

16 November 2017
Porto, Portugal

Centro de Congressos
da Alfândega do Porto



**STRONG
MAR**

STRONGMAR CONFERENCE A SEA OF INNOVATION

ORGANIZER



PROJETO
SIDENAV

PARTNERS



www.strongmar.eu

COMPETE
2020

PORTUGAL
2020



FCT

THE STRONGMAR PROJECT IS FUNDED BY THE
EUROPEAN COMMISSION UNDER THE 2009-13
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VENUE

The 2018 STRONGMAR conference will take place at the Centro de Congressos da Alfândega do Porto (floor 2, S.João Hall).



Address

Rua Nova da Alfândega
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S.João Hall (image credits: Centro de Congressos da Alfândega do Porto)

BUSINESS2SEA

The 2018 STRONGMAR conference takes place within Business2Sea - Sea Forum of 2018, which is organized by the Fórum Oceano association (www.forumoceano.pt) in collaboration with Fundação CETMAR, Centro Tecnológico do Mar, located in Galiza. You are invited to also attend the exhibition, conferences and business meetings.



[Business2Sea](#) (B2S), is an international event dedicated to stakeholders from the different activity sectors that comprise the maritime economy and will encompass international conferences, seminars and workshops and an exhibition space for sea products, services and technologies.

The 8th edition of the event will be dedicated to the main theme '2030 Sea Challenges' and will take place at Alfândega Porto Congress Centre (Porto, Portugal) between the 14th and 16th of November and will hold the Celebration of the National Maritime Day, at 16th, with a special programme.

The event will encompass a diversified programme that includes:

- a Conference commemorating the National Day of the Sea in Portugal, with the participation of international experts and representatives of European and national public authorities;
- a set of seminars and thematic workshops to be held in parallel, focusing on topics such as Nautical Tourism, Marine Resources, Marine Technologies, Employment and Training, Marine Industries, Marine Energies, Ports and Maritime Transport, Sustainability of the Marine Ecosystems, Cross-border and Atlantic Cooperation and Oceans Literacy.;
- a programme of International Business Meetings (B2B);
- a programme of Pitches - "Curtas de Mar" dedicated to short presentation of projects and initiatives in the area of the economy of the Sea;
- a showcase of marine products and technologies;
- moments for networking and for tasting of products of the Sea.

B2S is open to all participations, but with mandatory registration in each activity.

FORUM OCEANO

Fórum Oceano – Associação da Economia do Mar (Association of Maritime Economy) is a private non-profit association created in 2009 and since then formally recognized by the Portuguese Government as the entity responsible to implement collective efficiency strategies in the maritime economy sector. At present, the association gathers 130 members from the whole country, covering all sectors of the blue economy, from traditional to emerging activities, among them companies and business associations, R&D centres, higher education institutions, local authorities and other associative organizations. The Association main priority is to promote the sea as a valuable source for the economy, promoting cooperation between stakeholders through the intersection of knowledge and support for innovation, internationalization and entrepreneurship contributing, in sustainability conditions, for the country's competitiveness.

www.forumoceano.pt



PROGRAMME

SCHEDULE

Start	End	Session		Speaker	Title
09:00	09:30	Registration			
09:30	10:00	WS	Welcome session	John Watson Aberdeen University Scotland, UK	NA
10:00	10:30	S1	Session 1	Stephen Wilson Soil Machine Dynamics Ltd Newcastle, UK	<i>EVOLUTION OF POWER CABLE BURIAL AND PROTECTION AND LATEST DEVELOPMENTS FROM SMD</i>
10:30	11:00	S2	Session 2	Eduardo Leite, ASM Metalomecânica SA Sever do Vouga, Portugal	<i>SMART INFRASTRUCTURES FOR DEEP SEA NAVIGATION</i>
11:00	11:30	Coffee break			
11:30	12:00	S3	Session 3	Frank Lim 2H Offshore Woking, UK	<i>RISER SYSTEMS FOR LIQUID AND SOLID MINERAL EXTRACTION OFFSHORE</i>
12:00	12:30	S4	Session 4	David Ribas IQUA Robotics Girona, Spain	<i>IQUA ROBOTICS: PAST, PRESENT AND FUTURE</i>
12:30	13:00	CS	Closing session	Eduardo Silva INESC TEC and ISEP Porto, Portugal	NA

SESSIONS

S1 – Stephen Wilson

EVOLUTION OF POWER CABLE BURIAL AND PROTECTION AND LATEST DEVELOPMENTS FROM SMD

Soil Machine Dynamics is a spin out from Newcastle University in the UK. Professor Alan Reece was a professor of agricultural science at the university in the 1970's where he was approached by industry to develop a novel method of protecting pipelines on the seabed for the oil and gas industry.

