

The BtS serves since 2009 as a meeting place of experts and students of marine control engineering and signal processing and the marine robotics application areas in various types of ocean science. We are the world's first successful, multi-year field training program that combines academic topics in marine robotics and robotics application areas and hands-on working experience in the sea, doing remote sensing and sampling for various ocean sciences. We are also unique in that we put strong emphasis on the participation of principal investigators and established research group leaders from across the globe, catering not only to the EU or USA research communities.

This year, in addition to our four program tracks Marine robotics (MAROB); marine biology and marine nature protection (MARBIO); maritime security, naval and coast guard operations (MARSEC); and maritime, nautical and ship archaeology (MARCH), we will introduce new speakers from areas such as marine geology (MARGEO), oceanology (OCEAN), oceanography (GRAPH) and others.

This year, FP7 MORPH Summer School

MORPH project (<http://www.morph-project.eu/>), coordinated by ATLAS ELEKTRONIK (Mr. Joerg Kalwa), gathers a consortium of 9 partners (Centre for Maritime Research and Experimentation (CMRE), Jacobs University, Technische Universitaet Ilmenau, University of Girona, IMAR – Instituto do Mar, Consiglio Nazionale delle Ricerche, IFREMER, Instituto Superior Tecnico). The project, funded by the EC 7th framework, proposes a novel concept of an underwater robotic system that emerges out of integrating, albeit in a non-physical manner, different mobile robot-modules with distinct and complementary resources. It will provide efficient methods to map the underwater environment with great accuracy in situations that defy existing technology: namely underwater surveys over rugged terrain and structures with full 3D complexity, including walls with a negative slope.

Lectures and tutorials prepared by the MORPH consortium will be an integral part of the BtS2014, and all BtS2014 registered participants will have the opportunity to participate. The MORPH programme will provide a unique opportunity for BtS2014 participants to be a part of beyond state-of-the-art research in the area of marine robotics.

LECTURES

by world-class experts, focusing on recent interesting robotic, control, signal processing or ocean science (MARBIO, MARCH, MARSEC) results, dove-tailing with one of the program tracks.

Current list of lectures:

MARCH

Bridget Buxton, University of Rhode Island, USA
Martin Dean, AdsuDeepOcean Ltd and University of St. Andrews, School of History, Scotland
John Odin Jensen, Woods Hole institute and University of Rhode Island, USA

MARBIO

Sergej Olenin, Kalaipeda University, Lithuania
Marina Carreiro Silva, University of the Azores, Portugal

MARSEC

Margo Edwards, University of Hawaii, USA

MAROB

Joao Alves, Centre for Maritime Research and Experimentation (CMRE), Italy
Stefano Fioravanti, Centre for Maritime Research and Experimentation (CMRE), Italy

This year we will also present European Commissions FP7 projects:

ICARUS project (<http://www.fp7-icarus.eu/>)
CoCONET (<http://www.coconet-fp7.eu/>)
CADDY (<http://www.caddy-fp7.eu/>)

TUTORIALS

are hands-on sessions concentrating on the use of tools and applications for robotic ocean science mission preparation, post-processing and statistical analysis. Participants are guided and encouraged to draw their own conclusions based on analysis of the ocean science data sets - videos, images, side scan or imaging sonar feeds etc., collected by underwater robots. The tutorials provide an opportunity for all participants to receive hands-on training in marine robotics operations.

Current list of tutorials:

T1 Remote Presence: Long Endurance Robotic Systems for Routine Inspection of Offshore Subsea Oil & Gas Installations and Marine Renewable Energy (MRE) Devices
Edin Omerdić, University of Limerick, Limerick, Ireland
T2 A Laser Tracker System for Fast and Precise Relative Localisation of Marine Robots
Thomas Goltzbach, Ilmenau Technical University, Germany
T3 3D mapping in marine environments
Andreas Birk, Jacobs University, Bremen, Germany
T4 Hovering AUVs for inspection and intervention
Mark Carreras University of Girona, Spain
T5 Satellite remote sensing for seafloor mapping and water quality monitoring
Anders Knudby Simon Fraser University, Canada

DEMONSTRATIONS

of equipment: autonomous robotic units, vehicles, systems (ROVs, AUVs, USVs, UAVs); or remote sensing equipment, stereo-camera systems, sonars, radars, hydroacoustic modems etc. by research teams or industrial partners who exhibit and present their products.

For registered students (graduate and Ph.D.) of all disciplines, credit (ECTS) will be offered by the University of Zagreb.



REGISTERING AND PARTICIPATING

Registration is web-based, at <http://bts.fer.hr>. The registration and accommodation fees are combined. It is NOT NECESSARY TO BOOK THE LOCAL ACCOMMODATION, since room & board are inclusive in the registration fee.

The combined registration fee includes:

- accommodation with three meals per day in single rooms (for Standard registrations) or double rooms (for Student registrations) in a 4* hotel for 7 nights (5 October through 12 October),
- the full technical program, and
- the full social program.

Registration fees	Early-bird (by 5 July)	Regular (by 5 September)
STUDENT	€450	€550
STANDARD	€550	€700
ACCOMPANYING PERSON	€220	€220

CORPORATE PARTICIPATION PROGRAM

For commercial entities, we offer the Corporate Participation Program option. The Program includes:

- 3 full standard registrations (with full nights of stay and social program),
- a 30 min time-slot for the presentation of the product gamut,
- logistical / infrastructural local support and organization collaboration for an expo / hands-on demonstration activity at the prescribed site.

	Early-bird (by 5 July)	Regular (by 5 September)
CORPORATE REGISTRATION	€3000	€3500

For past commercial participants' experience, you can contact Evologics (Germany), Kongsberg-Hydroid (USA/Norway), VideoRay LLC (USA), OceanServer Technologies Inc. (USA), OcanScan Ltd.(Portugal).

POINT OF CONTACT

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SECOND ANNOUNCEMENT

2014
breaking the surface

**6th International Interdisciplinary Field Workshop of Marine
Robotics and Applications**

*Supported by Office of Naval Research – Global, US,
Under the patronage of the President of the Republic of Croatia,
Dr. Ivo Josipović*

OCTOBER 5 - OCTOBER 12, 2014

ILIRIJA RESORT, BIOGRAD NA MORU, CROATIA
HTTP://BTS.FER.HR

