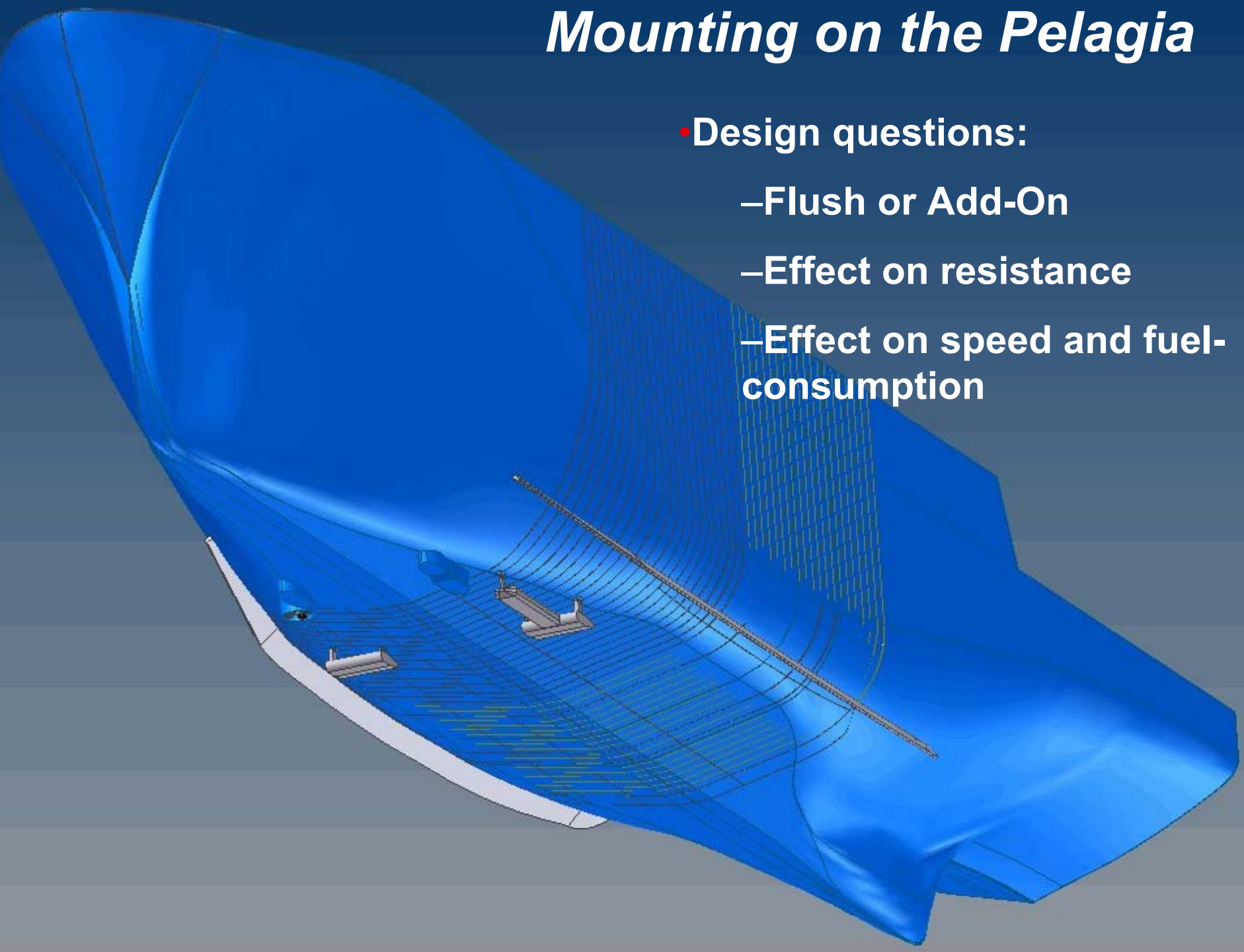
January 23, 2006



Swath KONGSBERG EM 302 1 x 2 degree multibeam echosounder for shallow and deep water. By using new chirped ping technology it is capable of producing a swath of 4000 m at 5 km depth.

Mounting on the Pelagia

- Design questions:
 - Flush or Add-On
 - Effect on resistance
 - Effect on speed and fuel-consumption





RV PELAGIA, 18 April 2006

THANK YOU



THE END

