

## NOTIFICATION OF PROPOSED RESEARCH CRUISE

### **PART A: GENERAL**

1. NAME OF RESEARCH SHIP R/B Norppa CRUISE NO. 2009-5
  
2. DATES OF CRUISE From 2009-06-01 To 2009-11-30
  
3. OPERATING AUTHORITY:  
Jacobs University Bremen  
TELEPHONE: +49-421 200 3254  
TELEFAX: +49-421 200 3229  
Email: l.thomsen@jacobs-university.de
  
4. OWNER (if different from no. 3)
  
5. PARTICULARS OF SHIP:

Name:	Research Boat NORPPA II
Nationality:	German
Overall length: (in metres)	<b>7.2 m</b>
Maximum draught: (in metres)	<b>0.5 m</b>
Net tonnage:	<b>1.6 tons</b>
Propulsion e.g. diesel/steam:	<b>Diesel</b>
Call sign:	
Registration port and number (if registered fishing vessel)	
  
6. CREW  
Name of master: Laurenz Thomsen, Hannes Wagner  
Number of crew: 2
  
7. SCIENTIFIC PERSONNEL  
Name and address of scientist in charge: Laurenz Thomsen and Hannes Wagner  
Jacobs University Bremen, OceanLab, Campusring 8  
D- 28759 Bremen  
Tel/telex/fax no.: +49-421 200 3254, +49-421 200 3229  
No. of scientists: 1-4
  
8. GEOGRAPHICAL AREA IN WHICH SHIP WILL OPERATE (with reference to latitude and longitude)  
Polygon, with limitations given below.  
59° 03',90 N, 10° 49',45 E; 59° 03',90 N, 11° 08',76 E;  
58° 57',10 N, 10° 49',45 E; 58° 57',10 N, 11° 04',90 E
  
9. BRIEF DESCRIPTION OF PURPOSE OF CRUISE
  1. New EU FP7 project HERMIONE. Interaction between cold-water coral reefs and passing water bodies
  2. Education and Training for graduate students at TMBL for the HERMIONE project
  3. Project in collaboration with Statoil: Effects of particulate matter on cold-water coral ecosystems

b) GENERAL OPERATIONAL METHODS (including full description of any fish gear, trawl type, mesh size, etc.)

Camera-transsects for studies on quality and quantity of benthic fauna. Studies will only be conducted in areas selected from bathymetric conditions. Camera-aided deployment of recording instruments. The

following types of equipment will be used:

Hummingbird Echosounder with GPS

Olex navigational system

Mini-ROV Camera type GNOM (max depth 200 m)

Aanderaa RCM 9 Recording instrument (salinity, temperature, current, turbidity) and Aanderaa ADCP 600 (recording profiling current meter)

Llist particle sizer

Particle traps

Time-lapse cameras

Particle-Cameras

Small Water sampler

## Results

In 2009, only a few sampling activities at the Tisler reef of the proposal above took place with the RV Lophelia from the TMBL laboratories in Tjarnoe. RB Norppa was NOT used at all due to its insufficient seagoing capabilities. For RV Lophelia (16 m, equipped with ROV a separate research report has been sent by TMBL. RB Norppa was heavily active in Swedish waters around Tjarno only.

However, on June 16, 2009, Norppa sailed to the Tisler island and did a few shallow water video surveys for the preparation of a future deployment of a cabled observatory. It was decided that the shore station should be located on a small Tisler island at 58°59.59, 10°57.23. The following proposal is the result of these mappings. The proposal was submitted to Norwegian authorities and has been accepted.

