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Data acquisition in coastal areas: use of floating robots and numerical models

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Within the EU-FP7 project "Hydronet", autonomous floating buoys and robots are being developed, which carry various sensors that provide data on oceanographic and environmental parameters. The chosen pilot sites in the northern Mediterranean Sea are subject to pollution with toxic metals and potential oil spills. New sensors are being developed for in-situ measurements of Cd, Cr, Hg and hydrocarbons.

Numerical models are used in two ways: to forecast the sea state (circulation) in order to help navigate the robots, and to simulate the transport and fate of pollutants under study. The data from regional oceanographic and meteorological models are being used as the initial and boundary conditions for both types of simulations. GIS-based models are used to simulate input from rivers and background area.

The use of linked modelling tools and sensors will decrease the costs of sampling, while the measured data will improve the results of the transport model predictions.

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