Application for Consent to conduct
Marine Scientific Research

Date: 21 May 2014

1. General Information

1.1 Cruise name and/or number:
ALKOR AL447

1.2 Sponsoring Institution(s):	
Name:	GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel
Address:	Wischhofstraße 1-3 24148 Kiel
Name of Director:	Prof. Dr. Peter M. Herzig

1.3 Scientist in charge of the Project:	
Name:	J. Schneider von Deimling
Country:	Germany
Affiliation:	GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel
Address:	Wischhofstr. 1-3
Telephone:	+49 431 600 2660
Fax:	
Email:	jschneider@geomar.de
Website (for CV and photo):	http://www.geomar.de/mitarbeiter/fb4/gdy/jschneider/

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:	
Name:	
Affiliation:	
Address:	
Telephone:	
Fax:	
Email:	
Website (for CV and photo):	

2. Description of Project

2.1 Nature and objectives of the project:
We applied for ship time for a research cruise to learn more about gas seepage processes in the North Sea and potentially to study environmental impact on the seabed. Therefore we want to apply modern hydroacoustic equipment to achieve the respective goals. An experiment to conduct small amount of gas on the seabed with the newly developed gas bubble simulator should serve for quantification of the acoustic results. The measurements are mandatory for the success of ongoing research projects. The first fully calibrated hydroacoustic gas detection survey will be conducted with the novel gas bubble simulator and will allow for quantitative measurements of natural gas flux.

2.2 If designated as part of a larger scale project, then provide the name of the project and the Organisation responsible for coordinating the project:
SUGAR (GEOMAR), ECO2 (GEOMAR)

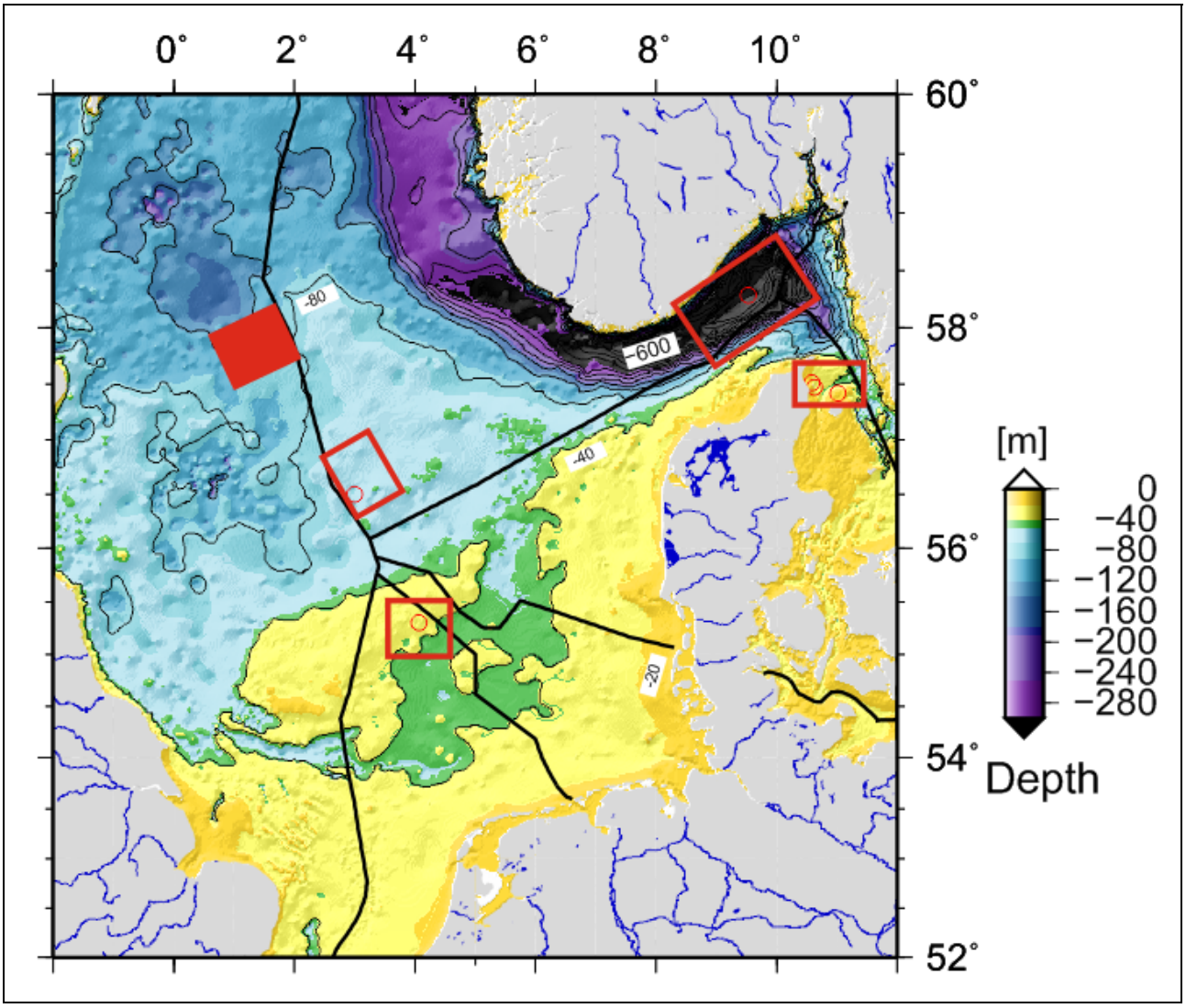
2.3 Relevant previous or future research projects:
COMET METROL GQ2

