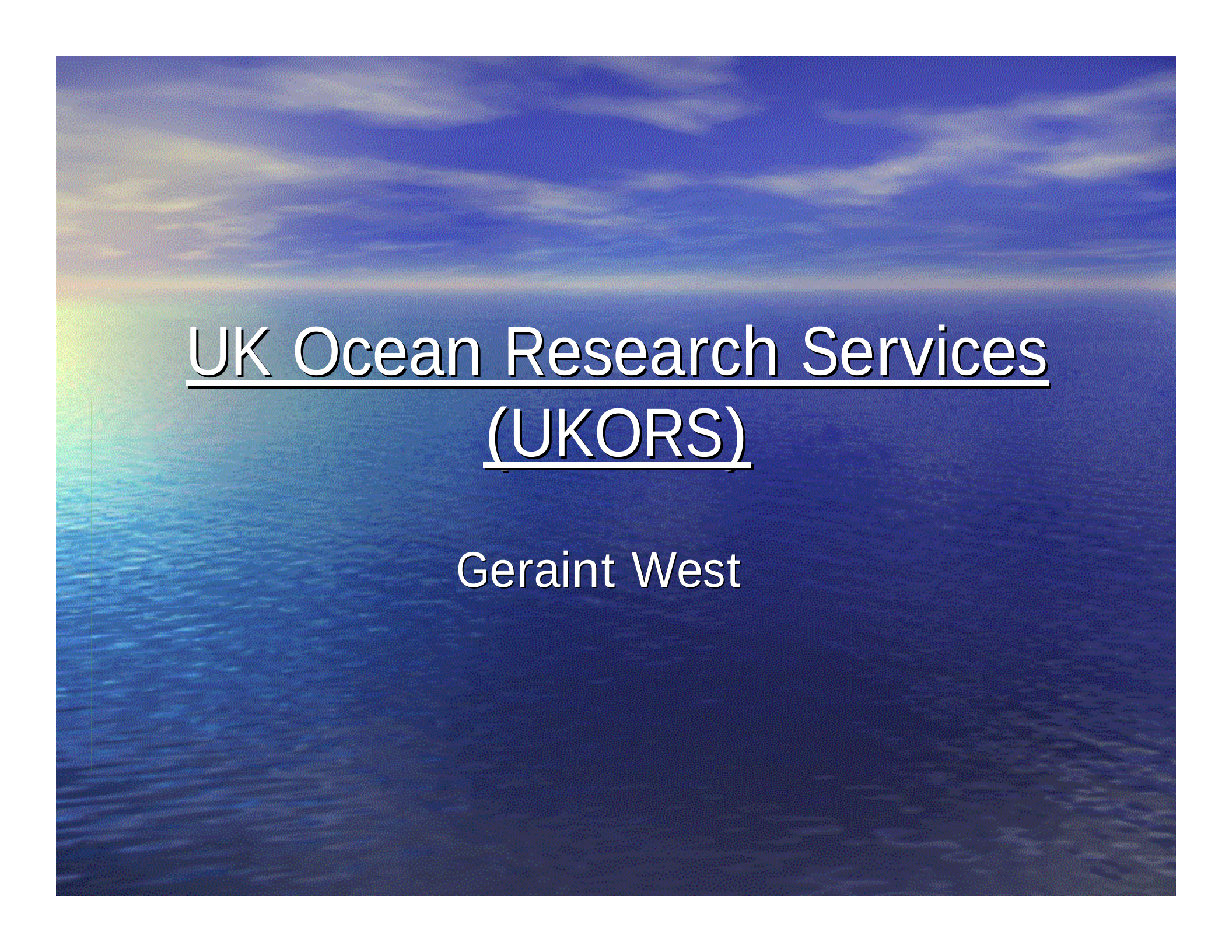




UK Ocean Research Services (UKORS)

