NOTIFICATION OF PROPOSED RESEARCH CRUISE

PART A: GENERAL

1. Name of research ship **RV BELGICA** Cruise N° **2015/16**

2. Dates of cruise From **10 June** To **16 June 2015**

3. Operating Authority
Belgian Navy under contract for Belgian Ministry of Science Policy
Royal Belgian Institute for Natural Sciences (RBINS)
Operational Directorate Natural Environment, Measurement Services Ostend
3de en 23ste Linieregimentsplein, B-8400 Ostend
✆+ 32(0)59 70 01 31 • 🖷 + 32(0)59 70 49 35 • ✉ bmmost@mumm.ac.be
www.mumm.ac.be

4. Owner **Belgian state represented by Minister for Science Policy**

5. Particulars of ship

Name	**Belgica**
Nationality	Belgian
Overall length	51 meters
Maximum draught	4,5 meters
Nett tonnage	232NRT
Propulsion	Diesel
Call Sign	ORGQ
Telephone	INMARSAT 00870 76 218 73 27
Facsimile	INMARSAT 00870 32 052 18 12
Email	belgica@mumm.ac.be

6. Crew
Name of master **Commander (BeN) Luc VAN TRICHT**
N° of Crew **15**

7. Scientific Personnel
Name and address of scientist in charge :
Dhr. Koen DEGRENDELE
FPS Economy, SMEs, self-employed and Energy, Continental Shelf Service (FPS-CSS)
NGII - Koning Albert II laan 16 , B-1000 Brussels ☎ +32-2-2778411• 🖷 +32-2 2775442•
✉koen.degrendele@economie.fgov.be

N° of scientists : **15**

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

8. Geographical area in which ship will operate (with reference in latitude and longitude)

French Continental Shelf near Brest:
- Gobetas wreck: 48°20.5953'N - 004°31.2530'W
- Carré Renard, square of 1km² round central point: 48°20.42'N - 04°28.79'W
- Pierres Noires, square of 4km² round central point: 48°16.30'N - 04°55.75'W

UK Continental Shelf near Southampton:
- Western Solent area of 7km² round central point: 50°46.00'N – 01°20.60'W

9. Brief description of purpose of cruise

Evaluation of quality and comparative studies with several acoustic systems with ground truthing on the French and UK reference areas for bathymetry and backscatter measurements.

10. Port of Call. Dates. Reasons

Brest	**8-9/06/2015**	**Embarkation of scientists.**
Brest	**10/06/2015**	**Departure port. Start of research cruise RV Belgica 2015/16**
Zeebrugge	**16/06/2015**	**Arrival homeport. End of research cruise RV Belgica 2015/16**

11. Any special logistic requirements at ports of call (other than water, fuel provisions, etc.) **N.A.**

NOTIFICATION OF PROPOSED RESEARCH CRUISE

PART B: DETAIL

1. Name of research ship **RV BELGICA** Cruise N° **2015/16**

2. Dates of cruise From **10 June** To **16 June 2015**

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.

The quality of bathymetry and backscatter (BS) obtained with the fixed EM3002D (300kHz) multibeam echosounder on the RV Belgica and with a mobile EM3002D system (mounted on the Belgica) will be evaluated by compering detailed surveys with the reference models for the wreck Gobetas and the Carré Renard area near Brest.
On the other area near Brest (Pierres Noires) and the area near Southampton (Western Solent), the measurements from the EM3002D systems will be supplemented with:

- **High resolution imagery with a SAS system (Shadows),**
- **Side scan sonar measurements with an AUV (Remus).**

Based on the resulting bathymetric and BS models a number of positions will be selected inside both areas for sediment profile imagery and bearing strength measurements. For the photographic sampling of the seabed a SPI (see below) will be used, for the bearing strength measurement a Sting (see below). The results of the SPI and Sting will allow the calibration of the backscatter measurements and following classification. The obtained data will contribute to the establishment of these areas as international BS reference areas.

