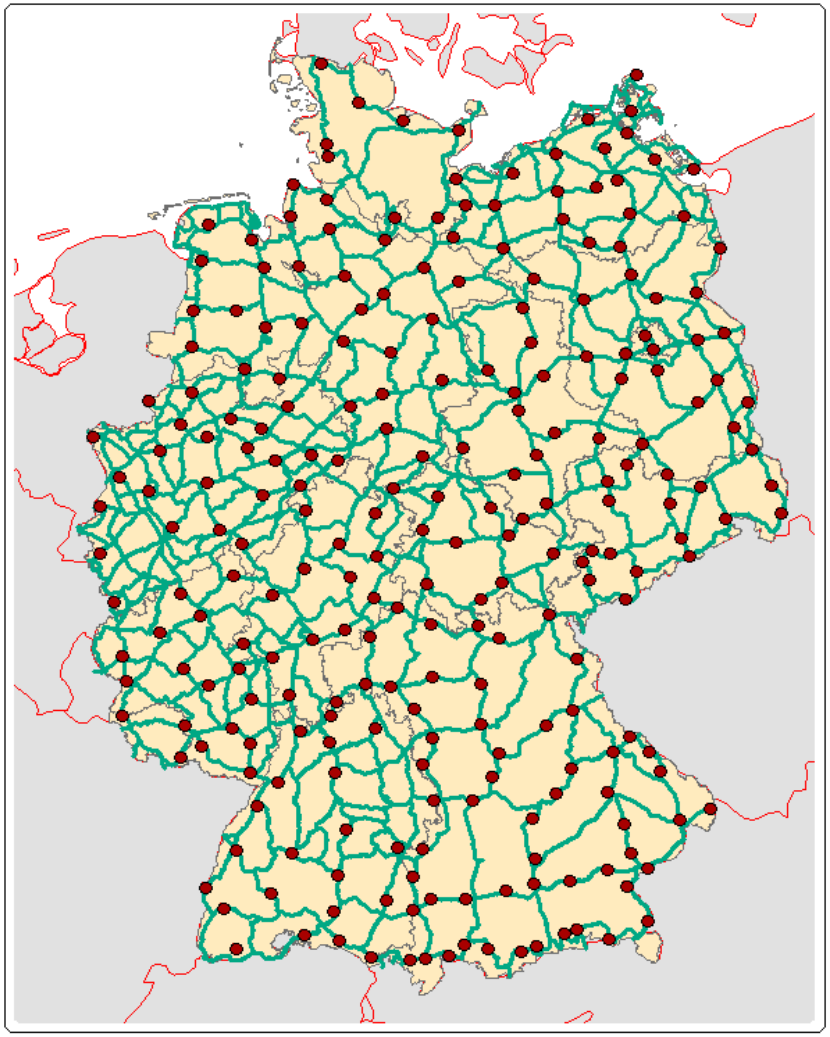
National Report of Germany

Johannes Ihde[1)], Cord-Hinrich Jahn[2)]

[1)] Federal Agency for Cartography and Geodesy (BKG)

[2)] Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder (AdV)

Modernization of the German height reference frame



- Measurements were finished end of 2012
- 99% of the observation data already available at the analyzing centers (status May 2013)
- Length of the leveling lines: 29 960 km
- 250 stations with GNSS, leveling and absolute gravity

Modernization of GREF – German integrated geodetic reference network

- **Refitting of all stations for GALILEO will be finished 2013**
- **Relocation of station Munich (MUEJ) to Augsburg (AUBG) because of**
  - **Jamming of GLONASS signal because of city location**
  - **Location on the roof – no precise connection to leveling network**
  - **Multi-path effects**
- **Rebuilding of station Sassnitz (SASS): new deep pillar in the inner harbor**

Processing of GREF/ DREFonline

- **Processing of DREF online comprises 75 stations of GREF, SA*POS*® and EPN/IGS**
- **Upgrade to Bernese GNSS Software V5.2 in April 2013**
- **Using new RNX2SNX procedure**
- **Parallel processing w.r.t. V5.0 gave 2 to 3 mm in horizontal and 5 to 6 mm in vertical**

