1 June 2022

English only

Committee on the Peaceful Uses of Outer Space
Sixty-fifth session
Vienna, 1-10 June 2022

Request for observer status with the United Nations Committee on the Peaceful Uses of Outer Space: application of the Association for the Development of the Atlantic International Research Centre (Air Centre)

Note by the Secretariat

1. At its thirty-third session, in 1990, the Committee considered guidelines for granting observer status with the Committee to international intergovernmental and non-governmental organizations. The possible criteria suggested by the Outer Space Affairs Division to the Committee at that time were the following:

(a) As part of its programme, the organization should be concerned with matters falling within the competence of the Committee on the Peaceful Uses of Outer Space;

(b) The aims and purposes of the organization should be in conformity with the spirit, purposes and principles of the Charter of the United Nations;

(c) The organization should be a recognized international organization and should have an established headquarters, an executive officer, and a constitution, a copy of which is deposited with the Secretary-General of the United Nations. In the case of a non-governmental organization, it should be a non-profit organization.

2. Having considered the matter, the Committee at its thirty-third session, agreed, that in the future non-governmental organizations which request observer status with the Committee should have consultative status with the Economic and Social Council (ECOSOC) and should, as part of their programmes, be concerned with matters falling with the competence of the Committee

3. At its fifty-third session, in 2010, the Committee agreed that observer status would be granted to non-governmental organizations on a provisional basis, for a period of three years, pending information on the status of their application for consultative status with the Economic and Social Council. The Committee also agreed

that the provisional observer status could be extended for an additional year, if necessary. The Committee further agreed that it would grant permanent observer status to such non-governmental organizations upon confirmation of their consultative status with the Council.

4. While the Committee's decision did not specifically include the elements referred to in 1 (c) above, it has been the practice of the committee, since its decision in 1990, to have before it the constitution or statutes of the organization or entity requesting observer status.

5. On 9 November 2021, the Office for Outer Space Affairs received an application for observer status with the Committee on the Peaceful Uses of Outer Space from Air Centre. The following related correspondence received from Air Centre is attached to this document:

(a) Letter from the Air Centre conveying the intention to become a permanent observer of the Committee;

(b) Statutes of the Association, as registered in Lisbon, Portugal;

(c) Air Centre Definition; and

(d) Air Centre Organization.

AIR CENTRE

ATLANTIC INTERNATIONAL RESEARCH CENTRE

APPLICATION FOR OBSERVER STATUS WITH THE COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE - COPUOS

NOVEMBER 2021

AIR CENTRE

Cover Letter 9th November 2021

Ms. Simonetta Di Pippo
Director
Office for Outer Space Affairs
United Nations Office at Vienna
Vienna International Centre
Wagramerstrasse 5
A-1220 Vienna, Austria

Dear Ms. Di Pippo,

On behalf of the Association for the Development of the Atlantic International Research Centre (hereby referred as AIR Centre), I am writing to formally apply for the status of Permanent Observer Organization to the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS).

The AIR Centre is an international networked institution, with is Headquarters on Terceira Island, Azores - Portugal aimed at promoting job creation and sustainable economic development in the Atlantic regions, through an integrative approach to space, climate, land, ocean, energy and data sciences. The AIR Centre promotes South-North/North-South cooperation in line with the national and regional priorities of Atlantic countries and addressing global challenges, such as the United Nations (UN) 2030 Agenda for Sustainable Development, the UN Decade of Ocean Science, the Paris Agreement, the Belem Statement and the Sendai Framework for Disaster Risk Reduction 2015-2030.

The AIR Centre is deeply involved in space activities as it hosts an **Earth Observation Laboratory** which is also an **ESA Lab** thanks to a collaboration agreement with the European Space Agency. In addition, the AIR Centre operates a satellite **Direct Receiving Station** for the reception of data from six different satellites and is co-owner of two optical Earth Observation satellites: **GEOSAT-1** and **GEOSAT-2** that provide valuable data for scientific applications. Furthermore, AIR Centre has started the development of a 16 satellites constellation, called **Atlantic Constellation**, for the ocean monitoring in order to

provide data with an unprecedent frequency to mitigate challenging problems like climate change or ocean pollution and help achieving the UN sustainability development goals.

The AIR Centre recruits and orchestrates a complex web of organizations and individuals to deliver change and social impact through concrete actions. This complexity comes from the AIR Centre's unique multidimensional mission-oriented, demand-driven, problem-solving approach, which integrates various sciences (space, ocean, earth, climate, and data sciences), includes different stakeholders (government, academia, industry, and civil society), encompasses diverse geographies, cultures and technology readiness levels (American, African, European countries and small island states or territories in the Atlantic region), and fully accommodates both local priorities and global challenges.

The mission-oriented approach for AIR Centre provides a clear orientation to foster knowledge-driven economic development in the Atlantic region by addressing new and emerging science and technology to achieve societal impact. The five main thematic missions are: i) Clean and productive bays and estuaries; ii) Resilience to coastal natural hazards; iii) Sustainable food production; iv) Improved resource management of oceans, coasts and marine system; v) Improved environmental and maritime security.

We look forward to working with the entire COPUOS community to contribute to the development of the AIR Centre and are eager to play our role as permanent observers. We are herewith attaching our supporting documents to the application: i) Statutes of the AD AIR Centre; ii) AIR Centre Definition, iii) AIR Centre Organization.

We would be grateful for your consideration of our application. In the meantime, we remain at your disposal to provide any further information you may require.

Sincerely,

Miguel Belló Mora, PhD
CEO of the AIR Centre

TABLE OF CONTENTS

I) STATUTES OF THE ASSOCIATION

(as registered in Lisbon, Portugal, translation from Portuguese)

CHAPTER I
General Provisions

Article 1
Denomination

This private non-profit association adopts the denomination of "Association for the Development of the Atlantic International Research Centre – AD AIR Centre", hereinafter referred to as Association, and shall be governed by the applicable Portuguese legislation and by the provisions on these Statutes.

Article 2
Term

The Association is incorporated for the time necessary for the installation of the Atlantic International Research Center (AIR Centre), hereinafter referred to as AIR Centre, an international scientific organization to create under the terms of the Florianopolis Declaration, signed on November 20th, 2017, according to no. 4 of the Resolution of the Council of Ministers no. 29/2018, of March 12th.

Article 3
Territorial scope and registered office

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

1. The territorial scope of action of the Association is national and international.

2. The Association has its registered office in the Autonomous Region of the Azores, in Rua Gervásio Lima, SN, 9760-472, Praia da Vitória, Azores.

3. The Association shall create delegations or any other forms of representation whenever deemed convenient or necessary for the fulfillment of its purposes, on national territory and abroad.

