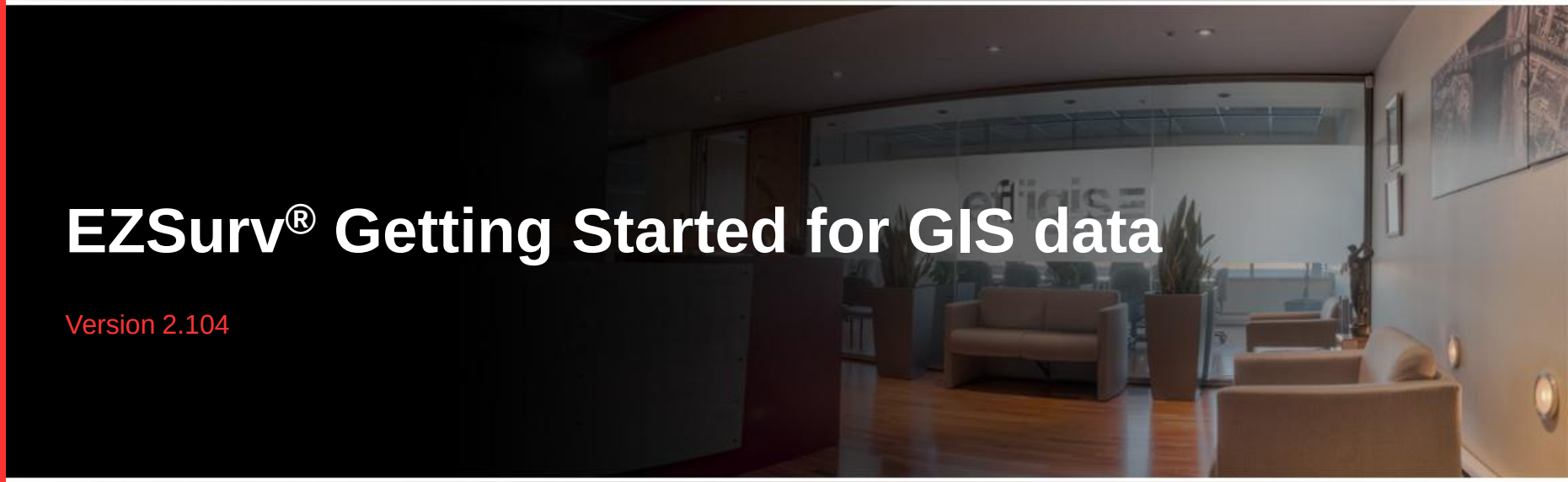
OnPOZ®
Precision Positioning



EZSurv® Getting Started for GIS data

Version 2.104

Summary

Information

- Why post-processing ?
- Compatible data collection software
- Basic post-processing concepts

Actions TO DO ONCE

- Install and license
- Default settings
- Configure Mapping System
- Configure Options

Actions TO DO AT EVERY JOB

- Post-process data
- Analyze data
- Export GIS Features (unless done automatically)

For detailed information, refer to the User Guide under **Start > All Programs > OnPOZ > OnPOZ Documentation.**

Why post-processing ?

- To improve the GNSS receiver accuracy.
- To obtain reliable results.
- To easily resolve the reference system alignment. By referencing your survey to a known Base Station (accurate coordinates), all your collected GIS features will automatically be referenced to the Base Station Geodetic Reference System. There is no other transformation to perform.

Compatible data collection software

GIS data, properly recorded using EZTag CE™ field software can be post-processed with **EZSurv®**.

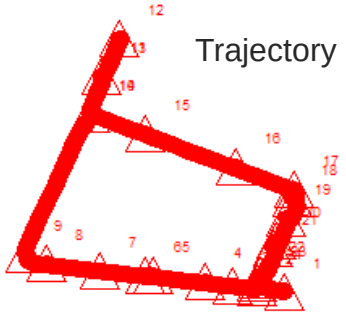
Basic post-processing concepts

In order to improve the accuracy and reliability of your GIS data with post-processing, GNSS data recorded at a reference point called **Base** Station is required. The accuracy of the positioning depends on the distance Rover-Base and the quality of the field data.

