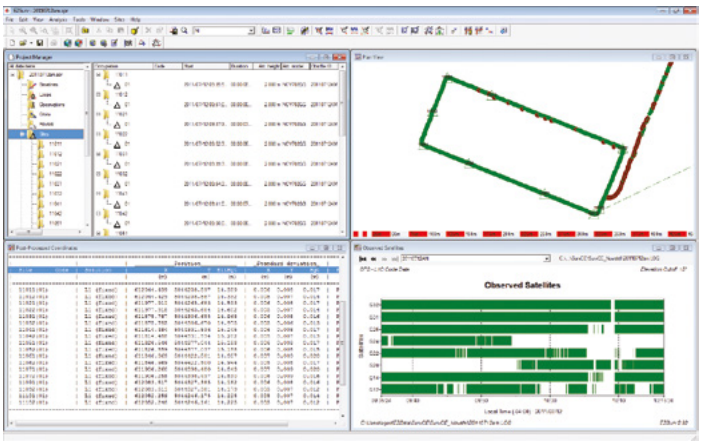
EZSurv®

ISO 9001 Certified

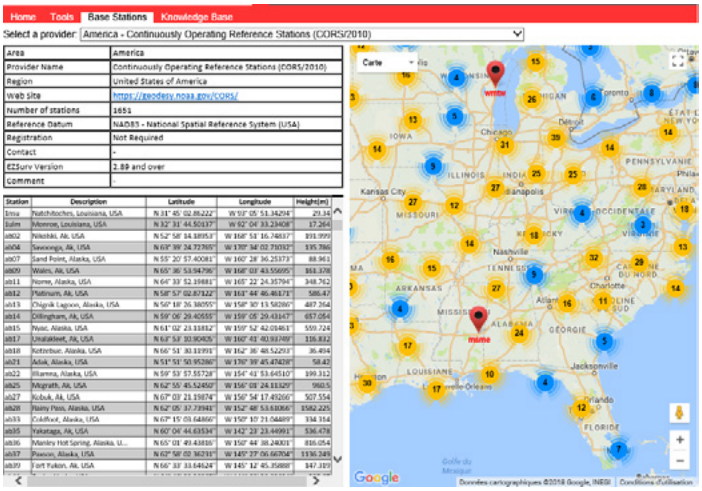
GNSS POST-PROCESSING SOFTWARE

EZSurv software is an open and complete solution designed to easily and reliably process raw GNSS data. This software product is the perfect tool to complement RTK systems. It is fully compatible with survey data recorded using FieldGenius (from MicroSurveys) or SurvCE (from Carlson Software) data collection software. It is intended for users who care about accurate results, without having to set numerous scientific parameters.



BASE STATION DATA ACCESS

The basic idea of GNSS post-processing is to combine nearby base station (fixed station) data, along with your GNSS rover data in order to improve accuracy. EZSurv automates this task to facilitate data processing. EZSurv automatically searches the Internet for the closest GNSS base station to process your field data. This search is performed on thousands of existing GNSS networks around the world. Post-processing of your data is handled automatically by pressing a single key. All you need is an Internet connection.



IMPORTING MULTIPLE DATA FORMATS

Importing GNSS datasets is straightforward since you can easily drag and drop files into the observation window to quickly see their descriptions and attributes. EZSurv directly supports raw binary formats from several manufacturers, as well as the receiver independent exchange format (RINEX).

COORDINATE SYSTEM

EZSurv offers several predefined «Map Projection/Datum» to help users quickly translate GNSS positions into regional mapping systems. Moreover, EZSurv's Mapping Systems tool provides complete coordinate-system support to customize your own mapping system. We support several datum, ellipsoids and projection templates. Our engine also supports Local Grid for small area projects. Post-processing data is the best procedure to ensure that your positions are properly aligned to your regional reference system.

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)
- Precise Point Positioning (for static and kinematic files).

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 observed satellites
- Graphical representations of carrier phase/doppler/pseudorange residuals
- Graphical tools to help analyze cycle-slip occurrences in data
- Inverse computation
- Loop closure utilities for users creating networks of baselines
- Least Squares Adjustment to adjust network of baselines.

OnPOZ

EZSurv®

Features

POST-PROCESSED ACCURACY

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

1. Horizontal accuracy (HRMS). Requires 5-10 minutes of continuous tracking with at least 5 satellites and a PDOP less 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 less 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 less 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. EZField data collection software is designed to facilitate the semi-kinematic process. It allows you to easily initialize on an initialization bar or a known point.
5. Horizontal accuracy (HRMS). Requires 30 minutes of continuous tracking with at least 5 satellites and a PDOP less 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 2-5 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 15 seconds of continuous tracking with at least 5 satellites and a PDOP less than 6. Multipath and ionospheric effects can affect final accuracy. This horizontal accuracy usually translates into 2 cm +/- 2 ppm.

SUPPORTED GNSS PROTOCOLS*

RINEX	Juniper Systems	SiRF
Altus	Kolida	South GPS
Bad Elf GNSS Surveyor	NavCom	Stonex
CHC Navigation	Novatel	Zenite from TechGeo
COMNAV T300	Topcon	u-blox
SATLAB Geosolutions	Surveyor Plus from Carlson	Unistrong
SXBlue from Geneq	Pentax	ProMark 500 from Ashtech
Hemisphere GPS	EOS Positioning Systems	eXplorist Pro10 from Magellan
Javad	Septentrio	Ike GPS from SurveyLab

* Protocols are added on a regular basis.

COMPATIBLE DATA COLLECTION SOFTWARE

MicroSurvey FieldGenius (land surveying application)
Carlson SurvCE (land surveying application)
ESRI ArcPAD with OnPOZ GNSS Driver for ArcPAD (GIS application)
OnPOZ EZTag CE (GIS application)
OnPOZ EZField (land surveying application)
OnPOZ GNSS Control Panel
Ike GPS data acquisition software
BAP precision GeoAssist software
Geo-Plus VisionTerrain

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 (pseudorange/carrier phase/Doppler)
Cycle-slip display
Observation files time span
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 and static files
Outlier detection (bad data elimination)
Algorithm to reduce data noise
Ambiguity smoothing
Base station data interpolation
Ambiguity fixing
Semi-kinematic processing for L1
Baseline batch processing
Trajectory batch processing
Loop closure generation
Rigorous least-squares adjustment

QA TOOLS

Loop closure report (closed and open loop)
Process summary report
Baseline summary report
Trajectory summary report
Network adjustment summary report
Residuals plot
Comparison between RTK and PPK positions (with delta N, E, H)

AVAILABLE VERSIONS

	EZSurv Lite	EZSurv L1	EZSurv L1 L2
Sub-meter/Sub-foot	*	*	*
Static L1 fixe (sub-centimeter)		*	*
OTF L1 (centimeter)		*	*
Static L1/L2 fixe (sub-centimeter)			*
OTF L1/L2 (centimeter)			*

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