



Atlantic GEOSS

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AIR CENTRE
ATLANTIC INTERNATIONAL RESEARCH CENTRE



deimos
elecnor group



SPACE

Expertise across the entire value chain in satellite systems
Deimos technology is present in more than 60 satellites



Capabilities to lead a complete space mission



PHASE 0



PHASE A



PHASE B



PHASE C/D



PHASE E



USER

DEFINITION

DESIGN

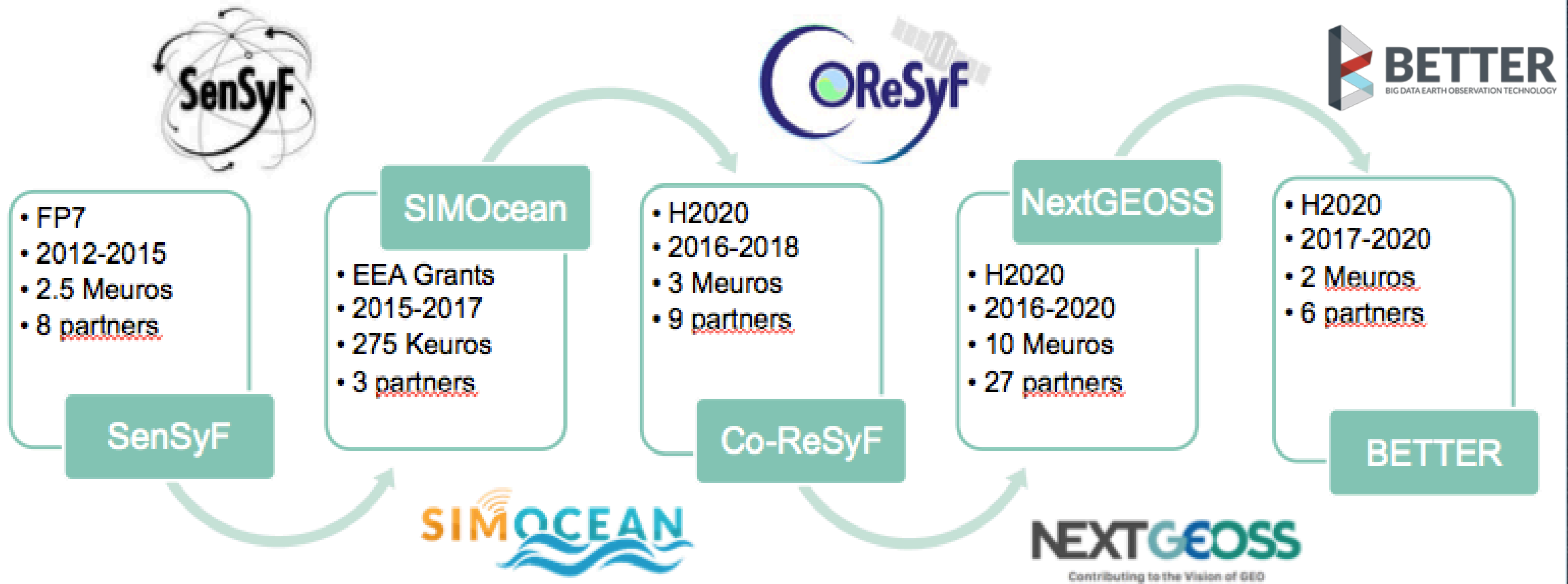
DEVELOPMENT

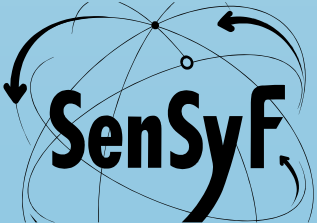




LAUNCH

APPLICATIONS



Background



Initiative	# Services	Pilots Thematic Areas	Targets
	7	<p>Generic (water, polar, vegetation, spectro-temporal integration, land use / land cover, agriculture support)</p>	Ingestion of Copernicus data, tools - SenSyF SDK, integration of pilot services in cloud platform
	3	<p>Maritime Monitoring (port entry, fishing, interactive analysis)</p>	Data preparation, data hub & catalogue, geo-portal
	6+8	<p>Coastal Research (water quality, bathymetry, storm surge, vessel detection, oil spills + 8 masters thesis)</p>	Tools - Co-ReSyF SDK, integration of pilot services in cloud platform
	11+	<p>Monitoring of SDGs (agriculture, biodiversity, security, artic, megacities, geohazards, territory, food security, smart cities, energy, +marine)</p>	Data ingestion & hub – catalogue, QoS and community feedback, user management, cloud + DIAS (ongoing), operations & monitoring
	3x6	<p>Challenges (food security, intelligence, geohazards, ...)</p>	Data ingestion and transfer, data analytics including ARD / data cubes, data visualisation



AIR Centre - For the benefit of the Atlantic societies



A new long-term platform for **scientific and economic cooperation** across and along the **Atlantic**, based on existing research capacities and infrastructures.

Addresses R&D gaps within the 6 Societal Benefit Areas aligned with the UN Sustainable Development Goals (SDGs).

Global challenges:

- Understanding, Predicting and Adapting to Climate Change
- Understanding the Atlantic ocean for a Healthy & Productive Ocean
- Clean, Affordable and Secure Energy for All



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OVERVIEW

Collaborative EO ecosystem for systems and services

