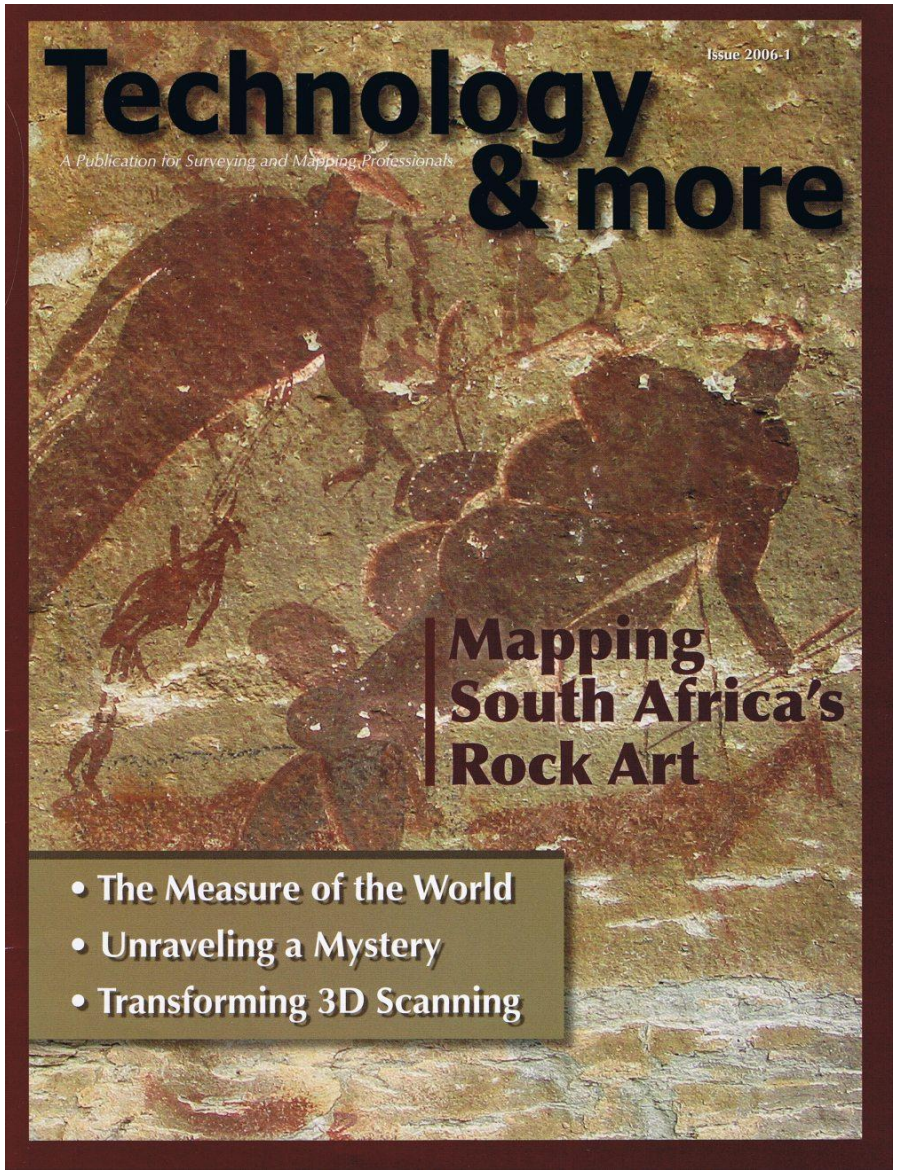
Use of DFHRS/DFLBF GNSS-online-transformation at Pfalzwerke, Germany

(see, page 4/4)



Welcome to the latest edition of Technology&more!

Dear Readers,

Welcome to the first issue of Technology&more for 2006. In this issue, you'll find a host of interesting stories and innovative new products designed to help you gain maximum efficiency and productivity. We cover a number of customer projects using Trimble® technology around the world, from China to Germany to Kenya to Russia and the United States. In addition, the issue covers the launch of the first modernized GPS satellite and the introduction of enhanced Trimble R-Track™ technology, which provides comprehensive Global Navigation Satellite System (GNSS) support. Trimble is the only manufacturer to offer a GNSS receiver capable of tracking all signals available today. Trimble will continue to use all available signals for its positioning solutions, as long as they provide financial and operational value to end users and customers.

