



RRS Discovery Replacement

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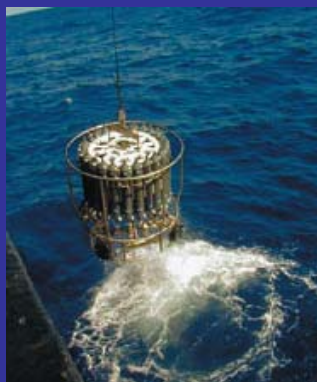
A Procurement Board for the replacement of RRS Discovery was established in July 2007.

The initial tasks for the project were to identify in the form of a "Science Case" and a "Business Case" the requirement for a replacement vessel and examine the means (both technical and financial) of providing the required platform to support and enable the future needs of world class marine science.

During the autumn and winter 2007/08 a consultation exercise was conducted to validate the detailed requirements of a "research platform" appropriate to be a leading facility for marine research for at least 25 years. The consultation took place under disciplines (scientific and technical) but with an eye to the multidisciplinary nature of most research activities and operational requirements.

These requirements were developed into a "Statement of Requirements" and issued along with other supporting documentation to a number of potential shipbuilders on two occasions, the first procurement being terminated in March 2009. The second procurement resulted in a contract being awarded on the 29th March 2010 to C.N.P. Freire S.A., Vigo, Spain, for delivery of a vessel to NERC Q3/2013 and available for science Q1/2014.

The project is supported by a "User Consultation Panel" chaired by Professor George Wolff, University of Liverpool.



The project aim is to provide a multi-role oceanographic research vessel comprising state of the art facilities and capable of operating worldwide (tropics to ice edge) in support of leading edge multi-disciplinary research. The vessel will be primarily for deep ocean research but there is no enforced difficulty with continental margin studies.

The new vessel will compliment the RRS James Cook which was brought into service in March 2007. Lessons have been learnt from the James Cook Project which will be taken forward in the development of the Discovery replacement.

Funding for the project is being provided by NERC and a capital allocation of £48M from the Science Budget via the Large Facilities Capital Fund administered by the Department for Business, Innovation & Skills (BIS).

Extract from draft vessel definition dated 25/02/2008

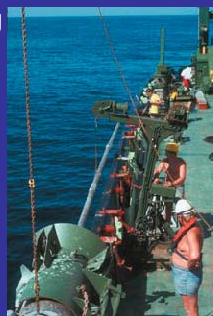
- Global Operation – excluding marginal ice zones
- Ice Class – vessel to have structural strength for longevity to give an Ice Classification equivalent to RRS Discovery (Lloyd's 1D)
- Endurance – 50 days (30 days fresh water storage)
- Design life - 25 years
- Max Speed 12 knots
- Summer Draft 6.5m maximum
- Maximum Length Overall 100m with a 16.5m beam
- Berths 28 Scientists/Technicians (Single Berth)
- Marine / Technical complement to allow 24 hour working
- Good sea-keeping – to allow work in high winds and high sea states
- Station Keeping / Manoeuvrability SS6/7 with Dynamic Positioning
- Maximise "Green/Environmental" credentials; including Ship Recycling Requirements
- Equipment Handling for the safe, controlled deployment and recovery of packages or equipment
- Acoustically quiet
 - ◊ Low radiated noise at instrument frequencies suitable for all disciplines but not necessarily ICES 209 Recommendation.
 - ◊ Minimise internal vibration
 - ◊ Optimise hydrodynamic performance of hull to minimise flow noise and cavitation
- Through Life Costs - minimised
- Navigation – to include USBL, DGPS and Attitude/Motion Reference Sensors
- High Bandwidth Communications for data to/from shore (512kbps with scope for increase).



