NewRV

A new multidisciplinary research vessel to replace the RV A962 Belgica

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Overview

1. Replacement process
2. Selection
3. Specifications

Replacement process

2005-2018

2005 Council of Ministers agrees with the start of the feasibility study on the replacement or modernization of the RV Belgica

2013 Council of Ministers agrees with the feasibility study and with the start of the finance study on the replacement or the modernization of the RV Belgica

2014 Council of Ministers agrees with the finance study: the build of a new research vessel is the best solution

2016 Council of Ministers principally agrees with the replacement of the RV Belgica and with the preparation of the public tender and the development of the further collaboration between Federal Sciences Policy and Defence for the exploitation of the new research vessel

2017 Council of Ministers agrees with the launch of the public tender and the replacement of the RV Belgica by providing the necessary budget (54.45 M€ incl. VAT)

2017 Council of Ministers agrees with the selection of the best offer from Freire Shipyard (& Rolls-Royce)

2018 Council of Ministers re-agrees with the selection of the best offer from Freire Shipyard (& Rolls-Royce)

Replacement process

2017-2020

- 2017 (Sept): 7 offers received
  - Astilleros Armon (ES)
  - Astilleros Gondan (ES)
  - Cammell Laird (UK)
  - Damen shipyards (NL)
  - Freire shipyard (ES)
  - Piriou shipyard (FR)
  - Niestern Sander shipbuilding (NL)

- 2017 (Dec): Offer of Freire shipyard with a design of Rolls-Royce was finally selected.
- 2018 (Jan-May): procedural & administrative obstacles (selection criteria & fuel consumption)
- 2018-2020: Detailed design (8 months) & build NewRV (20 months)
- 2018: Name-giving-competition (via schools & public participation)
- 2018-2019: New operational convention and business plan (Council of Ministers)
  - Discussing ship time & infrastructure exchange with a.o. IFREMER
- **Autumn 2020: Delivery NewRV**

Selection

2017

- Selection criteria
  - Original requirement, delivery of RV >65 m in last 5 years, not allowed (cfr. Belgian law)
    - Delivery of SPS vessel >65 m in the last 3 years (cfr. Belgian law)
  - Proven experience with:
    - Underwater radiated noise
    - Bubble sweep down
    - Dynamic positioning
    - Basic polar class
    - Fisheries
- Evaluation criteria
  - Price & consumption (20+20/100)
  - Independent consultants: RV Design, URN/Vibration & EMC/EMI (9+6+3/100)
  - Sea keeping & maneuverability (8+2/100)
  - Full Steel casco (5/100)
  - DG set configuration (2*1 + 1 + 1 em.) (8/100)
  - Electrical efficiency (4/100)
  - Warranty electrical propulsion motors (7/100)

Specifications

FULL OCEAN RESEARCH VESSEL

- 69m length, 16m beam, max. 4.8 draft (cfr. coastal monitoring) - preliminary
- 11 kn operational speed (max. 13 kn)
- North Sea, Atlantic Ocean, Mediterranean Sea
- Instrumentation adapted to water depths of 5000 m
- Ice Class for summer operations in Arctic areas
- Class: DNV-GL ✠ 1A; ICE(1C); SPS; E0; DYNPOS(AUTR); COMF-V(2); COMF-C(2); BWM-T; TMON; Silent-R; NAUT(AW)

