



"This first phase of implementation of Invensys software has paved the way for all sections of the plant to be integrated into one system. Future upgrades will be more cost effective, not only from a financial perspective, but also from an implementation time and downtime point of view."

Andrew Alexander
National Engineering Manager

Plascon Paints a Brighter Production Picture with Help from Invensys Operations Management Solutions

Goals

- Plant managers wanted to implement a more streamlined and productive batch processing system that would improve overall plant productivity

Challenges

- Cross-batch contamination remains one of the biggest challenges for industrial systems controlling paint manufacturing processes

Solutions and Products

- Wonderware InBatch
- Wonderware InTouch HMI
- Wonderware Historian
- Wonderware System Platform

Results

- Plascon significantly improved product quality and established a set of technology protocols to simplify future upgrades
- InBatch has successfully optimized recipe management and execution to improve productivity and cost efficiencies
- The Invensys solutions provide a highly scalable and flexible infrastructure, enabling the company to easily implement the same system in other plants



Mobeni, South Africa - The art of mixing paint is a very controlled and exacting science with the goal of achieving the proper color, consistency and finish. Any errors in ingredients and overall manufacturing can impact uniformity and the final color palette. One mistake can cause an entire batch to be discarded, requiring the entire process to be repeated.

For Plascon, manufacturing paint in a specific color palette, batch consistency and uniformity is the order of the day. Strict recipe control, traceable batch parameters and consistent product quality are the hallmarks of this successful paint and coatings company.

Plascon first implemented Wonderware InBatch software in 1995. As Plascon expanded its line of paint supplies to include premium decorative and road marking paint, plant managers quickly realized the need to invest in upgrading the Wonderware InBatch technology which served the company well since it was first installed.

Designed as a flexible manufacturing facility to address challenging production schedules, Plascon also chose to upgrade to the latest version of Wonderware InTouch HMI. Because all of these new Invensys software components were integrated with Wonderware System Platform, Plascon could establish a single scalable SCADA technology platform that would enable the company to perform system upgrades more quickly and easily throughout the entire manufacturing operation.

Why Upgrade?

Because the existing technology infrastructure could not keep up with Plascon's expanding business operations, it became apparent in recent years that software upgrades needed to be made in order for Plascon to remain competitive in the industry. The most important goal for the upgrade strategy was that the batch and HMI software must focus on producing products of the highest quality, while maintaining and meeting tight production schedules.

At the same time, the new solution would have to maintain production efficiencies and effectively manage company resources for manufacturing. In addition, Plascon required that the system upgrade be implemented without disrupting the ongoing manufacturing process. Therefore, hot swapping with the new PLC, SCADA system and InBatch model simultaneously was required to reduce downtime events.

"A hot-swappable approach was planned to maintain plant availability and limit downtime," said Gus Kruger, with system integrator Convenient Software Solutions. "Following recommended best practices from Invensys in the development stages, Plascon was able to seamlessly upgrade to the new versions of the Wonderware software."

Unique Operational Requirements of Paint Manufacturing

Because the initial installation of Wonderware InBatch was outdated, plant operators were forced to begin running paint batches manually. This resulted in poor production efficiency, lack of detailed traceability and a multitude of errors inherent in manual processes.

In addition, production scheduling became more difficult. Planning for optimum plant equipment availability and usage needed to be done manually and automated batch reports detailing the productivity process could no longer be produced for plant management.

The new software infrastructure had to address key operational issues such as:

- Batch recipes would have to be clearly defined and created so that batches could be run with minimal dependence on operators
- Detailed displays of batch status were needed when operator intervention was needed to address production issues
- A reliable, semi-automatic mode of batching was required when the system had to go offline due to planned maintenance or unexpected incidents

Wonderware InBatch Brings Color to Life

During the production process of paint and coatings, a variety of tints, thinners, resins, oils and pigments are mixed to create a specific color and type of paint product. To effectively manage the process of creating each particular batch of paint, strict adherence to a recipe must be followed throughout the process. Each of the ingredients, or raw materials, is stored in tanks for use during the manufacturing process based on the paint's particular recipe.

Wonderware InBatch enables plant operators and managers to accurately identify the proper recipes and observe the paint mixing process in real-time on a display screen to ensure successful batch execution and completion. Wonderware InBatch also provides material genealogy data and Web-based reporting to simplify monitoring and measurement of the overall manufacturing process.

Wonderware System Platform Provides a Vivid Solution

Plascon chose to standardize on Invensys technology partly due to its experience with Wonderware InBatch. The company also appreciated the fact that the entire software solution infrastructure, based on Wonderware System Platform, provides industrial manufacturing processes with a single, scalable platform for all SCADA, supervisory HMI and MES requirements.

