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Another Successful Year for GITA on Numerous Fronts

by GITA President Susan Ancel, EPCOR Water Services, Inc.

PRESIDENT'S MESSAGE

This is my final article as the president of your association, and I would like to provide an overview of the key accomplishments of GITA over the last year in its two focus areas of education and research.

Education



Ancel

GITA delivers education through its conferences, chapter meetings, and scholarships.

Our Annual Conference in Tampa, Florida, which was notable due to the successful interoperability demonstration where our corporate members successfully simulated how their respective software solutions could communicate and support the rapid response to an emergency event. This demonstration was a true testament to the maturity of our industry and how GIS is a vital part of the communications in any community.

The GIS for Oil and Gas Conference, held in Houston, Texas, was another successful event and was notable for breaking previous attendance records for both participants (668) and exhibitors (62).

2006 also saw GITA partnering with Gal-dos to deliver GeoWeb in Vancouver, Canada. This conference, focused specifically on the impact of Web services on geospatial technologies, saw a tripling of attendance from previous GML Day events. The event was especially fortunate to have keynote addresses from Steven Lawler of Microsoft and Michael Jones of Google Earth. The keynote speeches are available as podcasts from the following link <http://geoweb2006.invoke.com/>.

Planning for the 2007 event is underway and it will be

held July 23-27 in Vancouver.

Our various chapters across North America also sponsored regional conferences. In addition to all these conferences, the GITA chapters also hosted many luncheon sessions in their local communities—totaling 25 events.

All of the above education is focused on the existing practitioners. GITA also provides many activities aimed at expanding our future workforce; this includes the provision of educational scholarships to students studying in this field and the identification of internship opportunities within our member companies for students. In 2006 \$14,500 in scholarships was given out through GITA Chapters and GITA North America.

Research

The Geospatial Technology Report entered its eighth year. The report contains over 300 charts and graphs to allow you to benchmark your organization's investments in this technology. The 2006 survey results are currently being compiled with a record total of 386 survey participants, representing a 31% increase over the previous year. 2006 saw the survey format converted into a Web-based approach that will greatly simplify updating in future years for participating user organizations. For the future we are looking at the expansion of the survey with GITA's International Affiliates to provide a global perspective of the industry. As in the past, all participating organizations receive a free copy of the results so I encourage all user organizations to par-

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Budget Now
to attend Annual Conference 30,
March 4-7, 2007,
in San Antonio, Texas.

Drastically expanded:

- 16 new seminars
- 99 technical sessions
- 100,000 sq. ft. exhibit floor!

www.gita.org/annual

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ticipate in the survey next year.

The Return on Investment (ROI) Workbook project was completed in 2006 and is currently at the publisher, undergoing final preparations to have it available for purchase in the new year. This workbook will provide the practitioner with detailed instructions and multiple hints and tips on how to build a business case for geospatial investments in 12 different application areas. The workbook will also contain a detailed literature review to help identify other organizations that have implemented similar initiatives. Six detailed case studies will provide examples on how to use the enclosed MS Excel templates for calculating your financial metrics. In the coming months, GITA will be holding a number of seminars in various locations in Canada and the United States on how to utilize the templates and workbook. We continue to be grateful to our funding partners: the American Waterworks Research Foundation, GeoConnections Canada, and the U.S. Federal Geographic Data Committee.

GITA's ROI Workbook also led to us being invited to participate in a very interesting workshop in Europe on the justification of Spatial Data Infrastructures at an International or National level. This work-

shop was hosted by the Joint Research Council of the European Commission and featured presentations from organizations around the world discussing methodologies for justifying geospatial technology investments in a government environment. The presentations and final report from this exercise is available from the JRC Web site at the following address:

<http://sdi.jrc.it/ws/costbenefit2006/index.cfm> The participants are continuing to communicate on a regular basis and supporting the individual efforts occurring around the world.

Another significant research project currently underway is in response to the U.S. Department of Labor High Growth job Training initiative. Previous issues of *Networks* have highlighted this initiative and the development of the www.giwis.org portal in the Denver area. The next phase of the project is to develop methods to expand this concept into other communities throughout the United States. I encourage you to explore the GIWIS portal, which has lots of information that is useful to individuals outside of the Denver area. GITA is continuing to work with the Department of Labor to explore other opportunities to support its high growth job initiative and expects to have more materials available to our membership in the coming years.

Closing Comments

GITA is will be 30 years old next year and we have a number of interesting initiatives in the planning stages for the coming year. The Board of Directors will be meeting in Banff, Alberta in early December to finalize the budget and resources for the upcoming year. I look forward to continuing on the Board of Directors as Past President and working closely with incoming president Brent Jones.

The Board will also greatly miss meeting regularly with Pete Gomez, our current past President, who will be leaving the Board in 2007. Pete has been an extremely active member of our Board, representing GITA all around the world and I am certain that we will continue to involve him in other research, education, and volunteer activities in the future. I also want to extend my thanks to the rest of the GITA Board for their service over the last year and am very pleased to report that all of the remaining Board members will be staying for the 2007 year.

Thank you to all who have supported my presidency over the last year.

Susan Ancel is General Manager Network Services and Operations for EPCOR Water Services, Inc. in Edmonton, Alberta. She can be reached at sancel@epcor.com.

2006 Geospatial Technology Report Sees Record-breaking Growth

Get an extensive overview of the state of the geospatial industry with the all-new eighth annual *Geospatial Technology Report*. The report, to be published in December 2006, contains detailed information on the completeness, complexity, and direction of geographic information system (GIS) projects being implemented at nearly 400 infrastructure-based organizations—that's a 31% increase from last year!

You'll find out:

- How GIS implementations vary between six vertical markets.
- What the latest application development priorities are.
- What the most common applications integrated with GIS are and why.

These and dozens of other questions about geospatial implementations are answered in the *2006 Geospatial Technology Report* on CD-ROM. The expanded report gives you a comprehensive analysis of geospatial projects in the electric, gas, pipeline, public sector, telco, and water/wastewater markets.

The 2006 report includes these **new** features:

- Benchmarking metrics from ITAG
- Geospatial industry workforce statistics

In addition, the report continues its detailed coverage on critical industry topics like:

- Budget information for 2006
- Each market's top three issues

- Vendor market share info
- Project expenditure details
- Maintenance cycles
- Six-year trend analysis
- RDBMS usage details
- Implementation approaches
- Top 10 applications and technologies
- Land base accuracy and sophistication

This report can help you manage change by monitoring what your peers and the industry as a whole are doing. Use it as a benchmarking tool, to help you plan for the future, and anticipate industry direction.

Pre-order your copy of this valuable report today!

GIWIS—A GREAT START

by GITA Executive Director Bob Samborski

FROM THE INSIDE

Since its launch at the GIS in the Rockies conference in mid-September, the Geospatial Industry Workforce Information System (GIWIS) has captured the interest of industry professionals, educators, and workforce system personnel in the metro Denver area.



Samborski

The Web site is the centerpiece of the grant awarded last year to GITA and our primary partner, the Association of American Geographers (AAG). While there has indeed been a lot of progress made, much more needs to be done. We are just now beginning to appreciate the potential of GIWIS in helping to address the looming shortfall in qualified, educated workers for the geospatial industry of the future—not just in the Front Range of Colorado, but around the United States and Canada.

As we near the end of this project—the grant expires on December 31—our efforts are focused upon making GIWIS as useful a resource as possible for the various audiences it will serve and providing for the sustainability of the system for the foreseeable future. Both are daunting tasks, with implications well beyond our formal commitment to the Department of Labor.

The two months since GIWIS went live have offered us many opportunities to make presentations on GIWIS, explain the benefits of the Web site to various workforce investment boards (WIBs) in the metro Denver area, and participate in several job fairs at local middle and high schools. We have assembled a traveling display that highlights GIWIS and also features basic information about geospatial technology in general.

It's not as if students and their parents are totally unaware of geospatial technology. Just about every student we spoke with at the job fairs we attended knew what Google Earth is, and was somewhat



Approximately 4,000 eighth graders attended the Adams County Education Consortium Job Fair, where GITA exhibited.



familiar with GPS. Often their parents had mapping guidance systems in the family car, or the kids knew someone who had one. But students and their parents alike just do not connect these ubiquitous applications of geospatial technology with an industry, much less a career path.

At the annual meeting of the Colorado School Counselors Association in early November, we met many high school counselors who had never heard of GIS. These are the people who are charged with exposing high school students to various alternatives to pursue a career or choose a field of study in college. It seems obvious that this group is a great place to start to bring awareness of geospatial into the minds of high schoolers as they begin to consider options for their future. The

reception we received from the school counselors was excellent. Many left with a better feeling for what the technology is about and with plans to share the information they had been given to geography, math, science, and other teachers in their respective schools.

In fact, the reception we've received wherever we have talked about opportunities in the geospatial industry and the resources contained in GIWIS has been universally positive. Our audiences have ranged from a dozen or so middle school teachers looking for ways to incorporate GIS into math and biology classes, to Denver area WIB directors, to county one-stop Center boards, to 4,000 eighth graders at a job fair sponsored by Adams County (CO) Education Consortium.

The Gap Between Supply and Demand

We have come to think of the GIWIS—in fact, of the entire project—as a way to bring together the three important parts of the geospatial industry workforce equation: the “three-legged stool” of educators, industry, and the workforce system. As increasing implementation of geospatial technology results in explosive growth in

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the number and type of applications in governments, utilities and the private sector, the demand for sufficiently educated and trained workers also increases. We are often told by GITA corporate members that they simply cannot find enough qualified people to fill jobs created by their expanding operations. We are told that there is a significant gap in what they need and what is being produced by colleges and universities—in some cases several years' worth of knowledge and experience. Where do these companies get their needed employees, then? More often than not, from other companies. Or, from expensive and lengthy internal training programs that are required to bring new hires up to speed. Or, the work is being outsourced and/or offshored.

The “supply” side of the equation also needs to be addressed, and that is a primary objective of our grant and GIWIS. The entire spectrum of educational institutions requires a re-evaluation of how educational institutions at all levels are training and preparing people for geospatial industry jobs. The pipeline between education and industry needs to be drastically shortened. How can that be accomplished?

