BREST LIFE

CAMPUS MONDIAL DE LA MER

BRETAGNE

INTERNATIONAL
MARINE SCIENCE
& TECHNOLOGY WEEK

SEA TECH WEEK

BREST-FRANCE

www.seatechweek.eu

12 > 16 OCT. 2020

VIRTUAL - LIVE

UNDER THE HIGH PATRONAGE OF

European Parliament

MINISTÈRE DE LA MER
Liberté
Égalité
Fraternité

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

UNION EUROPÉENNE
UNANIEZH EUROPA
L'Europe s'engage en Bretagne

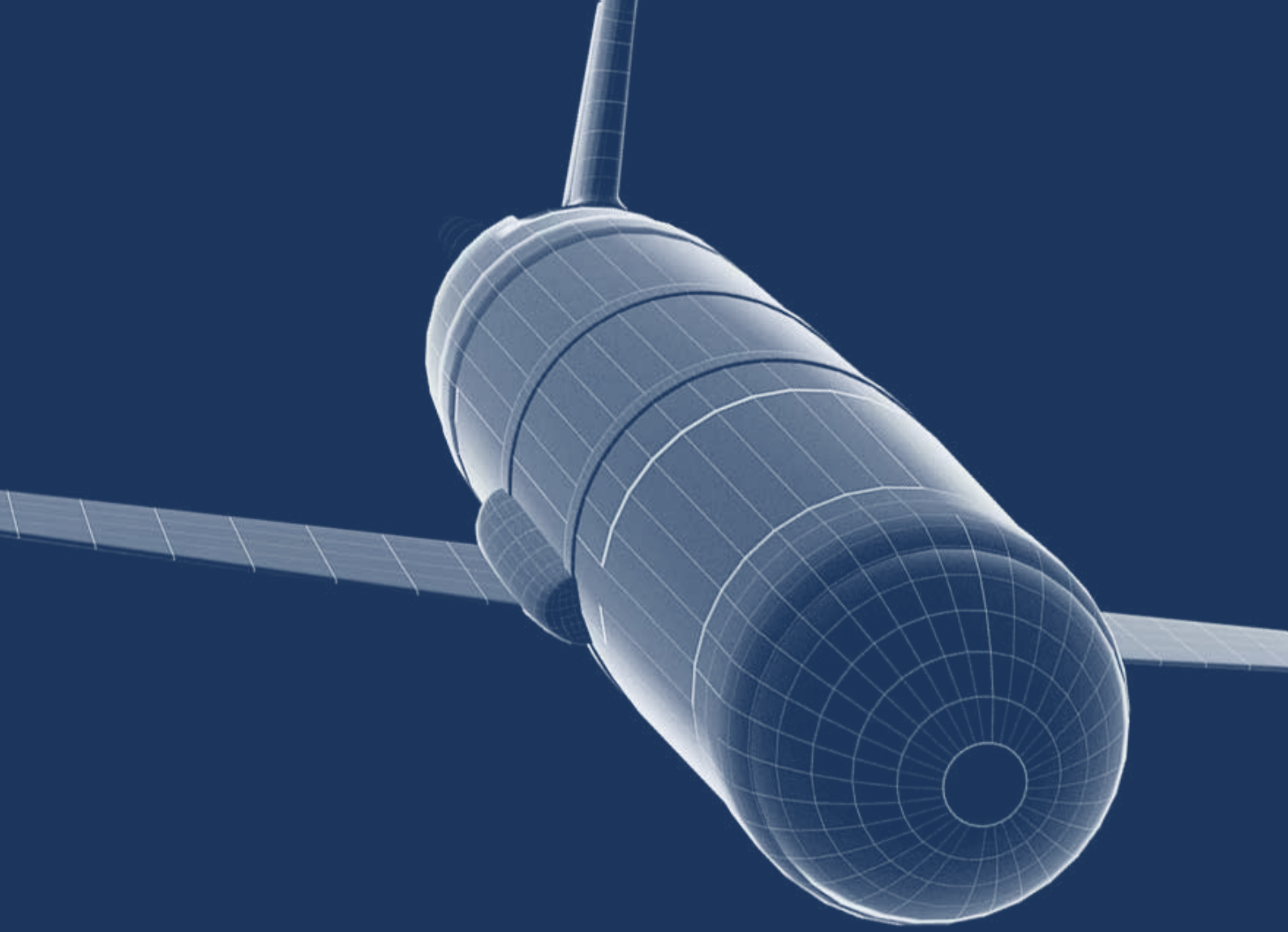
Région BRETAGNE

Brest MÉTROPOLE

TECHNOPÔLE BREST-IROISE

IEEE Oceanic Engineering Society

OES



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THE SEA TECH WEEK® INTERVIEW WITH FRANÇOIS CUILLANDRE

FRANÇOIS CUILLANDRE, PRESIDENT OF BREST MÉTROPOLE, RESPONDS TO 3 QUESTIONS ON THE EVENT.

Sea Tech Week® returns this year for an amazing 12th time. The core theme of 2020's event is 'Observation: from seabed to space'. Why this particular theme?

The theme of this year's event was chosen by stakeholders from the Campus mondial de la mer community, who are closely involved in international projects and networks linked to observing and understanding the oceans.

Take, for example, the French Naval Hydrographic and Oceanographic Service (Shom), based in Brest. It is the world's leading official hydrographic service and this year celebrates its 300th anniversary. Space sector applications are also currently experiencing major growth in Brittany, as is demonstrated by the number of the region's companies and research laboratories involved in this field.

What impact is the health crisis having on Sea Tech Week® 2020?

The Campus mondial de la mer community wanted to go ahead with Sea Tech Week®, despite the difficult circumstances we are experiencing. However given the situation, we could not envisage organising the event the same way as in previous years. So we opted to make Sea Tech Week® a virtual event, while making sure we meet the need for our region's marine science and technology experts – principally in companies and laboratories – to be able to share ideas.

But we are not talking here about a scaled-down event! Quite the contrary. We have retained practically all the elements of Sea Tech Week®. Therefore conference-goers will be able to take part in more sessions than ever, participate in B2B meetings, visit the exhibition, and more.

This virtual Sea Tech Week offers an amazing opportunity to encourage participation by a wider, even more international audience.

On that note, what examples of international cooperation will Sea Tech Week® be able to highlight?

The second meeting of the Campus mondial de la mer Assembly, organised in December 2019 at Océanopolis, a unique aquarium in Europe, demonstrated the capacity of our science and technology community to extend the region's influence internationally and to attract talent.

Following Brazil, Canada and Norway, it is Australia's turn to take centre stage, with the focus on common areas of interest such as undersea robotics and space. Our partners from India, Quebec and the United Kingdom will also be heavily involved in the 12th Sea Tech Week®.

DO COME AND JOIN US ONLINE
FROM 12 TO 16 OCTOBER.

TESTIMONIALS FROM THE SEA TECH WEEK® INTERNATIONAL

COMMITTEE MEMBERS REGARDING THE MARINE OBSERVATION

BARADA KANTA MISHRA,
DIRECTOR OF INDIAN INSTITUTE OF TECHNOLOGY
GOA, INDIA

The human race through its eons of development has always crafted ways to harness the power of natural resources to advance itself. Today, we are at the cusp of a major change to our planet that has clearly motivated the world organizations, nations, and people to carefully curate our future response in order for the world to remain sustainable. This has led the UN to define a set of seventeen so-called Sustainability Development Goals (SDGs) as a blueprint "to achieve a better and more sustainable future for all". At the 14th position on that list of SDGs is Life below Water to conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Marine Science and technology promise to be an important enabler of this goal. In fact, this field is being proposed to be so economically viable that it has given birth to an economic term in the form of Blue Economy which is being adopted by various organizations and nations world over to highlight the opportunities it holds.

India with its coastline of more than 7500 kilometers and an available oceanic area of 2.3 million square kilometers, is poised to make a mark in this emerging field. The Indian Ocean region holds abundant resources for various sectors such as fisheries, aquaculture, ocean energy, sea-bed mining, etc. which already contributes significantly to the nation's GDP. Despite that, there is a coordinated effort from the government to harness the power of marine resources through extensive permeation of modern technology in order to propel the nation into a steeper growth trajectory. In this regard, various national projects such as Sagarmala project as well as focus on indigenous ship-building and repair technology has already been initiated with huge investments. Besides these areas, a strong impetus on innovation-driven Research and Development in the areas of Ocean Energy, Marine Biology, Biotechnology, etc. is being planned for the nation to achieve significant market shares in these sectors.

Among various Indian institutes and universities, IIT Goa is uniquely positioned to contribute towards national goals in the area of marine science and technology. With its strategic location on the west coast of India and close proximity to various relevant industries and National laboratories, Goa offers a distinct advantage in terms of creating a technological hub for marine science and technology. As a relatively young institute, IIT Goa is committed to contributing to the development of this sector both at the local as well as national and international level with its unwavering focus on generating innovative technological solutions. We have made a strong beginning in this regard by signing MoUs with various French institutes and industries located on its west coast through a program named Goa Atlantic Cooperation Program (GOAT). The key to the success of such an overarching goal would be a coordinated effort from all the relevant stakeholders in this area. IIT Goa envisions to become a major player in coordinating this effort in not so distant future.

INGA LIPS,
SECRETARY GENERAL,
EUROGOOS

The ocean plays a vital role in the global climate system and provides crucial resources and services for humans. The degradation of coastal habitats, pollution, over-exploitation, biodiversity decline, sea-level rise, and ocean acidification due to anthropogenic activities are of concern to the general public and the various providers and users of ecosystem services. The growing need for more systematic ocean information at local, national, regional, and global scales to support efforts to manage our activities at ocean and seas but also on land is evident.

In the past, ocean observations were fragmented, often developed as independent components to meet the needs of different stake holders, e.g. oceanographic research community, environmental authorities, and private sector. The ability to assess ocean health and to predict future changes is critical, but it is limited in many regions due to sparse coverage of observations and gaps in the measured variables. These gaps in knowledge and observations are often the result of differing observational efforts and the lack of multidisciplinary and integrated observing programs.

Technological and computational advancements during the last decades are generating a tremendous opportunity for a fundamental breakthrough in understanding the ocean. The improved technical capabilities in terms of innovative sensors and multiple instrument integration, in particular the biogeochemical and biological sensors and autonomous platforms, will enable us to make discoveries and improve our understanding of the ocean. Moreover, it will allow better integration of operational, environmental and climate monitoring and the modelling efforts to address the challenges ahead.

DENIS HAINS,
PRÉSIDENT & CEO OF H2I INC.
OTTAWA-CANADA

The Ocean Observation is critical to monitor the Health and to guide the Sustainable Development of our Planet. It is the basic information needed to report and understand the impacts of human activities and its interactions with the oceans, with the coastal and aquatic zones. Decision-makers worldwide must ensure that sufficient funding is made available to initiate, increase and maintain globally integrated high quality Ocean Observation. It is further important to ensure prompt and easy access, open sharing and interoperability of all data and information gathered; as legacy, current, near real time and/or real time data and information.

This represents a major global challenge, especially when in 2020, the status of Ocean Mapping coverage still shows a lack of 80% of the basic bathymetric measurements. The use of remote sensing and all new emerging technologies, such as: Satellite Earth & Ocean Observation, in addition to Automated Aerial, Surface and Underwater Vehicles must be accelerated and increased. They are becoming pivotal to Ocean Observation at different resolutions. Alliances of countries and International Organizations must develop and implement their own version of initiatives, inspired from the United Nations Decade of Ocean Science 2021-30, as well as The Nippon Foundation-GEBCO, Seabed 2030 Project, to contribute and build knowledge for the sustainability of our oceans and the future of humanity.

