



Greetings again... from GIS

This is the first newsletter to discuss GIS. It should be useful for both those who already collect GIS data and those who do not even know what GIS actually is.

Further newsletters will cover the more technical aspects of GIS data collection.

What is GIS?

A **GIS** is a **Geographic Information System**. More specifically, it is a computer based information system that enables data acquisition, modelling, manipulation, analysis, presentation, and dissemination of *spatially referenced* data.

GIS is a **software**. The actual structure of the GIS is determined by the methods and the people behind the GIS. Generally, the people who would use a GIS can be categorised into one of three groups:

- Administration group (the GIS database managers)
- High-end users (the people to do most of the daily GIS work)
- Low-end users (usually the group the GIS is made for, e.g. the Internet community)

GIS is a fast growing business. More and more industries, businesses and groups of people are realising that a GIS is the best way to collect, analyse and present their data. The availability of GIS data on the Internet, decreasing prices of hardware, and the increasingly productive ways for data collection are some of the main reasons for this growth.

So why is GIS different to a "conventional" survey?

Possibly the best way to answer this question is as follows. For a "conventional" survey, the co-ordinates and the accuracy of these co-ordinates are normally of the highest importance. In addition, the surveyor may also code and attach attributes to these points, but not always.

For a GIS survey, the code and the attributes related to the points is just as, if not more important than the co-ordinates themselves. Indeed, the co-ordinates themselves are often simply considered as just another attribute.

However, data collection for a GIS survey can quite often be simpler for a conventional survey. "Conventional" surveyors, or indeed anybody new to surveying should not be wary of undertaking a GIS type survey.

Leica GPS Systems and GIS

The Leica GS50 sensor is designed for GIS data collection and GIS navigation and update.

The GIS "**Data Collection**" program intuitively guides the user to measure points, lines and polygons. For example, a tree would be considered a point, a fence as a line and a pond as a polygon. (On the sensor the word "area" is used instead of "polygon". Both words are common GIS terminology)

The GIS "**Navigation and Update**" program is the key application used for the updating of existing GIS data.

An introduction into the use of these GIS applications will be given in the next newsletter.

In addition, existing System 500 sensors can be "upgraded" with a password to access these GIS application programs and still retain the previous full survey applications. This allows, for example, an SR530 RTK sensor to be used for both conventional survey and stake out routines as well as the GIS applications. No additional hardware or firmware is needed.

Leica GIS DataPRO

Data collected using the GIS applications is imported into the **GIS DataPRO** software. This is software specifically designed to handle GIS data. All GIS data is directly viewed and edited in the **ESRI** Shapefile format.

ESRI (Environmental Systems Research Institute - www.esri.com) is the market leader for GIS solutions, setting the GIS standards. Since 1997 Leica Geosystems and ESRI have been GIS partners.

The many advantages of using the Shapefile format will be discussed in a future newsletter, but it basically allows the direct import and export of data into many other GIS.

Remember...

- The differences between conventional survey and GIS survey are decreasing.
- The GIS application programs can run on any System 500 sensor.
- The use of the GIS application programs is intuitive and therefore extremely easy to learn and use. Try them!