



Interview of Prof. Palleschi, Coordinator of the EU project « SMS »

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The SMS project develops a novel automated networked system that will enable real-time in-situ monitoring of marine water chemical and ecological status in coastal areas by the detection of a series of contaminants.

The project will try to help protect the marine environment while helping industry to make the best use of it (Blue Growth Strategy). How do you balance the (perhaps) conflicting demands of these sectors on the project?

Three SMEs involved in the project are making devices (Microbia, France), instruments and prototypes (Systea, Italy and Acromed, Sweden) to improve the existing instrumentation to monitor emerging marine pollutants in all oceans, including the coastal areas. So in my opinion there is not a conflicting demand because both research groups and SMEs involved in the project are working to solve the same problems. As marine pollution increases, thanks to the use of novel biosensing technologies, SMEs are helping the “sensorists” to make their devices working in complex matrices, and in real time.



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How does this project differ from or expand on previous work?

Basically this project is expanding the previous work by using an improved biosensor developed in a previous project and adapted to work in real time and to monitor toxic algal species. Moreover, SMS will prepare new biosensors based on aptamers that detect new pollutants in marine waters as biocidal compounds in antifouling paints (marine transport) – Flame Retardants – plastic components, pesticides, marine toxins, and pharmaceuticals as sulphonamide.

How were the pollutants to be detected selected for the project?

The pollutants are the ones listed in the call. We selected specifically those.

Why were the three marine test areas chosen?

Two areas, "La Spezia" and the Gulf of Trieste, in Italy, have some polluted areas where we can test our sensors, however there is also a marine park in Greece that is under pollution control by the Greek Government. This unpolluted marine park is used as a "blank" to calibrate our sensors.



How are the 11 work packages grouped (i.e. how many packages will work on sensor construction, how many on wireless networks etc)

One of the WP is devoted to the management (WP 11), the others are grouped in this way:

The first 4 WPs are dealing with the development of the new biosensors for the pollutants above described. This activity is performed by the research institutions of Italy, Spain, France, and Morocco. Another research institution ENEA (WP 8) is performing the sensor validation, to confirm the good performances of the developed probes. The SME Acromed (WP5) is building the sampling and preconcentration apparatus that is fundamental to have samples measurable in real time. The SME Systema is assembling the sensors and the sampling system in a main box (WP 6) which will work on a wireless technology developed by the Greek partners (WP 7). The partner of Slovenia (WP 9) will collaborate to work to assemble the prototype on buoys



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installed in the gulf of Trieste and will help to assemble it and perform measurements also in the other marine test areas.

Dissemination, training and demonstrations will be organized by Alienor (WP 10).

What are the advantages of working in both the public and private sectors?

People working in private sectors are more realistic than scientists working in public institutions, so they can give advices on how to make these sensors ready for the instruments they develop and useful to work properly in real time.

Public sectors have the advantage to do fundamental research that then can be applied by the industries. The free selection of the research activity in the public institutions is fundamental to build innovative devices.

Is there anything else you would like highlight about the project?

This is an ambitious project with some risks since the new pollutants are present in marine waters at very low concentrations, however the proposed new sensors and the associated technology makes me optimistic to reach the SMS objectives.



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