



Improve Bottom-Line Results with Better Batch Operations

Improve quality and increase operational performance by providing operators with better batch insights.

With growing global competition, you're challenged to get your batch products to market faster, and in many industries, you're pressed to meet regulatory requirements; yet you need manufacturing flexibility to quickly respond to changing customer demands. Batch operators are absolutely critical to facility safety and product quality. When the operator environment is streamlined and operators have the tools they need to perform well, operations improve as do the product quality, scheduling, and reporting.

“Across the industry, we have found yield variations up to 30% from batch to batch and campaign to campaign.”

— McKinsey&Company Outpacing Change in Pharma Operations

Avoid Common Problems

Today's economic conditions along with safety and quality concerns demand confidence that your batch system helps you prevent these difficult situations:

Poor product quality — Almost every facility at one time or other has had to scrap a finished product run. Meeting product quality specifications at minimum waste is not only difficult, but can be very costly. If the final product quality was poor, you have many questions to answer. Were the raw materials of poor quality? Did your process have unforeseen deviations, such as too much or too little energy going to machinery? Agitator spinning too fast? Pumps running too hot? Temperatures drifting?

Missed deadlines — Equipment scheduling problems can be difficult and can lead to product delays. Some systems do not alert batch operators to opportunities to run multiple products through the plant or alert them to equipment limitations. If operators would like to coordinate production with other downstream operations teams, they might not know if it is possible.

Inaccurate or out-of-date reporting — Without dependable record keeping and report creation, you cannot reliably ensure correct electronic signatures for governmental agencies or for your own company's auditing requirements. In addition, you are not able to track and review batch process anomalies — a significant problem if you are not meeting quality and scheduling requirements. Maybe the issue is that the batch and reporting systems are not integrated with other business systems, such as Laboratory Information Management Systems (LIMS).

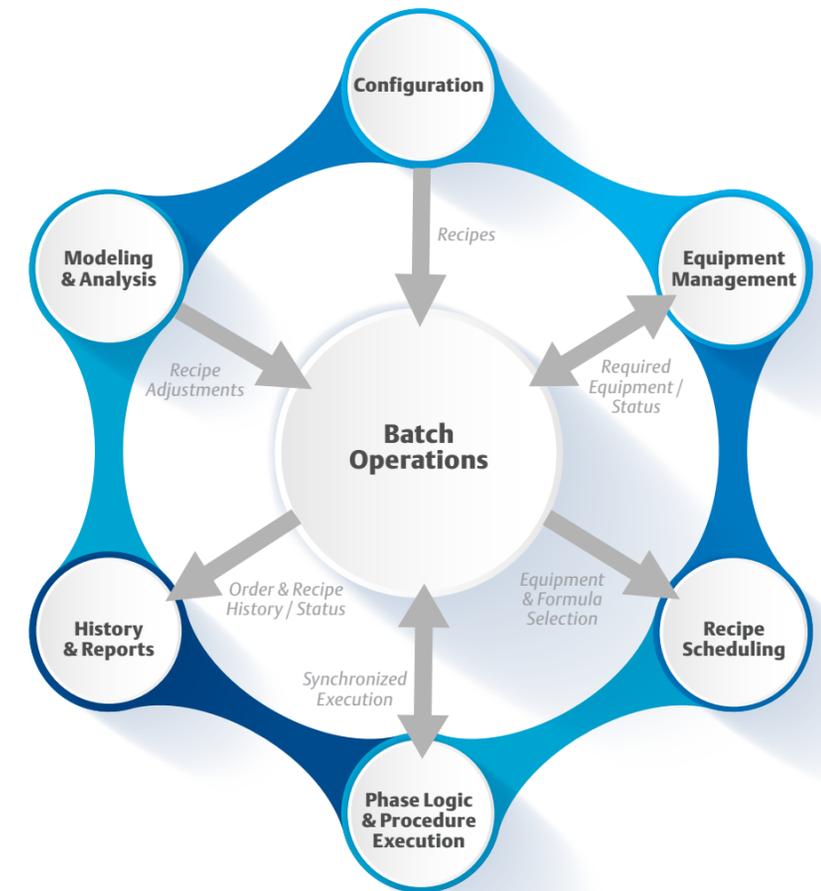
Effective Batch Tools Improve Operations and Deliver Better Bottom-Line Profits

A batch solution must offer easy-to-use tools that work with operators to deliver consistently high-quality products on time. It also must show that your team has used best practices in the creation and finishing of the end product. If the batch system delivers on those qualities, your facility will experience more streamlined and uninterrupted operations. You don't need to look far. Tools and techniques in DeltaV™ Batch are available from Emerson today to assist you.

Confidently Make the High-Quality Products You Require

DeltaV Batch Analytics helps you quickly identify an abnormal condition and gives you an earlier opportunity to put the batch back on track. Batches are managed more efficiently because the easy-to-use engineering tools help operators predict end-of-batch quality parameters, detect process faults in real-time, and determine reasons for deviations.

You minimize batch-to-batch variation and improve yield. For ease of use, Batch Analytics is web-based for real-time process analysis and adjustments. Although simple to use, Batch Analytics uses multi-variant analysis and modeling to provide strong reliable answers.



Reduce cost of design, implementation, testing and maintenance with consistent implementation.

Improve Operator Productivity and Increase Right-First-Time Performance

Emerson's DeltaV Batch Executive engine coordinates all batch processing activity, creates detailed batch history records, and schedules recipes and resources. By using it, operators will easily perform equipment arbitration and determine equipment ownership. In this way, the batch runs will avoid equipment conflicts and product cross contamination. Through the DeltaV Batch Executive, monitoring and scheduling are more efficient because operators can select equipment at run-time based upon given parameters, such as availability and cleanliness.

Operations will experience fewer surprises in batches. Seeing the big picture is clearer because equipment trains can be created that enable operators to group equipment together defining useful equipment boundaries. And with electronic logbooks, communication between shifts is more accurate and efficient. These functions enable operators to more easily see opportunities and stumbling blocks and make appropriate choices.

Simplify Record Keeping and Be Confident in Reporting Accuracy

Configuration changes by unauthorized users can lead to costly mistakes to your product and regulatory non-compliance. DeltaV Batch embeds version control and audit trail capabilities to automatically capture changes as they occur in the system. Record keeping is streamlined for an operator because it is automated as events occur. For example, during the execution of a recipe, DeltaV Batch can automatically generate batch history and store events conveniently to files that can be read by the

Batch Historian or viewed from the Batch Operator Interface for further detailed analysis.

And for easy reporting access and data archiving, DeltaV Batch enables web-based access to batch event and continuous historian information for anyone, anywhere using DeltaV History Analysis.

Accuracy and completeness are part of the solution. To ensure that end-products are safe and effective, organizations put regulations into place and Emerson assists users in compliance. DeltaV Batch fully supports compliance with the challenging electronic records demands of regulated industries for recipe and campaign management, batch history, automatic version control and change management, and electronic signature support. For example, to facilitate meeting FDA 21 CFR Part 11, OSHA, and ISO requirements, DeltaV Batch incorporates action confirm/verify via electronic signatures, with an additional verifier name and password if required— thus making sure that electronic records and signatures are equivalent to paper records and signatures.

Contact Emerson for Batch-Powered Operational Excellence

Because the DeltaV system is built for batch, the same intuitive features and engineering tools simplify and streamline your batch tasks. Please contact Emerson to find out how DeltaV Batch will help you succeed in improving operational excellence.

Learn more at www.emersonprocess.com/operationsperformance