Many Base Stations are available on the Internet. **EZSurv®** finds automatically the closest base station for your field data and transfers the required files on your PC (some providers require a subscription). The base station providers list is available under the icon . If you have access to an unlisted Provider, let us know!

EZSurv® post-processes **trajectories**.

A **Trajectory** is created when a rover file (with raw GNSS data) is combined with a Base Station file (covering the rover file time span). GIS points, lines and polygons are automatically extracted from the trajectory positions.

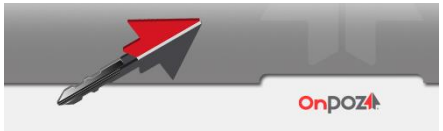


Install and license

- Download and execute **OnPOZSetup-en.msi** to install the products you want to use.

- Start **EZSurv®** application from the Windows **Start** menu, select **All Programs**, then **OnPOZ > EZSurv**.

- When starting the application for the first time, your “receiver s/n” license will be updated directly from Internet. For OPEN license use **Start > All Programs > OnPOZ > EZSurv License Management** to active your license (ask your vendor for your activation code).

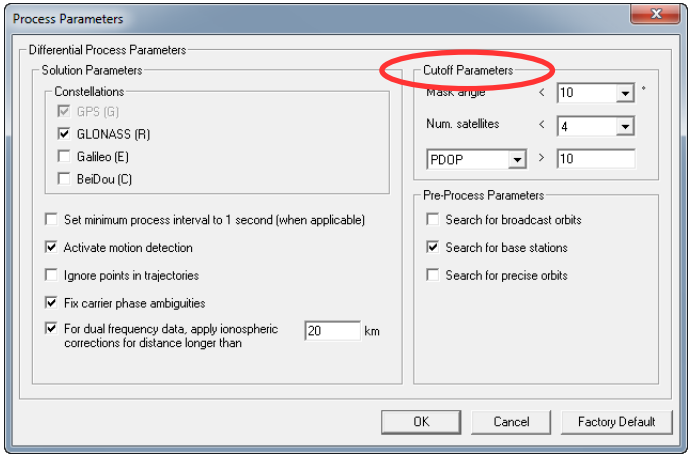


Default settings

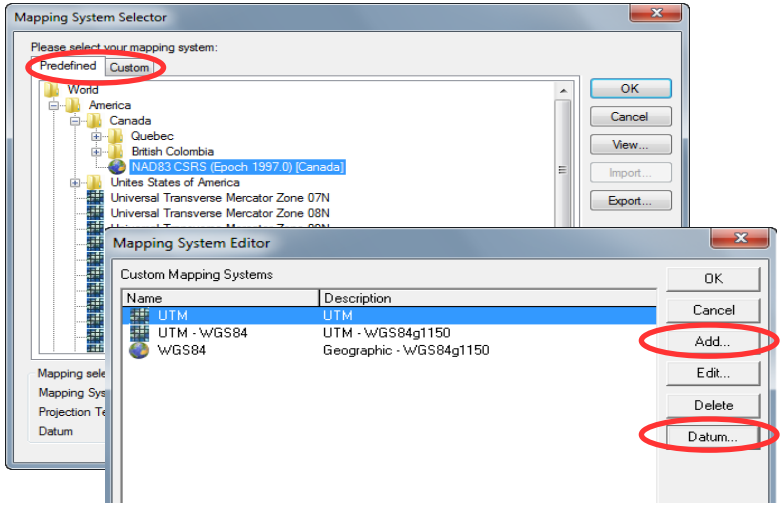
When projects are closed, you can set defaults for all future projects.

