

Objective of the group

Aquitaine hopes to mobilise the Atlantic Regions on the issue of innovation in the blue economy. There are endless possibilities for exploiting the Atlantic Ocean (marine energies, marine research and innovation, and naval construction, tourism, boating, maritime transport, ports) which are the keys for the development of our peripheral maritime territories and new kinds of employment. Cooperation among our Regions in these areas can only be beneficial for each one of them. Working together, sharing information, costs, results and they could meet the challenges (climate change, marine pollution, shortages of natural resources, etc.) which go beyond the regional and even national borders.

Area of activity of the Innovation Group – 4 areas/sectors of cooperation were identified in advance:

Ships of the future	Marine mineral resources	Biological Resources and Biotechnologies	Development, Surveillance and Security of the Coast
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This non-exhaustive list will be submitted for assessment by the Working Group and could eventually be added to. In the end we propose to work first on one or two main objectives of the blue economy which emerged from the “Smart Specialisation” of our Atlantic Regions. Among the 4 areas/sectors identified (details in the Appendix) we hope that each of the regions can select one or more that seem to them to be important for the Atlantic partnership. Your responses to this issue will make it possible for us to prioritise the areas of intervention for the Innovation Group in order to set up tangible collective actions.

Actions under consideration/results expected

Different types of actions could be envisaged by the Regions that are interested (production of strategic documents, active participation in consultations on European policies, permanent dialogue with the representatives of community and national institutions) with two possible operational objectives:

<p>* influence the European regulations and find funds from different sources of the EU, essential for companies, for research laboratories and universities to work in the area of maritime innovation (an area which remains to be defined on the basis of the S3 of the member regions).</p>	<p>* provide our institutions with tools (legal and/or financial) to encourage maritime innovation (with the option of conducting an operational project with the Member Regions (in the framework of Horizon 2020 or the European Territorial Cooperation Programmes).</p>
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Member Regions

18 Member Regions (Identify those which wish to work on this subject by writing the name of the Region under the heading corresponding to the document in the appendix).

Technical means

Each Region has its “Smart Specialisation - S3” and must identify one maritime “sector” or a maximum of two (so as not to disperse efforts) where innovation is the most relevant for its territorial development. The intersection of priorities (S3) with those of other Atlantic Regions will enable us to define the spheres of action where we share common interests. The discussions can be carried on by mail/internet with technical meetings for all the members 2-3 times per year (with the option of holding them at our office in Brussels)

Schedule

First meeting to set the group will take place in Bordeaux on 6 October 2015 in the premises of the *Conseil régional* of Aquitaine.

Proposal for 4 “blue innovation” areas (in line with regional “S3-Smart Specialisation”) in the form of 4 technical forms

Form n°1:

Ships of the Future - Nautical and naval ports and industries, energy management component (soft mobility), remote sensing

	Comments
<p>Ships that are more economical, cleaner and safer. The naval, civil, military and pleasure boat sector is subject to security, regulatory and sustainable development challenges, for both its design and construction activities as well as for associated services (maintenance, port logistics, etc.).</p> <p>In these sectors, the keys to innovation and growth are based on, among other things:</p> <ul style="list-style-type: none"> • <i>The engineering, design and construction of clean and innovative ships (with environmentally-friendly antifouling coatings, electrical propulsion, hybrid propulsion...);</i> • Chemistry and industrialisation of materials for marine applications; • The engineering, manufacture/supply and integration of equipment for these same ships (embedded software and linked objects...); • The maintenance, repair and refitting of ships; • The decommissioning of ships; • Ports. <p>In the same way, the ports constitute economic actors of the territory for which the ecological and technological challenges must be met by optimising energy performances, by reasoned waste management and by strengthened competitiveness.</p> <p>Meeting these challenges will involve multi-disciplinary technological innovations such as:</p> <ul style="list-style-type: none"> • Setting up new supply lines for energy, such as natural liquidgas, or quayside electricity for ships in port, • The treatment of solid or liquid wastes stored on board ships, • The improvement and security of handling, • The simplification of maritime procedures and customs verification. 	

