

SCADA System for Pharma Company

Modernising and upgrading the validation equipment in use for the utilities in a highly sensitive manufacturing facility to improve efficiency and reduce downtime

At a Glance

Company: Major Pharmaceutical Manufacturing Facility

Location: UK

Project Mission: Modernise and upgrade the validation equipment in use for the utilities in a highly sensitive manufacturing facility

Product / Services: SCADA System Implementation and Network

Challenges:

- Ageing utilities validation equipment.
- Chart recorders prone to paper jams
- Equipment required manual checks every two to three hours
- FDA requirement to improve its data recording and storage

Solution Delivered:

- SCADA System installation
- Data historian, alarm system and highly resilient fibre optic data network
- SMS text messages alert support teams to any issues
- Engineering early warning alarms alert the support teams to potential equipment failures

The Challenge

A highly sensitive and important pharmaceutical manufacturing facility in the UK had been operating for some time with ageing utilities monitoring systems, varying from chart recorders, to simple Green/Red lamps on panels. These included critical utilities associated with the process including clean steam, purified water and chilled water through to compressed air and effluent systems. Data monitoring and acquisition was provided by local paper and paperless chart recorders, while alarms were handled locally or fed to a Trend Building Management System. (BMS)

A number of limitations had been identified with the existing systems, including:

- Reliability of paper chart recorders
- Data management on chartless recorders
- Limited functionality
- Requirement for 4-hourly manual checks
- Link of general alarms to non-validated BMS
- Poor alarm visibility and segregation within BMS
- Lack of remote observation facilities
- Costly replacement of obsolete hardware

Addressing these limitations called for a Validated Monitoring System for Process Equipment. The system would need to be able to provide a validated alarm and parameter monitoring system for all critical utilities within the pharmaceutical production units. The system also needed to meet with all 21CFR Pt11 regulatory expectations and centralise all alarm and critical parameters monitoring into a SCADA system.

The key objective was to integrate data and alarms into an area wide SCADA and data collection system and then communicate any critical alarms to support staff.

The system also needed to accurately record data so that it could be retrieved in a controlled and secure fashion. It needed to achieve compliance with 21 CFR Part 11 for all aspects of the system and provide ease of use for operators and administrators. In addition, our client was also looking for a system architecture design that would allow for expansion into the future.

