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AWARE: A tool for monitoring and forecasting Available WAter REsource in mountain environment

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AWARE is a Specific Targeted Research Project funded with the contribution of the European Commission - Directorate General for Enterprise and Industry - under the Sixth Framework Programme (GMES).

AWARE is carried out by a team of hydrologists, remote sensing specialists, and information system analysts from five European countries with a long term experience in modelling and representing environmental phenomena, who will be cooperating for 3 years (2005-2008). The partners are: Institute for Electromagnetic Sensing of the Environment CNR, the Polytechnic of Milano, the Remote Sensing Data Engineering Srl, in Italy; the Swiss Federal Institute for Snow and Avalanche Research, in Switzerland; the Institute for Hydraulics, Hydrology and Water Resources Engineering of Vienna University, in Austria; the Faculty of Civil and Geodetic Engineering of Ljubljana University, in Slovenia; the Cartographic Institute of Catalonia and the Information Systems Department of University "Jaume I", in Spain.

The main goal of AWARE is to provide innovative tools for monitoring and predicting water availability and distribution in those drainage basins where snowmelt is a major component of the annual water balance, such as the Alpine catchments.

The Project will develop appropriate models to represent snow-pack dynamics and snowmelt runoff based on the combined use of satellite Earth Observation data and in-situ hydrological and meteorological measurements.

Model calibration, validation and demonstration will be performed considering relevant catchments representative of various geographic conditions (climate, geology, geomorphology, hydrography) in the European Alps. In particular, case study basins will be distributed inside the Alpine area, therein including Austria, Italy, Switzerland and Slovenia.

Another important goal of the AWARE project is to bridge the gap between available data about the state of water resources and information requested by different stakeholders involved in the local water resources management.

Models developed within the project will be implemented in a geo-service, an online interactive system allowing users (such as hydropower companies, irrigation consortia, municipal water supply) to exploit local and global data and to apply models developed in the project to local catchments.