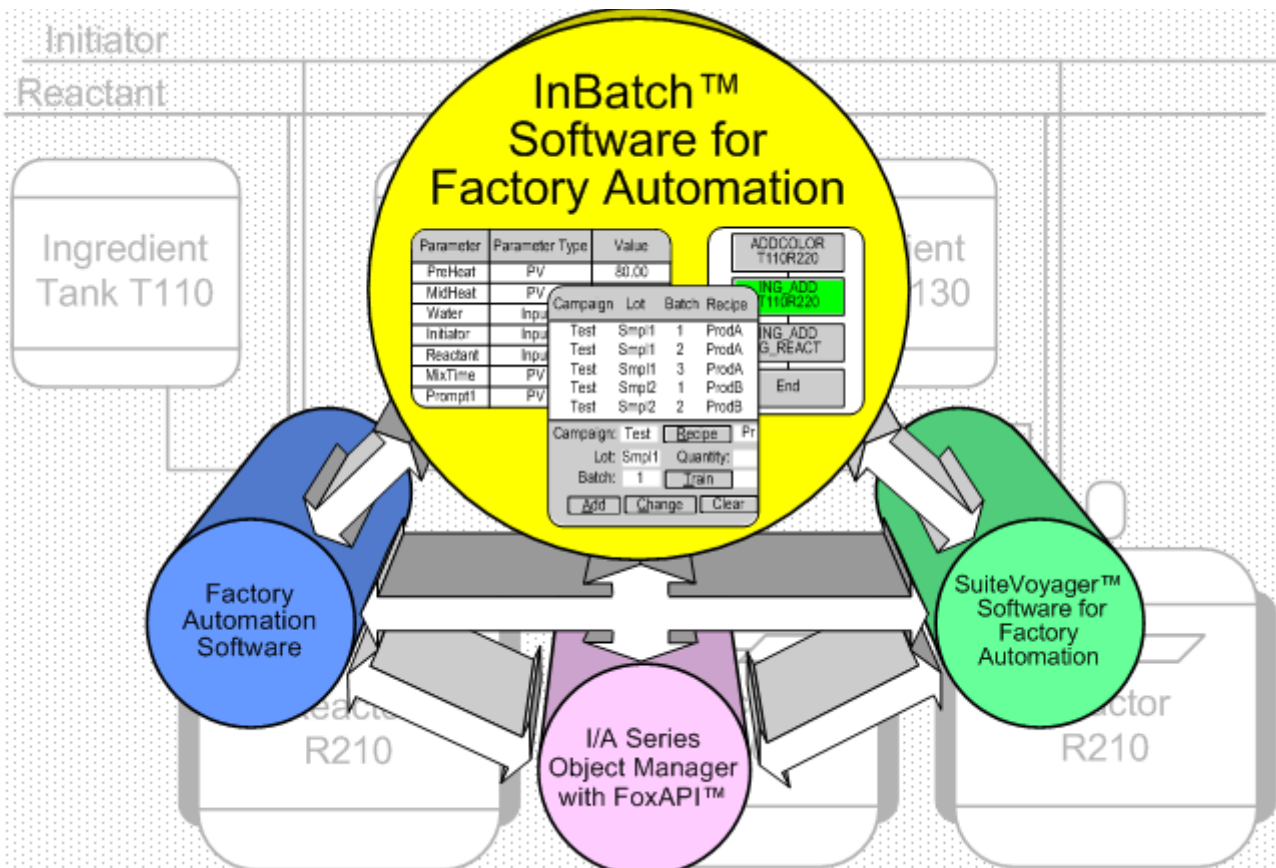


# I/A Series® Software

## InBatch™ Software for Factory Automation

### (Windows NT® Operating System)



#### OVERVIEW

Wonderware® InBatch™ software connects to I/A Series host stations for the Windows NT® operating system. The host stations interface with I/A Series process control software running on control stations. The combination provides batch management solutions for hybrid control systems (continuous and discrete control). InBatch software is versatile batch management software for modeling and automating batch production processes. InBatch software is compatible with the Instrumentation, Systems, and Automation (ISA) organization's ANSI/ISA 88.01-1995 standard and facilitates the design and implementation that are compliant with the 21 CFR Part 11 specification. InBatch enables you to quickly and easily create

recipes and simulate their execution against a model of the process. InBatch provides convenient operator interface applications for scheduling and managing execution of batches, adjusting recipes and controlling steps in batch phases. Recipe procedures are dynamically allocated to I/A Series control stations and programmable logic controllers for execution of batch phase control and sequence logic. Batch records, process data and alarms are automatically logged. Batch reporting is convenient yet includes extensive, well organized information. When compared to competitive solutions, the integration of the powerful InBatch software with I/A Series components reduces the cost and time to automate batch processes.

Production in many process industries is primarily based on the execution of batches via formulas or recipes. InBatch software is a flexible batch management application where batch phase logic is developed once suiting the individual unit's processing equipment. InBatch software is based on a process model that allows segregation of a plant into units. InBatch facilitates modeling each unit's equipment, interconnecting pipe and valve connections, and each unit's processing capabilities and control requirements.

