

**Programme:** MIUR – Legge 488

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**Duration:** 24 months

**Coordinator:** Softeco Sismat SpA (I)

**Partners:**

Università di Genova – Dipartimento di Ingegneria Ambientale (I)



<http://webtest.softeco.it/idro/index.html>

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## OBJECTIVES

The main objectives of the IDRO project have been the development of a set of software services for the sustainable management of the water basins and the protection of the geological environment. Waters in the European Community are under increasing pressure from the growth in demand for sufficient quantities of good quality water for all purposes.

Local authorities shall implement the necessary measures to prevent deterioration of the status of all bodies of surface and ground water, and shall protect, enhance and restore all bodies of surface and ensure a balance between abstraction and recharge of water.

The software service developed within IDRO project support public administrations in performing these actions and managing the water resource avoiding over-exploitation and degradation of the river basins.

The services allow to collect manage and analyse all the main water resources data and to simulate, on the basis of the data collected, the effects of the water exploitation (water supply, irrigation, power plant or industrial production) on the environment.

Surface and ground water modelling techniques have been designed, implemented and tuned with the support of the University of Genova, and have been tested in several northern-east Italian river basins, in the Liguria region.

The main services developed are:

- A cadastre, based on a commercial database and a GIS, of the hydrological data, which integrates physical territorial data (rain, temperature and water flow) and administrative data (catchments, water intakes, request for new water resource exploitations...).
- A predictive model which allows to estimate the water flow on the basis of a runoff rainfall simulation.
- A portal for the dissemination and the collection of the data via Internet



## PARTNERSHIP

The project has been carried out by Softeco Sismat S.p.A., with the co-operation of the “Università di Genova, Dipartimento di Ingegneria Ambientale”, which has performed the hydrological study and designed the models, and of the “Ufficio Idrografico e Mareografico di Genova”, which collects and manage the river basin data in the Liguria region.

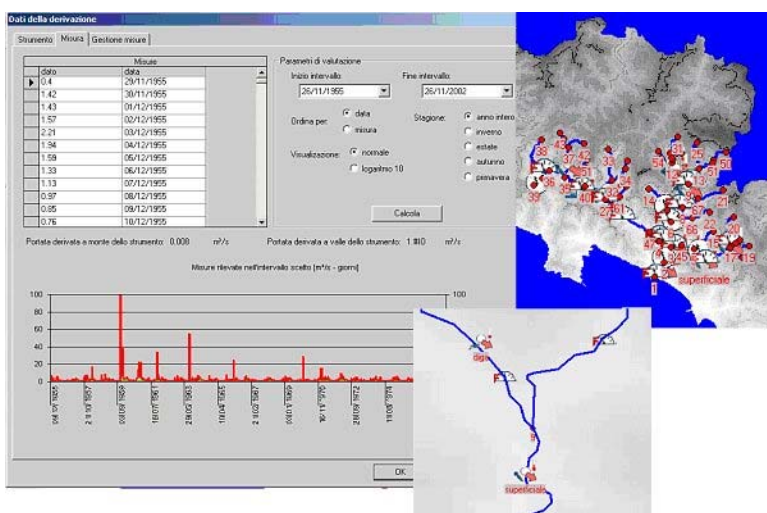
The software services developed are presently under test at the “Provincia di Genova”, the public authority which administrates the water basin in the Genova district of the Italian region Liguria.

The project has been financed by Italian State (MIUR).

## PROJECT OUTLINE

The work performed during the project by Softeco Sismat, with the cooperation of the University of Genova, has allowed the design, the development and the test of an integrated set of software services, dedicated to the public administrations, which support the management of the water basins and the issue of water exploitation concessions to companies or single users.

The software services allow the definition and the application of innovative land management protection policies.



They support several simple but effective water management and modelling techniques, which can be adopted by the public institution, integrated with the present activities, and which allow a relevant improvement in the water management.

In particular a runoff rainfall model has been implemented which allows to simulate the daily evolution of the water resources in the basins, and to optimise the water resources exploitation, without compromising the basins natural environment.

The model allow to characterize the river flow with the “duration curves”, these curves give a synthetic and effective description of the water availability in the rivers.

Moreover the software services allow to disseminate the hydrological data and make them available to companies and institutions which operate in environment protection area, and to all the citizens.

The technology has been tuned and tested on the eastbound water basins of the region Liguria, and it is presently under test at the “Provincia di Genova”.

The software has been designed and developed using a modular and open approach and can be adapted to several other regions in Italy and Europe.