THE OTHER MEMBERS OF THE INTERNATIONAL COMMITTEE

ANDY KORONIOS
CEO AND MANAGING DIRECTOR, SMARTSAT CRC,
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CLAIRE JOLLY
HEAD OF UNIT, DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION, OECD

SEA TECH WEEK®
BEFORE PROGRAMME
30 SEPTEMBER 2020
// LE QUARTZ, BREST

09:30 ..... Welcome of participants.

10:00 ..... Opening speeches by local authorities and representatives of the event's high patronages.

10:40 ..... Presentation of the content of the virtual Sea Tech Week®, with testimonials from some of the contributors.

11:20 ..... Lecture by Serge Ségura, Ambassador in charge of Oceans, Ministry of Europe and Foreign Affairs
Question and answer time.

11:50 ..... Presentation of the national prize of the French Institute of the Sea.

12:05 ..... Concluding remarks.

12:30 - 14:00 ..... Seated lunch.

OVERVIEW

THE CAMPUS MONDIAL DE LA MER team has reimagined how to connect the exhibitors, the speakers, the conference goers and the media from around the World while prioritising health and safety. To keep all items of the Sea tech Week® and switch them in virtual was the challenge to solve for the 12th edition.

SEA TECH WEEK® 2020 OFFERS A HIGHLY PERSONALISED EXPERIENCE:

• E-CONFERENCE INCLUDING 30 WEBINARS

Biodiversity, Hydrography-Oceanography, Instrumentation, Robotics, Marine energies, Data, Space, Training…
Register to the e-conference before October 8th
(registration fees from €10 to €150) Access for free to the EuroGOOS Ocean Technology Forum and Interreg TIGER sessions

• VIRTUAL EXHIBITION AND POSTER HALL

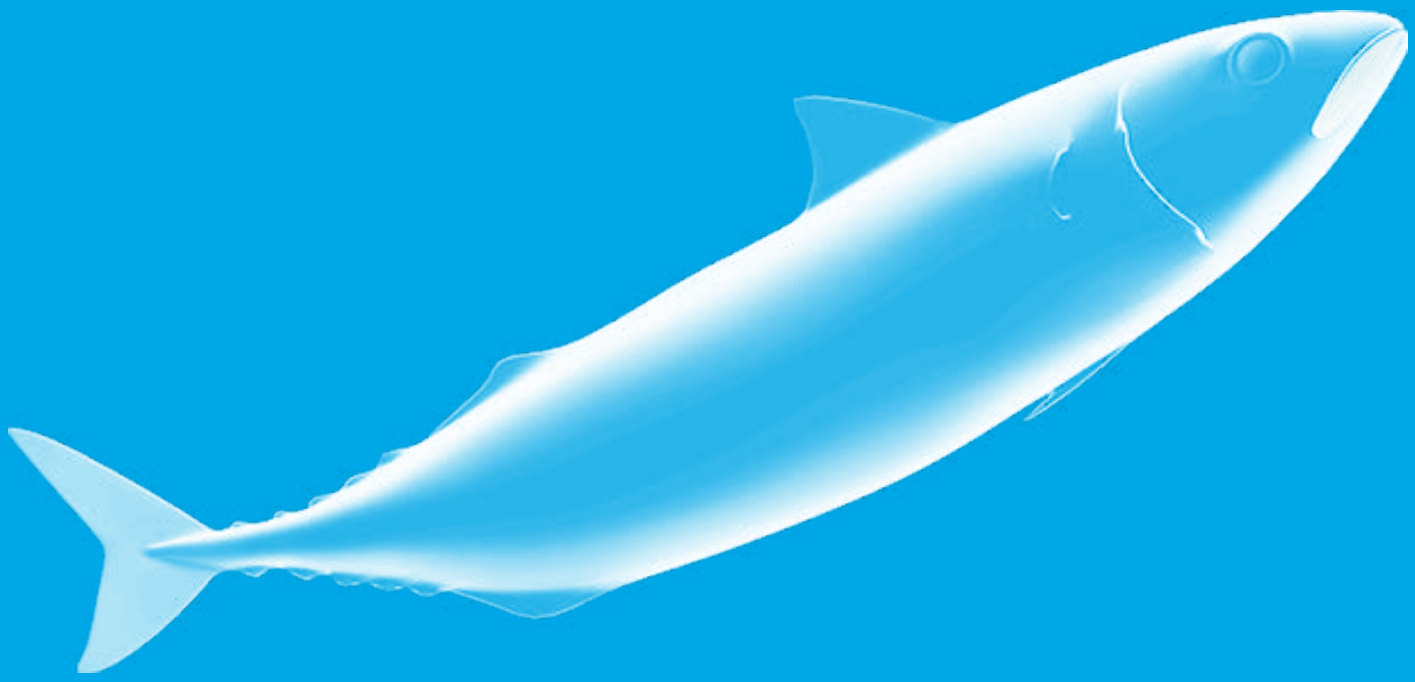
More than 20 exhibitors.
Visit the exhibition and the poster hall for free.

• VIRTUAL B2B MEETINGS

Make the right connections and expand your network in marine science and technology in France and beyond.
Open for free to visitors, exhibitors and conference participants.

• VIRTUAL PRESS HALL

Read the press release of Sea Tech Week® and the Campus mondial de la mer community.



E-CONFERENCE
THE INVITED SESSIONS

COOPERATION MODELS FOR OCEAN KNOWLEDGE AND INNOVATION

Observation of ocean and marine systems is a key issue for better knowledge, ecosystems preservation and long-term development of sea-based human activities. In order to create synergies and foster innovation, many collaboration patterns between research organisations and private-sector stakeholders have emerged. This session investigates different ways of collaboration in France and in Europe, by relying on the following networks: EurOcean, Pôle Mer Bretagne Atlantique and Campus mondial de la mer. A round-table will address the key challenges for innovation networks: How do these partnerships contribute to observation? How to increase their contribution to the blue economy by developing new products and services based on observation data and knowledge diffusion?

ORGANISED BY>

Campus mondial de la mer

IN PARTNERSHIP WITH>

Pôle Mer Bretagne Atlantique, EurOcean and OECD

KEYWORDS>

#Innovation #Companies #Networks
#Research #Blue economy

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Jacek Bełdowski,
IOPAN (Institute Oceanology Polish Academy Sciences), Poland.

Vincent Kerbaol,
CLS

THE FUTURE OF OBSERVATIONS FROM SEABED TO SPACE: TRAINING TO SUPPORT MARINE SCIENCE

This session will focus on the training and capacity needs for the future of marine science, with specific focus on what is needed for observation. It will highlight current and new professional specialisms that are needed to sustain the future of ocean observations. The session will feature short presentations on related topics from a panel of experts. The session will also allow significant interaction from the participants, with opportunities for questions and discussion with the panel and other participants. The session will enable different stakeholder groups to discuss opportunities for delivering the required training and capacity development, and how these opportunities can be actively taken forward. Participants will learn about training needs in relation to a number of topics relevant to marine science and ocean observations, and more about the potential roles for their sector in supporting or enabling this training and capacity development.

ORGANISED BY>

European Marine Board (EMB)

KEYWORDS>

#Training #Marine science
#Observations #Capacity

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Gilles Lericolais,
EMB Chair, Ifremer, France
Opening welcome.

Sheila Heymans,
EMB, Belgium
A holistic view of training needs to support future marine science, observations and the blue economy.

Wendy Brown,
IOGP, UK
Why should industry be involved in marine training and what opportunities are there for industry?

Ben Wilson,
IDCORE programme, SAMS, UK
Why is transdisciplinary training important and how can this be done?

Lucía Fraga Lago,
MATES Project, CETMAR, Spain
What trends and needs in marine training do we foresee?

ICE, WHERE AND HOW TO DEVELOP MY BUSINESS IN NON-INTERCONNECTED ZONES?

Give the opportunity to businesses ICE (Intelligent community energy) certified:

- to have a vision of non interconnected islands (NIZ) representing an opportunity on a market point of view;
- to meet with NIZ representatives and decision makers;
- to meet with ordering parties able to explain their issues;
- to meet with other businesses so that they can think about setting up consortia (to answer issues expressed by ordering parties).

ORGANISED BY>

Technopôle Brest-Iroise

IN PARTNERSHIP WITH>

Technopole Quimper-Cornouaille, Pôle mer Bretagne Atlantique, Bretagne développement innovation.

KEYWORDS>

#Smart-grids #Non interconnected zones #Marine energies

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Anaïs Turpault,
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Maxime Olivon,
Nexeya

ECOACOUSTICS, UNDERWATER SOUNDS OF BENTHIC INVERTABRATES

In this "Ecoustics" session, the underwater acoustic landscapes will be considered as a proxy for the structure, functioning and dynamics of marine ecosystems. If events of ecological interest are noisy and/or drive the emission of a sound source, the measurement and analysis of acoustic landscapes makes it possible to obtain a set of valuable environmental knowledge. "Ecoustics" will show that passive acoustics allows to describe the activity rhythms of benthic soniferous invertebrates (like marine mammals) at either individual, population and assemblages levels and to deduce the ecological properties of the objects heard. In addition,"Ecoustics" will be of interest in measuring in the laboratory and in situ the impact of anthropogenic noise on behavior or on the lifecycle of invertebrates.

ORGANISED BY>

Institut France-Québec pour la Coopération Scientifique en Appui au secteur Maritime (IFQM)

IN PARTNERSHIP WITH>

LIA Bebest

KEYWORDS>

#Ecoacoustic #Invertebrates #Underwater sounds #Noise impact

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A technological approach to understand deep-sea interaction between odontocetes and demersal longlines.

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Delphine Mathias,
Société d'Observation Multi-Modale de l'Environnement, France

Benjamin Ollivier,
Shom, France

Gwenn Potard,
La Carène, France

Frédéric Olivier,
MNHN, Station Marine de Concarneau, France

CONTRIBUTION OF NEW TECHNOLOGIES TO MARITIME AND COASTAL ACTIVITIES

The use of current technologies and the observations they produce are important for maritime and littoral issues. The definition, application, and management of maritime and littoral public policies depends on the acquisition and diffusion of a variety of data: DCSMM, DCSPEM, SNML, SNGITC, Littoral law… Observations by satellites and drones, and maritime traffic analyses are essential both for local authorities, as much for security and as for detecting illegal activities, to insure the protection of the environment and the preservation of natural resources. The traffic analyses also allow the identification of areas at risk to help authorities take preventive measures such as the establishment of specific maritime routes or planning maritime area activities.

ORGANISED BY>

CEREMA

IN PARTNERSHIP WITH>

Shom

KEYWORDS>

#Coastal #Maritime #Observation #Analysis #Traffic

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CEREMA EMF, France
Optimization of the Public Coastal Sea State Data Information System, CANDHIS.

Nicolas Fady,
CEREMA EMF, France
Structural response of « La Jument » lighthouse under extreme wave action.

Léa Thiebaud,
CEREMA EMF, France
Overview of site studies and investigations for offshore wind farm planning.

Emeric Bidenbach,
CEREMA EMF, France
AIS Data storage and processing for maritime traffic analysis.

Célia D'Hervé,
CEREMA EMF, France
Using drones and satellites for surveillance of maritime activities.

Loïc Gourmelen,
CEREMA EMF, France
Interest of aerial drones for the management of maritime public areas.

Frédéric Pons,
CEREMA EMF, France
Rivages, a public smartphone app for coast line tracking.

Julie Droit,
CEREMA EMF, France
Fairing areas in marinas, anchorages, and private shipyards. Status of Implementation of the MSFD Measure.

