ÜZ Lülsfeld

Customer Success Story

Autodesk® Topobase™
AutoCAD® Map 3D
Autodesk MapGuide®
Oracle® Spatial

"With network data integrated into one system, we've got the information we need to quickly approve new solar and wind hookups all in one easy-to-use location. What used to take several days up or up to two weeks can now be accomplished for our customers in a few hours."

—Artur Brei
GIS & Documentation Manager
ÜZ Lülsfeld

Integration Brings Big Results.

German utility adds thousands of renewable energy sources and completes tasks 50 times faster

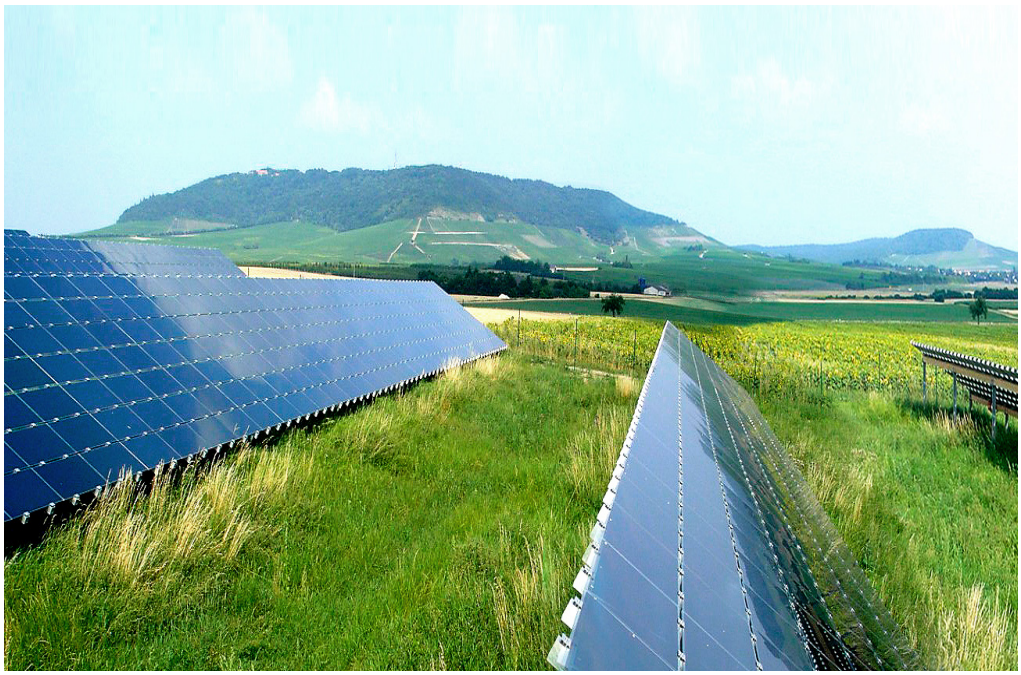

Image courtesy of ÜZ Lülsfeld.

Project Summary

Facing government regulations, pressure to provide superior service and a fast-growing number of private solar and wind energy sources, German electric utility Unterfränksiche Überlandzentrale eG, Lülsfeld (ÜZ) saw an opportunity to streamline its operations by integrating multiple applications, systems and databases into one integrated geospatial solution.

When German citizens install solar panels or wind turbines on their property, they receive a payment for each kilowatt hour of electric power they generate. It's no surprise that many of ÜZ's customers take advantage of the program and want the payment reflected on their power bill quickly. In fact, currently 22 percent of Germany's electric power is created by renewable energy plants. And, 40 percent of ÜZ's energy comes from renewable resources, and the number continues to rise each month.

ÜZ implemented an integrated asset management system to quickly add new renewable energy sources to its power grid, reducing the amount of required work and keeping customers happy.

Using Autodesk geospatial software, ÜZ Lülsfeld is able to:

- Approve renewable energy facilities 50 times faster
- Save $125,000 a year
- Analyze and connect sustainable wind/solar energy generators faster
- Reduce paper usage by 75 percent
- Generate government reports 10 times faster
- Reduce the number of employees needed to manage assets
- Manage data in its native format

Autodesk®

40 percent of ÜZ's energy comes from renewable resources, and the number continues to rise each month.