Article 4
Aim and Purpose

1. The Association aims to develop the scientific, technical and economic value activity, in international cooperation, bearing in mind the creation, installation and beginning of operation of the AIR Centre as an international scientific organization, and may, for this purpose, develop all the necessary, convenient or complementary activities for this purpose, including:

    a. Promote, develop and manage research, development, innovation and/or teaching projects and/or collaboration agreements with public or private, national or foreign, bodies, on the scientific and technological areas of interest for the AIR Centre, in order to formalize the scientific and technological infrastructure network that form part of this organization and begin its own scientific activity;

    b. Fund or apply for a national and/or foreign financing for the projects and collaboration agreements mentioned on the previous paragraph;

    c. Evaluate research, development, innovation and/or teaching projects within the scientific and technological areas of interest for the AIR Centre; Launch national and/or international competitions to promote de identification of the scientific and technical personnel that can join the AIR Centre;

    d. Promote, develop and manage, to the national or foreign competent bodies, all the proceedings and processes necessary for the installation and beginning of

operation of the AIR Centre, in its various facets, including the infrastructures necessary for the realization of the related purpose;

e. Employ and remunerate the necessary personnel for the realization of its purpose;

f. Proceed with payments which, in every occasion, are due to private or public, national or foreign, bodies, and grant its corresponding discharge;

g. Accept inheritances, donations, legacies or any other gratuities;

h. Edit and publish, in any form, works or documents related to the scientific and technological areas of interest to the AIR Centre;

i. Arrange conferences, colloquiums, seminars, congresses, debates and other events related to its activities, aims or other relevant themes to the AIR Centre;

j. Promote the exchange with institutions with similar activities;

k. Create a documentation center about its activities, aims and progress, or other themes related to the scientific and technological areas of interest to the AIR Centre;

l. Promote the scientific dissemination in its activity area.

2. For the achievement of its purpose, the Association may establish the affiliation, cooperation or collaboration mechanisms which might prove necessary or convenient, namely with companies, research and development institutions, higher education institutions or any other relevant partners of the national or international, public or private, productive, social or cultural sector.

CHAPTER II
Members and Bodies

Article 5
Members

1. The members of the Association are the Foundation for Science and Technology, I.P and the Autonomous Region of the Azores.

2. The legal people for this purpose assigned as the representative of a State or Region, which participate in the international process of creation and installation of the AIR Centre, may acquire the quality of member, under the conditions to be agreed by the General Meeting.

Article 6
Rights and duties of the members

1. The members have the right to:

    a. Elect and be elected for the governing bodies;

    b. Participate on the works and deliberations of the General Meeting, as well as request its convocation, under the provisions of the law and these Statutes;

    c. Suggest the admission of new members;

    d. Participate in all activities and initiatives of the Association;

    e. Consult and use all the elements archived with scientific or technical interest, according to the rules established for the due effect;

    f. Receive any publications that the Association shall edit, under the conditions to be agreed by the Board of Directors.

2. The members have the duty to:

    a. Complying with and enforcing the Statutes and the deliberations of the Governing Bodies;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

b. Collaborate, in every circumstance, with the Association in the pursuit of its vision, mission, purposes and aims;

c. Serve, with great care, the positions to which they were elected or assigned and participate in the development and prestige of the Association;

d. Pay the annual quota for the amount established by the General Meeting;

e. Contribute for the subsistence of the Association, through payment of extraordinary quotas or any other contributions that may be established by the competent bodies.

3. The members may be suspended by the Board of Directors whenever their associative duties are not met or excluded by the General Meeting whenever their associative duties are not met in a serious way or upon request.

Article 7
Association's revenue

The Association's revenue comprises the initial contribution of the members, the sum of the levies established by the General Meeting, any donations, subsidies, inheritances or legacies that may be received, as well as the sum of the sale of its publications or of the payment of services provided, the income from own assets and eventual revenue of social activities.

Article 8
Membership dues

1. During the term of the Association, every member contributes with an annual quota, due from the month of January, to be agreed by the General Meeting upon proposal of the Board of Directors.

2. As an initial contribution, each member contributes with an amount to be established by the General Meeting.

Article 9
Bodies

1. The Association's bodies are:

    a. The General Meeting;

    b. The Board of Directors;

    c. The Statutory Auditor;

2. The General Meeting may determine the creation of other bodies, upon proposal of the Board of Directors, establishing its competence, the rules of its composition and the remuneration of its members, including scientific counselling and new businesses bodies or bodies representative of affiliated entities or financing entities of Research and Development.

Article 10
General Meeting

The General Meeting comprises two representatives of each member.

Article 11
Competency and operation

1. The General Meeting shall be responsible to:

    a. Elect the Board of Directors;

    b. Accept new members;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

c. Deliver an opinion, until December 15th of each year, on the Association's budget and activities plan for the following year;

d. Deliver an opinion on the financial and accounts statement of the previous year and approve the balance;

e. Broadly appreciate the performance of the Board of Directors and of the Statutory Auditor, being able to deliver opinions and recommendations on the general acting lines;

f. Approve the acceptance of inheritances, donations, legacies or any other gratuities in its own name or on behalf of the Association;

g. Establish the annual quota of the members upon proposal of the Board of Directors;

h. Proceed to the designations within its competence, as well as providing the replacement of the members whose designation or co-optation is within its competence, in the case of resignation or definitive impediment of the performance of duties;

i. Dismiss the Association's bodies and proceed to the exclusion of members;

j. Establish the remuneration or the assignment of attendance fees to the members of the Board of Directors, the Statutory Auditor or other bodies that may be created under the provisions of article 9.

k. Deliver an opinion on any subject that the Board of Directors or the Statutory Auditor submits to its consideration;

l. Authorize the contraction of loans suggested by the Board of Directors;

m. Approve the amendments to these Statutes, suggested by the Board of Directors;

n. Authorize the right to pursue, the members of the Board of Directors, for facts practiced during the exercise of the correspondent positions;

o. Terminate the Association.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

p. Decide on every subject that isn't expressly assigned to other governing bodies of the Association.

2. The General Meeting is composed by a Chairman and a secretary, co-opted within the various members of the General Meeting, for a determined period.

3. The General Meeting is convened by the Chairman at least 15 days before and meets ordinarily twice a year, in the Association's registered office, and its members may participate through audiovisual conference by any technological means that ensures the reliable communication between the various members.

4. Without prejudice of the legal way of convocation, the call shall also be sent through electronic mail with receipt of delivery to the addresses provided by the members and shall contain the place, day and hour of the meeting, the agenda, the necessary documents for the full clarification of the subjects within the agenda and the requirements that may be subordinated to the technological participation means.

5. The General Meeting may meet extraordinarily whenever it is requested by the Board of Directors, the Statutory Auditor or any of its members, through a written request sent to the Chairman of the General Meeting, precisely indicating the subjects to include on the agenda and justifying the need for a meeting of the General Meeting.

6. The Chairman or the secretary of the General Meeting shall create a list of attendances, indicating the means of participation of the member on the meeting, as well as take the minute of each meeting of the General Meeting, which should be approved before being signed by the chairman or the secretary.

7. The members of the General Meeting are represented by whoever was assigned for this purpose.

8. Besides the normal suspensions established by the Chairman, the General Meeting may decide to terminate its duties, on the maximum of twice per session, and the resumption of the duties shall be immediately established on a date no more than 90 days after.

