

## Q/A with Andrew Beckerson



Andrew Beckerson, Sales and Marketing Director, KOREC Group

### How can GPS contribute to Risk Monitoring, Planning and Management?

The benefits of GPS can be felt in both the field and the office. Data collected in the field – everything from positional to attribute information and photographs – can be spatially analysed in an office GIS to provide an up to date picture of recorded points. This information, whether it is incidents of localised flooding or the position of faulty lighting columns, can then be used to make informed decisions either for future planning or immediate action. Similarly, data from an office GIS can be taken out into the field on a hand held GPS such as Trimble's GeoXT, and verified to ensure that all records are relevant and accurate. In an emergency situation, having this sort of information on a screen, in the field, enables you to quickly navigate to a point such as the nearest fire hydrant and to build up a better picture of what's happening around you.

A typical example would be Saxon Weald Housing Association which needed to find a solution for the management of the thousands of trees in its care following the recent change in law introducing corporate manslaughter liability for injury or death caused by negligence in the management of trees. They selected a sub-metre GPS to carry out the work and can now accurately identify a tree within a given street, analyse it and then prioritise any work on it depending on the level of maintenance required to keep it safe.

### How easy is it to collect and transfer data?

Recent developments mean that data transfer couldn't be more straightforward. Data can be automatically downloaded back at the office into a corporate GIS within minutes. It's just as easy to wirelessly send collected information from the field using FastMap software. On the data collection side, recording GPS points and attribute information has been simplified over the years to include pre-defined fields with auto-entry and pick lists to eliminate missed information and typos, whilst a hand-held GPS like Trimble's Juno will automatically link a photo to its GPS position and attribute information to ensure there is no mix up back at the office.



Adam Chell with his sub-metre Trimble GeoXT

## Day of the Knotweed

*Cornwall County Council adopts GPS technology in its fight against knotweed.* Introduced to the UK in the mid-nineteenth century as an ornamental plant, knotweed grows rapidly with mature plants reaching 3m. It has now become highly invasive in the UK with its vigorous growth in summer and thick mulch of decaying canes and leaves in winter causing extensive damage to concrete structures such as foundations, flood defences and roads and it can easily grow through tarmac surfaces.

Cornwall C.C. Countryside Officer, Adam Chell explains, "It can cost between £1,000 and £2,000 to spray a 10m<sup>2</sup> area of dense growth over a three year period. However costs can escalate dramatically when you look at the 'dig and dump' option regularly used by developers. Correctly clearing a site this size could cost around £300,000 even before transport costs.

In 2000, Cornwall C.C. began the process of manually recording knotweed locations

reported by members of the public. However locations were never exact enough and producing maps for contractors could be time consuming. Adam continues, "A GPS was the obvious solution so we contacted Trimble's UK distributor KOREC and they were able to demonstrate a Trimble GeoXT hand held GPS. In recent years we've mapped over 4,000 knotweed sites and with locations sometimes being just the size of a single stem, the real-time sub-metre accuracy that the GeoXT provides is perfect."

"The great thing is that with the OS background map data, we can see on the screen exactly where we are and where we've mapped. We can now quickly download accurate, collected information into our GIS so that knotweed locations can be viewed by everyone from the public to property planners."

*For the full story, please visit:*

<http://www.geoconnexion.com/geoconnexionuk.php>

## Getting the Wider Picture

*Reading Borough Council select hi-tech GPS Cameras to combat graffiti.*

Following the purchase of two high resolution Ricoh GPS cameras from UK distributor KOREC, Reading Borough Council (RBC) became the first council in the country to use this technology in its fight against graffiti. The cameras work by automatically embedding the captured graffiti images with GPS coordinates. At the same time, up to five

user-defined attributes such as graffiti type (spray paint, marker pen etc.) and whether or not the graffiti was offensive can be recorded on the camera. These attributes and the image are transferred into the Council's office based corporate GIS. An additional bonus is that RBC operates the same corporate GIS as Thames Valley Police allowing easy export of up-to-date, relevant data to their system.

