Geophysical Research Abstracts,
Vol. 11, EGU2009-12584, 2009
EGU General Assembly 2009

SeaMon-HC Buoy. A specific real-time-lightweight-moored platform as a tool for fast hydrocarbon detection

C. Barrera, MJ Rueda, R Moran, C Llerandi, and O Llinas

Instituto Canario de Ciencias Marinas, Oceanography, Las Palmas, Spain (carlos@iccm.rcanaria.es, 0034 928 132908)

The present paper-work describes the design, last development stages and the derived results from a specific buoy platform for fast hydrocarbon detection in seawater.

Under the name of SeaMon-HC, (Patent No. P200302219/8) the buoy represents a very chief tool for coastal monitoring, mainly surrounding areas with a high oil-spill risk level, like harbours, off-shore fish farming, beaches and so on. Nowadays, the Macaronesian area has nine units working in real-time, under the frame of the Red ACOMAR Network.

The main innovative aspect from this buoy is the detection system. It's based in polymer technology, working as a resistance, who increase its value when the pollutant on water surface is detected. The response time from the sensor is a direct function of the hydrocarbon volatility level. For hydrocarbons with high volatility levels (like petrol), the sensor needs less time (around 3 minutes) than others with less volatility such as oils.

SeaMon-HC is an autonomous, modular, reusable and a very low-cost development integrated by four subsystems (SS): SS-Flotation (different materials and shapes available); SS-Sensors (hydrocarbon detector and additional sensors –up to 15-, to solve specific sensor configuration requirements); SS-Power Supply (equipped in its basic configuration with a couple of solar modules and two 12V batteries) and the SS-Communication (based on a RF or GSM/GPRS modem technology, with a selectable communication frequency).

All SeaMon-HC units, as well the rest of the ODAS buoys who joint together the Red ACOMAR Network, works in real-time, sending the collected information to the control centre that manages the communications, providing data, in a useful form (as a web site), to diverse socio-economic important sectors which make an exhaustive use of the littoral in the Macaronesian region. The access to the information by the users is done through a specific GIS software application.