



Integration of upper air data in the MeteoSwiss Data Warehouse

M. Musa, Ch. Haeberli, and D. Ruffieux

MeteoSwiss, Kraehbuehlstrasse 58, 8044 Zuerich Switzerland (marc.musa@meteoswiss.ch)

Over the last 10 years MeteoSwiss established a Data Warehouse in order to get one single, integrated data platform for all kinds of meteorological and climatological data. In the MeteoSwiss Data Warehouse data and metadata are hold in a metadata driven relational database. To reach this goal, we started with the integration of the actual and historical data from our surface stations in a first step, including routines for aggregation and calculation and the implementation of enhanced Quality Control tools.

In 2008 we started with the integration of actual and historical upper air data like soundings (PTU, Wind and Ozone), any kind of profilers like wind profiler or radiometer, profiles calculated from numerical weather models and AMDAR data in the Data Warehouse. The dataset includes also high resolution sounding data from the station Payerne and TEMP data from 20 European stations since 1942.

A critical point was to work out a concept for the general architecture which could deal with all different types of data. While integrating the data itself all metadata of the aerological station Payerne was transferred and imported in the central metadata repository of the Data Warehouse.

The implementation of the real time and daily QC tools as well as the routines for aggregation and calculation were realized in an analog way as for the surface data. The Quality Control tools include plausibility tests like limit tests, consistency tests in the same level and vertical consistency tests.

From the beginning it was the aim to support the MeteoSwiss integration strategy which deals with all aspects of integration like various observing technologies and platforms, observing systems outside MeteoSwiss and the data and metadata itself. This kind of integration comprises all aspects of „Enterprise Data Integration“.

After the integration, the historical as well as the actual upper air data are now available for the climatologists and meteorologists with standardized access for data retrieving and visualization. We are convinced making these data accessible for the scientist is a good contribution to a better understanding of high resolution climatology.