THE WOW FACTOR

A Chinese survey team uses Sokkia Mobile Reference Station and GSR2700 ISX to help re-establish lost boundaries and control points after the 2008 earthquake.

SOKKIA Mobile Reference Station

As GPS has been adopted by surveyors, its proven benefits–higher productivity and efficiency–have been recognized. The unfortunate tradeoff to these benefits remains the high system cost of a traditional base and rover setup. To reduce the costs of GPS surveying, many countries have installed a permanent RTK infrastructure which allows rover-only GPS positioning. This approach cuts GPS system costs in half by eliminating the purchase a base receiver.

Countrywide RTK networks, seen predominately throughout Europe, provide surveyors with consistent centimeter-level positioning performance no matter where they work within their country. However, not all international locations have access to an adequate RTK infrastructure.

Troubles Facing Permanent RTK Infrastructures

Some regions face obstacles in creating full RTK coverage, such as lack of funding and slow adoption rates. In many countries including the United States, specific regions have only partial network RTK coverage. This lack of full coverage greatly hampers surveyors needing to work outside of the established RTK area. Also, as GPS reference stations and RTK networks involve permanent installations, their RTK coverage area is fixed and cannot be easily customized.

SOKKIA's Mobile Reference Station technology, included at no cost and integrated within SOKKIA's GSR2700 ISX receiver, overcomes this limitation by offering a flexible RTK infrastructure that can be set up and taken down in minutes.

The Mobile Reference Station Solution

The GSR2700 ISX receiver operates within a permanent RTK infrastructure in a rover-only configuration for centimeter level positions. In addition, the GSR2700 ISX can be configured as a portable Mobile Reference Station for surveyors needing to work outside of permanent RTK coverage areas. This flexible alternative to a permanent RTK infrastructure supports any number of GPS rovers.

The Mobile Reference Station performs just like permanently installed reference stations. However, unlike permanent RTK networks, it can be set up anywhere because it does not require any electrical or internet connections. Since the Mobile Reference Stations relies on cellular technology, rather than UHF radios, surveyors can work any distance from their base station without worry of losing their data link.

Surveying in the Midst of a Disaster

The Mobile Reference Station excels in many applications. A great example of its effectiveness involves the recovery efforts after China's Great Sichuan Earthquake.

This devastating, magnitude 8.0 earthquake struck western China in May 2008, killing nearly 80,000 residents and severely injuring more than 360,000. Much of the region was reduced to rubble.

The Chinese government immediately coordinated relief efforts, including dispatching survey crews to reestablish crucial parcel boundaries and control points. To accomplish the job quickly and accurately, the survey crews turned to GPS surveying.

The damaged area was surrounded some of the tallest mountains in the world, which severely limited the broadcast range of UHF radios. Additionally, the earthquake severed the majority of communication and electrical lines. As a result, a permanent reference station and RTK networks could not be established.

Instead, survey crews employed SOKKIA's Mobile Reference Station technology to create versatile RTK coverage. With a touch of a button, the Mobile Reference Station began to send RTK corrections to numerous GSR2700 ISX receivers within the 80 km^2 work area. The crews completed the job in record time, and rebuilding began.

Maximizing Potential

SOKKIA's Mobile Reference Station provides surveyors with endless RTK coverage options. Regardless of the size of job or location, surveyors can trust that the Mobile Reference Station will exceed their expectations and maximize their productivity.