

Newsletter Vol. 01, No. 15...

Newsletter Vol. 01, No. 15 mentioned that Great Britain's National Mapping Agency – **Ordnance Survey (OS)** is using System 500 to keep Britain's maps up to date.

OS could end up using several hundred receivers (a total value of several million pounds) - this is the biggest order for GPS ever received by Leica.

The National Topographic Database

All of Great Britain's maps are stored in digital format in an accurate electronic "master map of Britain" called the **National Topographic Database (NTD)**. This is a MASSIVE database and includes over 200 million different features of the British landscape from the shape of individual buildings to the exact location of public telephone boxes.

It has already been mentioned that one of the main objectives of OS is to continually update the existing maps of Great Britain – this effectively means to update the **NTD**.

As with any country, the infrastructure of a country is always changing – new roads and houses are being built, other buildings are demolished, even relatively small things such as the position of a post box being moved – all these changes need to be surveyed. Clearly, the NTD then needs to be updated with these newly surveyed features.

Updating the NTD

Obviously, it is desirable that the NTD can be updated as soon as possible once the surveyor has completed his work in the field – in this way the maps of Great-Britain are as up to date as possible.

The most efficient way for OS surveyors to update the NTD is to actually update the NTD in the field. This is of course impossible – the whole NTD is too large - however OS surveyor can do the next best thing.

At the start of the day, an OS surveyor knows in which area of the country he will work and will download the relevant part of the NTD (in effect, download a section of the map) into his Penpad computer.

The Penpad runs a software called **PRISM** which was specifically developed for OS. Basically, this software allows the surveyor to view the map of the area in which he is working as he works. He can then actually survey the new roads, buildings and post boxes with System 500, updating and creating the new map as he works. At the end of the day, this updated map is uploaded back into the NTD – and another part of the British maps has been updated.

The System 500 sensor sends the surveyed co-ordinates to the Penpad computer using **NMEA** messages. These NMEA messages are then used by the Prism software to give the necessary co-ordinates to the locations of features on the map.

The penpad computer is mounted on the pole and the surveyor uses a "pen" to operate the OS software and update the map. The TR500 Terminal is not used by the surveyor – instead, the penpad computer runs a "**Terminal Emulator**" software also specifically developed for OS. The sensor



operates in "Remote Mode" and if required, the surveyor can steer the sensor as if the TR500 was attached to the sensor using the emulator software.

Productivity Increase with System 500

An 8-month pilot project to investigate the use of System 500 for data collection was initiated by OS starting in November 2000. Four field offices throughout Great Britain were selected to carry out this pilot project.

One of the aims of this pilot project was to investigate the different ways to collect data using System 500 such as in conjunction with a **DISTO**. This was actually so successful, all OS surveyors using System 500 are now equipped with DISTO. Another aim of the pilot project was to find out if the quantity of data collected using System 500 has increased over the more traditional methods of collecting data. (Traditional methods include taping and total stations for example).

The ultimate aim of the pilot project is to define the working procedures that must be followed by all OS surveyors using GPS and to gauge efficiency gains.

Initial feedback shows that productivity has increased. And remember this increase in productivity has been achieved by field surveyors who had previously no experience in using GPS – **this shows how simple System 500 can be to use!**

Remember

- It is planned that the use of GPS within OS will greatly increase in the future. **A great success story for the partnership between Leica Geosystems and Ordnance Survey.**