## ...More Tips and the Future

### How do I choose a system that's right for my application?

GPS systems can be broadly put into four categories:- consumer systems for out door applications such as hiking which will offer limited functionality and around 5-10m accuracy; basic entry level, competitively priced systems offering 2-5m accuracy; excellent all round sub-metre systems and finally for highly accurate positioning, cm accurate RTK survey grade systems. For Risk applications a sub-metre or 2-5m accuracy system would usually fulfil any GIS data collection criteria. A range of easy to use on-board software is available to run on Trimble hand-held GPS including FastMap Mobile and ESRI ArcPad.

GPS ready cameras are also popular and are an excellent way of recording basic attribute and positional information geo-referenced to a time-stamped photograph. A council in Ireland is currently using a Ricoh GPS camera with FastMap software to capture the location of damages to roads within the county created by heavy trucks and machinery working on capital road projects. These locations and photos are then handed over to the contractor at scheduled intervals to provide them with evidence of road damage and potentially dangerous pot holes. The contractor is then liable to correct these damaged locations within a time frame to maintain safe road conditions.

In selecting a system, it is vital to have a clearly defined list of exactly what you wish the hardware and software to deliver and to trial it first.

### Working in real-time – what are the benefits?

I can see four clear benefits that working in real-time can bring. When a situation demands a quick reaction, the ability to transfer a 'packet' of information to the office including position, attribute information and a photo, is invaluable. An immediate line of action can then be decided upon based on relevant, up to the minute, information. Secondly, this process works both ways and the office can transfer maps etc on request to field workers as required, eliminating the need for time-consuming trips to the office to download missing information. Thirdly, real-time data collection with FastMap also means that a field operator can see exactly where he is on his background map (OS MasterMap, aerial photograph etc) in relation to what's happening around him. Finally, the movements of a lone field operator can be tracked 'live' back at the office to keep track of those working in remote or hazardous areas.

### Any exciting recent developments?

Another development is the launch of the Trimble Juno which offers 2-5m accuracy at a price that means an entire work force can be cost-effectively kitted out. It also offers a built in camera and modem.

**A. Beckerson**



The R8 can be mounted on an All Terrain Vehicle

## New Wave Technology

*Cm accuracy GPS is the solution for monitoring our coastline*

The UK's coastline needs to be monitored if existing defences are to remain adequate, future defences planned and resources channelled to where need is greatest. Looking after the Selsey Bill to Beachy Head stretch in the South East is Worthing Borough Council, the Lead Authority for the South Downs Coastal Group (SDCG).

Faced with the dual tasks of advising on future coastal defence needs and monitoring the performance of those defences already in place, they purchased four survey grade Trimble R8 GNSS receivers, TSC2 data loggers and a NetR5 base station, necessary for real-time cm accuracy in the field.

Worthing's GPS kit is predominantly used for monitoring beach levels although periodically coastal defence structure surveys are undertaken and on request, IN and OUT surveys for Local Authorities or Environment Agency contractors who recycle beach material to provide a much more accurate measure of material moved from one location to another.

Dan Amos, SDCG Project Manager, says, "Typically we spend around 75% of our working year surveying with the R8's and results are comfortably inside the +/-30mm tolerance that we require. Over time we can identify whether each of the profiles are eroding or accreting and this information supports sound decision making in the long term."

## Getting the Wider Picture

*Entry level 2-5m GPS helps keep the countryside glorious*

An environmental project in Ireland, established to combat the increase in illegal dumping/fly-tipping has found that a switch from paper records to a 'no frill's mapping system is saving time, increasing accuracy and providing essential base line data for the future.

PURE (Protecting Uplands & Rural Environments, [www.pureproject.ie](http://www.pureproject.ie)), is a government funded pilot project, the first of its kind in Ireland, which has equipped a driver with a Trimble Juno hand-held GPS receiver with KOREC's FastMap Mobile software on-board. Lightweight and compact enough to fit into the driver's pocket, the Juno is accurate to 2-5m and ideal for recording the position of the dumped rubbish. Details of the dumping incident can then be recorded on the spot using FastMap Mobile's drop down menus.

PURE Project Leader, Ian Davis explains,



"After each report or complaint received we send out our dedicated truck which ensures a swift removal of the material from the landscape. Last year we carried out around 700 collections. Previously each incident used to take the driver several minutes to record, now he's taking just 20 seconds! "This GPS and software combination has provided us with a system that is both cost-effective and very easy to use."