- Engage **Users** and **federate** service needs
- Easy access to a wide range of geospatial **data**
- Collaborative R&D, development and **operations**
- Attract funding and ensure **sustainability**
- Support the **SDGs** and Belém Statement
- Leveraging GEO and **GEOSS** for the Atlantic





NEXTGEOSS PARTNERS

European Data Hub and Platform



Schweizerische Eidgenossensch
Confédération suisse
Confederazione Svizzera
Confederaziun svizra



WORLD METEOROLOGICAL ORGANIZATION



VIDERUM



University of Reading



BLB



WAGENINGEN UNIVERSITY & RESEARCH



HS-RS

UNIVERSITY OF TWENTE.



Norsk institutt for luftforskning
Norwegian Institute for Air Research



Consiglio Nazionale delle Ricerche





NEXTGEOSS PILOT SERVICES

European Data Hub and Platform

Innovative
Pilot Services

IP1
Agricultural
Monitoring



IP2
Biodiversity



IP3
Space &
Security



IP4
Cold Regions



IP5
Air Pollution
in Mega Cities



IP6
Disaster Risk
Reduction



Business
Pilot Services

BP1
Territorial
Planning



BP2
Food Security



BP3
Smart Cities



BP4.1/2
Energy*



BP5 Marine
Drift





NEXTGEOSS USER EXPERIENCE

European Data Hub and Platform

“Need to bridge the gap between research and operational services”
Marco Weydert (EC)



NEXTGEOSS

Contributing to the Vision of GEO



NEXTGEOSS

European Data Hub and Platform

FIRST PUBLIC RELEASE

Feb 2019



NEXTGEOSS

Contributing to the Vision of GEO



NEXTGEOSS OPEN CALLS

European Data Hub and Platform



1. Integration of new **pilot services** in operational environment:

- *Fully scalable resources*
- *Cloud vendor independent environment*
- *Easy access to data sources*
- *Dedicated operation dashboards*

2. Cataloguing **data** from projects and services

- Providing single access point to (mainly) European data sources

3. Cataloguing **services** and **projects**

- Increase visibility for distributed activities and services

<https://nextgeoss.eu/join-us/>



VISION, MISSION, GOALS

Vision: The Atlantic GEOSS' vision is to **enhance the role of Earth Observation** information and services serving the **Atlantic Region** societal needs, with strong focus on the *Sustainable Development Goals* and the *Belém Statement*, while promoting collaboration and growth.