Article 12
Board of Directors

1. The Board of Directors of the Association comprises an odd number of members, until the maximum of seven, elected by the General Meeting for the exercise of the duties for a period of three civil years, renewable.

2. The President of the Association is the member of the Board of Directors that is appointed for this purpose by the General Meeting.

3. One of the members of the Board of Directors can be appointed as Executive Director, a designation that may or may not coincide with the one of President of the Association.

4. The Board of Directors has the duty to perform all the necessary acts for the pursuit of the Association's purpose that are not, under the provisions of these Statutes, assigned to other bodies, enjoying the highest extensive powers of representation and management, namely:

    a. Define and govern the internal organization of the Association;

    b. Manage and organize the assets of the Association;

    c. Program the activities of the Association;

    d. Prepare, decide and approve on the annual activities plan of the Association and the correspondent budget;

    e. Prepare and approve the annual statement, the balance sheet and the accounts of each year of the Association;

    f. Employ and manage the staff;

    g. Represent the Association, in or out of court;

    h. Establish, maintain and preserve internal systems of accounting control, in order to assure that they correctly reflect, at any moment, the assets and financial situation of the Association;

    i. Request the convocation of the General Meeting;

    j. Decide on the opening or closing of delegations or any other forms of representation;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

k. Decide on any other subjects concerning the Association.

5. The Executive Director performs the duties that are appointed by the Board of Directors.

6. The Board of Directors meets whenever called by its President of the Executive Director, and its members shall meet at least twice a month, in person or through audiovisual conference by any technological means that ensure the reliable communication between the various members.

7. The members of the Board of Directors shall be convened for the meetings through a letter or through electronic mail with the appropriate notice.

8. The Board of Directors decides through the majority of its members, and the subjects that involve making expenditures and the approval and execution of the annual activities plan needs the previous favorable opinion of the Foundation for Science and Technology I.P and/or other members that fund the association under the terms established by the General Meeting.

9. From each meeting of the Board of Directors, a minute shall be drawn on the correspondent book or on the numerated and aggregated pages, signed by all the participants.

10. The notifications or statements of third parties may be aimed to any members of the Board of Directors.

Article 13
Binding

The Association shall be bound, on any acts or agreements, by the signature of the President of the Board of Directors or the Executive Director or by the joint signature of two members of the Board of Directors with indication of that quality or even by the signature of one or more representatives, under the terms of the correspondent mandates.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

Article 14
Dismissal

1. The General Meeting may, unanimously, dismiss any member of the Board of Directors, on reasonable grounds.

2. Reasonable grounds for dismissal comprise, namely, the violation of the duties that are conferred to that member or the inability for the normal performance of the correspondent duties.

Article 15
Statutory Auditor

1. The Statutory Auditor of the Association is appointed by the General Meeting for three civil years, renewable, and shall be a company of certified public accountants or a certified public accountant.

2. The Statutory Auditor has the duty to:

    a. Verify if the administration of the Association is done in accordance to the law and these Statutes;

    b. Monitor the observance of the law and these Statutes;

    c. Verify the orderliness of the books, accounting records and documents which support it;

    d. Verify, whenever deemed convenient and through the means deemed appropriate, the existence of assets or goods belonging to the Association;

    e. Verify the accuracy of the annual report, the balance or the accounts of each year;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

f. Verify if the accounting criteria lead to a correct evaluation of assets and results;

g. Prepare an annual report on its supervisory action and deliver an opinion on the report and annual accounts presented by the Board of Directors;

h. Convene the General Meeting when, in violation of these Statutes or the Law, the Chairman doesn't do it;

i. Fulfill the further duties present on the law or on these Statutes.

3. For the performance of its duties, the Statutory Auditor may proceed to the acts of inspection or verification which are convenient for the full exercise of its duties, namely obtaining, from the Board of Directors, the presentation, for examination and verification, of the books, registers and other documents, as well as verifying the existence of any type of assets, provision of information or clarification on the course of the operations or activities.

4. The Statutory Auditor has the right to:

a. Participate on the meetings of the Board of Directors and attend the General Meetings which the correspondent president convenes or where the accounts of the financial year are appreciated;

b. Perform a conscientious and impartial inspection;

c. Keep secret of the facts and information of which they were aware on account of their duties;

d. Inform the Board of Directors of the verifications, inspections and diligences that were undertaken and their results;

e. Inform, on the first General Meeting that takes place, on all irregularities or inaccuracies verified.

CHAPTER III
Amendment and termination

Article 16
Amendment

These Statutes can be modified upon proposal of initiative of any member, which should be approved by three-quarters of the members.

Article 17
Termination

1. Immediately after the entry into operation of the AIR Centre, the General Meeting shall decide, on ordinary or extraordinary meeting expressly convened for this purpose, the termination of the Association.

2. Terminated the Association under the provisions of the previous number, the powers of its bodies are limited to the practice of acts merely conservatory and necessary to the transfer of its assets and/or the finalization of outstanding businesses.

Article 18
Assets Destination

1. All the Association's assets shall be transferred, together or separately and through the most appropriate legal securities, to the AIR Centre.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

2. The bodies of the Association shall ensure that the transfer of assets mentioned on the previous number is performed as soon as possible, preferably before the decision of termination of the General Meeting.

Article 19
Social year

The social year corresponds to the civil year.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

II) AIR Centre Definition

1. Background

The AIR Centre is an internationally networked organization, oriented to foster job creation and knowledge-driven sustainable economic development in Atlantic regions. It addresses and integrates space, climate, earth, ocean, energy and data sciences promoting north-south/south-north cooperation in alignment with national/regional priorities and global challenges such as the UN 2030 Agenda for Sustainable Development, the Decade of Ocean Science for Sustainable Development (2021-2030), the Paris Agreement, the Belem Statement and the Sendai Framework for Disaster Risk Reduction.

The AIR Centre is all about advancing science and technology in a transformative scale in the Atlantic region. It builds on and expands the abilities of individual organizations, and it advances selected scientific and technological domains and their constellations of actors towards shared targets. For that, it recruits and orchestrates a complex web of organizations and individuals to deliver change and social impact through concrete actions.

This complexity comes from the AIR Centre's unique multidimensional mission-oriented, demand-driven, problem-solving approach, which integrates various sciences (space, ocean, earth, climate, energy, and data sciences), includes different stakeholders (government, academia, industry, and civil society), encompasses diverse geographies, cultures and technology readiness levels (American, African, European countries and small island states or territories in the Atlantic region), and fully accommodates both local priorities and global challenges. AIR Centre activities use the power of "user-driven open innovation platforms" across government, industry, academia, NGOs and community sectors, with a focus on:

- Full value-chain collaborative science and economic mechanisms to inform, implement and influence policies for sustainable and inclusive blue economic development;
- Innovatively funded public-private blue economy development mechanisms for industrial empowerment and development through informed management,
- Technological innovation and impact in the new space, earth observation, robotics, data science and earth-ocean systems;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

- Community innovation for sustainable development: redefining community-based systems for blue economic development based on open, co-designed science- and knowledge based informed management;

- Attracting and empowering youth and new communities in the Science, Engineering and Technology domains in both formal and informal sectors.

