T41 - Batch Management
What's New and What's Next
Batch and Sequencing Opportunities
Distributed and Scalable Batch Solutions

- Batch manufacturing refers a discontinuous process
  - Start with raw material, do something with it, send the resulting intermediate or product on its way, and start over again
- Prevalent industries using batch manufacturing include:
  - Food & Beverage
  - Household & Personal Care
  - Life Sciences
  - Chemical
Batch and Sequencing Opportunities

More than Just Batch
Batch and Sequencing Opportunities

Business Drivers

- Batch Management is a specific solution used to optimize batch processes
- Key challenges Batch Management must address include:
  - Production Performance
  - Quality
  - Regulatory Compliance
  - Fast Product Changes and Turnovers
  - Improved Yields
  - Safety
  - Traceability
  - Efficiency

- Industry standards exist to help:
  - ISA-88: Addresses design of batch control systems
  - ISA-95: Addresses integration of control systems with MES systems
Agenda

Batch and Sequencing Opportunities

Modern Batch Differentiation

Scalable Batch Solutions

What’s Next?
Modern Batch Differentiation

Batch solutions that deliver the core capabilities expected from S88 based sequential control while providing:

- Faster and more reliable control
- Intuitive experiences for deployment and operations
- A system that is scalable
- Information enabled for connectivity throughout the enterprise
- Secured data

Rockwell Automation’s portfolio is uniquely positioned to leverage multiple technologies and partnerships to deliver upon this vision for a Modern Batch
Modern Batch Differentiation
Most Scalable and Comprehensive Offerings in the Market

**Batch Management**

- Scalable offerings and tools ranging from controller level to enterprise wide systems.
- Based on ISA88.
- Automating sequences to reduce time-to-market of product mixes.
- Create repeatable and controlled operations leveraging equipment capabilities.
- Focus on yield, throughput, and quality by managing recipes and procedures.
- Improve traceability, reporting, and approval controls by leveraging procedural models.

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**Comprehensive Batch & Sequencing**

- Provide capability for systems through modular software components
- Solves complex needs around traceability and compliance
- Optimizes product changes and turnovers

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**Basic Batch Management**

- Provide capability for systems through core system functions
- Ideal for small systems with simple requirements
- Localized visualization and control

**Packaged Skids & Pilot Facilities**
Agenda

- Batch and Sequencing Opportunities
- Modern Batch Differentiation
- Scalable Batch Solutions
- What’s Next?
**SequenceManager**

- Provides basic batch management
- Directs PhaseManager™ programs inside a Logix-based controller in an ordered sequence to carry out process-oriented task
- Includes integrated visualization and reporting
- Future releases of FactoryTalk® Batch will provide integration with Sequence Manager

**Logix Designer**

**FactoryTalk® View SE**

**OVERVIEW**

- Provides basic batch management
- Directs PhaseManager™ programs inside a Logix-based controller in an ordered sequence to carry out process-oriented task
- Includes integrated visualization and reporting
- Future releases of FactoryTalk® Batch will provide integration with Sequence Manager

**BENEFITS**

- Implement task-oriented sequences easily with native controller functionality
- Intuitive operation with integrated control and HMI solution
- Reduce infrastructure cost and software complexity
SequenceManager
Editor, Viewer, and Reporting

Editor & Viewer – Logix Designer
Define a procedural sequence that coordinates the execution of equipment phases

Operator Viewer - FTViewSE
Monitor and interact with a running procedural sequence in the HMI

Sequence Execution
Execute a procedural sequence through native functions in the controller

Reporting & Analytics
Generate events used to produce batch reports and procedural analysis
Where Does it Fit?

SequenceManager

- Small batch systems (Single Unit)
- No Server Connectivity
- Process Skids (CIP Skids)
- Modular systems connected into larger FT Batch process (CIP skid to process equipment)
- Fast Processes (Chromatography)
FactoryTalk Batch View

HTML5

Device independent SCALABLE and INTUITIVE graphics

Improved EFFICIENCIES for operator and supervisory tasks

Single install for EASY validation and lifecycle maintenance

READ & ACKNOWLEDGE | SCALABLE GRAPHICS | ALARM DISPLAYS | TRENDING

DESKTOP BROWSER SUPPORT

MOBILE DEVICE SUPPORT

NEW
FactoryTalk Batch V1.01
New FactoryTalk Batch View Version Released Concurrently

- First release of batch to fully take advantage of new FactoryTalk Batch View
- New Features
  - Active Step Change
  - eProcedure Manual Instructions Integrated
FactoryTalk Batch V1.01
New FactoryTalk Batch View Version Released Concurrently

- First release of batch to fully take advantage of new FactoryTalk Batch View
- New Features
  - Active Step Change
  - eProcedure Manual Instructions Integrated
eProcedure Manual Instruction Entry

Manual Instructions for ADD_EGG:1

Prepare SP_MIXER1 for delivery of 200 KG of Egg.
Press OK to proceed.

