Geoscientific implementation of Sensor Web Enablement (SWE) standard

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Sophisticated predictive models require continuous inflow of information from different sensor networks. Therefore, there is growing need to improve the exchange of data between the involved institutions.

In a large national project, including all major scientific institutes of the Netherlands, a testbed is created, to collect and convert actual measurement data from the meteorologic, hydrogeologic, surface water, soil humidy, civil and remote sensing domain in 2008 and 2009. OGC SWE services and data encodings were used to provide interoperability and web-based access to existing monitoring systems.

After one year of hard work, the goals of the projects were achieved. The data can be freely accessed across all domains, and fed to multi-domain models: for example a flooding model for rivers uses the meteo-, the groundwater- and soil-humidity data, and the biomass growth model combines the field data with remote sensing pictures.

Within the scope of this project, several new sensors were installed for educational purposes, giving the students the opportunity to directly manipulate these sensors. Finally, the concerned citizens were allowed to access the sensor networks through a very friendly user-interface based on Google Earth.

The main issues encountered in this project were: (1) large size of the messages and (2) restrictive attitude of commercial and governmental institutes.