CASE STUDY

Driving Centralized, Scalable SCADA Operations For A Next-Generation Biotech Manufacturing Site

Orise™

A leading biotechnology manufacturer launched a new final product assembly and packaging facility in the United States to meet growing market demand. To achieve seamless operations across eight production lines - each equipped with machinery from multiple OEM vendors - the company required a **centralized SCADA solution** designed for flexibility, scalability, and rapid qualification.

The solution had to unify data acquisition, visualization, and control from diverse automation systems while meeting an aggressive deployment, commisioning and qualification schedule. By implementing a **modular, standardized, and integrated SCADA platform,** the project enabled complete line-level visibility, real-time process monitoring, and a faster, compliant start-up - becoming a benchmark for future sites across the global manufacturing network.

Key Highlights

- **Industry**: Biotechnology manufacturing
- **Scope**: SCADA system integration across eight (8) new packaging lines
- **Core Technologies:** Rockwell FactoryTalk View SE, FactoryTalk Batch, ControlLogix PLCs, AssetCentre
- **Integration:** MES, Data Historian, Serialization, AWS AI applications
- **Timeline:** 26 months (from construction to FDA approval)
- **Impact:** Fastest site startup in company history, improved efficiency, reduced downtime, scalable model for global replication

Orise™

DRIVING CENTRALIZED, SCALABLE SCADA OPERATIONS FOR A NEXT-GENERATION BIOTECH MANUFACTURING SITE

The Challenge

The project team faced the task of delivering a **SCADA system unlike conventional equipment or line-centric designs.** Instead of monitoring individual machines or packaging lines, the new platform needed to deliver a c**entralized view and control capabilities across all eight lines**, integrating heterogeneous OEM automation technology - Rockwell, Siemens, B&R, and others - into a single unified supervisory environment.

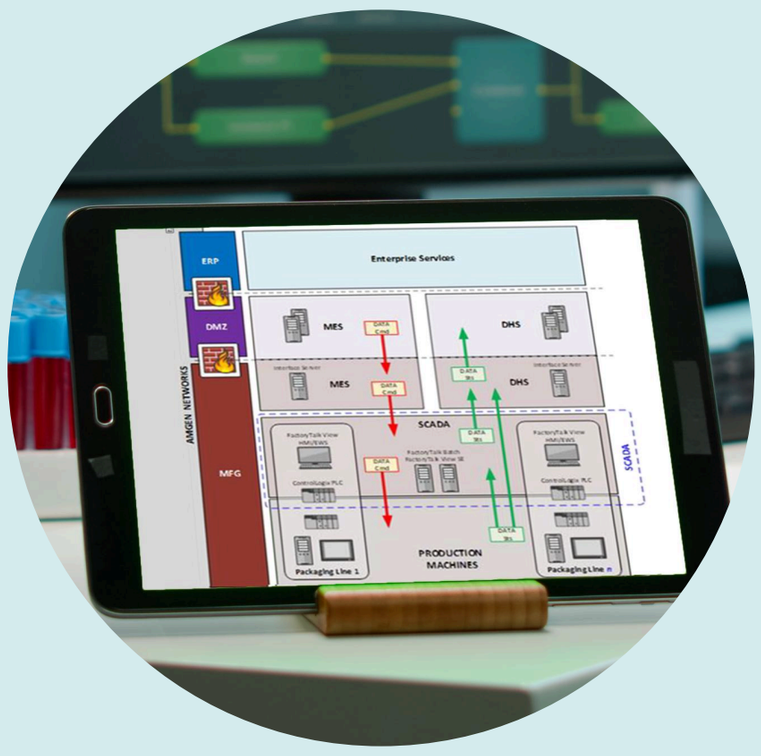
Beyond interoperability, the system had to:

- Acquire, display, and analyze data from every line in real time.
- Provide machine and line-level status, critical parameter monitoring, and interlock management.
- Integrate with **MES, Data Historian (SQL Alarm & Events, Audit Trail, Batch Data), and Serialization** systems.
- Enable **batch management** for recipe selection, configuration, and execution.
- Connect to **AI-based application**s running on AWS for line clearance process execution and reduced downtime.

