



ATLANTIC REGIONAL INITIATIVE AGORA

23rd Many

Bonn/Germnay

ATLANTIC REGIONAL INITIATIVE



23 May - Monday



GEMINI AGORA



15h30-17h00



#LPS22

Join the dialogue which will encompass new services and applications to address key **#Atlantic** stakeholders.



Maria Grazia Abete
ESA



Kostas Topouzelis
Uni. of Aegean



Rory Scarrott
University College Cork



Stefano Ferretti
ESA
(CHAIR)



David Petit
DEIMOS



Pedro Ribeiro
+ATLANTIC



Sara Aparício
Solenix for
ESA/ NOVA
(CHAIR)



Agenda

- **15h30-15h45** - Overview of achievements outlining ESA side (**Stefano Ferretti/Sara Aparício**)
- **15h45-15h55** - Blue Economy and Innovation Cluster (**Rory Scarrott**)
- **15h55-16h05** - Renewable energy and Atlantic Cities (ARIA2 and ARIA3) (**David Petit**)
- **16h05-16h15** - Blue World Task Force (**Maria-Grazia Abete**)
- **16h15-16h25** - Participatory Design of EO tools and applications - Atlantic EO (**Pedro Ribeiro**)
- **16h25-17h00** - Panel discussion



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ESA
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Objectives

Concrete embedding of EO capabilities within regional Earth science programmes, regional environmental protection agreements and regional sustainable development strategies

In each region:

- ◆ Connect innovative EO R&D, application and service developments with the required underlying customized platform and processing capabilities
- ◆ Augment connectivity between EO and conventional Earth science, environmental protection and natural resources management practices

Scope - separate but coordinated actions for each region:

