

NOTIFICATION OF PROPOSED RESEARCH CRUISE

GENERAL  
ORGANISATION  
PART A

1. Name of research ship **BELGICA** Cruise N° **2005/21**
2. Dates of cruise From **12 September** to **16 September 2005**
3. Operating Authority **Belgian Navy under contract for Belgian Ministry of Science Policy Management Unit of the North Sea Mathematical Model "M.U.M.M.", 3° & 23° Linierregimentsplein, 8400 Oostende  
Tel, 32(0)59 70 01 31, Facsimile 32(0)59 70 49 35  
Email : [bmmmost@mumm.ac.be](mailto:bmmmost@mumm.ac.be)**
4. Owner **Belgian state represented by Minister for Science Policy**
5. Particulars of ship
 

Name	<b>Belgica</b>
Nationality	<b>Belgian</b>
Overall length	<b>51 meters</b>
Maximum draught	<b>4,5 meters</b>
Nett tonnage	<b>232 NRT</b>
Propulsion	<b>Diesel</b>
Call Sign	<b>ORGQ</b>
6. Crew
 

Name of master	<b>L. GOUSSAERT , LTZ 1ste klasse</b>
N° of Crew	<b>15</b>
7. Scientific Personnel
 

Name and address of scientist in charge :

**Dr Alain Norro / Dr Kevin Ruddick  
Belgian Royal Institute of Natural Sciences  
Management Unit of the North Sea Mathematical Models  
"M.U.M.M."  
Gulledelle 100 B-1200 Brussels  
Telephone : 02/773 21 41 ; facsimile : 02/770 69 72; email : [a.norro@mumm.ac.be](mailto:a.norro@mumm.ac.be)  
Telephone : 02/773 21 31; facsimile : 02/770 69 72; email : [k.ruddick@mumm.ac.be](mailto:k.ruddick@mumm.ac.be)**

N° of scientists **15**

(A nominal roll of all personnel other than nationals of the applicant (flag) state is required)

<b>Rosa Astoreca (Chile)</b>	<b>  Dr. Kevin Ruddick (UK)</b>	<b>  Elsa Breton (Fr)</b>	<b> </b>
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8. Geographical area in which ship will operate (with reference in latitude and longitude).  
**Belgian, Dutch (near BE-NL border) and UK (to Harwich) Continental Shelves  
Inside box with corners at N 50°30', E 1°00 and N 52°00, E 3°30'**
9. Brief description of purpose of cruise  
Purpose a) of the cruise takes place on the Belgian continental shelf only :  
Scientific diving programme supported by Federal Science Policy of Belgium :  
BEVREMABI : "Belgian shipwreck : hotspots for marine biodiversity"  
Purpose b) of the cruise that takes place in Dutch and UK continental shelves :  
Belgian national funded research project within the Research programme for earth observation STEREO:  
"Study and management of coastal regions"  
Project "BEL-COLOUR": Optical Remote Sensing of coastal waters
10. Port of Call. Dates. Reasons.  
**Zeebrugge, 12/09/05 -16/9/05 : Departure-Arrival (start and end of campaign)**
11. Any special logistic requirements at ports of call (other than water, fuel provisions, etc.)  
**N.A.**

NOTIFICATION OF PROPOSED RESEARCH CRUISE

DETAIL  
PART B

1. Name of research ship **BELGICA** Cruise N° **2005/21**
2. Date of cruise From **12 September** To **16 September 2005**
3. Purpose of research and general methods. (If the research work is being taken on behalf of a research institution of a third state, it is the responsibility of that state to obtain prior permission ; it is essential that written confirmation that this has been done is obtained and quoted in this application.