The following proposal from November is therefore the main result of our 2009 activities at Tisler reef. Tisler will get an online observatory. Jacobs University is experienced in cabled observatory work. Results from successful operations can be seen under:

<http://www.youtube.com/user/neptunecanada>

<http://www.youtube.com/neptunecanada#p/u/6/lc-gxJzml6g>



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(Principal Scientist)

Dated 15.04.2010

# NOTIFICATION OF PROPOSED INSTALLATION OF TEST OBSERVATORY

## PART A: GENERAL

1. NAME OF RESEARCH STRUCTURE: TISLER OBSERVATORY
2. DATES OF DEPLOYMENT From 2010-01-30 To 2013-01-30
3. OPERATING AUTHORITY:  
Jacobs University Bremen together with Sven Lovén centrum för marina vetenskaper - Tjärnö  
TELEPHONE: +49-421 200 3254; +46 526 68600  
TELEFAX: +49-421 200 3229; +46 526 68607  
Email: [l.thomsen@jacobs-university.de](mailto:l.thomsen@jacobs-university.de)  
Tomas.Lundalv@loven.gu.se
4. OWNER (if different from no. 3)
5. PARTICULARS OF TEST OBSERVATORY:

Name:	TISLER OBSERVATORY
Nationality:	German/Swedish
Overall length: (in metres)	
Shore station	1 m2 area, 4 m high
Underwater node	1 m2 area, 0.5 m high
Cable length: (in metres)	600 m
Net tonnage:	0.6 tons
6. Responsible scientists  
Name: Laurenz Thomsen and Tomas Lundalv (TMBL)
7. SCIENTIFIC PERSONNEL

Name and address of scientist in charge:	Laurenz Thomsen Jacobs University Bremen, OceanLab, Campusing 8 D- 28759 Bremen
	Tomas Lundalv Göteborgs universitet Sven Lovén centrum för marina vetenskaper - Tjärnö SE-452 96 STRÖMSTAD
8. GEOGRAPHICAL AREA IN WHICH OBSERVATORY IS DEPLOYED  
(with reference to latitude and longitude)  
SHORE STATION: 58°59.59, 10°57.23 on small island  
The shore station is 4 m high, and consists of a battery box, connected to a wind generator of 120 cm diameter. This type of generator is used along the German coasts to power bird observatories. The propeller is painted in fluorescent color to prevent bird damage.  
UNDERWATER NODE: 58°59.84, 10°57.61 with up to 7 sensor cables in area up to 50 m around that node. The node consists of a titanium frame with control electronics.  
The underwater node is connected to the shore station with a 600 m subsea cable (ø 22 mm, 48V) which will be laid out by aid of the TMBL ROV. Weights will be attached to the cable to prevent drift. The cable will reach the shore through a concrete tube (ø 0.1 m, 5 m) to prevent ice-damage. Care will be taken to avoid damage to cold-water corals and other sensitive benthic organisms.
9. BRIEF DESCRIPTION OF PURPOSE OF CRUISE  
The Tisler Test Site on the Norwegian South coast is unique in that it contains true deep-water habitats, including hot-spot ecosystems such as cold-water corals (CWC), in a shallow (90 m) and sheltered position only about 500 m from land, making it ideal for testing observation systems, which later are to be applied in deeper water. The site is easily accessible from the EU supported Sven Lovén Center for Marine Sciences –Tjärnö (SLC–Tjärnö), the well-equipped host laboratory. All infrastructure needed for deployment and service of the test site is available at SLC-Tjärnö, including a brand new ROV and

several research boats and vessels. It allows additional tests of sensors from interested partners on short notice. Tisler will give insight into anthropogenic activities around cold water corals and will allow video observations by the local Norwegian community

1. PART B: DETAILS

3. a) PURPOSE OF RESEARCH

1. EU FP6 project HERMIONE. Interaction between cold-water coral reefs and passing water bodies
2. Education and Training for graduate students at TMBL
3. Project in collaboration with Norwegian authorities: Effects of particulate matter and sedimentation on cold-water coral ecosystems

b) GENERAL OPERATIONAL METHODS AND DETAILS OF MOORED EQUIPMENT

Cameras for studies on quality and quantity of benthic fauna.

Aanderaa ADCP 600 (recording profiling current meter)

Llist particle sizer

Particle traps

Time-lapse cameras

Particle-Cameras

Small Water sampler

Flow meter

Oxygen meter

Turbidity meter

Internet moving vehicle "Crawler" (10 m radius)

6.