10:00-12:00 ROOM 3

INTERREG TIGER - GROWING THE SUPPLY CHAIN FOR COST EFFECTIVE RELIABLE COMPOSITE BLADES AND CENSOR DESIGN FOR TIDAL TURBINES

Growing the supply chain for composite tidal turbine blades and sensors to improve cost reductions is a priority for the INTERREG TIGER project (2019-2023). The project seeks to bring turbine developers and supply chain companies together in the Channel region through this unique collaboration project. Presently, the use of carbon is becoming more important in tidal turbine blade design, but turbine developers continue to be confronted by limitations imposed by harsh ocean marine environments. The purpose of this supply chain event, being held in conjunction with Sea Tech Week 2020 in Brest is to cluster potential supply chain companies with expertise in the tidal energy sector and other marine and high performance environments to share experience and explore new solutions to similar design and production challenges. Key issues include weight reduction, mould reuse and increasing durability of materials in harsh saltwater environments.

ORGANISED BY>

Morbihan Hydro Energies and Ore Catapult
(Lead Partner: Interreg Tiger)

IN PARTNERSHIP WITH>

Bureau etudes – engineering design companies and consultancies / Research institutes – carbon in water (ERT Jules Verne) / Dutch, French, Irish and British / Yacht and hydrofoil designers and manufacturers / List being developed by MHE from existing and past projects

KEYWORDS>

#Carbon #Cost #Reduction #Moulding #Sensors #Fatigue

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Erwann Nicolas,
Sabella, France.
Emerging needs and requirements for seabed arrays Finlay Wallace, Orbital.

Finlay Wallace,
Orbital Marine Power, UK
Sustainable composite blade scale up.

Bernt Erik Westre,
Minesto, Sweden.
Composite needs in glider design.

Conchúr Ó Brádaigh and Dr. Jeff Steynor,
University of Edinburgh and Fastblade, UK.
FASTBLADE: Engineering options for new materials technology and accelerated evaluation of tidal turbine blades.

Peter Davies,
Ifremer, France.
Testing composites in harsh saltwater environments.

Phil Slack,
National Composite Centre, UK.
Lower cost manufacturing techniques for composites and tooling for the tidal sector.

Stephane Parboeuf,
Bureau Veritas, France.
Updating BV NI603: Validation and certification of emerging composite technologies.

EOOS TECHNOLOGY FORUM

EuroGOOS, through its Technology Plan Working Group aims to launch a permanent EOOS Ocean Technology Forum to discuss the adequacy of existing observing technologies in meeting current and evolving ocean observations requirements and to strengthen the links between ocean technology users, developers, and providers in Europe. The EOOS Ocean Technology Forum should bring together the European marine instrument manufacturers, technicians, technologists, and scientists around a variety of subjects to serve innovation and competitiveness.

ORGANISED BY>

EuroGOOS and Ifremer

IN PARTNERSHIP WITH>

OGS (Italy)

KEYWORDS>

#Ocean #Observing technology #Innovation #Instrumentation

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SESSION 1:
October 13th, 13.30-15.30

George Petihakis, Eurogoos/HCMR, Belgium/ Greece.

Martin Visbeck, GEOMAR, AtlantOS project, Germany.

Bev Mackenzie, iMarEST, UK.

Eric Delory, PLOCAN, Spain.

Jaume Piera, CSIC, Spain.

SESSION 2:
October 13th, 16.00-18.00

Peer Fietzek, Kongsberg Maritime, Germany.

Ralph Rayner, Society for Underwater Technology, London School of Economics, UK and NOAA, USA.

Maik Grunwald, 4H-JENA, Germany.

Nathan Lawrence, ANB Sensors, UK.

Cooper Van Vranken, BDC, US.

Yves Degres, NKE Instrumentation, France.

L'océan en référence

SHOM - 300 YEARS OF FRENCH HYDROGRAPHY

Legacy of 300 years of French hydrography and Shom innovation projects in 2020.

The history of French hydrography is thus told according to these themes:

- the safety of navigation;
- the hydrographic accompaniment of the exploration of the world;
- the support provided by hydrography to defence and naval operations;
- the progress of science and technology;
- the support given by hydrography to the development of the blue economy;
- the contribution of hydrographers to risk prevention.

ORGANISED BY>

Shom

KEYWORDS>

#Shom #300 years #Hydrography #Innovation

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What Hydrospatial?

Claire Bougeault and Julien Simon,
Shom, France.
Les drones au service des recherches sous-marines : Découverte de La Minerve.

Laurent Louvart,
Shom, France.
CHOF - Capacité hydro-océanographique du Futur - À la mesure de l'océan.

Julian Le Deunf,
Shom, France.
Traiter la bathymétrie avec l'aide de l'intelligence artificielle.

WAVE AND WIND OBSERVATIONS APPLIED TO OFFSHORE RENEWABLE ENERGIES

Improving knowledge of metocean conditions is crucial to optimise the design of renewable energy recovery systems such as floating wind turbines. Indeed, such machines can be exposed to extreme winds and waves in storms, which can jeopardize their mechanical structure. A detailed knowledge of meteoro-oceanic conditions is also necessary for fatigue calculations and the planning of marine operations. It is therefore essential to better understand and characterise these phenomena, which are very difficult to observe with in-situ instruments. To overcome this, remote sensing means deployed from terrestrial or satellite supports are promising alternatives.

ORGANISED BY>

France Energies Marines

IN PARTNERSHIP WITH>

Delft University of Technology (The Netherlands), Naval Energies, and Helmholtz-Zentrum Geesthacht (Germany)

KEYWORDS>

#Observation #Wind #Wave
#Offshore renewable energies

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Jean-François Filipot,
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Introduction.

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Naval Energies, France
Key meteocean information required for the design of Floating Offshore Wind Turbines.

Pedro Guimaraes,
France Energies Marines, France.
Sea surface stereo images to resolve space-time wave fields.

Jochen Horstmann,
Helmholtz-Zentrum Geesthacht, Germany.
Wind and wind gusts measurements using a Marine X- Band Radar at offshore wind farms.

Charlotte Hasager,
DTU Wind Energy, The Netherlands.
Measuring wind from space for Offshore Wind applications.

Alexis Mérigaud,
IFP Energies Nouvelles, France
Real-time forecasting of ocean waves and ship motion using a stochastic approach

09:00-11:00 ROOM 2

SEA-EU: EUROPEAN UNIVERSITIES ROLE IN COASTAL OBSERVATION

This session aims to explore what are the strategies and key commitment of each of the 6 universities on marine observation: how each university is contributing to local/national/European mission of Coastal /Marine/Ocean Observation? What human and material resources are made available? What are the big-scale projects in which our university are respectively involved? This session will be then open to question and discussion in order to determine a plan for future action at the European scale.

ORGANISED BY>

UBO

IN PARTNERSHIP WITH>

SEA-EU alliance: i.e. CAU (Kiel), UCA (Cadiz), UG (Gdansk), UNIST (Split) and UM (Malta)

KEYWORDS>

#University #Observation #Europe

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Ralph Schneider,
University of Kiel.

Leandra Vranješ Markić,
University of Split, Croatia.

SHOM
L'océan en référence

LITTORAL ALTIMETRY BY AIRBORNE LASERS AND LITTO3D® PROGRAMME

The national Litto3D® programme aims to produce a digital altimetric reference model, continuous land-sea, along the metropolitan and overseas territories coast. To meet the needs, Shom is implementing topo-bathymetric airborne lidars to cover the coastal zone. This system allows a land-sea continuity and to quickly cover large areas, on a departmental or regional scale. These bathymetric lidar data, freely available, meet a broader need than hydrography and safety of navigation.

ORGANISED BY>

Shom

KEYWORDS>

#Litto3D #Littoral #Laser #DTM #Hydrography

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Session 1 - October 14th 09:00-11:00

Yves Pastol, Christian Salvaterra, Christophe Vrignaud, Shom, France
Le projet Litto3D® et les levés au lidar bathymétrique.

Fanny Lecuy, Shom, France
Diffusion des données Litto3D® depuis les portails du Shom.

Arnaud Henry, Service SIG Brest métropole / Pays de Brest, France
Simulation de la hausse du niveau des océans à horizon 2100.

Bertrand Chazaly, Fugro, France
Exploitation des données Litto3D® en PACA pour la reconstitution du paysage à l'entrée de la grotte Cosquer.

Session 2 - October 14th 13:30-15:30

Guillaume Villemagne, Gémapi Saint-Malo, France and **Laurie Biscara, Shom, France**
Fusion de données Lidar et SMF pour réaliser un MNT haute résolution terre-mer dans le cadre du PAPI Saint-Malo.

Antoine Collin, EPHE-Dinard, France
Very high resolution remote sensing of coastal habitats using topobathymetric LiDAR.

Christophe Viala, Seaviews, France
Développement d'une méthode de cartographie des habitats marins à partir des données lidar du programme Litto3D®.

Dorian Ginane, Geomatys, France
Examind : des outils pour explorer la donnée Litto3D®.

OPEN ACCESS TO MARINE OBSERVATION DATA: PRINCIPLES AND PRACTICES

Addressing global-scale challenges involving the marine environment relies on acquiring a comprehensive understanding of all of its compartments (from the sea floor to the atmosphere). Building integrated multi-scale products and models presupposes that the data collected through the observation of these compartments is available and interoperable. A wide variety of fields -physics, chemistry, geology, biology and many others- are involved in marine observation. Each of them has its own best practices regarding data description, archiving, quality control and publishing. This calls for interdisciplinary initiatives to reach a sufficient level of interoperability and thus leverage the potential of cross-discipline data products that will be made available to the scientific community.

ORGANISED BY>

Station Biologique de Roscoff - CNRS/Sorbonne Université and IFREMER

IN PARTNERSHIP WITH>

Data Terra/ODATIS, SeaDataCloud, EMODNet, VLIZ, Copernicus Marine.

KEYWORDS>

#Open data #FAIR principles #Interoperability #Data stewardship

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SeaDataNet : Pan-European Infrastructure for Ocean & Marine Data Management

Marc Portier,
VLIZ, Belgium.
Marine Data Management at VLIZ

Pierre-Yves Le Traon,
Ifremer, France.
Copernicus Marine Environment Monitoring Services

GENOMIC OBSERVATORY: A NEW TOOL TO OBSERVE MARINE BIODIVERSITY AND ECOSYSTEMS

Long-term observation of the marine environment is absolutely essential to understand the functioning of ecosystems and assess their health. In recent years, the development of genomic tools has profoundly changed the way we monitor biodiversity by promoting a holistic view of ecosystems. Yet, many methodological and conceptual challenges remain (automated sample acquisition, data processing and use in environmental monitoring by national agencies). In this session we aim at gathering various actors (academic, environmental managers, private companies) to exchange on challenges and opportunities associated with the development of concerted marine genomic observatories. It will be organized around a few introductive talks and a round table discussion.

ORGANISED BY>

Station Biologique de Roscoff
and Institut France-Québec pour la Coopération Scientifique en Appui au secteur Maritime (IFQM)

IN PARTNERSHIP WITH>

CNRS and Sorbonne University

KEYWORDS>

#Environmental genomics #Biodiversity
#Long-term monitoring #Ecosystem health
#Technological development

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Fabrice Not,
Station biologique de Roscoff (CNRS, Sorbonne Université), France
Observing marine biodiversity and ecosystems : a genomic perspective.

Christine Paillard,
IUEM (CNRS, UBO), France
Effect of environmental changes on the dynamics of MICRObial communities and functional groups: evolution and adaptation of bacteria within the framework of the development of the genomic observatory of microorganisms in the Bay of Brest and the Iroise Sea (MICROBREST).

Louis Bernatchez,
Université Laval, Québec, Canada
Environmental DNA for improving the management and conservation of aquatic biodiversity.

Yves Saint-Pierre,
INRS-Institut Armand Frappier, Québec, Canada
Liquid biopsies for omics-based monitoring of marine ecosystems.

