Project

Feasibility of Using Satellite Technology in the Water Management Sector

The European Space Agency is committed to promoting the use of satellite technologies in the water management sector. Working together with various partners, EBP carries out an analysis of market demand and assesses the technical and economic feasibility of the services in question.

The European Space Agency (ESA) introduced its Integrated Applications Promotion (IAP) programme in 2008 to promote the development of satellite-based services. Working together with CSEM, Noveltis, the Association of Lake Constance-Rhine River Water Companies and the University of Geneva, EBP has now conducted a study to determine the feasibility of using new satellite-based technologies in the water management sector.

Lasting approximately one year, the initial focus of the feasibility study was to complete a broad-based analysis of the potential demand for improved methods of monitoring and forecasting water quantity and quality developments and more efficient methods of monitoring key infrastructures on behalf of various stakeholders, including water companies, agricultural stakeholders, environmental agencies and private sector hydrological service providers.

The study results showed considerable advantages to new satellite-based technologies in the monitoring of the infrastructure used for our water supply systems. On behalf of a group of British water companies, new satellite-based service ideas were developed and their market prospects were examined in the light of existing regulatory and trade

Client

European Space Research and Technology Centre (ESTEC) within the European Space Agency ESA

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conditions. The findings were then used as a basis for drafting a corresponding business model for marketing systems that make use of time series observation data generated by satellites or unmanned aircraft (drones) to improve our assessments of the risks to above-ground drinking water pipelines that are associated with land use changes, soil erosion and landslides. The data are to be made available to customers in the form of maps and statistical analyses on an online platform.

The service's individual components were designed and a proof of concept of the system were tested to determine the extent to which they could be expected to meet the relevant requirements. For instance, unmanned aircraft were tested and prospective customers were given a demonstration of an online-platform prototype. Based on the favourable results, the study's coordinators recommended the further development of the envisaged services in the context of a demo project.

We were responsible for analysing user and stakeholder needs and for carrying out market and cost-effectiveness analyses to assess the economic and non-economic feasibility of service developments.
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