Geraint West



Southampton Oceanography Centre

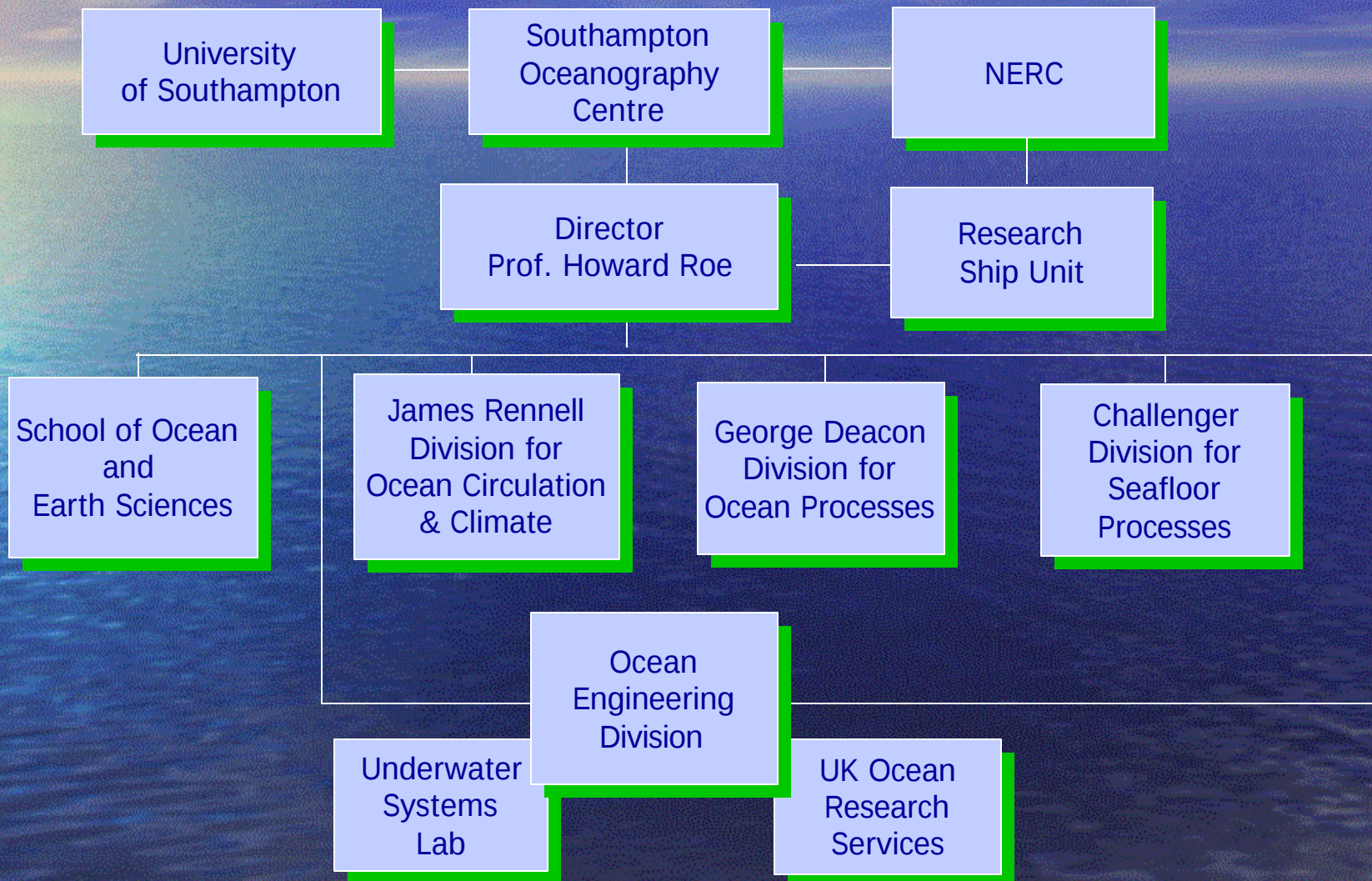
Joint venture between

University of Southampton
Natural Environment Research Council

- Completed in 1995
- Staff:
 - 450 Research and Engineering Staff
 - 190 PhD and MSc from UK and Overseas
 - 490 undergraduate students studying Oceanography, Geology/Geophysics or multi-disciplinary, e.g. with engineering
- 150 laboratories, specialised workshops
- 200 metres of dockside
- UK National Marine Equipment Pool
- National Oceanographic Library



SOC Organisation



Overview of Ocean Engineering Division

- Support marine science :
 - Shipboard systems
 - Commercial sensors & systems
 - Development of niche vehicles, systems and moorings
 - Sensor development - acoustic, electrical, mechanical, optical, chemical
 - Commercialisation - Technology Transfer to UK Industry
 - *Pro-bono* work for learned Societies - Society of Underwater Technology

Health and Safety is highest priority

Main output are technology and scientific peer reviewed papers

Ocean Engineering



- UKORS

- Technical support and equipment from National Marine Equipment Pool (NMEP) to UK marine science community
- Funding model of Infrastructure (NERC) & Superstructure (users)
- ~50 staff

- USL

- Primarily R&D of new technology - sensor and vehicles
- 5yr Core programme
- Other bid-for grant-funded projects
- ~30 staff

- Range of Skills

- Engineers
- Admin support
- Stores
- Health & Safety



Shore-side Facilities

- Mechanical Workshop
- Rigging Shop
- Pressure test
 - full ocean depth
- Acoustic tank
- Calibration Lab
 - seeking UKAS standard
- Transport
 - Lorries, cranes, forklifts