Jürgen Kliem
General Manager,
Survey Division

We also take an in-depth look at the Connected Survey Site, which takes Integrated Surveying™ to the next level. Trimble's Connected Survey Site model encompasses all critical elements of a complete surveying solution—products, techniques, services and relationships—and combines them into a fully integrated and interoperable surveying solution.

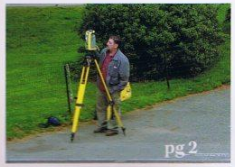
You'll also find information on new 3D scanning technology developed specifically for surveyors. The innovative Trimble GX™ 3D Scanner enables surveyors to provide more detailed measurements in about half the time of conventional equipment.

For those of you who could not attend Trimble Dimensions 2005 we have included post-conference coverage. So don't forget to mark your calendars for Trimble Dimensions 2006, which will be held November 5–8 at the Mirage Hotel in Las Vegas, Nevada, U.S.

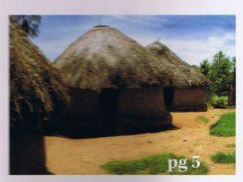
We hope you enjoy reading this issue of Technology&more.

Jürgen Kliem

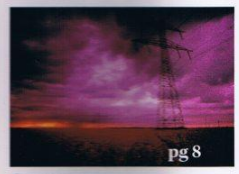
INSIDE:



U.S.



Kenya



Germany

China

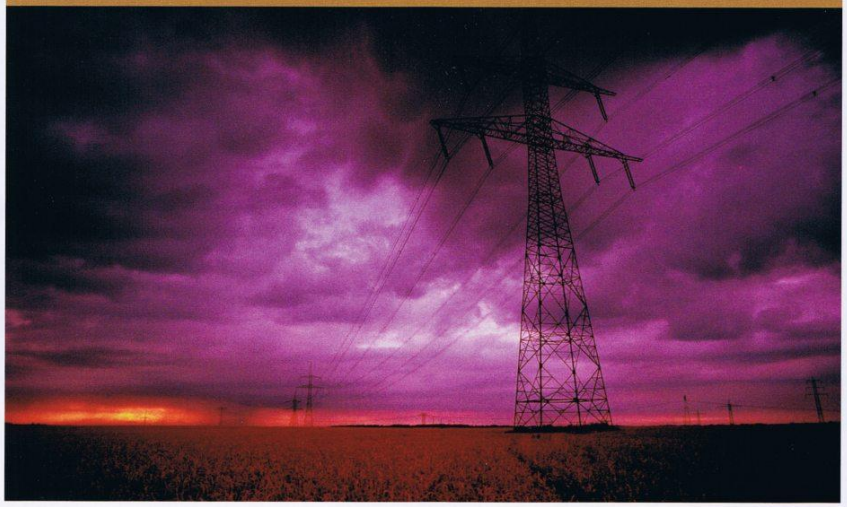
Published by:

Trimble Engineering & Construction
5475 Kellenburger Rd.
Dayton, OH, 45424-1099
Phone: +1-937-233-8921
Fax: +1-937-233-0522
Email: T&M_info@trimble.com
www.trimble.com

Editor-in-Chief: Angie Vlasaty
Editorial Team: Lea Ann McNabb; Heather Silvestri; Vivienne Edgar; Yvonne Faulkner; Colleen Miller; Susanne Preiser; Emmanuelle Tarquis; Christiane Gagel; Marikki Koschmieder; Lin Lin Ho; Maribel Aguinaldo; Stephanie Kirtland
Art Director: Tom Pipinou

Cover Photo: Jerry Peek, photomandalie.com

Pfalzwerke AG Taps Trimble for Utilities

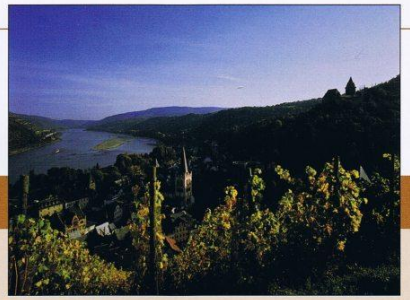


As a modern service provider, Pfalzwerke AG is the leading power supply company in Germany's Rhineland-Palatinate and Saarland regions. Founded in 1912, the company employs a workforce of more than 600, generating a turnover of nearly 580 million euros in power and heating supply, as well as housing management and waste water treatment. The approximately 15,000 km-long (9,321 miles) power supply cable network covers an area of 5,870 km² (2,266 miles²), encompassing 1.5 million people in 500 towns and other municipalities. The company headquarters in Ludwigshafen is in charge of four regional branches and eight surveying teams.

