

AED SICAD **forum**

INTERNATIONAL EDITION

09/09



AED SICAD

Success with GIS

FOCUS UTILITIES

AED-SICAD International User Community met at the 4th European Utility Forum in Brussels, Belgium

Albeit financial crisis and tight travel budgets, more than 80 attendees visited the 4th European Utility Forum, which was celebrated this year in the heart of Europe – Brussels. A total of 18 different countries were present, in a good mix between customers, business partners and prospective customers. It proved again to be an excellent forum for everybody to meet their peer professionals and discuss project work, technological trends and simply to get to know each other better.

The row of customer presentations was opened by the Belgium Utility PBE, where Raf Rooseels and Ghafoor Kangria presented their ongoing ArcFM UT project, focusing on the challenges which are presented by the documentation of the PBE Cable TV network.

Thomas Kindervater from EWE, which is the 5th largest electricity supplier in Germany, gave a good overview on the introduction of ArcFM UT at EWE – a challenging undertaking with 80 editing users and more than 1.800 other GIS users. Bill Meehan, Director of Utilities Solutions at ESRI Inc., widened the scope of how GIS can play a crucial role in utilities not only in documentation and analysis, but also in many other fields.

During the second day, Miha Pregl from GISData was presenting ArcFM UT for Sewage at the city of Koper (close to Italy) in Slovenia. He was followed by a presentation from the GIS team of the Electricity Distribution Company from Belgrade (EDB), which was done jointly by Jelena Milosavljevic from EDB and Ljubisa Adzemovic from Livona, highlighting interesting details in their ArcFM UT project like 3D laser scanning of critical infrastructure or automated import of GPS field measurements.

The final customer presentation was done by Marnix van Welie, Project Manager of the ArcFM UT project at Brabant Water, one of the largest Water Utilities in the Netherlands. Special interest sparked his life demo of their ArcFM UT Mobile deployment which was demonstrated on tough books used by Brabant Water field staff. AED-SICAD complemented the user experiences with presentations related to the ArcFM UT Product Suite. This year's winner of the AED-SICAD Business Partner Award was the ESRI Distributor of Slovakia, the company ArcGEO, which was honored for their outstanding and competent work with the utility company VSE.

This year's Utility Forum was again a big success, also because of "social" reasons. People appreciate to meet other users and having the opportunity for discussions and talks in relaxed and pleasant atmosphere.

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Bill Meehan, Director of Utilities Solution at ESRI Inc.



Gerald Kreuvel presenting the Road Ahead

Steady Growth

Dear Readers,

With great pleasure we present a new AED-SICAD forum International to you. What started as a small group of international utilities that wanted to learn from each other and to share experiences, has grown with at least one to two customers per month to a substantial group of motivated and interested users of ArcFM UT. The number of visitors to our annual European User Forum keeps growing. We are proud of that development and thankful to you.

This success was only achievable with the help and dedication of our international business partners. They have invested much in understanding our technology and your requirements. And they're doing a great job!

Now you're looking at the 2009 edition of our Forum magazine. It is a pearl that holds some beautiful information about you and your works. It shows where you are going with our technology.

The Road Ahead is not just defined by technological developments, but very much by user requirements. I like to call it a process of continuous improvement of our solution in order to meet your needs. The pillars that construct this continuous improvement basically come from three sides:

Changes in the core ESRI technology drive us to modify our solution. The new ArcGIS Engine and Server technology enabled us to provide a complete new suite of Smart Desktop applications. This met customer wishes to have smaller and more task-dedicated applications, e.g. for mobile use or for simple attribute data editing as in the Asset Manager.



Gerald Kreuvel

To make queries on the data easier for our users, we introduced some optimizations in our data model. Working fast and efficient with your data has our permanent attention.

The third pillar comes from more focus on business process support. Here our Server products will help you to leverage ArcGIS Server into your work flows. The ArcFM UT Integrator EAI will enable you to better integrate with external systems like SAP or a SCADA system. In our magazine you will find some excellent examples of this.

I hope that you will enjoy the pleasure of reading our AED-SICAD forum International.

Yours sincerely,

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Dynamic Gas Distributor in Austria

The Voralberger Erdgas GmbH (VEG) is a small, but dynamic gas utility on the Western edge of Austria: The 2.500 customers from 1978 increased 11-fold to 28.700 service points in 2008. No surprise, that they also develop energetically their GIS landscape with the introduction of ArcFM UT.

The local electricity utility, VKW, owns 71% of the shares of VEG, the rest is with local cities and authorities. With a ~2.000 km gas network and steady yearly increases in number of service points, there was clearly the need to keep the GIS up to date. Since VKW had opted also for ArcFM UT, there were a lot of clear advantages in terms of data and IT system synergies to quickly replace the old GIS system with ESRI and ArcFM UT.

Already within the process of the migration, the synergies with VKW were obvious: VKW staff helped VEG staff to perform the migration, and especially for all basemap data, both companies can now access the same server, which saves a lot of time and money: Previously, these data were maintained with high time expenditure by both companies. The common server really leveraged also the data procurement cooperation between local authorities, VEG and VKW to purchase

jointly up-to-date highly exact building data. Thus the cost for these data are split three ways, and are available at least for VEG and VKW on the same server. New gas lines are usually captured in the field with total stations, since GPS measurements are often not possible. These measurements are then imported as coded ASCII files directly into ArcFM UT, where objects are generated and connected according to the field sketch by the GIS experts. Additionally, VEG currently replaces PVC pipes with PE pipes, and these changes will also have to be documented in the GIS.

But the desktop system is not only used for the documentation of their assets, the before not available network tracing functionality allows them to perform powerful analyses including also a number of reports, such as monthly statistics on built lines, management summaries or the legally required reports to the Austrian



Administration building Voralberger Erdgas GmbH (VEG)

regulatory authority, the e-control. Additionally, the neighboring local authorities profit from the VEG GIS expertise and often ask VEG to perform surveying and produce GIS data on the communal water lines as a paid service.