InBatch software offers a scalable client/server environment for batch control. The InBatch batch engine provides field-proven functions for materials tracking, batch scheduling, batch and equipment management, batch history and batch reporting. InBatch software also supports fault tolerant redundant InBatch engines for application to critical processes. InBatch software also provides function-based security for up to five levels of approval with password protection.

InTouch™ HMI client software provides the principal operator interface functionality for InBatch. InTouch provides visualization of batch execution, process status, alarming plus real-time and historical trending. InBatch integration with InTouch software is achieved using batch wizards, ActiveX® controls and InTouch script functions that allow network access to all batch engine functions. InBatch ActiveX controls are also compatible with SuiteVoyager™ for deployment of InBatch Client capabilities over the Internet or Intranet.

For more information about visualization and historical data collection and reporting see Factory Automation Applications (PSS 21S-1B7 B4).

For more information about web deployment see SuiteVoyager™ for Factory Automation (PSS 21S-1B9 B4).

For additional information on the capabilities of InBatch batch management software, refer to Wonderware Data Sheet PN 15-0007.

## Benefits

InBatch software offers the following major benefits:

- Greatly reduced life-cycle engineering cost
- Faster time-to-market
- Increased production flexibility
- Easy integration with other Wonderware components

- Easy integration with I/A Series control stations and gateways
- Ease of use
- Extensibility.

## *Reduced Life-Cycle Engineering Cost*

InBatch software greatly reduces the cost of application and maintenance engineering through:

- Simplified phase logic implemented as process phases, each performing a specific function such as material transfer, heating or mixing
- Re-usable phase logic libraries for deployment throughout the enterprise
- Simulated recipe execution for testing recipes independently of the details of phase logic
- Automatic batch history for logging all production activity, material usage, material production, operator actions, comments, alarms and equipment history
- Comprehensive set of batch report templates to log or retrieve batch history.

## *Faster Time-To-Market*

InBatch software provides faster time-to-market for the end-user's production systems through:

- Fast and easy recipe creation by production personnel using an intuitive graphical user interface that includes a Sequential Function Chart (SFC) procedure editor, formula editor and recipe operations library
- Simulated execution of a new recipe against the process model of production facilities to determine if the plant has the equipment, processing capability and materials to process the recipe
- Fast validation of a new recipe because it is validated against the process model, which does not change when recipes are added.

## *Increased Production Flexibility*

With InBatch software each recipe can have a different procedure and formula and can be scheduled for production on different process equipment each time a batch is produced. The ability to configure which process equipment to use and to schedule when a recipe is processed provides significant flexibility.

### *Integration With Wonderware Components*

InBatch software is tightly integrated with the following Wonderware components:

- InTouch HMI software enables operators, engineers, and managers to view and interact with batch plant operations through graphical displays of their production processes
- InTouch Batch Wizards (20 are preconfigured) plus numerous script functions enable rapid development of InTouch HMI applications
- Integrated ActiveX objects can be imbedded in any InTouch display to access all batch execution, scheduling and monitoring functions
- InTouch alarms and operator events are automatically associated with a batch and stored in a historical database
- IndustrialSQL™ server stores all batch history, InTouch alarms and events, operator comments, material usage and production. Tools that support Microsoft® SQL provide easy access to this historical information for analysis, reporting and automatically passing to enterprise planning systems
- SuiteVoyager™ serves as a web portal for secure Internet and Intranet access to the InBatch engine, InBatch scheduling and management applications, InTouch graphics, and InBatch reports.

### *Integration with I/A Series Control Stations and Gateways*

I/A Series workstations with host or application station software for Windows (WINHST, WINAPP, 70 Series, or 50 Series) connect to any I/A Series control station or gateway. WINWRK or COTS (commercial-off-the-shelf) computers run InBatch software and communicate to the I/A Series workstations using the WonderLink™ I/O server. All batch phase logic is executed by the control stations and other processors such as programmable logic controllers.

### *Ease of Use*

InBatch software offers easy to use tools and “out of the box” functionality for implementing batch applications.

- InBatch Process Model Editor is a simple, yet powerful tool for defining a plant’s equipment, connections and processing capabilities

- InBatch clients provide a complete application framework with ActiveX objects, scripts and a library of Batch Wizards for embedding in the InTouch™ HMI
- InBatch Recipe Management offers rapid recipe development through a graphical editor (SFC) for creating new recipes.

### *Extensibility*

InBatch software leverages the following software technology for extending batch applications:

- ActiveX controls provide an SFC type recipe procedure window that you can embed in batch client displays, and a comprehensive interface that provides access to all batch execution, scheduling and monitoring functions
- An OLE automation server provides read and write access to the InBatch material and recipe databases, thus enabling the design of custom applications
- COM-Based Batch Function Interface allows modification of the InBatch batch management system with application-specific logic. For project-specific requirements, logic is conveniently placed at strategic steps during batch scheduling and execution
- InBatch integrates with Enterprise Resource Planning (ERP) systems such as Baan and SAP. Material, recipe, schedule and batch history information can be exchanged with these and other business level systems
- WonderLink™ I/O server connects InBatch software to the I/A Series system
- InBatch software uses any Wonderware compatible I/O server, of which there are hundreds, plus there is an extensibility toolkit for developing interfaces to unique new devices and protocols.