- **Close** the current project from the **File** main menu**.**
- From the **Edit Default** main menu, make sure to leave the **Processing Mode** at **Differential Positioning.** It is the most accurate mode if you have access to base station data.
- From the **Edit Default** main menu, set the default **Process Parameters**. According to your specifications, set your own process parameters (**Cutoff Parameters**) and click **OK** to save your settings.

Typically, the Factory Default values are correct for your needs.



Configure Mapping System



- Select a mapping system to display your results. You can select it from a list of **Predefined** mapping systems found under **Tools > Mapping Systems > Selector…**
- If your mapping system is not in the list, you can create a **Custom** one using **Tools > Mapping Systems > Editor…** You may need to create a **Datum** prior to **Add** a mapping system. Once your mapping system is created, you can select it with **Tools > Mapping Systems > Selector…** use the **Custom** tab.

Configure Options

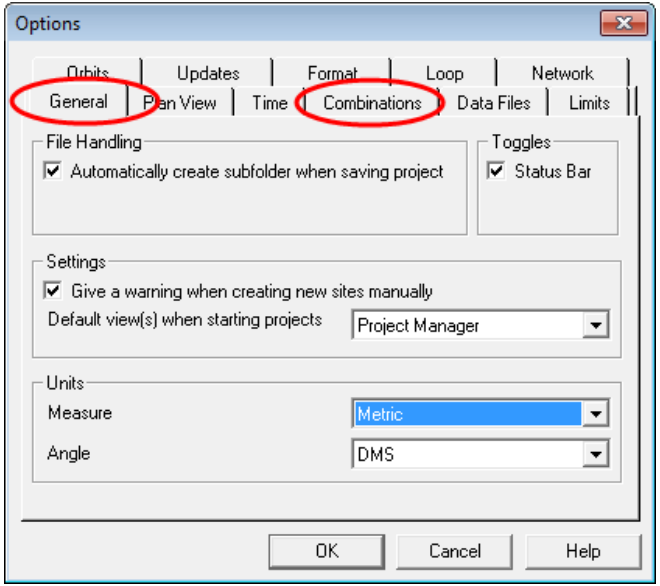
The options are kept from one project to another based on your last modifications. You access the Options through **Tools > Options…**

You must visit the following tabs to better control your process:

- **General** to set unit of measure (Feet or metric).
- **Combination** (explained page 9).

Moreover, you can visit the tabs:

- **Updates** to check or uncheck the Automatic updates (download mapping systems and Base providers upgrades).
- **Plan View** to customize its layout.
- **Time** to set the time scale.

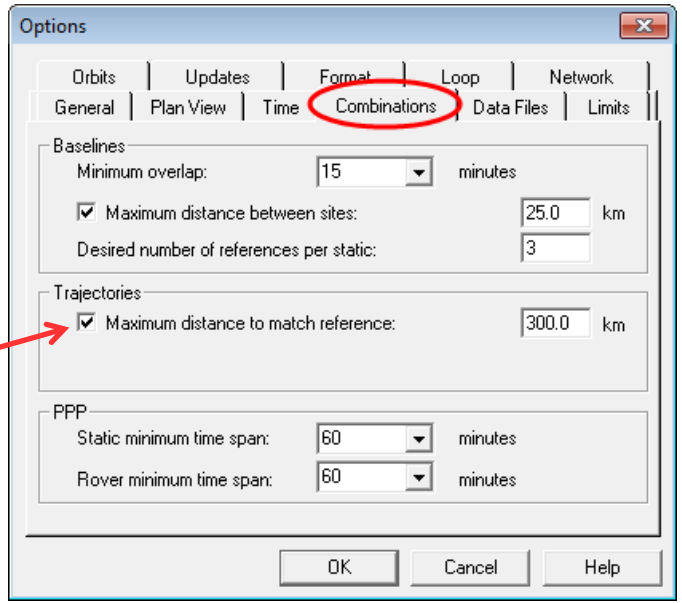


Configure Options – Combination Tab

The accuracy of the positioning depends on the distance between the Base Station (reference) and the survey area (Rover). Using your field data, the processor generates automatically a trajectory (Base-Rover) for each rover file imported in the project. The Base Station are selected according to the distance threshold set under **Tools > Options… > Combinations**.