Specifications

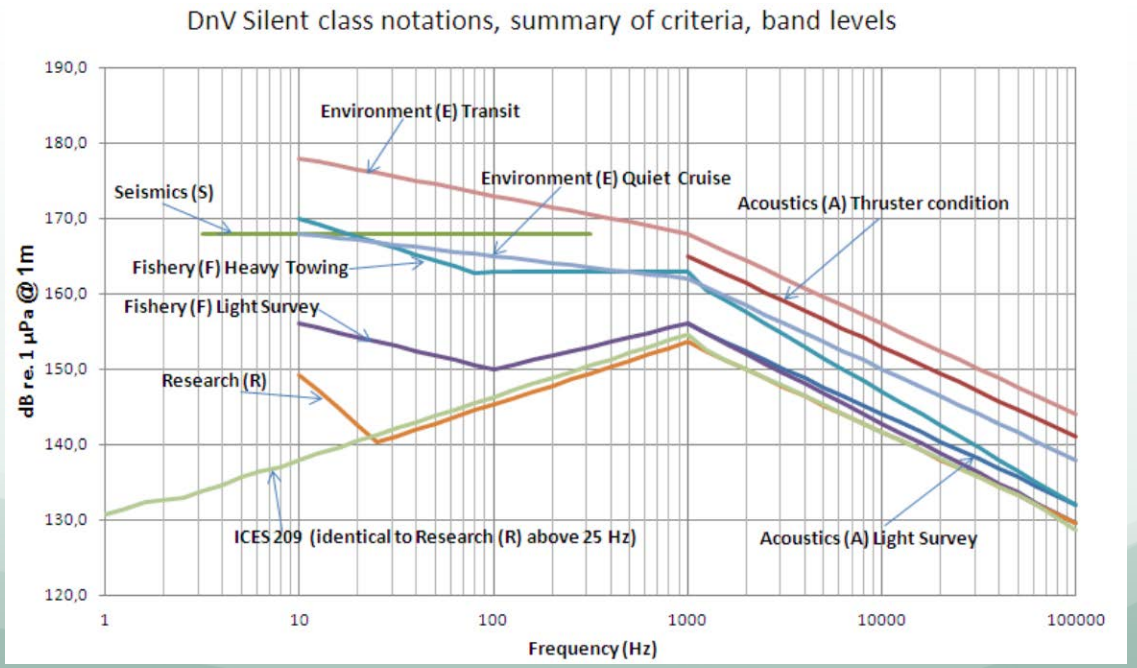
SILENT RESEARCH SHIP – GREEN SHIP

- Diesel-Electric propulsion (AC) (ABC – Rolls-Royce – Indar; twin screw – 5-blade – fixed pitch)
- Waste-heat recovery
- MARPOL TIER III
- DNV-GL Silent-R
- Energy-saving alternatives

➢Limited influence on environment

➢Optimal acoustic platform

➢Energy efficient



Eurofleets 2: WP11 D11.1
(IMR, Per Nieuwejaar)

Specifications

NEW CAPABILITIES

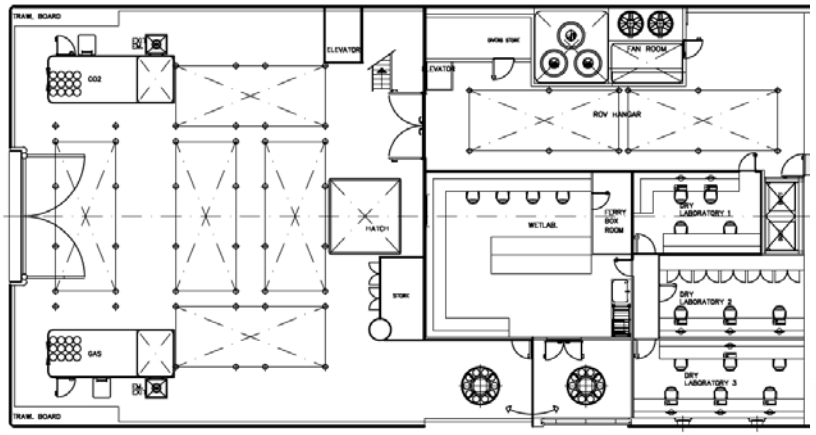
- Dynamic Positioning Class 2 (DP-2) (2 aft thrusters – 2 bow thrusters)
- Hoppe roll stabilization system
- 12 crew – 28 scientists & marine technicians (4 single - 18 double cabins)
- 30 day autonomy
- 300 days/year at sea (operating cost 4,3 M€/year incl. VAT)

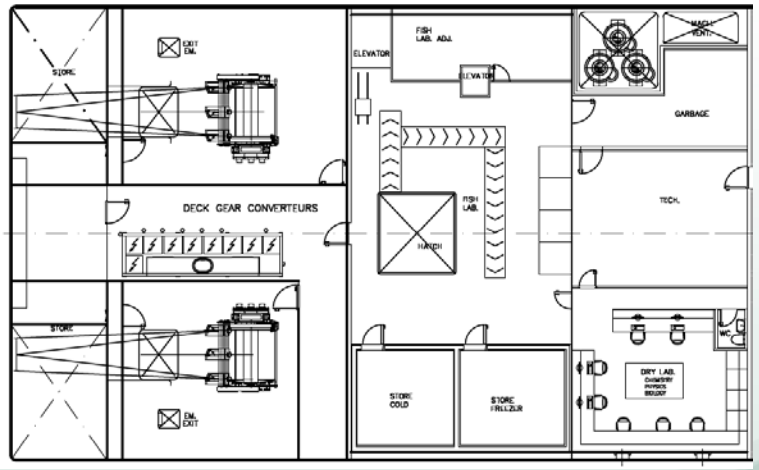
  ➢ Suitable for offshore research, survey & exploration

Specifications

SPACE FOR SCIENCE

- Wet Lab (46 m^2)
- 3 Dry Labs (20 & 33 & 39 m^2)
- Wet and Dry Fish Lab (15 & 68 m^2)
- AUMS Lab
- Aerosol Lab (11 m^2)
- Diver Store (7 m^2)
- Seismic Room (10 m^2)
- Scientific Lab (80 m^2 incl. ICT room)
- Operational Center (64 m^2)
- CTD hangar (24 m^2)
- Hangar (min. 60 m^2 incl. place for 2 ISO 20' containers)
- Crow's Nest
- Cold & Freeze Rooms (14 & 14 m^2)
- Large AFT & STBD decks (place for 5 ISO 20' containers)