Project Office

stakeholder engagement,
communication and planning

Science projects

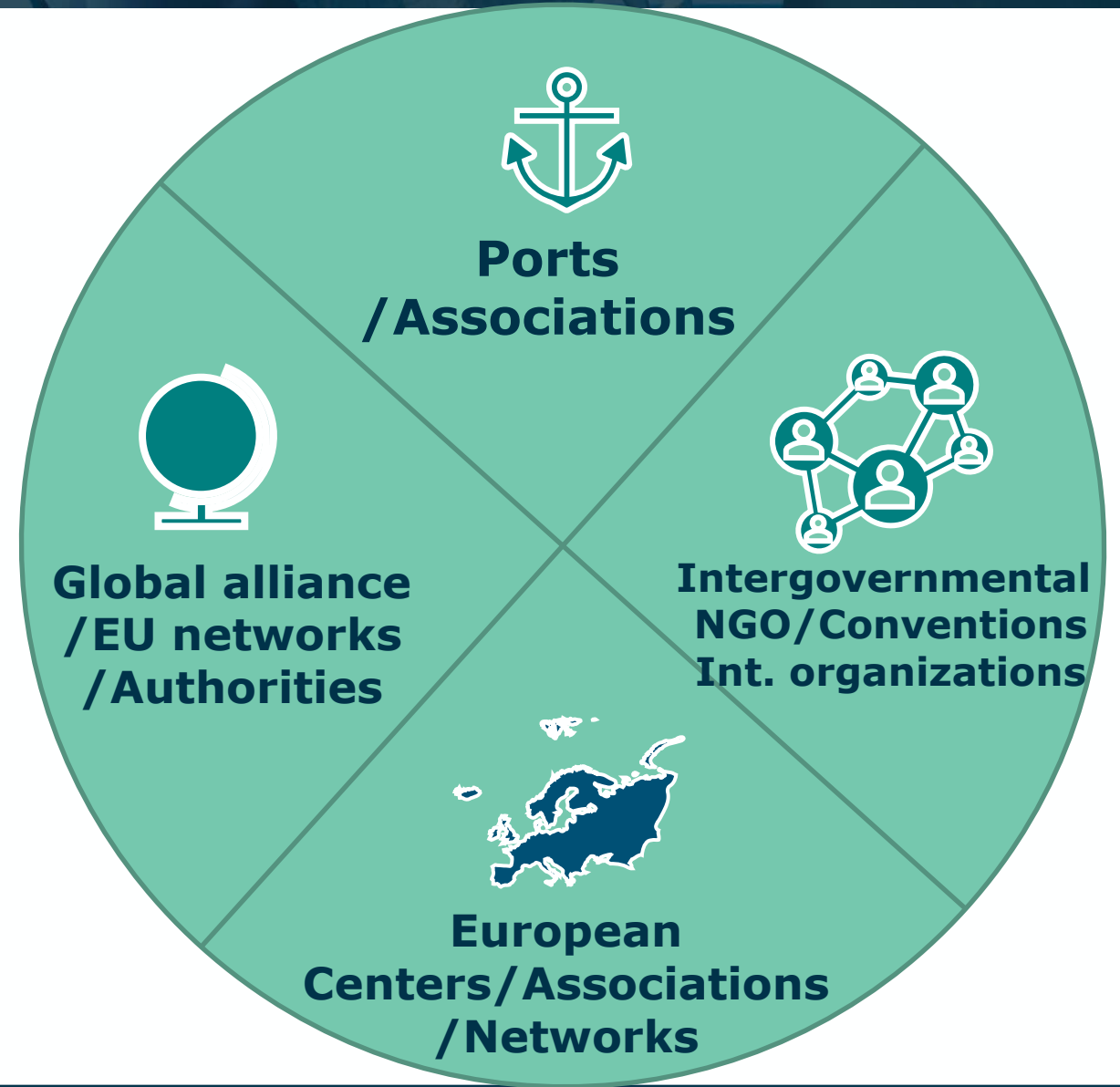
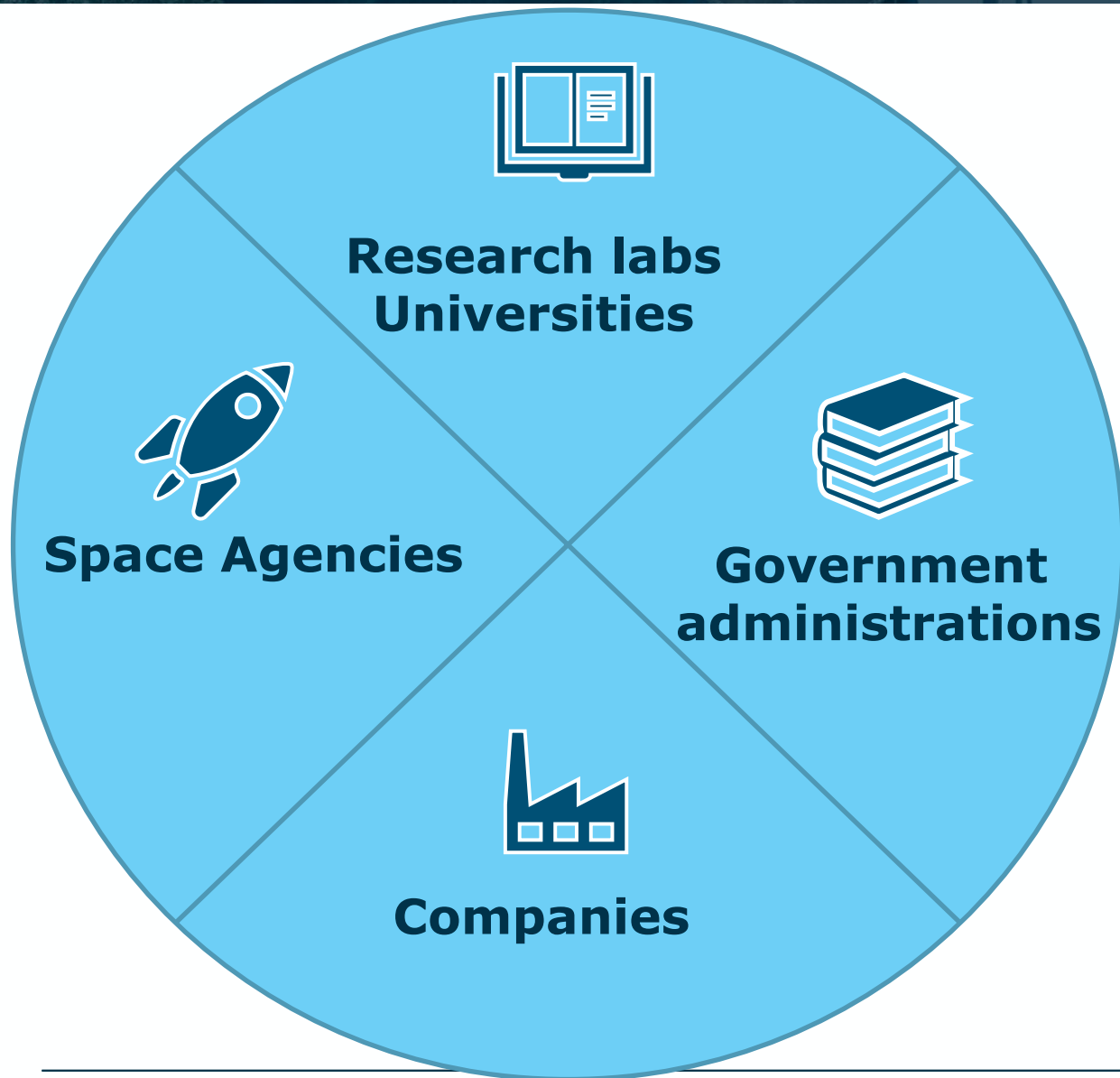
connect with regional
Science programmes