Input a maximum Base-Rover distance to create Trajectories.

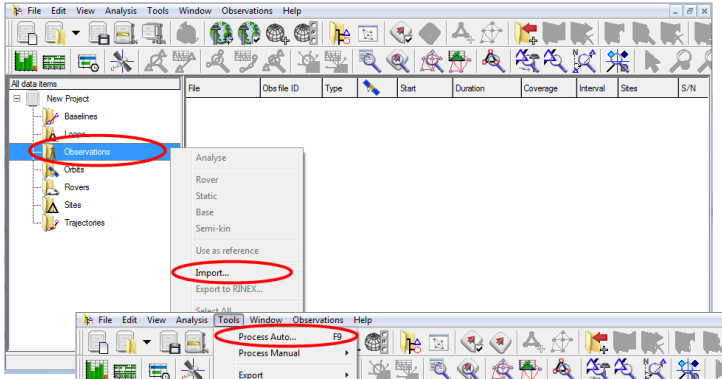
For GIS, typical distance threshold should be set between 100-300 km.



Post-process data (using a Base Provider)

1 – IMPORT YOUR DATA

- Transfer your data files to the PC.
- Start **EZSurv®**, highlight the **Observations** folder, right click and **Import** your *.GPS files.



2 – POST-PROCESS YOUR DATA

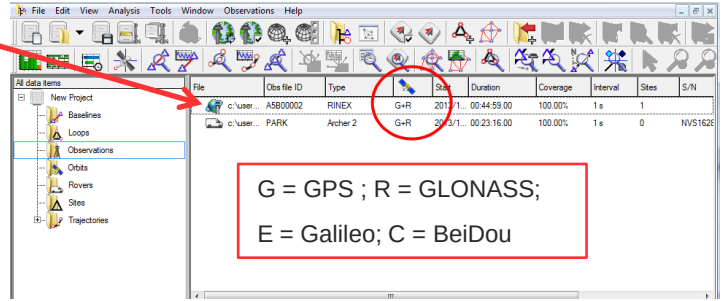
- Select **Process Auto…** from the **Tools** menu.
  The following tasks are performed:
  - ✓ Pre-Process
    - ❑ Download and merge Base data (if required)
    - ❑ Define Combinations (trajectories)
  - ✓ Process All Data
  - ✓ Display the Process Summary (to close it )

Post-process data (using a Base Provider)

3 – VERIFY THAT THE BASE AND ROVER HAVE THE SAME CONSTELLATIONS

If you use a GNSS receiver (rather than GPS only), then you should use a base with the same constellations. If the base used does not have the same constellations:

- Delete the base file (select it and delete it).
- Select **Tools > Base Stations > Finder** (main menu) to find the closest base with same constellations.
- Select **Tools > Base Stations > Providers Manager** to set your favorite provider (**Set Favorite**) and to select some specific base(s) from that provider (with **Get Station Coordinate List**).



4 – SAVE YOUR RESULTS

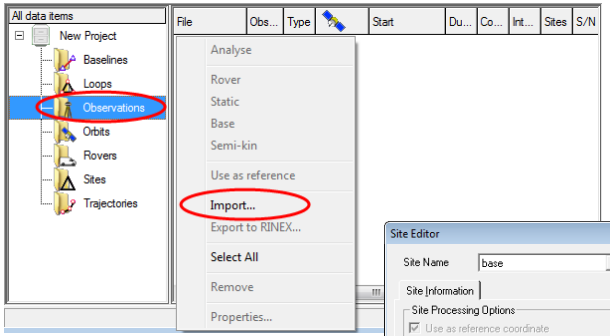
- Select **Save** from the **File** menu to update your files with post-processed positions.

