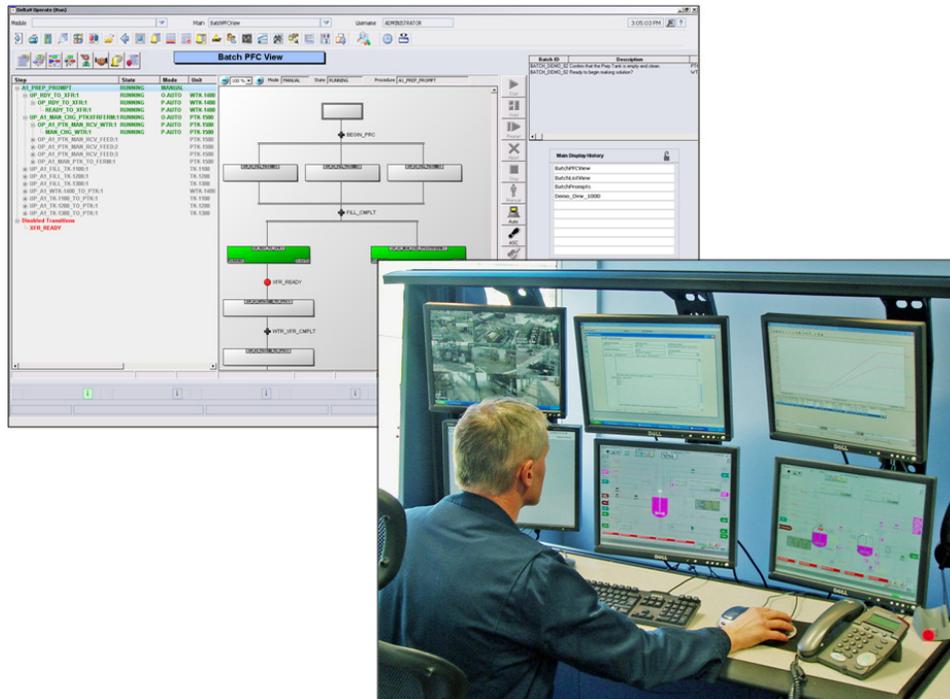# Batch Operator Interface

Complex batch control is simplified with graphical views of the procedural hierarchy.

- Intuitive recipe execution interface

- Resource management capability

- Online recipe execution modification

- Electronic signatures for meeting 21 CFR Part 11 requirements

- Dynamic unit selection

- Dynamic operator prompts

- Tight integration with the DeltaV system

Introduction

Do you need a recipe execution interface with intuitive batch displays based on industry standards such as ISA-88.01 and IEC 61131-3 Looking for an easy-to-use, yet powerful, recipe management tool at both macro- and microscopic levels within your batch?

Take a look at the DeltaV Batch Operator Interface. It has the capability for a user to schedule batches, manage batch equipment*, modify batch execution online*, and view event journal information—all from one application.
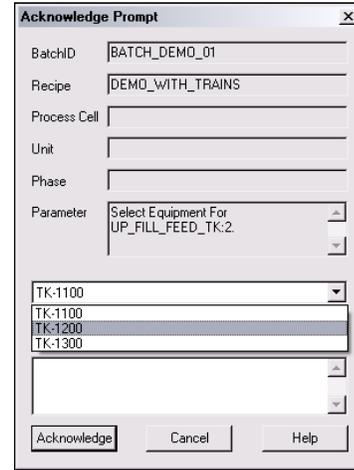
Benefits

Intuitive recipe execution interface. The Batch Operator Interface is an intuitive, easy-to-use batch control user interface. It uses industrial standards such as the ISA-88.01 procedural hierarchy, IEC 61131-3 Sequential Function Charts, and tabular views to illustrate the control recipe. Dynamic coloring is also used to convey unit procedure, operation, and phase state/status information.

