

## EUROFLEETS<sup>+</sup> AUV WORKSHOP / TRAINING

### *GULLMAR FJORD, SWEDEN AUGUST 18<sup>TH</sup>-23<sup>RD</sup> 2019*

#### The EurofleetsPlus “Blue Skills LABS”

During the past ten years new technologies have remarkably extended the scope of marine research and now offer exciting novel perspectives for pioneering research. Unmanned underwater vehicles have reached a high degree of reliability and they develop towards standard equipment on modern research vessels. However, the technical complexity of the systems and their integrated scientific payload is a challenge for both the operational team and the scientists. Eurofleets+ will address these needing through proposed dedicated training courses (Blue skills Labs) to enable the next generation of marine researchers to fully utilize the possibilities offered by this kind of scientific instrumentation onboard European research vessels.

#### WORKSHOP OVERVIEW



A workshops / training on AUV operation, organized within the Eurofleets<sup>+</sup> training program, will be held at the Robotics Lab workshop of Gothenburg University ([UGOT](#)) in collaboration with the Swedish Marine Robotics Centre ([SMaRC](#)) including participation of industry ([Marine Mätteknik, MMT](#)).

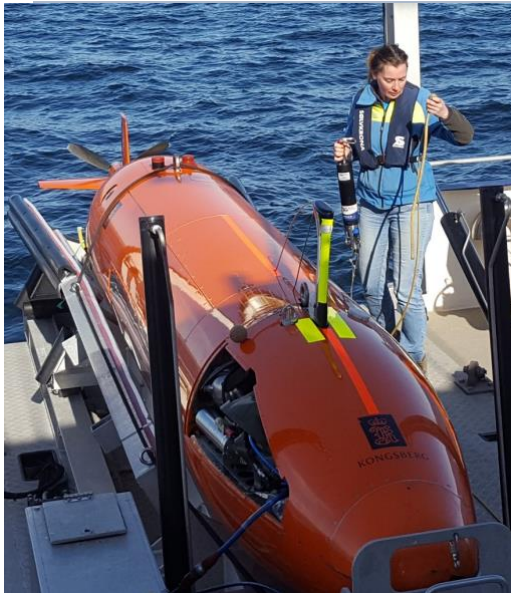
The workshop will have a duration of 6 days (from 18<sup>th</sup> to 23<sup>rd</sup> August) and is offered to European PhD and post-graduate students (students of all nationalities enrolled at European universities).

Course elements include a guide in using Autonomous Underwater Vehicles as a research tool, mission logistics, mission planning, scientific payload, data acquisition and post-processing of various types of sensors including hydroacoustic sensors. Theoretical course elements will be applied practically during two days when the course participants execute their planned missions in the Skagerrak Sea using the Hugin AUV 'Ran'.

## Learning objectives

Students participating in this workshop will learn to:

- Learning (-by-doing) the logistical challenges and advantages with AUVs as research tools
- Acoustic methods for biotope classification and GIS charting
- Limitations and opportunities of AUVs as platforms
- Importance of the AUV sensor suite



## Time Plan

Aug 18<sup>th</sup> – Arrival

Aug 19<sup>th</sup> – set-up software, installing maps, plan draft mission, pre-mission procedures and QC of mission plan

Aug 20<sup>th</sup> – Group exercises and lectures

Aug 21<sup>st</sup> – Practical training (mission QC, pre-dive checks and execution of mission)

Aug 22<sup>nd</sup> - Practical training (mission QC, pre-dive checks and execution of mission) and data post-processing

Aug 23<sup>rd</sup> – data post-processing, course report preparation and departure

## Teachers

Course responsible: Prof. Anna Wåhlin, University of Gothenburg

Course administrator: Niklas Andersson, University of Gothenburg

## Lecturers:

Johan Rolandsson, Marin Mätteknik

Hans Olsson, University of Gothenburg

Matthias Obst, University of Gothenburg

In preparation for the course, participants should have installed and started HuginOS on their laptop ([the software can be downloaded from this link](#)). If needed there are course laptops available (book at least one week before the course start).

A total of 12 positions are available for European PhD and post-graduate students (students of all nationalities enrolled at European universities). Applications will be evaluated on the basis of the scientific/technical career of the applicant and coherency between their studies and the topics in the Labs, based on information provided in the application form.

## Costs and travel grants

The course is free of charge, but the participants must pay for their own travel expenses including accommodation and food at the field station. Cost for accommodation and food is estimated to be 528 SEK (or 428 SEK for shared room), about 45-55 EUR, per day. A partial travel reimbursement up

## Eurofleets<sup>+</sup> Blue Skills Labs

to maximum 250€ is available after application. In order to apply for travel support, students are requested to indicate this in the online form. The support will be given on receipt of a bill from the student's university, so that expenses are claimed from the students own university which later sends a bill to University of Gothenburg.

### Application

ONLINE APPLICATION forms are available to access at

<https://forms.gle/chqA52PkG4KTEYnn8>

APPLICATION MUST BE RECEIVED BY JULY 8<sup>TH</sup> AT 18:00 HRS (UTC)

Successful applicants will be notified by July 15<sup>th</sup>.

Diversity will be considered as part of the application evaluation.

At the end of the workshop a certificate of completion will be delivered to all the participants. This document will include information about the workshop's topics and number of hours dedicated: it will allow the participants to get credits form their own institutions.

### Contacts

Course responsible: Prof. Anna Wåhlin [anna.wahlin@marine.gu.se](mailto:anna.wahlin@marine.gu.se)

Course administrator: Niklas Andersson [niklas.andersson.2@gu.se](mailto:niklas.andersson.2@gu.se)