Mission: The mission of the Atlantic GEOSS is to **mobilize and coordinate** complementary resources of Atlantic countries to create a **sustainable EO data ecosystem** for the Atlantic region, supporting the use of Earth Observation information in *decision-making processes*.



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CONTEXT: Opportunity and Challenges

Main Challenges



- International Cooperation and Belém Statement
- Opportunity to engage with end users
- Access to a wide Atlantic community
 - 30+ countries across 4 continents
- Federate Users needs from multiple countries
- Address indicators for several SDGs with accepted EO-based procedures
- Scale applications geographically

“Coordinate existing skills, means and opportunities into a unified approach.”

Miguel Miranda (IPMA)



CONCEPT DESIGN

Users Federation

- International group of federated user institutions
- Identify and standardise requirements
- Issue joint calls for ideas and challenges

Virtual Research Environment

- Interactive environment
- Visual workflow manager
- Advanced visualization

Virtual Development Environment

- Software development toolkit
- Analysis ready data
- Configurable dashboards

Operations Environment

- Operations monitoring dashboards
- Service Desk
- Community Portals

Knowledge Sharing

- Capacity building for AtlanticGEOSS ecosystem
 - Training events, webinars, ...
- Standardisation and interoperability

Citizen Engagement

- Engage citizen science activities
- Disseminate AtlanticGEOSS initiatives
- Data governance

Sustainability

- Ensure sustainability attract international funding institutions
- Promote calls for activities

CHALLENGES

SOLUTIONS

CAPACITATION

SUSTAINABILITY



CONTEXT: PRELIMINARY NEEDS IDENTIFIED

Internal study shows some of the relevant issues to be tackled within Atlantic monitoring, taking into consideration the available technologies and research activities being carried out

Main Challenge

Scale information of most relevant issues for the Atlantic region

Main Focus: Marine, Maritime and Coastal

- Marine Environment & Ecosystem
 - e.g. EOBs, monitoring of coastal area ecosystems and protected areas, plastics-free Ocean
- Fishing and Aquaculture
 - e.g. Fish population characterisation, illegal fishing detection
- Maritime Safety and Security
 - e.g. Supervise and secure navigation, people, goods
- Marine Spatial Planning
 - e.g. secure navigation, people, goods, assessment of offshore infrastructures





Rough Order of Magnitude (ROM) Budget for 2020-22

ACTIVITY	DESCRIPTION	BUDGET
User needs	Identification of main users needs through direct and remote interaction, including the setup of thematic users meetings. This should be followed by a detailed feasibility assessment.	3M€
Services definition	Identification of the EO services for users, including the identification of technical developers, existence and access to required datasets in all applicable regions for each potential service and other potential blocking points.	1.5M€
Funding rounds	Multilateral initiatives with international, regional and national funding organizations to select activities and services to go forward to implementation stage.	2.5M€
Services Implementation	Implementation of an AtlanticGEOSS catalogue of data and services. Implementation of EO services through collaborative engagement of technological solutions from AtlanticGEOSS countries.	6M€
Capacity Building	Preparation of dedicated actions for capacity building for users, system operators and downstream developers. Collocation of key users and stakeholders with development teams for specialized training.	3M€
Dissemination	Website, social media, participation in international events, etc.	1M€
ROM TOTAL (3 years)		17M€



Potential Funding Institutions for AtlanticGEOSS Projects and Activities:

- AIR Centre, e.g. in kind support of human resources for promoting international cooperation
- African Development Bank (AfDB)
- World Development Bank (WDB)
- European Investment Bank (EIB)
- European Bank for Development and Reconstruction (EBRD)
- West African Development Bank (BOAD)
- Food and Agriculture Organization of the United Nations (FAO)
- United Nations Office for Outer Space Affairs (UNOOSA)
- European Space Agency (ESA), including Atlantic Initiative (5-6 M€)
- European funding through H2020 actions, e.g.:
 - Coordination and Support Actions (CSA), e.g. SC5-16-2019 CSA (1M€)
 - Research and Innovation Actions (RIA) , e.g. DT-SPACE-06-EO-2019 (2M€)
 - Innovation Actions (IA), e.g. SC5-16-2019 CSA (3M€)
 - National/Regional Budgets