Application projects

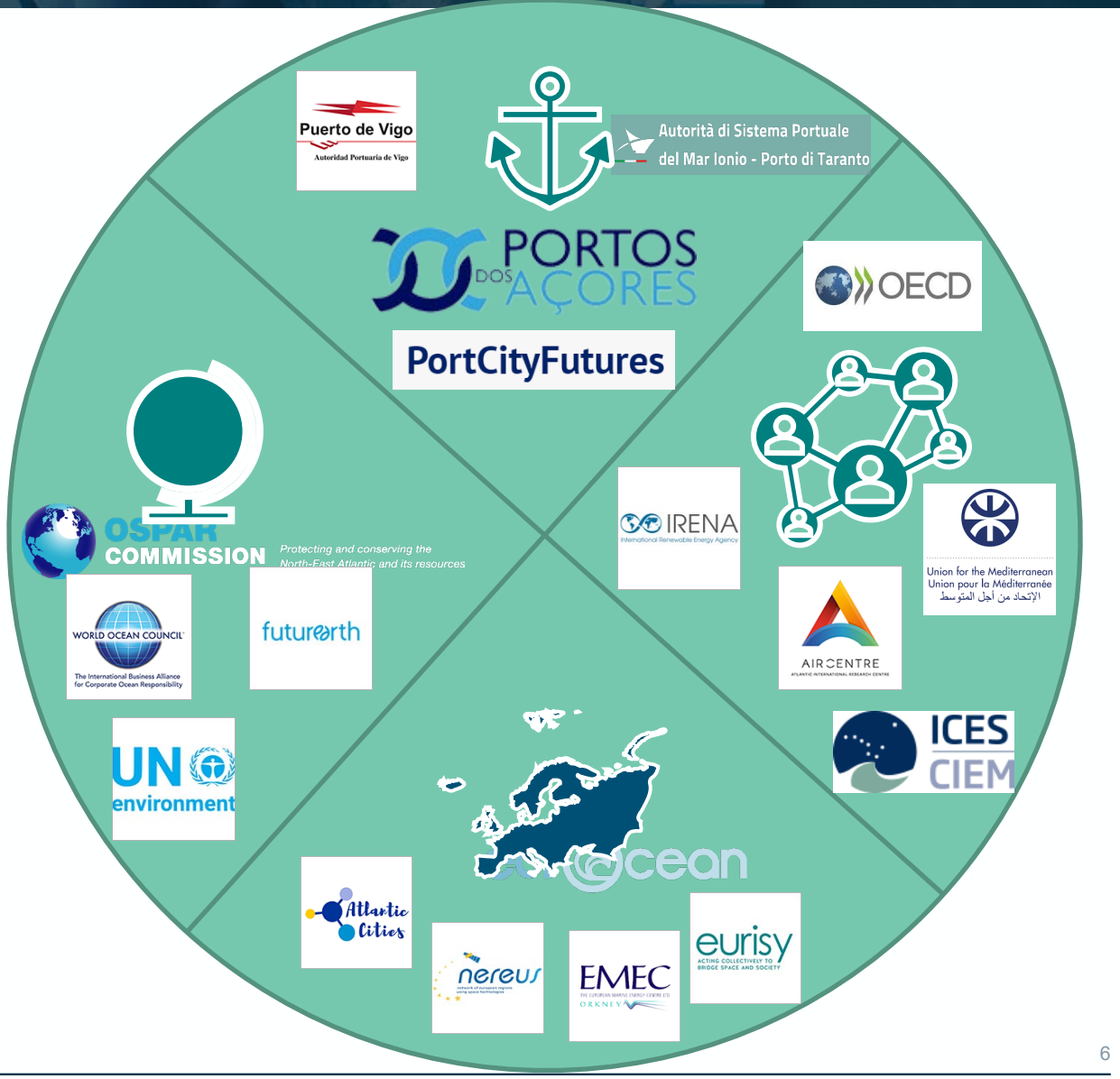
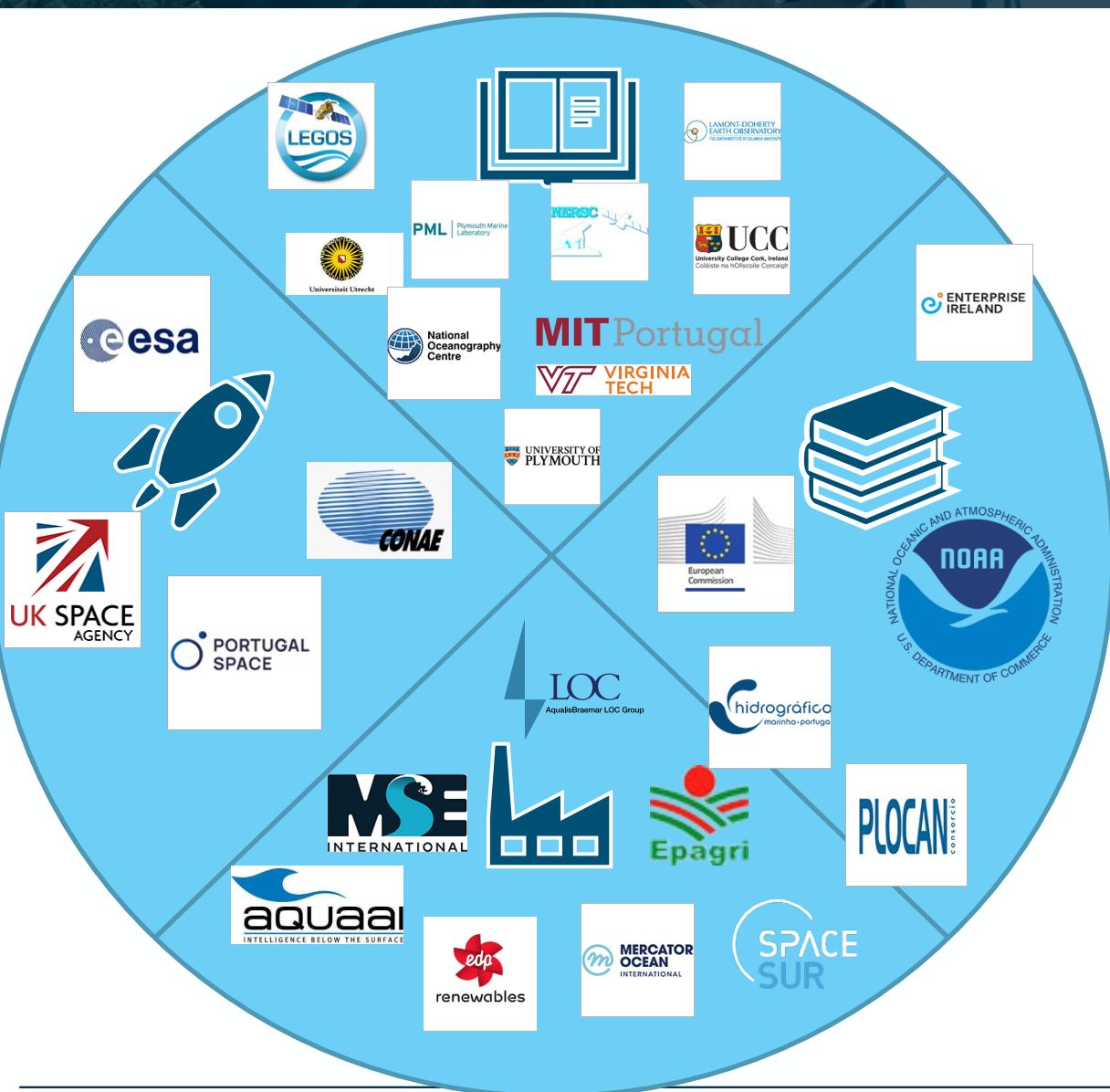
Integrate EO in ecosystem
assessment & sustainable growth