Resource management capability. Complex equipment arbitration is handled automatically by the Batch Executive. However, the user can manually intervene from the Batch Operator Interface and allocate resources for certain recipes.
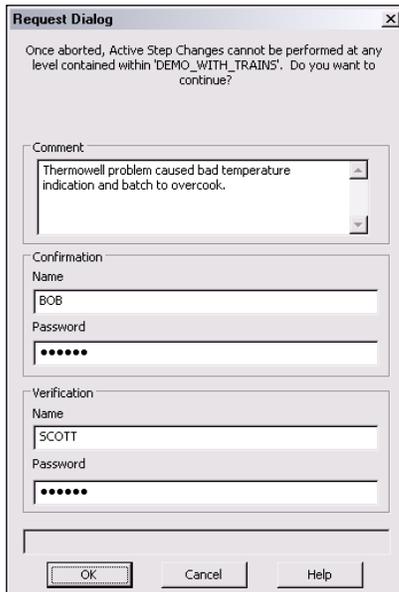
Online recipe execution modification. A user can *skip and repeat steps* during recipe execution, as well as manually control phases. Plus, operator interactions are tracked and recorded by the Batch Executive to provide accurate history of batch execution.

Electronic signatures for meeting 21 CFR Part 11 requirements. Operator actions, along with creating batches and acknowledging messages, can be set up to confirm the identity and security level of the user attempting to perform the action. For additional security, a secondary approval (verify) option is available. The confirm/verify option uses a username/password based electronic signature that meets requirements of 21 CFR Part 11.

Electronic Signatures

Dynamic unit selection. Equipment selection for a recipe may be chosen when the recipe is created or can be deferred up to the time it is required. The operator is simply prompted to select the equipment at the time it is needed. Regardless of when the equipment is initially selected, it can easily be changed *at any time*. For example, if the contents of a tank need to be transferred to another tank unexpectedly in the middle of a batch, the unit upon which the batch is executing can easily be changed.
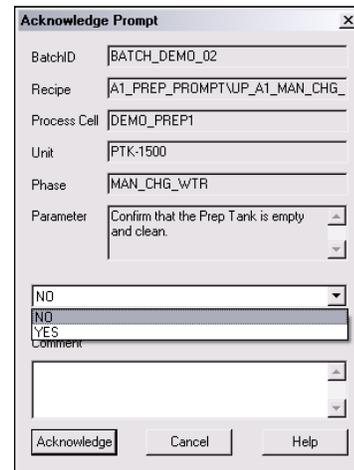

Dynamic Unit Selection

Dynamic operator prompts. The Batch Operator Interface can display dynamic operator prompts that allow embedding of phase parameter values in prompt strings. These dynamic operator prompts can be created dynamically in the controller, taking advantage of the controller's string handling capabilities.

Dynamic Operator Prompts

Tight integration with the DeltaV system. No configuration is needed to tie the Batch Operator Interface to information in controllers and other applications. One-click access from the Operator Interface makes obtaining detailed batch information a snap.

