

# THE American Surveyor

A FOOT IN THE PAST TO THE FUTURE

August 2009

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Surveyors in the field are able to use a handheld cellphone to call for technical support. A WiFi card in the Trimble TSC2 Controller connects to the Internet for Trimble Assistant and VRS corrections. The Trimble R8 GNSS receiver and Trimble TSC2 Controller are linked via Bluetooth.

# the PORTABLE EXPERT



keeping the crews **moving**

**M**att Bryant knows networks. He worked for the Texas Department of Transportation (TxDOT) Information Systems Division (ISD) for five years, providing training and support on GPS, surveying and CAD software to TxDOT's surveying and construction teams. During that time, he also played a key role in improving TxDOT's existing GNSS Regional Reference Point Network from a series of static base stations into an active Real Time Network (RTN) based on Trimble VRS™ technology. Today, Bryant works in technical sales and support for Western Data Systems (WDS), a dealer of survey equipment for Trimble headquartered in Houston. With his nearly 20 years experience in surveying, construction and mapping, Bryant's knowledge in connectivity and surveying are valuable assets for his customers.

Bryant knows that when a survey crew has a problem in the field, it is some of the most expensive downtime possible. It's not only the survey crew that is shut down. Other workers, materials and machinery can be idled as well. Whether the issue lies with equipment, software or procedures, the crew needs to get back to work quickly. Thanks to widely available access to the Internet, today Bryant and

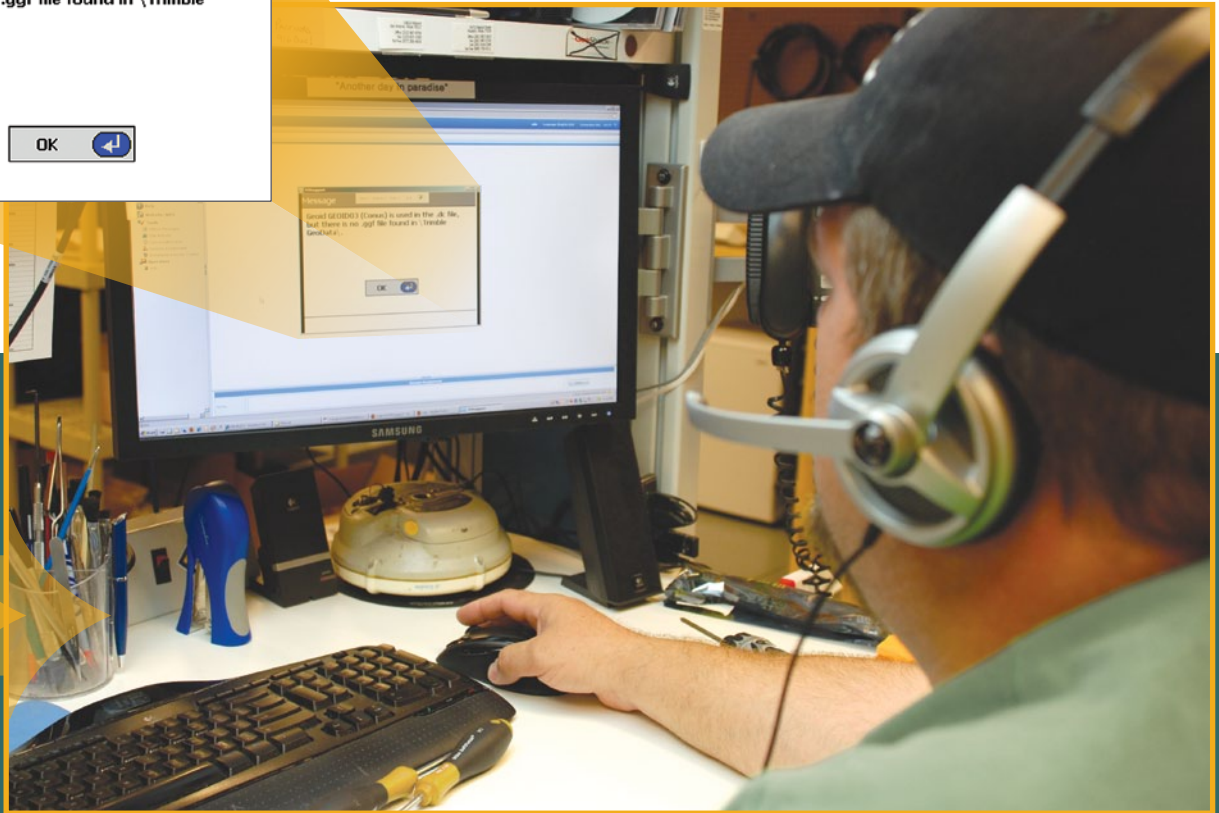
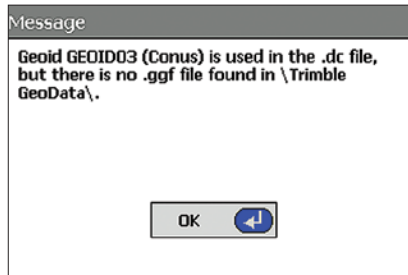
others like him have an innovative new way to provide service and support. It's called Trimble Assistant, and it's changing the model for technical support, field service and training. Utilizing the increasing availability of connectivity on jobsites, Trimble Assistant enables support technicians to see—and even control—exactly what is happening in the field.