Matthias Obst,
Department of Marine Sciences, University of Gothenburg, Sweden
Etablishing a marine biodiversity observatry network for hard-bottom communities in the coastal zone.

Pier Luigi Buttigieg,
Max Planck Institute for Marine Microbiology, Germany

09:00-11:00 ROOM 1

AUSTRALIAN-FRENCH SESSION: FROM SEABED TO SPACE

Australia is the guest of honour at the 12th edition of Sea Tech Week organized by the World Sea Campus on the theme of marine observation, from the seabed to space. This is the opportunity to zoom in on the links between the Lab-STICC UMR CNRS 6285 and two prestigious Australian institutions. In the frame of this Australian-French session animates by the Lab-STICC, Andy Koronios from the SmartSat CRC, Helene Baron from the Australian National University (ANU) and Ronan Fablet from the Lab-STICC are invited to present their activities.

ORGANISED BY>

Lab-STICC UMR CNRS 6285

IN PARTNERSHIP WITH>

SmartSat CRC and ANU InSpace

KEYWORDS>

#Australia #Space

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Eric Rius,
Lab-STICC UMR CNRS 6285, UBO, France.
Presentation of the session and a few words on the Lab-STICC.

Andy Koronios,
SmartStat CRC, Australia.
Presentation of the SmartSat CRC.

Hélène Baron and Jia-Urnn Lee,
Australian National University, Institute for Space (ANU InSpace), Australia.
ANU InSpace: Innovation from Sky to Sea.

Ronan Fablet,
Lab-STICC-UMR CNRS 6285, IMT-Atlantique, France.
Bridging Physics and AI for Space-Based Ocean Monitoring and Surveillance.

SEA-EU: COASTAL OBSERVATION ACROSS EUROPE – THE ROLE OF IMAGES AND INSTRUMENTATION

The SEA-EU alliance brings together 6 internationally-recognised universities – Brest, Kiel, Cadiz, Gdansk, Split, Malta - which have in common a coastal situation and an intensive involvement in research to gain a better understanding and management of the marine environment. Projects supported by P2I (Pôle Image et Instrumentation, a technical platform mutualized between the marine research laboratories of UBO) will be presented: on sandy beaches morphological monitoring, or, on mussel distribution monitored by drone aerial imagery. This will be completed by contributions from SEA-EU partners using images in their coastal research, creating the occasion to illustrate the research diversity and complementarity of SEA-EU in Coastal observation.

ORGANISED BY>

UBO ad CNRS

IN PARTNERSHIP WITH>

SEA-EU alliance: i.e. CAU (Kiel), UCA (Cadiz), UG (Gdansk), UNIST (Split) and UM (Malta)

KEYWORDS>

#Europe #Coastal #Image #Observation

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University of Malta, Malta.

Marion Jaud,
Pole Imagery and Instrumentation, UBO, France.

Žarko Kovač,
University of Split, Croatia.

Gabriel Navarro-Almendros,
Instituto de Ciencias Marinas de Andalucía (ICMAN-CSIC), Spain.

Iwona Pawliczka vel Pawlik,
University of Gdańsk, Poland.

Ivan Racetin,
University of Split, Croatia.

Jens Schneider-von Deimling,
Geoscience Institute, University of Kiel, Germany.

09:00-11:00 ROOM 3

MARINE SCIENCES, INDUSTRY AND TERRITORIES: OBSERVING PATHWAYS AND LOCAL STRATEGIES TO DEVELOP BLUE ECONOMY

Worldwide, part of the economic activity of coastal areas is linked to the presence of higher education and / or research organizations through, among other things, applied research, transfer, innovation or business creation. Scientific research, without being one of the major determinants of growth and employment in sparsely populated areas, is likely to encourage them. This session aims to explore science-industry-society relations in the territories, in the light of understanding keys proposed by social sciences. What do science and the development of technologies linked to marine resources "do" to the non-exclusively urban areas? How do the latter, in turn, build their economic development strategies by integrating these specificities? In what ways can these dynamics be supported? What are the success factors? This session will be dedicated to scientific communications and discussions bringing together speakers from various backgrounds.

ORGANISED BY>

Blue Valley

IN PARTNERSHIP WITH>

PETR Pays de Morlaix

KEYWORDS>

#Marine sciences #Local development
#Blue economy #Innovation #Science and society

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Kevin Charles,
Université Bretagne Occidentale (UBO), France.
Marine science and territorial development strategies: some determinants and preliminary issues.

Niki Vermeulen,
School of Social and Political Science, University of Edinburgh, UK
Mapping the oceans: marine science and policy

Antoine Police,
University Rennes 1, ARENES (UMR 6051), France
Seaweeds and public action : Industry's structuring related issues in Brittany (France)

Bastien Bernela,
Laboratoire CRIEF, University of Poitiers, France
and Flavie Ferchaud,
LAB'URBA, Universitey Gustave Eiffel, France
and Marie Ferru,
Laboratoire CRIEF, University of Poitiers, France.
and Marion Maisonobe,
UMR CNRS 8504 - Géographie-Cités, France.
and Josselin Tallec,
Institut d'Urbanisme et de Géographie Alpine, Université Grenoble Alpes, France.
Small size but big Scale? When Marine Science contributes to Territorial Development: the case of small cities.

SPACE-BASED INNOVATIONS OFFER INTERESTING DEVELOPMENT PROSPECTS FOR THE MARITIME SECTOR

In Brittany, the ecosystem has been structured to support local stakeholders (research laboratories, start-ups, SMEs, major groups, etc.) in these areas, from laboratory research to international development. This session aims to present the support systems for the maritime and spatial ecosystem:

- MORESPACE Booster lead by the Pôle Mer Bretagne Atlantique aims at accelerating the use of satellite data and techniques in the maritime sector through the intersection of the digital, space and maritime sectors to promote the development and/or improvement of new services.
- BreTel is a regional structure which aims to promote and support the development and use of space technologies and applications in Brittany by animating, federating and supporting the regional spatial ecosystem.
- ESA BIC Nord France is a structure set up by the European Space Agency to support the development of space-related start-ups.

ORGANISED BY>

Pôle Mer Bretagne Atlantique/Booster MORESPACE - Technopôle Brest-Iroise/ESA BIC Nord France

IN PARTNERSHIP WITH>

GIS Bretel

KEYWORDS>

#Innovation #Space #Maritime #Support #Europe

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Eric Brel,
CNES, France.
Enjeux et opportunités liés aux données et techniques satellitaires pour le maritime.

Anais Turpault,
Pôle Mer Bretagne Atlantique/ Booster MORESPACE, France.
and Alexia Freigneaux,
ESA BIC Nord France, France.
Accompagnement de l'écosystème pour accélérer l'utilisation de données satellitaires pour le secteur maritime.
Session de pitchs : solutions basées sur des données satellitaires.

Yann Guichoux,
eOdyn, France.

Antoine Thebaud,
SeaProven, France.

Gaëtan Fabritius,
CLS, France.

Olivier Michel,
Unseenlabs, France.
Session de pitchs : solutions basées sur des données satellitaires.

Stéphane Alain Riou,
Ailes Marines/Iberdrola, France.
EMR et données satellitaires – Enjeux, apports & besoins.

William Biegun,
CMA-CGM, France.
Transport et données satellitaires – Enjeux, apports & besoins.

THE EUROPEAN SPACE AGENCY'S BLUE WORLDS INITIATIVE

For 50 years, by pooling the resources and brains of its Member States, ESA has been leveraging technologies and knowledge to enhance the growth and sustainability of the European society and the well-being and security of its citizens. The importance of the blue economy is steadily growing and the security and environmental dimension of maritime area is more and more vital to Europe and its future. ESA has therefore decided to address the nexus between space technologies and space-based systems and data, on one side, and the specific needs and requirements of the maritime sector on the other side. Whether for autonomous shipping, for marine litter or enhancing safety and security of maritime suers a more extensive and focused deployment of space based systems can be very beneficial and contribute to tackle key issues. The session will address the objectives, status and outlook of ESA's Blue Worlds initiative and aim at engaging professionals from the maritime sector into a mutually beneficial dialogue.

ORGANISED BY>

European Space Agency (ESA)

KEYWORDS>

#European #Space

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AIS - TECHNOLOGY, DATA AND BEYOND

Created in the 90's, the Automatic Identification System (AIS) has continued to develop to address a wide range of user requirements. Originally designed to enable ship to ship and ship to shore vessel identification and tracking, it is now an essential pillar of e-Navigation. New AIS data collection systems, such as Satellite-AIS (S-AIS) or Mobil-AIS (M-AIS) allow ever more maritime traffic data to be used to provide innovative services to the marine community. Future systems such as VHF Data Exchange System (VDES) will also enable to extend the diffusion of AIS based services to mariners. The session will present an overview of recent developments related to AIS technology and how it is being used from the perspectives of data scientists and end-users.

ORGANISED BY>

SenX and eOdyn

KEYWORDS>

#AIS #Data #Use cases

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Stefan Pielmeier,
IALA, Denmark.
From AIS to VDES, an overview over history.

Simon van den Dries,
Spire Maritime, Luxembourg.
The Value of AIS data.

Mathias Herberts,
SenX, France.
AIS data challenges and technology to solve them.

Zannis Kostalas,
MarineTraffic, UK.
Density Maps: Shipping Trends at a glance.

Yann Guichoux,
eOdyn, France.
The Omni-Situ technology or how to measure total ocean surface currents, winds and waves by analyzing AIS data.

E-CONFERENCE
THE PAPERS SESSIONS

BIG DATA, DEEP LEARNING, SATELLITE OBSERVATION

SPEAKERS >

Clint Pazhayidam George,
Indian Institute of Technology Goa, India
Estimating location specific water column properties from remote sensing signals via machine learning

Piero Messina,
European Space Agency, France
Blue Worlds: The European Space Agency regional initiative for the Oceans

Eloise Le Bras,
Iodysséus, France
Analyzing ocean data towards modelling planktonic bloom intensity: influence of bio-physico-chemical environmental variables on blooms of coccolithophore in the North East Atlantic Ocean and inter-annual comparison between 1998 and 2020

Mathilde Letard,
EPHE-PSL Université Paris, CNRS LETG, France
Improving mangrove and salt marsh mapping using superpixel-based deep classification of VHR superspectral satellite imagery and topobathymetric LiDAR data

Axel-Christian Guei,
Teledyne CARIS, Canada
Deep Learning for Noise Segmentation in 3D Point Clouds

TUESDAY 13 THURSDAY 15

THE PAPERS SESSIONS

SESSION 1 > 13:30-18:00

SESSION 2 > 13:30-17:30

MOQESM - ROBOTICS FOR MARINE OBSERVATION

SPEAKERS >

Session 1 - October 13th 13:30-18:00

Karl Sammut,
Flinders University, Australia
Maritime Autonomy and Navigation

João Borges de Sousa,
LSTS, Porto University, Portugal
EUMarine Robots, a Marine robotics research infrastructure network: Mid-term report

Julien Damers,
KOPADIA, France
AUV navigation using isobath

Stéphane Imbert,
IMTa, France
AIS Relay for Autonomous Underwater Vehicle using an Adaptive Bit Rate Multi-Carrier Spread Spectrum Modem

Dorothée James,
EPHE-PSL, France
Coupling UAV multispectral imagery and neural network to model the seagrass coastal protection service

Pierre Tuffigo,
ELWAVE, France
6th Sense for Underwater Vehicle

Guillaume Labbé-Morissette,
CIDCO, Canada
Unsupervised detection of underwater objects in sidescan sonar imagery

Franck Florin,
Thales, France
High Frequency Acoustic Channel Modeling and Experiment in Shallow Waters