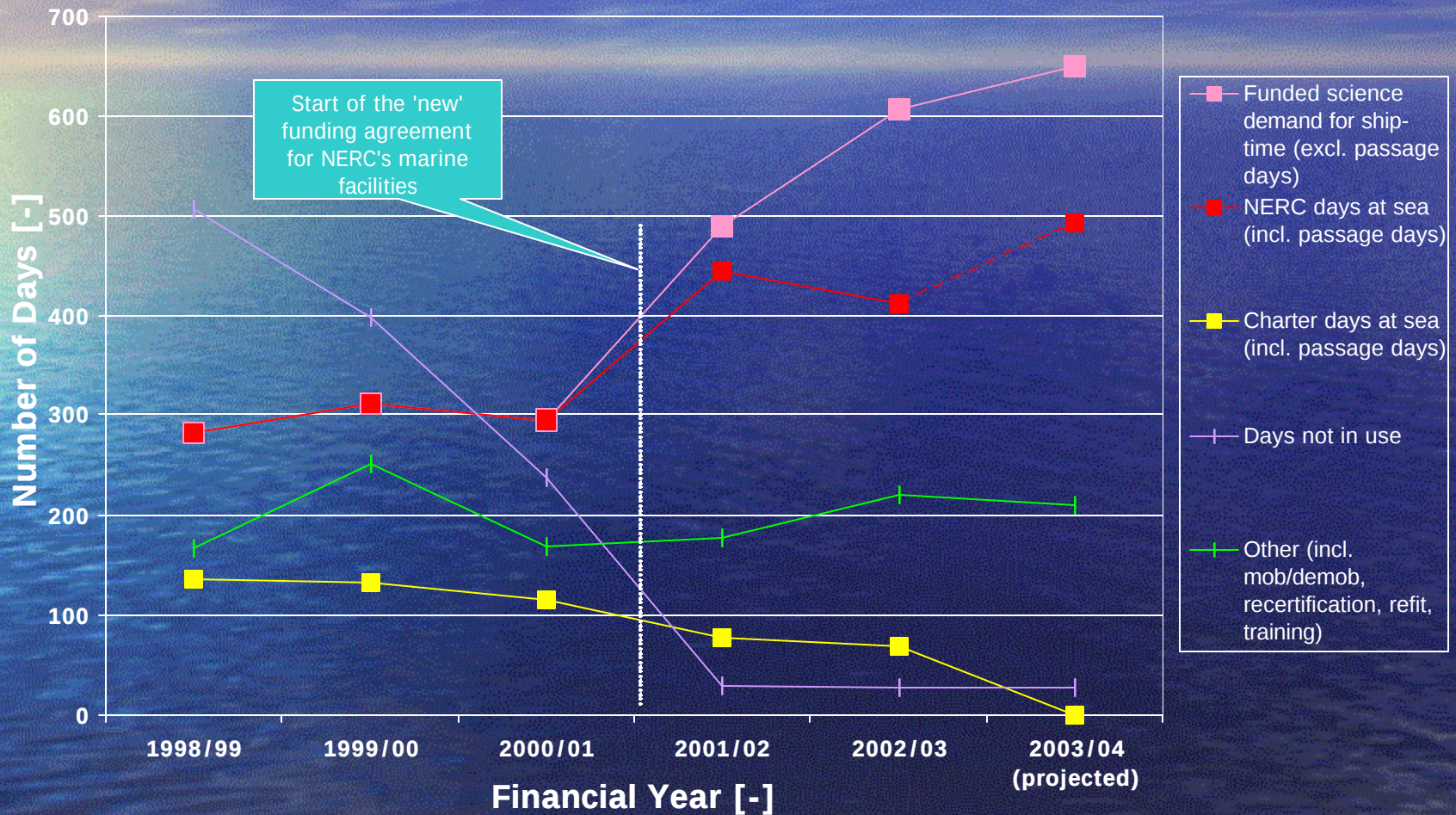


Vessels

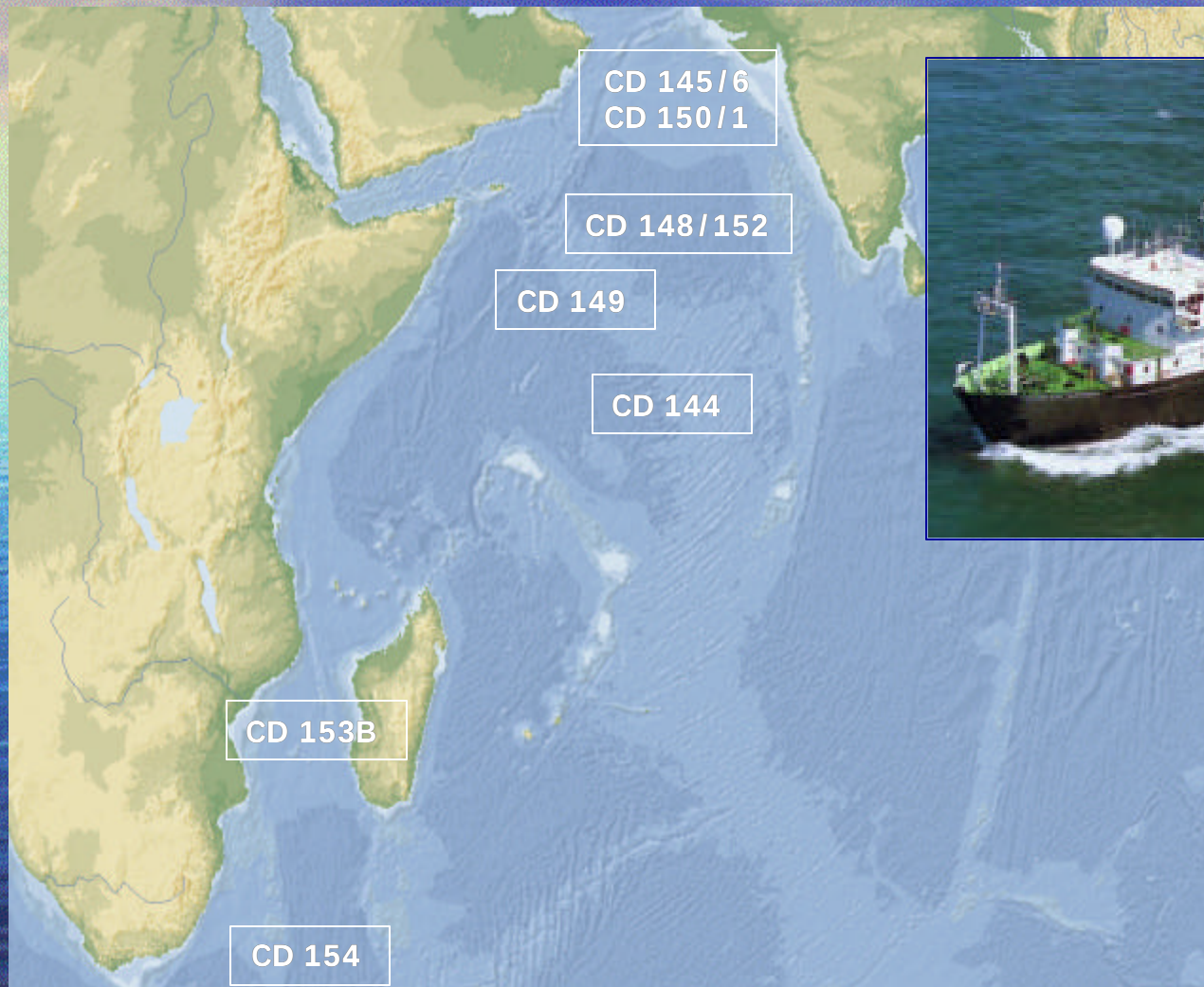
- NERC
 - Discovery
 - Charles Darwin
 - James Clarke Ross
 - Prince Madog
- Others
 - Pelagia
 - Polar Stern
 - Atlantis
 - Melville
 - Sonne
 - Poseidon
 - and charter vessels