An essential first step at middle school and high school levels is simple awareness. The “image and outreach” portion of our DOL project included the development of basic informational brochures on “What is Geospatial?” and links to excellent introductory Web sites like www.Geospatial21.org by Kidz Online (www.Kidzonline.org). Such sites serve to organize the inherent interest in technology that exists in many teenagers and young adults and helps them realize that they can actually make a living being involved in such cool stuff. For more advanced college and university levels students, it involves making their education more practical and relevant to industry demand. Involving real-world practitioners in classroom education is not a new concept, but one that GITA's members, especially in local chapters, could contribute to significantly.

WIBs and the Web

To reward a person who has committed themselves to entering the geospatial worker pipeline, there needs to be adequate jobs at the end of it. That's where the involvement of the workforce investment system comes into play.

In 1998, the U.S. Workforce Investment Act (WIA) established a national workforce preparation and employment system to meet the needs of businesses, job seekers, and those wanting to further their careers or wanting to transition to another type of work. The WIA also authorized workforce investment boards at the state level and in local areas where population exceeded 500,000. State boards advise governors on ways to develop the statewide workforce investment and labor market information systems.

Local WIBs focus on setting workforce development policy. Board members are appointed by the chief elected official of the local area in accordance with criteria set by the governor of the state, who certifies the board. These board members are subject to conflict of interest requirements and sunshine laws. Also, these WIBs are mandated to be representative of all local area workforce stakeholders. They typically include representatives of local businesses (required to be the majority of the board), labor organizations, educational entities, community-based organizations, economic development agencies, and “one-stop” career center partners. As such, they represent the entire continuum of the workforce development system—the pipeline that we are trying to shorten.

At the onset of this project, we didn't know what a WIB was, much less what it was created to do. Now it is clear that the eight WIBs in the metro area that GIWIS was intended to serve are crucial to our success. We've spoken with several of the local WIBs as part of the outreach portion of the project, and have been received enthusiastically at every meeting. There is a great deal of interest in leveraging GIWIS into ongoing operations of these local workforce development organizations and that will help address the sustainability provisions of our grant. Moreover, we have also begun a dialog with the principals responsible for securing one of thirteen \$15-million WIRED grants awarded by DOL this past summer for the Denver area. The goal of the WIRED—“Workforce Innovations in Regional Economic Development”—initiative is to transform regional economies by enlisting the skills of the numerous and varied players in those economies “to research and produce long-term strategic plans that prepare workers for high-skill, high-wage opportunities in the coming years and into the next decade.” We will be working closely with our WIRED col-

leagues to explore ways to expand the geographic area served by GIWIS, as well as to potentially adapt its use to the other vertical industries that are the focus of the Denver-based WIRED effort—namely, aerospace, information technology, energy, and health care. The WIBs will meet the Web at GIWIS.

So What Do You Actually Do?

Have you ever tried to explain to relatives at the Thanksgiving table what you—a geospatial professional—do all day? Not too many people have an elevator speech sufficiently succinct and understandable that the eyes of their audience don't glaze over after an attempted description. You say that you “make maps with computers” and leave it at that.

That's a major part of what interested people will find on GIWIS—a description of the geospatial industry, what the technology is used for, and why it is important. Students can view videos of real geospatial workers, describing how they use the technology in their everyday jobs. Educators can find geospatial subject matter, lesson plans, and other resources to help them incorporate geospatial into their classes. Schools at all levels can be included on an interactive mashup, with click-throughs to their geospatial course offerings. Transitional workers can learn what kinds of additional skills they need to acquire to obtain a good geospatial job and where they can go in their area to get those skills. Geospatial employers can post their job openings and connect to one-stop centers in their metropolitan area. Students can get a glimpse of their future.

It has indeed been a good start. We realize that the importance of GIWIS—and the purpose of shortening the pipeline between the education system and industry—the supply and demand cycle—deserves continued support by GITA and our members. It is, after all, in our collective interest to ensure the well-being of the geospatial industry, now and into the next decade.

Bob Samborski can be reached at bsamborski@gita.org or by calling 303-337-0513.

Click Here to Send This Article to a Friend

Annual Conference 30—Gearing Up for a Big Year

GITA 2007 to boast a drastically expanded program with **15 brand new seminars** and **99 technical presentations!**



Register now for GITA's 30th Annual Conference and Exhibition—the most highly regarded educational event for geospatial professionals—slated for March 4–7, 2007, in San Antonio, Texas. Annual Conference 30 will provide better ways to plan, design, manage, and maintain your geospatial systems and operations.

This year's conference theme—*Mission Possible*—reflects the idea that each attendee's path at the conference will lead to them to information and networking to assist in fulfilling missions that are indeed possible. You won't want to miss this exciting technical program, including in-depth seminars, educational sessions, user forums, panel deliberations, and networking socials.

Seminars Provide Interactive Learning

This year's lineup will include 16 seminars to help you kick-off your conference experience by taking part in one of GITA's half-day, preconference seminars. Be prepared to roll up your sleeves and get hands-on experience in the subjects of your choice! The seminars also offer you a great way to earn continuing education credits (CEUs). The fees for these seminars are separate from the conference registration; see the registration form for details.

See full seminar descriptions by visiting the links below:

[Project Management Series](#)
[Spatial Databases Series](#)
[GIS and the Web Series](#)
[Mobile GIS Series](#)
[Solo Seminars](#)

Speak Your Mind at Four Enticing Panels

These discussions cover topics that are sure to pique your interest. Here's your chance to express your thoughts on subjects that you're sure to have an opinion on.

New for 2007! Stick Around Wednesday Afternoon for Two Groundbreaking Power Panels

Harnessing the Momentum of Consumer Applications will feature a slew of non-traditional leaders in the industry—representatives from companies like Google, Yahoo, Microsoft, and more will talk about their role in the industry and the new direc-

tion of geospatial technology. During the last panel, *Extending the Reach of Geospatial Technology*, familiar industry leaders will respond to the first panel.

Enrich Your Mind with 99 Technical Sessions

To address the theme of *Mission Possible*, this year's conference includes a greatly expanded array of 99 paper presentations for you to choose from. The Internet & Web Services track has been greatly expanded, and four ROI case studies will provide in-depth ROI tips to help you justify GIS spending at your company. Also, the one-call track will return for the second year in a row. Visit the [Tracks and Sessions page](#) for full details.

Founding Executive Editor of HotWired to Keynote

Howard Rheingold has a proven record of accurate technology and social forecasting through more than two decades of syndicated columns, bestselling books, and pioneering online enterprises. Now he's on to the next and biggest thing: the marriage of mobile phone, PC, and wireless Internet, which is changing the way we meet, entertain, govern, and conduct business.

Rheingold was founding executive editor of *HotWired*, the first commercial Webzine, where the Web-based discussion forum and the online banner ad were invented. The *New York Times*, *Washington Post*, *San Francisco Chronicle*, and *Boston Globe* acclaimed his most recent book, *Smart Mobs*, and *The New York Times Magazine* named it one of the "Big Ideas" of 2002.

Rheingold has appeared on "Today," "Good Morning America," "ABC Primetime Live," "CNN," "CBS News," "NBC News," "MacNeill-Lehrer Report," NPR's "Fresh Air," and "Marketplace." He is a non-resident fellow at the Annenberg Center for Communications and a visiting professor at De Montfort University. Currently, he is teaching a digital journalism course at Stanford and a participatory media class at Berkeley, and he is working on a new book on cooperation.

Geospatial Career Expo to Make Life-changing Connections

Job seekers, be sure to **attend this free event** on Tuesday,

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March 6, from 1:00 to 3:00 p.m. It's our goal to place veteran GIS professionals as well as new-comers to the field with leading geospatial organizations that will assist in fulfilling your next dream job. Whether you are looking for a job or would like to hire qualified candidates, this is definitely an event you won't want to miss. The [Career Expo page](#) contains full details, and recruiters can sign up at the [Career Expo Recruiters page](#).

GITA's Annual Conference 30 International Poster Session

GITA would like to invite you to submit your posters and maps for our International Poster Session competition. This is an opportunity to showcase your company's projects in front of thousands of attendees. So come on—show us your innovative ideas and your applications with new technology! Submissions will be displayed on the exhibit floor for the duration of the conference, where they will be judged by a panel in the five categories. See categories and more information on the [Poster Session page](#).

Exhibit and Sponsorship Opportunities are Still Available

GITA's Annual Conference showcases the relevance and importance of geospatial information—and the many vendors that make geospatial solutions a reality. We view the importance of our event to the GIS industry as a major responsibility and take great care to manage the conference in a highly professional manner, attract the highest quality audience, and uphold the quality standard that GITA has earned over the past quarter century.

Why Exhibit?

GITA is the leading provider of high-quality, unbiased information for professionals who use geospatial information. We have a worldwide reputation for providing superior programs and services, and more than 80% of GITA's user attendees have direct purchasing authority.

[Download the invitation to exhibit.](#)
[See the 100,000-square-foot exhibit floor.](#)

Oracle Spatial Users Conference

GITA invites you to attend the Oracle Spatial User Conference, Thursday, March 8, after GITA's Annual Conference 30. If you are currently a user, solutions provider, or systems integrator who depends upon Oracle's spatial technologies, or if you want to learn why thousands of organizations use Oracle's spatial database and application server capabilities, this is one event you won't want to miss. Learn about the latest Oracle geospatial technologies and the business and technical benefits they provide as users, solutions providers, and Oracle executives share real-world experience with the world's most widely used geospatial information technology platform.

For additional information visit the [Oracle Spatial User Conference page](#).

Ten Sails Smallworld Symposium

Ten Sails and GITA invite you to attend the third annual Ten Sails Smallworld Symposium on Thursday, March 8, following GITA's Annual Conference 30. This will include a social network-

ing event on Wednesday evening. The Thursday program will conclude by 3:00 p.m. Presentations and panels will focus on GE Energy and partner technology updates, plus customer projects, experiences, and benefits. The conference will include content of interest to users, management, and technical staff. Smallworld users, partners, and GE staff are invited to submit abstracts on this theme.