- Freezers and Fridges
- Laboratories and Working Decks
- Large re-configurable deck layouts both aft and starboard side with bolt down matrix
- Hangar Facility accessible to the aft and starboard decks
- Aerial Platform suitable for temporary and permanent installations

General outfit to include

- Networking available in all cabins and workspaces
- CCTV surveillance (Security & Ops.)
- Clean Electrical Supplies
- Full services to containerised spaces
- Inter Laboratory Wiring
- Distribution routes for scientific gas piping
- Twin Drop Keels



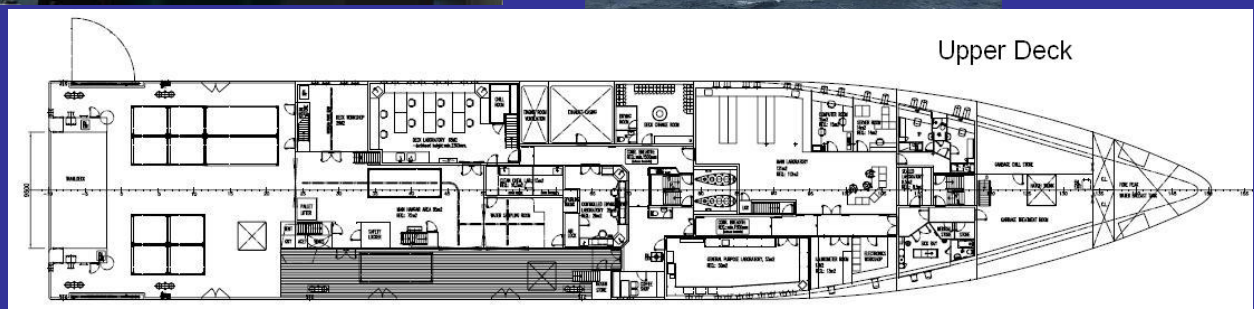
Outfit to include (specified for science capability)

- Echosounder (Single Beam) 12kHz with 10kHz for transponder control
- Multibeam Echosounder with incorporated sub-bottom profiler
- Acoustic Instrumentation
 - ◊ ADCP 75kHz & 150kHz
 - ◊ Multi-frequency Split-Beam Echosounder
 - ◊ Positioning & Telemetry (including Net Monitoring)
- HRPT Satellite Receiving Station
- Winches and Wires
 - ◊ Steel coring wire 7000m – Ø 16.5mm
 - ◊ Steel trawling wire 15000m – tapered Ø 14.5mm, 16.5mm, 18 mm
 - ◊ Electro-Optical Deep Tow cable 10000m - Ø 0.681" (~17.3mm)
 - ◊ Plasma cable 8000m - Ø 1.125" (~28 mm)
 - ◊ CTD conducting cable (x2) 8000m - 0.45" (~11.43 mm)
 - ◊ Metal Free CTD – 8000m (~14 mm or 15.25mm)
- Overside Handling, typical requirement 20 tonnes SWL in SS5/6
- Cranes, Forward, Aft, Midship's plus transfer gantries around hangar.
- Real time displays of track/line information (mixture of alpha and graphical)
- Clean Seawater (Non-Toxic) – distributed to laboratories and working decks
- Distributed analytical grade water to laboratories
- Distributed cooling water supply (for containers and portable plant)
- Distributed hydraulic power (for portable plant)
- High pressure air piping for use with containerised compressors
- Container Laboratory Suites
 - ◊ Radionuclide Laboratory
 - ◊ Ultra Clean Chemistry Laboratory
 - ◊ Constant Temperature Laboratory
- Accommodation for other containerised facilities for example
 - ◊ ISIS ROV Containers
 - ◊ Seismic Air Compressors
 - ◊ DNA Laboratory
 - ◊ Core Reefer



Hotel / Recreation

- Communal Mess
- Galley
- Bar / Lounge
- Conference Room / Library
- Video Room
- Fitness Centre
- Laundries
- Hospital



For further details on the project in general please refer to:
http://www.noc.soton.ac.uk/nmf/discovery_replacement_project/d4rpintrroduction.html

