First chapter: Introduction

Since the apparition of the Global Positioning System (GPS), it became almost essential to use GPS receiver during our outdoor activities. Whether you go on foot, riding a horse, by bike or sailing with kayak, this device will accurately informing us at any moment of our position, distance traveled and route followed. Once at home, we can analyze this information back, modify them, display them graphically over our digitized maps or 3D images and share this content with our friends. The program CompeGPS Land allows you to complete this and much more, and for this reason we started this new section where we will go shelling, month by month, all the secrets behind this application.

CompeGPS Land is a software that proposes to go further in our outdoor activities and allows us to extract the maximum and revive them in a new, funny and different way. The many preparation, navigation and analysis tools available with **CompeGPS Land** are the ideal base for any amateur or professional outdoor sportsman, which will give him the possibility to transfer data from (tracks, routes, waypoints) with their GPS receivers to the computer and vice versa.

CompeGPS Land is compatible with most GPS models. You can work with this data after viewing the picture on digital maps, create new routes, tracks or waypoints and even discover the more realistic and spectacular 3D images. Among others, the most important functions of **CompeGPS Land** are:
- Visualization of digital maps in many different formats.
- Download free maps from Internet.

- Calibrating maps to digitize the paper maps you have.
- 3D landscapes from around the world via free download.
- Last generation 3D viewer to work in the most spectacular and realistic way.
- Creating, editing and animation of way points, tracks and routes.
- Direct navigation with moving map mode (laptop).
- Compatibility with most of the GPS for sending and receiving routes, tracks and waypoints.
- Roadbooks to store and manage all the excursions, know statistics and monitoring progress.
- Track Server to share trips with others.

PREVIOUS CONCEPTS:

The main goal of this guide is not to explain the use of a GPS and the roles that these devices can develop, but there are some concepts related to its operation to be known, in order to understand and fully enjoy the program **Compe-GPS Land**. If you have to buy a GPS receiver, you should know for sure that the equipment chosen has the desired characteristics.

Datum: the maps are drawn with references from which measurements are made, called datum. If you look at the map you will see a series of lines drawn perpendicular. This grid (in blue on the editorial Piolet maps and black on the editorial Alpina maps) is used to help describe a position on the datum point. Both publishers are working with European Datum 1950. So, before working with your GPS, you will have to make sure you have selected the correct datum.

Coordinates: is a reference system that uses both angular coordinates (latitude and longitude) to determine the positions of the Earth. Most popular are the geographical coordinates (latitude and longitude) and map projections (UTM - Universal Transverse Mercator). The first ones indicate the angular position by coordinates of latitude (angle between any point and Ecuador) and length (angle between any point and the meridian of Greenwich). These coordinates are defined in degrees, minutes and seconds. Map projections, however, are the coordinates of a point on a distorted representation of the earth's surface onto a plane. Among the various systems used to perform this projection, the most used on our maps is UTM system, which builds geometrically the map so that the parallels and meridians are transformed into a regular and rectangular grid.
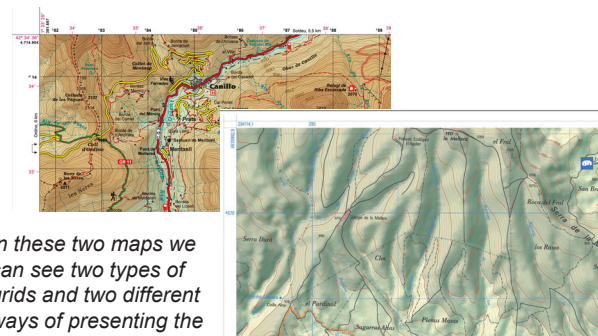
In these two maps we can see two types of grids and two different ways of presenting the coordinates.

The point P in this example has the following geographic coordinates: latitude 42 ° 21 '30"N and longitude 71 ° 03 '27"E
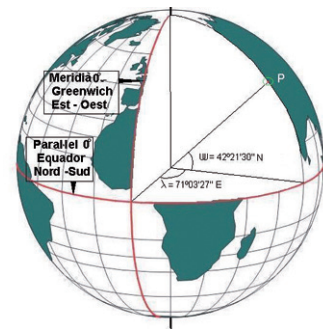
Waypoints: are reference points used for identifying and/or remember places. GPS receivers are capable of storing a certain number of points. Apart from the numerical value of their coordinates, it must have a name that identifies them.

Routes: in **CompeGPS Land** as in our GPS receivers, the route is a list of crossing points. The device will indicate the way forward, straight and sequentially, to go from one way point to another.

Track: the track is a set of crossing points without name concatenated one after another to define a route. As we move, the GPS will store a series of points will draw the path we have done. At each point are associated coordinates, a height (if GPS has altimeter), a time and date of creation. With these data **CompeGPS Land** can then draw the route on a digital map, showing the altimetric profile and give us technical information about the trip, as the distance traveled, speed or duration of travel. Mountain bike lovers like to see, once at home, the disparities that have made them suffer riding the bike.

One of the advantages of working with **CompeGPS Land** is that you can create your waypoints, tracks or routes on the computer, then pass them to the GPS and make the trip following the route plotted. This is a formula often used by mountain skiers, who know the possibility that snow hide the roads and trails and take the opportunity to store the track in a GPS.

CompeGPS Land license uses a modular system to meet the specific needs of each user. This system consists of dividing the program into several modules (groups of functions) that can be purchased separately. The program consists of a "core functions" free, which can be supplemented by the "advanced". The latter are sold grouped into modules. It is also possible to purchase a "Standard License" (recommended) to activate most functions of the program.

How to get CompeGPS (basic) Free

The easiest way to access the program is to download it from the Downloads section of the website: www.compegps.com.
Once downloaded and installed, a user registration is required to activate the basic functions. If you do not perform this free procedure, would be available only the minimal functions of the program and you would not have the option to try the rest.
Next month we will see all these steps of installing and configuring the program.

Requirements:

To use **CompeGPS Land** is required to have a computer. It is not necessary a next-generation machine, a Pentium II or equivalent is enough. Of course, you must have Windows XP, Windows Vista or Windows 7 OS and a minimum of 128 megabytes of memory (512 MB is recommended). To take full advantage of this guide that we start today, you should also have a scanner and a graphics editing software, which allows you to retouch digital images (in our examples we will use Photoshop).