For additional information, visit the [Ten Sails Smallworld Symposium page](#).

Smallworld is a registered trademark of General Electric Company. Ten Sails is a GE Energy Authorized Partner.

Welcome to San Antonio

San Antonio's newly expanded 1.3 million-square-foot Henry B. Gonzalez Convention Center enhances San Antonio's reputation as a premier meeting destination. Now the eighth largest city in the United States, San Antonio has retained its sense of history and tradition, while carefully blending in cosmopolitan progress. Sounds and flavors of Native Americans, Old Mexico, Germans, the Wild West, African-Americans, and the Deep South mingle and merge. Expect moderate temperatures, with an average high in March of 72° Fahrenheit. Close to twenty million visitors a year delight in the discovery of San Antonio's charms, and we hope you join us there for Annual Conference 30.

Congratulations 2006 GIS for Oil & Gas Speaker Award Winner!

Devon Humphrey,
Texas A&M Spill
Control School

*"Using GIS for Disaster
Drill Simulations"*
[Read the full paper!](#)



Abstract: While GIS has been a mature technology for many years, a large number of organizations are still grappling with paper maps within their EOCs. GIS can make it much easier to communicate what is happening to high-level decision-makers, the general public, and the media. The use of GIS as a simulation environment during disaster preparedness exercises will be demonstrated using recent U.S. Navy oil spill drills as a case study.

GITA's Speaker Award program, established in 1992, recognizes speakers who received excellent ratings on their presentations at the association's conferences. The award is given to the top five percent of total speakers, as ranked by the conference attendees.

Deploying a Geospatial Resource Management Solution in a Large Enterprise

By Jean Beaulieu, Bell Canada

Bell Canada's Geospatial Resource Management (GRM) solution improves processes in network planning and provisioning and provides the foundation for future development and efficiency across the enterprise. With rapidly changing technology and the increasing complexity of deploying that technology to expand services, the need to increase efficiency, reduce deployment time, and reduce the average network repair time is driving the need to improve legacy systems.



Beaulieu

The requirement for a fully open relational database system was an important factor in Bell Canada's decision to define and configure NetworkX for Bell Canada's needs. The project faced challenges that included geographic separation between vendor and client, bilingual users, application scalability and performance, migration of data from multiple files in a proprietary database format, and the triple constraints of project management—time, cost, and quality. Challenges were overcome and the project has been completed successfully, but it's only the beginning for Bell Canada.

A Venerable History

Bell Canada Enterprise (BCE) was originally incorporated in 1880 as Bell Telephone Company of Canada. BCE is a holding company, which includes Bell Canada.

Bell Canada provides a full range of telecommunication services throughout the provinces of Ontario and Quebec in Canada. These services include local telephone, long distance, wireless communications, Internet services, data, satellite television, and a variety of other value added services to its residential and business customers. Bell Canada also operates in the two official languages of French and English.

Across Canada, Bell Canada and its subsidiaries—Télébec, Northern Tel, Aliant, Northwestel, and Bell West—service

USER PERSPECTIVE

approximately 27 million residential and business customers.

Project Background: How It Began

Bell Canada maintained centralized Plant Locations Records (PLR) groups. These groups received all engineering work orders and updated large network drawings. These drawings were then distributed to all departments that required information about the network. Unfortunately these drawings were typically schematic and the presentation of

than a year out of date. As a result, most offices using these records had to maintain copies of the PLR drawings as well as copies of the engineering work plans stapled to the PLR drawings (engineering offices, network maintenance groups, and cable locate groups).

To improve the overall efficiency of the engineering work plan and PLR processes, it was decided to develop a CAD-based system to support managing the PLR drawings as well as the engineering work prints. In 1992, Bell Canada started development of a PLR drawing system based on the existing CAD application. This

“A centralized system, providing access to each business unit, would dramatically improve the accuracy of the network information, reduce duplicate effort, and provide opportunities to improve business processes through automation.”

network information was left to the creative of the individual users. This was further complicated because the original engineering work prints were also created manually and often required “interpretation” by the PLR clerk to properly update the main PLR drawings. Therefore, the presentation of network information was very dependent on the artistic ability of both the engineering clerks drawing the work orders and the PLR clerks that transcribed the engineering work prints to the master PLR drawings.

In 1985, a CAD system was introduced to improve the overall quality of the engineering work plans, but the corporate records maintained by the PLR group were still drawn manually. In 1989, as part of a process improvement effort, it was decided to move the responsibility for maintaining PLR drawings to the engineering groups to allow staff reductions, cost reductions, and to hopefully improve the turnaround time on updating the master PLR records. In some locations, the PLR drawings were more

allowed retaining the existing engineering CAD application and eliminated the cost of a large software acquisition. Once the application was extended to support the PLR drawing process, the existing paper drawings were converted to digital records superimposed on a digital land base. The data conversion process, from 1995 to 1997, converted more than 450,000 large paper drawings (plats) into the system.

In 1999, Bell Canada began looking at geospatial resource management (GRM) systems. Following extensive evaluation of vendor capabilities, a contract was signed with Intergraph Corporation for their G/Technology communications solution called G/Comms. The internal project was called NetworkX. It was determined that no solution met Bell Canada's performance and functional requirements for an enterprise solution, but Intergraph's centralized database solution and architecture had the greatest potential to meet Bell Canada's aggressive expectations. From

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December 2000 to March 2002, Bell Canada and Intergraph worked together to document the requirements, extend the capabilities of the product, and complete user requirements and acceptance. The pilot and performance testing was completed by May 2003. Full deployment was achieved in May 2004.

Making Business Decisions

Projects within Bell Canada BS&T must be profitable and are measured against corporate-defined economic parameters. Cost and benefit studies are completed and take into consideration a variety of economic measurements, the most important ones being net present value (NPV), discounted payback period, and profitability index.

Specific areas were targeted to recognize the benefits of the solution. Four specific areas were land base management, data extracts for project design, analysis tools and project design improvements. Land base management was a foundation for the technology. It was determined that for this project to be successful, a consistent approach to managing the huge geographic mapping across the provinces of Ontario and Quebec had to be implemented.

The existing process was awkward, time consuming, and involved a wide group of government at the federal, provincial, and local levels as well as local development groups throughout the provinces. The data extracts for project design in the CAD system created a complex administrative overhead to extract the engineering work order areas from the CAD system and then post the extracted areas back into the system and manage the conflicts created by overlapping projects or engineering design errors. It was also determined that system analysis tools could significantly reduce the manual engineering effort required to assemble network configurations, apply design or transmission parameters, and determine if specific communications technologies could be applied to the existing network. Finally, project design improvements could reduce the number of required design staff and provide the company with an opportunity for cost reduction and faster turnaround on engineering design projects, such as project approvals, design analysis, and work plan creation.

Many departments within a communi-

cation company are dependent on accurate records of the network to support their individual business processes. Without a centralized system, these diverse groups were maintaining their own copies of the network inventory records. As a result, there were many copies of the data maintained within each business unit, and each business unit was therefore required to maintain the administrative staff to continually update their network records with engineering changes. A centralized system, providing access to each of these business units, would dramatically improve the accuracy of the network information, reduce duplicate effort, and provide opportunities to improve business processes through automation.

The key advantages to Bell Canada's NetworkX enterprise network inventory system were:

- Resident in a centralized Oracle RDBMS.
- Client-Server environment (thin client) providing advantages to the IT group that administers the system.
- Allowed Bell to move off OS-2 to a Windows-based client configuration.
- Supported a multilingual (French and English) application.
- A single version of the application with enterprisewide access to the data.

PROJECT MANAGEMENT AND ORGANIZATION

Recognizing the scope of the NetworkX project, Bell Canada decided to break the project into five subprojects. These subprojects, although interdependent, could be more effectively managed. The subprojects were:

- G/Comms development, configuration, and testing
- Data migration
- Land base restructuring and import
- G/NetViewer and G/Mobile testing and deployment
- G/Net Export Server configuration and installation

The subproject teams could more effectively manage the unique milestones of their specific projects. The subprojects, although interdependent, typically did not have any significant "overlapping" deliverables that created risk during the project lifecycle. In most cases, the final deliverable from the subproject was in fact a unique deliverable. The key to overall project success was to manage the subprojects so the deliverable slid appropriately into the timeline for the NetworkX project

implementation.

To assure success, it was essential that some basic project fundamentals were recognized. From a corporate perspective, the project had to have a corporate sponsor and executive support across business units impacted by the project. Due to the long project lifecycle this was essential for the project to survive typical budget and staff fluctuations that exist in any large organization over time. In this day and age, these fluctuations happen at much shorter intervals.

Functionality, Configuration, and Testing

The Senior Business Systems Analyst is responsible for delivery of the solution and assuring that it meets the original project expectations. This dictates close monitoring of the defined areas, including functionality, configuration and, ultimately, testing to assure the documented expectations of the system are met.

Within the NetworkX project, there were five functional areas defined and assigned to the project teams. These five areas were:

- Land base, infrastructure, and distribution cables.
- Outside plant, including feeder cables and equipment.
- Electronic equipment contained in the network, housings, and remotes.
- Work plans, plotting, printing, and SAP integration.
- Analysis tools, search capabilities, query functions, and reports.

Within the project teams, the system integrator and the vendor provided equivalent area resources with the expertise to support all aspects of the requirements within the five functional areas. The teams worked closely together and having skilled, knowledgeable members from Bell Canada, the system integrator and the vendor ensured excellent team dynamics, respect, and close teamwork.

Performance, Scalability, and System Architecture

Bell Canada's expectations for NetworkX as an enterprise solution were a definite challenge. The initial scope was the access of 1,450 users, in 50 different geographic locations, in two provinces, with two national languages, accessing the single corporate enterprise database of network information that was expected to exceed a terabyte of data. The user expect-

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tations, to meet business needs, were that the system would provide virtually immediate response in all aspects of functionality.