Customized platform and processing resources

A GROWING ATLANTIC COMMUNITY (STAKEHOLDERS)



A GROWING ATLANTIC COMMUNITY (STAKEHOLDERS)





The ESA EO Atlantic Regional Initiative today

Atlantic Regional Initiative ROADMAP



Azores as use case to be **scalable** To other islands



The ESA EO Atlantic Regional Initiative today





The Atlantic Data Handbook

- An interactive e-book aiming to give an overview of the Regional Initiative, providing insights on workflows procedures as well as a first intro on data, tools and applications in the context of new the Atlantic to new users.

ATLANTIC REGIONAL INITIATIVE APPLICATIONS

RESOURCES AND TOOLS

Learn about the Copernicus data: cheat sheet

Mission	Sensor & type of data description	Maritime & Coastal Application potential (examples)
Sentinel-1 Launched: April 2014 & April 2016 	Polar-orbiting, all-weather, day-and-night radar imaging mission for land and ocean services. This radar satellite measures the return signal from a sequence of pulses proving. Grey levels in a SAR image are related to the microwave backscatter properties of the surface. The intensity of the backscattered signal varies according to roughness, dielectric constant and slope. Thus the radar signal refers mainly to geometrical properties of the target . Instrument: C-band synthetic aperture radar (SAR) at 5.405 GHz. Revisit time: Six days (at the equator).	+ Ship monitoring
Sentinel-2 Launched: June 2015 & March 2017 	Polar-orbiting, multispectral high-resolution imaging mission. This multispectral satellite measures the Earth's reflected radiance in 13 bands of the electromagnetic spectrum. Each and every object has its own chemical composition. This is the equivalent to saying that each composition has its own spectral signature. Hence, an optical image provides the spectral signature – or type the target , revealing also new insights about features that our eyes cannot see. Instrument: Multispectral imager (MSI) covering 13 spectral bands (443 nm–2190 nm) with a swath width of 290 km and spatial resolutions of 10 m (4 visible and near-infrared bands), 20 m (6 red-edge/shortwave-infrared bands) and 60 m (3 atmospheric correction bands). Revisit time: Five days (at the equator).	+ Ship monitoring
Sentinel-3 Launched: February 2016 & April 2019 	Near-polar, sun-synchronous multi-instrument mission, measuring sea-surface topography, sea and land surface temperature, ocean colour and land colour with high-end accuracy. Instruments: Ocean and Land Colour Instrument (OLCI) covering 21 spectral bands (400–1020 nm), the Sea and Land Surface Temperature Radiometer (SLSTR) covering 9 spectral bands (550–12 000 nm), a Synthetic Aperture Radar Altimeter (SRAL) Ku-band and C-band, and a Microwave Radiometer (MWR) . Revisit time: is 1 and 2 days for SLSTR and OLCI sensors, respectively.	+ Ship monitoring - ships can be easily discerned in the SAR images due to their bright intensity resulting to the strong radar backscatter from their metal surface.
Sentinel-5P Launched: October 2017 	This near-polar, sun-synchronous orbit satellite also known as Sentine-5 Precursor– is the forerunner of Sentinel-5 to provide timely data on a multitude of trace gases and aerosols affecting air quality and climate. Instrument: Tropospheric Monitoring Instrument (Tropomi) Swath width of 2600 km covering bands in ultraviolet and visible (270–495 nm), near infrared (675–775 nm) and shortwave infrared (2305–2385 nm) at a spatial resolution as high as 7 km x 3.5 km. Revisit time: Daily global coverage.	+ Air Quality

Explore the above missions datasets on [Copernicus Open Access Hub](#). Explore also other [ESA](#) and [Third Party](#) missions.

