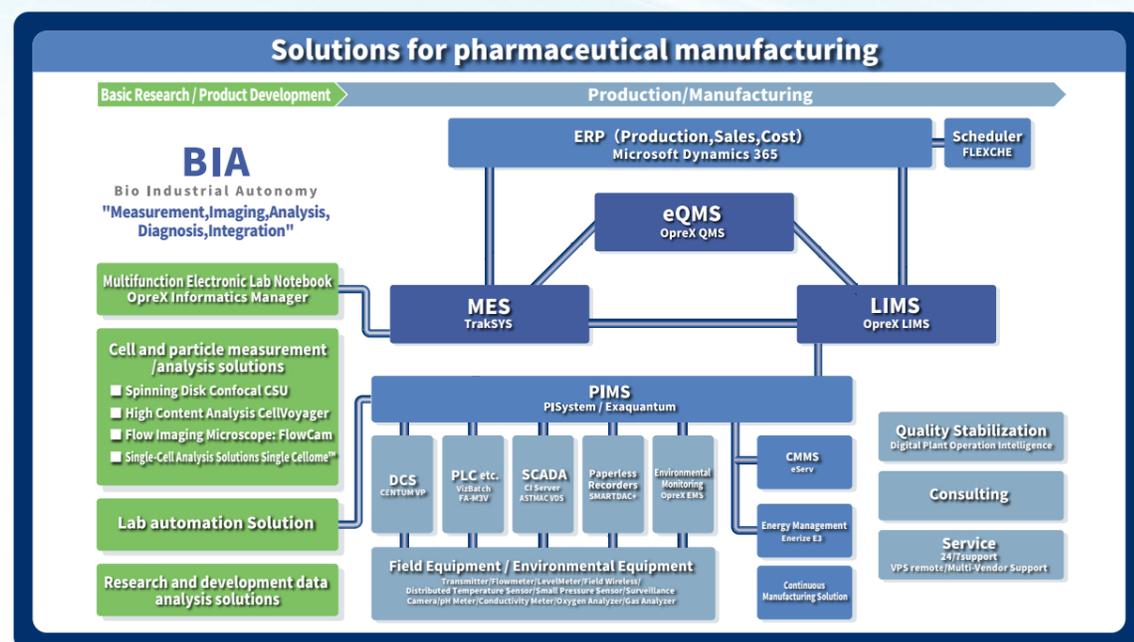


With decades of experience in the pharmaceutical industry and over 1,000 successful system implementations across API, drug formulation, and biotechnology fields, Yokogawa is your trusted partner in transforming challenges into opportunities.

From initial concept to full-scale deployment, we support every phase of total system integration, helping you enhance productivity, ensure quality, and achieve sustainable growth.

Together, we can shape the future of manufacturing, realizing your vision through digital innovation and seamless automation.

## Smart GMP Factory



## Triple Pillars of Data Integrity for Pharma Operational Excellence

Empowering your quality operation through MES, LIMS, eQMS integration

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## Triple Pillars of Data Integrity for Pharma Operational Excellence

### Empowering your operations through MES, LIMS, eQMS integration

To achieve operational excellence in pharmaceutical manufacturing, data integrity must be ensured across the three core GMP functions: manufacturing, quality control, and quality assurance. MES, LIMS, eQMS represent the key systems that support these functions—forming the triple pillars of data integrity. Together, they enable end-to-end traceability, ensure ALCOA+ compliance, and eliminate process silos. This unified digital foundation allows for faster, smarter decisions, minimizes the cost of non-compliance, and enhances both productivity and quality in a highly regulated environment.

## Beyond System Silos to Holistic GMP Compliance

While each system excels within its respective domain, Yokogawa's strength lies in understanding the entire process and taking a holistic approach. We offer three core solutions—MES, LIMS, eQMS—that can be positioned within the end-to-end workflow, demonstrating their complementary roles in ensuring consistent data handling, compliance, and operational efficiency across manufacturing, quality control, and assurance.

eQMS	LIMS	MES
<b>OpreX™ Quality Management System</b> 	<b>OpreX™ Laboratory Information System</b>  <small>OpreX™ Asset Operations and Optimization: Laboratory Information Management System (LIMS)</small>	<b>TrakSYS™ by Parsec</b> 
Accelerate DX in Quality Assurance Processes for GMP Manufacturing 	Standardize quality management operations to reduce costs and improve the service level 	Run Your Manufacturing Operation More Effectively, Using Real-Time Data 

## Connect. Trace. Transform. – The Power of MES, LIMS, eQMS

Connecting the three modular elements (MES, LIMS, eQMS) establishes the ultimate data integrity and traceability quality framework that extends beyond individual systems.

This enables organizations to transform into continuously improving operations, creating a foundation for long-term success.



### Key Benefits

- ✓ Compliance driven by Data Integrity & Traceability
- ✓ Faster Batch Release
- ✓ Improved Productivity & Efficiency
- ✓ Robust and Efficient Change Control
- ✓ Pharma 4.0 Ready