Session 2 - October 15th 13:30-17:30

Rafael Garcia,
Catedrático de Universidad, Spain
Computer Vision and Machine Learning solutions

Delphine Mallet,
VISIOON, Nouvelle-Calédonie, France
Non-destructive monitoring of soft-bottom fishes and habitats using a standardized remote un-baited 360° video sampling method

Markus Lindh,
Swedish Meteorological and Hydrological Institute, Sweden
A picture is worth a thousand data points: Making videos and images from marine environmental monitoring available to all

Pierre-Yves Morvan,
IxBlue, France
Delph Subsea Positioning Software - iXblue's innovative software solutions for subsea positionings

Luc Jaulin,
ENSTA Bretagne, France
Ocean exploration with underwater robots

Simon Rohou,
ENSTA Bretagne, France
Underwater Localization with Indistinguishable Landmarks

Joris Tillet,
ENSTA Bretagne, France
Guaranteed underwater localization with scanning sonar

Nathalie Olivier,
IxBlue, France
Test results before the deployment of a subsea geodetic monitoring system

Pierre-Jean Bouvet,
ISEN, France
IROMI-LMAIR : an innovative network of instrumental platforms for marine and underwater technologies

INSTRUMENTATION, APPLICATION TO OCEAN OBSERVATION

SPEAKERS >

Neelakandan Rajamohan,
Indian Institute of Technology, India
Intelligent Navigation and Adaptive Controller for AUV– A Hybrid Approach with KF-CS and Deep Learning in NARMAX Model

Sébastien Smet,
ACTIMAR, France
Operational oceanographic service for O&G upstream operations off South Africa

Guillaume Jouve,
iXblue Sonar Systems Division, France
Gas detection and quantification using iXblue Echoes high-resolution sub-bottom profiler and Seapix 3D multibeam echosounder from the Laacher See (Eifel crater lake)

Christoph Staudinger,
Pyroscience, Austria
AquapHOx - A flexible optical sensor platform for monitoring of pH and oxygen

PLATFORM, DATA MANAGEMENT

SPEAKERS >

Nitin Agarwala,
National Maritime Foundation, India
Undersea Ocean Surveillance using Submarine Cables

Cooper Van Vranken,
Berring Data Collective, Denmark
Fishing Gears as an Oceanographic Data Collection Platform: Progress on collaborative in-situ observations of shelf seas

Sabine Schmidt,
CNRS, France
Facilitating access to data and analytics services: the strategy of ODATIS, the gateway to French open ocean and coastal data

Thomas Vandenberghe,
Royal Belgian Institute for Natural Sciences, Belgium
Data management for European fleet of research vessels in EUROFLEETS+

Estérine EVRARD,
Euro-Argo ERIC, France
A new phase for Argo at the European level: towards a global, full-depth, and multidisciplinary vision with the Euro-Argo RISE project

Regis Kalaydjian,
Ifremer, France
Economic impact assessment methods applied to environmental research infrastructures: what can we learn from past studies?

Didier Clec'h,
RBR Ltd., Canada
Development and Evaluation of the New RBRlegato3 C.T.D on Glider Platforms

THE PAPERS SESSIONS

FRIDAY
16

SESSION 1 > 09:00-11:00

SESSION 2 > 13:30-15:30

SESSION 3 > 16:00-18:00

NEW TECHNOLOGIES FOR MARINE ENVIRONNEMENT MONITORING AND MANAGEMENT POLICIES

SPEAKERS >

Session 1 - Friday 16th October 09:00-11:00

Anne Mouget,
IRD, CNRS, Univ Brest, Ifremer, UMR 195 Lemar, IRD Délégation Régionale Ouest, France
Effect of environmental parameters on acoustic characterisation of pelagic biocenoses in ultra-shallow (5-30 m) coastal areas

Viviane David,
MNHN, UMS PatriNat, Dinard, France, IRD, UMR Lemar, France
Insight of high frequency multi-beam detection for quantitative indicators of pelagic fish communities in shallow waters

Anne Mouget,
IRD, CNRS, Univ Brest, Ifremer, UMR 195 Lemar, IRD Délégation Régionale Ouest, France
Is hydroacoustic an efficient tool to survey necto-benthic fishes in shallow rocky reefs?

Gaëtan Richard,
ENSTA Bretagne, France
A first assessment of Chilean fin whale behaviour with a bio-logging approach

Irène Mopin,
ENSTA Bretagne, UMR 6285, Lab-STICC, STIC-PRASYS, France
Marine observations with a harmonic single-beam echo-sounder. Seabed characterisation and fish study

Session 2 - Friday 16th October 13:30-15:30

GENOMICS
Sebastian Mynott,
Applied Genomics Ltd., United Kingdom
Development of a large-volume environmental DNA sampler for comprehensive marine biodiversity monitoring

Anaïs Rey,
UMS 2006 Patrimoine Naturel (OFB, CNRS, MNHN), CRESCO, France
Improving monitoring of coastal fish assemblages for the Marine Strategy Framework Directive by using environmental DNA metabarcoding

Johan Pansu,
CNRS, Station Biologique de Roscoff, France, CSIRO Ocean & Atmosphere, Australia
Developing new environmental DNA-based ecological assessment tools for the management of coastal environment in a multi-stressor context

Mariarita Caracciolo,
Sorbonne Université, CNRS, Station Biologique de Roscoff, AD2M, UMR7144, France
A morphogenetic approach to study the seasonal succession of the eukaryotic marine plankton communities: the SOMLIT-Astan time-series

INSTRUMENTATION
Dorothée Vincent,
Office Français de la Biodiversité (OFB) - Direction Surveillance, Evaluation, Données (DSUED) - Service Evaluation, Connaissances et Usages du Milieu Marin (ECUMM), France
Monitoring zooplankton for Pelagic Habitats assessment within the MSFD: what was done so far in France and what's next?

Sabine Schmidt,
CNRS UMR5805 EPOC, France
Generalization of the continuous monitoring of the physico-chemical water quality of the North-Aquitanian estuaries thanks to the development of improved autonomous multiparameter devices

Yves Dégrés,
nke Instrumentation, France
The WiMo sonde, innovative, robust and flexible solutions for water quality data collection

Marie Cachera,
Shom, France
Monitoring Hydrographical conditions: the case of descriptor 7 of the MSFD

Session 3 -
Friday 16th October 16:00-18:00

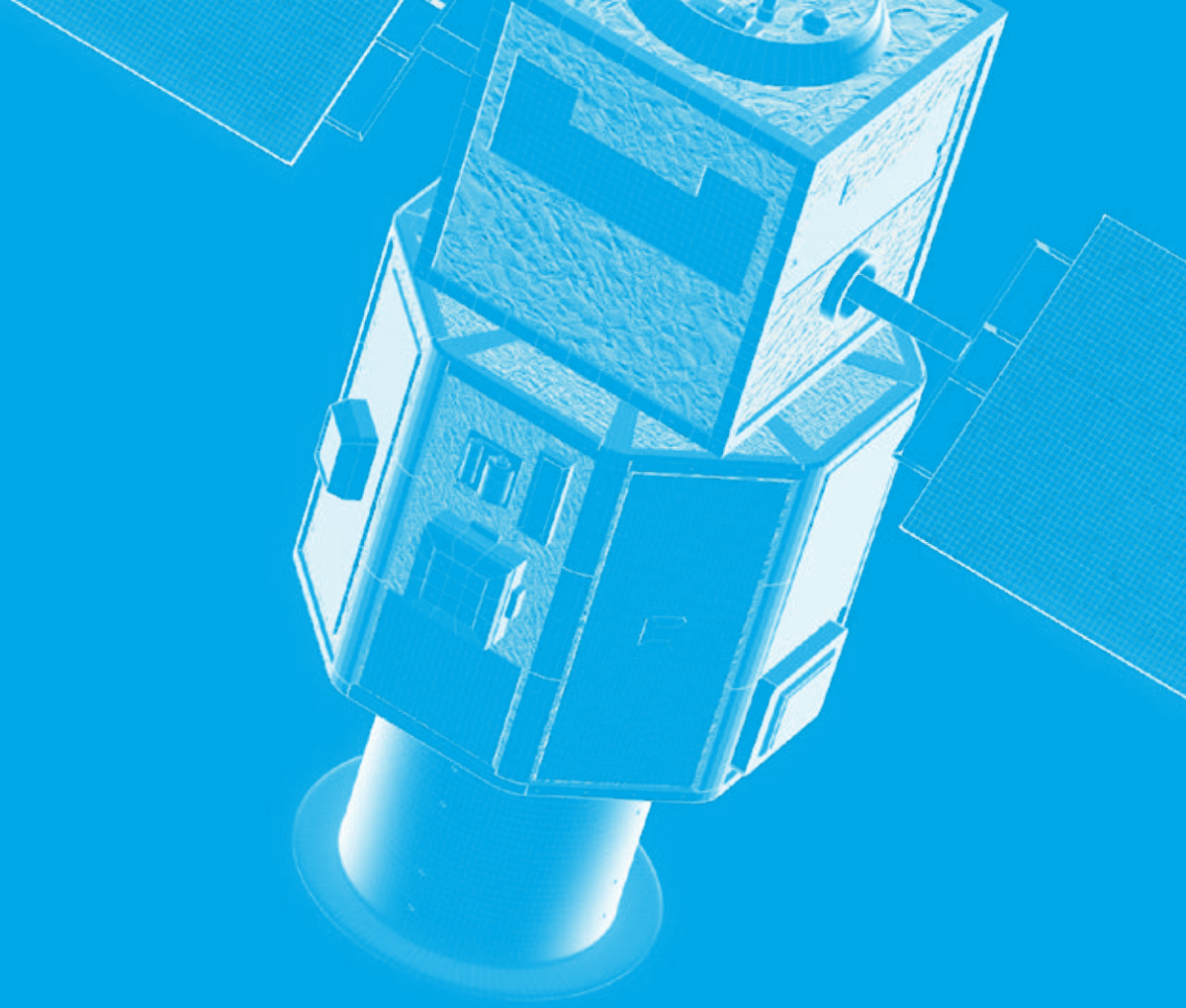
Dorothée Vincent,
Office Francais de la Biodiversité (OFB) - Direction Surveillance, Evaluation, Données (DSUED) - Service Evaluation, Connaissances et Usages du Milieu Marin (ECUMM), France
Optimizing French monitoring programme for assessing eutrophication within the MSFD - what are the gaps and challenges to address?

Pierre Gernez,
Université de Nantes, France
Sentinel-2 remote sensing of Zostera noltei-dominated intertidal seagrass meadows

Anne Goffart,
University of Liège, Oceanology, Belgium
The challenge of using phytoplankton composition for ecosystem health assessment

Quentin Ternon,
Muséum National d'Histoire Naturelle (MNHN), Station de biologie marine, CRESCO, Dinard, France, UMR BOREA (MNHN, CNRS, SU, IRD, U-Caen, UAG), France
Photogrammetry as an efficient tool to survey marine coastal benthic biocenoses and biotopes of shallow rocky reefs

Nicolas Thomas,
Hytech-imaging, France
STORMM©: a high-resolution optical system to assist marine megafauna aerial surveys



PROFESSIONAL EXHIBITION

BIONEF

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PRESENTATION>

Bionef, is a supplier of measurement and control systems for industry and research, for water quality monitoring, ecotoxicology and environmental monitoring. Bionef offers you high quality instruments and equipment for industrial processes, environmental sciences and technologies, scientific research.

