

## The new RV Belgica: delivery and operations



**Lieven Naudts**

RBINS – OD Nature

Royal Belgian Institute of Natural Sciences – Operational Directorate Natural Environment

## Timeline

### 2021 - 2022

Pre-Oct 2021

See previous ERVO presentations (2005 - 2021) incl. technical specs

Oct 2021

Award contract integrated management and operation of the ship to GENAVIR

Nov 2021

Training mixed crew (Navy & Genavir) & take over of the ship by GENAVIR

Dec 2021

Delivery of vessel

**Jan 2022**

**Start operations new RV Belgica**



## Operational & management organization

- **Federal Research Vessel**

- **Belgian Science Policy Office (BELSPO)** is the owner of the multidisciplinary research vessel as representative of the Belgian State.
- The **Royal Belgian Institute of Natural Sciences (RBINS)** manages the RV Belgica (which includes, the planning of the scientific campaigns, the responsibility for the ship's budget and the scientific instrumentation support).
- The **private operator Genavir** is responsible for the integrated management and operation of the ship (which includes, the crewing and the operational & maintenance support). 
- The **Belgian Navy** provides the bridge personnel (Captain, Chief Mate, Second Officer) and the home port of Zeebrugge.



## Training & Delivery

### TIMELINE

- Operator contract awarded 30<sup>th</sup> of October 2021
- Training crew (BE, FR, LT) (02/11-28/11)
  - 18 days at quayside
  - 5 days at sea (SATs were done in Dec 2020 en Feb 2021)
- Delivery procedure (Belgian Flag, port authorities, contractual discussions, etc.) (30/11-09/12)
  - 10 days – due to Spanish national, regional and local holidays – closed authorities & banks



24<sup>th</sup> ERVO meeting



[belspo.be/NewRV](https://belspo.be/NewRV)

06.09.22 - Bucharest

## Training & Delivery

### REMARKS

- Originally training was planned during commissioning
  - Agreement on procurement procedure and budget and finalization of procurement for the operator (legal actions) made this impossible.
  - Late award of operator contract also resulted in many justified comments of the operator towards the yard (extra punch list – 289 items).
- When is the best period to organize contractual training? During commissioning and sea trials? After delivery? Both?
- Delivery of vessel was very stressful cfr. contractual discussion and punch list agreement (48 items)



## Training & Delivery

### HOMEPORT

- The new RV Belgica arrived in Zeebrugge (Belgium) on the 13<sup>th</sup> of December 2021
- Delayed delivery
  - Originally - 28 months (Design and Build);
  - Due to Covid-19, commissioning, weather, etc. - 34 months
  - Due to delayed operator contract - 43 months (Design and Build)



# Operational Life

## YEARLY PROGRAM 2022

- Requested: 464 scientific days
- Planned 223 scientific days; 31 transit days, 7 foreign port days, 4 event days

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
January	Zeebrugge							OD Nature	Zeebrugge	Transit to Algeiras							Algeiras	EUROFLEETS+ Grace & Sea Quake											Algeiras		
February	Transit to Zeebrugge							1 MF <sup>1</sup> XD IS	Zeebrugge							2	OD Nature INBO			ILVO			ILVO CSS								
March	ILVO CSS		Zeebrugge							UB			OD Nature			OD Nature CSS VLIZ			OD Nature RMA												
April	KH <sup>1,2</sup> KD									6 ML/LCs			MF XD IS DVDE			7 VVL VVL/ VVLs			KD TV			8 JV AN ANJ Ana			9 OL						
April	OD Nature		RCMG							Zeebrugge							ILVO			EV											
May	MF <sup>1</sup> XD IS		10 MDbn														11														
May	OD Nature INBO DGL VUB							Zeebrugge	Transit to Toulon							Toulon	EUROFLEETS+ TAIPro2022											La Spezia	Transit to Cadiz		
June	14		RCMG							Transit to Zeebrugge							OD Nature			Zeebrugge			Baptism RV Belgica Ghent			OD Nature VUB					
July	JV NB		17 /L VVL/ DK TK GME KD							18 PR MF XD IS			Zeebrugge							19			DVR								
August	RCMG							Cork	Transit to Zeebrugge							Zeebrugge			OD Nature INBO			ILVO									
September	ILVO		OD Nature RMA							VLIZ/RCMG							Zeebrugge			ILVO CSS OD Nature											
October	HR		22 VVL/ MF XD IS GMG OL							23			Zeebrugge							24			KH <sup>1,2</sup> KD VVL/								
November	KH <sup>1,2</sup> KD		VVL/							25 MF XD IS NV NF			Zeebrugge							27			BV BVw								
December	28		OD Nature CSS VLIZ							OD Nature			ILVO							Zeebrugge											
December	31		VLIZ							OD Nature			CSS RMA INBO			Zeebrugge															