The original files are kept and copied under ***_RT1.***

Post-process data (using your own Base)

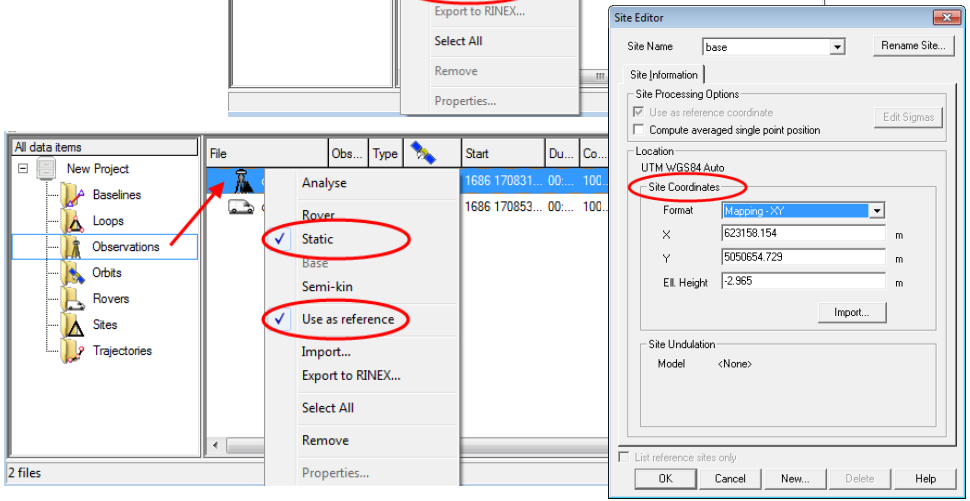
1 – IMPORT YOUR DATA

- Transfer your data files to the PC.
- Start **EZSurv®**, highlight the **Observations** folder, right click and **Import** your rover *.GPS files and your base files (*.GPS or RINEX).



2 – CONFIGURE YOUR BASE (reference)

- From **Observations** folder, highlight your Base file and right click to make sure it is set to **Static** and check **Use as reference**.
- The **Site Editor** opens: input your reference **Site Coordinates** in the proper mapping system.



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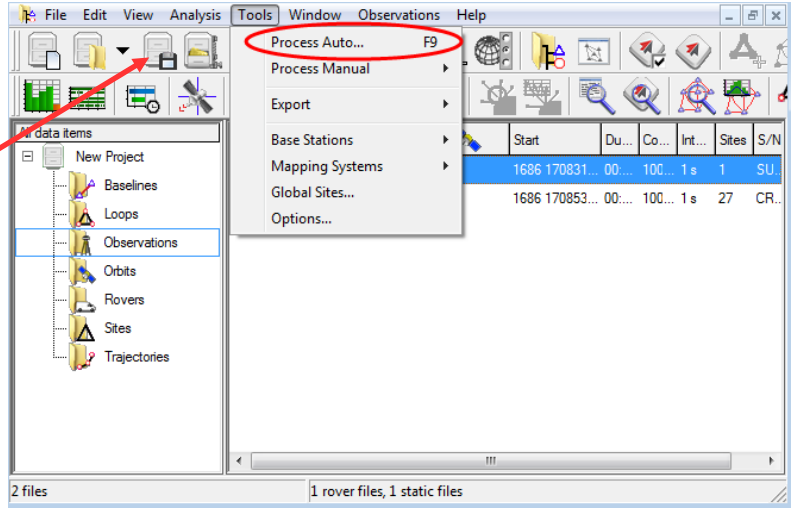


Analyze data

Analysis > Process Summary

The **Process Summary** is automatically displayed after post-processing. It provides the following information:

- Information on the project
- Information on the Base Station used
- List of rover files processed
- Features available in the data