The presentation will follow the last 45 years of developments and innovations to share with you the needs and solutions behind many "world firsts" that have followed the development of industries wanting to work in the subsea environment from oil & gas to telecoms to subsea power transmission and then mining. SMD is evolving as a company to respond to the challenges of remove operations in extreme environments and its new developments are taking it down very different pathways.

S2 – Eduardo Leite

SMART INFRASTRUCTURES FOR DEEP SEA NAVIGATION

A. Silva Matos Metalomecanica is a Portuguese company established in 1980, is a manufacturer of the steel works field specialised in pressure vessels and other equipment intended for storage and processing applications within the Oil & Gas, Chemical, Petrochemical, water, among other fields of application. The company employs more than 100 people and operates in 2 manufacturing plants (Sever do Vouga and Aveiro, Portugal), being export sales weight in excess of 70%.

As part of its DNA, A. Silva Matos Metalomecanica is involved along the years in different innovative projects within the scientific and industrial fields, as well as in the deep-sea applications. Within these last ones, the company developed new mechanical technologies for high pressure, variable buoyancy systems and floating materials, what allowed the design, manufacturing and testing of autonomous robotic landers of modular design able to operate at depths down to 4000 m. This approach results on new and innovative products for a diversified activity within multiple deep-sea applications.

S3 – Frank Lim

RISER SYSTEMS FOR LIQUID AND SOLID MINERAL EXTRACTION OFFSHORE

Lifting of slurry from the seabed mining machine to the surface production vessel is a critical element of any deepwater seabed mining system. A vertical transport riser system comprises pump(s), riser string, connectors and hang-off assembly as its main components, but it is the pipe material, riser configuration and installation method that often attract the most discussions.

This presentation features important riser design work 2H has undertaken over the years for different stakeholders, and including the work carried out as a partner to the EU funded Blue Mining Joint Industry Project

The key challenges faced by the design of a deepwater riser system are:

- High riser payload
- Large deck space for storing riser joints
- Long time to deploy and retrieve riser
- Uncertain metocean conditions
- Vortex induced vibrations
- Weld and connector fatigue

Increasing the water depth further sees the longer and increasingly 'springy' riser experiencing axial resonance caused by wave induced vessel heave motions being close to the riser resonant period. This can lead to snatch loading and fatigue failure in the riser.

The presentation will discuss the above design issues, analysis requirements and provide guidance on pump/riser selection. Alternative riser configurations will also be proposed.

S4 – David Ribas

IQUA ROBOTICS: PAST, PRESENT AND FUTURE

IQUA Robotics is a spin-off company of the University of Girona that was created in 2016. The company's goal is to become the reference manufacturer of autonomous underwater robots in southern Europe with a well-defined business strategy and being recognized for its quality in manufacturing and innovation. The business model of IQUA focuses on the development of autonomous underwater robots at a competitive price, having a flexible configuration and performance similar to higher-end units, mostly for the research market.

We will discuss the major steps done by the entrepreneurial team from the foundation of the company in 2016, the present challenges and the expected future.

SPEAKERS



David Ribas

David Ribas is hardware product manager at IQUA Robotics, a spin-off company of the University of Girona devoted to the commercialization of innovative AUVs which are the result of more than 10 years of research at the University.

He holds an M.Sc. degree (2003) and a Ph.D. degree (2008) in Industrial Engineering from the University of Girona and is a former member of the Computer Engineering Department, as well as of the Computer Vision and Robotics Institute of the same University. During his career as a researcher, he has been involved in many national and European projects about underwater robotics and several technology transference projects about real-time and embedded systems. His research interests include the development of AUVs, and more particularly to the autonomous navigation problem using simultaneous localization and mapping techniques.