## Putting Educated Eyes on the Jobsite

Bryant easily recalls an example of how he's been able to implement Trimble Assistant for his customers. He had just finished training on the system, which WDS had implemented as a way to improve its customer support. "I was in my truck in San Antonio when I got a call from a customer working in Laredo (about 145 mi/230 km) away. I pulled into a TxDOT rest stop that had WiFi and made the connection to the customer's data collector. I looked at his system and noticed they were using the wrong geoid name. I loaded the correct information onto his data collector and everything was OK." The entire event took less than 20 minutes. Without Trimble Assistant, Bryant's customer could have been shut down for hours waiting for diagnosis and the correct data.

The support Bryant is able to provide through Trimble Assistant goes beyond helping find the right geoid. To bring

>> By John Stenmark, LS



Seated at his workstation, WDS Service Technician Lee Bower speaks with a surveyor in the field. Trimble Assistant lets Bower see the surveyor's display to diagnose problems.

the support technician even closer to the field, Trimble Assistant takes advantage of cameras built into field tablets and handhelds such as the Trimble Yuma™ and Trimble Juno™ devices. “It puts a set of educated eyes onto the jobsite,” says Bryant, “and lets the technician inspect hardware, cables and connections as well as the job site and conditions.”

### Moving Beyond Support

Trimble Assistant uses a dedicated network of servers and software to access a customer's remote system. The support technician can see exactly what the crew is doing on its survey controller, field computer or office PC. At the same time, the technician can talk with the crew via VOIP (Voice Over Internet Protocol) or cell phone to guide them through the solution. The technician can see every keystroke and, when needed, operate the remote system as if standing alongside the crew in the field.

In addition to working with application software, Trimble Assistant lets the support technician run diagnostic routines

on the data collector and surveying equipment. If there's a problem with the total station or GPS receiver, the technician may be able to spot it. The technician can check firmware and software versions and install needed updates without a trip back to the office. A senior instructor in surveying and mapping for Trimble, Mel Philbrook expects large organizations to use Trimble Assistant for version management and training as well as support. “You can make sure that all crews are using the current software and firmware,” he says. “And you can do uploads in the evenings or other times when the crew is not using the controller. You could even install updates while the field crew is on lunch break.”

According to Philbrook, companies using Trimble Assistant as an in-house system will be able to go beyond technical support. Because Trimble Assistant allows management or supervisors to see what the crew is seeing, they can take better advantage of their expertise. Rather than waiting for help to arrive on site to assist in solving a problem, the crew can “show” the situation to other

staff in real time. As a result, one person can support multiple crews in greater detail than ever before.