### **Features**

InBatch software provides the following features:

- Process Modeling
- Recipe Management
- Batch Management.

### *Process Modeling*

The process model defines the plant equipment, connections and processing capabilities that form the framework for configuring the equipment and control system to produce batches.

Features of InBatch process modeling are:

- Units (equipment modules) process materials and include storage tanks, reactors and blenders
- Connections transfer material between units and include pipes, pumps and valves
- Classes allocate units that have the same processing capabilities within common process categories
- Phases define the processing capabilities of each process unit and the transfer capabilities of each connection class
- Each process phase defines a process action, such as mix, heat, cool and agitate
- Connections that have the same material transfer capabilities are in the same connection class
- Transfer phases define transfer capabilities of each transfer class
- Each transfer phase defines a material transfer action.

#### *Recipe Management*

A recipe specifies the equipment, materials and procedure required to produce a single batch of product. Recipe creation includes selecting equipment classes connection classes and processing capabilities from the Process Model.

Features of Inbatch Recipe Management are:

- Master recipe is the user-built recipe that is based on process classes and nominal material quantities. It allows you to execute batches of varying sizes without changing the structure of the recipe

- Recipe header provides information about the recipe such as version and originator
- Equipment requirements specify the process classes and their attributes needed to produce one batch
- Formula specifies the material inputs, the material outputs (finished goods and by-products) and process variable setpoints for a recipe
- Procedure comprises operations and phases required to execute one batch of a recipe. You build procedures in a Sequential Function Chart (SFC) format, associating each operation and its phases with a process or connection class. For phases, you define process variable parameters and link material inputs and outputs to transfer phases.

#### *Batch Management*

The InBatch engine enables creating, scheduling and managing batches, recording history and generating reports.

Features of InBatch Batch Management are:

- Batch scheduling involves creating, scheduling and dispatching batches for production
- Batch management dynamically allocates equipment, executes phases and records data
- Batch history records materials used and produced, equipment usage, alarm events and operator actions
- Batch reporting automatically triggers reports to be generated on batch events.

---

## LICENSING AND MEDIA KIT

Wonderware software licenses enable development and/or run-time features of individual Wonderware components on designated WINWRK workstations or COTS computers. Licenses are also available as bundles. The following licenses permit operation of the software application on one client or server computer. Each InBatch server license with IndustrialSQL server permits that IndustrialSQL server application to be installed on a computer separate from the one on which InBatch server is installed. Licenses in general authorize non-expiring permission to operate the designated software component for the version or range of version numbers defined in the license.

## FACTORY AUTOMATION BUNDLE SOFTWARE MEDIA KIT

For installation of InBatch Software for Factory Automation, one media kit is required.

### LICENSES

#### InBatch Development License

This license includes the following software:

- InBatch Development Client Applications
- InBatch Wizards and Script Functions
- InBatch Function Interface (API)
- IndustrialSQL CAL incl. Microsoft SQL CAL

#### InBatch SuiteVoyager Browser/Client License

This license provides InBatch client capabilities in a SuiteVoyager Browser.

#### InBatch FDA21 CFR Part 11 Security Option License

This InBatch license may be used to facilitate the implementation of a system that is compliant with the 21 CFR Part 11 specification.

#### InBatch Licenses for Batch Reporting

The following InBatch licenses are available and may be used for designing and deploying batch reports:

- InBatch Reporting Template Designer License
- InBatch Report Client License

#### InBatch Server Licenses

The following InBatch server licenses are available:

- InBatch Server Small (1- 15 Units)\* License
- InBatch Server Medium (16-40 Units)\*
- InBatch Server Large (40+ Units)\* License
- InBatch Server Small (1-15 Units)\* Redundant License
- InBatch Server Medium (16-40 Units)\* Redundant License
- InBatch Server Large (40+ Units)\* Redundant License

\* A unit is a contiguous group of process equipment including its sensors, transmitters and control devices. A unit is typically controlled from a single control station which contains all the phase logic for that unit.





33 Commercial Street  
Foxboro, Massachusetts 02035-2099  
United States of America  
[www.foxboro.com](http://www.foxboro.com)  
Inside U.S.: 1-866-PHON-IPS (1-866-746-6477)  
Outside U.S.: 1-508-549-2424 or contact your local Foxboro representative.

Foxboro, I/A Series, and WonderLink are trademarks of Invensys Systems, Inc.  
Invensys is a trademark of Invensys plc.  
ActiveX, Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation.  
Wonderware, InBatch, IndustrialSQL, and InTouch are trademarks of Wonderware, Inc.  
All other brand names may be trademarks of their respective companies.

Copyright 2002 Invensys Systems, Inc.  
All rights reserved