

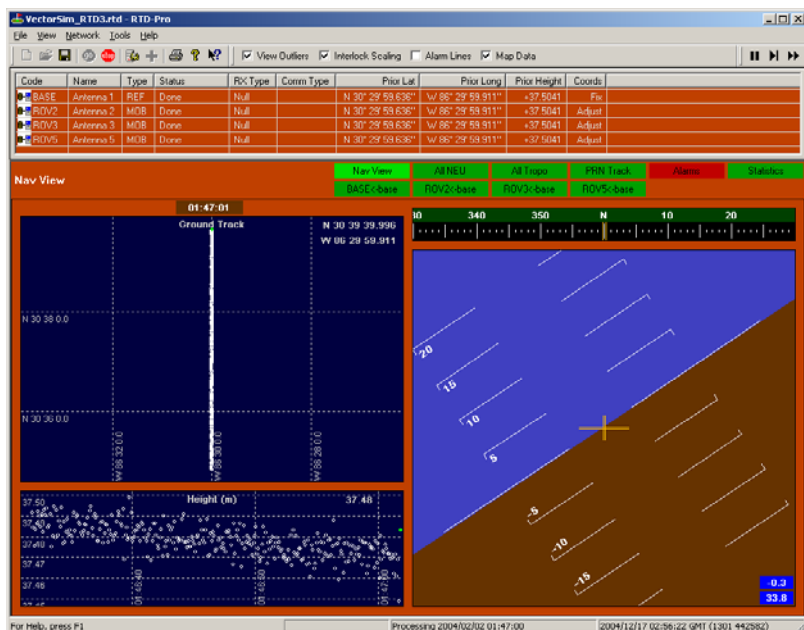
RTD Vector is a high-precision attitude determination application utilizing two or more GPS receivers to compute real-time platform attitude (e.g. heading, pitch; yaw, pitch, roll)

RTD Vector is based on Geodetics' Epoch-by-Epoch™ technology and provides an independent estimate of platform attitude for each epoch of dual-frequency (L1 and L2) observations.

RTD Vector Features

- Determines attitude of any rigid structure to which it is attached
- Completely autonomous - no external reference station required
- Angular precision is 0.01-0.05 degrees (at 2.5 m antenna spacing)
- Complements inertial guidance systems in that there are no long term drifts
- Vector arrangement can also generate a self-correcting virtual station for positioning relative to external systems
- Relative orientation of two vector stations can be found
- Attitude determined at sample rate of GPS hardware, e.g., 10 -20 Hz.
- Compatible with equipment from all major GPS hardware manufacturers

Customized Vector and receiver integration and packaging available.



Technical Specifications

Applications

Air, land, and sea vehicle attitude determination. Weapon pointing angle determination, correcting for angular deflections of a platform engaged in sonar sounding, radar imaging, optical imaging, formation flying, machine control

Modes: *Free Vector:* Autonomous heading and attitude determination.
Fixed Vector: Autonomous heading and attitude determination coupled with precise Epoch-by-Epoch™ positioning, relative to known base stations.

Comm: Supports RS-232 and TCP/IP communications with GPS receivers.

Setup

User Interface: Intuitive, guides the user through the setup process. Includes full on-line help.

Backup: Multiple network configurations can be defined and saved.

Site Info: Comprehensive names, coordinates as Cartesian or geodetic, position constraints, GPS receiver and antenna type.

Sensors: Leica CRS1000, System500, GPS1200, Ashtech Z-12, μ -Z, z-Extreme, Trimble 4000 SSi, 4700, 4800, 5700, NetRS, Novatel OEM4. Topcon receivers. Others on request.

Analysis

Algorithm: Proprietary Rapid Network Analysis (RNA) module with the Epoch-by-Epoch™ positioning algorithms.

Solution: Independent attitude determination at each epoch.

Precision: Direct function of antenna separation. At 2.5 m spacing: heading precision is 0.01 degrees; roll, pitch, yaw precision is 0.01-0.05 degrees.

Rate: Extremely efficient Epoch-by-Epoch™ algorithms support up to 50 Hz data rates.

Data Logging

Attitude/Position solutions and raw field receiver data. Diagnostic displays and logging.

Hardware Requirements

Processor: Pentium®, 450 MHz or faster Intel® processor, or equivalent.

OS: Microsoft Windows NT 4.0, 2000 or XP with Microsoft Internet Explorer 4.0 or greater.

Memory: At least 128 MB

Disk: At least 500 MB free space

Misc: Parallel or USB port for the security key. Depending on the communication link to be used to the receivers, one or more serial ports and/or a network interface card.

Embedded Vector solutions available.

*Accuracy is dependent upon GPS satellite system performance, satellite visibility, platform rigidity, and other factors.