**Purpose a) cfr. part A § 9**

**Purpose b)**

**The BEL-COLOUR project, funded by the Belgian Federal Science Policy Office (previous OSTC), aims at improving the theoretical basis and software tools for applications of suspended matter and chlorophyll-based satellite data products in coastal waters. In addition to algorithm work and image processing BEL-COLOUR participates in seaborne cruises for the purposes of calibration of algorithms and for validation of the end products.**

4. Attach chart(s) showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations, tracks of survey lines, positions of moored / seabed equipment.

**See chart in Annex 1**

5. Types of samples required, e.g. Geological / Water / Plankton / Fish / Radioactivity / Isotope ....

**Purpose a) : N.A.**

**Purpose b)**

**water, plankton**

**and methods by which samples will be obtained (including dredging/coring/drilling).**

**Niskin bottle, In situ measurements (SCTD,.....),  
spectroradiometric measurements**

6. Details of moored equipment : **N.A.**

**Dates**

<b>Laying</b>	<b>Recovery</b>	<b>Description</b>	<b>Latitude</b>	<b>Longitude</b>
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7. Explosives : **N.A.**

(a) Type and Trade Name

(c) Dept of trade class and stowage

(e) Depth of detonation

(g) Dates of detonation

(b) chemical content

(d) Size

(f) Frequency of detonation

8. Details and reference of

a) Any relevant previous/future cruises

Purpose a) : N.A.

Purpose b)

Project BEL-COLOUR : Belgica cruise 2002/07, 2002/09, 2002, 2002/14, 2003/06, 2003/16, 2003/19 and 2003/22, 2004/10b, 2004/16

b) Any previous published research data relating to the proposed cruise (attach separate sheet if necessary)

Purpose a) : N.A.

Purpose b) : See Annex 2.

9. Names and addresses of scientist of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made.

Purpose a) : N.A.

Purpose b)

BELCOLOUR - NL

Dr Steef Peters, Instituut voor Milieuvraagstukken, Vrije Universiteit Amsterdam, De Boelelaan 1115, 1081 H V, Amsterdam, Netherlands

Tel: ++31 20 444 9555, Fax: +31 20 444 9553, Email: [Steef.Peters@ivm.vu.nl](mailto:Steef.Peters@ivm.vu.nl)

BELCOLOUR - UK

Dr. Gavin Tilstone, Remote Sensing Group, Plymouth Marine Laboratory, Prospect Place, West Hoe, PLYMOUTH PL1 3DH, UK, Tel: +44 1752 633 406; facsimile +44 1752 633 101; email : [ghti@pml.ac.uk](mailto:ghti@pml.ac.uk)

10. State :

(a) Whether visits to the ship in port by scientists of the coastal state concerned will be acceptable.

**YES**

(b) Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation / disembarkation.

**Yes, see part A§10**

(c) When research data from intended cruise is likely to be made available to the coastal state and if so by what means. (If the final report is likely to be delayed beyond 12 months, interim progress reports are required.

Purpose a) : N.A.

Purpose b) :

- Cruise report available within 2 months (on request)
- Reflectance, chlorophyll and suspended matter data will be made available on request to scientists of the coastal state within one year.

**PART C SCIENTIFIC EQUIPMENT**

**COASTAL STATE : THE NETHERLANDS**

**INDICATE "YES" OR "NO"**

**BELCOLOUR-project**

LIST SCIENTIFIC WORK BY FUNCTION	WATER COLUMN INCLUDING SEDIMENT SAMPLING OF THE SEABED	FISHERIES RESEARCH WITHIN FISHING LIMITS	RESEARCH CONCERNING THE NATURAL RESOURCES OF THE CONTINENTAL SHELF OR ITS PHYSICAL CHARACTERISTICS	DISTANCE FROM COAST		
				WITHIN 12 NMS	BETWEEN 12-200 NMS	CONTINENTAL SHELF WORK (ONLY) BEYOND 200 NM BUT WITHIN THE CONTINENTAL MARGIN
eg. MAGNETOMETRY : GRAVITY DIVING : SEISMICS: BATHYMETRY SEABED SAMPLING TRAWLING ECHO SOUNDING : WATER SAMPLING U/W T.V. : MOORED INSTRUMENTS: TOWED INSTRUMENTS :						
<b>Niskin water bottles</b>	YES	NO	YES	YES	YES	NO
<b>in situ measurements (SCTD, .. and optical properties)</b>	YES	NO	YES	YES	YES	NO
<b>Non toxic seawater intake (fluorimeter, salinograph, ..)</b>	YES	NO	YES	YES	YES	NO
<b>spectroradiometer Trlos</b>	YES	NO	YES	YES	YES	NO
<b>Secchi disk</b>	YES	NO	YES	YES	YES	NO