Link to EO portals

- ▶ An interactive E-book
- ▶ Overview of Regional Initiative
 - Description of applications
 - Explanation of workflows
- 🔧 Resources & Tools
 - Data & missions overview
 - Examples for new users
 - Link to EO gateway ESA & Third Party missions

The Atlantic Data Handbook Overview (II)

RESOURCES AND TOOLS

RESOURCES AND TOOLS

NETWORK OF RESOURCES NOR

STAKEHOLDERS

An initial group of key stakeholders for the Atlantic Regional Initiative have been identified and engaged by the EO team in order to identify user needs, priorities and synergies among the many actors which are involved in the sustainable socio-economic development of the Atlantic region.

THE ATLANTIC REGIONAL INITIATIVE DATA HANDBOOK

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- ▶ An interactive E-book
- ✂ Resources & Tools
 - 🗄 Browse & Dowload platf.
 - 🖥 Ocean-oriented platforms to access, process & viz
 - ☁ Cloud platforms & services
 - ⚙ Dedicated toolboxes
- 🔗 Support to funding schemes
- 👤 Stakeholders & Network

The aim of Atlantic EO applications development is to **embed EO-derived information into pre-operational regional monitoring, assessment and planning activities:**

ESA Invitation to Tender resulted in **3 contracts** with industry to develop applications and future services

Blue Economy



1. Blue economy: Innovation Clusters, Atlantic Natural Resources Management and Maritime Spatial Planning

Bridge **EU policies**, ESA programs and **Atlantic strategies**, to better anchor space uses to the needs of territories and industries, fully exploiting the potential of EO applications for better-informed decision-making and innovation processes

Renewable Energy



2. Renewable Energy: Off-shore Wind

Build **international partnerships** and mobilize initiatives that enhance **cross-sectorial exchanges** amongst actors and investments