Private investment (>3M€)





SETUP ROADMAP 2019

- **Gather initial list of supporting countries and entities / potential members within AIR Centre stakeholders**
 - **Define initial contributing individuals**
 - **Engage user authorities in participating countries**
 - Discuss collaborative governance and structure
 - Discuss and agree on a AtlanticGEOSS programme for submission to GEO
 - Obtain and consolidate concrete requirements for services from users
 - Assess capacity of Atlantic GEOSS members
 - Apply to first projects funding
 - Engage with international funding agencies to attract interest

PREPARE FOR FIRST BATCH OF AIR-C ACTIVITIES

January

February

March

April

May

June

July



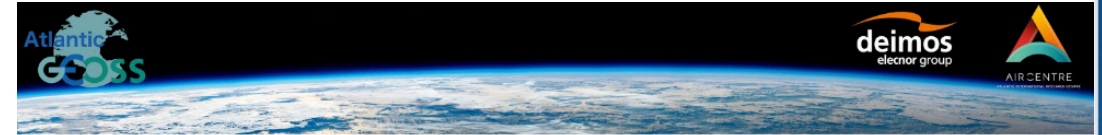
APPLICATION TO GEO

Before 15th February
Application document is available

Go to:
<http://atlanticgeoss.org>

Download Application Document
Provide review and comments until

10th February



AtlanticGEOSS **Cooperation for a better understanding of the Atlantic**

In 2015 the UN members agreed upon a new set of strategies to promote a sustainable development, defining 17 Sustainable Development Goals ([SDGs](#)) to be achieved over the next 15 years. Earth Observation (EO) data and monitoring systems have proven to be an effective solution for a deepened understanding of the marine environment and, as a result, a better response to emerging challenges. The [AtlanticGEOSS](#) is an initiative proposed in the context the Atlantic Research Centre ([AIR-Centre](#)), focusing on an integrated approach for Earth Observation based services. It will be proposed as an official GEO Initiative to the [Group of Earth Observations](#) in February 2019.

The goals of the [AtlanticGEOSS](#) are to develop an integrated EO framework that promotes collaboration and growth within the Atlantic countries, and to engage with communities to identify and potentiate opportunities for EO information and services, serving the region's societal needs.

The [AtlanticGEOSS](#) is focused on Marine, Maritime and Coastal application areas, such as monitoring marine biodiversity and protected areas, fishing and aquaculture, and marine spatial planning. Geographically, the initiative is based on the extension to the South Atlantic of the [Galway Statement](#) - the [Belém Statement](#), signed between the EC, South Africa and Brazil. The initiative comprises institutions from many Atlantic states from Europe, Africa and America, in order to facilitate the creation of value-added services for federated users in support to decision-making processes.

The four pillars of the [AtlanticGEOSS](#) are 1) federating user needs for the Atlantic leveraged mostly on the AIR-Centre extensive network; 2) matching the user needs with solid Earth observation technologic and scientific players in Atlantic bordering countries; 3) engaging International and National Funding Institutions to support the initiatives with highest impact; 4) promote dedicated capacity building to ensure the local and widespread sustainability of the activities.

If you are interested in [AtlanticGEOSS](#), please click on the button below. We are currently collecting support from interested parties from Atlantic bordering countries, in order to prepare the [AtlanticGEOSS 2020-2022 program](#), to be submitted to GEO in February 2019.

[Fill in Form](#)

We are also collecting comments and suggestions on the application programme to GEO **until the 8th of February**. Please download the current draft **here**, review the document (make sure Track Changes is turned on), and then upload it here:

[Upload Your Review](#)

Alternatively, you can also your reviewed document to nuno.catarino@deimos.com.pt.



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Thank you!

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