Product Description

Recipes are displayed graphically using the ISA-88.01 Procedural Model along with IEC 61131-3 Sequential Function Charts (SFC) to illustrate the steps within procedures, unit procedures, and operations. A user may "drill down" into a recipe by double-clicking a step. For example, double-clicking an operation step within a unit procedure will bring up the SFC for that operation. Step names and descriptions can be displayed, along with comments that have been configured for the recipe. Transitions also have the option of displaying their configured name, description or condition expression. Together, these features make online recipe viewing easy.
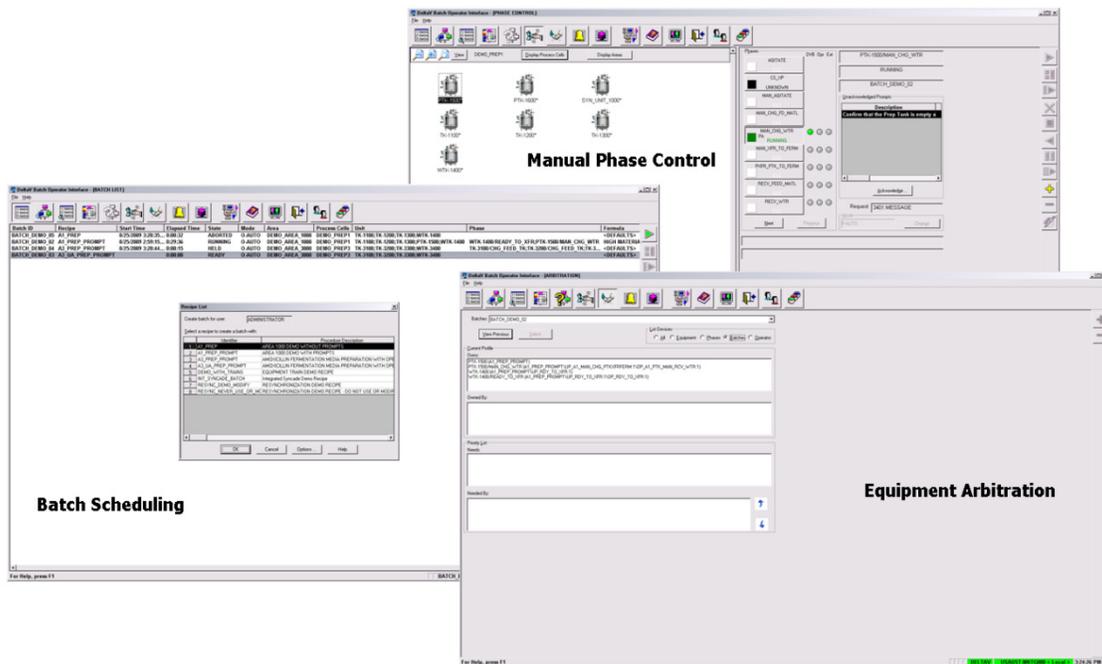
The Batch Operator Interface allows a user-flexible control over executing recipes. For any active batch, a user has the ability to stop, hold, restart, and abort the batch. It is possible to skip and repeat steps within the recipe as well. All of these actions, along with creating batches and acknowledging messages, can be set up to confirm the identity and security level of the user attempting to perform the action. For additional security, a secondary approval (verify) option is available. The confirm/verify option uses a username/password based electronic signature that meets requirements of 21 CFR Part 11.

The Arbitration display provides users with the ability to manage equipment resources. Even though equipment arbitration is handled automatically by the Batch Executive, a dedicated equipment arbitration screen offers details about equipment being used by active batches as well as other resources that may be waiting to acquire equipment. From this arbitration screen, users can manually acquire a piece of equipment or reorder the priority list, allowing resources to be made available to a particular batch.

Phase execution can be manually controlled. An operator can acquire and execute a single phase without initiating an entire recipe. Manually executed phases are given a batch ID, and the associated batch event data is automatically collected and stored.

In addition to entering recipe, equipment, and phase control, a user can enter data for use by the recipe or manually enter an ad hoc comment to be included with the batch's history. Such actions can take advantage of the built-in verification and approval options. Allowable data types include real, integer, Boolean, string or enumerated entries.

Additional information such as prompt, alarm, and phase summaries is also available, and the tight integration with the Operator Interface provides the user with visual indicators and one-button access to batch alarms and messages.

The Batch Operator Interface allows a user to schedule batches, manually control phases, and control equipment arbitration.

Related Products

- **DeltaV Operate.** High performance operator graphics, trends and alarms offered in standard operating layouts and utilizing system-wide built-in security.

- **Advanced Unit Management Software.** Provides class-based Unit Modules and aliasing to make developing unit-relative equipment strategies simple.

- **Batch Executive.** The batch engine which coordinates all batch processing activity, creates detailed batch history records and schedules recipes and resources.

- **Batch Historian.** Automatically collects and stores batch recipe execution data from the DeltaV Batch Executive and process alarm and event data from the DeltaV Event Chronicle.

- **Recipe Studio.** Powerful yet simple to use application for graphically configuring recipes (with formulas) for successful batch production.

Prerequisites

- One ProfessionalPLUS Station in a DeltaV system.

- One DeltaV Batch Executive. Refer to the Batch Executive product data sheet.

- The DeltaV Batch Operator Interface may be loaded onto any DeltaV workstation. A variety of hardware is available to meet your specific requirements. Call your local sales office for details.