ArcFM UT is used in all Involved Departments

Not everybody within VEG is a GIS expert, but many have the need for in-depth information on the location and quality of the VEG assets. For this, approx. half of the company is using the GIS Portal combined with the ArcFM UT Web for general information retrieval for tasks like customer requests, field work, construction work or simply preparation of their next job.

Mr. Gach, project lead GIS at VEG, points out that he is especially happy about the quality and up-to-date-ness of the data within the ArcFM UT Web, which – he explains – is absolutely critical for its successful use. Construction site information requests are currently still answered one by one by sending out via email a PDF or DWG (for AutoCAD planners) file, generated from the central database, but in future they will

definitely introduce a web-based “click-before-you-dig” solution, which allows even less involvement by VEG staff. The 24/7 stand-by emergency duties at VEG is using the ArcFM UT Mobile solution, which is regularly synchronized with the central server, allowing them to take up-to-date data to the field which are kept on the local laptop hard disk for reliable availability. They are planning to use in the future also the mobile solution to detect gas leaks. Within the next project phase they are going to implement the ArcFM UT Integrator to connect the network calculation tool “Optiplan” to the GIS database, thus further improving the daily business process and creating a truly enterprise GIS environment.

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Public Municipal Utility of Koper Uses ArcFM UT for Effective Control of Sewage Network and Integration of TV Inspection Data

The Slovenian utility market consists of over two hundred utility companies. Most of them are municipal companies that manage fresh water, sewage, waste, public light and different combinations of these.

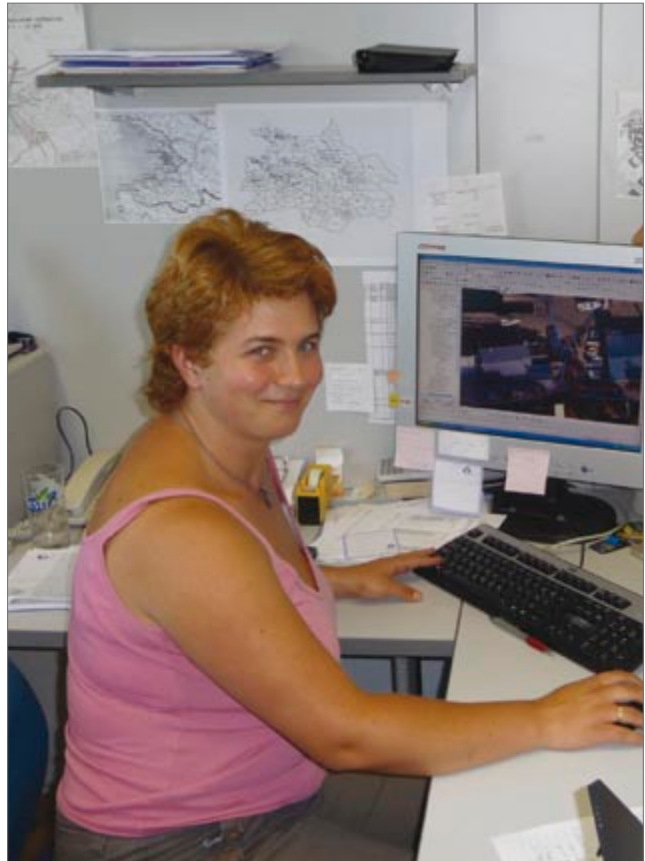
One of these companies is Komunala Koper public municipal company which is focused on managing waste water and waste of the whole Koper municipality. With a sewage network over 700 km in length and around 15.000 service points, the company provides effective daily support disposing and cleaning waste water to approx. 50.000 inhabitants.

For supporting the underlying business processes, Komunala Koper chose Gisdata and its partner AED-SICAD, whose effective solutions in the utility sector are widely used throughout Europe. Utility GIS is a powerful tool for managing the flow of wastewater from service homes and businesses. GIS technology can also be used for tracking the location and condition of water mains, valves, hydrants, meters, storage facilities, sewer mains, and manholes. In addition, this technology facilitates and simplifies the keeping up with compliance, TV inspection data, and condition ratings.

After using an old and limited CAD system, Komunala Koper decided to upgrade to a modern and capable enterprise GIS system in which only the actual users of power have a desktop system for advanced business processes, whereas all other users use an integrated web portal for accessing their network and printing custom plots for maintenance in the field.

With this project, Komunala Koper wanted to achieve geodatabase design and sewage data consolidation, accurate data in real time, lower maintenance costs, network optimization (amortization calculation, investment plan), audit over legislation and EU report generation, accurate legal data about parcels, ownership and users and better network control and management with the network planning process support.

After the important preliminary project phases of current state analysis, specification workshop and functional specification, Gisdata completed the data model configuration, system parameterization, installation, data migration and system testing which lead to a successful fulfillment of the project goals - accurate network data from service point (producer of sewage) till end point (cleaning station) and fully supported business processes.



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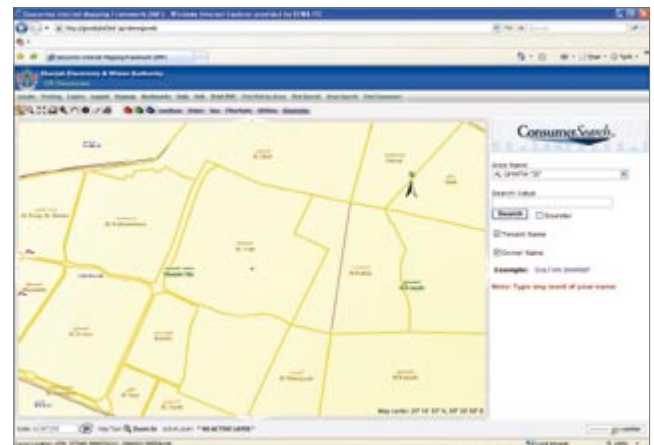
ArcFM UT Utility Asset Management at SEWA in the United Emirates

SEWA has completed the first stage of data loading and is now focusing on the support of business processes. Many applications related to ArcFM UT are improving the daily work of network operation and customer services.