To assure that the expectations would be met, Bell Canada decided to establish test criteria that would assure that the vendor product and other required deliverables (data migration, system integration, land base management) would meet those expectations. Therefore, the data for the acceptance testing had to include 20% cross-section of Bell Canada's network data and 80% data fill to provide the full system load.

The evaluation also included the corporate client server configuration. Establishing the NetworkX application as a key enterprise enabling solution also meant establishing the client workstations with

The deployment of a GRM solution is probably one of the most complex deliveries to an enterprise. It is not just the fact that this technology has the added complexity of a dataset that includes a geospatial component. It is the extent of user interaction with the application toolset.

connections to the enterprise database on top of the existing Inter-Company Network (ICN). The final solution was a thin client implementation using CITRIX. This configuration minimized network traffic by moving the majority of data processing, application churn and application to data communication to the data warehouse. An additional benefit from this configuration was more effective IT management of the system implementation and ongoing system administration.

To achieve the performance expectations, Bell Canada made a major commitment to the team that would define and test the proposed system architecture. The team's focus included planning (user work flows and system load), preparation/logistics (schedules, scripts, hardware, data), execution, and finally measuring (monitoring, collecting, analyzing, concluding).

Integration

The integration requirements involved both upstream and downstream systems. A custom interface had to be developed to

the circuit assignment system. The key systems that required the most effort were SAP and GIMMS.

The circuit assignment system

Some specific items such as phone number, cable pair number, etc. are replicated directly from the circuit assignment system in the table of NetworkX for direct reference.

The interface with SAP

The SAP module produces an extraction of material and work plan activities that is downloaded to an external file (DAT file) that can be uploaded to SAP PS and PM module.

The SAP interprets each activities identified in the NetWorkX work plans according to the contract with our contractor Expertech (placement, removal and modification of material as well as splicing operations on new and existing facilities).

For each activity, a line describing the activity is produced for the extracted file and is referenced with the activity code (SKU), reference to the plan number, and work location.

An interface is also available to review and edit the SAP Extract output before it is saved in a file to be uploaded into SAP.

The interface with GIMMS

When a new subdivision is being built or revised, the project is submitted to the NetworkX Landbase Support team. The file is then upgraded to Bell Canada standards and saved into the GIMS environment, where a nightly incremental update export file is created.

GIMS is a central repository for spatially enabled data with a geospatial management component for the input and maintenance of data. GIMS Geospatial Manager controls all input and maintenance of the data while a gate controls all access to the repository for delivery of data products and services.

Export files are created nightly using NetxExport, which is a stand-alone application that is used to perform automated, unattended exports of data from the GIMS database. Data is retrieved from GIMS based on database activity since the previous export, and exported in the format required by the NetworkX application. NetworkX then publishes the new data on a biweekly basis.

Deployment and Data Migration

The deployment of the solution involved the synchronization of the subgroup deliverables. The highest-risk item was the data migration of more than 1,100 separate CAD files from the original CAD-based system. These files had to be migrated from a hierarchical, proprietary database. To provide some risk mitigation, Bell Canada decided to use two vendors for the data migration. However, one of the vendors was unsuccessful and the complete load was transferred successfully to the other vendor, who successfully delivered the complete data migration effort.

The deployment had to take into consideration the day-to-day operations of the company. A flash cut was not practical due to the huge data volume and number of users. In the active environment of a typical engineering district, the potential for a huge backlog of work orders across the company made a progressive rollout the safest solution. This allowed the company to strategically plan for user training, data migration, quality validation, and all the other aspects of such a large project implementation.

Involving the Customer

Based on past experience, Bell Canada recognized that user involvement was essential to the success of the project. The deployment of a GRM solution is probably one of the most complex deliveries to an enterprise. It is not just the fact that this technology has the added complexity of a dataset that includes a geospatial component. It is the extent of user interaction with the application toolset.

A GRM solution requires users to work within a GUI environment that will test their ability to design complex communications networks that are superimposed on a geographic land base map. They are required to artistically create a view of the network that can be easily understood and utilized by other business units to provision services or maintain the network and its infrastructure. The designs must also recog-

Continued on page 10

nize a variety of structural as well as transmission design requirements. Next, the designers have to provide all the information required by the construction teams to build the network and then to be able to support the cumbersome accounting requirements dependent on the work plans and database to properly account for all the financial aspects of capital, expense, and associated productivity measurements. This was a significant challenge to the NetworkX project team that would be impossible to achieve without the direct participation of the end user community.

The user community was involved at virtually all phases of the project, including:

- * Functional definition
- * Testing
- * Training
- * Migration
- * Deployment

Developing Project Support

Project support was provided by a variety of participants depending on the particular activity.

Local subject matter experts (SMEs) provide valuable input during all stages of the project and in many aspects of the project as identified earlier. A “point of contact” person, established in each area, participated directly with the team.

A corporate help desk, Integrated System Support (ISS), provides functional support and coaching. The help desk is staffed by project members have experience in the project and understand the user application and business requirements.

CGI, Bell Canada’s NetworkX system integrator, provides the help desk for system and database issues.

Intergraph Canada provides the NetworkX application support.

Intergraph Corporate provides core technology support and address Bell Canada’s need for specific core capabilities.

What Was Planned Vs. What Really Happened

The NetworkX project was originally defined as an 18-month project. However, due to many factors the project ultimately spanned 48 months. A major contributor to project delays was project creep. The scope of the project changed three times over its lifespan.

The next contributor to delays was continuous changes in project resources. Bell Canada experienced a variety of resource changes that were both within and beyond its control. The company went through strategic downsizing during the project. As a result, there were five senior project manager changes, six project manager changes, 12 business analyst changes and 10 SMEs from operations that changed. These had significant impact in the overall project schedules. In addition, there were seven amendments to the original contract.

To add a human perspective, within the project team there were five children and four grandchildren born, and one team member retired during the course of the project.

Planning for the Future

The NetworkX project implemented a key enterprise business solution within Bell Canada that spans multiple business units. As such, it must evolve and adapt as Bell Canada’s business needs change. In the immediate future, NetworkX will include full network resource management capabilities with the addition of inside plant (ISP) equipment.

To more effectively respond to business needs, NetworkX will be more tightly integrated with the circuit design system and the circuit assignment system. This will allow us to refine the service provisioning

processes and improve our response to customer service requests.

Network information is fundamental to so many business processes across a communication company’s business units. At the beginning of NetworkX, the implementation was focused on the planning engineering and maintenance business units. Then, the data was made for consultation only directly available to all business units that require information about the network. This involves deploying in 2005 the Web and mobile viewers to more than 3,000 managers, associates, and technicians in various business units across the organization.

Challenges were overcome and the project has been completed successfully at Bell Canada, but it’s only the beginning for the NetworkX national model. The next challenge is to expand the NetworkX system to the rest of Bell Canada Enterprise (BCE) nationwide within the same database to include Bell West, Northern Tel, Télébec and Aliant without any degradation of the performance.

Jean Beaulieu, P.Eng., is Section Manager for Bell Canada in Montréal, Québec. He can be reached at jean.beaulieu@bell.ca.



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The U.S. National Grid

by Talbot Brooks, Director, Center for Interdisciplinary Geospatial Information Technologies, Delta State University

EDUCATION

Two days before Hurricane Katrina made landfall in Mississippi, several students and I volunteered through the Bolivar County Emergency Management Agency to serve at the Mississippi Emergency Management Agency's Jackson Emergency Operations Center.



Brooks

This initial response rapidly expanded with the help of GITA, URISA, and many others to field a team of more than 60 geospatial professionals. Our original mission was to assist with answering telephones and completing paperwork, but Assistant Director Mike Womak quickly had other ideas when he found out we could help with geographic information technologies and had brought along computers and printers.

The evening prior to landfall we were tasked with producing 250 large-format laminated maps for use in search and rescue. The maps were to show the areas of Hancock, Harrison, and Jackson Counties between Interstate-10 and the beach, have streets clearly marked, and contain 1-mile by 1-mile-grid squares for use in conducting searches. Each grid was to be uniquely identified, so a graticule was placed along the border. The resulting map (Figure 1) was similar to what one might purchase in a gas station with letters across the top and numbers running down the sides. The general idea was that after a grid was searched, it could be marked as such and resources focused elsewhere. Likewise, if widespread problems were encountered in a particular area, the general location could be quickly described.

After landfall, the search area was expanded to include interior counties as well. We were tasked with adding Stone, Lincoln, Pearl River, and Adams counties into the mix as well. Further, the U.S. Coast Guard asked that we add popula-

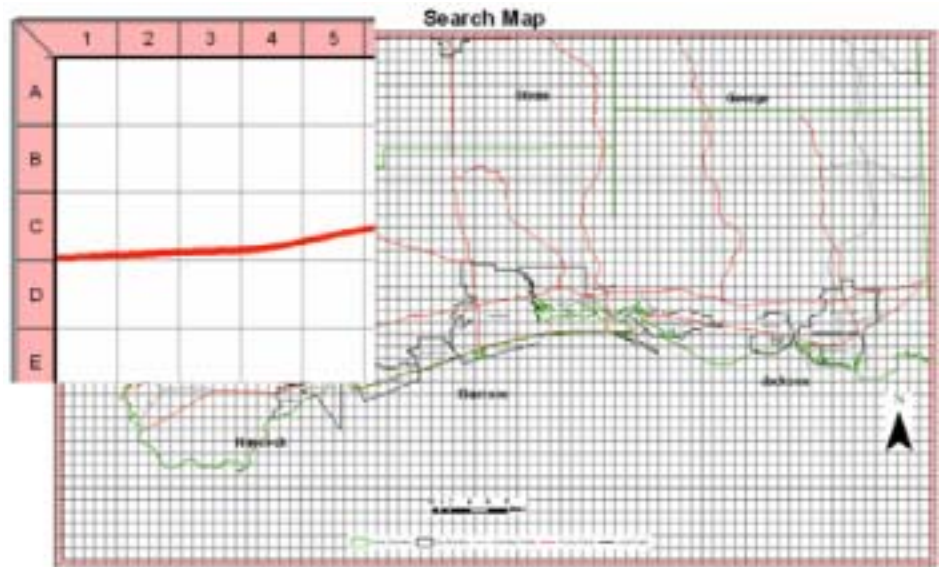


Figure 1. The first search and rescue map produced on August 28, 2005.