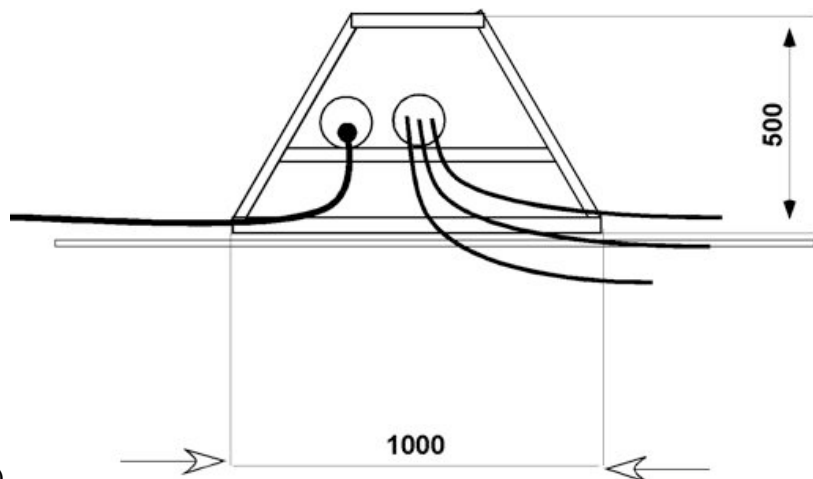
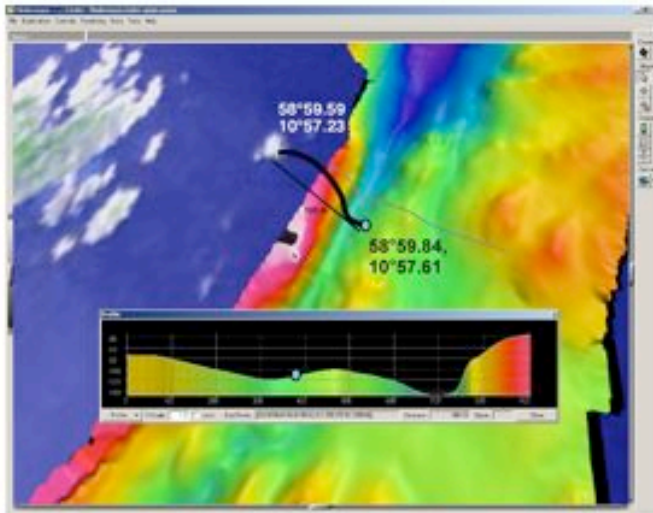
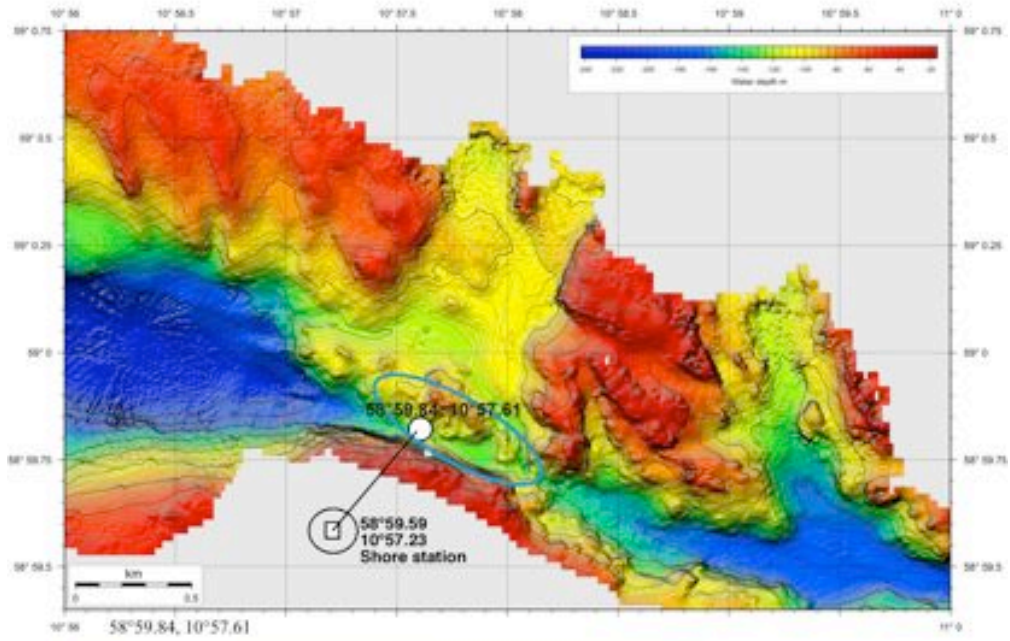
<u>Dates</u>	<u>Recovery</u>	<u>Description</u>	<u>Depth</u>	<u>Latitude</u>	<u>Longitude</u>
<u>Laying</u> Between 2010-01-20 and 2010-03-20	Between 2013-01-20 and 2013-02-20		Cable from shore station to 115 m	Within trawl exclusion zones in the specified area	Within trawl exclusion zones in the specified area