Sharjah Electricity and Water Authority (SEWA) is a government-owned utility agency providing electricity, natural gas, and water services to the communities of Sharjah Emirate, including Sharjah city, Khorfakkan, and Kalba with approximately 300.000 electricity, more than 270.000 water and about 150.000 gas customers.

The ArcFM UT solution is fully in operation since 2005 with about 13 Editors and more than 50 Web users. Based on the complete network documentation starting from service points up to the power and water generation, including station internals, SEWA's typical tasks in the daily operation are executed much more efficiently. Examples are:

- » No Objection Certificate (NOC) application in gas, water and electricity. Herein any new construction has to be permitted by all affected parties. It consists of a document with the map showing the planned scenario plus administrative information. It is published to all organizations for approval.
- » The web based emergency application which registers all incidents like network faults and their details. Its purpose is to generate preventive maintenance plans because it supports the analysis of frequently defect network devices.
- » Within the service connection application the user can locate a customer on the map via its consumer number. This is important for the help desk in case of network incidents or any other information requests.
- » The well drilling permission application (based on ArcPAD) allows field workers to view, edit and transmit well data directly to the SEWA central database. Thus the GIS database is directly updated with accurate field data like water capacity. The handheld devices are equipped with GPS for



easy navigation and localization.

- » Accumulation of switch load for the determination of network capacity.
- » Specialized reporting functionality such as
 - Consumer & consumption density and growth reports
 - Average consumption reports
 - Asset replacement reports
 - Maintenance history reports

In this way the ArcFM UT solution has become an important position in SEWA's organization. The next steps are further system integrations such as the billing system for network planning and SCADA.

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Fully Integrated GIS – up to the DMS

ENELVEN, the electricity distribution company in Maracaibo, Northern Venezuela, is a dynamically evolving utility, with annual growth rates in new service points around 8%. In such a dynamic environment, integration between the key IT systems nearly becomes a necessity to allow smooth business processes: Therefore a close integration to the SAP and the DMS system was highly important to the expert **ENELVEN GIS team**.

ENELVEN is responsible for energy distribution in the Zulia state of Venezuela around the “Lago de Maracaibo”, serving almost 661.000 service points and >3.6 Mio. inhabitants. This is also the major zone for oil within Venezuela. The dynamic growth rates cause quite some work in updating all asset information in the GIS database. However, the system in place was not supported anymore by its vendor.

So, when upgrading its DMS, they decided to replace their GIS with a modern solution, engaging Siemens as prime contractor for the DMS upgrade and AED-SICAD for the GIS replacement. Thus, when selecting German providers, ENELVEN remained close to the roots of Maracaibo, which was founded in 1529 as “New Nuremberg” by German Governor Ambrosius Ehinger.

Efficient GIS team at ENELVEN

The project execution was remarkable, since the GIS team at ENELVEN chose to contract only guidance on how to implement the utility solution, rather than to receive a turn-key project. As such, the majority of the tasks to be done, like data migration, software configuration and even interface programming was performed by the GIS team. Hely Socorro, project lead at ENELVEN, laughs when asked about this: “Since our previous GIS, we were used to do the administration and work on our own. Therefore, this was for us a natural



Hely Socorro, project lead at ENELVEN

choice, since we had discovered the advantages of knowing your GIS administration inside out. Of course, we were somewhat worried about the new and often un-known tasks to be done, but with the smooth support from AED-SICAD, it all went very well.”



The ENELVEN GIS project team

The migration posed some challenges, since the data were transformed at the same time from the old coordinate system “La Canoa” to the now-used “RegVEN”.

High-Level Integration

One of the first tasks in terms of integration was to establish a close link to SAP. ENELVEN chose to create a synchronization to SAP using a daily batch process, although they are considering using the standard on-line SOAP interface of the ArcFM UT Integrator in the future. The programming skills of the ENELVEN team were placed on a test, when they chose to program part of the custom C# interface, which is even creating geographical objects in the GIS, themselves – a test which they passed without problems. Thus depending on the work process, the relevant assets are either first documented in the SAP and then synchronized to the GIS or, first updated in the GIS and then sent to the SAP.

GIS-supported DMS

Another major facilitation of the daily work processes is the interface from the GIS to the DMS. Exporting the topology of the GIS and importing it into the DMS allows them to maintain the geographical network in only one IT system, the GIS, and pass it on to other IT systems as needed. Thus duplication of work along with the typical errors in entering data is avoided.

On the DMS side, ENELVEN will manage all their power distribution outages, crews and maintenance processes in order to reduce the time of their customers’ outages. This is done by sending via radio the outage information to terminal displays in the trucks, using GPS solutions to track their crews, and assigning them to closer outages. The dispatchers (DMS users), with the support of their crews, can solve the outage permanently or implement a provisional solution. In the latter case, they will

deliver a working order to the maintenance department to replace any line or device damaged and to provide a permanent solution to the problem in the distribution network. The power distribution network, crews and the outages are geo-referenced in the GIS. The working orders are treated with interfaces from DMS to SAP using the CCS and PM modules as solution for commercial and maintenance operations. It is supplemented with geo-referenced information from the GIS. The GIS was rolled out over the whole distribution area of ENELVEN, leaving some editing posts far outside from the central server. Due to the somewhat limited bandwidth of the communication lines, a Citrix terminal server was chosen for the remote offices.

For the upcoming project phases they plan to use GIS to control the logistics of their field crews and to calculate the best possible routes for their daily maintenance work. Another plan is, of course, further optimization of the business processes, i.e. integration of the network calculation program with the GIS. But also within the commercial/sales departments, they plan to make further use of the excellent analysis and thematic mapping capabilities of the new GIS and use it more in the analysis of their client base. The ENELVEN GIS team will surely not run short of ideas for future improvements in their GIS business process!

