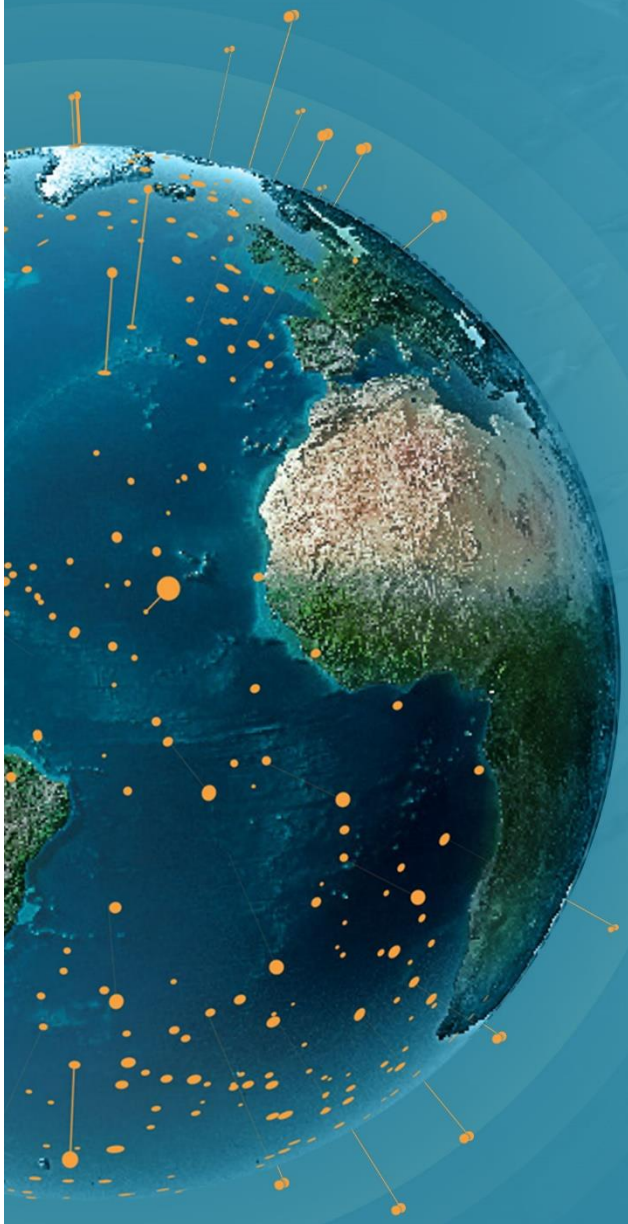

ALL-ATLANTIC OCEAN RESEARCH ALLIANCE

Creating an Atlantic Ocean Community by Implementing the Galway and Belém Statements

AA-MARINET Report:

Adopted Guidelines for RI sharing in the All-Atlantic Region

BUILDING AN ALL ATLANTIC OCEAN COMMUNITY
Implementing the Belém Statement

Report Identifier

Report Name	**AA-MARINET Report: Adopted Guidelines for RI sharing in the All-Atlantic Region**
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ALL-ATLANTIC JOINT PILOT ACTIONS

Following a year-long collaborative process among more than 70 stakeholders at the Atlantic level, the All-Atlantic Ocean Research Alliance Multi-Stakeholder Platform, divided into 5 sub-multi-stakeholders platforms, identified more than 1000 initiatives towards strengthening marine research and innovation collaboration at the Atlantic level, 56 gaps and 79 needs/recommendations to achieve the All-Atlantic Ocean Research Alliance ambition, guided by a total of 20 Strategic Objectives, 20 Operational Objectives, and 10 Key Performance Indicators.

