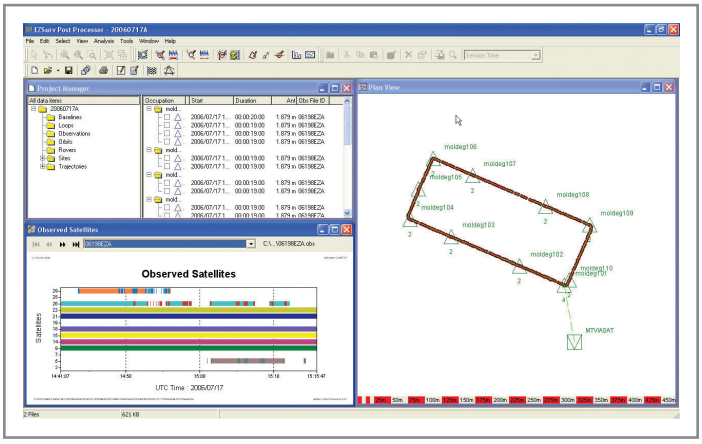
ISO 9001 Certified

EZSurv™

GNSS POST-PROCESSING SOFTWARE

EZSurv™ software is an open and complete solution designed to easily and reliably process raw GPS and GLONASS data. This software product is intended for users who care about accurate results, without having to set numerous scientific parameters.



BASE STATION DATA

The basic idea of GNSS post-processing is to analyze nearby base station (fixed station) data along with your GNSS rover data in order to improve accuracy. **EZ**Surv™ automates this task to facilitate data processing. **EZ**Surv™ automatically searches the Internet for the best GNSS base station that fits your field data. This search is performed on a number of existing GNSS networks around the world. Post-processing your data is handled automatically by pressing a single key. All you need is an Internet connection. If you maintain your own GNSS network, it could be easily incorporated into the search through a LAN connection.

The data rate of your base station is no problem since **EZ**Surv™ can automatically perform a polynomial interpolation (up to 60 sec.).

IMPORTING MULTIPLE DATA FORMATS

Importing GNSS datasets is straightforward since you can easily drag and drop files into the observations window to quickly see their descriptions and attributes. To avoid long conversion processes, **EZ**Surv™ directly supports raw binary formats from several manufacturers as well as the receiver independent exchange format (RINEX).

COORDINATE SYSTEM

EZSurv™'s Mapping Systems tool provides complete coordinate-system support. Over 62 standard datums and 22 standard ellipsoids are predefined. Additionally, you can create your own user-defined datums and ellipsoids. There are also over 12 different map projection templates from which you can derive most mapping systems used in the world. The US State-Plane Coordinate System is fully supported, and local grids can be defined.

RIGOROUS PROCESSING ENGINE

EZSurv™ uses the latest GNSS processing techniques to get the most out of your GNSS data. Depending on your fieldwork methodology, the software will process any of the following modes:

- Static
- Rapid static
- Stop and go
- Kinematic
- Semi-kinematic
- OTF (for single and dual frequency receivers)

All processing is fully automated. Baseline and trajectory computation can be launched in batch mode (as many baselines and trajectories as you want). Advanced users can adjust various processing parameters to meet special requirements.

QUALITY CONTROL

Various tools are included for quality control:

- Editing of GNSS data file properties
- Graphical representations of phase or code residuals
- Graphical tools to help analyze cycle-slip occurrences in data
- Loop closure utilities for users creating networks of baselines
- Common vector analysis
- Least Squares Adjustment to adjust network of baselines

COMPATIBLE DATA ACQUISITION SOFTWARE

When using ArcPad and GNSS Driver, GNSS Control Panel, **EZ**Tag CE™ or **EZ**Field™ data collection software, **EZ**Surv™ becomes a powerful companion product to handle your field data. **EZ**Tag CE™ is designed for GNSS/GIS data acquisition; it lets you collect features and attributes that are displayed in **EZ**Tag CE™ powerful PlanView along with vector and raster maps. **EZ**Field™ is designed for accurate surveying data acquisition with GNSS receivers.