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City center of Oldenburg

EWE migrates to ArcFM UT

With 1.470 employees and a turnover of 1.6 Billion EUR in 2008 EWE NETZ GmbH in Oldenburg belongs to the large German network companies. About 115 EWE NETZ employees actively work with the GIS to update the documentation on the extensive networks. The amount, complexity and different branches represented in the data were a challenge for the migration.

EWE NETZ GmbH was formed back in June 2006 to focus on the operation of the extensive electricity and natural gas network in the Ems/Weser/Elbe region and the natural gas networks with blanket coverage throughout Brandenburg, Rügen, northern West Pomerania and Poland. They serve > 800.000 service points with electricity and > 680.000 service points with gas. It is a 100% subsidiary of EWE AG, which is an integrated company, operating networks through EWE NETZ, handling energy production, procurement and sales and additionally actively working in the field of

Information Communications Technology (ICT) through various telecommunication companies as well as its 100% subsidiary BTC AG. BTC AG, an AED-SICAD business partner, actively works in the fields of SCADA, SAP and GIS implementations for utilities as well in their integration. Thus EWE, with 5.3 Billion EUR turnover in 2008, holds a unique position within the landscape of the large German utilities, also due to the fact that the majority of its stake holders are local authorities. In 2009, EWE and EnBW have agreed upon a strategic cooperation.

The key drivers for an update of their existing GIS platform were that the existing system was soon running out of support, to increase the capabilities of their GIS platform and additionally to lower maintenance cost. After looking into the utility solutions of the major GIS suppliers in the market, EWE NETZ jointly with its IT subsidiary BTC AG decided again for AED-SICAD, now for the utility product suite ArcFM UT. One of the key reasons was that ArcFM UT covered all branches which had to be documented within the EWE group: Besides electricity and gas also water, waste water, telecommunication and district heating.

EWE NETZ decided to upgrade the system with BTC AG as main contractor, together with support in key activities by AED-SICAD. The migration was carefully planned, since the core business processes like data maintenance through >100 employees, approximately 1.800 employees for network information service, and internal network analysis and reporting to the regulatory authority, needed to be supported without any interruption. From the technical side, a challenging 220 Mio. graphic elements had to be migrated without loss. After an initial pilot migration project EWE NETZ started the full migration process using the standard tool "FME". At the same time they decided to convert all data from the Gauß-Krüger coordinate systems to UTM-ETRS 89. The reason for this was that the different distribution areas were laying in different meridians. An elaborate test protocol ensured that the new system would meet the tight quality criteria of EWE NETZ: A load test with 65 users working simultaneously during 2 hours ensured adequate performance of the system. Representative business processes were tested regarding their good execution using the new system. Since EWE NETZ is using a Citrix (terminal server)

environment, further performance tests were run within the complete system environment, including the Citrix server farm. The graphical control of the migration result showed that e.g. in electricity, from 2.3 Mio network elements, only 7 elements, corresponding to 20 cm network length, were missing, possibly resulting from erroneous data. Of those 26 elements/assets which were reported "missing in action", every single one was followed up for clarification. On August 24, 2009, the ArcFM UT system went into operation and users as well as administrators compliment on the modern interface and the great, but controllable liberty in usable functionality. From the business side, especially the open, scalable architecture, the cost optimizing and improved support of the network operations through ArcFM UT are lauded.

Additionally, of course all data are displayed via the GIS Portal within the EWE Intranet for timely web-based information primarily retrieval and printing of the network assets. However it is also used for other themes, like archived network data in raster format, EWE telephone services and ADSL distribution area - provided by EWE TEL, sales and complaints management, map of all German network operators, etc. Using the WebMapPlotService (WMPS) and some elaborate templates, end users routinely create high-quality plots from their desktop. Together with the integration to SAP IS-U for the addresses, EWE has formed a state-of-the art GIS.

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Zagreb City Gas in Croatia

Zagreb City Gas, the Croatian name is Gradska Plinara Zagreb (GPZ), is an experienced GIS user: Since more than 10 years they have updated their networks with GIS. Now it was the clear goal to move away from the mainly paper-based daily work to fully IT-based business processes. However, for this, in a first step they needed to implement a modern, enterprise GIS.

GPZ is the Gas Utility for the dynamic capital of Croatia, Zagreb. With 254.641 service points and a 3.595 km gas pipe network, they are by far the largest gas distribution company in Croatia. With their existing GIS, GPZ managed daily processes quite well, although there was a concern since huge knowledge about the network assets was stored on hard disk in the server room in form of static files. GIS was just used to find data, present them graphically, print maps and take them to the field.