Based on these findings and on the idea of collaboration, alignment, and use of existing resources, they have developed six ambitious and long-term collaborative Joint Pilot Actions:

- **All-Atlantic Training Platform (AA-TP)**
- **All-Atlantic Aquaculture Technology and Innovation Platform (AA-ATiP)**
- **All-Atlantic Marine Biotechnology Initiative (AA-BIOTECMAR)**
- **All-Atlantic Data Enterprise 2030 (AA-DATA2030)**
- **All-Atlantic Blue Schools Network (AA-BSN)**
- **All-Atlantic Marine Research Infrastructure Network (AA-MARINET)**

This report is developed by **All-Atlantic Marine Research Infrastructure Network (AA-MARINET)**, that provides tools to support a transatlantic network of Research Infrastructures initiatives, promoting Trans-National Access and other methods for sharing infrastructures in the Atlantic area. It will work as a platform where stakeholders can share information about planned observation activities and available spare capacities, creating a forum where thematic networking and synergies will bring a better articulation of infrastructure-related activities in the Atlantic basin, improving the support of multidisciplinary science to address global societal challenges.

This report is a deliverable in scope of AA-MARINET Task 5 “Drafting guidelines on RI sharing in the Atlantic” that aimed to build on the case study of ship-time sharing and cooperation opportunities of collaboration and sharing of observation infrastructures (AA-MARINET Task 3) and the Collaborative Portal (AA-MARINET Task 2) to propose principles and guidelines for trans-national access to Marine Research Infrastructures in the All-Atlantic region.

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TABLE OF CONTENTS

CONTENTS

AANChOR is a Coordination & Support Action project aimed to support the implementation of the Belém Statement. It has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 818395.

SUMMARY

AA-MARINET's case study of ship-time sharing and cooperation opportunities of collaboration and sharing of observation infrastructures (AA-MARINET Task 3) was performed in the eastern part of the All-Atlantic basin during the seed-funding phase. The case study took advantage of the opportunity provided by a mission carried out by a hydro-oceanographic vessel of the Portuguese Navy that, between October 2021 and January 2022, covered the region between the continental coast of Portugal, Cabo Verde Archipelago, Angola, and Sao Tome and Principe. In addition to Task 3, a Collaborative Portal was developed to assist the coordination between different actors involved in the observation of the Atlantic basin (AA-MARINET Task 2). This portal provided an environment designed specifically to bring together the broad community involved in ocean observation, thus facilitating the identification of opportunities for collaboration and the direct contact between the different actors. Learning from the implementation of both Tasks it was decided to adopt the European charter of access for research infrastructures: Principles and guidelines for access and related services (https://aircent.re/eu-guidelines-ri), which could provide relevant "non-regulatory principles and guidelines to be used as a reference when defining Access policies for Research Infrastructures and related services" in the All-Atlantic region.

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DRAFTING GUIDELINES ON RI SHARING IN THE ATLANTIC

The importance of Marine Research Infrastructures to the advancement of ocean science and technology is rapidly increasing. In addition to offering broad range of facilities, tools, equipment, and services needed by the science community, marine research infrastructures are essential for attracting, empowering, and building the capacity of young researchers. Moreover, trans-national access should follow EU's strategic priorities for Open Science, Open innovation, and Open to the world.

Since research excellency in ocean science usually requires complex and expensive infrastructures, shared access is becoming indispensable for reducing or optimizing the costs for operators and managers as well as promoting inclusiveness. Nonetheless, there still are several barriers for effective cooperation such as lack of coordination at an international level, different rules and regulations, and poor communication.

AA-MARINET's case study of ship-time sharing and cooperation opportunities of collaboration and sharing of observation infrastructures (Task 3) was performed in the eastern part of the All-Atlantic basin during the seed-funding phase. The case study took advantage of the opportunity provided by a mission carried out by a hydro-oceanographic vessel of the Portuguese Navy that, between October 2021 and January 2022, covered the region between the continental coast of Portugal, Cabo Verde Archipelago, Angola, and Sao Tome and Principe.

The case study looked at three possible scenarios for infrastructure sharing and collaboration in the Atlantic.

- Scenario 1 was tested in the Cabo Verde Archipelago between 30 October and 15 November 2021 and represented joint activities during a focused interdisciplinary survey. It involved, among other things, the use of a ship as a platform for the deployment of a Waveglider and the participation of individuals from partner institutions in the All-Atlantic region, notably local partners.

- Scenario 2 involved the opportunistic employment of a research ship visiting certain locations to place surface floats and to undertake observations of the presence of invasive biological species.