BRETAGNE OCEAN POWER

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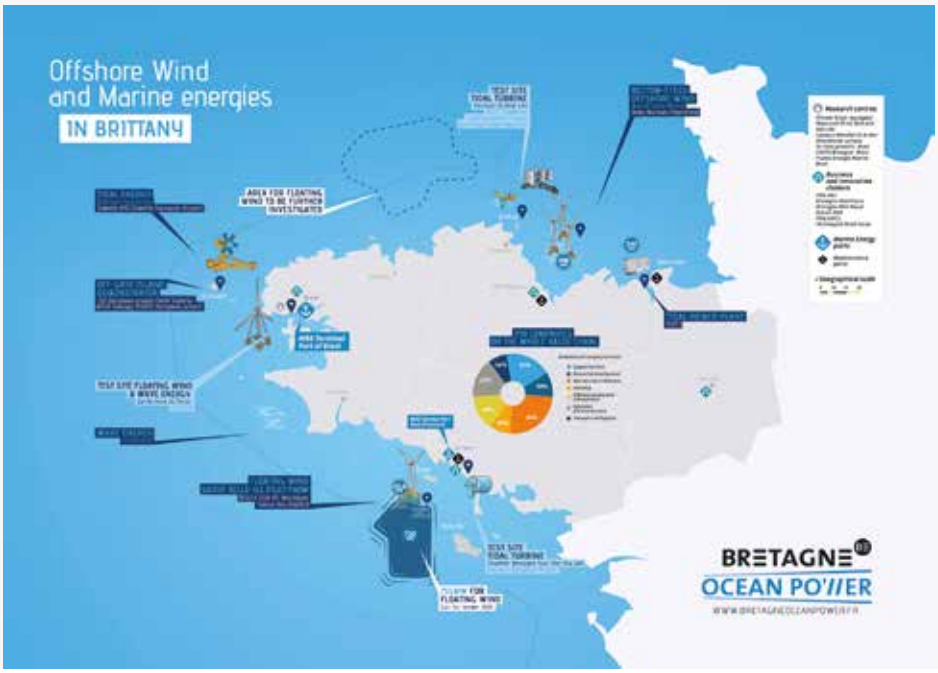
PRESENTATION>

Bretagne Ocean Power, a potent accelerator: Prompted by the Bretagne Regional Council, all the MRE stakeholders in Brittany have joined forces as a single entity to foster more efficient industrial projects. Bretagne Ocean Power seeks to: Facilitate access to industrial know-how for commissioning authorities, Facilitate skill development and market access for Brittany businesses, Attract national and international players who wish to develop marine renewables, Promote local know-how under a single banner.

LATEST NEWS>

Our key strenghts in offshore wind and marine energy: 140 companies working in all MRE technologies, off-grid solutions to become self-sufficient in energy, dedicated port infrastructure, 3 open-sea tests sites equipped to host the primary marine energy technologies (tidal, wind and wave)



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PRESENTATION>

The Campus mondial de la mer is France's foremost community of experts in the study and economic development of the ocean Our strength lies in the synergy between our network of academic, scientific, economic and institutional stakeholders working across marine science and technology and the wider maritime economy. We work as part of a regional initiative in western Brittany, underpinned by active cooperation between Brest, Roscoff, Morlaix, Quimper and Concarneau. Campus mondial de la mer key figures We aim to promote innovation and convert the existing concentration of marine science and technology expertise in Brittany into the creation of more companies and more jobs. We work collaboratively to pool our equipment, grow our reputation and publicise the real gems in our shared ecosystem. The rich, diverse and complementary nature of our community, alongside our deep regional roots, make the Campus a pioneering driver of the blue economy. Our shared values are community, ambition and excellence.

LATEST NEWS>

Following the visits of Sigi Gruber (European Commission/Head of the Marine Resources Unit in DG Research and Innovation) and Pascal Lamy (Chairman of the Health of the Oceans Mission Board), respectively in December 2019 and February 2020, our community has mobilised to contribute to the construction of the next framework programme for research and development, Horizon Europe, on the maritime dimension.

CEREMA

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PRESENTATION>

Cerema is the leading public expert in its fields of expertise, such as territorial engineering, buildings, mobility, transport infrastructure, environment and risks, and finally the sea and coastline. It is recognised for supporting the triple challenge of the ecological, energy and digital transition of territories. Committed to territorial cohesion, our objective is to provide you with tailor-made solutions, whether you are a local authority, project owner, company or public policy holder.

LATEST NEWS>

The applications of UAVs for territories are developing, and with them the offer proposed to local authorities. In order to enlighten stakeholders on the advantages and points of attention linked to the use of UAVs for territorial observation, Cerema is publishing a summary guide in the form of a P'Tit Essentiel. To find out more: https://www.cerema.fr/fr/actualites/drones-nouvelle-vision-mon-territoire-p-tit-essentiel-du (in French)

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CIDCO
Centre interdisciplinaire de développement en cartographie des océans
Interdisciplinary Centre for the Development of Ocean Mapping

PRESENTATION>

The Interdisciplinary Centre for the Development of Ocean Mapping (CIDCO) is a non-profit organisation for training and R&D in marine sciences and hydrography. It is an active member of the Canadian Coastal Ocean Mapping Research & Education Network (COMREN) and is a partner of choice. Dedicated to the development of state-of-the-art technologies and knowledge for the acquisition, management and representation of maritime spatial data, the CIDCO responds to the international, national and regional training and R&D needs of the coastal and maritime community. Modernizing hydrography The CIDCO's mission is to modernize hydrography through research, development, training and technology transfer and to valorize the results in a sustainable way thanks to its partnerships and its state-of-the-art expertise. CIDCO's objectives are

1 - To increase marine geomatics expertise in the Bas-St-Laurent region (Quebec, Canada)

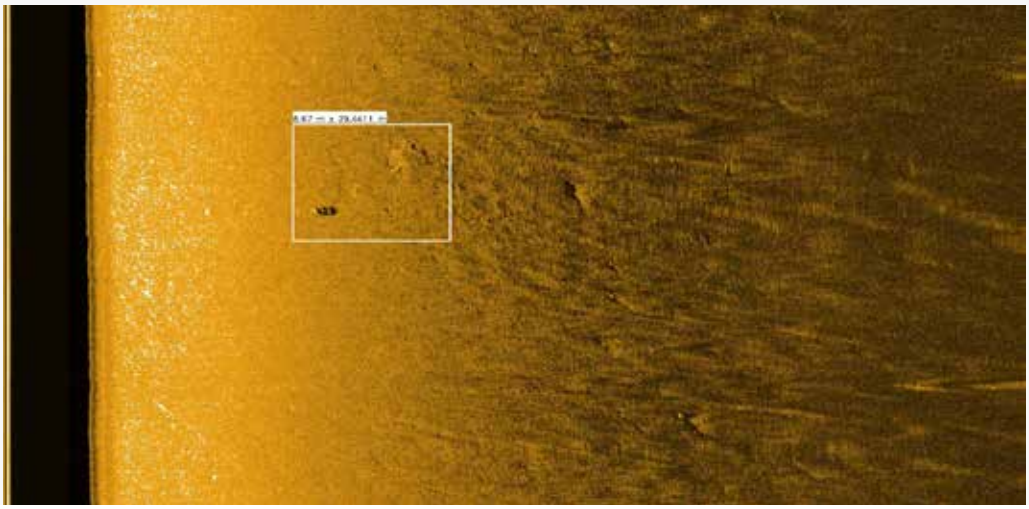
2 - To improve or develop new methods and technologies for ocean mapping

3 - To collaborate with industry, government departments and institutions in the development of solutions to improve technologies affecting the maritime sector

4 - To be a structuring element for the development of maritime information services and technologies in the region.

LATEST NEWS>

Automatic target detection on SSS with the CIDCO AI



CRÉDIT MARITIME GRAND OUEST

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PRESENTATION>

The development prospects for the maritime economy, which could double by 2030, are numerous and remarkably diverse. Our region has all the assets to play a leading role in this adventure, both in traditional activities and in the most emerging ones. The stakes are obviously economic and environmental, because this development is resolutely sustainable and responsible. It is in this spirit that Crédit Maritime Grand Ouest is determined to strengthen its historic leadership alongside the players in the blue growth and to actively support projects in the maritime economy of the Greater West.

LATEST NEWS>

2019, a remarkable year in terms of funding for the maritime economy with €120 million for blue growth players.

HYTECH-IMAGING

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hytech-imaging.fr

PRESENTATION>

Hytech-imaging is a quickly growing company whose purpose is to create operational products and services for mapping from (multi- and hyper-) spectral images, and to democratize access to this type of data. Hytech-imaging is actively involved in the development of the uses of hyperspectral imaging while taking a leading position in this field. Hytech-imaging operates aerial airborne hyperspectral surveys all around the world through its "FlySpec" service. Hytech-imaging is currently developing an operational service for the production of "B-maps", benthic habitat maps and bathymetry in the littoral zone through the use of airborne and satellite data. A processing chain is developed from know-how derived from hyperspectral imagery and integrated into the SWIM® chain (Shallow Water mapplng using optical reMote sensors). The service brings together expertise in advanced digital technologies (cloud platform / remote operationality) and big data processing.

LATEST NEWS>

Airborne surveys for biodiversity mapping are currently going on the coasts of Brittany: Marine megafauna surveys using STORMM® (Système de Télédétection Optique d'aide au Recensement de la Mégafaune Marine) & Coastal habitats surveys using our FlySpec® airborne hyperspectral services.

INTERREG ATLANTIC AREA PROJECT «IFADO»

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PRESENTATION>

iFADO (innovation in the Framework of the Atlantic Deep Ocean) is an Interreg Atlantic Area project. Its main objective is to integrate technologies, including remote sensing, numerical modeling and in-situ monitoring and to provide decision support tools for relevant MSFD (Marine Strategy Framework Directive) authorities. It will support the next phase of MSFD implementation, in particular to achieve coherent, coordinated and consistent updates of the Good Environmental Status (GES) determinations in the Atlantic Area.

LATEST NEWS>

iFADO's participation in Sea Tech Week® aims to promote the project among public and private bodies and individuals interested in the implementation of the MSFD, in order to generate involvement and cooperation: the public sector, university/research centers, industrial and commercial sector and the general public. Particularly, innovative Small and Medium-sized Enterprises (SMEs) are invited to propose their products and services, enhance existing ones or develop new ones, in the fields of data.

INREST (NORTHERN INSTITUTE FOR RESEARCH IN ENVIRONMENT AND OCCUPATIONAL HEALTH AND SAFETY)

Northern Institute for Research in Environment and Occupational Health and Safety
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inrest.ca/en

PRESENTATION>

INREST's mission is to conduct research relating to environmental sciences and occupational health and safety.