Because Wonderware System Platform is the backbone of the entire software system, Plascon could more easily maintain and manage all of the functional capabilities required within its manufacturing operation.

Combined with Wonderware Historian, Wonderware System Platform enables production history archiving, efficient data compression and auto-configuration of historical data – eliminating duplicate efforts within the organization. Wonderware System Platform also features Wonderware Information Server, which delivers manufacturing operations information to users across all functions of the Plascon plant floor.

The integration of Wonderware System Platform with these specific Invensys software solutions enables plant operators and industrial managers to improve operational efficiencies and overall product quality as well as to dramatically increase plant throughput by leveraging the facility's existing software and hardware applications. Ultimately, Invensys helped Plascon achieve rapid ROI with the lowest possible system lifecycle cost.

Software & Paint - A Vivid Solution

With its extensive experience in the chemical process control industry and expertise in batching applications, Plascon selected system integrator Convenient Software Solutions (CSS) to implement the Invensys solution. As a Wonderware-certified system integrator, CSS is highly skilled in integrating new Wonderware software with legacy systems.

With the help of CSS, Plascon created operations protocols using Wonderware InBatch software based on the ISA S88 industry standard. This standardization enables Plascon to reuse the software components to meet specific requirements of the manufacturing facility, and then easily roll them out to other facilities when needed. The flexibility associated with reengineering components provides Plascon a significant savings in software development and deployment.

The Invensys solutions also allowed for the flexible expansion of Plascon's operations, which was a key objective of the system upgrade. The software installation was not only seen as a stand-alone implementation, but also as the first phase of many system upgrades to improve the performance of all Plascon production facilities.

"Though the production of paint sounds like a fairly straightforward process, it involves very measured processes which must occur at specific times to produce consistent color and consistency of a particular product," said Kruger. "With the help of Wonderware InBatch, Plascon is able to customize specific commands and methodologies that can be quickly and easily executed by plant operators."

A Colorful View for Monitoring the Manufacturing Process

To view production processes, Wonderware InBatch is paired with Wonderware InTouch HMI which provides a detailed view of plant floor operations. Storage tank levels are displayed for daily reviews of supply levels with interlocking displays showing batch status. The tag naming conventions are based on ISA S88 standards, which provide consistent terminology for batch control processes and enable easier integration of batch applications. Because Wonderware InBatch adheres to ISA S88 standards, Plascon can optimize and maximize equipment use, execute multiple batches simultaneously and provide comprehensive electronic batch recording and reporting capabilities.

Once the standards were determined, Plascon created a library of object and graphic templates that could be re-used in future installations. Two automation object servers were then installed with a fail-over process configured between them to provide a “store-and-forward” capability should connection to the plant’s Wonderware Historian be lost or when the historian server is suspended for maintenance.

Wonderware Historian provides Plascon with a high-performance, real-time database for storing historical information. It is designed to collect a wide variety of plant data, at full resolution and very high data rates, ensuring that decision-makers at all levels have the historical information necessary to help implement productivity improvements.

“The Invensys solution offers three main exceptional features including the enforcement of standards, considerable reduction in engineering over time and a highly configurable plant

modeling capability,” said Andrew Alexander, National Engineering Manager at Plascon. “No matter how unique a Plascon plant’s operation or how specialized its batching process, an operationally accurate plant model can always be created using the Wonderware software. This ensures that plant resources, both equipment and materials, will be managed reliably during all batching phases.”

By clearly defining and adhering to standards, any modification to automation objects in the plant model is a simple process. Following Invensys-recommended best practices in the development stages resulted in seamless upgrades to new versions of Wonderware software solutions.

Protecting Legacy Investments with Invensys

Plascon’s implementation of Invensys solutions is a textbook example of protecting legacy technology investments. The company was able to successfully upgrade its batching software with the significantly enhanced version of Wonderware InBatch while maintaining its current investments in other software and hardware by leveraging the software’s compliance with ISA S88 standards.

Increasingly, manufacturers are looking to unify their production and business information assets for improved control and decision support at all levels of an organization. For this reason industrial software technology that can effectively build a solid application foundation, successfully integrate solutions and enforce industry standards is at the top of many industrial manufacturers’ “shopping lists.”



Invensys Operations Management • 5601 Granite Parkway III, #1000, Plano, TX 75024 • Tel: (469) 365-6400 • Fax: (469) 365-6401 • iom.invensys.com

Invensys, the Invensys logo, ArchestrA, Avantis, Eurotherm, Foxboro, IMServ, InFusion, SimSci-Esscor, Skelta, Triconex, and Wonderware are trademarks of Invensys plc, its subsidiaries or affiliates. All other brands and product names may be the trademarks or service marks of their representative owners.

© 2011 Invensys Systems, Inc. All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, broadcasting, or by any information storage and retrieval system, without permission in writing from Invensys Systems, Inc.