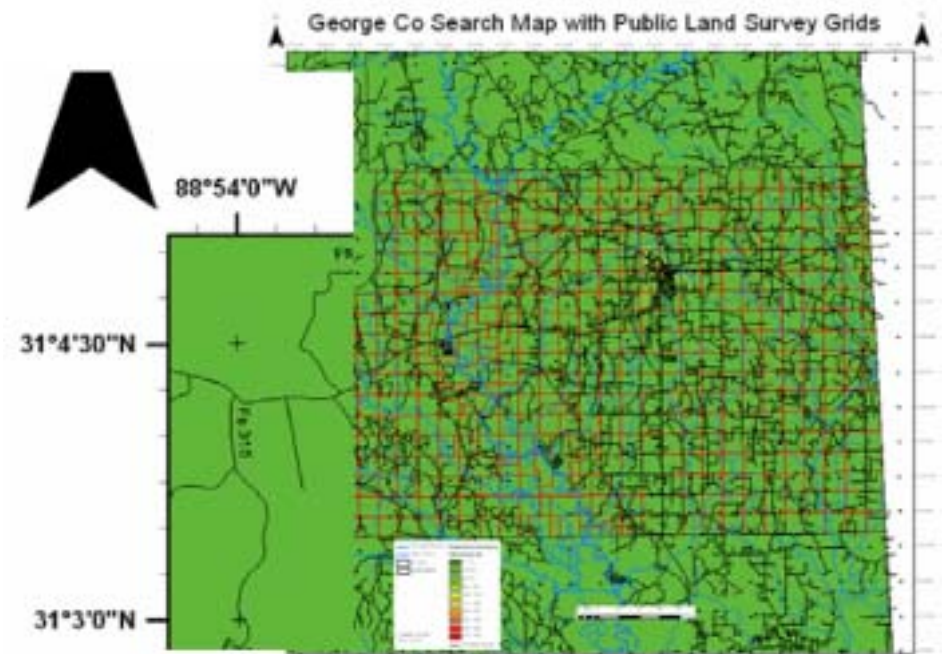


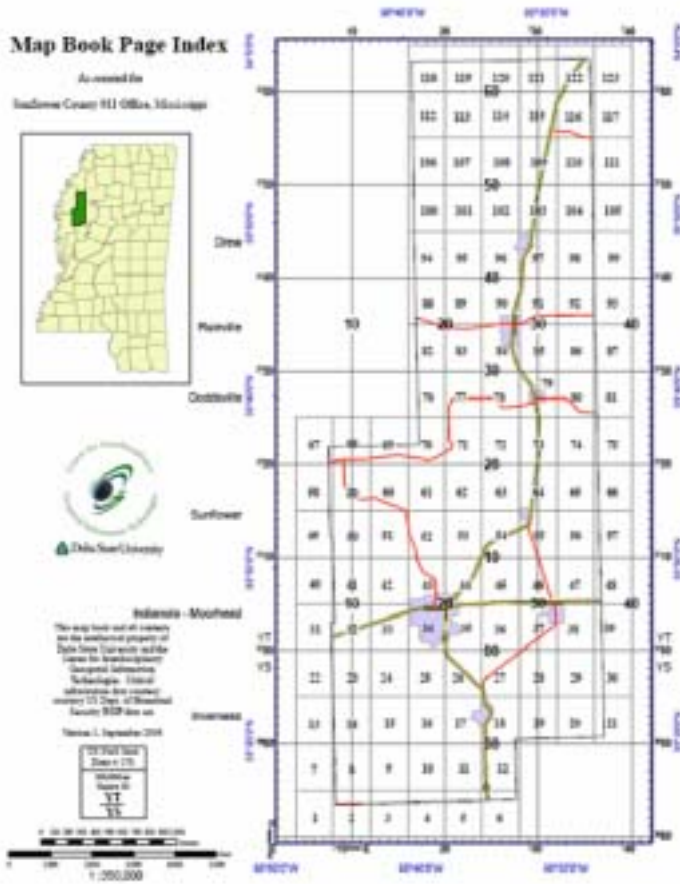
Figure 2. The expanded search and rescue map using PLSS and population density.

tion density as a background layer.

The immediate problem was to create a new search grid, something I loathe to do because it would create two distinct search map sets that did not share the

same reference coordinate system. However, the system of numbers and letters would just not work clearly as we quickly reached zzz123-type grid squares. I

Continued on page 12



Figures 3 and 4. Sunflower County, MS map book index page based on the US National Grid. Each map page represents a 4 x 5 km area printed on an 8.5" x 11" page at a scale of 1:24,000 for easy use with standard compasses and grid readers.

Continued from page 11

struggled with what might work. Using latitude and longitude was out of the question. Try to figure out how far apart two lines of longitude are or determine the number of decimal places to report a position within a few meters and the problem should become apparent. Further, this was not the time and place to explain 2.5' grids or the way to understand the differences between DMS and DD. In the end, the Public Land Survey System was used because it natively contains 1-mile by 1-mile grids and each grid is unique within a county (Figure 2).

While all of these efforts were at least somewhat useful, they did consume a great deal of time and served to highlight a fundamental problem. What was in fact needed was the application of a standard coordinate system, which any responder could use regardless of the map in hand or the GPS unit in use and which would work well with the largest group of

responders, the US military. Not known to us at the time, such a standard already existed, but was not being used by any responding agency—particularly FEMA. It is called the U.S. National Grid (USNG, <http://www.fgdc.gov/usng>).

The critical lesson learned is that every search and rescue team member, firefighter, medic, and police officer needs to learn fundamental map-reading skills and the USNG. When Katrina blew through, it stripped the land of recognizable landmarks such as street markers, house numbers (and the houses as well), and signage. The ability to navigate in this environment is crucial to providing emergency services and a map with the USNG is the most effective means to do so. Further, geospatial professionals need to know how to make standard map products with USNG overlays as they might someday find themselves in a similar position.

The USNG is a ground-based coordi-

nate system that uses the meter as the basic unit of measure. With minor exceptions, it is the same as the Military Grid Reference System (MGRS), the system every recruit must master if they want to graduate from boot camp. It may be found in most all newer model GPS units and can be easily used if placed on a paper map. It is readily sectioned into 1-km by 1-km grids and may be used to report positions with 1-meter accuracy (Figures 3 and 4).

Beyond the search and rescue community, this issue is important. The fundamental concept in play is the creation of a common, spatially-based operational framework using interoperable maps. As geospatial professionals, we have become accustomed to the seemingly endless choice of projections, coordinate systems, and map scales at our disposal—sometimes at the expense of the end-user in the field. By dropping a

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common and easily understood spatial reference system such as the U.S. National Grid onto a paper map product, we are able to facilitate interoperability in the field. The lineman with a schematic of power line infrastructure is able to more easily cross reference the drawing with an aerial photo, if both have the same grid overlay.

Likewise, use of the U.S. National Grid may make our jobs a bit easier. Over the years I have heard of many different schemas for geoaddressing telephone poles and transformers in the utility industry. The U.S. National Grid could easily become the interoperable standard for geoaddressing infrastructure. If implemented, utility crews responding from Virginia to an ice storm in Pennsylvania might have an easier time finding or reporting damaged infrastructure in the field.

While a detailed description about the technicalities and implementation of this coordinate system are beyond the scope of this article, its principle has become one of the recommendations for implementation by Congress in their review of Katrina (<http://hsgac.senate.gov/index.cfm?Fuseaction=Links.Katrina>, page 22, recommendation 50). Please reference the Federal Geographic Data Committee's description on the FGDC Web site above if interested in a more technical description. Training materials are available at both the FGDC site, at <http://mississippi.deltastate.edu>, and will soon be available through the U.S. Fire Administration and additional samples may be downloaded from <http://cleveland.deltastate.edu/data>. Implementation of this system will save lives, time, and money in future disasters.

Talbot Brooks is the Director of the Interdisciplinary GIS Center at Delta State University, Cleveland, Miss. He can be reached at tbrooks@deltastate.edu.

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Meet GITA Member Tina Cary

MEMBER SPOTLIGHT

Dr. Tina Cary is president of Cary and Associates.

Q. How long have you had your own company?

Cary and Associates has been delivering marketing services to the mapping profession for nine years. We serve clients around the world by providing market research, marketing communications, and business planning services.

Q. What projects are you working on now?

For one client we are doing market research about the size of the global market in its particular specialty, and looking at trends in the adoption of relevant new technology. For two clients, I just finished writing articles to help spread the word about their capabilities and accomplishments. And, for another client we are documenting the business case for an investment opportunity in the geospatial arena.

Q. How long have you been a member of GITA?

I joined GITA in 2002. The Rocky Mountain Chapter is very active and provides numerous opportunities for learning and networking.

Q. What is your favorite membership benefit, and how has your GITA membership helped your career?

My favorite benefits are the online discussion forums and the member search function; these help me know who is doing what. The *Geospatial Technology Report* has been a great asset to my career by providing information about the various market segments.

Q. Anything else about you that you'd like to share?

My main hobby is family history. I love to look at USGS maps and aerial imagery to envision the landscape where my ancestors lived and how far they walked to church or school. The Sanborn fire insurance maps (1867-1970) even convey what materials were used to construct these buildings!



Standing on the farm purchased by my great-great-grandfather in July 1843—two months after he arrived in the United States—Cary and her brother are holding a piece of old barbed wire they found there.

Nominate a Colleague to Be Featured in the Next “Member Spotlight”

Give a colleague 15 minutes of fame by recommending him or her to be featured in our “Member Spotlight” section. Just e-mail *Networks* editor Kathryn Henton at khenton@gita.org.

12 Weeks to Annual Conference Giveaways

To celebrate the new GITA Web site and get ready for GITA 2007, we're awarding 12 great prizes to 12 lucky site visitors.