### Connectivity: The New Watchword in the Field

Connection to the Internet has assumed a key role in many surveying and construction projects. Bryant points to the critical role communications and connectivity is playing in planning and constructing the new Texas State Highway 130 (SH130). When completed, the 41-mile (64-km) toll road will provide motorists with a new route that bypasses the congested I-35 corridor between San Antonio and Austin. WDS is focused on ensuring connectivity for all aspects of the SH130 project. They are installing communications infrastructure, including repeaters and WiFi hotspots, to provide crews with easy access to high-speed Internet links for the entire length of the roadway. In addition to connectivity for Trimble Assistant, surveyors and contractors working on SH130 will have communications for data transfer, asset manage-



A surveyor puts the Trimble system to work on a project site. The proliferation of cellular and WiFi service provides increased capability for field-to-office collaboration using Trimble Assistant.

ment and activity monitoring. Crews using GNSS can use the communications network to receive corrections for high-accuracy real-time positioning from the TxDOT VRS network. Inspectors, project managers and engineers will be in constant contact to receive design updates and status information.

Bryant is convinced that connectivity can save money. “With traditional surveying methods,” he says, “it could be hours before information about a problem got back to the office, and more hours after that to get the solution back to the field. A lot of dirt could be moved in that time, and the result is an expensive change order or redesign. By keeping everyone connected, problems are exposed and solved much faster. You can prevent that unneeded expense.”

To use Trimble Assistant in the field to get help, a field crew connects the field computer or controller to the Internet using WiFi or cellular phone. The crew then uses their standard Internet browser to access a special Trimble Assistant Website. The crew makes a single phone

call to the support technician, who provides login information to the field crew and starts the support session. In seconds, the technician has direct access to the field system and can see everything that is happening in real time.

“The key word is ‘easy,’” says Bryant. “When a field crew is having trouble, the last thing they need is a complex process to get a solution for a simple problem. And that is probably the nicest part of Trimble Assistant—it’s dead simple. There’s no special software or complex procedure to getting it going.”

### Continuous Improvement

And technical support is only part of the equation for the new solution. According to Philbrook, Trimble Assistant is designed to be part of a firm’s ongoing training and development programs.

“It’s easy to spread the experiences of one field crew throughout the organization,” he says. “A company can record solutions to common issues and add them to their own custom knowledge base of support materials.” Information

can be stored as movies or documents and crews can access and review the files whenever and wherever needed.

Trimble Assistant also helps an organization maintain continuous improvement. Companies can track and log support issues raised by their employees to identify common problems. They can develop training and procedures to solve those problems and add that information to the knowledge base. The system tracks the support load of technicians as well as the activity of end users. This data helps pinpoint needs for future training and improvement. Organizations can use the system’s open Applications Programming Interface (API) to create customized or automated workflows for diagnoses and solutions.

Philbrook noted that Trimble Assistant may reduce training costs and downtime by reducing travel by field crews and trainers. It makes it easy to deliver training sessions to remote locations, and at flexible times. Trimble Assistant services can be used with Trimble Surveying, Construction, Mapping/GIS, Infrastructure and other systems. Large organizations such as highway departments or engineering and construction companies can use the Trimble Assistant platform as the engine for their internal support systems, says Philbrook. Trimble dealers can use it to provide high-level service to their customers. And individual Trimble users may subscribe to receive Trimble Assistant services from their dealers or directly from Trimble.

Bryant sees Trimble Assistant as the next logical step in using wireless Internet access across jobsites and in urban areas. It goes hand-in-hand with GNSS RTN, where the communications systems are already in place. And he believes that full-site connectivity like SH130 will become the norm. “It doesn’t make sense to drive for hours just to help solve a problem,” he said. “The new system is an amazing time saver and it makes sure the field crews’ needs are handled quickly and accurately. Users are able to minimize downtime and maintain productivity. As long as you have connection to the Internet, you can get advice or a second opinion from your own experts.”

**John Stenmark** is a writer and consultant working in the AEC and technical industries. He has over 20 years experience in applying advanced technology to surveying and related disciplines.