The mission-oriented approach for AIR Centre provides a clear orientation to foster knowledge-driven economic development in the Atlantic region by addressing new and emerging science and technology to achieve societal impact. The five main thematic missions of AIR Centre are: i) Clean and productive bays and estuaries; ii) Resilience to coastal natural hazards; iii) Sustainable food production; iv) Improved resource management of oceans, coasts and marine system; v) Improved environmental and maritime security.

2. Global Challenges and Operational Objectives

2.1 Present framework

The AIR Centre implementation calendar (see Figure 1, next page) has given rise to several High-Level meetings between the Government-Academia-Industry, involving participants at ministerial level from various countries on the Atlantic shores. In addition to the formally associated countries to the General Assembly of the AIR Centre – i.e., Portugal, Spain, the United Kingdom, Nigeria, Cape Verde, South Africa, Morocco, Angola, there are other countries involved – e.g., the USA, Brazil, Sao Tome and Principe, Namibia, Ghana, Dominican Republic, Peru, Mexico, Colombia, and Norway. The network continues to expand, and there have been several expressions of interest for collaboration and membership by other Atlantic nations.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

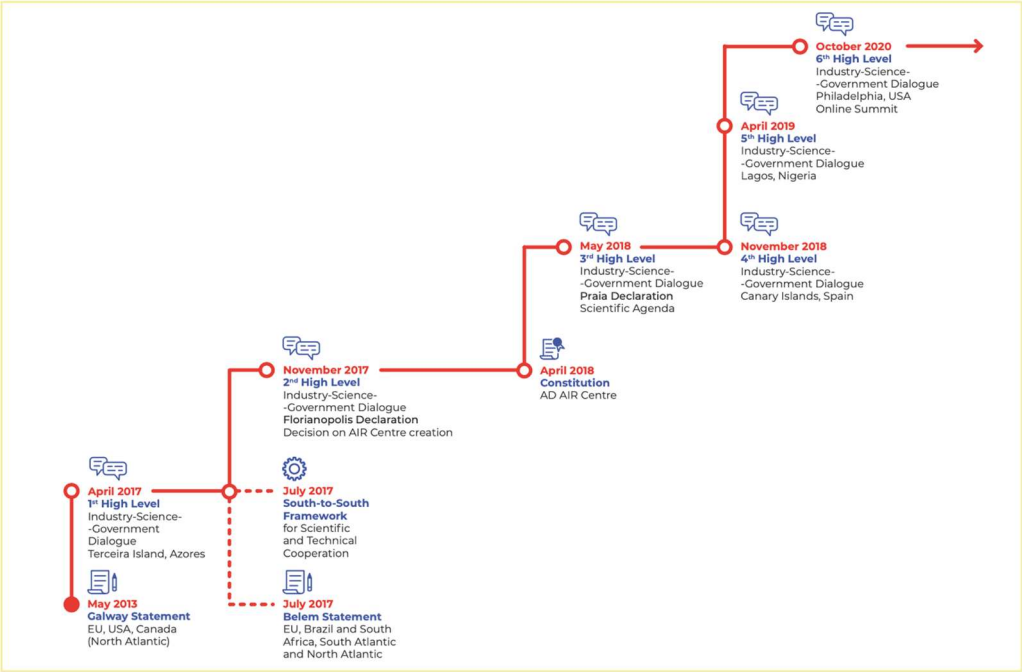


Fig. 1 - AIR Centre Implementation Calendar 2017-2020

2.2. MISSIONS AND OPERATIONAL OBJECTIVES

The AIR Centre is a networked, collaboratively, and internationally distributed organization aimed at promoting and creating value and benefits for science, economy and the citizens of the Atlantic Area aligning with regional, national priorities and based on three major global challenges:

- climate change;
- Digital transformation; and
- Population dynamics related to income inequalities.

To achieve these global objectives during 2020, the AIR Centre has mainly proposed to strengthen research and innovation cooperation between Atlantic countries to address the challenges of developing a more integrated and connected sustainable blue economy in the Atlantic basin. The

AIR Centre focused on strengthening scientific and technological collaboration between public and private entities in a wide range of areas related to Space, Atmosphere, Oceans, Climate, Energy and Data Sciences in the Atlantic. The AIR Centre develops its activities based on a scientific agenda aligned with (5) missions directed at promoting transdisciplinary and collaborative Research and Development (R&D) with Universities, Research & Engineering Centres, Institutions and/or Research Laboratories, also seeking to stimulate technology transfer and contribute to the projects continuum in the value chain to higher TLRs, for example with technology-based startups, small and medium-sized enterprises and industry in general in all regions of the Atlantic. The AIR Centre's scientific agenda is based on five (5) missions that are represented in Figure 2:

***Fig. 2** – Five (5) AIR Centre Missions*

To achieve the challenging missions and flagships projects, the AIR Centre is focused in designing and constructing an internal structure capable of overcoming the most complex challenges. For that, several objectives have been prioritized and are being consolidated, as follows:

- Continuous recruitment of high qualified staff and promote expert development and training;
- Deployment and operationalization of new infrastructures: ESALab, MBON
- Scientific infrastructure: RAEGE-Azores
- Network consolidation and expansion to new Atlantic members
- Detecting, mapping and producing new services and products in connection to areas related to Space, Atmosphere, Oceans, Climate, Energy and Data Sciences

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

- Continuous development and deployment of R+D+I initiatives, projects and actions:
    - Implement existing projects and agreements;
    - Preparing new national and international initiatives;
- Increase visibility and impact by organizing high-level events and increase the international collaborations

2.2. Network Consolidation

2.2.1. Current Composition

The Headquarters and Central Office of the AIR Centre are located in Terceira Island in the Azores and in Lisbon, respectively. Members are entities engaged as associates of the AD AIR CENTRE and that contribute to the support of the design, development, operation and evaluation of the AIR CENTRE. Members contribute to the development of the AIR Centre's vision, to the establishment of its goals and objectives, to the definition of its scientific agenda, missions and also have voting rights on all matters related with AD AIR CENTRE.

Presently, these are the AIR Centre institutional members:

- FCT – Portuguese Science and Technology Foundation (Portugal)
- RGA – Regional Government of the Azores (Portugal)
- PLOCAN – The Oceanic Platform of the Canary Islands (Spain)
- NASRDA – National Space Research and Development Agency (Nigeria)
- UKRI – UK Research and Innovation, Research Infrastructures Policy, Fusion Research Infrastructures and Establishments Team (United Kingdom)

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

- GOVERNMENT OF BAHIA STATE, BRAZIL – Secretary of Environment of the Bahia State

  As of 22nd October 2021 these countries officially joined,

- SOUTH AFRICA – Department: Science and Innovation, Republic of South Africa
- ANGOLA – Instituto Nacional de Investigação Pesqueira e Marinha (INIPM)
- MOROCCO – Abdelmalek Essaadi University

Members have to provide local / national offices, but the AIR Centre may establish additional offices and services worldwide, in other Atlantic countries, through affiliated institutions and/or specific agreements. The participant organizations provide the AIR Centre with facilities and resources (human, technical, financial) to perform their activities.

