



### At a Glance

**Project:** HYDROSYS

Advanced spatial analysis tools for on-site environmental monitoring and management

**Projects coordinator**

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**Duration:** 36 months from 01/06/2008

**Total cost:** 4.315.691 €

EC Contribution 3.260.611 €

**Programme:**



Seventh Framework Programme

**Project web site:**

<http://www.hydrosysonline.eu>

**Consortium:** 7 Partners from 4 countries



HYDROSYS aims at providing a system infrastructure to support teams of users in on-site monitoring events analysing natural resources. The project introduces the innovative concept of event-driven campaigns with handheld devices, potentially supported by an unmanned aerial vehicle (UAV). In these campaigns, users can setup and retrieve data from mobile sensorstations, the UAV and external sources (sensor network) generating dense information on a small area. The sensor network system gathers and stores sensor data, and processes simulations based on physical process models. To obtain rich data sets from a specific location, additionally, remotely controlled cameras are deployed, mounted on sensorstations and below the UAV. Users can analyse the environment using cell phones and handheld computers, supported by advanced user interface techniques. The system is validated in two application areas, dealing with pollution caused by storm water, and permafrost melting. The project will improve environmental monitoring and management for environmental scientists, institutions and service providers, through its strong integration of handhelds and sensor networks.

The project will progress well beyond the current state in the art, by dealing with short-term events and detailed analysis of small sites. The analysis of such events is hardly supported by current methods, but has a large impact on environmental degradation. Additionally, information is dispersed to citizens by providing mechanisms to access top-level environmental data. Within the project, cutting edge interdisciplinary research will be performed to

develop user-centred solutions.

When the data is integrated with analytical tools in a shared information space it will also aid a wide range of managers and planners in the pursue of more environmentally sensitive solutions to engineering problems. To aid the process, the research is steered by considerable end-user involvement throughout the full project.

### **Participants:**

- TECHNISCHE UNIVERSITAET GRAZ, AUSTRIA
- ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE, SWITZERLAND
- EIDGENOESSISCHE FORSCHUNGSANSTALT WSL , SWITZERLAND
- TEKNILLINEN KORKEAKOULU, FINLAND
- THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM
- LUODE CONSULTING OY, FINLAND
- UBISENSE LIMITED, UNITED KINGDOM