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.
   Attach chart with list of positions (+ geographical references)

   ANNEX 1 : Chart 1 (overview), 2 (France) and 3 (UK) in annex.
   ANNEX 2: geographical references working area

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

   Hydrography, geophysics and sedimentology

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

   1. **Fixed and mobile EM3002D Multibeam: bathymetry and backscatter;**
   2. **Shadows (300-455kHz SAS system): high resolution imagery;**
   3. **Remus (AUV with side scan sonar (900-1800kHz) and navigational transponders (12MHz)): high resolution imagery;**
   4. **SPI (*see reference: Rhoads, D. C. and J. D. Germano (1982). "Characterization of organism-sediment relations using sediment profile imaging: an efficient method of remote ecological monitoring of the seafloor (Remots (tm) System)." Marine Ecology Progress Series 8: 115-128.)*: sediment profile imagery;**
   5. **Sting (penetrometer measurement): bearing strength.**

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

Dates Laying	Recovery	Description	Latitude	Longitude

7. Explosives **N.A.**

(a) Type and Trade Name
(b) Chemical content
(c) Dept of trade class and stowage
(d) Size
(e) Depth of detonation
(f) Frequency of detonation
(g) Dates of detonation

8. Details and reference of

(a) Any relevant previous/future cruises

R/V Belgica Cruise 1017a in June 2010:
Performance and accuracy test of the EM3002D multibeam system on board the Belgica on the French Continental shelf:

1. Epave Gobetas (48°20.5953'N - 004°31.2530'W)
2. Zone du Carré Renard (1000m square around center: 48°20.3800'N - 004°28.8500'W)

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

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.

For France:
Christophe Vrignaud
Service Hydrographique et Océanographique de la Marine
SHOM/DO/MGS/IES (Ingénierie des Equipements Scientifiques)
CS 92803
29228 BREST CEDEX 2
France
Phone: +33298221669
E-mail: christophe.vrignaud@shom.fr

For UK:
Dr. Tim Le Bas
National Oceanography Centre, Southampton
Marine Geosciences
European Way, Southampton, SO14 3ZH
UK
Phone: +44(0)23 80596557
E-mail: tim.lebas@noc.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, cfr. 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.
Cruise report within 1 month by request to the chief scientist

Part C: SCIENTIFIC EQUIPMENT

COASTAL STATE : **France**

(Indicate "YES" or "NO")

LIST SCIENTIFIC WORK BY FUNCTION EG. MAGNETOMETRY : GRAVITY DIVING : SEISMICS: BATHYMETRY SEABED SAMPLING TRAWLING ECHO SOUNDING : WATER SAMPLING U/W T.V. : MOORED INSTRUMENTS: TOWED INSTRUMENTS:	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
Multibeam echosounding	**YES**	**NO**	**NO**	**YES**	**NO**	
High resolution imagery	**YES**	**NO**	**NO**	**YES**	**NO**	
Sediment profile imagery	**YES**	**NO**	**YES**	**YES**	**NO**	
Bearing strength	**YES**	**NO**	**YES**	**YES**	**NO**	

Part C: SCIENTIFIC EQUIPMENT

COASTAL STATE : **United Kingdom**

(Indicate "YES" or "NO")

LIST SCIENTIFIC WORK BY FUNCTION EG. MAGNETOMETRY : GRAVITY DIVING : SEISMICS: BATHYMETRY SEABED SAMPLING TRAWLING ECHO SOUNDING : WATER SAMPLING U/W T.V. : MOORED INSTRUMENTS: TOWED INSTRUMENTS:	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
Multibeam echosounding	**YES**	**NO**	**NO**	**YES**	**NO**	
High resolution imagery	**YES**	**NO**	**NO**	**YES**	**NO**	
Sediment profile imagery	**YES**	**NO**	**YES**	**YES**	**NO**	
Bearing strength	**YES**	**NO**	**YES**	**YES**	**NO**	

