# New Features of the GNSS Data Center

History

The Federal Agency for Cartography and Geodesy (BKG) operates the GNSS Data Center (GDC) since 1992 and planned a re-design of all components in 2002. After 2 years developing and 1 year testing the new system was launched in 2005. LINUX operating system, Apache web server, MySQL data base and Perl script language are basic elements of the system as it has been presented at the 2004 IGS workshop in Berne. We show here new features of the GDC to better support user requirements. The archive is accessible via ftp and http. While using the http access the user is guided through well designed web pages with several functionalities. The columns "file status", "station information", "download" and "search functions" hold various meta data for public users. Also the administrator has got some more functionalities for administrating the whole data center.
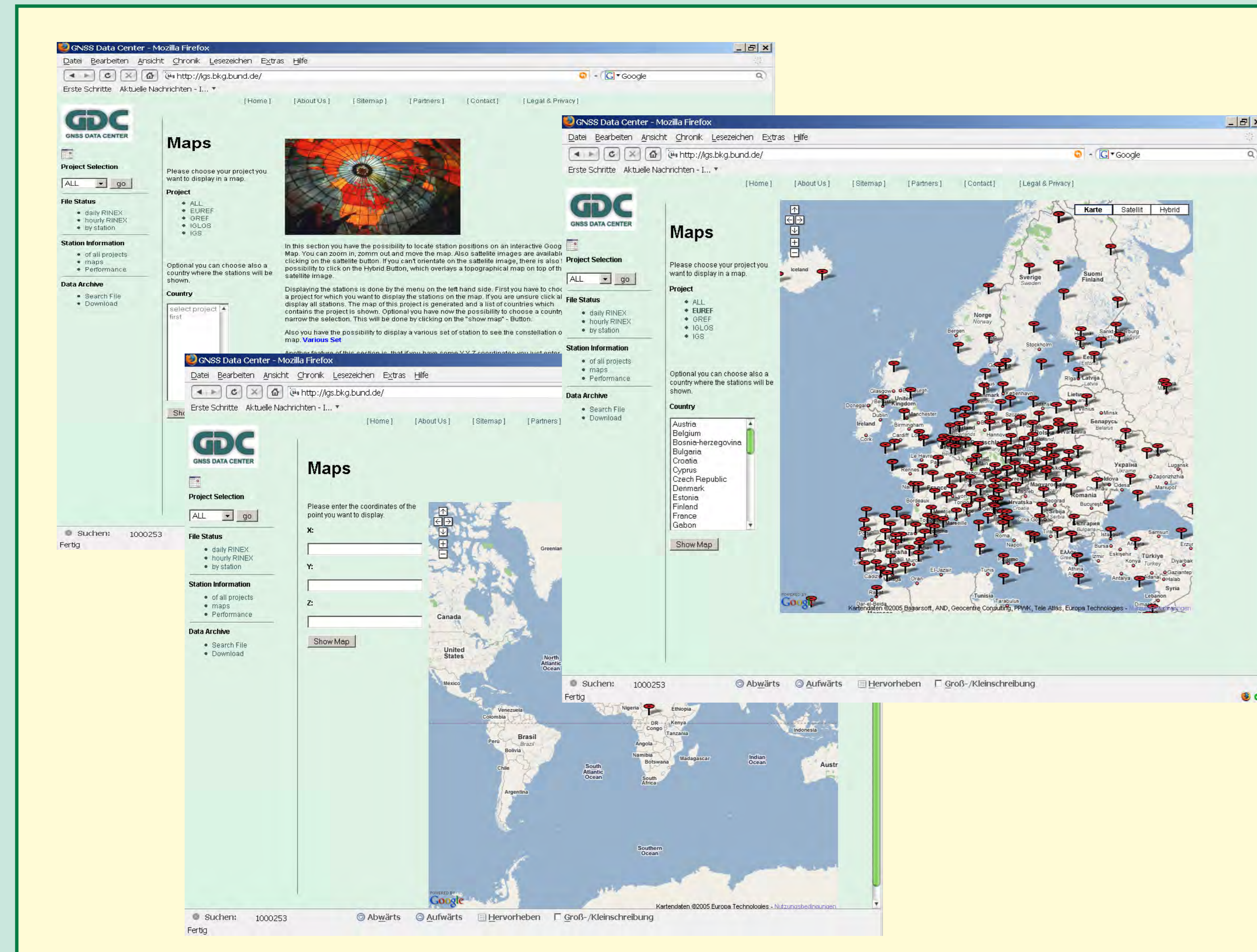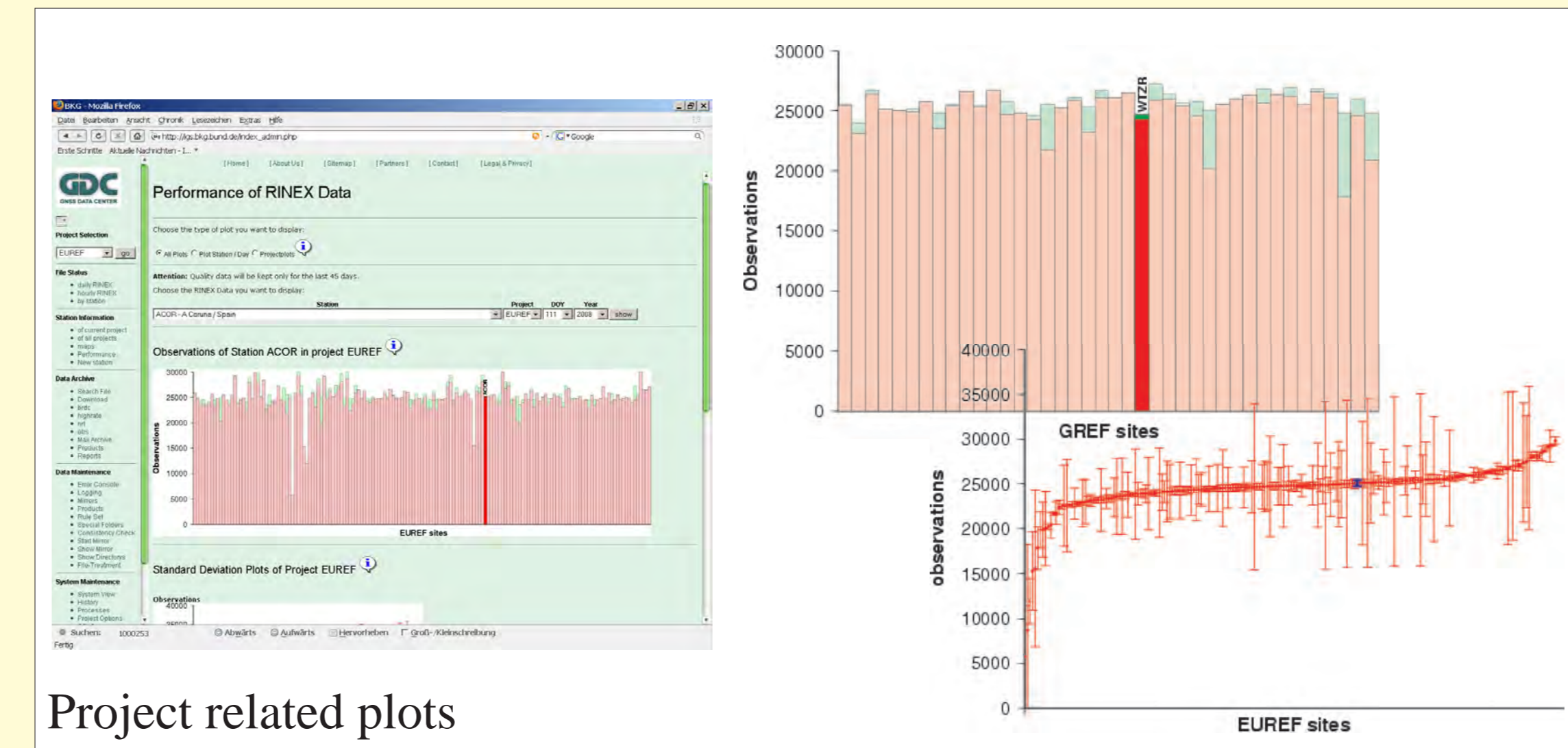
Map Functions