AIR Centre | Offices – member entities with national/regional government nomination.

AIR Centre Offices	Representative
AIR Centre | Rio de Janeiro	LAMCE/COPPE – UFRJ, Federal University of Rio de Janeiro, Brazil
AIR Centre | Bahia	IGEO – UFBA, Federal Universoty pf Bahia, Salvador, Bahia, Brazil
AIR Centre | Ceará	LABOMAR, Fortaleza, Ceará, Brazil
AIR Centre | Nigeria	NASDRA, Abuja, Nigeria
AIR Centre | SPAIN	PLOCAN, Las Palmas de Gran Canaria, Canary Islands, Spain
AIR Centre | UK	CATAPULT Satellite Applications, Harwell Campus - Didcot, UK

AIR Centre hubs – members entities which established through direct agreements, with no governmental intervention.

COUNTRY	AIR Centre Nodes
Angola	INIP – National Institute of Fisheries Research
Cape Verde	IMAR - Institute of the Sea, Mindelo Island
Ghana	DFMS – Department of Marine and Fisheries Sciences, University of Ghana
Namibia	UNAM/SANUMARC – University of Namibia/Sam Nujoma Marine and Coastal Resources Research Centre
Portugal	CoLab +Atlantic
Portugal	Colab DTx
São Tome and Principe	USTP – University of Sao Tomé and Principe
South Africa	CSIR – Council for Scientific and Industrial Research
USA	UNC - University of North Carolina in Charlotte
USA	PSU - Penn State University in Pennsylvania

Partners and affiliated Institutions – Entities engaged to collaborate in the implementation of the goals and objectives of the AIR Centre with special focus in countries, regions or specific sectors through specific agreements or Memorandums of Understanding (MoUs). The affiliated institutions do not have participation in the management or in the organization of the association.

Notwithstanding, the affiliated entities, including scientific, industrial and financial institutions could be engaged in a supplementary body in terms to be determined by the General Assembly meeting.

Country/Region	INSTITUTION
Global	United Nations Office for Outer Space Affairs
Global	GEO BON – Group on Earth Observations, Biodiversity Observation Network
Global	GEO Blue Planet
Africa	AFRIMAR (afrimar.org)
Europe	ESA – European Space Agency
Europe	LifeWatch ERIC – European Infrastructure Consortium
Brazil	UFRJ - Federal University of Rio de Janeiro
Brazil	INPE – Brazil National Institute of Space Research
Brazil	SECITECE – Secretary of Science, Technology and Higher Education, Ceará
Portugal	Forum Oceano
Portugal	Institute of Science and Innovation for Bio-Sustainability at University of Minho
Portugal	IH – Portugal Hydrographic Institute
Portugal	INESC TEC – Institute for Systems and Computer Engineering, Technology and Science

Portugal	MACC - Minho Advanced Computer Center at University of Minho
Spain	BSC - Barcelona Supercomputing Center
USA	AESEDA – Penn State Alliance for Education, Science, Engineering & Design with Africa
USA	MIT - via the MIT-Portugal Program
USA	University of Texas at Austin - via the UTAustin-Portugal Program

2.2.2. ACTIONS

- To track and diagnose the current status of the network partners, areas of interest and capabilities to implement cooperation within the network;
- To develop new models of the interrelationship of human resources, technology and knowledge transfer, exchanging knowledge-based products;
- To create joint services among the network and shared workspaces, providing added value to all partners;
- To strengthen the cooperation with pan-European, pan-African and Pan-American Research Infrastructures;
- To promote joint-seminars and workshops aiming to discuss joint funding opportunities and projects;
- To stimulate the mobility among institutions focused on joint research activities, technology and capacity building;
- To start joint-training initiatives among the network to fill knowledge gaps and to stimulate knowledge and know-how transfer;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

- To enlarge visibility and public awareness of the AIR Centre network by promoting special events and targeted meetings and side-workshops;
- To explore new business models to boost joint activities among the AIR Centre nodes, including bilateral projects, ERANETs, cooperation with private entities or multilateral funders.
- To identify the countries that are directly influenced by the Atlantic, that are not part of the AIR Centre;
- To define an "interest rating classification scale" based on a set of qualitative and quantitative indicators;
- To approach the "Highly Strategic" and "Important" countries according to the collected information and chosen methodology;
- To share the responsibility of enlarging the network, with AIR Centre partners, in areas of their regional influence;
- To foster the development of new agreements and protocols with scientific and institutional organizations at "Highly Strategic" countries;
- To stimulate the active involvement of academics and scientists of these countries in international joint flagship projects;
- To endeavor a permanent close dialogue with international organizations, such as the European Union, African Union and the United Nations, among others;
- To approach the public and private entities and organizations at the local, regional and international level, which can be part of funding mechanisms that may contribute to meet the financial needs of the agenda implementation;
- Initial conversations for more Atlantic nations to join the AIR Centre, are being hold with Ireland, Mexico, Colombia, Chile, Norway, and Sweden;

2.3. Science, Research, Technology and Innovation

The AIR Centre promotes and/or develops within its network a range of scientific activities and technological developments with effects and impacts on the environment and society, as follows:

CLEAN AND PRODUCTIVE BAYS AND ESTUARIES

Promoting the sustainable development of major bay and estuarine areas, including the comparative assessment and action research.

RESILIENCE TO COASTAL NATURAL HAZARDS

Preventing, reducing and increasing preparedness for response against costal hazard exposure and vulnerability to natural disasters, such as floods, sea-level rise and extreme weather, adapting and mitigating climate change.

SUSTAINABLE FOOD PRODUCTION

Promoting new food value chains with sustainable fisheries and offshore aquaculture and reducing environmental risks for food security;

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

IMPROVED RESOURCE MANAGEMENT OF OCEANS, COASTS AND MARINE SYSTEMS

Promoting the sustainable development of ocean and coastal ecosystems, enhancing capacity for good governance of marine and coastal biodiversity, and raising awareness for local communities and decision makers on the economic value of the ecosystem;

IMPROVED ENVIRONMENTAL AND MARITIME SECURITY

Enabling the creation of impactful, affordable data collection and information systems employing collaboratively developed cubesats, robotics, and autonomous systems coupled with earth observation, models and artificial intelligence systems;

2.4. Flagship Projects/Initiatives

2.4.1. ESA_LAB@Azores

The Earth Observation Lab (EO Lab), located in the Science and Technology Park – TERINOV in Terceira Island, Azores, is established as an ESA_LAB @ Azores, a laboratory that aims to establish an institutional link between research entities and the European Space Agency (ESA) to explore innovative applications based on technologies and space observation systems for the Atlantic area. The EO Lab is also part of the Regional Blue Planet Thematic Observation Group (GEO) as well as the GEO-MBON (Marine Biodiversity Observation Network).