Last Process Summary

Last Processed

Project	New Project
Processing Date	2014/11/06 10:54:51.50 (LOCAL)
Mapping System	UTM NAD83csrs Automatic
Projection Template	Universal Transverse Mercator, Automatic (UTM-A)
Datum	NAD83 - Canadian Spatial Reference System
Geoid Model	<None>

TRAJECTORIES

Base Station	drao
Constellations	GPS, GLONASS
X	309256.478 m
Y	5466635.031 m
Ellipsoid Height	542.230 m
Undulation	0.000 m
Mean Sea Level	542.230 m
Scale Factor	1.0000469
Central Meridian	W117°

Rover	Distance (km)	Number of epochs Total	Solved	% Solved	Constellations Used
A92206_4WHIS	203.4	102	102	100.00	GPS, GLONASS

[Points] Type	Feature	Number of points Total	Solved	% Solved
Point	Stations	1	1	100.00

[Continuous lines/polygons] Type	Feature	Count
Line	Road	1

Select **Archive project** from the **File** menu to save your post-processing project into one file.

Analyze data

Analysis > GIS Feature Summary

You can view the features position along with their post-processed accuracy.

The solution types **Pseudo-ranges (raw)**, **L1 (float)** and **L1 (fixed)** indicate post-processed positions.

GIS Feature Summary

KHS LOWER SE | All | C:\...\EZData\Forest\Kucera\20110922\DATA1\khs lower sept 20.tag

KHS LOWER SE | C:\Users\sgos\EZData\Forest\Kucera\20110922\DATA1\khs lower sept 20.tag | EZTag CE

[Points] Feature	Label	Start time	Duration	Solution	Position X (m)	Position Y (m)	Position EllHgt (m)	Standard deviation X (m)	Standard deviation Y (m)	Standard deviation Hgt (m)
Point Average	0	2011/09/20 15:48:17	00:04:58	L1 (float)	918735.194	5698402.083	1009.143	0.241	0.091	0.119
Point Average	1	2011/09/20 15:53:59	00:04:58	L1 (float)	918718.573	5698425.734	1010.522	0.245	0.097	0.131
Point Average	2	2011/09/20 16:00:03	00:04:58	L1 (float)	918699.178	5698438.881	1008.306	0.248	0.107	0.141
Point Average	3	2011/09/20 16:05:41	00:04:58	L1 (float)	918687.362	5698431.647	1009.361	0.230	0.107	0.134
Point Average	4	2011/09/20 16:11:45	00:04:58	L1 (float)	918692.637	5698420.866	1009.696	0.213	0.094	0.127
Point Average	5	2011/09/20 16:18:05	00:04:58	L1 (float)	918710.396	5698402.556	1008.854	0.144	0.060	0.083
Point Average	6	2011/09/20 16:30:37	00:04:58	L1 (float)	918725.707	5698377.100	1007.781	0.235	0.093	0.142
Point Average	7	2011/09/20 16:36:33	00:04:58	L1 (float)	918745.701	5698355.015	1009.939	0.234	0.102	0.098
Point Average	8	2011/09/20 16:42:13	00:04:58	L1 (float)	918764.622	5698329.460	1008.535	0.187	0.077	0.099
Point Average	9	2011/09/20 16:48:27	00:04:58	L1 (float)	918788.116	5698293.022	1009.826	0.203	0.074	0.118
Point Average	10	2011/09/20 16:54:27	00:04:58	L1 (float)	918805.789	5698260.260	1009.258	0.152	0.050	0.073
Point Average	11	2011/09/20 17:01:37	00:05:00	L1 (float)	918814.684	5698257.834	1009.794	0.242	0.074	0.110
Point Average	12	2011/09/20 17:07:15	00:04:58	L1 (float)	918819.801	5698278.129	1008.034	0.454	0.205	0.199
Point Average	13	2011/09/20 17:13:17	00:04:58	L1 (float)	918811.234	5698290.995	1008.587	0.244	0.074	0.094
Point Average	14	2011/09/20 17:18:53	00:04:58	L1 (float)	918800.224	5698305.716	1008.338	0.387	0.179	0.144
Point Average	15	2011/09/20 17:25:07	00:04:58	L1 (float)	918773.111	5698341.578	1008.732	0.388	0.124	0.118
Point Average	16	2011/09/20 17:30:43	00:04:58	L1 (float)	918760.888	5698358.433	1008.911	0.383	0.113	0.100
Point Average	17	2011/09/20 17:36:19	00:04:58	L1 (float)	918750.681	5698375.470	1009.740	0.379	0.106	0.099
Point Average	18	2011/09/20 17:41:57	00:04:58	L1 (float)	918740.255	5698392.743	1008.998	0.440	0.251	0.319
Point Average	19	2011/09/20 17:48:13	00:04:58	L1 (float)	918716.163	5698412.248	1009.098	0.431	0.100	0.119
Point Average	20	2011/09/20 17:53:59	00:04:58	L1 (float)	918737.375	5698378.584	1009.392	0.423	0.091	0.106
Point Average	21	2011/09/20 17:59:43	00:04:58	L1 (float)	918758.986	5698346.004	1008.616	0.426	0.090	0.423
Point Average	22	2011/09/20 18:05:25	00:04:58	L1 (float)	918779.085	5698315.566	1009.748	0.389	0.087	0.254
Point Average	23	2011/09/20 18:11:15	00:04:58	L1 (float)	918804.052	5698282.323	1009.170	0.375	0.087	0.221

