RV BELGICA II: THE NEW BELGIAN RESEARCH VESSEL TO REPLACE THE EXISTING RV A962 BELGICA

Lieven Naudts[1], David Cox[2], Patrick Roose[1] and Frank Monteny[2]

1 Royal Belgian Institute for Natural Sciences (RBINS), Operational Directorate Natural Environment (OD Nature), 3de en 23ste Linieregimentsplein, B-8400 Ostend, Belgium. Lieven.Naudts@mumm.ac.be

2 Belgian Science Policy Office (BELSPO), Louizalaan 231, B-1050 Brussels.

Abstract: *For 30 years RV Belgica has been the marine infrastructure for Belgian marine scientists working on the Belgian Part of the North Sea and in the marine realm stretching from Norway, over Ireland to Morocco. Even if the ship is still performing research activities for more than 180 days per year, the increasing number of technical breakdowns and the rising maintenance cost associated with her age makes the replacement by a new RV Belgica II a necessity for the Belgian marine science community.*

Key words: *RV A962 Belgica, RV Belgica II, research vessel.*

INTRODUCTION

The present-day Belgian oceanographic research vessel A962 Belgica is a thirty-year-old research platform. Although the RV Belgica continuous to perform scientific activities for ca. 180 days per year, the renewal of the vessel should be anticipated. The lifetime of a research vessel is approximately 30 years (Binot et al., 2007).

FIGURE 1. The current RV A962 Belgica.

FEASIBILITY STUDY

In 2009 a feasibility study (BELSPO & Techmar International, 2009) was ordered by the Belgian Science Policy Office (BELSPO) to assess the best future options for the A962 Belgica, i.e. replacement by a new oceanographic research vessel or modernizing the existing vessel. The main conclusions of this study are:

i) RV Belgica is overall in good working order but obsolescence of certain equipment together with (hidden) corrosion and the lack of space and comfort are troublesome for a modern oceanographic research vessel;

ii) The ship time demand in terms of researcher units (8 hours) expressed by the Belgian scientific community (questionnaire 2008) would lead to a total of 10.000 units compared with the current 4.000/5.000 units. The current vessel operated by 1 crew can certainly not accommodate for this demand;

iii) The scientific community insists that the new ship should be a multipurpose research vessel (for hydrography, geology, biology, oceanography, fisheries, environmental sampling, etc.) with dynamic positioning capabilities, with an autonomy of 4 weeks, with more space and ideal for large-scale equipment (AUV, ROV, coring, etc.) and with a minimal ice class;

iv) Multipurpose oceanographic research vessels belonging to the regional/ocean class will be lacking in Europe in the near future. Therefore a pan-European approach regarding transnational access, design, pooling of equipment etc. should be fostered (cfr. EC-FP-7 EUROFLEETS project);

v) Regarding the financial, technical, statutory aspects modernizing the existing vessel can be abandoned as a feasible option; acquiring a new oceanographic research vessel is the only option.

FINANCING STUDY

In 2013-2014 a financing study was performed by BELSPO and RBINS-OD Nature to get an update of the building and operating costs of a new Belgian research vessel. This study was based on the scientific needs as were expressed by the Belgian scientific community in the feasibility study (BELSPO & Techmar International, 2009). Furthermore, several management options and a collaboration with neighboring countries for the build and exploitation of the new research vessel were investigated. The main conclusions of the financing study are:

i) As stated in the feasibility study, the modernization of the current RV A962 Belgica is financially, technically and scientifically not a solution.

ii) The expected build and delivery cost of RV Belgica II is 54.45 M€, including VAT.

iii) The expected exploitation cost of RV Belgica II for 300 days at sea is 4.3 M€ per year. To sail 300 days per year, 2 crews are needed.

iv) Over the 30 year life span of a research vessel, financially the best option is for the Belgian federal government to foresee in the build and the operational aspect of the new research vessel, as is the case for the current vessel. A continuation of the collaboration between the Belgian Science Policy Office and Belgian Defence – Naval Component to operate the vessel can be expected and will be further explored.

Besides these financial and operational results the financing study also resulted in several letters of support in favor of the RV Belgica II project; support comes from different Belgian national and regional institutes and universities, government bodies and private companies expressing their need for a larger Belgian research vessel to sustain the growing demand for marine research, training and education.

It is still unclear what the future will be for the current RV A962 Belgica if the much-awaited RV Belgica II will be taken into service. In any case, from the moment the budget for the new vessel will be foreseen by the Belgian federal government, it will still take 3.5 years for the ship to be delivered and to be made operational.

RV BELGICA II & RV SIMON STEVIN

The new research vessel Belgica II will be completely complementary to the Flemish research vessel Simon Stevin. As the present day RV Belgica, the new RV Belgica II will perform multiple day (5-20 days) expeditions whereas the RV Simon Stevin generally performs daily expeditions. The new RV Belgica II will be a larger ship (overall length ca. 65m, breadth ca. 15m, draught max. 4.8m) and will perform scientific tasks in Belgian and European waters whereas the RV Simon Stevin is much smaller (36m by 9m by 3.5m) and is mainly operated in Belgian coastal waters. The difference in working area and in expedition duration shows that both research vessels are indeed complementary. The two research vessels, RV Belgica II and RV Simon Stevin, will accommodate for the growing demand in marine research and knowledge.

ACKNOWLEDGEMENTS

We would like to thank the commanders and crew of RV A962 Belgica and the Belgian Defence – Naval Component for the 30 years of support offered to the research performed on our Belgian federal research vessel.

REFERENCES

Belgian Science Policy Office, Techmar International, 2009. Feasibility study on the purchase options for a new oceanographic research ship aimed at replacing the A962 Belgica or modernizing the existing oceanographic research ship: summary. Belgian Science Policy Office, pp. 10.

Binot J. Danobeita J. Müller Thomas J. Nieuwejaar P.W. Rietveld M. Stone P., eds., 2007. European Ocean Research Fleets: Towards a Common Strategy and Enhanced Use; European Science Foundation, Marine Board: Position Paper, ESF, Strasburg, pp. 62.

FIGURE 2. An artist impression of a possible design of the RV Belgica II.