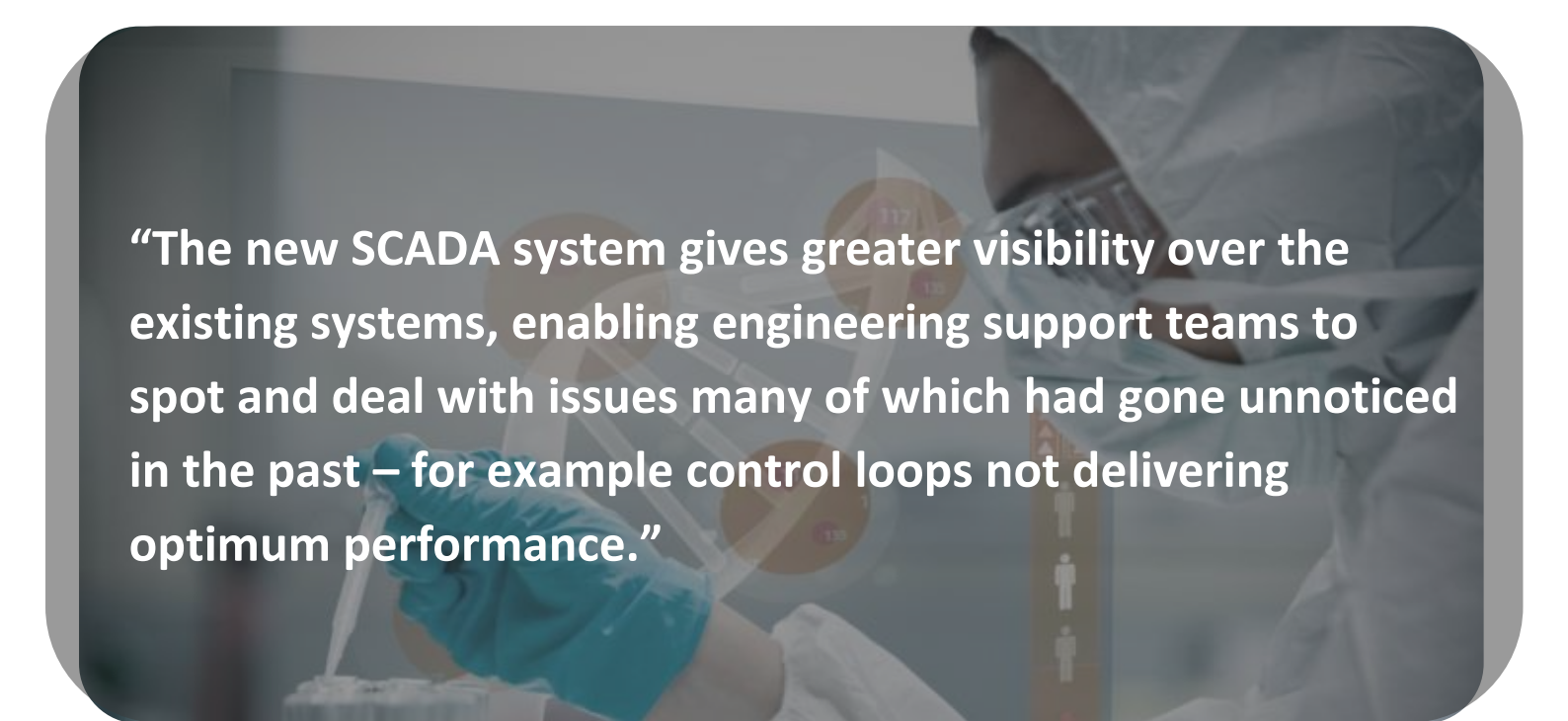
Our Solution

Zenith experts designed and installed a complete SCADA (supervisory control and data acquisition) system for the utilities at the plant. This included a data historian and an alarm system together with a highly resilient Hirschmann fibre optic data network linking the various production units.

The Zenith team installed a system based around Wonderware System Platform to communicate with multiple types of control equipment, such as PAC units and chart recorders. Where no such equipment existed, instrumentation and RTU units were supplied and installed.

The SCADA system logs all the data collected and uses it to pass on, generate and categorise alarms. These alarms are also stored and made accessible for validation purposes. Where any alarm is deemed critical, an SMS text message is sent to the support team so that they can respond immediately.

The system also provides engineering early warning alarms which alert the support teams to potential equipment issues so they can pre-empt the problem and minimise any downtime or loss of production.



“The new SCADA system gives greater visibility over the existing systems, enabling engineering support teams to spot and deal with issues many of which had gone unnoticed in the past – for example control loops not delivering optimum performance.”

Results and Benefits

Our client now benefits from a highly modern and efficient electronic control system monitoring all of its utilities across its pharmaceuticals facilities. This is supported by a highly resilient network linking the various buildings offering built-in redundancy.

The system is compliant to all relevant parts of Title 21, Code of Federal Regulations, in particular Part 11 – Electronic Records; Electronic Signatures; Final Rule, US Food and Drug Administration. By providing more data and easier access to information the systems are also helping to deliver improved decision making.

The new SCADA system gives our client greater visibility over their existing systems, enabling engineering support teams to spot and deal with issues many of which had gone unnoticed in the past – for example control loops not delivering optimum performance.

The client’s teams can now also pull multiple data sessions from the equipment. Analysing the relationships between the data leads to greatly improved problem resolution.

Automated alarms help to minimise downtime by ensuring issues are dealt with rapidly. Since the team no longer needs to carry out manual inspections of the chart recorders, this frees up resources to concentrate on improving operations and overall efficiency. Systems have been fine-tuned for greater efficiency and improved quality throughout the production process. Validation around the production of vital drugs has been significantly improved, with additional benefits around cost reduction and elimination of wastage and manual working practices.

At a Glance

Results:

- A modern and efficient electronic control system monitors all utilities across the pharmaceuticals facility
- Resilient network offers built-in redundancy
- Easier access to more data improves decision making
- Greater visibility over existing systems
- Improved problem resolution
- Automated alarms minimise downtime
- Systems fine-tuned
- Validation significantly improved

For more case studies visit:
www.zenithtechnologies.com