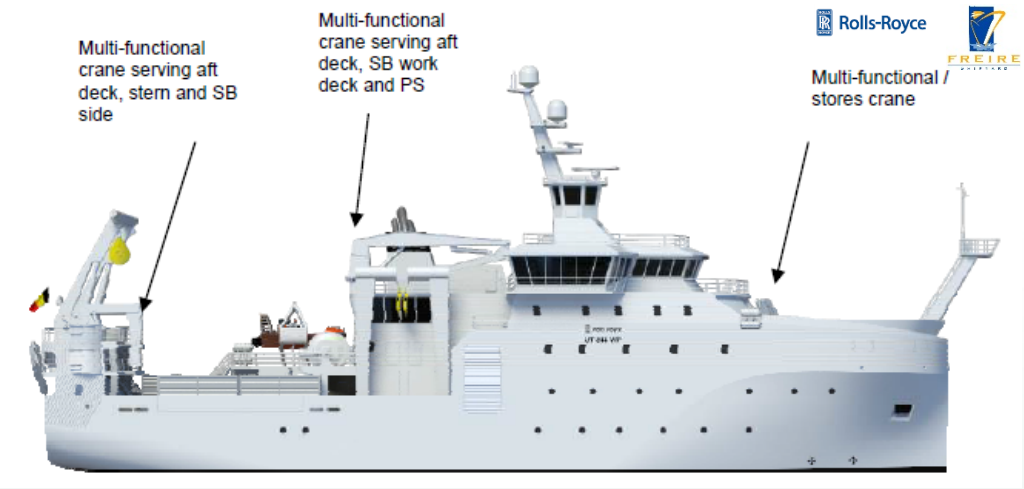
➢ Adapted to the scientific needs for the coming 30 years

2009, feasibility study

Specifications

HEAVY DUTY

- 3 Cranes (FWD, MID, AFT) – 1.5t, 4t, 8t
- 2 CTD Winches (STBD) – AHC – 5500 m
- Multifunctional Winch (STBD) – 5500 m
- Hydrographic Winch (AFT/STBD) – 5500 m
- 2 Trawl Winches – 40t – 5500 m
- Net Drum Winch – 30t – 10 m^2
- Split Net Drum Winch – 30t – 8 m^2 each
- Net Sonde Winch – 6t – 5500 m
- 2 Gilson Winches – 40t – 5500 m
- CTD Gantry & LARS (STBD)
- 2 STBD T-frame Gantries – 10t
- AFT A-Frame – 30t
- Gilson Gantry
- Work Boat – 6 m
- Piston corer incl. LARS solution – 15 m



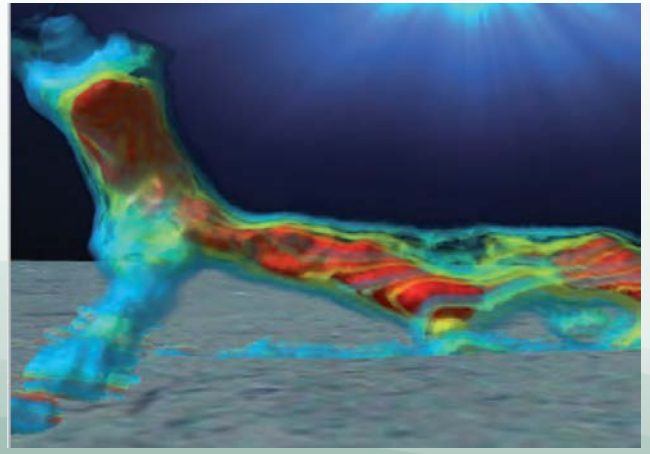
➢ Able to deploy wide range of scientific gear up to 5000 m water depth