Smart Use of GIS

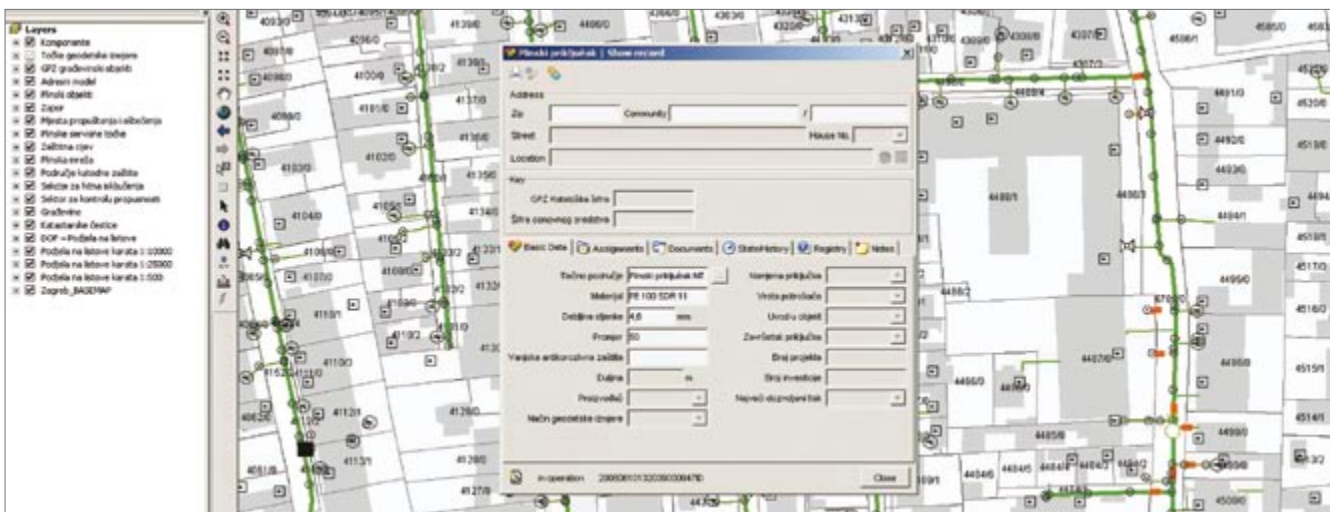
The mentioned GIS approach did not include any efficient handling of the technical alpha-numerical asset information. Not surprisingly, this information was spread across the entire company in many different, sometimes duplicated databases. This resulted in practical problems in emergency interventions and open questions like “Which valves are inaccessible?”. Given these problems and the GPZ goal to manage its business processes based on modern IT infrastructure, it was clear that the non-spatial data had to be integrated much better.

Thus the approach of AED-SICAD business partner in Croatia, GISDATA, was to create a new data model as a first step for the definition of the new GIS system in GPZ. This data model had to combine both the actual geographical data but also various sources of non-spatial data. This resulted in a search for the owners and more importantly, the process owners, of the required

non-spatial data. In other words, it was necessary to investigate daily work flows and business processes in the technical departments. The collected information was summarized in work flow diagrams and included in the new data model. Mirella Subotić, Head of GPZ Distribution Center, explains: “The understanding of the business processes is essential for the proper design of user applications because this new GIS system must give the users much more than just storage and presentation of technical data of the gas network. The first aim of the GIS is to make daily processes as simple as possible by automating or semi-automating processes through smart use of IT.”

Implementation: Different User Groups

In times of “smart”, i.e. small budgets, existing licenses were of course re-used. On the desktop side, ArcFM UT was implemented, integrating all existing spatial and non-spatial asset data in one central database. ArcFM UT is used by the power users “in network planning and cadastral departments due to the extensive desktop functionality and the advanced functions for database management, gas network maintenance and calculations as well as network design. GISDATA localized all ArcFM UT interfaces into the Croatian language. Clearly in the center of the new enterprise GIS is the GIS Portal with ArcFM UT Web, acting as a corporate access to versatile applications and datasets as well as a central asset information platform on the communal Geo Data infrastructure. Most of the users in GPZ are connected



Screenshot of ArcFM UT in operation at GPZ

to the GIS Portal. Often, their work is oriented more towards non-spatial than spatial data. The third group of users is the field workers. For them, mobile GIS applications for off-line and later on-line access from the field to the central database are planned. The mobile applications are part of the next investment cycle because this will also require changes in the gas network maintenance procedures and the work organization.

Next Project Phase: Bringing it All Together

For the final project phase, scheduled for 2010, the integration of further important IT systems with the enterprise GIS is foreseen. One IT system to be integrated is the document management system (DMS) containing thousands of scanned documents relevant to the network assets and the daily business processes. Every day, the DMS accumulates further documents, although already a large part of this information is being saved

to the new GIS-based asset management system. Another highly important IT system to be integrated is the ERP system, controlling and evidencing the costs of the physical maintenance of the gas network. Here, a bi-directional data exchange between the GIS and the ERP is foreseen. Care is taken that state-of-the-art technologies for integration are used, such as the Service Oriented Architecture (SAO). Thus, users at GPZ will have all asset, document and financial information at their finger tip through their new enterprise-based GIS approach.

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ArcFM UT at DEWA (Dubai) in the United Arab Emirates

Dubai Electricity and Water Authority (DEWA) is the main supplier of both electricity and water in the Emirate of Dubai. The company decided for an upgrade of their GIS to the ArcFM UT solution. This project is an example of a fast implementation at one of the most challenging places in the world.

DEWA generates, transmits and distributes both electricity and water and has 467.648 electricity customers as of 2008. The installed capacity of power and desalination plants in 2008 was 6676 MW. The electricity network consists of 20.000 substations and has an overall length of 18.056 km.

Within the water domain, at 392.938 water service points 80.397 Mio. gallons per year are consumed. The total length of the water network is 1.884 km. The supply area is mainly in the urbanized area of the Emirate of Dubai.



DEWA GIS

In August 2008 the DEWA management decided to implement ArcFM UT as an improvement for the existing custom developed application. This decision was based on detailed evaluation of the product and on the results of a functional and data gap analysis report prepared by an independent, external consultancy company contracted by DEWA. The main reason for initiating a new GIS project was the necessity of integrating current isolated data islands used by different departments into a single geodatabase that encompasses all electricity and water infrastructure information. Also, DEWA daily work in terms of network operation, planning and customer service needed to be supported much more efficiently. Subsequently existing workflows had to be adapted to the latest technology in terms of business process re-engineering. DEWA selected GISTEC, the ESRI distribu-

tor of UAE as the main contractor for the implementation of the new system. AED-SICAD acted as subcontractor with specific support tasks. The DEWA project plan consisted of the following 3 main tracks:

1. Utility Network Data

Within the utility network data track, the complete electricity and water data from Dubai were converted to ArcFM UT. This step included the definition of the DEWA specific ArcFM UT data model with about 90 object classes and subsequent application configuration. The data itself were upgraded by FME workbenches.

2. System Replacement

The existing custom developed ArcGIS-based electricity and water application was replaced by the standard product ArcFM UT, which covered already a huge portion of the existing functionality. With these standard functions plus DEWA specific additions such as NOC (no objection certificate) and the Draft Network Planning, the users take advantage of an enriched system directly after deployment of the new solution. Additionally, ArcFM UT WEB was introduced, greatly enhancing the previous web functionality.

