

Customer

Antalya Water and Sewerage Administration operates a drinking- and waste water system for a population close to 1 million spread over an area of around 1.5 thousand km². Daily tasks include drinking water supply, waste water service, maintenance of technical equipments and administration.

Challenge

To keep up with the rapid growth in population and unplanned urban developments, it was necessary to implement a Geographical Information System completed by field data collected with a GNSS receiver.

Solution

Ordinary paper maps have been replaced by handheld computers equipped with GNSS receiver. DigiTerra Explorer running on these devices enables workers to display network maps on site. Updating geographical information with descriptive data collected outside of the office is an important goal of the project.

Results

Having an access to the maps and the descriptive data of the GIS database as well as displaying plans has become much more efficient. With the use of GPS technology identifying valves and pipes has become much simpler.

Antalya Water and Sewerage Administration (Turkey)

GIS-based administration supported by Topcon and DigiTerra

Antalya, with a population of over 1 million people is a well-known holiday destination located in a bay of the Mediterranean Sea in Southern Turkey. The drinking-water supply of local inhabitants and guests is provided by Antalya Water and Sewerage Administration. To keep up with the challenges of rapid growing urban area, the company introduced and operates a GIS system, supported by handheld GNSS receivers.



The challenge

Fast increase in population of urban areas in and around Antalya caused unplanned and unfounded development in the past years. Recently developed areas had to be supplied by new drinking and waste water pipes, while the maintenance of existing infrastructure gives a heavy workload as well. Information technology systems and administration could not keep up with the needs of construction companies, government institutions. Maintenance workers and citizens could not be informed in an adequate way either.

In order to get the unusually rapid changes under control, a comprehensive IT system had to be established. The process started in 2002, when existing data have been transferred to a new GIS database, based on land survey. In order to correct infrastructure data, Antalya Water and Sewerage was the first administration in Turkey that has established a Single Reference Station by Topcon to enable continuous observation and communication via GPRS.

As a next step, the GIS system had to be completed with on-site data collection, in order to map new constructions, record changes and update existing descriptive data.

Mr. Erkan Demirbas, GIS manager summarizes why Antalya Water and Sewerage decided to complete the GIS system with mobile data collection operating on handheld GNSS receivers:

- Navigation to find easily valves, plugs, pipe locations
- Fast and accurate accessibility of infrastructure data on site of the developments and constructions
- Query and identification of data stored in the central database (streets, roads, pipe type, block of buildings etc.)

Software used

DigiTerra Explorer 6
Professional mobile GIS and
data collection software.

Hardware used

Topcon GRS-1 GNSS receiver

Consultant involved

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The solution

As digitalized GIS data for water pipes were already available it would have been illogical to return to paper maps and hand them out to employees. For this reason, it was decided to make use of the established GNSS Single Reference Station and purchase Topcon GRS-1 GNSS receivers that are able to process RTK correction signals, resulting in measurements with centimetre accuracy. These devices are equipped and seamlessly integrated with DigiTerra Explorer 6 Professional. This is an easy to use and still robust mobile data collection and field mapping software, being able to quickly display large raster and vector files even on handheld computers.



'Transferring data from the existing GIS database to the mobile application of DigiTerra Explorer was simply to solve as the software supports a wide range of standard files. We did not encounter any problem when using the forms in the same structure as previously designed.'

Results

Printed maps and outdated water and wastewater GIS database belong to the past in Antalya. Thanks to Topcon's GNSS receiver with centimetre accuracy and DigiTerra's high performing mobile data capture software, any rapid changes are recorded and documented immediately. Daily work of construction and maintenance has been significantly facilitated by identifying infrastructure elements and collecting relevant data by the GNSS receiver easily.



'Antalya Water and Sewerage is committed to keep their system up-to-date and adapt improved technology to support our daily work. Paksoy Teknik and DigiTerra proved to be a flexible partner to us because they are able to continuously adjust their solution to our changing needs. Based on this partnership, we are able to reach our goal and remain the first in our industry that is implementing revolutionary developments.'

Learn more about DigiTerra Explorer at www.digiterra.hu