Application of OGC standards at the Royal Netherlands Meteorological Institute (KNMI)

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The Open Geospatial Consortium (OGC) defines many standards for geospatial and location based services. The OGC Web Map Service (WMS) is a web service to generate visualizations of geospatial data in the form of 2D images suitable for transfer over the internet. The OGC Web Coverage Service (WCS) is similar, but is used to transfer geospatial data, instead of visualizations. These standards help to make data more useable and interoperable.

These standards are being used more and more in several domains like meteorology, hydrology and climatology. At KNMI, many features of the WMS and WCS standard are used to disseminate meteorological data and climate data. Time, height and forecast dimensions are required to make climate and forecast data available, and named Styled Layer Descriptors (named SLD) are used to visualize data using contour lines, shading and custom wind barbs. Because these features are required, a custom implementation of the WMS/WCS standard was needed. The software is originally developed in the ADAGUC project and consists of an OGC WMS/WCS server and a WMS client.

Currently, the software is applied and extended in various projects at KNMI. It is used to make precipitation radar data available in WMS/WCS where challenges were the five minute time interval. Another application is the dissemination of MSG Cloud Physical Products (MSG – CPP) with WMS. In order to keep good response of the web service, the software was adjusted and optimized to cope with the huge data volume. In order to monitor global volcano activity, near real time visualization of sulfur dioxide measured by the OMI instrument is made available in WMS. Another application is the dissemination of EC-Earth (global climate model) data in OGC services. One of the latest features of the WMS server is the possibility to use OpenDAP as a data source, enabling the use of WMS/WCS on top of OpenDAP.

The application of these OGC services and software will be presented. The client and server software will be made open source in 2011. Goal is to make the client software available in spring 2011. The server software will be released in a later stage.