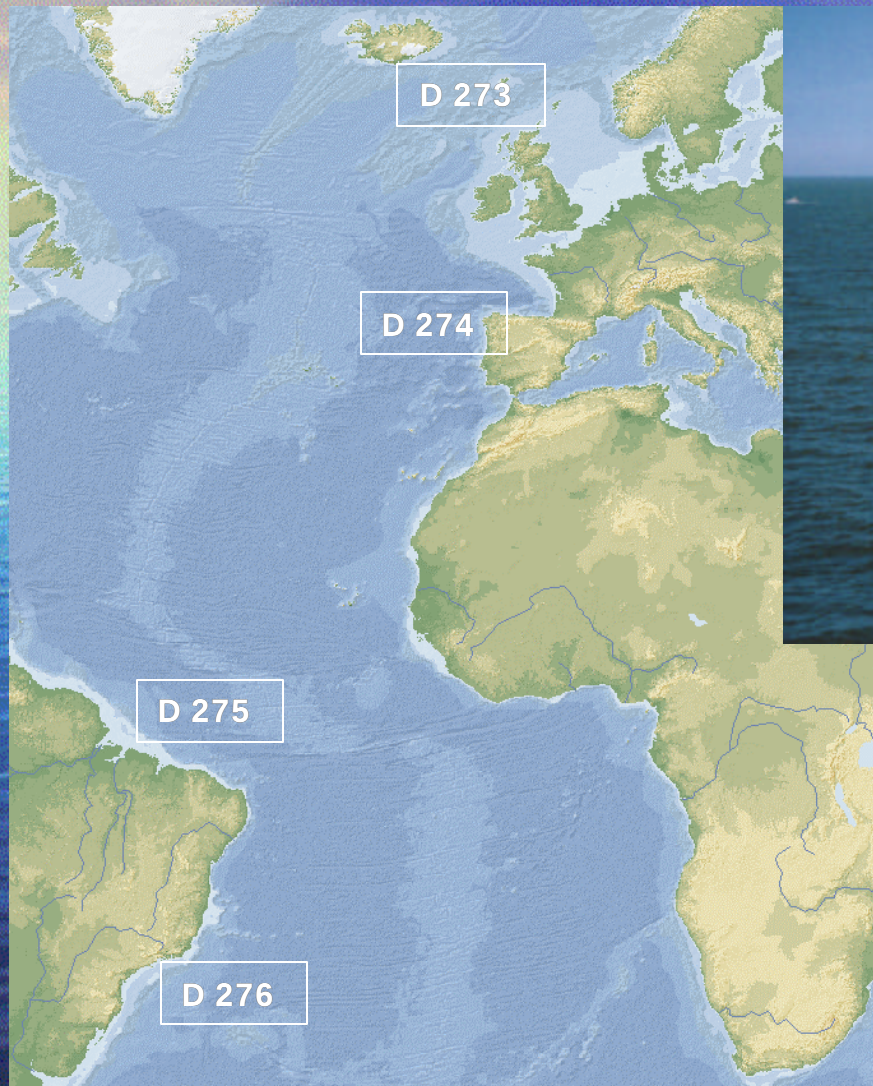
RSU Ship Utilisation



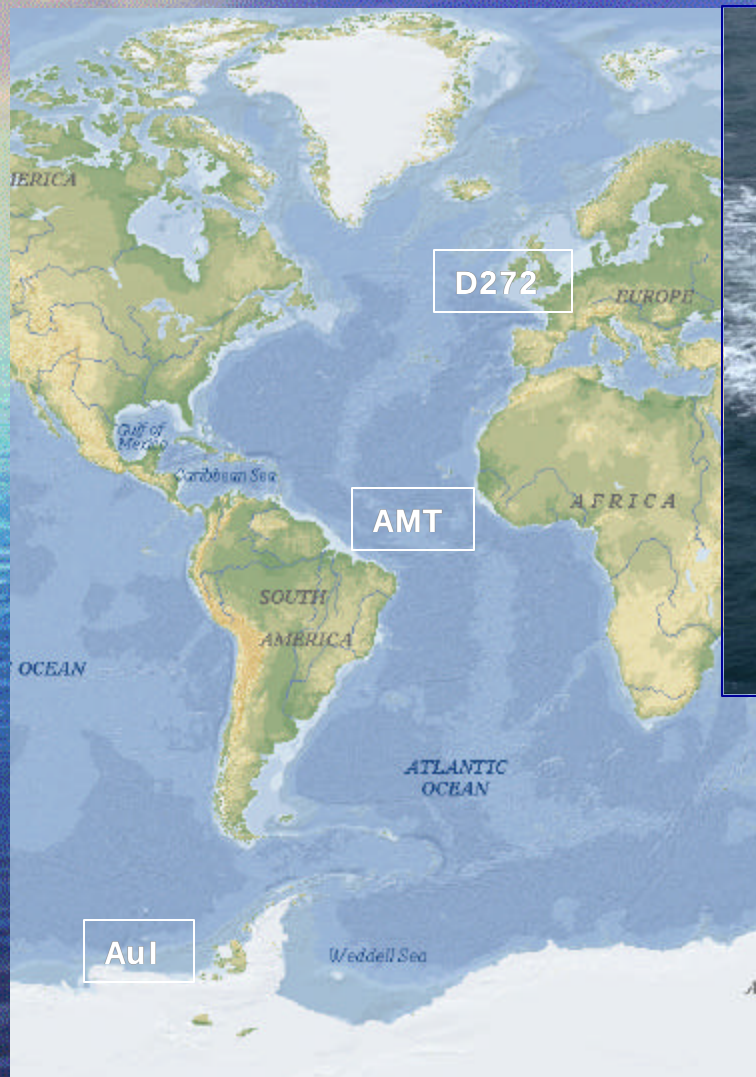
RRS Charles Darwin



RRS Discovery



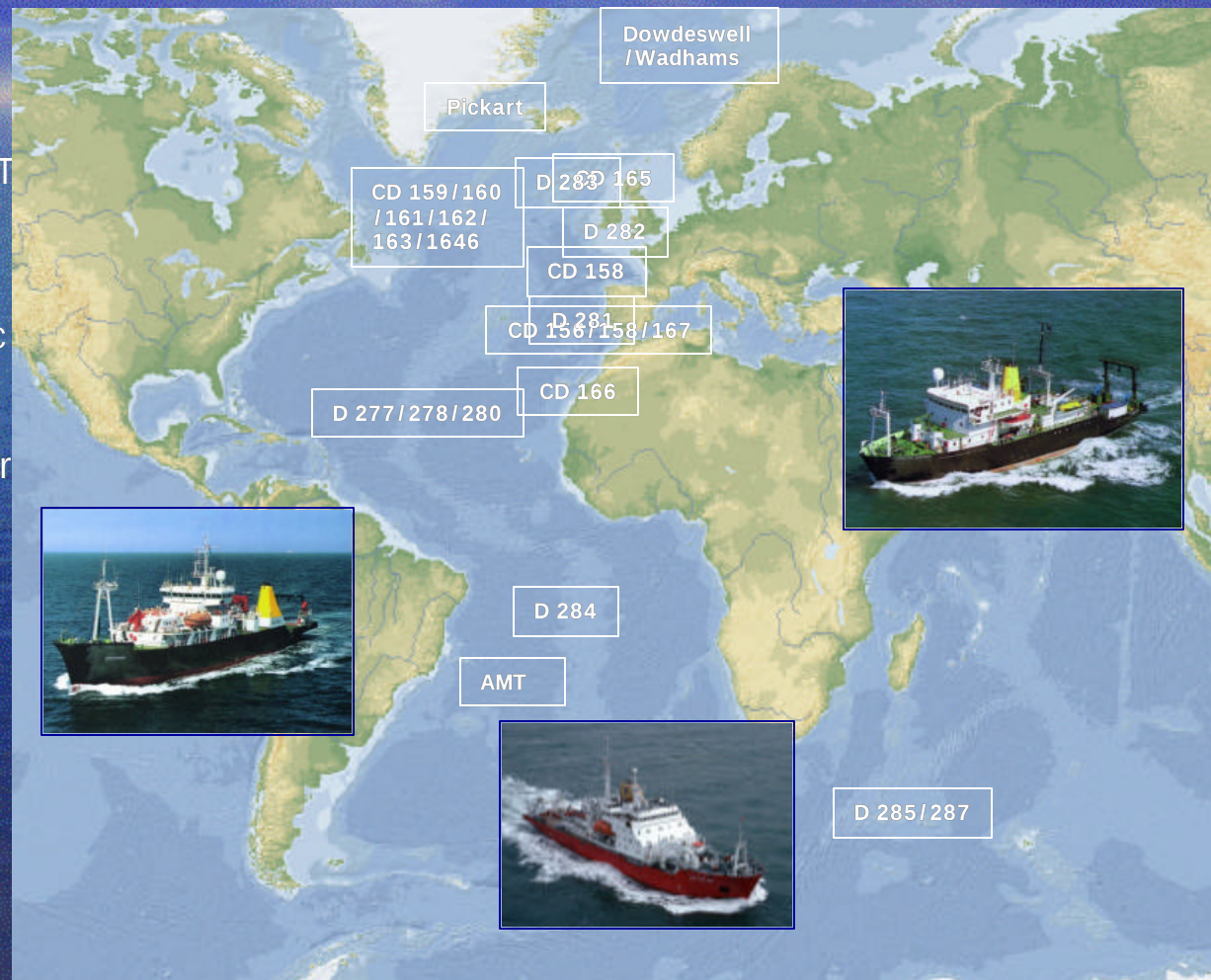
RRS James Clark Ross



Projected 2004 programme

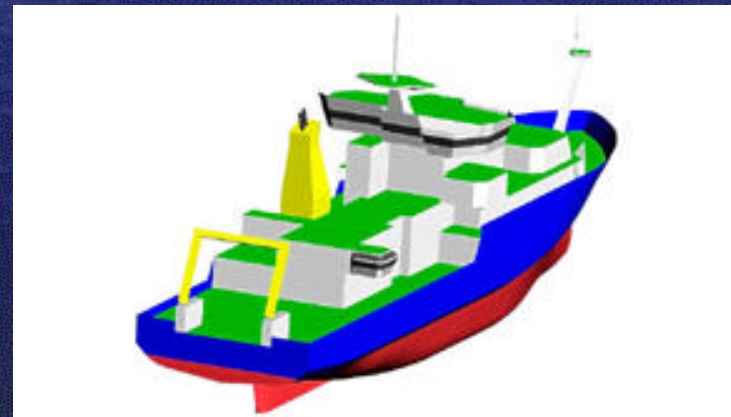
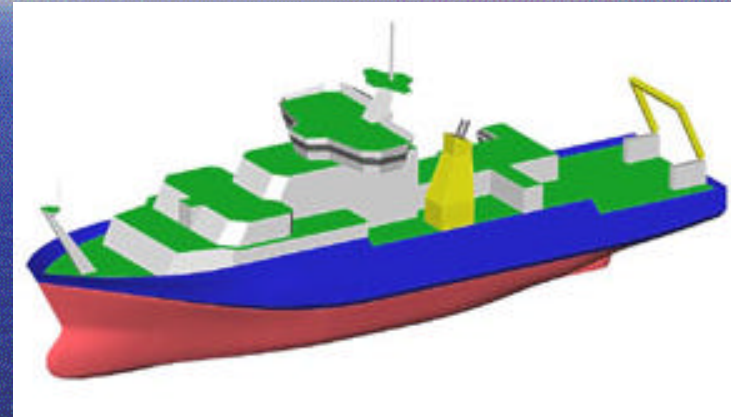
Currently anticipate:

- *RRS Discovery*