Now it is possible to map all the stations which are hosted by the BKG using Google™ Maps. The user has got the possibility to map the whole project, select stations in a certain country, select specific stations and the user can also display an unknown station by using the point finder where the co-ordinates has to be entered.

GDC
GNSS DATA CENTER
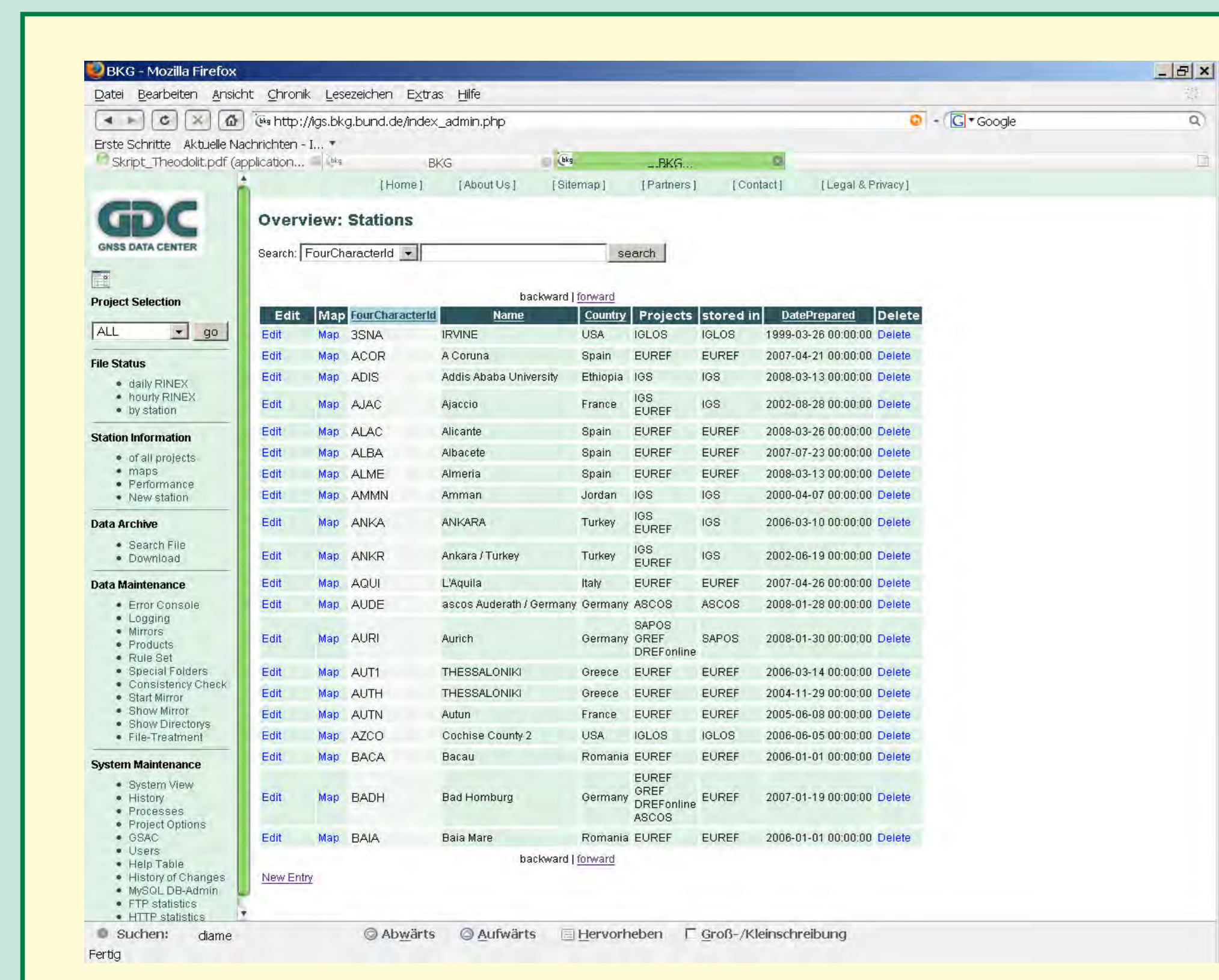
Project Assignment

Until now, a station was exactly linked (in disk directory and website) to one project, e.g., IGS or EUREF. This becomes exhausting for users, if a station belongs to more than one project and the data are always stored in the hierarchically higher project.
The station-to-project relation has now been extended. While looking at the station information list, there show now 2 separate columns up: One for the projects the station belongs to and one column for the directory where the data are stored. This structure offers the possibility to show a complete list of stations of a selected project or the corresponding map.