- Scenario 3 began during the ship's mission but continued long after it was completed. The sharing of observation systems and the cooperative operation of stationary platforms erected in the coastal ocean regions of Cabo Verde, Angola, and Sao Tome & Principe were both examined in this scenario.

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Overall, the All-Atlantic community was able to easily construct and implement a wide articulation of efforts amongst many partners after learning that a research vessel was going to make specific scientific observations in a portion of the All-Atlantic region.

This kind of articulation significantly enhanced current capacity to characterise and comprehend key features of the All-Atlantic region by improving existing observational efforts. In addition to the efforts that were originally anticipated, the case study facilitated the sharing of other types of observing infrastructures, enabling the collecting of a wide variety of supplementary observations.

The key findings are the following:

- The All-Atlantic community can play a significant role in developing a support system that could make it easier to get permits and move scientific equipment quickly between institutions and ships and back again, allowing researchers to operate in various Atlantic region nations. This could ensure that prospects for sharing observation infrastructures in the All-Atlantic region are adequately accessible.

- Opportunistic infrastructure sharing, which is a simple technique to put into practise, can dramatically broaden the range of observations that are accessible in the All-Atlantic domain and expand our understanding of key factors influencing this region. It offers the chance to send out observing systems by ships in transit, bringing much-needed observations to remote parts of the Atlantic. However, a method must be devised to ensure that comparable samples can be kept and transmitted to the institutions doing the study if a similar programme is being developed aboard a ship of opportunity that is not docking in ports where logistical assistance is readily available. In the absence of such a system, the viability and success of this kind of cooperative endeavour may be jeopardised.

- Sharing of observation systems and the cooperative operation of stationary platforms a opens a window over the local specificities and local difficulties that promotes a better understanding of the global environment where the observations are conducted. This contributed to improve the cooperative work and opened new perspectives for collaboration and possibilities for observation of a given geographical area.

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- Cooperative actions that are based on sharing infrastructures and that can significantly affect our understanding of the All-Atlantic domain may be very straightforward and only require the timely exchange of information about potential opportunities. This aspect was especially evident in the scenario of opportunistic observations from a ship in transit throughout a wide region of the Atlantic, as well as the potential for the availability of ships, gliders, or autonomous vehicles in the first scenario investigated. With a better organised approach, several of the challenges we encountered during the case study may likely be overcome, for instance, preparing the direct engagement of researchers.

In addition to the above-mentioned case study (AA-MARINET Task 3), a Collaborative Portal was developed to assist the coordination between different actors involved in the observation of the Atlantic basin (AA-MARINET Task 2). This portal provided an environment designed specifically to bring together the broad community involved in ocean observation, thus facilitating the identification of opportunities for collaboration and the direct contact between the different actors.

Learning from AA-MARINET's Tasks 2 and 3 it was decided to adopt the European charter of access for research infrastructures: Principles and guidelines for access and related services (https://aircent.re/eu-guidelines-ri), which could provide relevant "non-regulatory principles and guidelines to be used as a reference when defining Access policies for Research Infrastructures and related services" in the All-Atlantic region.

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FUTURE DEVELOPMENTS

Marine Research Infrastructures can be anything from small specialist laboratories to very large research networked facilities. In the context of the All-Atlantic region, they have distinctive purposes, diverse types of stakeholders, varied geographies, and different levels of investment and budget for operation and management. They can have a unique physical location, or they can be distributed, mobile (oceanographic vessels) or virtual (e-infrastructures). Access can be physical, remote, or virtual.

A detailed guideline and access policy for marine research infrastructures with the objective of increasing trans-national access in the All-Atlantic region would require a comprehensive inventory of facilities, instrumentation, existing access policies, best practices, and national rules and regulations. AA-MARINET's collaboration portal was originally designed as a tool to support the mapping of collaboration opportunities, but it could be further developed to map, categorize and cluster Marine Research Infrastructures in the All-Atlantic region.

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All-Atlantic Marine Research Infrastructure Network Joint Pilot Action (AA-MARINET)

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