3. Transition and Implementation

In July 2009, after only 10 months of application setup and complete data loading, the existing GIS data were already completely upgraded to ArcFM UT. The deployment of ArcFM UT was accompanied by user and administrator trainings. A hands-on assistance at production start ensured a smooth transition to the new system. The ArcFM UT WEB/GIS Portal was built on top of the integral geodatabase as a presentation layer that systematizes, speeds up and simplifies information flow throughout the entirety of DEWA.

Next Phase Implementation

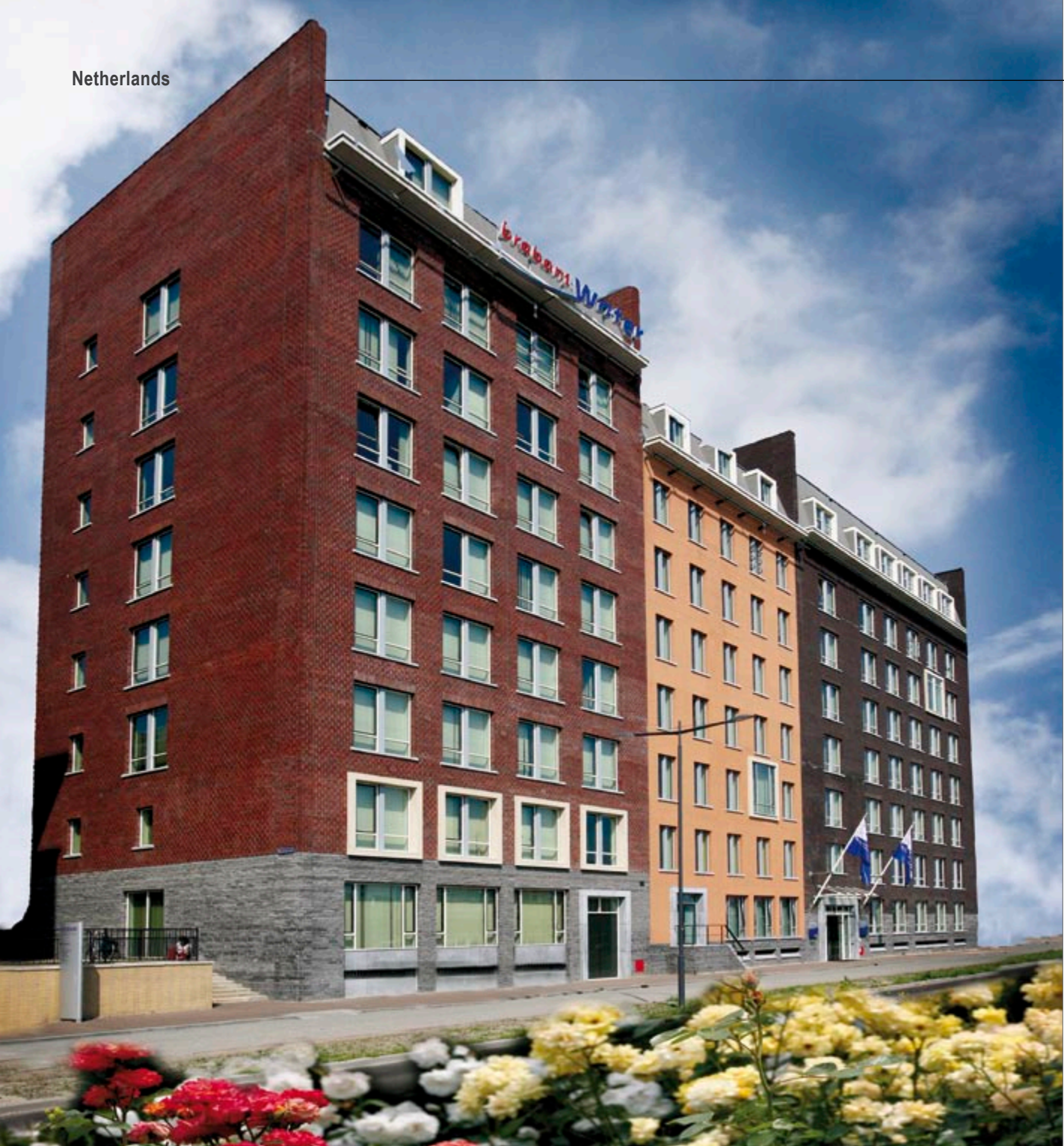
The next step in the project plan is called "Data Enhancement" in order to fill the data gaps and establish a seamless utility network information system from consumer points to power generation plants. In the future, the integration with SAP, SCADA and Network Planning tools is planned. The project is considered as an excellent reference for a fast implementation of ArcFM UT at a location with highest demands in terms of functionality and workflows due to the rapidly growing infrastructure in Dubai's electricity and water networks.

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Building of Brabant Water

Brabant Water in the Netherlands

Brabant Water is the second largest water supplier in the Netherlands: Brabant Water supplies the province of Brabant with drinking water. 2.4 Million inhabitants with 1.1 Million service points profit from their services. Besides the desktop and web system, they also implemented ArcFM UT Mobile. And they set up an integration with their Customer Billing system.

Since their legacy GIS from IBM was not appealing to nowadays needs and running out of support, Brabant Water contracted ESRI and AED-SICAD to replace their GIS, after an international tender. Brabant Water chose to have the implementation services done by system integrator Atos Origin together with key Brabant Water staff, project management by M&I/Partners and selected expert consultants from ESRI NL and AED-SICAD.

The clear goals set out for this project were (1) no custom code, but standard utility application, (2) a future proof solution, (3) management, analysis and viewing of their network, (4) 100% data conversion from the old system and (5) integration with Customer Billing. With 18.000 km network length, 20 editors and 120 mobile field workers it was a challenging project implementation.