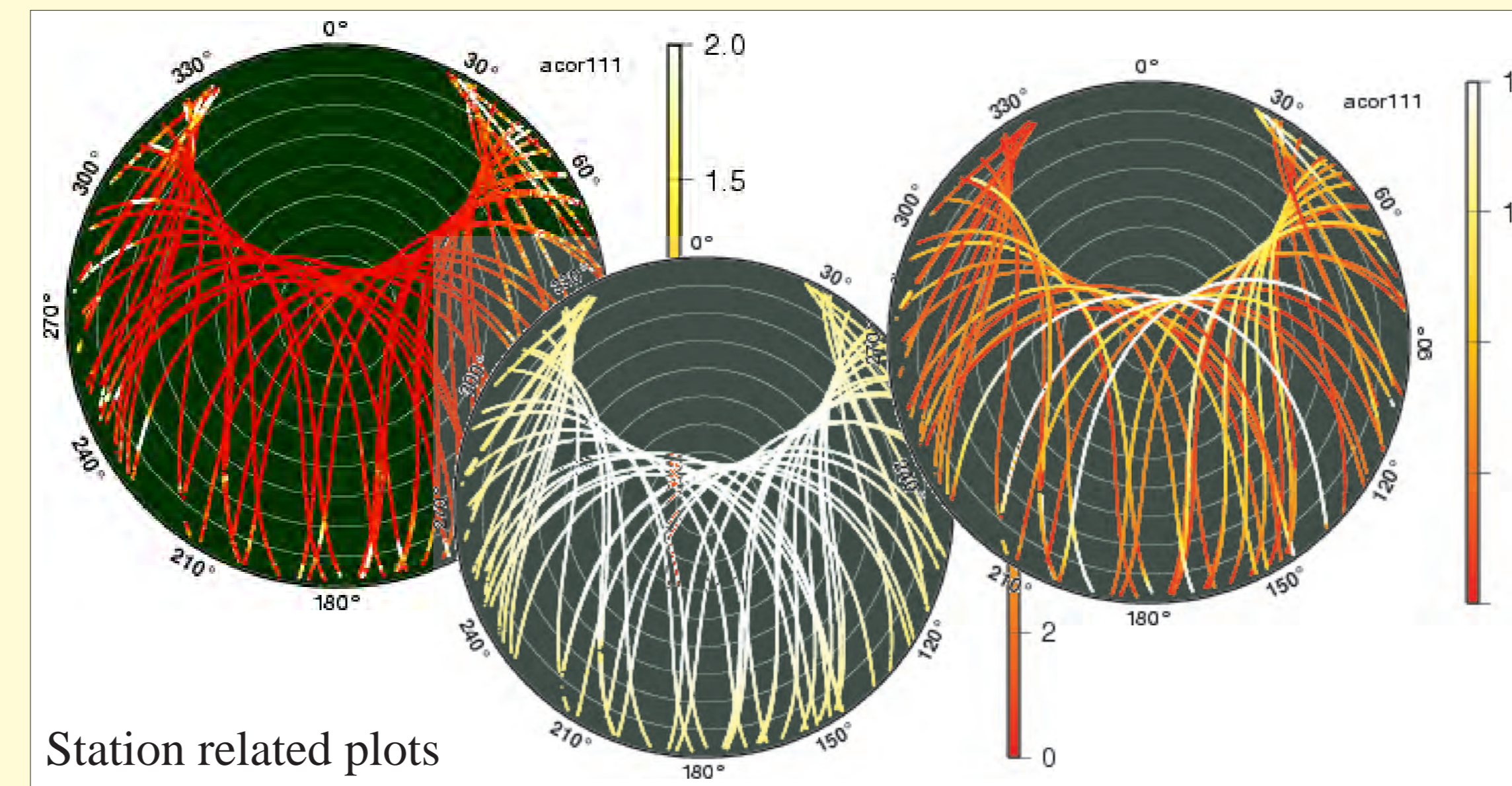
Performance Checks of RINEX Data

Recently the performance check functionality has been added to the GDC, which generates quality plots of RINEX data. The output of the TEQC quality check function is used as input data for this plots. The Generic Mapping Tool (GMT*) plot program generates dynamic pictures from the ASCII raw data and the result is presented on a webpage.

The plots are classified into two groups: project related and station related. At the moment there are station related plots available which show multipath, signal-noise and ionospheric delay for each satellite at one day and one station. The project related plots show the observations, multipath and cycle slips in a common plot of all stations of a project and tag the selected station.

