Title: MOBY – A real time Oceanographic observatory

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Abstract
In 2010 IH (Portuguese Hydrographic Office) will celebrate its 50 years of activity, dedicated to the observation and study of the sea. Even older, it's the Portuguese effort to discover the ocean, supported by ocean cartography, sea-floor mapping and environmental observations. This national responsibility mission was given to IH in 1960, and since then both hydrographers and oceanographers work together to map, understand and predict the ocean.

The sea level has been measured systematically by IH for more than four decades, along the Portuguese coast and overseas. In the early 80's the wave gauges addicted to this network the assessment of the sea state. Periodically Portuguese oceanographic ships survey the North Atlantic Ocean and instruments are deployed along the West Iberian margin.

The new century brought environmental issues that require a continuous monitoring effort, becoming real-time observatories inevitable. To respond to this challenge IH is developing and integrating state of the art systems, aiming the real-time measurement of the near and off-shore ocean.

One of these new generation observatories is the MOBY system, composed by a METOC-ODAS buoy, acoustically coupled with a bottom Lander and radio linked with a receiver station at the shore. The bottom Lander is equipped with up-looking and down-looking ADCPs (Acoustic Doppler current profilers), as well as temperature, conductivity and turbidity sensors. Most of these measurements are sent to the surface by acoustic modem link, where an oceanographic buoy is prepared to receive it. This buoy lodges other oceanographic and meteorological sensors (wave gauge; near-surface current-meter and termistors; anemometer; air temperature and pressure), as well as a data logger system linked to a radio modem, that transmits all these bottom and surface measurements to shore. At shore a radio receiver is mounted at a light house, here a PC controls the data flux and disseminates the information by an IP address.

Presently, this MOBY system is being installed near Roca Cape (West Iberian Coast), in the frame of a multidisciplinary monitoring project designated by AQUA-SIG. This project intends to establish a long term coastal observatory in a complex region, where the ocean meets a very dynamical river flow in the presence of sever bathymetric features. This communication pretends to present the MOBY observatory, by revealing the technological challenges, the system dimensioning, its role in the Portuguese environmental network, the AQUA-SIG application and IH future developments.