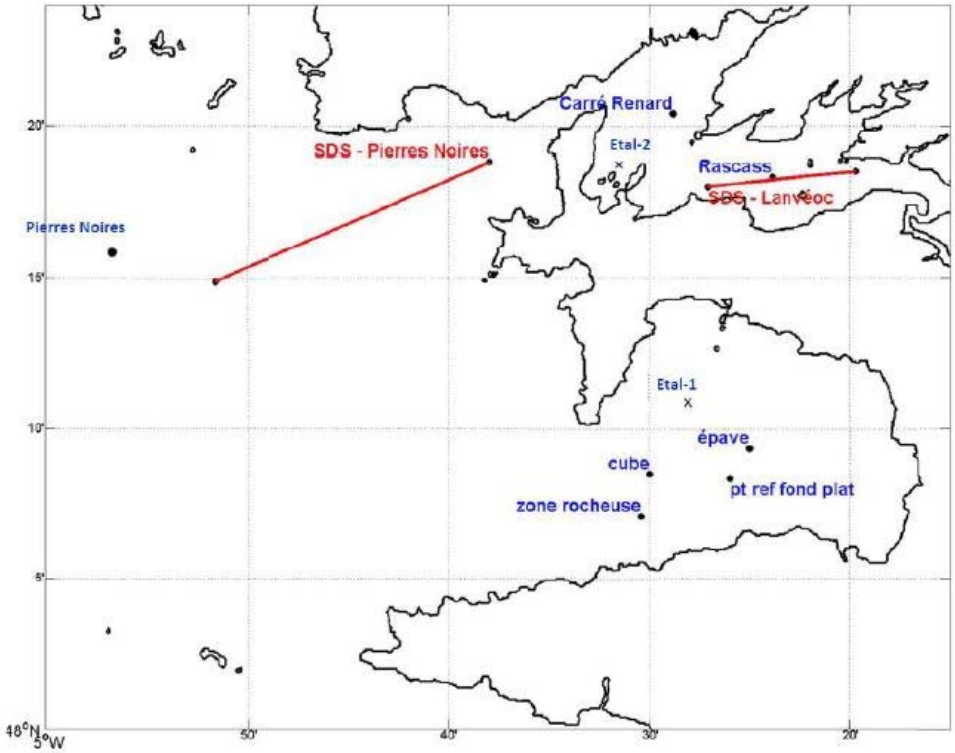
Annex 1:

RV Belgica research cruise 2015/16:

Chart 1:

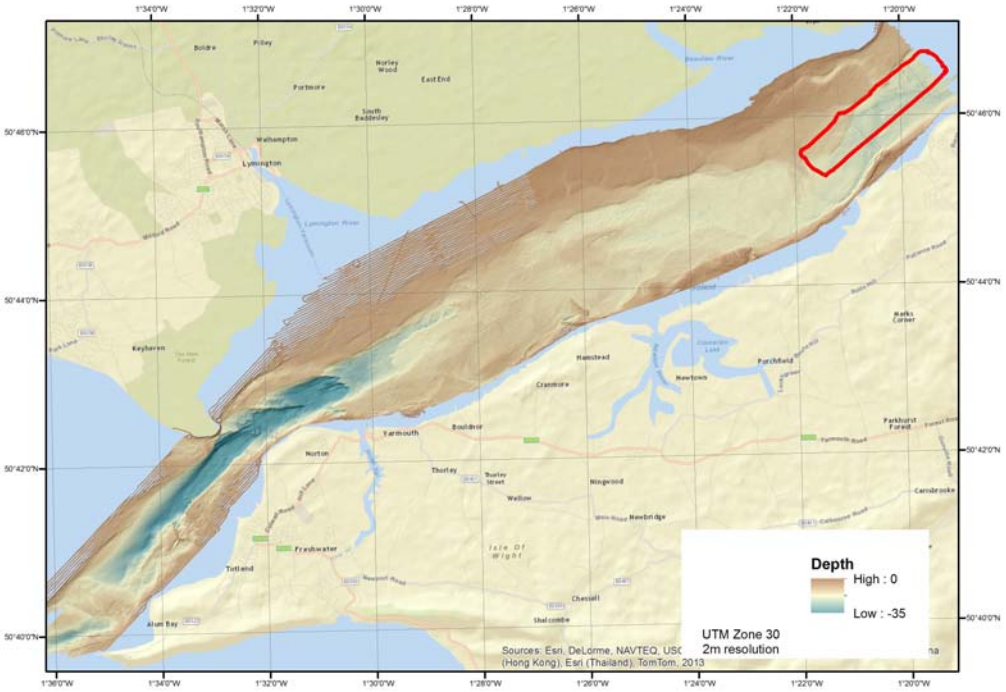
Overview of the working areas in the French and UK continental Shelf

Chart 2:



Working areas on the French Continental Shelf near Brest: Carré Renard and Pierres Noires

Chart 3:



Working areas on the UK Continental Shelf near Southampton: Western Solent

ANNEX 2:

French Continental Shelf near Brest:

- Gobetas wreck: 48°20.5953'N - 004°31.2530'W
- Carré Renard, square of 1km² round central point: 48°20.42'N - 04°28.79'W
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