Begin charging 200 KG of Egg into SP_MIXER1.
Press OK when complete.

Record final amount Egg added to batch in SP_MIXER1: [ ] KG
Note: Initial target amount for delivery was 200 KG of Egg.
Press OK when complete.
FactoryTalk Batch View 1.02
Force Transitions
FactoryTalk Batch View 1.02
Condensed View
FactoryTalk Batch View 1.02

Equipment View
FactoryTalk Batch View 1.02

Equipment View – Diagram View
FactoryTalk Batch View 1.02

Equipment View
FactoryTalk Batch View 1.02
Manual Phase Control
FactoryTalk Batch View 1.02
Journal Viewing
### FactoryTalk Batch View 1.02

#### Journal Viewing

#### SORT and FILTER

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FactoryTalk Batch View 1.02

Reports

SQL Server Reporting Services
Batch Reports

010-Batch Listing
020-Batch Summary
030-Batch Detail
040-Material Usage
050-Forward Tracking

060-Backward Tracing
070-Batch Execution
080-Duration Comparison
090-Batch Exceptions
FactoryTalk Batch View on the Portal

FactoryTalk® Batch View
FactoryTalk Batch View provides a modern and intuitive portal into a comprehensive batching solution for effective operations. Modern batch systems must account for the growing need for architecture flexibility, true distribution of control, and scalable solutions. The product leverages its own webserver using HTML5 technology to provide native connectivity into a FactoryTalk Batch through any browser technology.

Studio 5000 Application Code Manager
Application Code Manager is an engineering tool that enables more efficient project development by leveraging highly reusable libraries. You can create your own libraries using Library Designer or use provided ones. Application Code Manager creates not only the Logic but also associated FactoryTalk ViewSE/ME displays, FactoryTalk Historian tags and FactoryTalk Alarm and Events (FTE) content.

Studio 5000 License Portal
The Studio 5000 License Portal is a secure, easy to use web portal designed to manage content protection.

Ordering Website:
portal.rockwellsoftware.com
Where Does it Fit?

FactoryTalk Batch View

- Any FactoryTalk Batch Application!
- View SE integration for HMI for uniform operator experience
- Need for remote browser access
- Manual activities, operators on the move
FactoryTalk Batch v13
SCALABLE | DISTRIBUTED | INTUITIVE | FAST & RELIABLE

- Improved EFFICIENCIES for operators and supervisors
- FAST navigations with INTUITIVE device-independent graphics
- SCALABLE architecture integrates into existing strategies
- COMPLETE coordination of S88 phases in the controller

Distributed Control + Intuitive Interfaces + Secured Information
FactoryTalk Batch V13
SequenceManager Integration

- Ability to connect to and command SequenceManager Sequences
- Scale up from small systems
- Distribution of batch control
FactoryTalk Batch V13
Database Management Tool

- Allows for archiving of batch SQL database
- Ability to restore database backups
- Allows for better control of size of database
Realize the benefits of a fully integrated MES and Batch system:

- Feature-rich procedural control of the process areas
- Accelerate *exception based reporting* with data extracted directly from the process control layer
- Vendor-supported integration eases validation efforts
- Streamlined workflows of the overall enterprise operation
  - Equipment tracking & Inventory management
  - Workforce Policies to ensure compliance and training
  - Prebuilt modules for automated and manual procedures such as:
    - *Weigh & Dispense, Formulation*…and more
  - Integration to Business systems such as ERP, LIMS, Warehouse….
FactoryTalk Batch V13
Improved Installation Experience

- Reduce manual install and uninstall procedures
- Combined Installation for Batch, eProcedure, Material Manager
Installation and Release Notes Improvement

- Individual installation guides combined into one to support the new install user interface.
- New install guide leads the user
- Need-to-know component information remains in install manual
- Single set of release notes in delivered in HTML format.
System Requirements

- Windows Server 2008 R2, Server 2012, Server 2012 R2
- Windows 7 Service Pack 1
- Windows 8.1
- Windows 10 (Clients Only)
- SQL Server 2008 R2, 2008 SP4, 2012 SP2, 2014 SP1
- IE 11
- Logix Designer 29 or later (for SequenceManager integration)
Where Does it Fit?

FactoryTalk Batch

- All Industries (Life Sciens, CPG, Chemical, etc)
- Multi-Unit Batch Control
- Integration of process skids
- Integration with 3rd party systems
Batch Reports

- New Reports!
- Batch Exception
- Sequence Events
- Event Summary

Available via “Patch”
Agenda

- Batch and Sequencing Opportunities
- Modern Batch Differentiation
- Scalable Batch Solutions
- What’s Next?
FactoryTalk Batch What’s Next

- Server robustness (online changes)
- Recipe management improvements (formulations)
- Improved communications through FactoryTalk Linx
- Microsoft Server 2016 Support
- FactoryTalk Batch View will full legacy capabilities
- Continuous improvement of Install
- Continuous improvement of database management

** Subject to Change **
Thank you!