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(Principal Scientists)

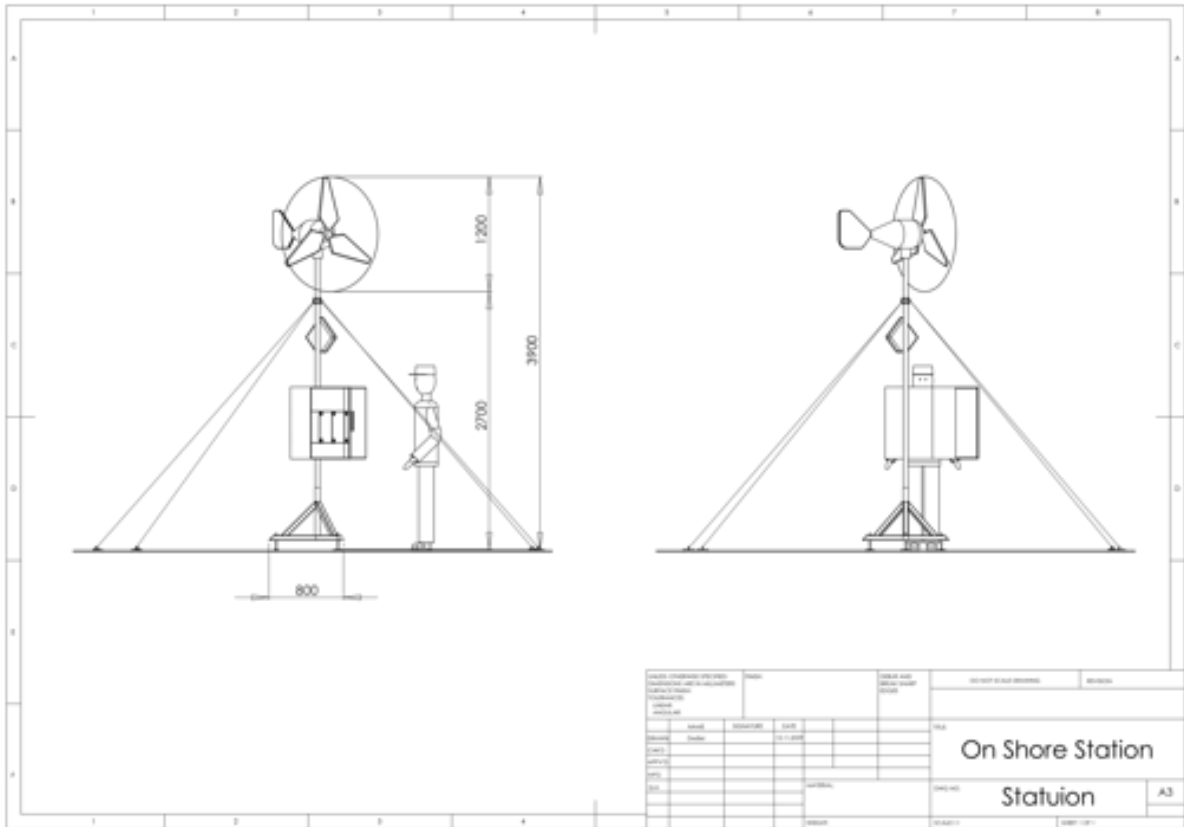
Dated 16.11.2009

# Tisler Observatory



Underwater Node (Junction Box)

Shore station



Underwater Node Overview