Total: 24 point feature(s) (24 processed)

Export GIS Features

- If you used **EZTag CE™**, export your post-processed features using a specific GIS format with **Tools > Export > Features**… (explained page 17).
- With **EZSurv®**, you can add the export process to the tasks performed automatically (**Tools > Process Auto…**). In order to do so, you can configure the export output with **Tools > Export > Configure Batch Export**. In Configure Batch Export Window, make sure to check:

  ✓ Batch Export **Feature** section (refer to page 17 for details)

  ✓ and **Automatically batch export after processing**.

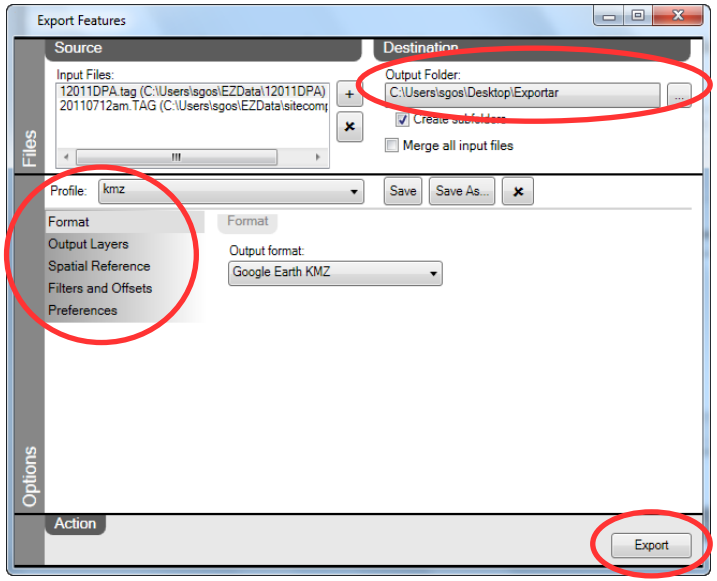
Export GIS Features

To configure your features export:

Select the **Output folder** (not available with **Configure Batch Export**, since the output folder is configured in the Window Configure Batch Export).

Configure the export (**Format**, **Spatial Reference**, apply **Filters and Offsets** to the output, set some output metadata according to your **Preferences**). Your export configurations are saved in a **Profile** for future exports and for batch exports.

Click **Export** to export your files (not available with **Configure Batch Export**, simply close the Window once your profile is created).



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Precision Positioning