Geophysical Research Abstracts
Vol. 15, EGU2013-13039, 2013
EGU General Assembly 2013

Precise Point Positioning technique for short and long baselines time transfer

Pawel Lejba, Jerzy Nawrocki, Dariusz Lemanski, Anna Foks-Ryznar, Pawel Nogas, and Piotr Dunst

Space Research Centre, Polish Academy of Sciences, Astrogeodynamic Observatory, Borowiec, Poland (plejba@cbk.poznan.pl)

In this work the clock parameters determination of several timing receivers TTS-4 (AOS), ASHTECH Z-XII3T (OP, ORB, PTB, USNO) and SEPTENTRIO POLARX4TR (ORB, since February 11, 2012) by use of the Precise Point Positioning (PPP) technique were presented. The clock parameters were determined for several time links based on the data delivered by time and frequency laboratories mentioned above. The computations cover the period from January 1 to December 31, 2012 and were performed in two modes with 7-day and one-month solution for all links. All RINEX data files which include phase and code GPS data were recorded in 30-second intervals. All calculations were performed by means of Natural Resource Canada's GPS Precise Point Positioning (GPS-PPP) software based on high-quality precise satellite coordinates and satellite clock delivered by IGS as the final products.
The used independent PPP technique is a very powerful and simple method which allows for better control of antenna positions in AOS and a verification of other time transfer techniques like GPS CV, GLONASS CV and TWSTFT. The PPP technique is also a very good alternative for calibration of a glass fiber link PL-AOS realized at present by AOS. Currently PPP technique is one of the main time transfer methods used at AOS what considerably improve and strengthen the quality of the Polish time scales UTC(AOS), UTC(PL), and TA(PL).

KEY-WORDS: Precise Point Positioning, time transfer, IGS products, GNSS, time scales.