

New Capabilities for an Established Food & Beverage System

An international beverage manufacturer needed to add fruit juice processing capabilities to an existing carbonated beverage facility. They required a Control System and Manufacturing Execution System to monitor and supervise this fully automated batch process.

Main Objective

The client required complete design, development and deployment of the complex, fully automated batch process and supporting information systems. Special considerations included direct interface with the ERP System and integration with the Laboratory Information Management System (LIMS).

Customer Results

The new, best-in-class system met or exceeded all of the client's requirements for this project, including the capacity to meet all demands of their international clientele. The system went through startup in the spring of 2005 and is currently producing at capacity.

Application Description

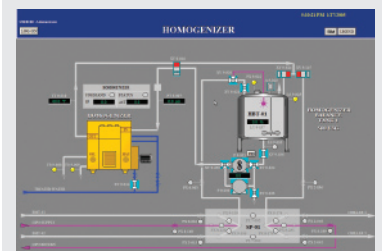
- The Batch Tracking System utilizes InBatch™ (Batch MES), InSQL™ (Data Historian), InTouch™ (HMI) and Active Factory™ (Web-based, real-time trending and reporting)—all off-the-shelf products from Invensys Wonderware.
- A Microsoft SQL Server database configures data and provides process data storage and retrieval.
- Wonderware and Microsoft systems communicate across an Ethernet network.
- The controls and instrumentation are supported and integrated on multiple field buses. PROFIBUS is utilized for all analog instrumentation, ASI Bus was chosen for discrete I/O networking, ControlNet and DeviceNet are used for MCC communications, DH+ is used for OEM PLC communications.
- This batch tracking and controls supervision system supports fifteen different storage vessels that feed ingredients into one of three mix tanks. Each mix tank is supported by four load cells used to automatically load ingredients from both storage tanks and electronic scales to weigh manually loaded ingredients. Flow meters are system-monitored to determine quantities of raw materials.
- More than 75 different juice recipes were defined and validated.
- More than 150 Clean in Place (CIP) recipes were defined and validated.
- The Batch MES is the master repository for all recipes and is ISA-88-compliant—the ISA batch control standard. The MES is also responsible for tracking the batch from pre-weigh through mixing, homogenizing, chilling and finally to filling.
- A data historian stores process data for reporting and validation.
- A flexible and user-friendly HMI (human machine interface) was implemented.
- The system forwards resultant information from one process to prepare downstream processes with critical setup information.
- System has approximately 1000 I/O.



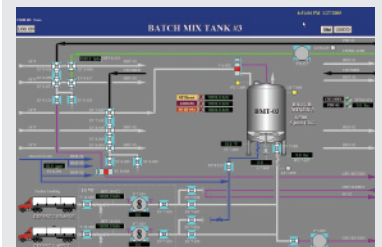
Entering Filling Station



Filling Station



Homogenizer



Batchmix Tank

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