Eduardo Leite

Eduardo Leite, holds a degree in mechanical engineering from FEUP, performs technical-commercial functions at A. Silva Matos Metalomecânica SA. Acts in the metal-mechanical industry since 1997, working in projects for the petrochemical, chemical and food processing industries, special projects (scientific and other applications), involving the development of specific equipment and integrated solutions for customers of international markets (Europe, Mediterranean, Middle East and Central America) and Portuguese market.



Eduardo Silva

Eduardo Silva is the Coordinator of the Centre for Robotics and Autonomous Systems (CRAS) at INESC TEC and Professor at the School of Engineering (ISEP) of the Porto Polytechnic Institute (IPP). He has a PhD in Electrical and Computer Engineering from the University of Porto. His main research areas are marine robotics, control architectures, perception and navigation for autonomous robots. He has participated in more than 14 research projects. He has more than 60 publications in the area of the Field Robotics.

Eduardo Silva is the Principal Investigator of the STRONGMAR project.



Frank Lim

Frank Lim was a Global Director of 2H Offshore, a company that has pioneered technologies for riser systems that are now deployed in deepwater regions around the world. He now assumes the role of Principal Advisor and is also a professor at the China University of Petroleum in Beijing.

Frank's offshore engineering career began in 1983 upon gaining a PhD in the UK, and continued through numerous oil and gas projects in the North Sea, Gulf of Mexico, West Africa and Brazil, until about a decade ago when he turned his interests to deepwater projects in the Asia Pacific, supporting them from the 2H Kuala Lumpur and Beijing offices he set up in the region.

Since 2007, he has been leading all 2H projects in seabed mining riser design in different parts of the world, including Papua New Guinea, Pacific Ocean, Black Sea and South Indian Ocean.

A fellow of the UK Institution of Mechanical Engineers and Royal Institution of Naval Architects, Frank is a regular author of technical papers and speaker at conferences.



John Watson

John Watson is Emeritus Professor of Optical Engineering at the University of Aberdeen. He has been researching and teaching in optics, optoelectronics, optical engineering and electronics for nearly forty years. His main areas of activity include holography, laser induced spectral analysis and optical image processing. In particular much of his work has centred around the application of holography for subsea imaging of marine plankton. He has published several hundred peer-reviewed papers and three books in related areas. He is a Fellow of the Inst of Physics (UK) and the Institute of Engineering Technology and is also a Senior Member of IEEE.



Stephen Wilson

Stephen Wilson, Strategic Business & Development Manager @ Soil Machine Dynamics Limited. In 2004 Stephen joined, what was then Narec and is now the Offshore Renewable Energy Catapult. Over the last 14 years he has been involved in testing, developments and installation services for manufacturers & offshore contractors for offshore wind, wave, tidal and oil and gas companies. Working for such companies as DeepOcean and Matrix Composites & Engineering, Stephen has gain valuable insights and understanding of the changes in the energy markets over this period.

Stephen's current role is to identify, assess and develop new investment & developments for SMD's subsea and hazardous environment remote robotic solutions business. SMD are leaders in the design and manufacture of trenching equipment for power cable protection. With over 45 years of experience, SMD is still innovating to meet with the market needs.

