



On-line workshop:

‘La robotica ispettiva, di intervento e di monitoraggio per operazioni subacquee’

21 Febbraio 2022



Underwater Intervention Robotics: the DEXROV experience in ISME

Giovanni Indiveri, UNIGE – ISME

On-line workshop, 21 Febbraio 2022



Università di Genova



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GENOVA
Legal Headquarter



PISA



FIRENZE



ANCONA



CASSINO



LECCE



BOLOGNA



ROMA 1



COSENZA

***NATIONAL INTER-UNIVERSITY CENTER TO SUPPORT RESEARCH ACTIVITIES IN
THE FIELDS OF MARINE TECHNOLOGIES AND OCEANIC ENGINEERING***



Brief Presentation - 1

- Main background

Systems and Control Engineering

Applied Mechanics

Computer Science

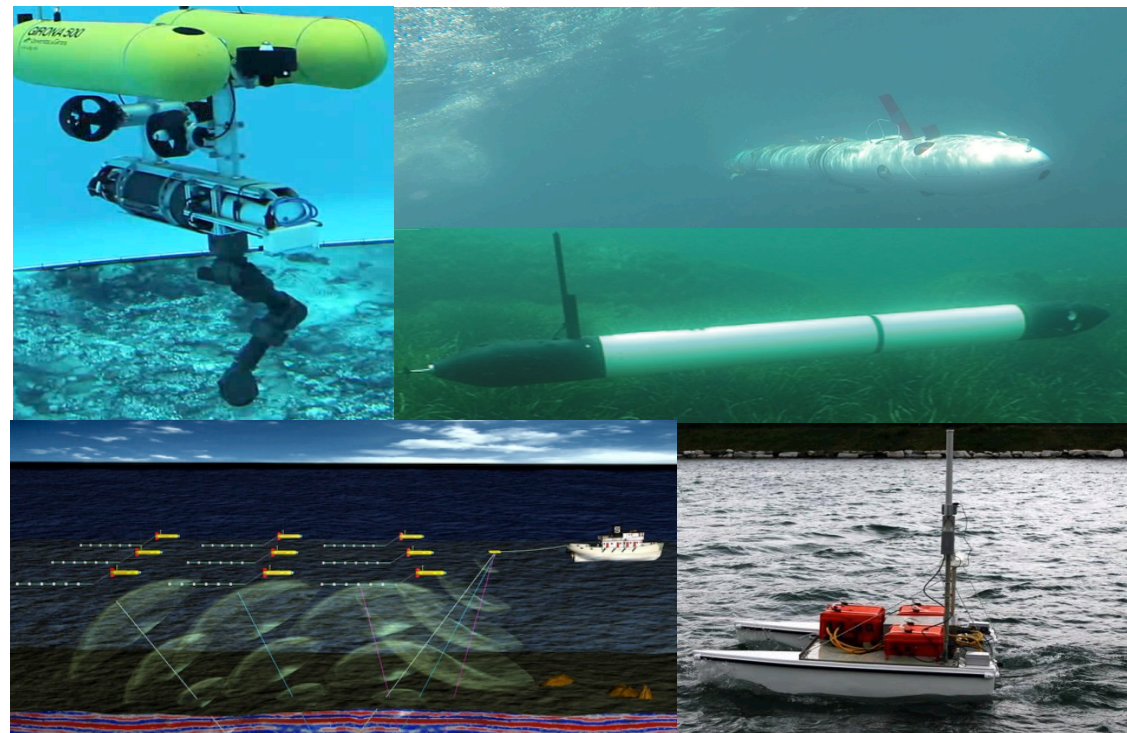
Competences and applications include

- Navigation, Guidance and Control for autonomous marine robots
- Underwater Manipulation and Intervention robotics
- Communication systems
- Marine Acoustics for communication and perception
- Underwater systems mechanical design
- Networking and underwater IoT for underwater environment monitoring and surveillance
- AI and Machine Learning methods
- System identification methods for marine systems
- Proprioceptive and exteroceptive perception
- Mission planning and execution + Human-Machine Interface
- Cooperative Robotics

Brief Presentation - 1

Established in 1999

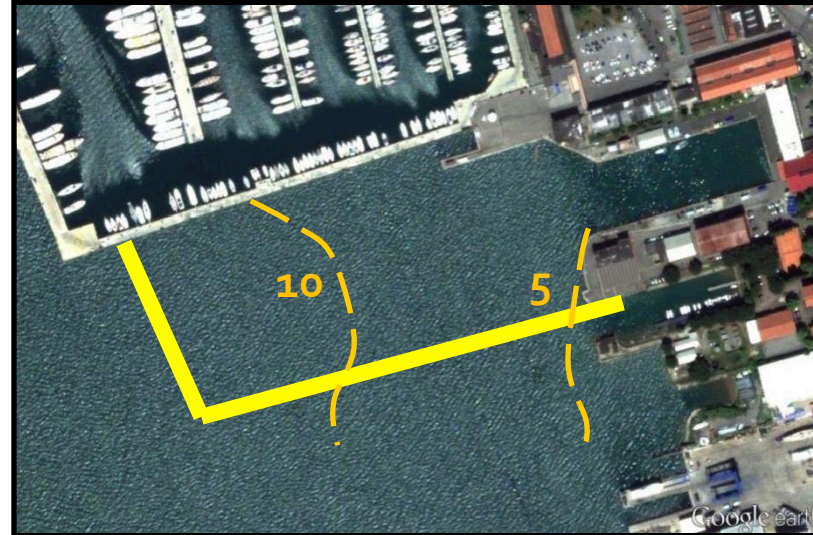
- 9 Italian University members
- 35- Structured researchers; 15-20 young researchers
- Shared Infrastructures, labs, equipments
- Funding from EU, National , Industrial res. projects
- 1MEuro/year (approximate average of last 5 years)
- CSSN-ISME Joint Lab (SEAI Lab)



A national academic collaborative network of wide-spectrum synergic competences, devoted to research and development on marine unmanned system.



SeaLab: Joint CSSN-ISME Laboratory on “Sistemi Eterogenei Autononomi”



Brief Presentation - 2



SEALab DIRECTOR CSSN - Officer

- promote the Laboratory activities;
- discuss and approve the three year program of work.

Technical Scientific Committee - CTS (at least 5 members of ISME and CSSN)

- Half Yearly monitoring of the Program of Work;
- Three Year Program of Work preparation;
- Annual Report preparation.

Scientific Coordinator ISME Scientist

- direct the Technical Scientific Committee;
- promote the Laboratory;
- prepare the three year program of work;
- prepare the Annual Report.

Brief Presentation - 2



Scientific-Technological Demands	SEALab Project	TEST & EVALUATION
Persistence	PATH (Persistent Auv Through marine energy Harvesting)	
Deployability, Autonomy & Unmanned Systems	ASAP (Auv for Seabed monitoring And intervention with high Projectability)	
Interoperability	UBIqUItous (Underwater Bridging for Improving Unmanned Interoperability)	
Modularity-Reconfigurability, Scalability	MOSAiC (Modularity & Scalability for Autonomous detection and Classification)	
Autonomy & Unmanned Systems	ASSeT (Autonomous Self-reliant Systems Technology)	
Information & Communications Dominance	UNICA (UNderwater Information & Communications Assurance)	
Modeling & Simulation/Mission planning tool/Command& Control/Computer Based Training	CoMPASS (Cross Mission Planning And Simulation Software for AUV)	