INREST'S OBJECTIVES:

Develop innovative applied projects, taking into account sustainable development concerns

Provide scientific support to decision-making

Measure public health impacts and worker health safety in all projects undertaken

Preserve water quality, ecosystem health, and food resources

Make results accessible to a large audience

Pool together resources to put forward solutions to challenges posed by northern developments

Favour regional training of research professionals

Welcome college and university students (bachelor, masters, and doctorate level) and supervise research projects for government organizations, private businesses, industry etc.), directly from Sept-Îles

Bring together researchers working in the fields of environment and/or occupational health in northern environments

Establish a regional team of specialists, universities, and research centres for each project

iXblue

IXBLUE

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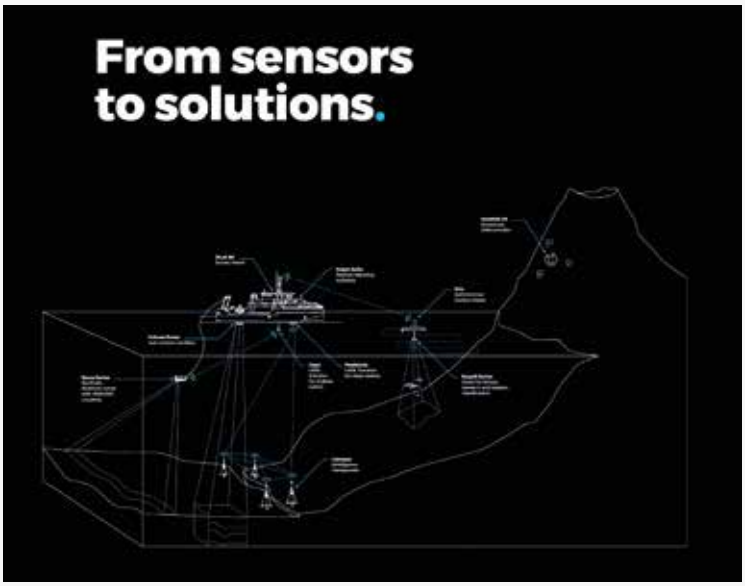
PRESENTATION>

iXblue is a global high-tech company specializing in the design and manufacturing of advanced marine, photonics and autonomy technologies. The group in-house expertise includes innovative systems and solutions devoted to inertial navigation, subsea positioning, underwater imaging, as well as shipbuilding and test & simulation. iXblue technologies support Civil and Defense customers in carrying out their sea, land and space operations with maximum safety, efficiency and reliability. Employing a workforce of 650 people worldwide, iXblue conducts its business in over 60 countries. iXblue in Brest is specialised in underwater acoustic solutions based on the use of acoustic transducers and sensors. Its systems enable the positioning of objects and vehicles under the sea with great accuracy, underwater communications, and communication with surface equipment. iXblue's acoustics solutions also enable precise imagining of objects and living organisms located on the seabed.

LATEST NEWS>

As an innovator in the maritime field, iXblue is a partner of hydrographic, oceanographic institutes and research laboratories around the world. Current projects include the construction of the new DRASSM Archaeological Research Vessel Alfred Merlin, the precursor of a new generation of economical, ecological and efficient vessels, which will embark high-tech equipment developed by iXblue. The company also provides positioning and imaging systems for IFREMER's new AUV for deepwater exploration.



KOPADIA

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PRESENTATION>

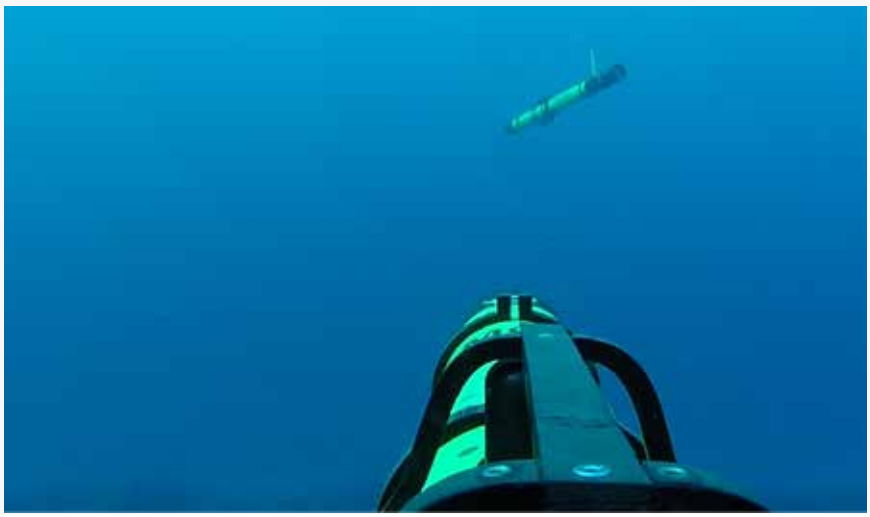
Created in March 2017 and with its technical and operational centre located in Nantes (FR), Kopadia is a company specialising in underwater robotics with a service offer based on technical and operational aspects: Engineering and Inspection. Kopadia has the particularity of being able to develop its expertise in these two key and complementary activities of underwater robotics:

- Systems Engineering: enables Kopadia to design underwater robotic systems that fully meet the customer's needs. This engineering expertise covers the entire product value chain: from the understanding of the problem to the definition of the need and the design of the system with the integration of sensors, prototyping and the definition of the operational model and the associated means of implementation. This approach guarantees Kopadia's customers the guarantee of a solution that fully meets their needs for improved operational and financial efficiency and better control of the risks associated with the activity,

- Subsea inspection: ensures that Kopadia implements its operational solutions adapted to the inspection of submarine cables and pipelines.

LATEST NEWS>

Kopadia launches the development of bathymetric inspection solutions for cable laying.



MARITECH

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PRESENTATION>

MARITECH is currently supplying a wide range of underwater equipment and instrumentation for navigation and positioning (GPS, DGPS, USBL, etc…), Sonar (imaging multibeam, mechanical, sidescan, multibeam and echosounder), wave measurement (Buoys, wave recorder and radar), USV, water sampling (Niskin bottle, oil kit and flow meter), underwater communication (acoustic and induction) and also sensors (CTD, high resolution pressure sensor, buoy controller, etc…). We will be able to assist you on cables, connectors, moulded harnesses and ocean winches.

LATEST NEWS>

Maritech will introduce the paroscientific pressure sensor, the world leader in the field of precision pressure measurements. On our sonar system, the Gemini 1200ik multibeam imaging sonar is the latest addition to the popular Gemini range , whilst the 1200 kHz high frequency setting offers extremely detailed multibeam images and the Pico-MB130 the world's smallest integrated Multibeam Echosounder.

MARITIME UK SOUTH WEST

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MARITIME UK SOUTH WEST

PRESENTATION>

Maritime UK South West Maritime UK South West is a public, business, research partnership which brings together the breadth of our ocean economy, working in partnership to champion, grow and clean the sector. The cluster aims to champion and promote our sector, internally, nationally and abroad, drive clean growth and build centres of excellence to maintain regional competitive advantage. Champion and Promote: Create evidence based strategy, profile and lobbying Promote regional excellence Drive Clean Growth Increase collaboration, investment in R&D and clean growth Increase investment in skills and promote careers in marine and maritime. Build centres of excellence Building supply chain capability in offshore renewables and bring forward investment in floating offshore wind in the South West. Create a world leading centre for marine autonomy and geospatial data innovation. Drive investment in our sustainable ocean economy

LATEST NEWS>

MARITIME UK SW OCTOBER UPDATE

Partners from across South West submitted an ambitious "Future Ocean Institute" positioning document to government's comprehensive spending review. The outline plan focusses on marine autonomy and other smart, clean maritime technologies. The strategy paper is linked with a wider £1BN Maritime UK bid to decarbonise the sector and the growing potential of floating offshore wind in the South West a bid for which is being worked and up will be submitted in November.

NKE
INSTRUMENTATION

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PRESENTATION>

The aims of the company is designing, manufacturing and selling instruments for the measurement and the monitoring of oceans and fresh waters. The fields of applications are rivers, lakes, estuaries, oceans and deep sea. There are three distinct ranges of products. Underwater monitoring instruments that are products designed to measure in-situ the main physico-chemical parameters of fresh and sea water. Buoys and instrumented systems aim to measure, transmit and retrieve data in any type of environment. Profiling floats are used for oceanographic and environmental studies of the evolution of oceans and climate. NKE Instrumentation is though involved in the international ARGO program to supply temperature and salinity profiling floats.

LATEST NEWS>

We are delighted to introduce you the WiMo sonde that will make your life easier. _ Thanks to its digital smart sensor suite and its real plug and play, you can measure up to 20 water parameters down to 250 meters depth. As the web interface is embedded within the sonde you don't have to waste any time installing software.

NOVACAVI

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PRESENTATION>

Specialist in custom cables design and manufacturing since 1975. Sound experience in specialized cable solution for subsea, harsh and demanding environments. Proven materials expertise, engineering versatility & production flexibility to match customers' requirements. ISO 9001 certified since 1995.

LATEST NEWS>

NOVACAVI proudly supplied a 3Km fiber optic tether for an upgraded ROV engaged in tunnel inspection in western Panama. Engineered to perfectly match and maximize performance of this 3km capacity underwater observation and inspection-class vehicle and its reel system, 6GAX130 reinforced tether cable allowed to complete long-distance inspections more cost-efficiently and with less of an environmental impact while identifying any areas in need of repair.

OUEST VALORISATION
Ressources d'innovation

OUEST VALORISATION

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PRESENTATION>

Ouest Valorisation is the valorisation's operator of public research for 28 establishments in Brittany and Pays de la Loire. Its mission is to offer companies attractive innovation resources from more than 160 laboratories. Created in 2012, Ouest Valorisation works every day to establish a link between public research and companies. It simplifies and professionalizes the transfer of innovations from French academic research to industrials. The Ouest Valorisation's team detects, evaluates and protects scientific inventions. It selects the most promising projects that meet the company's expectations and finances their technical and economic maturations. It also participates in the emergence of startups resulting from research teams. Turning towards industrials, Ouest Valorisation facilitates and secures their access to the scientific skills and equipments of public research laboratories. Ouest Valorisation establishes mutually beneficial collaborations within the framework of partnerships for which it is responsible for contract engineering.

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PRESENTATION>

The Brittany Atlantic Sea Cluster: driving maritime innovation
With a network of more than 390 players including major groups, SMEs, research and higher education centres, the Brittany Atlantic Sea Cluster contributes to the development of the maritime sector.
The Cluster helps the emergence of innovative projects in the field of the sea: networking of academic and industrial skills, search for funding, support for SMEs in their R&D investment, access to markets for their new products and services, and international development.
The Cluster in figures:

- 1 maritime territory of excellence Brittany - Pays de la Loire
- 390 members, more than half of which are SMEs 6 areas of innovation:
- Maritime defence, safety and security;
- Naval and water sports;
- Marine energy and mining resources;
- Marine biological resources;
- Environment and coastal development;
- Ports, logistics and maritime transport.
- 407 projects labelled since 2005 representing a global budget of 1 billion euros (figure Sept 2020)

More info: pole-mer-sainte-atlantique.com; @PoleMerBa

PYROSCIENCE GMBH

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www.pyroscience.com/en/

PRESENTATION>

PyroScience manufactures innovative and unique optical sensor technology (REDFLASH) for oxygen, pH and temperature measurements. The advanced sensor solutions comprise compact fiber-optic instruments and OEM (made in Germany) with various optical sensor heads and expert customer support. Now PyroScience introduces a cost-effective and easy-to-operate underwater sensor platform for monitoring of (trace) oxygen, pH and temperature. This new AquapHOx technology is available as underwater long-term loggers, meters with real-time data transmission for ultra-fast O2 & T measurements, and as flexible OEM solutions. This new platform will help researchers, (non-)governmental organisations and industry to monitor critical parameters and their dynamics underwater; in the open ocean, the deep sea and in coastal ecosystems.

LATEST NEWS>

AquapHOx- New flexible optical sensor platform for underwater monitoring of O2, pH and temperature. The new compact and easy-to-operate underwater AquapHOx technology from PyroScience offers an unmatched flexibility for underwater pH measurements, ultra-fast O2 and temperature monitoring and trace O2 detection in our oceans. Measure several important parameters down to 4000m with the same compact instrument.

RBR

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rbr-global.com

RBR

PRESENTATION>

Since 1973, RBR has been designing and manufacturing oceanographic instruments in Ottawa, Canada, and has steadily expanded to include offices in Atlantic Canada, and China, with direct sales in USA, France, and Australia. From the ocean abyss to the polar ice cap; lakes, rivers and coastal zones, RBR's sensors and loggers track water parameters including conductivity, temperature, depth, salinity (CTD), dissolved gases, pH, and many others.