The challenge was compounded by a highly aggressive construction and qualification schedule - demanding a fast, modular, and validated deployment that would meet stringent operational and regulatory standards.

Orise™

DRIVING CENTRALIZED, SCALABLE SCADA OPERATIONS FOR A NEXT-GENERATION BIOTECH MANUFACTURING SITE



The Solution

The implemented SCADA platform serves as the **central command layer** for the plant's packaging operations. It unifies line data, provides full process visibility, and supports both supervisory monitoring and limited control across each packaging line. At its core, the solution leverages **Rockwell Automation's FactoryTalk suite**, combining:

FactoryTalk View SE	Delivering an intuitive graphical interface between line operators and production equipment, with role-based access and audit traceability.
FactoryTalk Batch	Orchestrating recipe and batch transactions between the MES and line equipment, ensuring data integrity and synchronization.
ControlLogix PLCs	Managing supervisory logic and real-time communicationbetween line controllers and the SCADA layer.
FactoryTalk AssetCentre	Supporting configuration management and versioncontrol for long-term maintainability.

Each line is equipped with **client workstations** for visualization and process verification, while the **SCADA Controller** manages the supervisory logic and coordinates data exchange with machine controllers. This architecture created a **standardized communication model,** simplifying integration with OEM equipment and ensuring minimal disruption to native control systems. The result is a **modular, scalable, and validated SCADA environment** that centralizes operations and enables seamless interoperability across all automation layers—from machine control to MES and cloud-based AI tools.

Orise™

DRIVING CENTRALIZED, SCALABLE SCADA OPERATIONS FOR A NEXT-GENERATION BIOTECH MANUFACTURING SITE

The Results

The project was completed in **just 26 months** from groundbreaking to FDA approval - making it the fastest site completion in the company’s history. The SCADA solution played a pivotal role in achieving this milestone by enabling:

Centralized visibility	Real-time overview of all lines, from individual machine performance to total yield.
Rapid qualification	Standardized modules and reusable templates shortened validation cycles,
Higher uptime	Early alerts and automated responses reduced downtime and maintenance effort.
Operational efficiency	Integration with AI applications accelerated line clearance and supported predictive maintenance.
Sustainability and cost savings	Improved process control reduced energy consumption, waste, and manual errors, resulting in measurable cost savings compared to similar facilities.

The project’s success has led to the replication of this SCADA model at additional sites, including the expansion phase of the same U.S. facility, which will integrate six new lines using the same architecture.

Orise™

DRIVING CENTRALIZED, SCALABLE SCADA OPERATIONS FOR A NEXT-GENERATION BIOTECH MANUFACTURING SITE

Powering smart, scalable, and compliant manufacturing

This project demonstrates how a **centralized, modular SCADA architecture** can bridge the gap between automation and enterprise systems - delivering faster qualification, unified control, and future-ready scalability.

By combining advanced supervisory logic, seamless OEM integration, and AI-enabled analytics, the solution set a new benchmark for efficiency and digital maturity in large-scale biotech manufacturing.

rise™

DRIVING CENTRALIZED, SCALABLE SCADA OPERATIONS FOR A NEXT-GENERATION BIOTECH MANUFACTURING SITE

At Orise, we help businesses run smoother and more efficiently.

For over 30 years, we've made complex industrial processes easier and more effective. Orise has evolved to reshape process automation by focusing on data integration and contextualization to boost productivity, quality, and safety. Think of us as the expert partner who steps in to make sure your systems work better and more effectively — saving you time, energy, and money.

Having worked extensively with manufacturers in the life science, consumer goods, chemical, and energy industries, we know how to bring long-term solutions that improve the most important aspects of your production facilities. These are more than just quick fixes — they are scalable, efficient, and cost-effective answers that range from productivity and safety to product quality and beyond. Our job is to make sure that you're constantly improving through the entire lifecycle of your plant, whether it's the first analysis, ongoing support, or long after implementation has taken place.

AM HERRSCHAFTSWEIHER 25 | 67071 LUDWIGSHAFEN GERMANY

Orise™

+49 6237 932-0 INFO@ORISE.COM WWW.ORISE.COM