The Challenge

Unterfränksiche Überlandzentrale eG, Lülsfeld (ÜZ) is a regional electric utility supplying electricity to 125,000 residents and 1,000 square kilometers in northern Bavaria. Electric utilities throughout Germany and Europe face pressure to meet strict government regulations while providing superior service to their customers. Utilities search for ways to streamline operations and eliminate redundant systems and tasks.

ÜZ's service area includes many small towns that use their own databases to store municipal data. Meanwhile, every ÜZ department maintained its own versions of asset and electrical data. And, the utility itself used five different applications to store and maintain its electric network data.

"When network information is housed in various places across a large area, it is difficult to find the most recent data, which leads to redundant work," says Artur Brei, GIS and Documentation Manager at ÜZ Lülsfeld. In fact, 35 employees worked with these sets of asset and customer data daily and reported that they often recreated work when it already existed in another system. "We quickly realized that we often duplicated our data maintenance tasks," Brei adds. "Our staff wasted hours each day, which means we were losing money."

Maintaining multiple sets of asset data required many hours and made it difficult to respond to customers quickly. Senior management questioned the data quality because multiple systems often result in costly data errors and inconsistencies between databases. Brei's team envisioned a complete solution that integrated data directly from its SAP work management system, digital archive system, land information system, customer records system, electricity network and independent municipal databases.

ÜZ wanted to streamline its operations with an integrated geospatial solution – eliminating errors that result from maintaining the same data in different applications, creating a system that works seamlessly with many applications and data types, and helping staff to make faster and smarter decisions.

"Our main goal was to create an open geospatial system to combine our databases and applications easily," Brei notes. We wanted to graduate from using paper-based maps, reports and multiple applications and move toward an IT system that delivers network asset information in a single digital system. In the end, we wanted only one database that contains all graphical and numerical data, across the entire network, at any time."

The Solution

By using truly open data standards, ÜZ Lülsfeld implemented an integrated asset information system that helps to manage all types of data simultaneously. The utility uses Autodesk Topobase software to integrate all the asset data stored in isolated databases and systems into a centralized Oracle Spatial database. Now employees can quickly access and easily maintain the data in real time, eliminating out-of-date information and redundant efforts.

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The utility stores more than 600,000 features with more than 6 million asset attributes in Oracle Spatial. Staff manage physical assets such as poles and transformers in the system using AutoCAD Map 3D to minimize the risks of power outages as well as to answer customer queries and report status updates to management and regulation committees quickly.

No GIS or IT Expertise Needed

Staff use Autodesk Topobase to access asset and other data stored in Oracle Spatial. The software translates attributes and network connectivity into objects and displays these on a web-based map via Autodesk MapGuide and the company's intranet. The asset information system helps professionals without any database expertise to access all their information stored within a central data warehouse. For other CAD-savvy users and designers, the system provides a classic AutoCAD software interface that includes all the geospatial visualization and analysis capabilities they need.

Image courtesy of ÜZ Lülsfeld.

ÜZ managers realized that employees without engineering expertise, such as customer service agents, managers, and field crews, would benefit from ready access to the asset and geospatial design information by speeding their business decisions and customer support. Using the software's web tools, the utility made the data available securely over the Internet on dynamic, intelligent maps. Now, users throughout the organization can access asset information anytime, anywhere.

Open System Opens Doors

Because the team built its asset information system on open standards, ÜZ Lülsfeld easily connected location and design information with other enterprise systems, including its SAP workflow management as well as its customer accounts system. Autodesk MapGuide displays a detailed, graphical view of the data on a web browser – publishing information for employees throughout the utility.

Now, when a customer calls the utility with questions or repair requests, customer service agents have network maps and design details as well as traditional customer data at their fingertips. The employee has instant access to the caller's location, nearby connected facilities and any possible service disruptions. And, with workflow management data readily available, agents can provide service restoration estimates. The integrated system is helping the utility deliver quality service much faster than before. A quick glance at a computer screen gives the agent critical information to share with customers.