The site launched at 12:12 pm on 12/12/06, 12 weeks from Annual Conference 30.

To enter, just visit gita.org/12—good luck!

Keeping Up With Chapters

CHAPTER UPDATE

California/Nevada Chapter

The California/Nevada Chapter held its Annual Conference in early November at the Orange County Sanitation District (OCS D). This year's conference theme was "GIS: Integrator of Many Technologies" and featured a series of excellent presentations from expert speakers in the utilities, government, and industry. The full-day, educational event drew GITA members and guests from throughout the region and included a superb hosted luncheon and many fantastic door prizes. The exciting day was capped by a fascinating and informative guided tour of the state-of-the-art facilities at OCS D. The CA/NV Chapter is grateful to our dedicated sponsors and to the folks at OCS D for helping make the chapter conference such a successful, worthwhile event for our GITA membership.

Read the CA/NV Newsletter

Minnesota Chapter

The Minnesota Chapter sponsored an event on November 2, 2006, at Connexus Energy in Ramsey, Minnesota. Over 100 people from all parts of the state attended the half-day conference for utilities, municipalities, and contractors interested in improving their geographical information by making better use of technologies that will improve their working relationship with Gopher State One Call (GSOC). Jim Holzer, general manager, GSOC, focused on many things that can be done with GSOC that few people are currently utilizing. It centered on moving from the historic paper world to what can be done digitally and through the Internet. Also discussed were new tools at Gopher State, such as "Virtual Polygon," as well as, "out of area locates" and how this issue fits into the whole public safety arena. Tim Felix, facility operations supervising engineer, Minnesota Power, focused on the real-life success story at MP. MP has been working hand-in-hand with GSOC in attempting to improve their productivity by eliminating most of the paper work and redundancies that have been a part of maintaining their



Caption Here?

relationship to GSOC. This has led to lower cost, better results, and a general improvement in the quality and usability of their GIS data. The purpose of this discussion was to help utilities and contractors to see their way beyond their current way of working and begin to put processes into place that will provide substantial benefits now and in the future. Patrick Shea, assistant public works director, City of St. Cloud and Kendis Scharenbroich, manager, GIS Consulting Services, ProWest Consulting, discussed in more detail the GIS/LIS News featured article about a "Locate Ticket" project that Pro West has developed with the city of St. Cloud. The discussion focused on how and why of this highly successful interactive site that has received high praises from residents of the city as well as staff. This quote from the article sums it well: "Using existing GIS and wireless technology and dedicated staff, the City of St. Cloud is increasing its level of public service, efficiently fulfilling Positive Response requirements and saving time and money executing GSOC requests." For more information about activities with the Minnesota Chapter, visit the Web site at

www.gita.org, and navigate to the MN Chapter.

Ontario Chapter

On Nov. 2006, GITA Ontario Chapter held its annual conference at the Living Arts Centre in Mississauga, Ontario, Canada. More than 200 GIS professionals, including software vendors, consultants, and solution vendors, helped make the event a success. "I don't mind traveling [from California] to participate in a top-caliber event like the Ontario Chapter of GITA has put on," one attendee said. The event kicked off with a panel discussion that included representation from IBM, Microsoft, and Oracle with discussions ranging from spatially enabled databases to future technology directions. "The panel was great—to actually hear candid, honest, and real discussions. I can't remember ever hearing such open dialogue between leading software companies," another conference-goer commented. Attendees concurred that this event cannot be missed. "Awesome—you can't get this anywhere else in Ontario. I don't think I

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have experienced a panel discussion as rewarding as this one.”

Southeast Chapter

The Southeast Chapter of GITA distributed \$4,000 in scholarships in 2006. Fulfilling GITA's educational mission, the Southeast Chapter used revenues from conferences to assist five students at colleges and graduate schools to further their learning in the geospatial field. Much of the support went to students at the University of Tennessee at Chattanooga, who are working to document and geocode herbarium samples. Their database design is intended to be a model for the National Biological Infor-

mation Infrastructure (NBII).

Wisconsin Chapter

The Wisconsin Chapter held two board meetings in November. Read the details from each below:

November 14, 2006

November 21, 2006

Midwest Chapter Board

GITA Midwest Chapter's first year was full of planning and ideas; however, getting a chapter established takes more than a year. The chapter is determined to keep the chapter going and provide benefits to local

GITA members. To end the year, they held a chapter meeting on Dec. 6 in Kansas City. They had a full agenda, including a presentation from an ESRI representative on some of the new GeoDatabase and Desktop features available in ArcGIS 9.2. The meeting also included a lunch of fine KC barbecue.

The agenda included:

- Recap 2006 Activities
- ESRI Software Demonstration
- Election of New Officers for 2007
- Plan for 2007

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Water For People

Using Innovative Positioning Technologies to Monitor International Development Efforts

In 2005, Water For People supported the provision of safe and sustainable drinking water resources and/or sanitation facilities like the one at left, benefiting more than 78,000 people in the developing world.

Water For People, a private, nonprofit international development organization that supports safe drinking water and sanitation projects in developing countries, recently launched a pilot monitoring and evaluation program to assess the functionality and long-term viability of its water and sanitation projects. The program was developed using a methodology developed by WESTON Solutions, Inc.[®] (WESTON, West Chester, Penn.) and GPS receivers and related software from Trimble (Sunnyvale, Calif.) and ESRI (Redlands, Calif.).

Like most international development organizations, Water For People has been focused on completing projects to meet the need. And like so many organizations, monitoring and evaluation of previously installed projects had been relegated to back-burner status. But one of Water For People's primary goals is system sustainability—and that means checking back to ensure that past projects are functioning as planned. Founded in 1991, Water For People has funded and supported the development of more than 700 water and sanitation projects worldwide. With a carefully developed research methodology using GPS hardware and mobile GIS software, the organization was recently able to launch its first structured monitoring and evaluation program to assess the success of past efforts.

“Very few organizations have any kind of monitoring program to assess past project successes. By doing so and by developing a system that will be accessible to the public at large, Water For People is showing its commitment to openness, transparency and accountability for its actions overseas,” says Ned Breslin, Water For People's Director of International Programs.

From Idea to Reality in Two Months

“The Water For People monitoring project is no different from the work we do for our clients on a daily basis,” says Pete Virag, technology initiatives group leader for WESTON and the lead in developing

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the Water For People project. “We go into the field, collect data electronically on tablet PCs or PDAs, take digital photos, associate photos with the data and synchronize data to a central database where we manage that data and view and access the data spatially via the Web using ESRI’s ArcIMS.”

Into the Field

Water For People conducted the pilot study in Honduras in late August. A team of staff and volunteers spent two weeks visiting 33 previously completed project sites supported by Water For People. The goal was to assess the functionality of each of these water systems. Field data were collected from each site location using the rugged GPS receivers and tablet PCs and photos of each project were included as

are most effective, as well as those that need improvement. This new program not only helps Water For People from an operational perspective, but also enhances the quality of life of the thousands of people in the communities in which we work. Furthermore, it will allow us to improve our work, based on lessons from the past, so that future recipients of our support will benefit from our improved understanding of what works and does not work in specific contexts.”

Lori Armstrong, water/wastewater industry manager at ESRI, is also supportive of Water For People’s monitoring and evaluation program. “Water For People is an amazing organization. Volunteers will now be able to take ArcPad, in conjunction with Trimble’s GPS hardware, into the field to collect data and map the areas where water projects have been developed and

the opportunity to visit rural Honduras. “It’s an incredibly majestic country,” he says. “And the people are so warm, friendly and appreciative of the help. Here are people who are struggling to survive, yet they were always eager to prepare lunch for our team with what little they had. It was quite a reality check.”

Results and Lessons Learned

The results of the pilot study were encouraging. Virtually all of the water systems that had been installed with the support of Water For People over the past 10 years were still functioning. And members of each community were engaged in ensuring ongoing operations. It means that Water For People’s work is indeed sustainable and continues to serve people as it was intended. “I was a bit surprised that these systems are still functioning after 10 years,”

“I was a bit surprised that these systems are still functioning after 10 years,” confides Virag. “It shows that a little bit of effort and engineering can go a long way.”

part of the record. A survey was conducted gathering information about functionality, access, and use that can be compared across communities, regions, and eventually countries. Finally, the results were posted on the Internet.

Every night after collecting volumes of data from each of the sites, it was uploaded for display on the Internet. The data was later extrapolated and used to create reports relating to the viability of Water For People’s work in a number of areas, including system functionality, water quality, use of chlorination and other factors.

The design and implementation of the pilot program was performed by Water For People staff and an all-volunteer team of supporters.

Monitoring Past Work

The pilot monitoring and evaluation program is giving Water For People its first structured look at the long-term success of its prior work and will no doubt provide insight into areas for improvement. Moving forward, the program will rely heavily on volunteers, who will conduct the majority of the field work.

“This project is allowing us to track and visualize the impact of our work in the developing world,” says Breslin. “And it’s teaching us which parts of our approach

ensure that they continue to function as planned. We hope that this will be the first step in helping Water For People track its work over the last 15 years and into the future.”

Based on the success of the pilot program, plans are already in the works to roll out the full-scale monitoring and evaluation program in all five Water For People program countries in 2007. Each in-country coordinator will conduct ongoing surveys. The information collected will be made available to all via the Water For People Web site at www.waterforpeople.org. Any interested party will be able to access any project online and review the system as well as get a broader look at program effectiveness for an area, region, or country.

Although the hours were long and the work intense, the pilot study was a completed on schedule. “Everyone involved, from the volunteers to the Water For People staff, was committed to making the program a success,” says Virag. “It has been so rewarding to work with an organization that is making a real difference in the world and helping so many people.”

Volunteers made it all work and will be used to conduct future monitoring and evaluation efforts. Virag thoroughly enjoyed his involvement in the project and



Water For People partners with communities and other nongovernmental organizations to help people improve their quality of life by supporting sustainable drinking water, sanitation and health and hygiene projects like the one above in Honduras.

confides Virag. “It shows that a little bit of effort and engineering can go a long way.”

