

BKG Ntrip Client (BNC)

Introduction

PPP-RTK & Open Standards

Tutorial

12-13 March, 2012, Frankfurt

Contributions

- Introduction to BNC
 - By Georg Weber, BKG, 20 min
- Demonstration of BNC Options
 - By James Perlt, BKG, 20 min
- Precise Point Positioning and Combination of Clock Corrections with BNC
 - By Leos Mervart, CTU, 20 min

BNC Author

- Concept & coding: CTU, Leos Mervart
- Test, validation, documentation: BKG, Georg Weber & colleagues

BNC Contracts With

- Czech Technical University, Leos Mervart
 - BNC, GUI
- Alberding GmbH, Dirk Stöcker
 - rtm3torinex: Observation decoding and RINEX generation
 - clock_and_orbit:SSR encoding & decoding

BNC History

- First published in 2007
- Version 2.5 published in 2011
- Today working on version 2.6

BNC Purpose

- Initial purpose: Feed real-time GNSS engines
- Multi stream Ntrip client, handles many streams simultaneously
 - Requires stream decoding
- Supports various stream transport protocols
 - Ntrip v1 and v2, pure TCP/IP and UDP
- Supported stream format: RTCM v2 and v3

BNC Purpose cont'd

- Saves RINEX v2 and v3 observation and navigation files
- Saves SSR message contents in ASCII format
- Output of synchronizes decoded observations via IP port
- Output of observations from single stream via serial port
- Detects and visualizes stream latency, bandwidth, outages
- Precise Point Positioning, displacement plot
- Combination of clock corrections
 - SSR stream encoding and upload to caster

Open Source

- Source code at <http://software.rtcn-ntrip.org>
 - Subversion (SVN) software archive
- Exception from Open Source: Clock correction combination option is only freeware, no source code
- Intention: push development of Open Standards for PPP
- Does not compete with commercial products

Supported Platforms

- Linux
- Windows
- Solaris
- Mac
- Pre-compiled binaries from <http://igs.bkg.bund.de/ntrip/download>
- Compiling requires Qt graphics library

Supported Systems

- GPS, GLONASS, Galileo
- RTCM v3 High Precision Multiple Signal Messages (HP MSM) input
- RINEX v3 output

Configuration File

- ASCII format
- Default location and name
 - Windows:
`..\config\BKG\BNC.ini`
 - Linux:
`$HOME/.config/BKG/BNC.ini`
- Other location and name of configuration files possible
 - Optional start via command line

Configuration File Contents

[General]

adviseFail=15

adviseReco=5

adviseScript=

autoStart=0

binSampl=0

casterUrlList=http://user:pass@www.igs-ip.net:2101

corrIntr=1 day

corrPath=

corrPort=

corrTime=5

ephIntr=1 day

ephPath=

ephV3=0

logFile=c:\\temp\\bnc.log

.....

Documentation, Help

- Documentation comes as „Help Contents“ function of the software
- Online-Help function provides short description of options

Aims for 2012

- Read RINEX obs/nav files and SSR files
- Add post processing option
- Quality control functionality, possibly:
 1. Basic multipath analysis
 2. Cycle slip analysis
 3. Data completeness: tracked vs. visible satellites
 4. SNR plot with regards to elevation angle
 5. Phase vs. code time series
 6. DCB estimation