



LONWORKS® Technology Meets Strict Health and Safety Rules at Bayer Healthcare



As the central production and logistics site for Bayer HealthCare AG's Animal Health Division, KVP Pharma + Veterinär Produkte GmbH can look back on an exceptionally

successful development. Today, around 50% of all animal medicines sold worldwide by Bayer are made at the 88,600 m² site at Kiel, and from there shipped to over 100 different countries. KVP's product range primarily comprises animal medicines in practically every conceivable application, as well as products for animal nutrition and care. The breadth of this range constitutes a major challenge for KVP and requires the greatest flexibility with regard to plant, machinery and technologies.

The Challenge

When the system integrator eNeG had its first contact with KVP in 2003, each of KVP's diverse buildings located in Kiel was equipped with building automation products from different vendors. Poor service and validation support and a high dependence on the existing system manufacturers forced KVP to search for a powerful, flexible and open system provided by a system integrator with proven experience in the pharmaceutical industry.

A tailor-made technical solution meeting the requirements of the price/performance ratio and the highest possible service was the starting basis for eNeG to get the first project for measuring and control systems in building 77.

In the meantime, several production buildings, laboratories and warehouses have been equipped and validated by eNeG using TAC components, all following GAMP 4 and compliant to the FDA CFR 21 Part 11 (Food and Drug Administration Regulations). KVP in Kiel is still

an ongoing project and eNeG is responsible for the HVAC and energy data logging.

As well as the challenges of FDA and GAMP 4, eNeG additionally had to meet Bayer's "Health, Safety and Environment" requirements. One of the main drivers for Building Automation for KVP is the minimising of the health risks associated with some of the highly toxic substances used by some processes.

The Solution

The challenging requirements relating to comfort, energy efficiency, security and the efficiency and flexibility of production could only be met by a flexible distributed architecture based on LONWORKS technology. An Ethernet IP-Backbone structure connects the various buildings with their individual LONWORKS structure, all following the EN 14908 norm. Standard interfaces handle the seamless integration of each system. Thus, Profibus and Modbus are deployed for chillers, and OPC for data logging equipment. Monitoring systems are controlled by TAC Vista, the primary supervisory solution element. Six operator stations plus several panel PCs in each of the larger technical rooms enable easy handling and control of the complete system. Pharmaceutical process alarms are prioritised, processed and delivered to a variety of printers and monitors dispersed around the facility.

Precise Control for The Production Cycle

The precise control of differential pressure in all laboratories and production halls is one of the project's highlights for guaranteeing perfect clean room environments for production and research, especially for rooms where critical substances are used. Detailed limit value monitoring for pressure, humidity and temperature round off the control and measurement strategy. Even the heart of production, a water softening system, which is the basis for the whole production process, is connected to TAC Vista via OPC and can be monitored, controlled and measured via the system. In addition to the integration of the production and science environment, the warehouses have also been included, where the emphasis is on the

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monitoring and control of the climate to guarantee optimum storage conditions. This ensures that the product quality is maintained prior to worldwide distribution.

The Bottom Line



KVP benefits from an open, flexible and universal system, which will meet future demands. Future development, in accordance with KVP requirements, has been taken into account in the initial solution. The open

structure allows economies of scale for new buildings, maintenance and service when compared to the previous installation or when compared to industrial contractors. Further cost-savings and higher efficiency result from the processes, documentation and procedures deployed along with the new solution.

The system's high availability and reliability combined with eNeG's 24 hour on-call service are the basis for further extensions and enhancements, some of which are planned in the near future.

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