 - N. Atlantic until autumn, transit via AMT to Crozet Plateau
- *RRS Charles Darwin*
 - Return to Europe for refit e., then N. Atlantic
- *RRS James Clark Ross*
 - Transit via AMT north from Antarctic; summer around Greenland and Svalbard

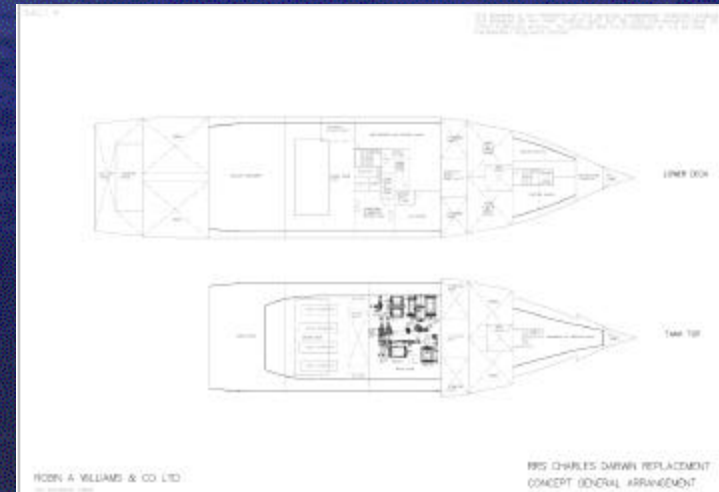
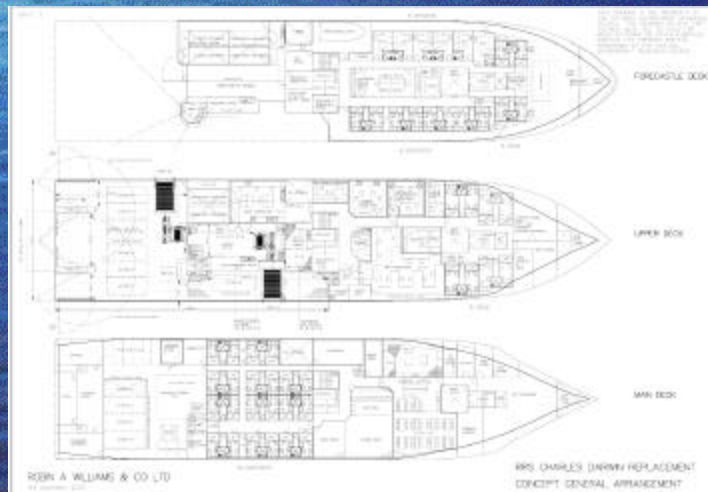
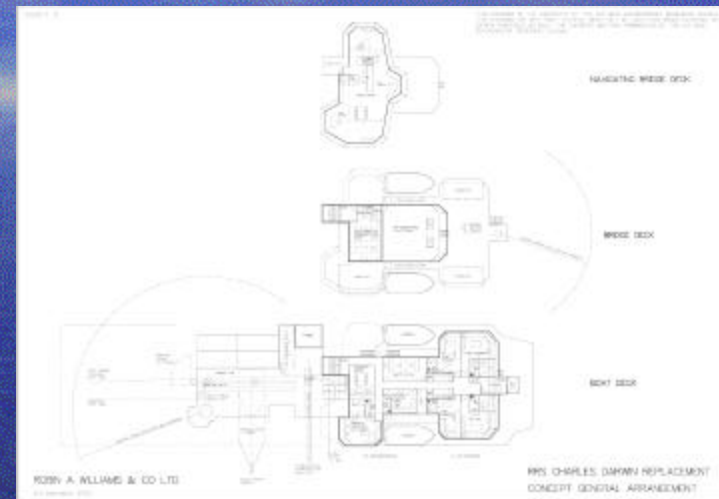
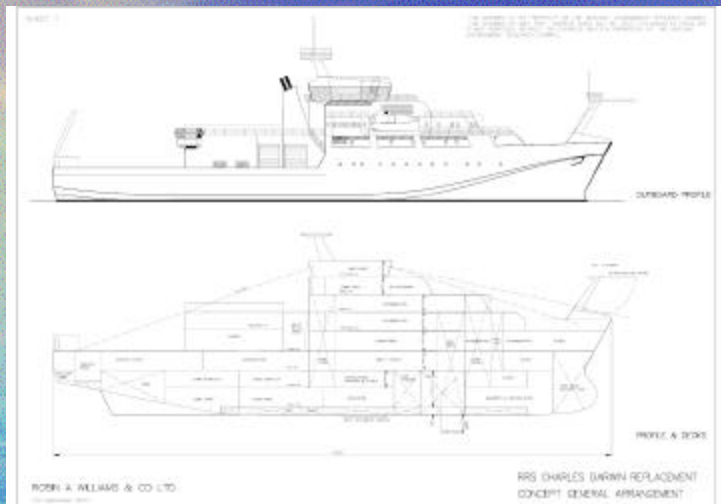


