Water Quality Service for Lakes

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Lake water quality can be monitored with several methods: traditional, automated or remote. Actors in the public or private monitoring are usually specialized in certain methods. Therefore additive information and enhanced accuracy that can be gained with the joint use of various methods are often not utilized. This project aims to develop an operations model for an environmental monitoring service that combines the functionality of public and private sector, and on the other hand, several monitoring data sources, including remote sensing. General goal is to generate operations model than can be copied to other monitoring regimes in Finland. This model provides business opportunities for private sector as a service provider, as an end user or as a data provider. At the same time it allows standardized organization of local environmental data which is highly valuable for research organizations. Project demonstrates a water quality service for lakes that offers both chargeable and free of charge environmental information for local end users. The commercial side of the service provides water quality information which is specifically tailored to users' needs. The public side of the service publishes general environmental information and encourages citizens to participate with discussion forums and 'blogs'. The technical solutions in this project are developed on the co-operation between University of Helsinki, Finnish Environmental Institute, University of Jyväskylä and Helsinki University of Technology. Technical goal is to build a local database and generate processing tools that are found useful both in the private and public sector. The project develops also the idea of clustered and interoperable network of local databases. After an end user questionnaire survey, a common data base for several environmental data sources including automated measuring stations, remote sensing and traditional measurements is built. All data is tagged with XML-based metadata. Automated interpretation, combination and forecast tools that use this data bank are then developed, as well as automated methods that transfer the information in standardized form to the service provider. Furthermore, the project develops a cheap 'laymans' device for measuring water quality, which is based on the cameras in mobile phones. This opens new business possibilities for e.g. mobile service solutions that are emphasized in the service development of the project. Project is included in the Water Programme by TEKES (the Finnish Funding Agency for Technology and Innovation). It is also supported and/or participated by following organizations/companies: Vesijärvi foundation, Nab Labs Oy, EHP-tekniikka OY, Avenla Oy, Länsi-Uudenmaan Vesi ja Ympäristö Ry, Luode Consulting Oy and Labyrintti Media Oy.