Image courtesy of ÜZ Lülsfeld.


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Reporting for Regulations

European Union regulations require that utilities continually report on their activities. ÜZ quickly and easily queries the system status, automatically populating a report with numeric and graphical data. "Before implementing our Topobase system, regulation reports took hours," Brei acknowledges. "Now, it takes only minutes."

In addition, ÜZ staff query the system to create "what if" scenarios – generating reports for proposed projects to analyze their impact and value. For example, when the utility receives a request for a large renewable power plant, such as a wind farms or solar panels in a remote area, engineers add all information related to the proposed plant. The report integrates information from all systems and shows exactly how it will affect customers, surrounding real estate and utility workflows. These reports are used for review and approval at all stages of utility projects.

"What-if reports save us quite a bit of time and effort," Brei notes. "Our staff could spend weeks or months working on a proposed project, only for the regulations committee to reject it. With our geospatial system, we can create an extremely detailed, customized report in a day, saving significant work hours for our staff to focus on other tasks."

Managing Data In Its Native Format

Brei appreciates that his team can use many types of GIS data in the system without translation. For example, Bavarian municipalities use an ESRI platform to manage environmental data. The open source Feature Data Object (FDO – www.osgeo.org) technology embedded in Autodesk software enables ÜZ to manage geospatial data in its native format. "Having accurate environmental data is critical to an electric utility. We depend on it for a complete view of our projects' potential impact on the landscape and environment," says Brei. "Not having to translate or convert our environmental data reduces the risk of corrupting it or losing the data altogether."

The system also enables the utility to deliver files back to the municipalities in an ESRI format, ensuring each town has up-to-date utility network information that it can use.

The Result

When German citizens install solar panels or wind turbines on their property, they receive a payment from the government for each kilowatt hour of electric power they generate. It's no surprise that many of ÜZ's customers take advantage of the program. In fact, currently 22 percent of Germany's electric power is created by renewable energy plants. And, 40 percent of ÜZ's energy comes from renewable resources, and the number continues to rise each month.

ÜZ automatically generates required renewable energy governmental reports – producing them 10 times faster.

Faced with the challenge of managing a growing number of private solar and wind generators in their service area, ÜZ uses its integrated system to review and approve new renewable energy hookups. With each new facility, ÜZ employees had to review each new application and determine if the cables and transformers could physically withstand transferring added power. Too much power running over smaller lines results in unnecessary downtime. "With network data integrated into one system, we've got the information we need to quickly approve new solar and wind hookups all in one easy-to-use location," says Brei. "What used to take several days up or up to two weeks can now be accomplished for our customers in a few hours."

ÜZ also uses its system to automatically generate required renewable energy governmental reports – producing them 10 times faster than the manual processes.

In addition to promoting renewable energy sources, ÜZ reduced its printing requirements by more than 75 percent. Now the utility shares reports, maps, and data electronically, essentially eliminating the need to distribute hardcopy documents. The utility's staff makes all changes online; employees throughout the utility simply query the system to get the most up-to-date data.

Integration and Customization Bring Tremendous Benefits

To reduce the costs of maintenance and system troubleshooting, ÜZ designed customized workflows by connecting outage alerts to the SAP work management system. Now staff simply clicks on an asset to generate a work order for the maintenance crew. The system populates all fields automatically; the only manual requirement is an outage description for the crew. Automating this workflow reduced the amount of time to generate a work order from 2 hours to 18 minutes. And, it reduced the utility's headcount by one employee, saving more than $60,000 in the process.

In total, Brei estimates that the utility is saving more than $125,000 a year by integrating its applications and databases into one system and eliminating traditional operating expenses. In the past, his team spent hours and days searching various systems and databases for information to complete a project. Now that they have all data available in a matter of seconds, they are free to focus on other tasks. They are more productive, completing tasks faster and with fewer errors. In addition, the utility no longer must spend time or money to retrain staff or translate data into a standard format. Brei adds, "Quite simply, we are able to complete projects faster and focus on the next task."

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