STRONGMAR PROJECT

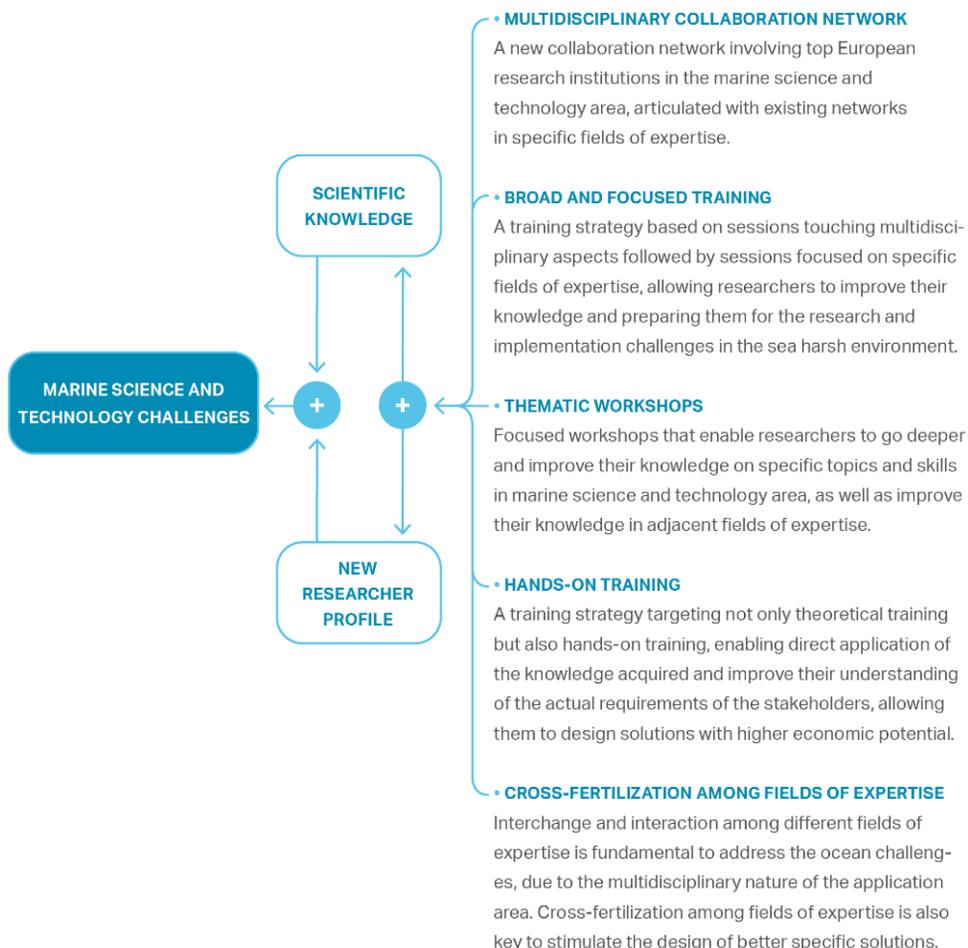
INESC TEC is strongly committed to become a center of excellence in maritime technology and, in particular, deep sea technology. It is strategically located, with fast access to deep sea, it has been steadily building up its skills, capabilities and resources, and is presently in the process of implementing an open research infrastructure, thus preparing itself to become capable of providing services and open access to the European academic and industrial communities and, thus, become a recognized European maritime research asset.

The STRONGMAR project thus aims at creating solid and productive links in the global field of marine science and technology between INESC TEC and established leading research European institutions, capable of enhancing the scientific and technological capacity of INESC TEC and linked institutions (as well as the capacity of partnering institutions involved in the twinning action), helping raising its staff's research profile and its recognition as a European maritime research center of excellence.

These objectives will be fulfilled through a set of measures: summer schools, winter schools, short-term scientific meetings, long-term staff visits, networking meetings, workshops, conferences, technology transfer workshops with stakeholders, and other dissemination activities. Therefore, the STRONGMAR project places INESC TEC as the pivot of a network of excellence, involving four European partners which are international leaders in deep sea technology.

CONCEPT

Five main pillars support the project's concept:



CONSORTIUM



DATA

Name

Strengthening Maritime Technology Research Center

Acronym

STRONGMAR

Reference

692427

Duration

01/01/2016 to 31/12/2018 (36 months)

Type of Action

Coordination & Support Action (CSA)

Topic

Twinning

Call for proposal

H2020-TWINN-2015

EU contribution

999.203,75 €

Project Officer

Agne Dobranskyte-Niskota

Coordinator

INESC TEC (Portugal)

Partners

CINTAL (Portugal), Heriot-Watt University (United Kingdom), NATO Science & Technology Organization (Belgium), Universitat de Girona (Spain) and University of Aberdeen (United Kingdom)

CORDIS

www.cordis.europa.eu/project/rcn/199452_en.html

Website

www.strongmar.eu



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Go deeper into the Strongmar Project
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