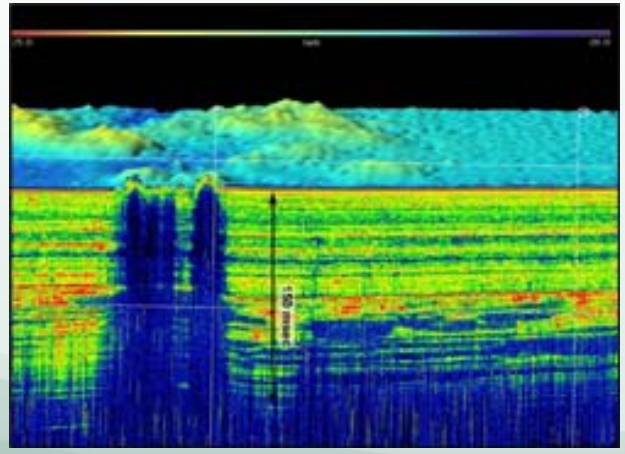
Specifications

FULL ACOUSTIC UNDERWATER INSTRUMENTATION SUITE

- Shallow (**EM2040**) and deep-water (**EM304**) bathymetric multibeam echosounders (600 m & 8000 m)
- Parametric subbottom profiler (**Topas PS18**) (11000 m)
- Scientific multibeam (**ME70**) & split-beam wideband echosounder (**EK80**) (>5000 m)
- Omnidirectional fish sonar (**SU90**) (4500 m)
- Net- and catch monitoring system (**PX & FX80**)
- Underwater position-reference system (USBL) (**HiPAP 502**) (5000 m)
- Acoustic Doppler Current Profilers (**Ocean Surveyor 75 kHz & Workhorse 600 kHz**) (1000 m & 50 m)

➢ Mapping and analyses of full water column (incl. fauna), sea floor and subsurface





Specifications

ADAPTED TO EXISTING LARGE EUROPEAN MARINE RESEARCH INFRASTRUCTURE

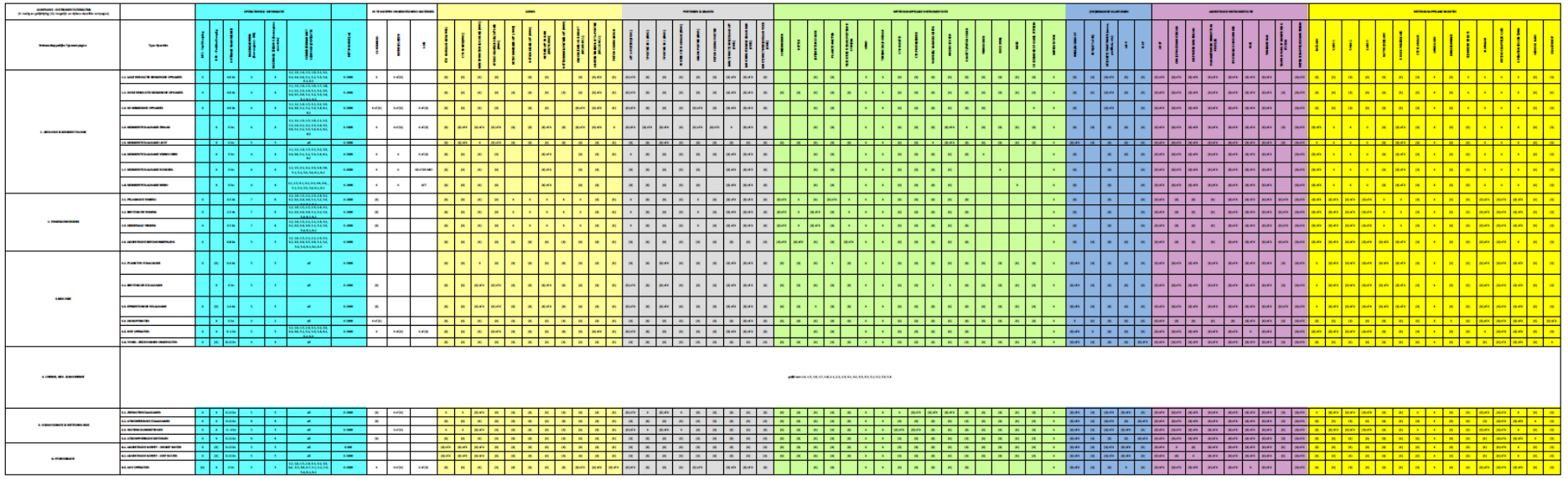
- As a requirement of full list of embarkable infrastructure was given:
  - Autonomous Underway Vehicles (AUVs)
  - Remotely Operated Vehicles (ROVs)
  - 3D seismic systems
  - Scientific sediment coring and rock drill devices
  - Storage space for 7 ISO 20' containers AFT + 2 ISO 20' container FWD
  - 2 integrated drop keels
  - UAV platform FWD

➢ A platform for European cooperation through which Belgian researchers get access to large European marine research infrastructure

Specifications

Matrix of Vessel Functions

- As a requirement
- Campaign/operation vs. sea state/vessel speed/depth /location/frame-winch-crane/instrumentation
- Required combination of given activities, be it simultaneously or during the same campaign



New Potential & End Users

- Complete support of Belgian Marine Science community
- Ship time exchange with European Research institutes to enhance research capacity and study areas based on shared cost
- Strengthening the Belgian role in the Blue economy via its researchers, training centers & maritime industry
- Financial return by deploying NewRV as an exploration- & test platform, research- & monitoring ship, education- & training platform



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