Darwin Replacement

- Statement of Requirements nearing completion – final stage before tender
- Total funding available: ca £40M:
- In service 2006



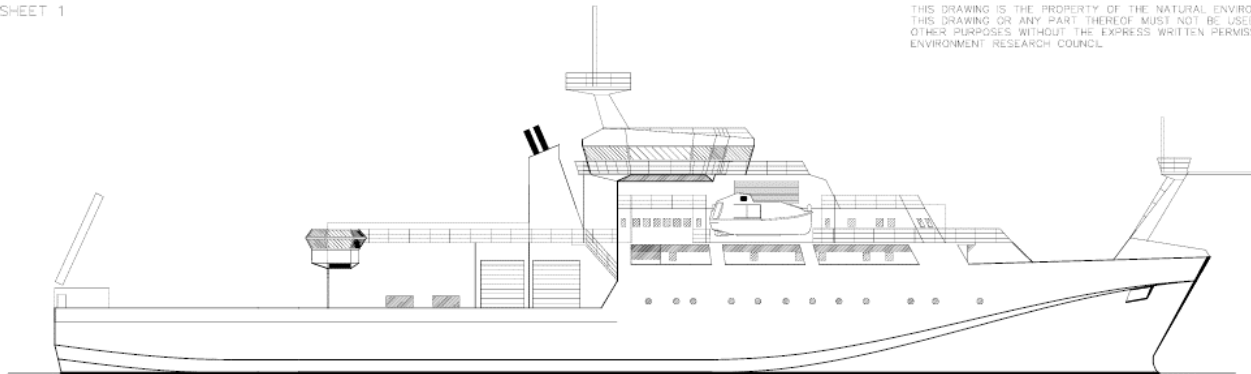
Darwin Replacement



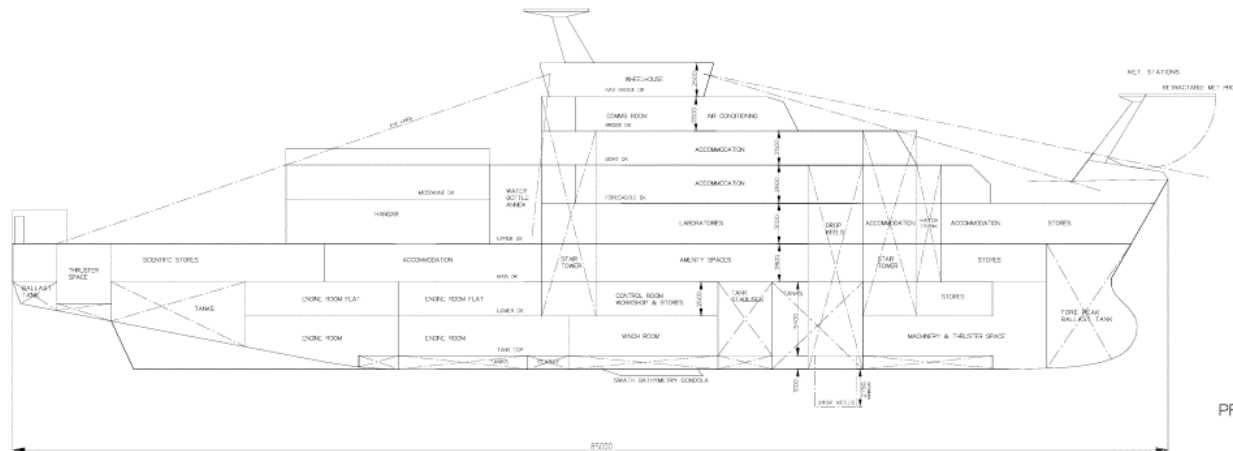
