



G-Nut software library and its applications within context of EPOS

Jan Dousa, Pavel Vaclavovic, Gabriel Gyori, and Jan Kostelecky

Research Institute of Geodesy, Geodetic observatory Pecny, Zdiby, Czech Republic (JAN.DOUSUSA@PECNY.CZ, +420 2 32364926)

The contribution will present new G-Nut software library aimed for the development of targeted end-user GNSS applications in various geoscientific fields – geodesy, seismology, meteorology, climatology and others in future. The G-Nut core library has been developed since 2011 in Geodetic Observatory Pecný. Its status and more details can be found at www.pecny.cz.

The library is written in C++ applying the object oriented approach aiming for a flexible source code implementation, easy maintenance and future extension. Currently, the library supports the Precise Point Positioning GNSS processing technique as a core highly efficient and autonomous method suitable for most accurate post-processing tasks as well as real-time applications. Specific end-user applications are being developed - the tool for GNSS data converting, concatenating, editing and quality checking, the application for tropospheric parameter estimation in (near) real-time and post-processing and the application for the precise position estimation in static and kinematic mode. Although the programs are still under consolidation for a first release, the latest results demonstrate the capability and relevance for supporting specific applications in different areas. Plans for further enhancements are discussed together with potential contributions to the EPOS or similar other inter-disciplinary projects.