Quick GPS data capture and seamless GIS integration

Since modern power supply and waste disposal companies today depend on reliable acquisition, safe operation and professional management of three-dimensional data to maintain their competitiveness, Pfalzwerke has boosted its established Geodimeter® 600 Tachometer System by integrating the Trimble 5800 GPS Rover with ACU Controller, the Trimble R8 GPS System and PDL450 Radio for RTK GPS measurement.

This enhancement provides seamless integration of GPS measurement data, as well as quick and time-saving transfer into the Pfalzwerke network management system, which is based on an AED SICAD GIS. Any operational resources used for the activities of Pfalzwerke are documented in the GIS. In addition to the medium-voltage lines with their voltage transformation points, these resources include local supply networks such as low-voltage lines and connections to individual premises, street lighting lines with all the required cable distribution boxes and the regional power supply lines in the area serviced by Pfalzwerke.



This information can be displayed and exported, as well as enhanced with data in the form of digital topographic or outline maps or orthophotos from governmental survey authorities. In addition to planimetric (horizontal) geographical information, it is also possible to examine relevant object data such as the manufacturer, year of construction, cable laying company, who measured what and when, or other technical data managed in the SAP (Systeme, Anwendungen und Produkte in Datenverarbeitungen: Systems, Applications and Production in Data Processing) database. In this way, the system provides all Pfalzwerke users with up-to-date information at the simple press of a button.

The rapid transfer of predefined Pfalzwerke code directives into the ACU shows the excellent compatibility of Trimble systems, facilitating subsequent surveying work, such as the determination of gas, water and cable routes in terms of their open trenches in areas of new buildings, as well as staking out planned routes and buildings in a straightforward way that allows the managers of the eight surveyor teams and their GIS team to achieve "up-to-the-minute documentation."

Prior to carrying out any surveying work, the measurement team managers export and transfer current DXF format GIS data from the GIS to the ACU. This way, measurement data captured and encrypted in the field can be directly viewed in the graphics. Any measurement error or divergence from the planned route can be recognized immediately and eliminated, taking advantage of GPS rover and Geodimeter 600 series compatibility with respect to local conditions. Any horizontal and vertical instrument setup position can be determined using GPS equipment in combination with SAPOS (Satellite Positioning Service of the German Federal State Survey Authorities) correction data or via RTK.

DFLBF (Digitale Finite Elemente Lage Bezugs Fläche: digital reference plane for the horizontal positioning of finite elements) and DFHBF (Digitale Finite Elemente Höhen Bezugs Fläche: digital reference plane for the altitude positioning of finite elements), provided by the Seiler engineering office, mean that new GPS points measured can be stored in the relevant coordinate system of the state authority and in the NN altitude system. Registration of any points that cannot be determined by means of GPS is carried out with a classical Geodimeter 600 Total Station, using the automated robotic measurement procedure. The ACU is simply transferred from the GPS rover to the Geodimeter or the reflector unit.

The Geodimeter 600 setup positions are defined by the connection points determined using GPS, making it possible to capture all points measured with the total station directly, with coordinates valid in the state authority system and with NN heights. Since the ACU is capable of graphic display, objects can be registered with line connections created on-line. In most cases, the automatic data flow permits direct import of the measured results to the Pfalzwerke GIS. This data can be dimensioned immediately, labeled by GIS operators, and then linked to the relevant object data from SAP-PM. This means the entire Pfalzwerke staff can quickly access new data for information and planning via the Internet-GIS-Web service.

Using this approach, the new Trimble GPS equipment significantly increased efficiency in power supply network management, permitting surveying services to be offered to third parties and exploiting new fields of activity.

Professional surveying technology

With its extensive knowledge and experience, the Helmut Schultz Gesellschaft für Vermessungstechnik mbH (a company for land survey technology) in Saarbrücken is a well-established expert for exacting survey tasks in the Rhineland-Palatinate/Saarland region. A variety of reference projects for customers such as the Saarland government or the city of Saarbrücken, in addition to projects well outside the Saarland/Palatinate region, are documentary evidence of the company's technical expertise. With its recently completed GPS implementation and surveying project for the most important power supply company of the region, Helmut Schultz and his team could once again demonstrate the advantages of the sophisticated and highly compatible Trimble surveying technology, bringing considerable time and resource savings to his customers.