Darwin Replacement

SHEET 1

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OUTBOARD PROFILE

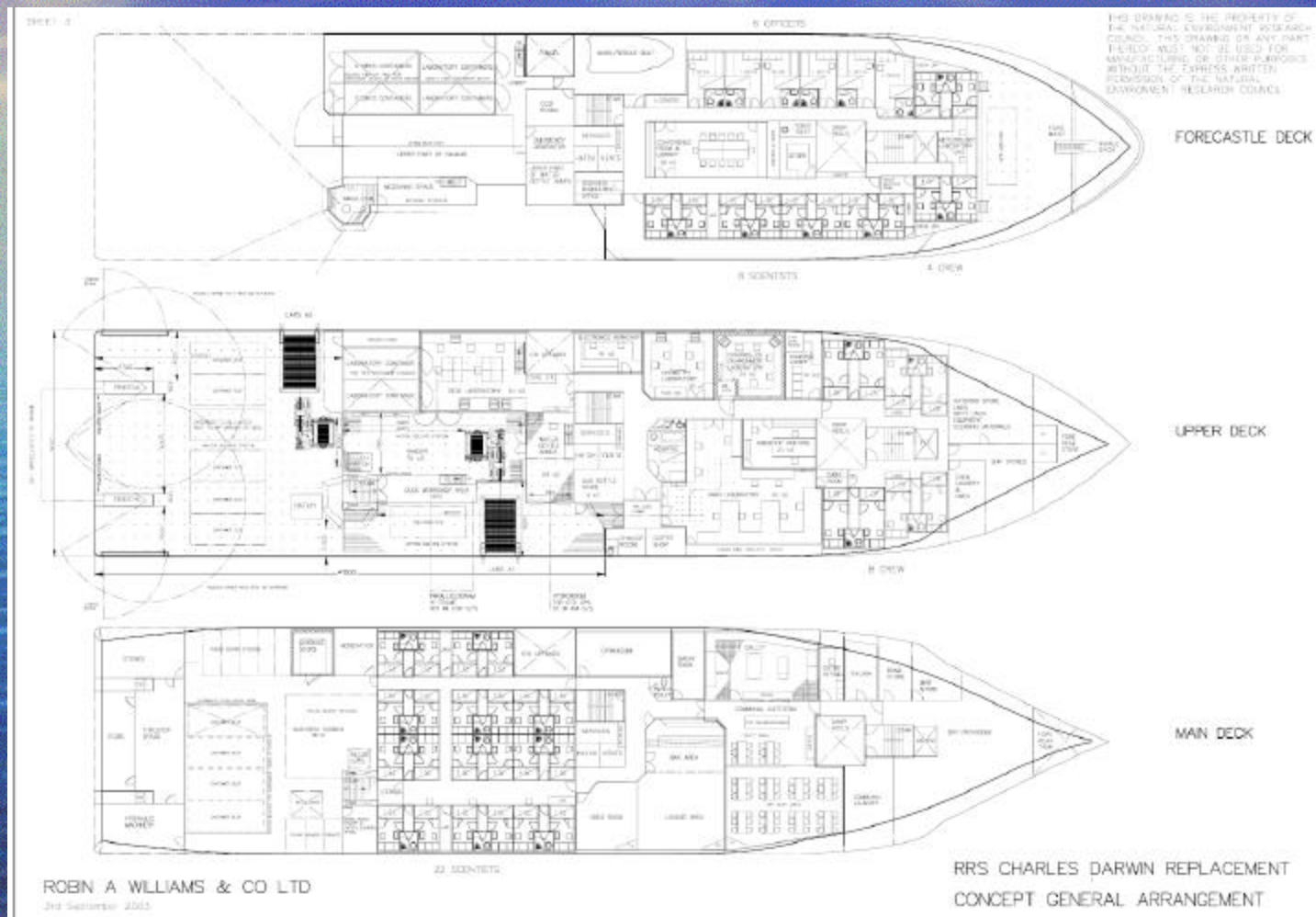


PROFILE & DECKS

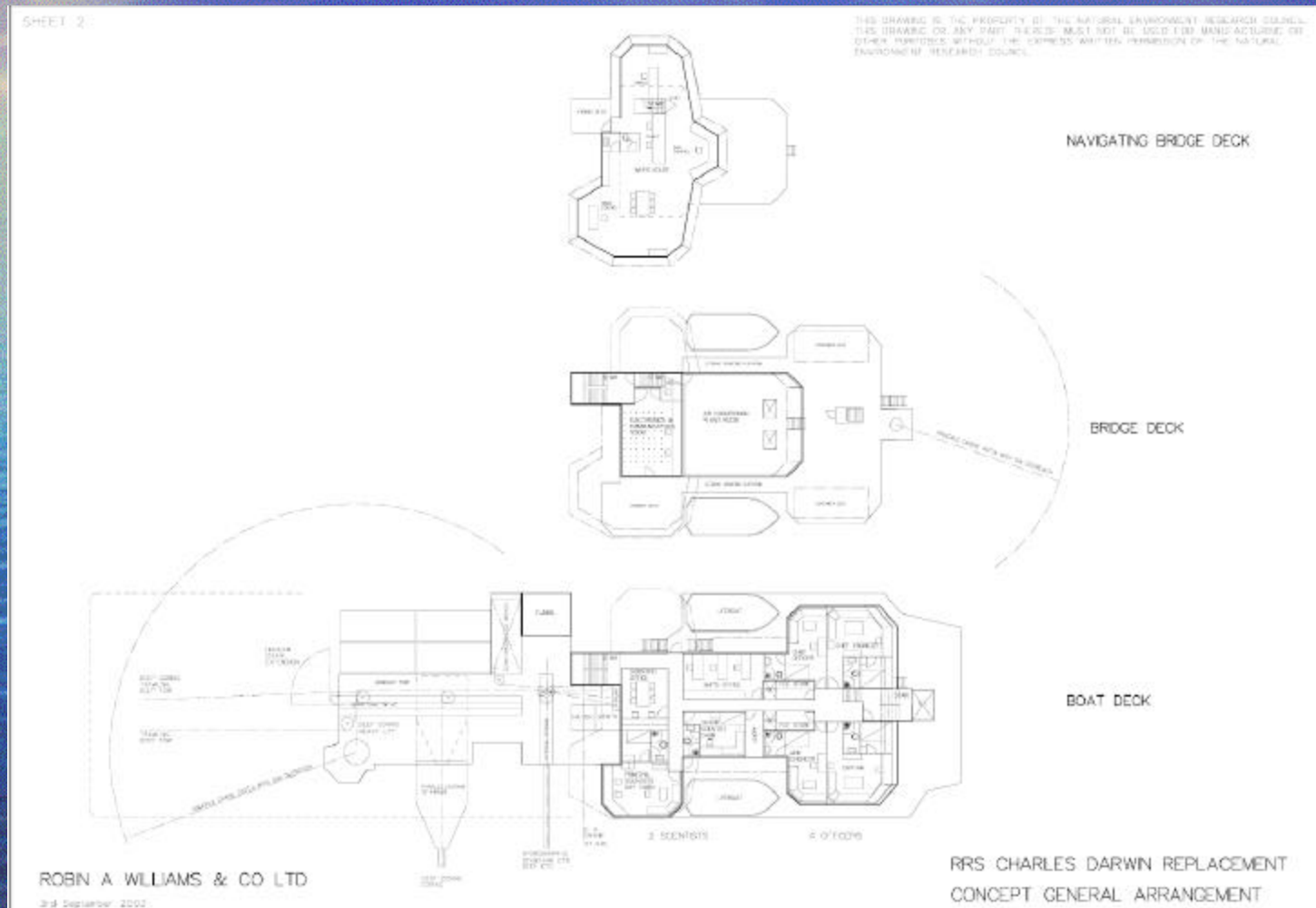
ROBIN A WILLIAMS & CO LTD
3rd September 2003

