The Alignment Engineering Group

RTK Mapping Presentation – June 4, 2002

Establishing SLAC's Master Control Station

The Data Model within Bernese Vers. 4.2

Carrier phase observation equation:

$$\Phi = \rho + c \bullet (dt - dT) + \lambda \bullet N - d\_ion + d\_trop + \varepsilon$$

where:

Φ	pseudorange from carrier phase
ρ	geometric distance to satellite
c	speed of light
dt	satellite clock offset
dT	receiver clock offset
λ	wavelength
N	integer number of ambiguities
d_ion	ionospheric delay
d_trop	tropospheric delay
ε	receiver noise, multipath, etc.

Processing steps with Bernese software:

- Downloading of RINEX, orbits, ERP
- Orbit computation
- Synchronization of receiver clock
- Creation of baselines
- Data cleaning
- Ambiguity resolution
- Daily network solution
- Combination of daily network solutions and datum fixing