Implementation

After several test migrations, the ESRI Geodatabase was filled with approx. 20 GB of data. This data pool is the absolute information hub for a number of other GIS components: The ArcFM UT desktop systems are used to update and analyze the data. External surveyors collect the position of the new water pipes with GPS and AutoCAD tools. Based on this, Brabant Water imports the geographic data to the GIS and adds the necessary technical (alpha-numerical) information. A large number of users look at and analyze the data via the GIS Portal and ArcFM UT Web. And another 120 users synchronize their ruggedized laptops in short intervals to have the latest version of the GIS data within their ArcFM UT Mobile. They then go out into the field to do maintenance – either corrective or preventive maintenance. In case they do not know where a certain hydrant can be found, they use the GIS to search the exact location via the hydrant number. Connected with a GPS device, the system also acts as a navigation tool, much appreciated by the users. A very typical maintenance task is leakage repair. The system supports this with the trace function to select the appropriate valves.

Integration with the CRM

An important aspect of the introduction of the GIS was also that the address data should always be kept in synchronization. In this case, the leading department is that of customer services. They update and maintain the customer address data in the Customer Billing system. The ArcFM UT Integrator EAI then makes sure that all address data are kept synchronized with the GIS via the SOAP XML interface. This avoids errors in data redundancy or double-entry of addresses and enhances

user acceptance of the system. Speaking of user acceptance: The GIS team of Brabant Water stresses the fact to always talk to the actual end users: Not only at project start, but also after setting the system into operation. So, a few months after going into operation, they went back to the end users, checking on the correct usage and also explaining why certain system or functional design choices were made during the implementation. These explanations greatly helped end users to understand and accept the standard functions of the new IT system. Generally, end users recognize that they are in a learning curve and are happy about the new GIS since it offers much more functionality than the previous system.

Future Plans

In a first step, the Brabant Water GIS team still would like to pick up some loose ends, like improved plot layouts for the smaller scales. But quickly after that Brabant water would start to explore the many new functions of the system. The latter is necessary to for instance deal with maintenance of pipes whose failure would have a high impact, like pipes at crossings of rivers or major roads. For this they are now also introducing additional objects into the data model, such as protective pipes and protective sockets.

Contact Brabant Water

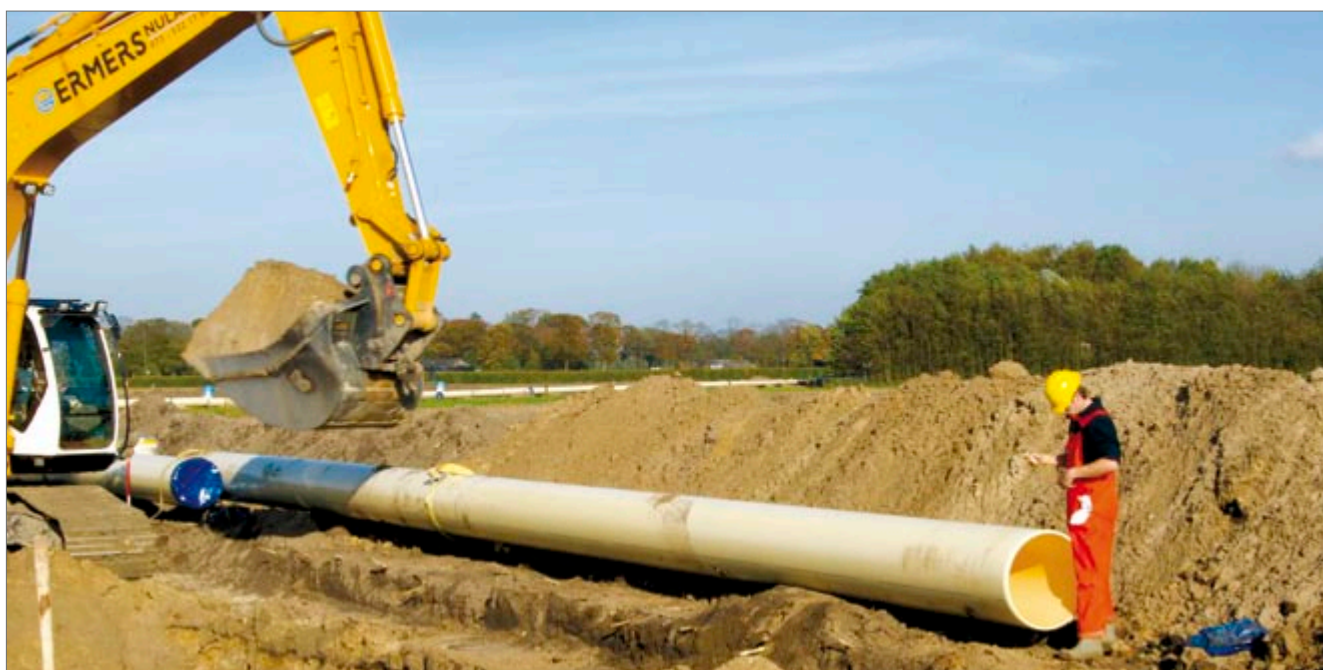
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What's New in ArcFM UT

One of the major new developments recently is the "ArcFM UT Smart Desktop" line. Intended to give a very specific set of targeted functionality to specific user groups / departments within utilities, it is a low-cost solution meant to satisfy a large number of users. One prominent example is ArcFM UT Mobile which gives data access in both online and offline mode to field crews.

Another important example of the Smart Desktop is the ArcFM UT Asset Manager, allowing a large number of users to view the geographic data and to edit the alpha-numerical data. AED-SICAD placed under the hood the ArcGIS Engine technology from ESRI, allowing competitive pricing in comparison to full desktop clients. Also, it is fully built on Microsoft's .NET framework. Further planned products in this product line are e.g. a planning and a gas sniffing application.