Atlantic Cities

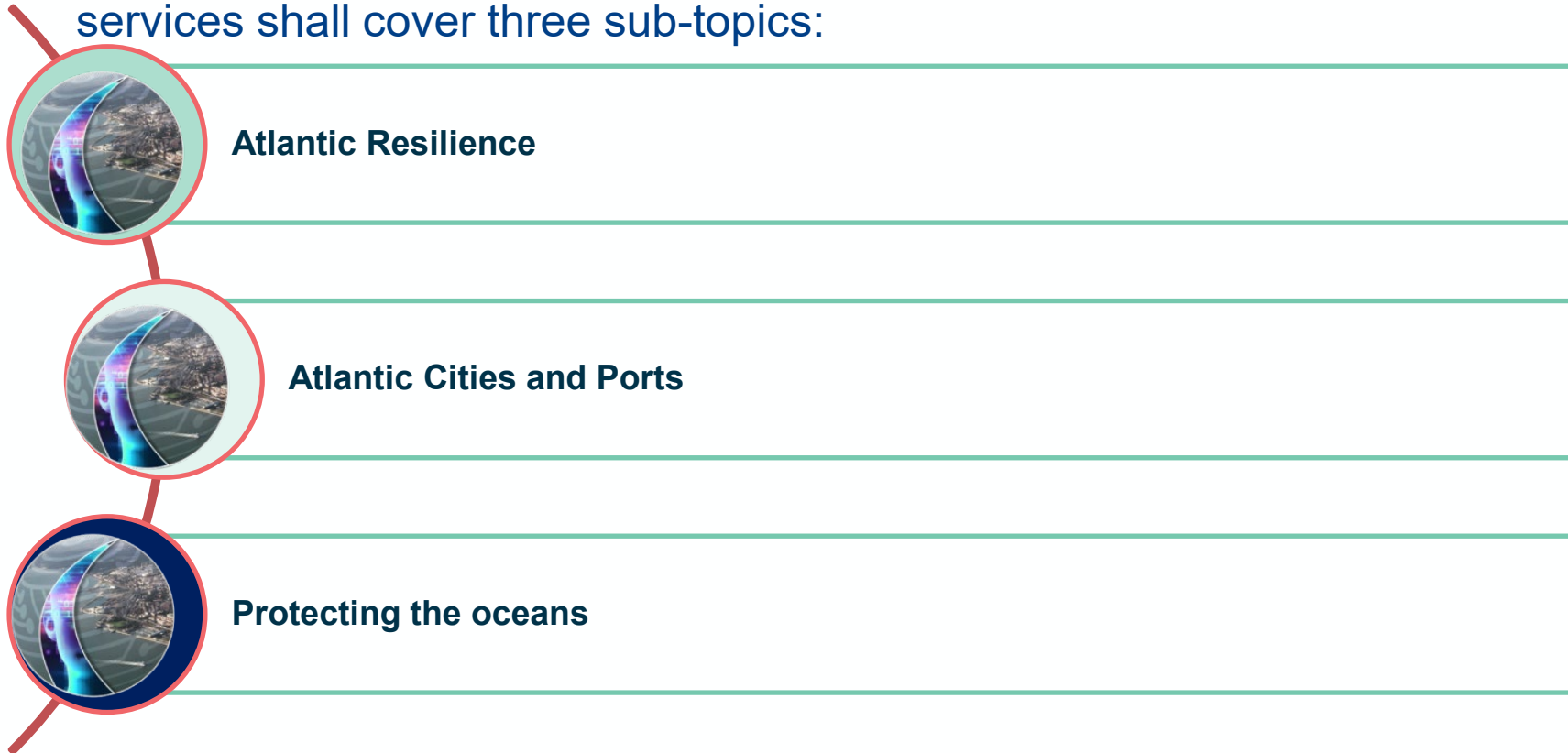


3. Atlantic cities: Smart, Sustainable and Secure Ports and Protecting the Ocean

Integrate the EO dimension in **regional innovation** and SME programs, strengthening and developing local communities by raising the profile of EO capabilities towards **new actors**

Atlantic Cities: smart, sustainable and secure ports and protecting the ocean

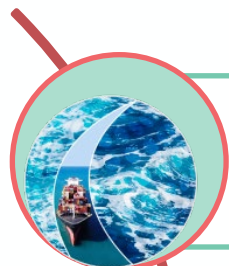
Development, delivery to the end user community and respective impact assessment of a number of customized EO-based information services to support decision making processes by the climate resilience, cities & ports and protecting the oceans related stakeholders in the Atlantic Region. Those services shall cover three sub-topics:



Consortium



The **ATIN-BLUECO** project aims to complement the ESA Regional Atlantic initiative by providing insights and solutions in the Blue Economy thematic:



Service 1 - Integration of EO data into the Coastal Monitoring Programmes of England



Service 2 - Waves, Tides and Currents from EO for Ocean Renewable Energy Production



Service 3 - Analysis of the status of Marine Litter in EU waters, dynamics, associated transportation corridors and of how MSPD can work to minimize the impacts




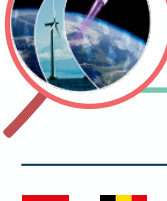
Consortium





Renewable Energy: Off-shore Wind

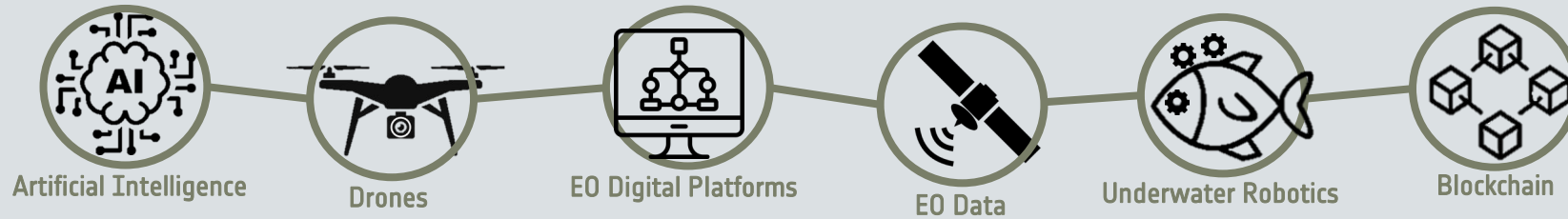
This application aims to develop EO based services to support management and operation of off-shore wind farms, namely:

-  Dashboard for wind farm design and operations (weather windows)
-  Assessment of wind resource for energy production
-  Assessment and minimization of Wind Turbine Wake Effect;
-  Assessment of Rain Erosion of Wind Turbine Blades.

Consortium



Sustainable Islands Workshop



Working Live Document

