EZTag CE™
GNSS/GIS DATA COLLECTION SOFTWARE

onpozi
Product Overview // July 2018
EZTAG CE SOFTWARE

Designed for highly productive field GIS data collection

EZTag CE™ software is designed to collect simple or complex data models in the field along with the functionality to improve geometric accuracy in post-mission mode using EZSurv® Post-Processing software.

The software can be used on any compatible Windows Mobile device (5.0 and later) or any PC (Windows XP or later) and can be connected to different GNSS receiver brands commonly used in the market.

EZTag CE allows you to easily collect geospatial data, including points, lines and polygons, along with their specific attributes. Ready-to-use without programming, the EZTag CE data dictionary editor manages simple and complex data models. In this way, users can easily model their data to match their own office database structure.
EZTag CE Data Flow

Collecting geospatial data is typically divided into three steps.

1. If you want to collect specific geospatial data in the field, **preparation** must first be carried out in the office to configure a dictionary to model the data to be captured. A data dictionary may contain many different feature templates, so the dictionary can be created once to cover all your needs.

   “If you want to collect simple points, lines and polygons, you can used the provided dictionary, to speed up the field data collection.”

   If you are using cartographic files in the field, you need to set your mapping system (map projection and datum) to have your GNSS positions properly overlay your mapping files. EZTag CE comes with a large library of pre-defined mapping systems. You can even define your own mapping system if necessary.

2. During the **field operation**, you can use a GNSS receiver to capture the precise positions, a laser rangefinder to offset your position when required, plus a barcode reader, and camera to associate a picture with your feature. The GNSS receiver can be configured to record the raw GNSS data in order to improve your post-processing accuracy.

3. **Back in the office**, your data is imported to EZSurv to be post-processed if required, and then be exported to a GIS format to be used by your corporate GIS.

See reference diagram on page 4.
STEPS FOR COLLECTING GEOSPATIAL DATA

1 Office preparation

Create a data dictionary to model your data

Dictionary

2 Field Data Collection

Laser Range Finder
Barcode
Camera

GNSS

Positions Features Raw GNSS Data

When using field positions

Export to GIS formats

EZSurv®

When using accurate positions from Post-Processing

3 Office Processing

Corporate GIS
Office Preparation

Full feature Data Dictionary

If you have to model a specific dataset, EZTag CE provides a Dictionary Editor for creating these data models. The Dictionary Editor lets you describe a feature based on different types of attributes:

- **Numeric value** (default value, value within a range, value within a matrix of ranges, auto increment, fix number of decimals)
- **Alphanumeric** (default value, maximum of character, entry mask)
- **Logical choice**
- **Single choice** from a drop-down list
- **Conditional choice**
- **Multiple choice** from a list
- **Date**
- **Time**
- **External** (single choice from an external text list)
- **Picture** (from the embedded camera)
- **Position** (from a GNSS receiver or a manual input)

A “help” description can be associated with each feature to be displayed in the field while collecting the data. Specific “help” can also be extended on each individual attributes.

A dictionary can include as many features as you want so you can include what you need in one dictionary and use it for all your field work.

Other options can be used to add extra validation in the field. For instance, you may require a confirmation for specific numeric attributes (in order to avoid blunders), you may want your field operator to be warned when the trend of a specific attribute changes, etc.
Mapping System Tools

In order to view your field data in the mapping system itself, EZTag CE includes a library of hundreds of previously defined mapping systems to be used in your data collector. It also includes a Mapping System Editor for defining any other mapping systems that might not be in our database.

In addition to map projection, a specific datum can be selected or customized. This is important when your local data are not aligned with the satellite reference system. Specific selection of a map projection/datum allows you to properly overlay your GNSS positions onto your cartographic data.
Field Data Collection

Once your data dictionary and mapping system templates are transferred to your data collector, you are ready to collect your data.

Extended GNSS compatibility

EZTag CE can be connected through Bluetooth® or serial connection on any receivers based on the following GNSS boards:

- Hemisphere GNSS
- NavCom
- NovAtel
- NVS technology
- Septentrio
- SiRF
- u-blox

It can also be connected to all other receivers through NMEA protocol (NMEA cannot be post-processed)

Along with feature and attribute data collection, you can record raw GNSS data from your GNSS device in order to improve the accuracy of your GIS data using EZSurv post-processing software. EZTag CE is designed for reliable raw data recording. When using a dual frequency receiver, EZTag CE records all the necessary data to post-process, accurate to the centimeter.