CÉLADON SEA TEST BASE

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PRESENTATION>

Celadon, a none profit organization gathering stakeholders in maritime engineering (Thales, ECA, Technopole Brest-Iroise, Flinders UniversityISEN Yncréa Ouest, École Navale, ENSTA Bretagne, IMT Atlantique, Ifremer, UBO, etc.), operates in Brest and manages the base of Sea Test Base.

SERCEL UNDERWATER ACOUSTICS

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PRESENTATION>

Sercel Underwater Acoustics (ex-Orca Instrumentation) develops and markets underwater data transmission systems and marine instrumentation for oceanographic engineering, scientific community, military and oil & gas applications. The company's products include underwater acoustic communication & positioning systems, passive acoustic monitoring & marine mammal detection systems, ocean bottom seismometers, mooring monitoring beacons, acoustic transducers & hydrophones.

LATEST NEWS>

Sercel recently announced the opening of our new marine test center. Located in Lorient, our dock facility and laboratory can offer a wide range of services to help you achieve your in-sea equipment project goals: from testing and validation through to qualification.

L'océan en référence

SHOM

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PRESENTATION>

The Shom, heir to the first official hydrographic service in the world (1720), is a public administrative establishment (EPA) under the supervision of the Ministry of the Armed Forces. It is the public operator for maritime and coastal geographic information. Its mission is to know and describe the physical marine environment in its relationship with the atmosphere, the seabed and coastal areas, to forecast its evolution and to ensure the dissemination of the corresponding information. This mission is carried out through three main activities:

- national hydrography, to meet the needs of surface navigation in waters under French jurisdiction and in areas under French cartographic responsibility;
- defence support, characterised by the expertise provided by Shom in hydro-oceanographic fields to the Directorate General of Armaments and by its operational support capabilities for the forces;
- support for public policies on the sea and the coastline, through which Shom enhances its heritage data and expertise by making them available to the public authorities and, more generally, to all those involved in the sea and the coastline.

LATEST NEWS>

1720-2020: 300 years of French hydrography

PROVINCE OF TIERRA DEL FUEGO, ANTÁRTIDA E ISLAS DEL ATLÁNTICO SUR

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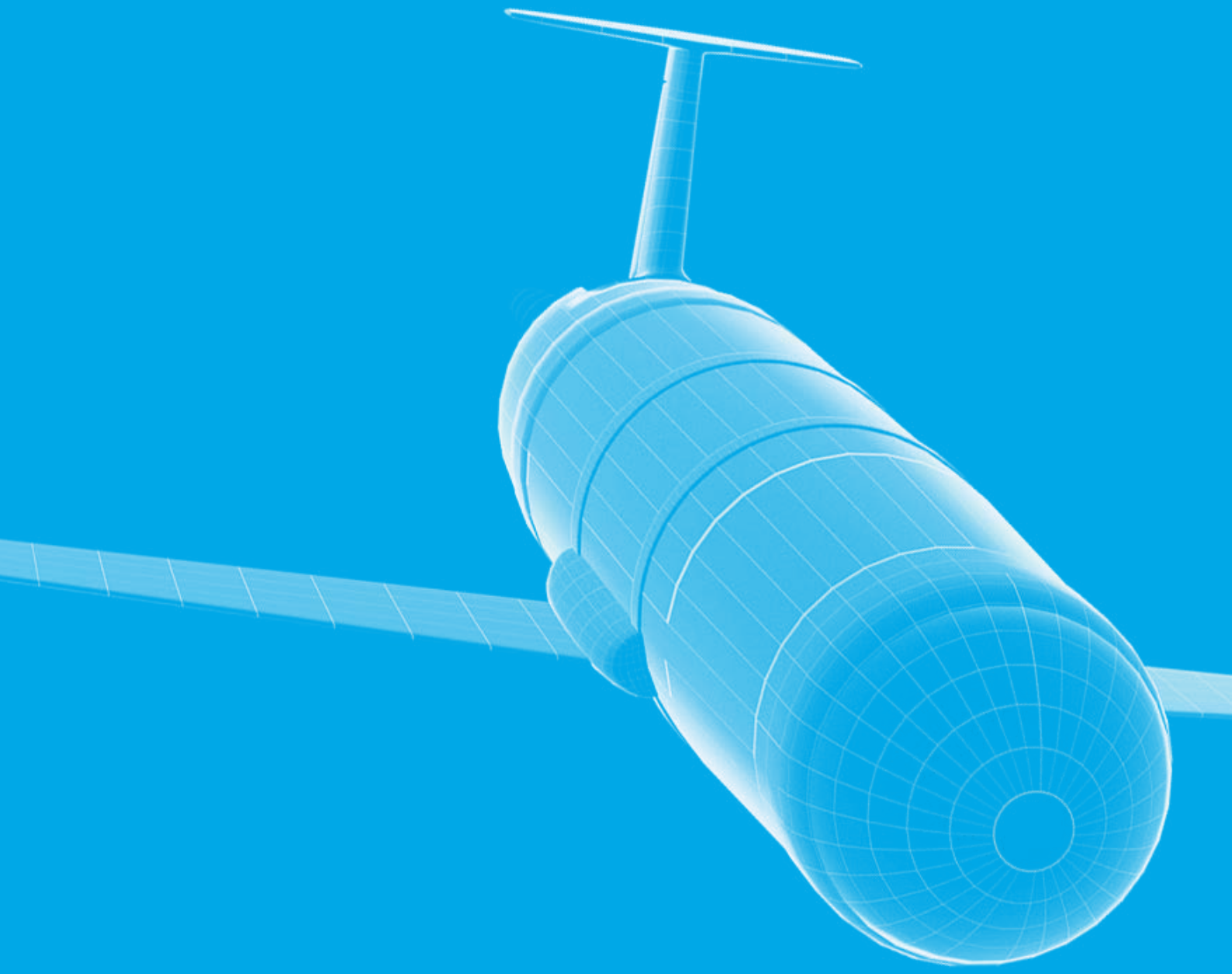
PRESENTATION>

Tierra del Fuego Antártida e Islas del Atlántico Sur, is the southernmost province of Argentina with a strategic geographical position. On one hand, due to its constitution as a special customs area, and on the other hand, due to its place in the tourism sector, which has been recognized worldwide as the "End of the World". Last but not least it also has a port infrastructure that allows it to be considered a gateway to Antártida. The province has a highly diversified economy, highlighting the development of the textile, clothing, plastic and auto parts industries. Among the use of its natural resources, it is worth mentioning activities such as hydrocarbons, fishing and aquaculture, forestry, timber, and livestock farming. It also has potential for development in alternative energies, with constant winds and the highest world quality standards. The geography is suitable for the development of fishing activity in its different variants, offering deep-sea fishing in the open sea and a coastal coastline suitable for artisanal fishing, as well as excellent conditions for aquaculture, among the best in the world, in all cases following sustainability and sustainability criteria. Under the protection of Law 19640, the main industrial activity developed in the province is based on the transformation of raw materials from abroad, with an outstanding specialization in consumer electronic products, boasting more than 30 establishments of the sector.

LATEST NEWS>

Tierra del Fuego, Antártida e Islas del Atlántico Sur government approved law 1239 that updates the official cartography, to include Argentina's Antarctic territory within the province. The public bidding for the extension of Ushuaia's port is now open. This project will benefit directly the tourism sector as it will increase the mooring capacity by 25%. This season, more than 35 cruise ships docked at Ushuaia's port, transporting well over 30000 visitors, in destination to Antártida.



SPEAKERS

SPEAKERS

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Claire Jolly, OECD

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Andy Koronios, SmartStat CRC

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Niki Vermeulen, School of Social and Political Science, University of Edinburgh

Ben Wilson, IDCORE programme, SAMS

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Cooper Van Vranken, BDC

Ralph Rayner, NOAA

PROGRAMME OF THE CONFERENCE

Day	Paris Time	Room 1	Room 2	Room 3
Monday 12	09:00 > 11:00	COOPERATION MODELS FOR OCEAN KNOWLEDGE AND INNOVATION		
	13:30 > 15:30	THE FUTURE OF OBSERVATIONS FROM SEABED TO SPACE: TRAINING TO SUPPORT MARINE SCIENCE	**(Paper session)** BIG DATA, DEEP LEARNING, SATELLITE OBSERVATION	
	16:00 > 18:00	ICE, WHERE AND HOW TO DEVELOP MY BUSINESS IN NON-INTERCONNECTED ZONES?	ECOACOUSTICS, UNDERWATER SOUNDS OF BENTHIC INVERTABRATES	
Tuesday 13	09:00 > 11:00 or 10:00 > 11:00		CONTRIBUTION OF NEW TECHNOLOGIES TO MARITIME AND COASTAL ACTIVITIES (9:00 > 11:00)	INTERREG TIGER - GROWING THE SUPPLY CHAIN FOR COST EFFECTIVE RELIABLE COMPOSITE BLADES AND CENSOR DESIGN FOR TIDAL TURBINES (10:00 > 12:00)
	13:30-15:30	EUROGOOS OCEAN TECHNOLOGY FORUM - **Session 1**	MOQESM - ROBOTICS FOR MARINE OBSERVATION (13:30-18:00)	SHOM - 300 YEARS OF FRENCH HYDROGRAPHY
	16:00 > 18:00	EUROGOOS OCEAN TECHNOLOGY FORUM - **Session 2**		WAVE AND WIND OBSERVATIONS APPLIED TO OFFSHORE RENEWABLE ENERGIES
Wesnesday 14	09:00 > 11:00	**(Paper session)** INSTRUMENTATION, APPLICATION TO OCEAN OBSERVATION	SEA-EU: EUROPEAN UNIVERSITIES ROLE IN COASTAL OBSERVATION	LITTORAL TOPO-ALTIMETRY BY AIRBORNE LASERS - LITTO3D PROGRAMME **Session 1**
	13:30 > 15:30	OPEN ACCESS TO MARINE OBSERVATION DATA: PRINCIPLES AND PRACTICES	**EXHIBITORS SESSION**	LITTORAL TOPO-ALTIMETRY BY AIRBORNE LASERS - LITTO3D PROGRAMME **Session 2**
	16:00 > 18:00	GENOMIC OBSERVATORY: A NEW TOOL TO OBSERVE MARINE BIODIVERSITY AND ECOSYSTEM		

Day	Paris Time	Room 1	Room 2	Room 3
Thursday 15	09.00-11.00	AUSTRALIAN-FRENCH SESSION: FROM SEABED TO SPACE	SEA-EU: COASTAL OBSERVATION ACROSS EUROPE – THE ROLE OF IMAGES AND INSTRUMENTATION	«MARINE SCIENCES, INDUSTRY AND TERRITORIES: OBSERVING PATHWAYS AND LOCAL STRATEGIES TO DEVELOP BLUE ECONOMY»
	13.30-15.30	SPACE-BASED INNOVATIONS OFFER INTERESTING DEVELOPMENT PROSPECTS FOR THE MARITIME SECTOR	MOQESM - ROBOTICS FOR MARINE OBSERVATION (13:30 > 17:30)	**(Paper session)** PLATFORM, DATA MANAGEMENT
	16.00-18.00	The European Space Agency's Blue Worlds Initiative		
Friday 16	09.00-11.00	NEW TECHNOLOGIES FOR MARINE ENVIRONNEMENT MONITORING AND MANAGEMENT POLICIES **Paper session 1**	AIS - TECHNOLOGY, DATA AND BEYOND	
	13.30-15.30	NEW TECHNOLOGIES FOR MARINE ENVIRONNEMENT MONITORING AND MANAGEMENT POLICIES **Paper session 2**		
	16.00-18.00	NEW TECHNOLOGIES FOR MARINE ENVIRONNEMENT MONITORING AND MANAGEMENT POLICIES **Paper session 3**		

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