## Operational Life

### BUT....

- Shortly after arrival in Zeebrugge (15/12/2021) the Harbor/Emergency generator broke down due to a fan drive failure and associated camshaft damages
- Repair was very slow due to end of year holidays, spare part delivery issues, etc.
- 3 weeks were lost – Eurofleets+ campaign to Mediterranean Sea needed to be replanned
- No clear root causes during repairs
- Further Failure Root Cause Analysis by Mitsubishi indicated:
  - Fan Drive Gear bolts installed without washers - Insufficient tightening force on the bolts.
  - Bolts still come loose - no final solution yet! Also occurred during pre-commissioning period!
- **Who will pay for the loss of shiptime and associated costs!?**





# Operational Life

## YEARLY PROGRAM 2022 - UPDATED

- Requested: 464 scientific days
- Planned 227 scientific days; 20 transit days, 7 foreign port days, 4 event days

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
January	Zeebrugge: Repair harbor-/emergency generator																										OD Nature										
February	Zeebrugge																										1	MF <sup>1</sup> XD IS	2								
March	Zeebrugge																										3	MF <sup>1</sup> XD IS ANJ DK NV	4	EV	5	KH <sup>1,2</sup> KD					
April	Zeebrugge																										6	ML/LCs	7	MF XD IS	8	7 'L VVLI VVLS GMG (MF) KD T	9	JV AN ANJ ANa OL			
May	Zeebrugge																										Transit to Algeiras		Algeiras	UROFLEETS		11	Grace & SQ				
June	Zeebrugge																										Transit to Toulon		Toulon	EUROFLEETS+		12	TAIPro2022	La Spezia	Transit to Cadiz		
July	Zeebrugge																										Transit to Zeebrugge		OD Nature		Zeebrugge		Baptism RV Belgica Ghent		OD Nature		VUB
August	Zeebrugge																										Transit to Zeebrugge		OD Nature		Zeebrugge		Baptism RV Belgica Ghent		OD Nature		VUB
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December	Zeebrugge																										Transit to Zeebrugge		OD Nature		Zeebrugge		Baptism RV Belgica Ghent		OD Nature		VUB

## Operational Life

### YEARLY PROGRAM 2022 - UPDATED

- 20 campaigns performed 121 days of planned 136 days (Covid-19, Weather, Favorable outcome)
- 2 Eurofleets+ campaigns in the Mediterranean Sea (24 days)
- 351 scientists (257 unique ones): 215 BE – 136 foreign; 198 M & 153 F
- > 15 200 nm sailed
- Overall, very successful thanks to GENAVIR skilled crew and experienced organization notwithstanding > 300 warranty claims (up to date)
- Ship performs very well and is very capable
- Scientists are generally very happy with the new ship and the new operator
- Downside: Long financial uncertainty cfr. political decision on operational budget and fuel cost



# Operational Life



Christian Clauwers



## Royal and Ministerial Visits, Baptism & Open Doors



## Warranty

### CONTRACTUAL

- 2-year warranty period
- Belgian law implies direct and indirect costs to be covered

### ACTUAL SITUATION

- 318 claims (excl. punch list items)
  - 40% solved – 15% refused
  - Claims are generally spread over all different ship systems
  - Yard and suppliers inappropriately depend on ship's crew to check and solve issues!
  - Many suppliers are very slow to provide feedback, spare parts, solutions, interventions!



**This experience seems to be common among (research) vessel construction/delivery, independent of the shipyard. How can we as ERVO community better protect ourselves and mitigate these problems?**

- For the new RV Belgica the following could have helped:
  - Having the crew/operator onsite during build and commissioning incl. sea trials
  - Foreseeing training (incl. problem solving) during operational life after delivery

## Conclusions

### We got the multidisciplinary Research Vessel we wanted!

- Our **tender was sufficiently detailed** for a **1 phase tender** (for Design & Build) with **limited budget** (<45 M€ excl. VAT) for a **highly complex and capable vessel**.
- It was clearly an advantage to work with a **shipyard with a wide experience** in building RVs. A **designer** and **suppliers** with very **recent RV experience** was also very favorable.
- **Onsite team** (Marine Engineer, Marine Technician, Scientific Engineer) was primarily sufficient. An extra onsite member for Electricity/IT could have been helpful (but was covered by **offsite team**).
- Due to the **delayed procurement** for the **operator**, the operator couldn't be involved in the commissioning of the vessel – **in hindsight this was clearly a large disadvantage**
- **Warranty claims are an important issue!** We, as RV operators, are often happy to have a new ship after a long political decision phase, a procurement phase, a design & building phase **but should think/act to insist on shipbuilders and suppliers to provide the correct warranty work.**

**Thank you!**



Please visit: [odnature.naturalsciences.be/belgica](https://odnature.naturalsciences.be/belgica) & [belspo.be/NewRV](https://belspo.be/NewRV)

Website, Facebook, Twitter, etc.