Geophysical Research Abstracts
Vol. 17, EGU2015-1895-1, 2015
EGU General Assembly 2015

Quality Checking for Multi-GNSS Data

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Quality checking of GNSS observations has a long tradition within the international GNSS community. For example, the RINEX files provided by the International GNSS Service (IGS) and IAG sub-commissions dealing with GNSS have been routinely checked with the tool teqc (Translation, Editing and Quality Checking (Estey & Meertens, 1999)). Data Centres like the regional GNSS data centre at the Federal Agency for Cartography and Geodesy (BKG) are relying on such tools. With upcoming new GNSS like BeiDou or Galileo and new regional systems like QZSS or IRNSS and growing number of Satellite-Based Augmentation Systems (SBAS), new signals and frequencies, and new formats like RTCM-MSM and RINEX 3 the need for flexible quality checking tools is arising. The IGS is keeping the pace with his initiative on multi-GNSS (MGEX) which is focusing on the use of the GNSS beyond the established GPS and GLONASS and with the establishment of a new working group on data quality control.

Together with the Technical University of Prague (CTU) BKG has been developing the tool BKG Ntrip Client (BNC). Initially started as a tool for providing real-time navigational and observational data and derived products to the user BNC has been subsequently extended, e.g. by precise point positioning (PPP) and by post-processing capabilities. In the near past special features for editing and quality control have been established, e.g. for multipath analyses (MP) and signal-to-noise ratio (SNR).

In this presentation, we will demonstrate the various features of BNC for quality control. Examples especially for multi-GNSS data will be shown. Potential usage for the open GNSS community will be outlined. Some proposals for a unified ASCII output to facilitate usage of different software tools on quality checking will finalize the presentation.