**PART C : SCIENTIFIC EQUIPMENT**

COASTAL STATE : **UNITED KINGDOM**

INDICATE "YES" OR "NO"

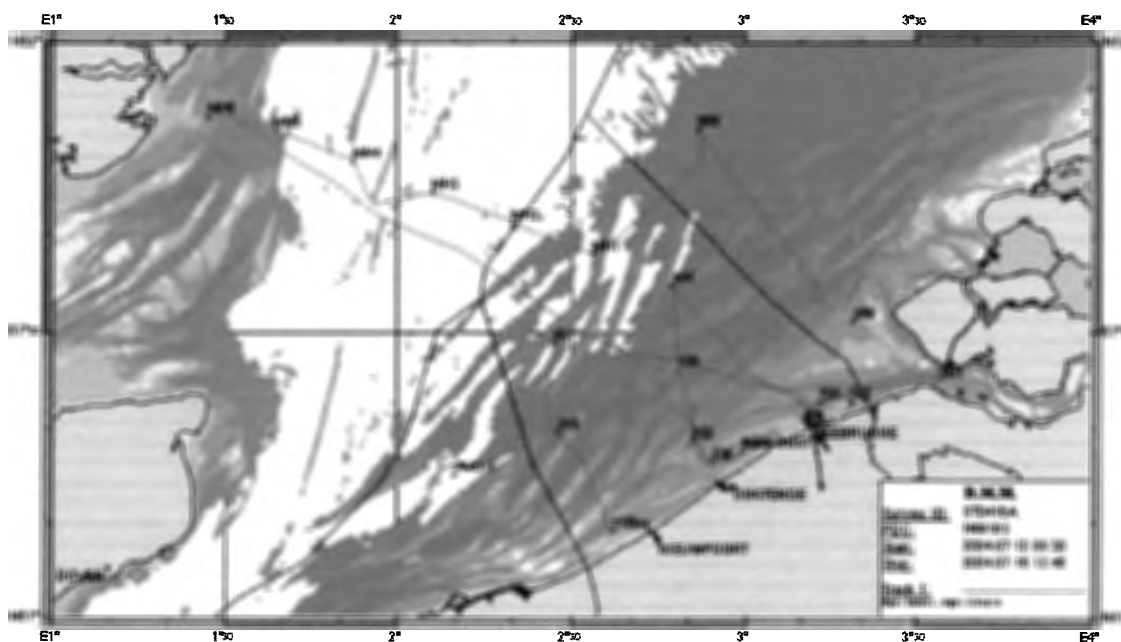
**BELCOLOUR project**

LIST SCIENTIFIC WORK BY FUNCTION	WATER COLUMN INCLUDING SEDIMENT SAMPLING OF THE SEABED	FISHERIES RESEARCH WITHIN FISHING LIMITS	RESEARCH CONCERNING THE NATURAL RESOURCES OF THE CONTINENTAL SHELF OR ITS PHYSICAL CHARACTERISTICS	DISTANCE FROM COAST		
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<b>Niskin water bottles</b>	YES	NO	YES	YES	YES	NO
<b>in situ measurements (SCTD, .. and optical properties)</b>	YES	NO	YES	YES	YES	NO
<b>Non toxic seawater intake (fluorimeter, salinograph, ..)</b>	YES	NO	YES	YES	YES	NO
<b>spectroradiometer Trlos</b>	YES	NO	YES	YES	YES	NO
<b>Secchi disk</b>	YES	NO	YES	YES	YES	NO