2.4 Previous publications relating to the project:
Schneider von Deimling, J., Brockhoff, J. und Greinert, J. (2007) *Flare imaging with multibeam sonar systems: data processing for seep bubble detection* Geochemistry, Geophysics, Geosystems, 8 (6). Q06004. DOI10.1029/2007GC001577. Schneider von Deimling, J., Rehder, G., Greinert, J., McGinnis, D., Boetius, A. und Linke, P. (2011) Quantification of seep-related methane gas emissions at Tommeliten, North Sea Continental Shelf Research, 31 (7/8). pp. 867-878. DOI 10.1016/j.csr.2011.02.012.

3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in Latitude and longitude in decimal degrees, including coordinates of cruise/track/way points/sampling stations). Please provide coordinates in a separate excel spreadsheet.
57°28’ N 1° 2.25’ E 57°56’ N 1° 0’ E 58°11‘ N 1° 45‘ E 57°45‘ N 2° 3‘ E The precise locations of track lines and sampling stations have to be defined during the cruise within the research area (s. chart).

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical Areas of the intended work and, as far as practicable, the location and depth of sampling Stations, the tracks of survey lines, and the locations of installations and equipment.



4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	**ALKOR**
Type/Class:	RV
Nationality (Flag State):	German
Identification Number (IMO/Lloyds No.):	8905880
Owner:	Ministerium für Wissenschaft und Wirtschaft des Landes Schleswig-Holstein vertreten durch das GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel Wischhofstraße 1-3 24148 Kiel
Operator:	GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel Wischhofstraße 1-3 24148 Kiel
Overall length (meters):	54,60 m
Maximum draught:	03,95m
Displacement/Gross Tonnage:	1000 BRZ
Propulsion:	Diesel Electric
Cruising & maximum speed:	10 kn, 12,5 kn
Call sign:	DBND
INMARSAT number and method and capability of communication (including emergency	**Telephone:** VoIP 00421 9440243021

frequencies):	Mobile GSM: 0049 1714104627
Name of Master:	Jan Lass
Number of Crew:	11
Number of Scientists on board:	12

4.2 Particulars of Aircraft:	
Name:	
Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (meters):	
Propulsion:	
Cruising & Maximum speed:	
Registration No.:	
Call Sign:	
Method and capability of communication (including emergency frequencies):	
Name of Pilot:	
Number of crew:	
Number of scientists on board:	
Details of sensor packages:	
Other relevant information:	

4.3 Particulars of Autonomous Underwater Vehicle (AUV):	
Name:	
Manufacturer and make/model:	
Nationality (Flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall length (meters):	
Displacement/Gross tonnage:	
Cruising & Maximum speed:	
Range/Endurance:	
Method and capability of communication (including emergency frequencies):	
Details of sensor packages:	
Other relevant information:	

4.4 other craft in the project, including its use:

4.5 Particulars of methods, full description of scientific instruments to be used(for fishing gear specify type and dimension) and location			
Types of samples and Measurements:	Methods to be used:	Instruments to be used:	To be carried out within 12nm (yes or no):
Hydroacoustics	Multibeam	Kongsberg EM2040	yes
Hydroacoustics	Sediment profiler	INNOMAR	yes
Hydroacoustics	Single Beam	Kongsberg EK60	yes
Water column sampling	CTD	Seabird	yes
Mooring on seafloor	Seismics	OBS	no

Mooring on seafloor	Hydroacoustics	Lander	no
Video Survey	Video seabed survey	OFOS, ROV	no
Seafloor sampling	Grab sampler	Grab sampler	yes

4.6 Indicate nature and quantity of substances to be released into the marine environment:
We plan to release 50l of compressed CO2 and 50l CH4 at 200bar from our Lander device

4.7 Indicate whether drilling will be carried out. If yes, please specify:
Grab Samples (30cm penetration)

4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, Chemical content, depth of trade class and stowage, size, depth of detonation, frequency of Detonation, and position in latitude and longitude:
No explosives

5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and Anticipated timeframe for recover, as far as possible exact locations and depth, and Measurements):
The precise locations of sampling stations and mooring deployment have to be defined during the cruise within the research area (s. chart). We plan deploying the moorings on the seabed between October 25th and Nov. 3rd deeper than 30m water depth. The moorings dimension are max. 2.5 m high and will be deployed for a maximum of 5 days.

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:
First entry 21 October Departure 03rd November
6.2 Indicate if multiple entries are expected:
yes

7. Port Calls

7.1 Dates and Names of intended ports of call:
No port calls planned during the cruise

7.2 Any special logistical requirements at ports of call:
None

7.3 Name/Address/Telephone of shipping agent (if available):

8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research Project:
One place on bord is reserved for an observer

8.2 Proposed dates and ports for embarkation/disembarkation:
Embarkation 20th October Kiel/Germany Disembarkation 4th November Kiel/Germany

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary report, which should include The expected dates of submission of the data and research results:
No preliminary report is expected to be written. However, if required, we could supply such a report 1 months after the cruise

9.2 Anticipated dates of submission to the coastal State of the final report:
6 months after the cruise a full cruise report will be supplied

9.3 Proposed means for access by coastal State to data (including format) and samples:
Data will be available via DVD 1 months after the cruise and shipped over

9.4 Proposed means to provide coastal State with assessment of data, samples and Research results:
Data and results will be stored at GEOMAR in Germany and accessible through the research stuff members of the cruise.

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples And research results:
Assistance in assessment or interpretation of data will possible via the staff members of the cruise hosted at GEOMAR

9.6 Proposed means of making results internationally available:
The cruise report will be published on http://oceanrep.geomar.de/

10. Other permits Submitted

10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending):
Norway, Netherlands, Denmark

11. List of Supporting Documentation

11.1 List of attachments, such as additional forms required by the coastal State, etc.:

			DISTANCE FROM COAST (BASELINES)			
List of all major Marine Scientific Equipment it is proposed to use and indicate waters in which it will be deployed.	Fisheries Research Within Fishing Limits	Research concerning Continental Shelf out to coastal state's margin	Within 3 NM	Between 3 - 12 NM	Between 12 - 50 NM	Between 50 - 200 NM
Magnetometry	NO	NO	NO	NO	NO	NO
Gravity	NO	NO	NO	NO	NO	NO
Diving	NO	NO	NO	NO	NO	NO
Seismics	NO	NO	NO	NO	NO	NO
Seabed sampling	YES	NO	NO	NO	NO	YES
Bathymetry	YES	NO	NO	NO	NO	YES
Trawling	NO	NO	NO	NO	NO	NO
Echo sounding	YES	NO	NO	NO	NO	YES
Water sampling	YES	NO	NO	NO	NO	YES
U/W TV	YES	NO	NO	NO	NO	YES
Moored instr.	YES	NO	NO	NO	NO	YES
Towed instr.	YES	NO	NO	NO	NO	YES
ROV	YES	NO	NO	NO	NO	YES
OBS	YES	NO	NO	NO	NO	YES
Multibeam 200-400 kHz	YES	NO	NO	NO	NO	YES

Signature: pp

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