In the ArcFM UT Desktop, the concept of Cable Conduit Systems (CCS) has been introduced. CCS are purely alpha-numerical objects, which are typically related to routes or cables. This concept will be further enhanced in the upcoming ArcFM UT V9.3.1, where you can create now Main CCS, containing further CCS and of course pipes and cables. Of course, also functionality like

add / remove cables to CCS or splitting a complete CCS including cables to create two new independent CCS will be provided.

Within the ArcFM UT Web, further new tracing functions, like find next isolation device were added. This will be especially important for web-users from gas or water utilities in case of leakage. Also the functionality to export network tracing results to an Excel table was well received. Due to the ever increasing numbers of international users, ArcFM UT Web now supports also UTF8 characters (special characters like Č Ć Đ Ž).

What's New in GIS Portal

Just as in the ArcFM UT Web, GIS Portal now also supports UTF8 characters. An important improvement of those involved in INSPIRE projects is the even closer integration of the terraCatalog for management of meta data, planned for the upcoming GIS Portal V3.5.2.

For the same version, also ArcGIS Server as mapping server will be supported. With the upcoming GIS Portal versions, we will gradually add further ArcGIS Server functionality to the GIS Portal.

The User and Resource Management (URM) was further enhanced to now support also various administrators for the user management. The reason behind this is that in large organizations, often various administrators are responsible for the management of user names and passwords. In this context, the enhanced LDAP support is also an important improvement.



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News Flash New Customers: Since our last edition of the AED-SICAD forum, the following utilities have opted for the ArcFM UT product suite: ++ [VSE](#), Slovak Republic, a major electricity supplier in Eastern Slovakia. VSE is a partial subsidiary of RWE and supplying energy at 600.000 service points. ++ [Komunala Koper](#) in Slovenia, a local authority right at the border to Italy, introduced ArcFM UT for sewage (novaKANDIS) together with the AED-SICAD GIS Portal (see article). ++ In Croatia, the largest gas distributor, [Zagreb City Gas](#), introduced ArcFM UT for Gas jointly with ArcFM UT Web. Both the implementation in Slovenia and Croatia were done by AED-SICAD business partner GIS-Data (see article). ++ A number of German municipal utilities decided for ArcFM UT, e.g. [Municipal Utility of Düren](#), [Regio IT Aachen](#), [Municipal Utility of Goch](#), [Technical Works of Schussenthal](#), [E.wa.riss](#) in Biberach, [Municipal Utility of Ingolstadt](#), [Municipal Utility of Villingen-Schwenningen](#), [FairEnergie Reutlingen](#), [Municipal Utility of Tuttlingen](#), [Municipal Utility of Straubing](#), [City of Pforzheim](#), [GSW Kamen-Bergkamen-Bönen](#), [EWF Korbach](#), and [City of Bochum](#). All these projects are directly implemented by AED-SICAD. ++ In Saudi Arabia, the [Saudi Electric Company \(SEC\)](#) decided for ESRI and ArcFM UT technology, and AED-SICAD business partner MIS is implementing it for the Riyadh area. At the same time, a challenging digitalization project of the analog data is on its way with a subcontractor in Egypt. ++ In Austria, the gas distribution company VEG opted for ArcFM UT (see article). ++ In Jordan, AED-SICAD is implementing jointly with business partner Infograph ArcFM UT for the electricity distribution company [EDCO](#). ++ The first utility in Belgium, [PBE](#) decided for ESRI and ArcFM UT. They are implementing it not only for electricity but also for Cable TV and a small network of fiber lines. ++ In the Netherlands, [Westland Infra](#), a utility supplying not only electricity but also CO2 to greenhouses, is implementing ArcFM UT, closing an era of working with CAD systems. ++ In the United Arab Emirates, [Dubai Electricity and Water Corporation \(DEWA\)](#) has opted for ArcFM UT and implemented it in very short time (see article). ++ In Croatia, the [Airport of](#)

[Zagreb](#) opted for ArcFM UT documenting the multitude of different utility lines on their premises. ++ Latest News: In Slovenia, also [Ljubljana Water \(VO-KA\)](#) decided to implement ESRI and ArcFM UT technology after an international tender. ++ In Uganda, the electricity transmission company [UETCL](#) decided for ArcFM UT.

News Flash Current Projects: Germany: [EVO](#), supplying electricity, gas, district heating and other services to the citizens of Oberhausen, went into production for all three branches, documenting the assets with 6 full editing stations and 70 ArcFM UT Asset Manager seats ++ [VEG](#) in Austria, supplying gas in the Vorarlberg region, had recently decided to move on to ArcFM UT and went into operation in July 2009. ++ [Delta](#), multi-utility in the Netherlands went into operation for all branches in 2008 and is using nearly all components of the ArcFM UT product suite, including UT Integrator to SAP and network calculation programs.

New Business Partners: Since our last edition of the AED-SICAD Forum International with focus utilities, the following companies have joined the AED-SICAD business partner network: [ESRI France](#), ESRI distributor of France, [Web Geo Services](#), a company dedicated to utility solutions and web services in France, [SIGGIS](#), a GIS oriented company in Belgium, [Graphtech](#), the ESRI distributor of Tunisia, [GISDATA](#), the ESRI distributor for the ex-Yugoslavian countries and Hungary.

New Staff: [Veronika Landers](#), recently graduated, has joined the product management team of Gerald Kreuwel ++ [Fabian Diergardt](#), also recently graduated, joins the utility consulting team. ++ [Silke Klepper](#) has joined to support the sales team ++ [Thomas Büttner](#) who worked before for BTC, has now joined the ArcFM UT development team ++ We are always looking for consultants and developers.



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ESRI France User Conference	Paris, France	Sept. 30 – Oct. 1, 2009
ESRI European User Conference	Vilnius, Lithuania	Oct. 14 – 16, 2009
ESRI Middle East and North Africa User Conference	Bahrain	Nov. 10 – 12, 2009
ESRI International User Conference	San Diego, USA	July 12 – 16, 2010