OnPOZ

FEATURES

POST-PROCESSED ACCURACY

RECEIVER	KINEMATIC	STATIC	SEMI KINEMATIC	OTF
Single frequency	submeter[1], subfoot[2]	sub-centimeter[3]	centimeter[4]	centimeter[5]
Dual frequency	N/A	sub-centimeter[6]	N/A	centimeter[7]

SUPPORTED GNSS PROTOCOLS*

- Rinex v2.10
- Hemisphere GPS
- NavCom
- Novatel
- Septentrio
- SiRF
- Ublox

* Protocols are added on a regular basis

VIEW

- Plan view to graphically analyze your survey
- Project Manager view to manage your data with archive capability

GRAPHICAL ANALYSIS

- Number of satellites in view in a file
- Satellite by satellite visibility in a file
- Cycle-slip display
- Point and baseline error ellipse from Least Squares adjustment
- Standardized Residual Histogram (from Least Squares adjustment)

DATA EDITING

- Site name, coordinates, antenna height and antenna model
- Coordinates systems and geoid models
- Time span
- Total or partial satellite segment elimination
- Export raw data in standard RINEX format

AUTOMATED PROCESS

- Baseline definition from imported static files
- Trajectory definition from imported rover files
- Internet scan to detect base station data that fits rover files
- Outlier detection (bad data elimination)
- Algorithm to reduce data noise
- Ambiguity smoothing
- Base station data interpolation
- Ambiguity fixing
- Semi-kinematic processing for L1 data when **EZ**Field™ data collection software is used
- Baseline batch processing
- Trajectory batch processing
- Rigorous least-squares for network adjustment

QA TOOLS

- Common vector analysis report
- Loop closure report (closed and open loop)
- Process summary report
- Baseline summary report
- Trajectory summary report
- Network adjustment summary report
- Residuals plot

AVAILABLE VERSIONS

	EZSurv™ Lite	EZSurv™ L1	EZSurv™ L1L2
Submeter/Subfoot	•	•	•
Static L1 fixe (sub-centimeter)		•	•
OTF L1 (centimeter)		•	•
Static L1/L2 fixe (sub-centimeter)			•
OTF L1/L2 (centimeter)			•

Each version is available with full GNSS capability or GPS only.

1. Horizontal accuracy (HRMS). Requires 5-10 minutes of continuous tracking with at least 5 satellites and a PDOP better than 6. Multipath and ionospheric effects can affect final accuracy. Base station separation may affect accuracy by about 5 ppm (depending on the quality of the base station data).
2. Horizontal accuracy (HRMS). Requires 15-20 minutes of continuous tracking with at least 5 satellites and a PDOP better than 6. Multipath and ionospheric effects can affect final accuracy. Base station separation may affect accuracy by about 5ppm (depending on the quality of the base station data).
3. Horizontal baseline accuracy (HRMS). Requires 15-30 minutes of good data on a minimum of 4 satellites and a PDOP better than 6. Multipath and ionospheric effects can severely affect final accuracy. This horizontal accuracy usually translates into 1cm +/- 2 ppm.
4. Requires L1 frequency receiver that outputs quality code, Doppler and carrier phase observations along with reliable real-time cycle-slip detection. **EZ**Field™ data collection software is designed to ease the semi-kinematic process. It allows you to easily initialize on an initialization bar or a known point.
5. Horizontal accuracy (HRMS). Requires 45 minutes of continuous tracking with at least 5 satellites and a PDOP better than 6. Base station must be within 10 km. Multipath and ionospheric effects can affect this accuracy. This horizontal accuracy usually translates into 2 cm +/- 2 ppm.
6. Static results require only 5-10 minutes of data to achieve centimeter accuracy. This horizontal accuracy usually translates into 1cm +/- 1 ppm (with good dual frequency data).
7. OTF requires approximately 30 seconds of continuous tracking with at least 5 satellites and a PDOP better than 6. Multipath and ionospheric effects can affect final accuracy. This horizontal accuracy usually translates into 2 cm +/- 2 ppm.

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Printed in Canada