Powerful features to get reliable data

The main features related to field data collection are:

- Easy and powerful field data collection of features, attributes and position data
- Default data dictionary to speed up data collection
- Data collection mode in grid form or in a scenario mode (step-by-step data collection)
- Support for raster and vector background maps
- Compatible with ESRI Shapefiles
- Navigation to features and/or waypoints
- Different views to validate satellite constellations (sky plot, azimuth/elevation/SNR table, etc.)
- Support image attributes (from embedded camera)
- Compatible with laser rangefinder to offset points
- Record GPS and GLONASS raw data for post-processing
- Post-process accuracy to the centimeter when using any dual frequency receivers
Different validation parameters are implemented in EZTag CE in order to secure reliable data collection. Your field employees are not left to themselves, since the data collection scenario helps them collect every single piece of required data in proper order. Conditional data collection scenarios are supported to ease field experience. Help on each feature/attribute can be opened at any time.

Geometric accuracy is also validated by different tracking parameters related to the satellite constellation (mask angle, DOP filter, number of satellites, etc.). Constellation parameters can be displayed in a sky plot along with the current position, its quality, the signal-to-noise ratio, and satellite positions (azimuth/elevation).

All collected data can be viewed in Plan View using full feature tools for data management. Recorded features can be revisited to edit attribute values or simply to recapture a position. They can be selected in Plan View or selected from a list.

**Office Processing**

![Sky Plot](image1.png)

Statistics about the number of collected features

Distance measurement on the Plan View

**EZTAG CE CAPACITY**

EZTag CE enables you to easily collect geospatial data, including points, lines and polygons, along with their specific attributes. Ready-to-use without programming, the EZTag CE data dictionary editor manages simple and complex data models. In this say, users can easily model their data to match their own office database structure.
Once back at the office, field data are transferred to the Office PC to be exported to GIS format, or to be post-processed and then exported. GIS data can be exported in ESRI Shapefile, in DXF format, in CSV format or in KMZ format to be viewed in Google Earth.

**Quick and Powerful Post-Processing**

EZSurv post-processing software is fully compatible with EZTag CE as well as with the native data format of all the receiver boards listed in the previous section (no need for RINEX translation). When working in an area covered by a CORS network, post-processing can be done in one click. This includes the following steps:

- Searching for the closest operational base station
- Downloading the required base station data
- Merging all base station hourly files
- Interpolating the base station data to the survey data interval
- Processing your survey data
- Exporting your data into a selected output format
All of this is done automatically for one or more files (batch mode). For typical GIS devices, post-processing can make a huge difference in terms of accuracy.

Once post-processing and export are completed, you can archive all your data in one compressed file.

### Handheld Field Computer

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows Mobile® version 5.0 or 6.x</td>
</tr>
<tr>
<td>Processor type</td>
<td>ARM, XScale</td>
</tr>
<tr>
<td>Processor speed</td>
<td>200 MHz or faster</td>
</tr>
<tr>
<td>Memory</td>
<td>64 MB RAM with at least 8 MB free memory</td>
</tr>
<tr>
<td>Input/output</td>
<td>Serial cable and RS-232 serial port or Bluetooth® technology for connection to the GNSS receiver</td>
</tr>
<tr>
<td>Display</td>
<td>Colour touch screen (240 × 320 pixels or larger)</td>
</tr>
</tbody>
</table>
Windows Field Computer
Operating system:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Windows XP, Vista, 7, 8, 8.1, and 10 (32 or 64 bit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor speed</td>
<td>500 MHz or faster</td>
</tr>
<tr>
<td>Memory</td>
<td>64 MB RAM at least 8 MB free memory</td>
</tr>
<tr>
<td>Input/output</td>
<td>Serial cable and RS-232 serial port or Bluetooth® technology for connection to the GNSS receiver</td>
</tr>
</tbody>
</table>

Vector formats (background)
- Effigis TAG file format
- ESRI Shapefiles (.shp)

Raster (image) formats
- Supports many formats (*.tif, *.jp2, *.pdf, *.ecw and *.bmp)
- EZTagCE comes with a tool to crop a Web Map image.
Visit our OnPOZ Technical Support Area
http://www.onpoz.com/Support/KBData/KbMainPage.aspx in order to answer some of your questions.
See also:

**EZField™**
Powerful yet easy to use survey software for collecting GNSS survey data to obtain centimeter accuracy in static and semi-kinematic modes.

**EZSurv®**
GNSS Post-Processing software that provides a reliable and efficient RTK offline solution. Processes GPS, GLONASS, GALILEO and BEIDOU signals from different types of receiver brands. Compatible with industry standard data collection software.

**OnPOZ GNSS Driver for ArcPad**
Receiver-independent extension that adds the power of post-processing to ArcPad.

**GNSS Control Panel**
Allows you to record raw GNSS data from different receiver brands.

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**Software**
OnPOZ Precision Positioning Software is a complete suite of applications that enables you to easily and accurately collect, record and post-process geospatial data.
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