



Making informed choices for our Oceans: quality seawater monitoring system to achieve Blue growth

Brussels, December 10th 2014

Seas and oceans provide an essential part of our wealth and well-being and are a source of food, energy and resources. However, the impact of human activities on the marine environment is strongly increasing and research and innovation are crucial to support a thriving and sustainable maritime economy.

Monitoring seawater: crucial to protect our environment

To protect and use sustainably marine resources better, seawater pollution monitoring is necessary so as to make the right management choices (protected areas definition, choice of transport routes, aquaculture, tourism, fisheries development etc.) Indeed, as stated by the EU Marine Strategy Framework Directive, *“Member States shall take the necessary measures to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest.”* In this context, SMS a European Union co-funded project, which fosters a multidisciplinary scientific approach and involves business partners—is developing a tool that will enable real time *in situ* detection of a series of pollutants as well as toxic algae and their toxins. The wireless transmission of these data in real time will allow the development of a system that can alert authorities when a critical level of pollution or toxins is reached.

Detecting pollutants: which ones and why?

“Thousands of toxic compounds are present in the marine environment, which is why SMS identified “indicator” substances that are representative of the level of pollution”, explains Giuseppe Palleschi, coordinator of the project. SMS will monitor the presence of synthetic compounds which can be found in a series of chemicals, such as pesticides, flame retardants, antifouling compounds and pharmaceuticals. A second group of substances present in coastal areas that are non-synthetic, namely toxic micro-algae and their associated toxins, will also be monitored by the device developed by the project.



This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 613844





Science and business working together towards a common goal

“To have an innovation that succeeds both in going beyond the state of the art and in being practical and efficient on the field, researchers and SMEs have to work hand in hand”, Giuseppe Palleschi explained. “It is challenging to understand the needs of each other, but with discussions, visits and exchanges, working towards a common final application is motivating”, he added.

SMS brings together partners from different horizons and from different fields. Researchers develop novel and innovative biosensors, they miniaturize them and design the devices that will make *in situ* sampling and analysis possible, while SMEs are involved in each step of the innovation’s development (biosensors, sampling, and prototype). Together, they participate in the development of an innovative and competitive marine technology, which aims at helping to protect the environment while sustainably using its resources. The results of this project will, without a doubt, be a useful tool in line with the European Union agenda’s priorities: blue growth and job creation.

About SMS’s partners:

University of Rome “Tor Vergata”, Italy – Coordinator

Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy

Catalan Institute of Nanotechnologies, Spain

Acromed, Sweden

National Institute of Biology, Slovenia

University of Thessaly, Greece

SYSTEA, Italy

Université Hassan II Casablanca, Morocco

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