The EO Lab as an operational working methodology (see Figure 3, in workflow format) that allows a coherent approach to the various stakeholders in the design of ideas and projects and that integrates the vision of the AIR Centre for the flagship initiatives.

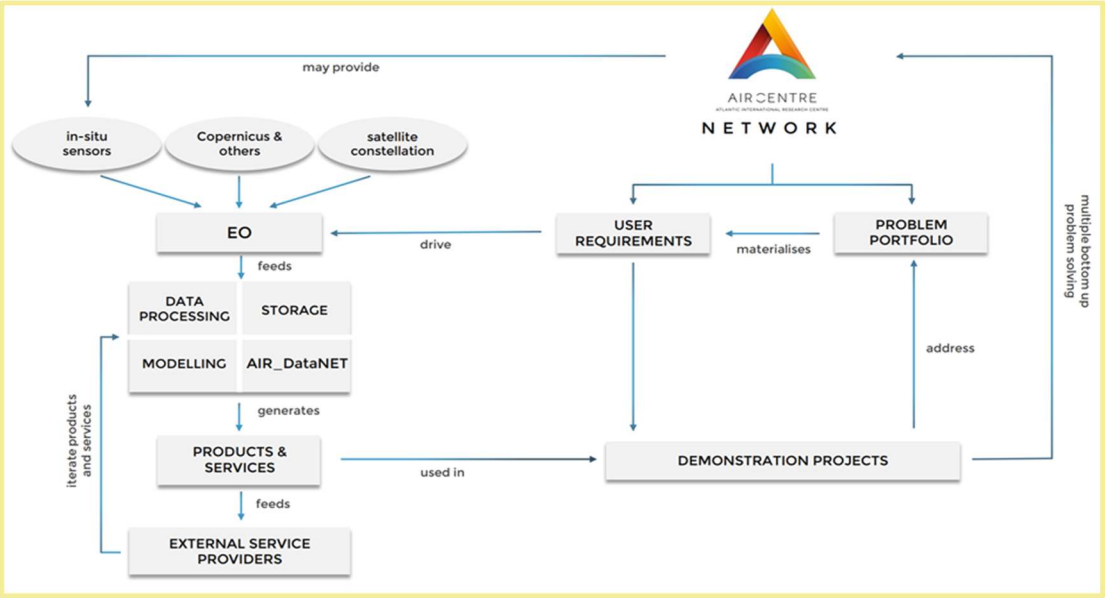


***Fig. 3** – EO Lab operational methodology*

Considering and looking at the coming years the EO Lab will manage a significant volume of data (e.g. in the order of an annual traffic that could reach 45k terabytes per year), and currently is implementing a **Data Centre** which includes the implementation of a computing infrastructure (i.e. network, servers for data management and storage, software/platform for Big data administration, among other activities that include hardware installation for communication between the IT rooms/equipment to which the AIR Centre occupies at TERINOV facilities.

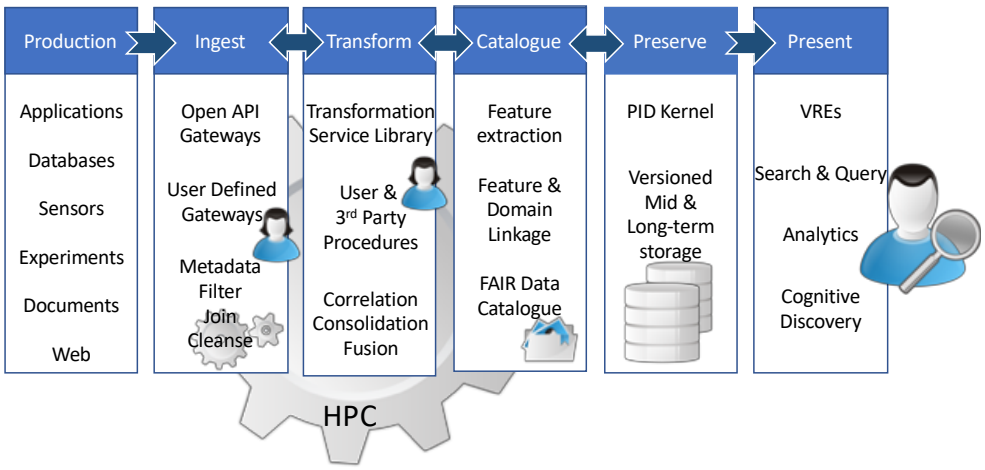
2.4.1.1. AIR DATANET

The AIR Centre Data Intelligence Network (AIR DataNet) is being developed in collaboration with institutions from the respective partner countries. The founding institutions are MACC (Minho Advanced Computing Centre), Portugal, BSC (Barcelona Supercomputing Center), Spain and TACC (Texas Advanced Computing Center), USA. Other current partners include COPPE (Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia), LNCC (Laboratório Nacional de

Computação Científica) and INPE (National Institute for Space Research) from Brazil. CHPC (Centre for High Performance Computing) from South Africa is also expected to join soon.

The AIR DataNet will act as the AIR Centre data foundry. It is being designed to manage all sorts of data relevant to the AIR Centre projects (e.g. datasets, source code, publications) duly curated and catalogued. Researchers will be able to in situ query, process, analyze and render presentations enabling the fulfilment of AIR Centre's research missions. These procedures and services will be fully aligned with the Open Science agenda in the Pan-European Research Area.

The implementation of the AIR DataNet leverages a highly scalable Open Science Cloud node federating storage and processing resources from the MACC, BSC and TACC. The node will start by creating a FAIR1 Data & Metadata Catalogue of the AIR Centre projects and will progressively offer a comprehensive state-of-the-art platform to systematize the ingestion, transformation, cataloguing, preservation a presentation of data (Figure below).



[1] Findable, Accessible, Interoperable and Reusable.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

2.4.2. ATLANTIC CONSTELLATION

The use of satellites in the "Space" component is absolutely fundamental, as it is an observation system that provides synoptic measurements due to its very wide field of view. Part of the Space component of APPOSS consists of satellites that provide free data existing in Europe (e.g. Copernicus program), the US (e.g. NOAA and NASA) and other national satellites from AIR Centre partners. The AIR Centre has been coordinating and contributing to the design of a Flagship project for the development of a constellation of small satellites called the **Atlantic Constellation**, in which it intends to unify its Atlantic network partners in a transatlantic partnership vision for a constellation that will provide important measurements with unprecedented frequency, which allows to develop innovative applications from Space to the Ocean, Earth, Climate and Atmosphere. Part of this constellation will be implemented in coordination with Portugal Space Agency – Portugal Space, The European Space Agency (ESA) and the AIR Centre network countries that have been showing interest in collaborating.

