Stadtwerke Bayreuth Achieves Faster Access to Geospatial Data Using Hexagon Technology

Stadtwerke Bayreuth Energy & Water GmbH
Bayreuth, Germany

Stadtwerke Bayreuth Energy & Water GmbH plans, constructs, operates, and manages local electric, gas, and heat distribution facilities and networks in the city of Bayreuth, Germany, and its surrounding areas. Stadtwerke Bayreuth relies on innovative information technologies and an efficient and environmentally responsible energy and water supply concept. Stadtwerke Bayreuth's previous network information system limited the possibilities of system integration and was unable to solve emerging utility issues.

The multi-utility company sought an open and customizable geographic information system (GIS) solution with standardized access and high integration capabilities with its spatial management system. Stadtwerke Bayreuth also needed a centrally controlled database with high-quality graphic and attribute data to repurpose existing data and solve future issues.

Overcoming Challenges

- Replace CAD-based network information system with a multi-utility, customizable GIS that adapts to inner-city and rural infrastructure requirements

- Build a sustainable spatial data infrastructure and create fast, easy migration of existing gas and water data

- Ensure economic and sustainable security of supply through GIS-based production planning and predictive

maintenance, including mobile solutions for field service (from inventory to outage management)

- Adhere to legal obligations of the Federal Network Agency in Germany

- Implement an integrated geospatial information management system that follows a phased approach

Realizing Results

Stadtwerke Bayreuth selected advanced utility GIS software from Hexagon's Safety & Infrastructure division for its migration of gas and water data. Hexagon customized the pre-configured, ready-to-use GIS solution according to Stadtwerke Bayreuth requirements to support gas, water, cadastre, and topography sectors. The solution's feature manipulation engine tools collected partially inconsistent information and standardized the data to make it usable in Hexagon's technology and transferrable into the GIS.

"Overall, the migration has led to an even higher-quality level of our enterprise data," says Günter Geist, head of Infrastructure Management and Distribution at Stadtwerke Bayreuth. "It is important to remember that correct data is crucial to safety."

Phase two involved implementing applications for district heating, telecommunications, and electricity (low and medium voltage). Meanwhile, Stadtwerke Bayreuth operated

on the modern technology of Hexagon's solution and used the spatial database of the local land surveying office.

Stadtwerke Bayreuth's cable networks can now be represented in multi-line plans and different states, providing a faster and more accurate calculation of cable lengths. Simultaneously, the Hexagon system enables multi-line views with information about the type, size, and year of internal sections or area-based upgrades of the network, contributing to an even more focused investment strategy.

Furthermore, Stadtwerke Bayreuth was able to produce statistics on land referencing required by the Federal Network Agency, as well as customizable queries and current information on areas of supply. Stadtwerke Bayreuth uses Hexagon's technology for its administration, data capturing and maintenance, and processing of queries. Using differential global positioning system remote-controlled total stations, Stadtwerke Bayreuth can also measure and capture newly installed or modified network facilities as geospatial objects, thus avoiding postprocessing in the office. For instance, the field outage management crew has access to instant,updated data.

"Even in the surrounding communities where there is no staff-intensive local knowledge, or we have no intelligent vector data, we can still ensure reliable energy supply," Geist said. "In this process, automotive GPS navigation systems and mobile viewing seats are providing assistance with PDF files and aerial images stored in the system."

Moving Forward

GIS has become a central element of Stadtwerke Bayreuth's operations. The administration of graphic data processing currently supports approximately 40 seats at information systems and GIS and mobile workstations.

"The open, integrated technology allows the construction of a sustainable spatial data infrastructure," said Roman Engl, GIS project manager for Stadtwerke Bayreuth. "We are open to innovation, whether it is by changing the position of the reference system or extending the information value chain to customers and contractors."

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