



## Press release

### **EC-funded project HYDROSYS seeks advanced spatial analysis tools for on-site environmental monitoring and management.**

After the project kick-off in Graz, Austria, on June the 9<sup>th</sup>, 2008, the HYDROSYS project consortium members have successfully started the analysis and definition of new, highly advanced spatial analysis tools for on-site environmental monitoring and management. The project consortium brings together five universities and two SMEs from Austria, Switzerland, The United Kingdom and Finland. The HYDROSYS partners represent some of Europe's most prestigious organizations, with disciplines spanning from computer science to robotics and hydrology.

The project consortium addresses the need to take a closer look at ecological processes as a response to the continuously increasing pressure on our ecosystem. HYDROSYS extends current practice by enabling on-site data collection and visualization, enabling new ways of observing ecological processes. The research aim of the project is to provide a system infrastructure to support teams of users in the on-site monitoring of events and analysis of natural resources. The project will introduce the innovative concept of event-driven campaigns using handheld devices, potentially supported by an unmanned aerial vehicle (UAV). Event-driven campaigns provide users the capacity to analyze and predict environmental changes on-site, supporting the process of taking appropriate countermeasures to avoid environmental degradation. During these campaigns, users will be able to setup and retrieve data from mobile sensorstations, the UAV and external sources (such as permanent sensor networks) in order to generate dense information on a small area. The whole sensor network system will gather and store sensor data, and process simulations based on physical process models. Hence, a shared information system fusing heterogeneous data sources will be provided that supports teams of stakeholders to monitor environmental processes on-site, complementing remote monitoring and management. To enrich the data sets from a specific location, additional remotely controlled cameras will be deployed, mounted on sensorstations and below the UAV. Users will be able to analyze the environment using mobile phones and handheld computers, supported by advanced user interface techniques.

The project will improve monitoring and management for environmental scientists, institutions, service providers, engineering companies and municipalities 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. Furthermore, information is made available to citizens by providing mechanisms to access top-level environmental data. Within the project, cutting edge inter-disciplinary research will be performed to develop user-centered 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 pursuing more environmentally sensitive solutions to engineering problems. To aid the process, the research is steered by considerable end-user involvement in all its phases.

The EC-funded 7<sup>th</sup> Framework project HYDROSYS (224416, DG-INFOS) is a cooperation between the following institutions and companies: Graz University of Technology (Austria), Ecole Polytechnique fédérale de Lausanne (Switzerland), Swiss Federal Institute for Forest, Snow and Landscape Research (Switzerland), Helsinki University of Technology (Finland), University of Cambridge (United Kingdom), Luode Consulting Oy (Finland) and Ubisense LTD (United Kingdom).