The constellation project, and considering the evolution of specific strategic actions during 2020, it was defined the following configuration:

1. "upstream" which will be the development of small satellites (see Figure 4), of which:

    a. Sixteen (16), in four orbital planes, integrating four (4) payloads (hyperspectral camera, GNSS-R system, AIS system and IoT module with 5G protocol), and with the terrestrial segment (e.g. terrestrial station, control and processing center) and launch;

    b. Three (3), in an orbital plane, integrating two (2) payloads (multispectral high-resolution camera, and module for optical communications), and with the terrestrial segment (e.g. terrestrial station, control and processing center) and launching.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

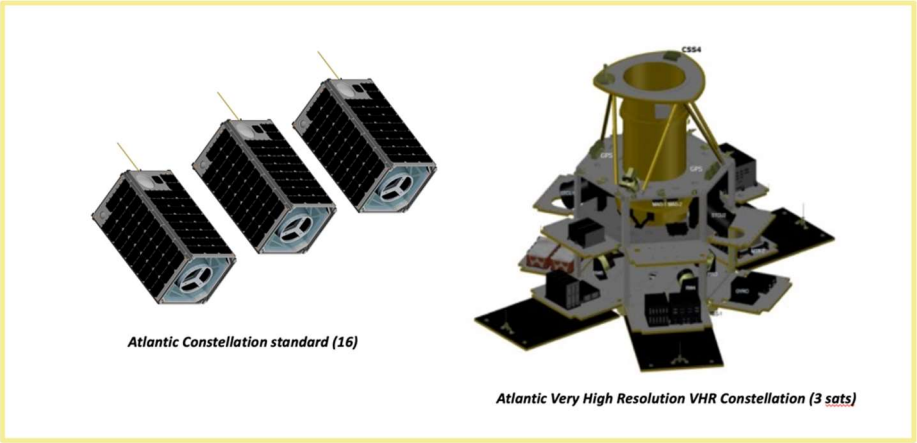


Fig. 4 - *Concept small satellites: 20kg platform - 16 satellites & platform 80kg - 3 satellites*

2. "downstream" which will be the development of applications based on artificial intelligence, Big Data and other methodologies for providing effective services in the areas of oceanography, fisheries, agriculture, environment, natural disasters, renewable energies, smart cities of the future, etc. In this second part of development, studies by the most prestigious international consultants indicate that in the area of applications there is a multiplier factor that can reach the value of 10, so up to 1.500 highly qualified jobs can be created by the end of the decade in 2030, in the areas of digital transformation, artificial intelligence, Big Data as a direct consequence of this project.

2.4.3.Satellite Data Direct Receiving Station (DRS)

The provision of near real time (NRT) information of Earth Observation data is a unique asset for different types of users and applications, both national and international. The local storage, at the AIR Centre's head office in the Azores, of this data will allow its access to regional, national, and international entities with very low latency times, enabling local processing for R&D purposes of new applications without the need to use other servers in other places in the world. The Examples of real-time applications are: extreme weather events warning systems and natural disasters. Examples of users to these applications, can be research centres and universities, entities and local authorities (e.g. entities related to agriculture, forests, fisheries, meteorological services, among others) as well as industry, both established and startups (the latter for the development of new

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

products and services). At the end of 2020 the AIR Centre Board of Directors approved the acquisition and installation of a DRS station (see Figure 4) for data processing of satellites in the AIR Centre's premises at TERINOV. There are currently several satellites that provide satellite data for free (e.g. TERRA, AQUA, Suomi NPP, JPSS-1 (NOAA 20), Feng Yun 3-C and Fengyun 3D), and this dedicated ground-station called Direct Receiving Station (DRS) is capable of receiving this data. The operation of a DRS system can generate large volumes of data daily (in the order of Petabytes), that will be processed in real time at TERINOV facilities. The following example of one-day operations includes 12 daily passes of the aforementioned satellites between 10:00 and 17:00 (and it is also possible to operate at night):

- Terra at 11:23 and 12:59 UTC
- Aqua at 14:38 and 16:19 UTC
- Suomi NPP at 14:00 and 15:41 UTC
- JPSS 1 at 13:13 and 14:51 UTC
- Feng Yun 3C at 10:47 and 12:29 UTC
- Feng Yun 3D at 13:37 and 15:16 UT

The installation and operation of DRS capitalizes on the unique geography of the Azores that confers a unique technical and competitive advantage, because it allows access to this satellite data without time delay when compared to other DRS stations already installed in other locations, critically enhancing the development of NRT applications.

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

Fig 5 – Location for installation of the DRS station in TERINOV

2.4.4. MBON Secretariat

The Marine Biodiversity Observation Network (MBON) is a "coalition of wills" that aims to share knowledge and know-how to assess biodiversity changes in the ocean, including data, products, protocols and methods, data systems and software, to inform and support ecosystem-based management and long-term health and the use of marine ecosystems. MBON was established as a GEO-BON theme, supported by 110 member countries, to expand a global community to develop and share best practices and standards on how to collect and share data on ocean life. One of MBON's major challenges is to demonstrate the Essential Ocean Variables (EOVs) and the Essential Variables of Biodiversity (EVBs), which can be used to track changes in the ecosystem such as the abundance, distribution, and diversity of organisms in the ocean. The secretariat of the MBON network, is integrated at the AIR Centre's headquarters in the Azores and was the result of an agreement concluded in November 2018 between MBON, the AIR Centre and the Regional Fund for Science and Technology (FRCT) in the Azores and activities were initiated at the start of the EO Lab in the last quarter of 2019. During 2020, the MBON Secretariat is 100% operational dedicated to ongoing activities, notably in the definition of a roadmap for the development of future and short-term MBON activities in the regional, national, and global context, as well as in the design of project proposals under the United Nations Decade of Oceanic Science for Sustainable Development.

2.4.5 PhD Scholarship Program 2020-2022

In the first half of 2020, the AIR Centre signed a protocol with the Foundation for Science and Technology (FCT) with the goal of funding 20 (twenty) PhD research grants per year, over a three-year period in the fields of land and ocean observation, climate science and climate change, ocean health and marine pollution including the development of technological aspects, conservation of the marine environment and its biodiversity, the use and exploitation of its resources, the management and application of data, including the processing of large amounts of data, the application of artificial intelligence, robotics or emerging and innovative fields related to technological development and the blue economy. The AIR Centre PhD Scholarship program aims to train the leaders of the future, with the following principles:

- strengthen scientific research and technological development capabilities of the AIR Centre network to better address national priorities and global challenges in the Atlantic region;
- strengthen existing collaborative ties and explore or develop new collaborative links between the AIR Centre and the Portuguese and International scientific community in areas of common interest;
- promote bilateral/multilateral cooperation between Portuguese scientific institutions and other institutions in various Atlantic countries by sharing inclusive knowledge and data to promote job creation, youth entrepreneurship and inclusive sustainable development;
- expand the reach of the AIR Centre mission agenda through broader engagement with academia to demonstrate the social relevance and public value of research;

2.4.6. ARTIFICIAL INTELIGENCE FOR PUBLIC HEALTH (AI4PublicHealth)

The main objective is the support to the definition of the required interventions for the deployment of social, economic and environmental sustainability action-policies:

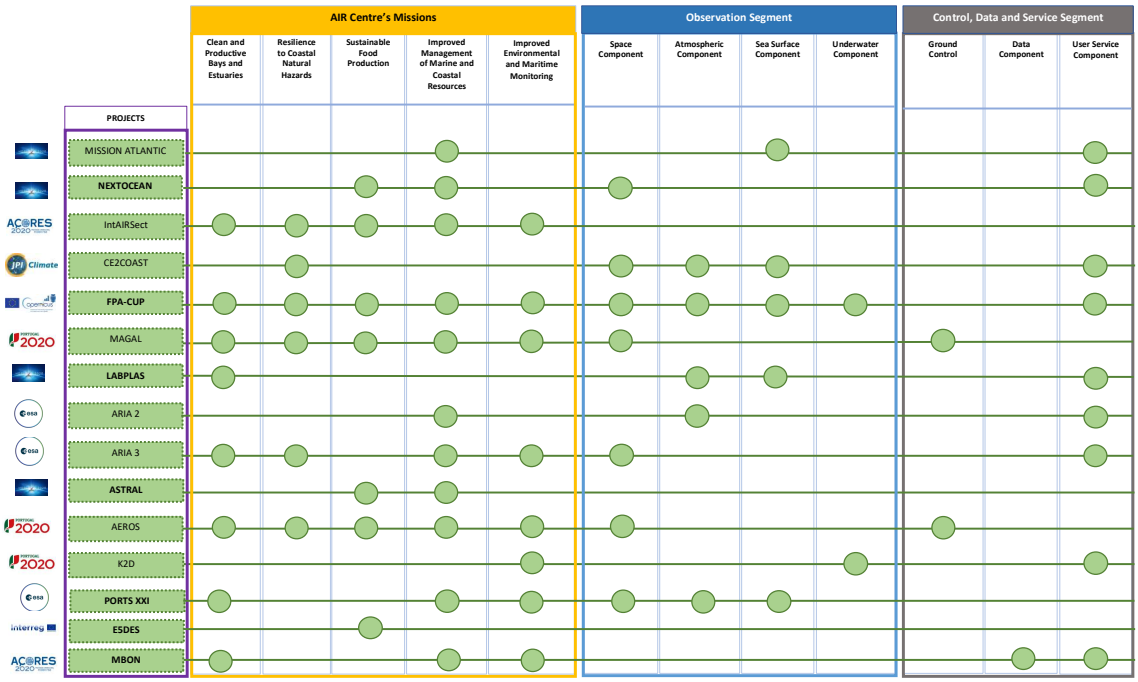
- The base is the use of indicators linked to the UN Sustainability Goals of Agenda 2030

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

- The scope of the project is the generation of products/ information's that could be used directly by local communities to maximize social resilience
- The project methodology is based in the integration of social, health and economic data with environmental data (meteorology, geology, oceanography, atmosphere, space and others)
- This integration shall allow data fusion and the definition of non-obvious patterns and information, supporting important decisions

2.4.7. CURRENT AIR CENTRE PROJECTS ALIGNED WITH MISSIONS

To give a "snapshot" overview of all the main current AIR Centre projects and their alignment with the (5) missions described above, see Figure 6 illustrating the matrix below:



AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

Fig 6 – Location for installation of the DRS station in TERINOV

III) AIR CENTRE ORGANIZATION

1. STRUCTURE

The AIR Centre Board of Directors is composed by institutional members that characterize a structure with the goal of being efficient, transparent and global. The current organization is described, as follows:

Composition of the Board of Directors: as of April 2021

- President of the Board (Portugal): Maurício Guedes, Director of Technology at FAPERJ under the Secretariat of Science, Technology and Innovation of the state of Rio de Janeiro.
- Member of the Board (Portugal): Carolina Rêgo Costa, Legal Adviser of the Portugal Space Agency
- Member of the Board (Portugal): Sergio Ávila, Azores Government Regional Director for Science and Digital Transition
- Member of the Board (South Africa): Selby Modiba, Assistant Director of the Department of Science and Innovation of the South African Government
- Member of the Board (United Kingdom): Nick Veck, Special Advisor of the CEO of Catapult Satellite Applications
- Member of the Board (México): Salvador Landeros Ayala, Director-General Mexican Space Agency
- Member of the Board (Spain): Miguel Belló Moura, CEO of the AIR Centre

Modus Operandi

The AIR Centre Board of Directors meets one time per month, and takes the important strategic, operational and financial decisions and monitors the implementation of the decisions taken. Further, by reviewing and deciding on the financial statements of the AIR Centre, as mentioned in the Statutes, the Board provides the advice, guidance and necessary approvals for the preparation of the General Assembly meetings.

The AIR Centre General Assembly is composed by institutional members that characterize a structure with the goal of being efficient, transparent and global. The General Assembly meets twice per year, and takes all the major policy, strategic, operational and financial decisions. The current composition is described, as follows:

Composition of the General Assembly: as of April 2021

- President of the General Assembly (Portugal): Paulo Ferrão, full-professor of the Department of Mechanical Engineering, IST - Instituto Superior Técnico, Lisbon
- Secretary of the General Assembly (Portugal): Jose Joaquin Brito, Chief Executive Officer (CEO), Oceanic Platform of the Canary Islands (PLOCAN)
- Member of the General Assembly (Portugal): Ana Quartin, Director of International Relations Department at the Portuguese Foundation for Science and Technology - FCT
- Member of the General Assembly (Portugal): Paulo Roberto de Medeiros do Nascimento Cabral , Head of Cabinet of the President of the Regional Government of the Azores
- Member of the General Assembly (Portugal): Guilherme Botelho de Oliveira e Silva, Assistant to the Office of the Secretary for Finance, Planning and Public Administration of the Regional Government of the Azores
- Member of the General Assembly (Spain): Paula Pacheco Santamarina, Head of Administration of the Oceanic Platform of the Canary Islands - PLOCAN
- Member of the General Assembly (United Kingdom): Christopher Matthews, Research Infrastructures Policy Lead at Fusion Research Infrastructures and Establishments Team of the UK Government

- Member of the General Assembly (United Kingdom): James Loveder, Senior Policy Advisor at Department for Business, Energy and Industrial Strategy (BEIS) of the UK Government
- Member of the General Assembly (Nigeria): Asma Ibrahim, Director at the Nigerian Space Research and Development Agency on Climate Change and Modelling
- Member of the General Assembly (Nigeria): Abayomi Oguntunde, Director of Promotion of Science and Technology of the Federal Ministry of Science and Technology of Nigeria
- Member of the General Assembly (Cape Verde): Malik Lopes, President of the Board of Directors of Instituto do Mar (Imar)

AD AIR Centre – TERINOV Parque de Ciência e Tecnologia da Ilha Terceira, Canada de Belem s/n, Terra Chã, Angra do Heroísmo, Azores, Portugal
www.aircentre.org

2. ORGANIZATION CHART, AS OF 2020