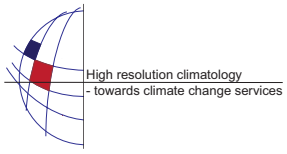
EMS Annual Meeting Abstracts
Vol. 7, EMS2010-521, 2010
10th EMS / 8th ECAC



Grid Data Management and Customer Demands at MeteoSwiss

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Data grids constitute the required input form for a variety of applications. Therefore, customers increasingly expect climate services to not only provide measured data, but also grids of these with the required configurations on an operational basis. Currently, MeteoSwiss is establishing a production chain for delivering data grids by subscription directly from the data warehouse in order to meet the demand for precipitation data grids by governmental, business and science customers.

The MeteoSwiss data warehouse runs on an Oracle database linked with an ArcGIS Standard edition geo-database. The grids are produced by Unix-based software written in R called GRIDMCH which extracts the station data from the data warehouse and stores the files in the file system. By scripts, the netcdf-v4 files are imported via an FME interface into the database.

Currently daily and monthly deliveries of daily precipitation grids are available from MeteoSwiss with a spatial resolution of 2.2km x 2.2km. These daily delivered grids are a preliminary based on 100 measuring sites whilst the grid of the monthly delivery of daily sums is calculated out of about 430 stations.

Crucial for the absorption by the customers is the understanding of and the trust into the new grid product. Clearly stating needs which can be covered by grid products, the customers require a certain lead time to develop applications making use of the particular grid. Therefore, early contacts and a continuous attendance as well as flexibility in adjusting the production process to fulfill emerging customer needs are important during the introduction period. Gridding over complex terrain can lead to temporally elevated uncertainties in certain areas depending on the weather situation and coverage of measurements. Therefore, careful instructions on the quality and use and the possibility to communicate the uncertainties of gridded data proofed to be essential especially to the business and science customers who require near-real-time datasets to build up trust in the product in different applications. The implementation of a new method called RSOI for the daily production allowed to bring the daily precipitation field up to the expectations of customers.

The main use of the grids were near-realtime and past event analysis in areas scarcely covered with stations, and inputs for forecast tools and models. Critical success factors of the product were speed of delivery and at the same time accuracy, temporal and spatial resolution, and configuration (coordinate system, projection). To date, grids of archived precipitation data since 1961 and daily/monthly precipitation gridsets with 4h-delivery lag of Switzerland or subareas are available.