Project related plots

Station related plots

* www.gmt.soest.hawaii.edu
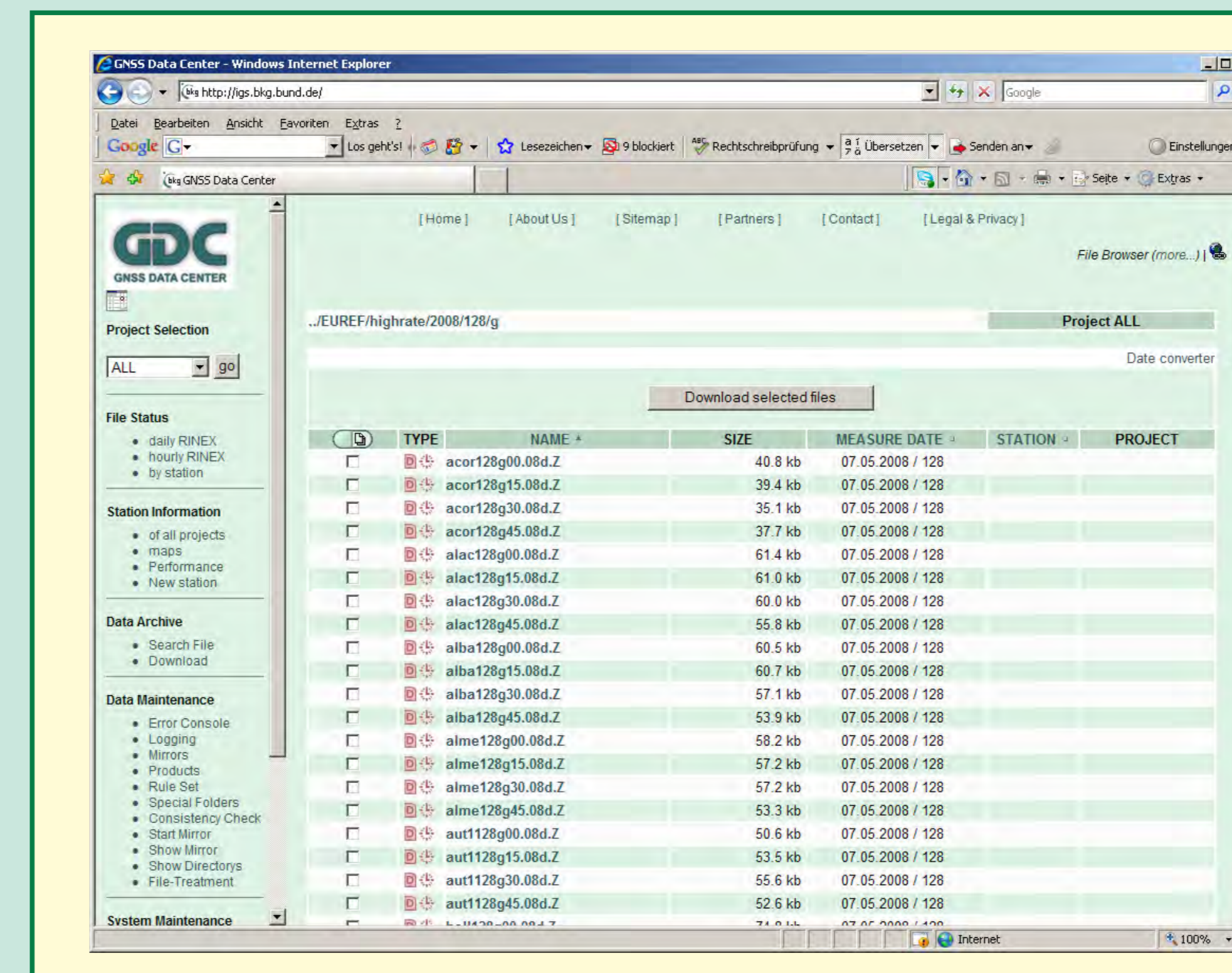
High-rate RINEX

As a new data type BKG archives 15 min/1Hz RINEX files from IGS, EUREF and GREF (German national GPS network) stations, which are accumulated from real-time GNSS data streams. They can be used for near real-time post-processing applications. These files are available for download with a delay of approx. 4 minutes.
The data are uploaded to CDDIS and IGN GNSS Data Center.

Outlook

The requirements from GNSS users for GDC change all the time and BKG is trying to be most conform to support new data types and formats. BKG is adding more functionality for the users to check and download data more comfortable. Furthermore, new hardware will be installed at BKG to improve the performance of the data center. A new design of the main software tool for managing all incoming files is going to be implemented and will provide sophisticated flexibility. It allows the administrator to react faster and more comfortable on new user requests.

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