# Annex 1

## Chart – Belgica 2005/21

### **BELCOLOUR working zone**



## **Annex 2 : previous published research data (selected)**

### **BELCOLOUR project**

Ruddick, K.G., G. Lacroix, Y. Park, V. Rousseau, V. De Cauwer, W. Debruyne and S. Sterckx (2003). Overview of Ocean Colour: theoretical background, sensors and applicability for the detection and monitoring of harmful algae blooms (capabilities and limitations). Submitted to UNESCO monograph of Harmful Algae Blooms.

Ruddick, K., V. De Cauwer, Y. Park, G. Becu, J.-P. De Blauwe, E. D. Vreker, P.-Y. Deschamps, M. Knockaert, B. Nechad, A. Pollentier, P. Roose, D. Saudemont and D. v. Tuyckom (2002). Preliminary validation of MERIS water products for Belgian coastal waters. Envisat Validation workshop, 9-13th December 2002, Frascati, European Space Agency. ESA Special Publication.

Ruddick, K.G., H.J. Gons, M. Rijkeboer and G. Tilstone, 2001. Optical remote sensing of chlorophyll-a in case 2 waters using an adaptive two-band algorithm with optimal error properties. Applied Optics. Vol. 40, no. 21 (in press).

Ruddick, K.G., F. Ovidio and M. Rijkeboer, 2000. Atmospheric correction of SeaWiFS imagery for turbid coastal and inland waters. Applied Optics, Vol. 39, No. 6, pp. 897-912.

Gons, H.J., M. Rijkeboer, S. Bagheri and K.G. Ruddick, 2000. Optical teledetection of chlorophyll-a in estuarine and coastal waters. Environmental Science and Technology, 34(24): 5189-5192.

Ruddick, K.G, F. Ovidio, A.P. Vasilkov, C. Lancelot, and V. Rousseau, 1999. Optical remote sensing in support of eutrophication monitoring in Belgian waters. In "Operational remote sensing for sustainable development", edited by Vaughan and Molenaar, Balkema, Rotterdam, p445-452.

**INTERNATIONAL AFFAIRS / SURVEY / BNS BELGICA / UK TTW/ 12/09 – 16/09/ 2005.**

1. **A. Participating naval unit:** BNS BELGICA (A 962)  
**B. Ship's characteristics:** length 51m / beam 10m / draught 4.6m / masthead height 28.6m / Displacement 1200 T
2. **Waters to be passed:** UK TTW
3. **Waters :**
  - A. Entrance UK TTW : on 12 Sep PM near Dover
  - B. Leaving UK TTW : on 16 Sep AM near Dover
4. **Anchorage in UK TW:** in case of adverse weather or technical problems
5. **Visit to harbour (harbour / period / character):** nihil
6. **Commanding officer:** LTCDR Lieven GOUSSAERT ( Sep 03)
7. **Crew:**
  - A. Total crew: 30
  - B. Officers: 2
  - C. Crew: 13
  - D. Civilian scientists: 15
8. **Reason for visit:** nil  
**Reason for stay in TW and EZ:** MONITORING
9. **Communication requirements :**
  - A.1. Frequencies: 2461K3, 4158K8, 6239K0, 8330k4
  - A.2. Frequencies: 2072k1, 4113k9, 8752k2
  - B.1. Transmission mode: F1B
  - B.2. Transmission mode: J3E
  - C. Effective output: 400 Watt
  - D. International call sign: OSCAR ROMEO GOLF QUEBEC
  - E. Receiver station: OSN
10. **Organic aircraft:** nil
11. **Logistic requirements:** nil
12. **Summary of survey:** See para 9 of NPRC (annexe B )