There were some issues uncovered as well, including some water-quality concerns and inadequate treatment at some of the sites. But that was the idea. The pilot study was successful and will give Water For People the opportunity to fix problems and help the organization fine-tune its model to ensure the delivery of safe drinking water and improved sanitation for the long-term.

More information is available at www.waterforpeople.org.

Job Postings

SRP, Phoenix, Ariz. the nation's third-largest public power and water utility, is recruiting an entry-level computer analyst/developer for its Water Information Technology Department located in Tempe, Ariz.

A bachelor's degree in computer science, CIS, computer systems engineering, or related field is required.

The position also requires strong teamwork, communication, and customer service skills; object-oriented application design, development, and support experience with Microsoft .NET, C#, VB, and VBA; experience with Microsoft SQL Server and creating database objects and stored procedures; interest and experience with GIS; and related application development with ESRI GIS ArcObjects, ArcMap, ArcGIS Engine, ArcGIS Server and SDE a plus.

Job description:

Position will create and maintain applications using a structured project development life cycle methodology; meet with internal clients and team members to identify and document application requirements; work in a team environment to develop ESRI ArcGIS applications with C#, .NET, ArcObjects that support various client departments; and provide support for customized batch data extracts, map products, and reports for client ad-hoc data requests. Job requires being on callout periodically to support a 24x7 environment.

If you're interested in this position, please apply online at the SRP Web site www.srpnet.com. The job number is 1478.

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- Have broad level of experience and successful track record selling to one or more of these markets.
- Have established network of contacts in these markets.
- Have some basic understanding of the utility industry and field-based operations.
- Have prior software sales experience.
- Possess knowledge of GIS, work management, or field automation.
- Have 5+ years direct experience in the utility industry.
- Have Bachelor's Degree.

Extensive travel required. This position can be located anywhere in the Midwest U.S. This is a well compensated position, and includes salary plus commission. All travel related expenses are included.

Senior Software Engineer – Technical Lead

MapFrame is also looking for seasoned software engineers with proven skills in building Windows and Windows Mobile client software. You will work on software applications that span the client and server enterprise. You'll gather requirements, design the application, and coordinate development activities throughout the entire software development life cycle.

The candidate should have:

- Strong customer-centric attitude.
- Extensive C/C++ programming experience (at least four years of hands-on software development experience with complex applications).
- Familiarity with database and data communications technologies.
- A successful track record of delivering high quality commercial software on schedule.
- Excellent communication skills with technical and non-technical team members. Must be able to lead a two to four person development team throughout three-six month projects
- The ability to prioritize and work on multiple, concurrent projects.
- GIS, spatial background preferred; experience with ESRI, GE Smallworld, Intergraph, or Autodesk platforms.

- College degree required—a BS or MS degree in computer science or computer engineering is even better.

This position is based in Dallas, Texas, and may require occasional travel. Local candidates preferred but relocation assistance may be available, depending on the candidate.

Spatial Business Systems, Inc. is seeking to fill a senior-level GIS development position. The selected individual will work as a technical development lead, supporting our growing ESRI GIS services practice, based in Lakewood, Colo. Responsibilities include the design, development, and implementation of geospatial software solutions, primarily in the utility and telecommunications market sectors.

Minimum Qualifications:

- Bachelor's degree in computer science, a related field, or equivalent experience in software development.
- A minimum of five years experience in developing ESRI-based applications with a strong proficiency in ArcGIS and ArcObjects development.
- Experience with service-oriented architecture development, including ArcGIS Server.
- Knowledge of C# and C++, .NET or Java is highly desirable.
- Oracle RDBMS, Oracle Spatial, SQL Server and/or ArcSDE.
- Practical project experience with geospatial data migration software tools and custom utilities.

Please contact our human resources department if you would like to send us your qualifications or receive further information: hr@spatialbiz.com.

Inside information

General

Advantica, Mechanicsburg, Pa., announced that Public Service Electric & Gas Company (PSE&G) has selected Advantica's Mains Replacement Prioritization solution for implementation in its New Jersey service territory. Under the agreement, Advantica will implement the GIS-based solution as a proven methodology for calculating the condition of metallic mains in PSE&G service areas. The GIS integrated approach will reduce data replication and deliver a flexible and configurable solution that PSE&G can develop according to its future needs.

Azteca Systems, Inc., Sandy, Utah, a provider of GIS-centric asset maintenance management solutions, announced that the City of Woodland, Calif. has realized great success using Cityworks for their maintenance management needs. In a recently published article in Woodland's eNEWSLETTER, the city detailed their use of Cityworks and how the tool has enhanced productivity within the organization. The City of Woodland, like many other cities, manages and cares for a wide variety of capital assets and infrastructure. Woodland has been a Cityworks user for over three years, using the system to track utilities, right-of-way, and city-owned facilities. In the past 12 months alone, they have logged 3,323 service requests and 8,943 work orders. Cityworks enables Woodland staff to plan work in advance and address projects that need immediate attention.

Azteca Systems also announced that the 2007 Cityworks User Conference dates have been moved to May 22-24, 2007. Azteca made the decision to shift the dates back a day to ensure that the conference wouldn't interfere with participants' plans for Memorial Day weekend. The 2007 User Conference will be held in Park City, Utah, at the Park City Marriott. The event will feature pre-conference training on May 20 and 21 for new and existing users as well as specialized implementation training for authorized business partners. Training will be followed by the conference, which will include numerous user case studies, technical and application

sessions, vendor presentations, an exhibit hall, and a Cityworks Doctor's Office. The beautiful mountain setting provides a casual and enjoyable atmosphere.

Bentley Systems Inc., Exton, Pa., announced that Comcast, a provider of cable, entertainment, and communications products and services in the United States, has won a 2006 BE Award for its Comcast Northern Division Upgrade Initiative in New England. The award category was "Geospatial: Communications." The BE Awards of Excellence, which are judged by an independent panel of industry experts and presented at an evening ceremony during the annual BE Conference, honor the extraordinary work of Bentley users improving the world's infrastructure. These projects set benchmarks for their industries and showcase the imagination and technical mastery of the organizations that created them.

Bentley also announced that the BE Careers Network launched the 2007 BE Awards of Excellence student competition. Four winners will receive BE Awards and scholarships during BE Conference 2007, taking place April 29-May 3 at the Los Angeles Convention Center in California. The competition is broken into two categories: college/university and middle school/high school.

NMT Corporation, LaCrosse, Wis., announced that We Energies has upgraded their mobile mapping software application to NMT Corporation's FAAR 3 as part of an ongoing effort to increase productivity, safety, and customer service. We Energies uses FAAR 3 to distribute map-based information for their gas, electric, and water facility data to over 3,500 mobile and office-based employees and authorized third-party contractors.

The Open Geospatial Consortium, Inc., Wayland, Md., held an Interoperability Day Seminar, during which Dan Mandl of the NASA Goddard Space Flight Center described how NASA is using the OGC's Sensor Web Enablement (SWE) standards to simplify the tasking of satellites. NASA also supported the live demonstration showcasing the NASA Earth Science Gate-

way as a successful implementation of open standards in support of better decision-making. GITA co-hosted the seminar, which highlighted successful applications of standards-based interoperable geospatial technologies. The event, held October 4, 2006 in Tyson's Corner, Vienna, Virginia included live demonstrations of standards-based services for coordination of emergency management and response as well as presentations and panel discussions.

Optimal Geomatics Inc., Vancouver, British Columbia, a geomatics solutions provider to engineering and geospatial professionals, is pleased to announce that it has been ranked #19 in Business in Vancouver's (BIV) annual ranking of British Columbia's Fastest-Growing Tech Companies list. The BIV list profiles British Columbia's most successful, fastest-growing high-tech companies based on five-year revenue growth. Accordingly, Optimal achieved a 968% growth over the five-year period since 2001. Results of the ranking have been published in Business in Vancouver's October 24-30, 2006 issue.

Optimal Geomatics Inc. also announced that the U.S. Department of Energy (DOE) has completed a National Electric Transmission Congestion Study in response to the recently passed Energy Policy Act of 2005, which is the first congestion study for the United States. Within this first study, the DOE has examined transmission congestion and constraints and has identified many areas in the United States with constrained transmission paths. By completing this study, the DOE is creating a forum to discuss where congestion is the greatest matter for concern and focus on ways in which congestion problems might be alleviated. This information will be extremely beneficial for identifying and potentially designating

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Attention GITA Corporate Members: Send your press releases to khenton@gita.org for inclusion in *Networks*.

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new national electric transmission corridors. The national congestion study is to be updated every three years.

Telvent Miner & Miner, Fort Collins, Colo., announced that CPS Energy of San Antonio is now in production using M&M's ArcFM for land and electric distribution, and is in the development phase for the implementation of gas transmission and distribution. Also underway is the designer project, which will include integration to Logica's WMIS. CPS Energy is the nation's largest municipally owned energy company, providing both natural gas and electric service. They serve more than 650,000 electric customers and more than 312,000 natural gas customers in and around San Antonio, Texas.

Telvent Miner & Miner also announced that Public Service Company of New Mexico (PNM) and Texas New Mexico Power (TNMP), both wholly owned subsidiaries of PNM Resources, Inc., have selected Miner & Miner's ArcFM™ Solution for their Texas and New Mexico operations. The companies chose ArcFM and Designer along with ESRI's ArcGIS® solution to replace their existing GIS systems. Public Service Company of New Mexico (PNM) serves more than 426,000 electric customers and more than 481,000 natural gas customers in about 100 communities within New Mexico, and also sells electricity on the wholesale market. Texas-New Mexico Power, headquartered in Fort Worth, Texas, provides community-based electric service to 85 cities and more than 256,000 customers in New Mexico and Texas. PNM Resources, the parent company of PNM, completed an acquisition of TNMP in 2005.