RRS CHARLES DARWIN REPLACEMENT
CONCEPT GENERAL ARRANGEMENT

Darwin Replacement



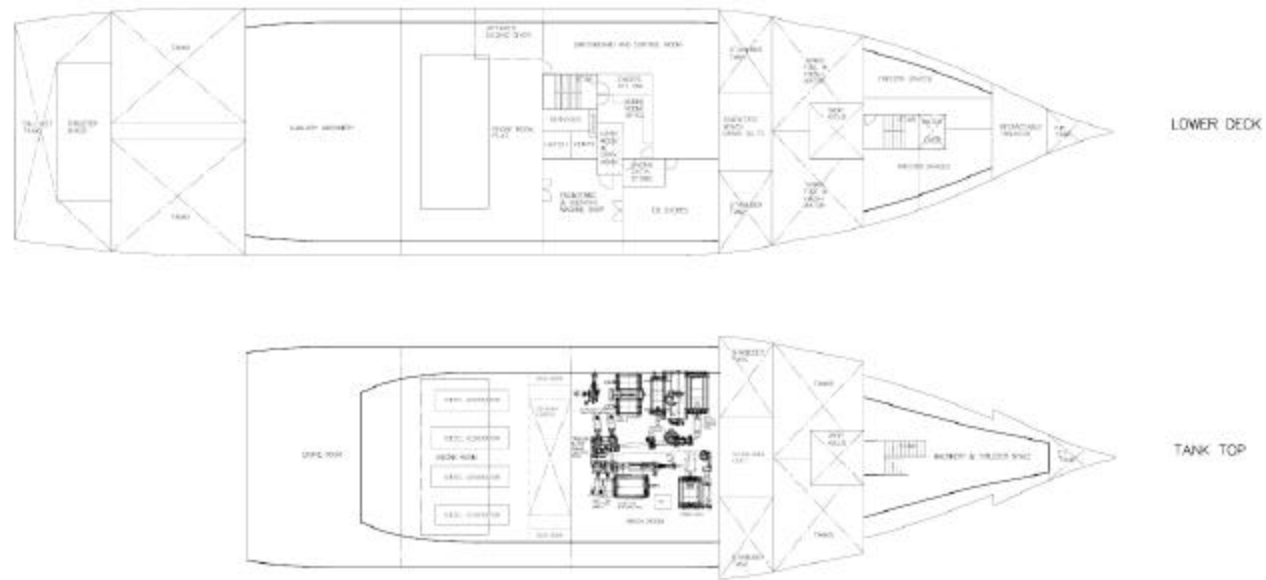
Darwin Replacement



Darwin Replacement

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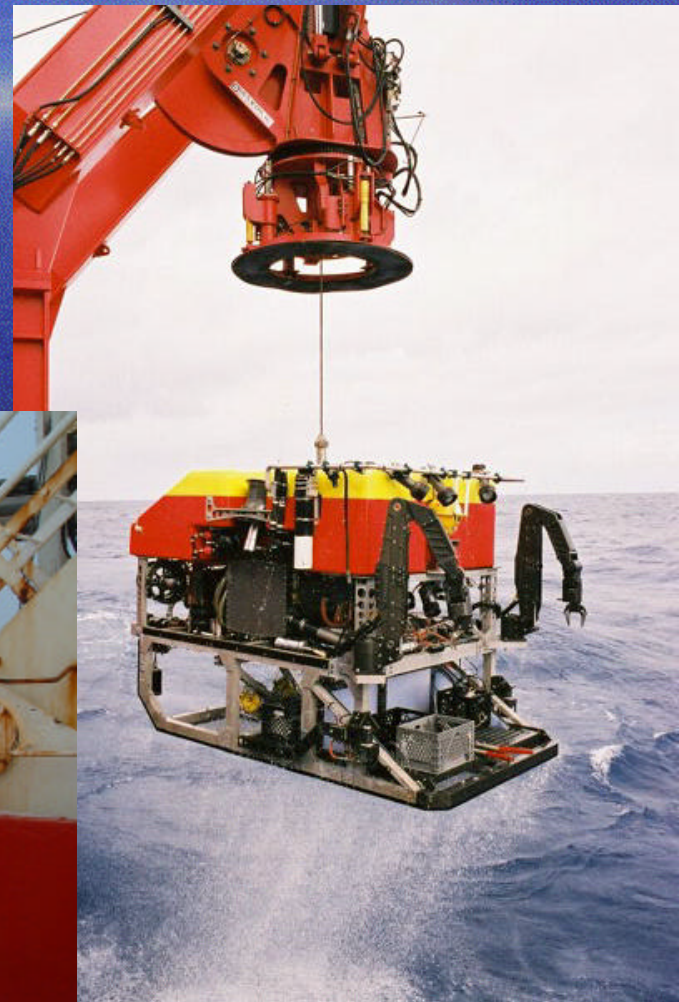
ROBIN A WILLIAMS & CO LTD
3rd September 2003

RRS CHARLES DARWIN REPLACEMENT
CONCEPT GENERAL ARRANGEMENT

New National Facilities

Uplift of infrastructure funding to make facilities available through the NMEP from Apr 2004:

- ISIS ROV.
- Autosub



RRS Discovery Winch Suite

	PURPOSE	CABLE / ROPE						WINCH		
		CONSTRUCTION	LENGTH	DIAMETER	MBL	WEIGHT IN WATER	MANUFACTURER	OPERATION	PULL CAPACITY	SPEED
FIXED	Coring	Steel	7000m	16.5 mm	18.56 Te	780kg.km-1	Certex (UK) Ltd	conventional direct pull	11 Te	2.0 ms-1
	Trawling	Tapered Steel	8300 m	14.5mm	13.00 Te	638kg.km-1	Certex (UK) Ltd	conventional direct pull	12.5 Te (first layer)	2.0 ms-1
			4350 m	16.5 mm	18.10 Te	780kg.km-1				
			2350 m	18.00mm	20.90 Te	1133kg.km-1				
	Deep Tow	Steel Armoured Electro/Optical	10000m	0.68" or ~17.3 mm	18.14Te	806kg.km-1	Rochester Corporation	traction winch with level wind	11Te	2.0 ms-1
	Deep Coring	Plasma	8000m	0.875" or ~22.0mm	42.00 Te	Buoyant SG = 0.98	Cortland Companies	traction winch with level wind	20Te	2.0 ms-1
CONTAINERISED	Standard CTD (x2)	Steel Armoured Electro/Optical	8000m	0.45" or ~11.43 mm	8.39Te	417kg.km-1	Rochester Corporation	traction winch with level wind	5.0 Te	2.0 ms-1
	Hydrographic	Steel	8000m	6.0 mm	2.0 Te	130kg.km-1	Certex (UK) Ltd	conventional direct pull	1.2 Te	2.0 ms-1
	Deep CTD	Synthetic Electro/Optical	8000m	12.7 mm	8.07Te	49.11kg.km-1	Cortland Companies	traction winch with level wind	5.0 Te	2.0 ms-1

RRS Discovery Winch Suite

