

Minutes of the meeting May 28th, 2009

General

Only a few issues could be presented in this meeting due to the lack of time during the symposium. It has been decided that a detailed discussion, exchange of ideas and information is planned through a WIKI that will be setup by the chair of the WG.

The proposed time schedule (presented on <http://epn-repro.bek.badw.de> and during the presentation by the chair) has been accepted by the members of the WG. The general items are:

- Install reprocessing-capabilities by September 2009
- Study:
 - strategies for the reprocessing,
 - the impact of different orbit products
 - different software packages (GIPSY, GAMIT and BERNESE) and standards of the analysis of the data from **2006**.
- Guidelines for the reprocessing of the entire data will be established by the end of 2009. These guidelines will mainly depend on the previous studies.

Responsibilities performing the mentioned studies and drafting the guidelines will be clarified in the WIKI.

Database:

Products of the pilot processing (daily and/or weekly coordinates and ZPD) will be sent to the BKG GNSS data centre. BKG will establish a new project environment for all reprocessing related product files. Access to this project will be restricted to members of the EPN Reprocessing Group.

ROB will provide a database with RINEX files of the entire EPN for reprocessing purposes (further details were presented by Carine during the symposium). Stations that were or are not official EPN sites at certain times can be included in the reprocessing. But they have to be provided in time to the ROB data center, which makes them available as well as the LOG-files. ROB will also make available the station information files (BERNESE format) containing equipment information. ROB (Carine) as well as WUT (Carolina) will also check the contents of the EPN antenna file (epn_05.atx) for missing antennas and distribute this information.

Each Local Analysis Center (LAC) that detects problems with specific sites shall make this information available through the WIKI.

Network distribution:

It is a goal to arrange a distributed processing of the entire EPN. Therefore at the minimum three LACs shall be appointed to process each site. A redistribution of sites will be necessary, since not all LACs will contribute in the same extent as they do in the weekly analysis of the EPN. Therefore each LAC shall compile a list of sites that it intends to reprocess. That will be the basis for redistribution of the sites to other LACs. There is the option to include additional global sites into the EPN reprocessing for purpose of datum definition. The appointment of such global sites to

individual LACs needs to be discussed.

Software:

Stefan Schaer (SwissTopo) presented some new details on the new updates to the BERNESE 5.0. Most important is the increased reprocessing capability. The consistent use of antenna names and numbers has been one of the mayor issues. Therefore the introduction of individual antenna calibration values has been tested in depth and has been verified.

The program ADDNEQ2 is now capable to write SINEX-files version 2.0. It is also possible to store the free (i.e. unconstrained) normal equation system (NEQ) of the solution into the SINEX file. It is proposed to store both formats, NEQ-SINEX and COV-SINEX, by LACs using the Bernese GPS Software.

The sign of N/E/U residuals computed by ADDNEQ2 was previously reversed in case of inactive *Helmert transformation*. This bug has now been fixed. An additional feature is now the provision of RMS errors in ADDNEQ2 plot (PLT) file.

Miscellaneous

It has been pointed out that the PDR05 products contain 2. and 3.order ionospheric corrections that cannot yet be exploited by the BERNESE 5.0. Only the new release of the BERNESE will be capable of these corrections. This release will be Galileo capable and one should expect this release not before the end of 2010. It has been emphasized that GAMIT and GIPSY apply already the higher order ionospheric corrections. There are also discrepancies between the mapping functions used in the different software packages. GAMIT and GIPSY have already included new mapping functions like GMF and VMF, while BERNESE will realize these only with the next release.

The datum realization of the reprocessing is not yet solved. Ideas by Carine and Juliette (ROB) using a network of globally distributed IGS sites will be carefully considered.