

# Leica Geosystems **TruStory**

## Channel Islands:

### A model for an effective system



#### **The use of Leica Geosystems has created an easy to use and reliable solution for the people of the Channel Islands. People just switch on the rover and go - without having to worry about Base Stations**

The Channel Islands consist of Jersey, Guernsey, Alderney, Sark, Herm, Jethou and other smaller islands. They are located in the English Channel, nestled in the Bay of St Malo, just 25 miles from France and 60 miles from the south coast of England. The States of Jersey and the States of Guernsey separately govern the Islands, not as part of the United Kingdom but as Crown Dependencies. To give an idea of their size Jersey is approximately 45 sq. miles and has a population of about 90,000, Guernsey is 25 sq. miles and has a population of around 60,000. Because of their relative independence, each Island has to maintain an administration and infrastructure that is effectively self sufficient. Not necessarily by growing all of its own food but certainly by creating a business and social environment, which can render each fiscally independent.

During recent years, the Guernsey States and more latterly the States of

Jersey recognised the need for highly accurate satellite positioning systems for both the maintenance of their respective Digital Mapping and for the benefit of local businesses. As the Channel Island local GIS specialist company and Leica Geosystems reseller we, at Digimap, have been instrumental in providing the required solution ably assisted by the Leica Geosystems sales and support staff.

The Channel Island GPS system consists of a base station in each of the major Islands, Jersey and Guernsey wholly owned and maintained by the respective Governments. The base stations are sited on points that have been very accurately surveyed and are key as they tie all the satellite measurements in to solid local references. The base stations receive signals from the available satellites then transmit an error correction factor, once a second, on a private frequency to roving units which in turn produce highly accurate positional measurements. Basic GSM access is of course also available, although the Islands do benefit from virtually 100% island coverage with the radios and using the available repeater units.

#### ■ **Challenge**

Provide an effective and easy to use RTK GPS system for the Channel Islands.

#### ■ **Company**

Digimap Ltd

#### ■ **Date**

Guernsey - 1999

Jersey - 2005

#### ■ **Project Summary**

##### **Instruments**

Leica SR530 base stations with Leica AT504 choke ring antennas

Leica SR530 GPS Rovers

Leica SmartRover (ATX1230 antenna & RX1250 controller)

Leica TCRA1205 Total Station

Leica GPS Spider Software

##### **Offices:**

Guernsey - Old Gsy Tobacco Factory, La Ramee, St Peter Port, Guernsey GY1 2ET and

Jersey - Chamber House, 25 Pier Road, St. Helier, Jersey JE1 4HF.

##### **Benefits of Leica Geosystems' RTK GPS**

- Simple to use
- Highly accurate
- Low cost of rover operation



***"Leica Geosystems has provided the foundation for all the GPS systems in the Channel Islands".***

*Colin S. Le Conte, Digimap Ltd.  
Managing Director*

- when it has to be **right**

**Leica**  
Geosystems



Sean Harvey of the States of Guernsey using the first Leica Geosystems rover in the Channel Islands in 1999

The Leica Geosystems base stations were primarily set up to assist the States' mapping Departments with the Digital Mapping updates. As the Channel Islands are not part of the United Kingdom (or indeed the EU), they have to provide their own updates to their excellent digital maps. David Wakeford of the States of Guernsey Digimap Service and Ralph Buchholz of the States of Jersey Mapping, lead their respective Island mapping projects. They each have small surveying and GIS teams, who are continually gathering new and amended information to update the mapping data sets. This process ensures that the mapping is dynamic and able to provide very current and accurate information to all the businesses and local government agencies that now rely on the

integrity of the map data to continue their own effective operations.



The new Leica GPS1200 series is proving to be popular with local users

Probably the biggest other users of the base stations are the Utilities. They are all at various stages of digitizing their records and the use of RTK GPS has been a major benefit to the accurate recording of asset location, most of which are of course buried in the roads. Andrew Redhead, Head of Guernsey Water said "we have two rover units and collect information everyday. The accurate positional record of our assets will help to locate our distribution pipes in the future, advise other utilities where they are and ultimately reduce the extent of road closures".

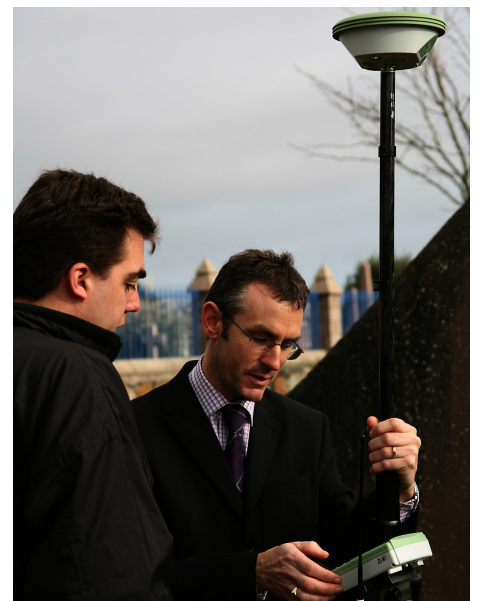
The States of Guernsey Mapping have recently purchased the new Leica TCRA1205 series reflectorless Total Station. David Wakeford, Administration & Systems Manager says "The new Total Station complements the RTK GPS very well and allows us to record highly accurate information on local properties, often without having to walk on their land."

Jersey Water has now also purchased the new cable free Leica SmartRover. This equipment stands to revolutionise the way in which the position and details of the distribution apparatus is recorded. Initially they intend to start a rolling program surveying all of the Sluice Valve boxes on the Jersey system. These boxes are surface mounted in the roads and not only mark the position of the valves but more importantly, give the line of the connected distribution main. The recorded GPS points can be laid over the existing digitised network on the digital map and the relative valves and mains can then be shifted into position. Peter Redmond the Monitoring & Systems Engineer of Jersey Water says:

*"This will effectively allow us to survey all of our underground water mains without digging up the roads, a very efficient and cost effective alternative. In fact so problematic was a full Island survey previously, it was not really a practical proposition."*

Architects and surveyors in Guernsey have for some time been utilising the GPS equipment to plot sites and developments around the Island. They are able to integrate the GPS data obtained with the vectorised Guernsey map data, thereby making their workflow much more efficient and competitive. Their opposite number in Jersey have recently had made available, an equivalent set of the Jersey map data. Digimap in Jersey has a Leica Geosystems GPS roving unit available for hire and commercial surveying is now being undertaken by various surveying concerns.

The Governments of Guernsey and Jersey have been visionary enough to see the potential benefit of combining the groundbreaking technology of Leica Geosystems GPS equipment with the accurate digital mapping resource that each Island has produced and owns.



Ben Carruthers of Leica Geosystems training Peter Redmond of Jersey Water to use the Leica SmartRover RTK GPS.