TELUS Geomatics, Alberta Canada, announced that its Web-based emergency management service—Emergency Management Operating System (EMOS)—was named Best Online Solution by the Consumer Electronics Association judges. The provincial government said the service is valuable enough that it is considering subsidizing the roughly \$5,000 a year annual subscription cost to allow more municipalities to subscribe. That would get them EMOS' GIS mapping and incident logging capabilities. Geomatics offers a number of services around the GIS system, components of which are

used by some 20 Alberta ministries, municipal agencies and private corporations. Most are emergency management departments responsible for preparing for a disaster, anything from an outbreak of animal disease to a natural gas well blowout. EMOS allows an organization to get an emergency operations centre up and running quickly because it lets administrators see where assets are so they can judge the impact of an incident. Auto phone alerts. The system maps and tracks almost anything from natural gas wells to vehicles.

Partnerships

Korea geoSpatial Information & Communication Co., Ltd., Seoul, South Korea, a GIS solution company in Korea, signed an alliance agreement with Heilongjiang Province Computer Center, China, on Nov. 1, to establish a joint Korea-China Science Technology Information Center and cooperate on IT projects. KSIC is best known for IntraMap GIS software in Korea, a complete GIS product that is widely used in Korea GIS market and it is also scheduled to be released in Heilongjiang, China as the customized application. Heilongjiang Province Computer Company has laid out 63 Heilongjiang Province projects, which include GIS-based meteorological analysis, 3-D geographic information system, fire hazard monitoring system and others with foreign investment in Korea and Hong Kong companies.

Océ, Chicago, Ill., a provider of digital document management and delivery systems, announced that it has joined the ESRI Business Partner Program as a Complementary Technology Provider (CTP). As a CTP partner of ESRI, Océ provides end-users with award-winning hardware and software printing solutions that are complementary to ESRI technology. Currently, Océ is the only manufacturer capable of supplying GIS users with a choice of printing technologies for large format, complex images—including full color inkjet printers, light-emitting diode (LED) monochrome printers, and continuous tone digital photographic printers. Océ also offers optional scanning and copying technology for incorporating hardcopy data into a GIS. Already a recognized provider of these technologies to the GIS market, Océ will now offer its

large format, GIS printing expertise with the support of ESRI.

Telvent Miner & Miner and Telvent China are working together to bring a localized version of ArcFM to the Chinese utility market. The two offices have recently completed the translation of ArcFM into Chinese characters. With this effort, utility users will be able to navigate the graphical user interface in the local language. ArcFM 9.1.2 is operational with the ArcGIS® Chinese language package from ESRI China. By offering a localized version of ArcFM, Chinese utilities can take advantage of having a complete GIS utility solution for modeling, editing, maintaining, and managing facility asset data in an enterprise system. The product provides productivity tools and specific utility functionality, such as feeder management, map production, and electric, gas, and water tracing, as well as an extensive set of editing tools. The application can be configured and extended to support the specific business rules and operations of any organization.

TerraGo Technologies, Atlanta Ga., a provider of GeoPDF® and the MAP2PDF™ family of products, announced that it has entered into a strategic agreement with In-Q-Tel, the independent strategic venture capital fund that identifies innovative technologies to support the missions of the Central Intelligence Agency and the larger Intelligence Community of new mapping products needed by government agencies such as the National Geospatial-Intelligence Agency and other In-Q-Tel Intelligence Community partners. These agencies use TerraGo products to quickly and easily share geospatial data throughout their organizations.

Products

Caliper Corporation, Newton, Mass., announced that it is developing software applications for five major Census Bureau data programs for the forthcoming 2010 Census. These applications will be used by more than 40,000 state, local, and tribal governments to enhance the Census Bureau's Master Address File (MAF) and TIGER geospatial database of roads, legal

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and administrative boundaries, and geographical area reporting units for Census and survey data. These updates are essential for the success of the 2010 decennial population census and the many related subsequent activities such as congressional, state legislative and local redistricting, the allocation of federal funds to local and state governments, and the publishing of Census data. Collectively named the MAF/TIGER Partnership Software (MTPS), the five custom applications are based on Caliper Corporation's Maptitude GIS.

GIM International, The Netherlands, announced that it has prepared a media planner containing dates of magazine issues, copy guidelines/deadlines for contributors, product surveys, BPA results, circulation, advertising possibilities, etc. Contact Victor van Essen (victor.van.essen@reedbusiness.nl) to receive the 2007 Media Planner. With an international editorial coverage and distribution, GIM International is focused on the latest news and topical overviews, providing information concerning geomatics technologies, products, and business. GIM International is published by Reed Business Information - Geo.

Océ announced that the Océ TCS500, a large format color print/copy/scan system for CAD and GIS applications, has received a "4-Star, Highly Recommended" rating from BERTL, an independent, industry-leading source of product evaluation reports and comparative analyses. Of the hundreds of digital imaging devices evaluated by BERTL, only a select few that demonstrate superior business-critical functions and deliver a high return on investment receive this rating.

OpvanteK, Inc., Newtown, Pa., announced the availability of two companion service offerings to help natural gas distribution utilities prepare for upcoming Distribution Integrity Management Regulations. First, its Distribution Integrity Roadmap project will help an LDC to quickly inventory all current sources of knowledge about the piping infrastructure and the threats it faces. Then, OpvanteK will work with the LDC to identify and prioritize gaps in its Distribution Integrity Management capability, and recommend a

phased approach to address the highest priorities ahead of the impending regulations.

Safe Software, Las Vegas, Nev., the makers of Feature Manipulation Engine (FME®) technology, announced today development of the FME Feature Data Source for Autodesk Map® 3-D, Autodesk MapGuide® Enterprise, MapGuide Open Source, and Autodesk MapGuide® Studio. The announcement was made at Autodesk University 2006, where Safe Software is exhibiting and demonstrating this new technology. FME Feature Data Source gives Autodesk's geospatial product users a seamless connection to dozens of FME-supported formats using open source Feature Data Objects (FDO) technology.

Wind Lake Solutions, Inc. (WLS), Mukwonago, Wis., announced the release of its Spatially-enabled Permitting And Notification System (SPANS™) application. SPANS is a Web-based system that utilizes a highly configurable ASP.net and SQL Server architecture to efficiently facilitate the complex inter-company communication flows associated with joint use pole attachment projects. SPANS' database configurability allows communication flows to be tailored to the specific informational needs of participating companies, while addressing the full lifecycles of attachment project types including attachment requests, transfer notifications, code violations, and others. The SPANS product provides a shared environment within which pole owners and attachers can access and update a common set of project information.

Wind Lake Solutions also announced that WLS is teaming with Ruckert/Mielke (R/M) to complete an electric distribution system GIS data conversion project for the Wisconsin Rapids Water Works and Lighting Commission (WW&LC). As a subcontractor to R/M, WLS' primary responsibility will be to provide GIS consulting and quality assurance services. WLS will assist with the development of WW&LC's ArcGIS electric data model, define an effective conversion methodology, and design quality audit procedures. WLS will also provide R/M personnel with electric distribution facilities expertise and will assist with quality audits during the project's pilot and full conversion phases.

People

Enspira Solutions, Denver, Colo. announced that Mark Hatfield has joined its field automation consultancy practice as principal consultant. With ten years experience in field automation, Hatfield will work closely with other Enspira subject matter experts, leveraging Enspira's unique knowledge and experience in understanding the business and work processes of utilities and how they can be improved through technology. Prior to joining Enspira Solutions, Hatfield has been involved in numerous mobile specific projects. Hatfield has extensive experience managing all aspects of a project ranging from feasibility studies, vendor selections, and strategic planning to system design and configuration, project management, business process optimization, and project audits. Recently Hatfield completed a mobile workforce management system replacement project for Cinergy Corporation. Following vendor selection, he continued with the implementation of the project as the technical project lead responsible for designing, building, and implementing all interfaces, coordinating design decisions, and coordinating the development of the deployment plan.

The Federal Geographic Data Committee, Reston, Va., announced the selection of a new coordinator for the National Spatial Data Infrastructure (NSDI) Coop-



Urban-Mathieux

erative Agreements Program (CAP) and the opportunities for 2007 NSDI CAP awards. Gita Urban-Mathieux joined the FGDC staff this past summer and was selected for the coordinator position in October. She has been with the U.S. Geological Survey since 1988 serving as a research cartographer. For the past ten years Gita's efforts have been essential to the success of the National Atlas of the United States®. She dedicated herself to developing geographic information products and services that met or exceeded the needs and expectations of the American public. Gita will miss supporting the Atlas, but is looking forward to new prospects and challenges that come with coordinating the NSDI CAP which offers recipients great opportunities to participate and build the NSDI.

EVENTS

2007

January 22-25	Map World Forum Noida, Uttar Pradesh, India
February 4-6	DistribuTECH San Diego, California
March 1-2	2007 North Carolina GIS Conference Winston-Salem, N. Carolina
March 4-7	GITA's Annual Conference 30 San Antonio, Texas
March 5-8	CARIS 2007 Kuala Lumpur, Malaysia
March 13-14	Indiana GIS Conference Indianapolis, Indiana
April 4-6	CalGIS 2007 Oakland, California
April 9-11	Map Middle East 2007 Dubai, UAE
April 16-18	Location Intelligence Conference 2007 San Francisco, California
April 23-24	2007 Washington GIS Conference Lynnwood, Washington
May 14-17	2007 GeoTec Event Calgary, Alberta
June 5-9	The 5th International Symposium on Digital Earth San Francisco Bay Area, California
June 25-29	32nd International Symposium on Remote Sensing of Environment San Jose, Costa Rica
July 3-6	GI_FORUM: Symposium and Exhibit for Applied Geoinformatics Salzburg, Austria
July 17-18	2007 Wireless & Mobile Expo & Conference Ontario, Canada
Nov. 15-17	Rocket City Geospatial Conference Huntsville, Alabama

CREDITS

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Networks is a bimonthly newsletter of GITA. Inquiries related to editorial content, including submission of press releases and other news items, should be directed to the editor. *Networks* accepts vendor press releases only from corporate members. Please direct all inquiries to GITA, 14456 East Evans Avenue, Aurora, Colorado 80014 U.S.A. Tel: 303-337-0513 Fax 303-337-1001. E-mail: khenton@gita.org. Web address: www.gita.org

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