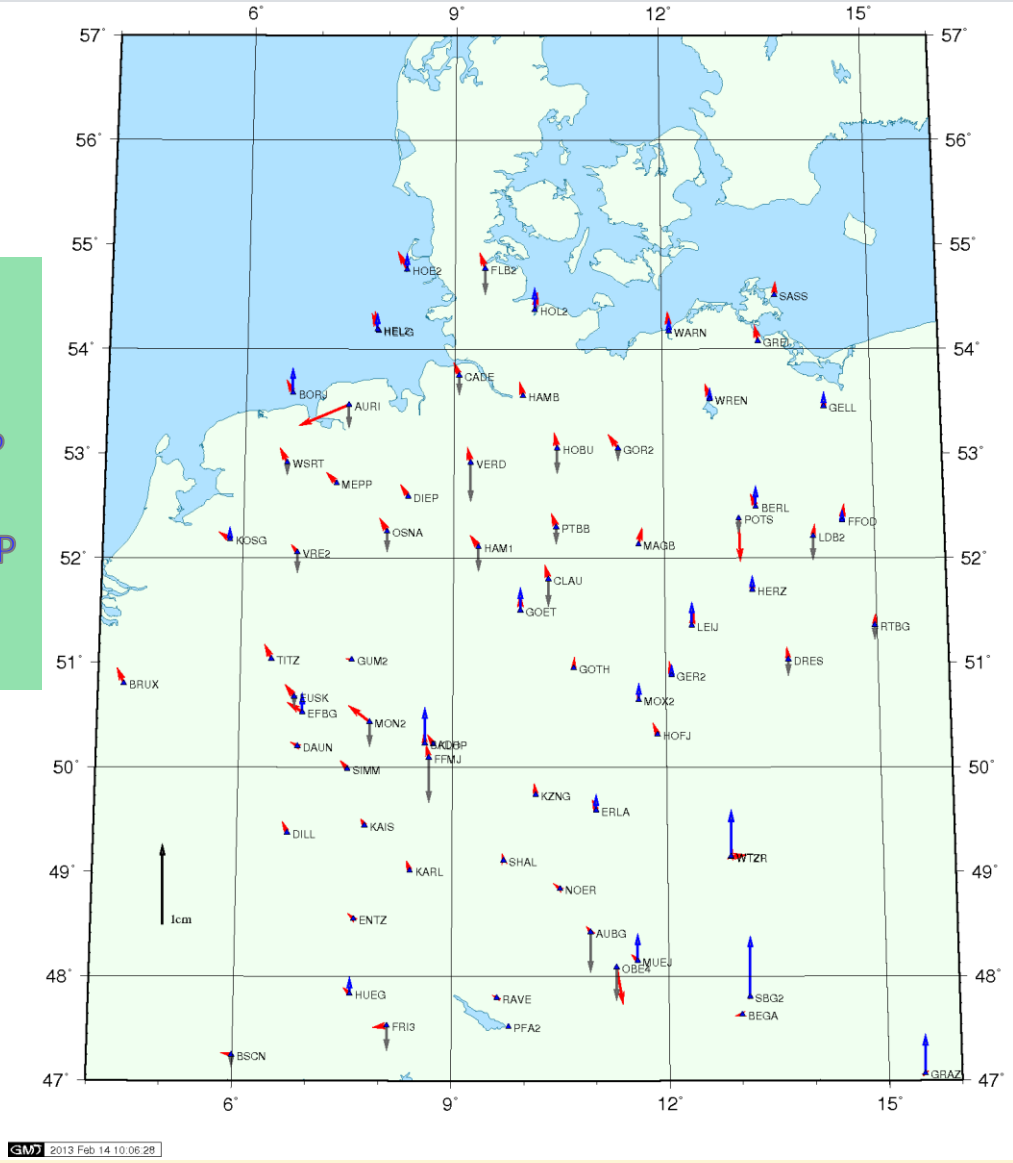
Processing of GREF/ DREFonline

Example for parallel processing GPS Week 1724

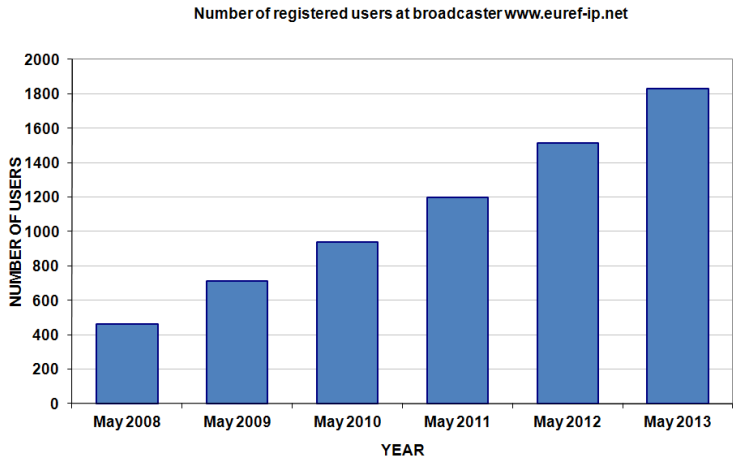
75 Stations

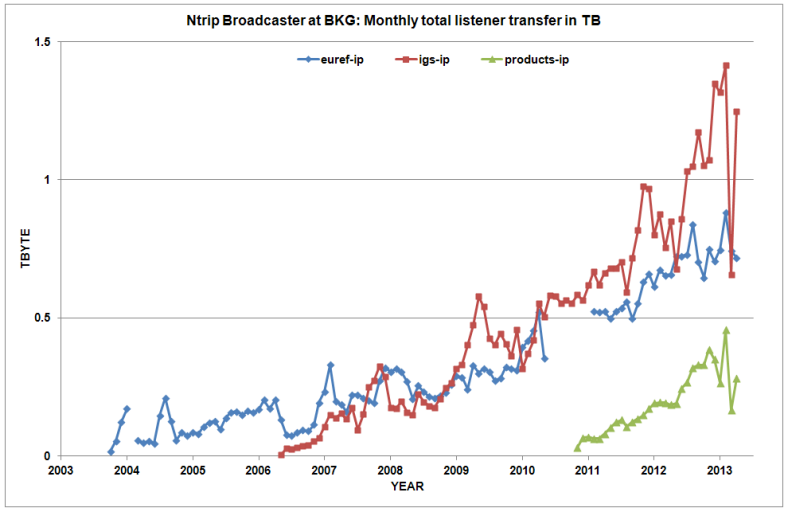
68 St. (= 88%) < 3 mm 2D / 5 mm UP

0 St. < 10 mm UP



Real-time activities at BKG





- **Unchanged rising demand for access to real-time casters**
- **Multi-GNSS: M-GEX caster and RINEX V3 extended DC**
- **Product redundancy concept established for**
  - **Individual BKG/CTU real-time orbit & clock solutions (CLK10, CLK11)**
  - **Combined IGS and EUREF orbit & clock solutions (IGS02, IGS03, EUREF01, EUREF02)**

by using two different PC at different places and automated switching in between

Geodetic Observatory in Wettzell

- **Dedication of new Twin Radio Telescope on April 26, 2013**
- **2 identical telescopes with a diameter of about 13 m**
- **Possibility of**
  - **service and repair operations without interruption of observation series**
  - **simultaneous observation of 2 objects (quasars, satellites)**

View onto the twin telescope