Form n°2:

Marine mineral resources: Exploration and exploitation of these resources, desalination, competencies in human and social sciences (maritime law)

	Comments
<p>Access to marine mineral resources is a significant economic stake and a major technological challenge.</p> <p>Technological and scientific advances have made it possible to discover mineral resources on the seabed: nodules and more recently crusts and sulphides. Major elements found there are: barium, cobalt, copper, iron, manganese, nickel, lead, silica and zinc, as well as precious metals, diamonds and the renowned rare earths. The presence of key metals for industry is all the more interesting at a time when land-based reserves and deposits are reaching critical mass and where high technologies, as well as consumer products and the markets linked to them, are dependent on regular supplies of strategic metals, with surges in the prices of some of them to over 700%.</p> <p>The exploitation of these resources is very unequal, as their cost - access, technologies for exploitation, transformation, etc. - do not yet allow for profitable economic plan.</p> <p>In closely related mineral resources, there are also loose seabed sediments and silicate and limestone materials that are already being exploited. The silicate sand and gravel are useful essentially for the construction industry.</p> <p>Access to deep and ultra-deep offshore resources would stimulate innovation and create markets, in particular in the areas of:</p> <ul style="list-style-type: none">• The identification of new deposits,• The limitation of environmental impacts,• The design of architectures and components for extreme environments,• Real-time monitoring and robotics in ultra-deep water,• The associated exploitation of treatment, storage and transfer,• The capacities for inspection, maintenance and repair of equipment. <p>All of these together constitute a real pathway to excellence for offshore exploration and industry.</p>	

Form n°3:
Biological resources and biotechnologies

	Comments
<p>Marine bio-resources refer to the products, co-products and by-products of multi-trophic fishing and fish-farming, marine organisms, fungi and halophytes.</p> <p>The exploitation of marine bio-resources, from production to transformation, has many applications: human and animal nutrition, agriculture, health, cosmetics, chemistry, etc., which are rapidly developing industries. Exploitation will stimulate many innovations and collaborations and the emergence of new opportunities.</p> <p>If marine bio-resources today represent a small part of our maritime economy, the markets related to them are will need to develop in the coming decades, in the face of the challenges of the 21st century.</p> <p>Biotechnologies are a specific mode of enhancement. They depend as much on specialised knowledge as the availability of primary resources – whether they are by-products of fishing, algae, or other vegetal or animal organisms. The promise of biotechnologies leads companies – start-up, small and medium-size as well as the major commercial groups – to invest to better assess the economic potential of these resources.</p> <p>Marine biological resources are increasingly important for biotechnologies, especially algae, the main marine resource massively exploited for biotechnologies – and which is increasingly used in human nutrition.</p> <p>In this sector, the keys to innovation are based in particular on:</p> <ul style="list-style-type: none">• Basic research in biology, chemistry, physics, genetics and modelling, to name only a few...;• Industrial biotechnologies;• The harvesting of marine species in hostile areas;• The capture and bio-sequestration of CO₂.	

Form n°4:
Development, surveillance and security of the coast

<p>This field of action involves the development of products and services to sustainably manage and improve the coastal areas and the marine environment. It includes the surveillance of environmental quality, the prevention of environmental risks, services adapted for use by the tourist industry, information for citizen monitoring, the design and execution of sustainable coastal development and coastal ecological engineering.</p> <p>In these sectors, the keys to innovation are based in particular on:</p> <ul style="list-style-type: none">• metrology and instrumentation,• new information technologies• operational oceanography,• the protection of natural areas,• user services,• eco-citizen monitoring observatories,• participative science,• intelligent, multi-function and integrated development,• the eco-design of coastal structures,• ecological engineering, artificial reefs...	Comments
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