

# BASF Saves Time and Money

ABB's System 800xA for Harmony enables optimized productivity

Project Report



“Our evolution process to one control system supplier and the ability to upgrade to the latest technology (while maintaining our control system integrity) works really well!! System 800xA saves BASF time and money with regard to operations, maintenance and future expansions. It helps us to be as productive as possible.”

Jiri Prochazka  
I & E Engineer – Process Automation  
BASF, Windsor Facility



One of several free-standing process control workstations on the manufacturing floor.



BASF in Windsor, Ontario



## How to Stay Competitive, Protect your Control System Investment *and* Keep Maintenance Costs Down?

Perhaps you can relate to Jiri Prochazka's problem. As the I&E Engineer for BASF's automotive paint plant in Windsor, Ontario (Canada), Jiri was satisfied with his existing control system solution, which was performing as designed. But as time went on, he was faced with the issue of how best to maintain his aging electronic technology. Maintenance costs were increasing; finding hardware and the resources to work on it were problematic. Jiri had no other choice but to upgrade the control system.

As in most industries, chemical producers such as BASF are facing challenges to produce more, be more agile in the marketplace and to differentiate themselves from their competition. Add to this the fact that new control system and process automation technologies have made it possible to achieve greater maintenance savings and reduced time to decisions and actions - and you can see why Jiri had an important decision to make: how to upgrade his system to maintain competitiveness, keep maintenance costs reasonable, keep operations satisfied, protect his current control system investment *and* 'keep it simple?'



## The Chemical Company

### About BASF

BASF *The Chemical Company* was first incorporated (as Badische Anilin & Soda Fabrik) in 1865 for production of coal tar dyes and other products. Today, it combines economic success with social responsibility and environmental protection. It contributes to finding answers to such global challenges as climate protection, energy efficiency, nutrition and mobility. BASF is comprised of chemical, plastics, performance products, functional solutions, agricultural solutions and oil and gas segments. The automotive paint plant in Windsor, Ontario in Canada is part of BASF's Coatings Division, which is part of the Functional Solutions segment.

Located on eight acres in Windsor Ontario in Canada, the site produces automotive paint and employs approximately 120 people. It is unique in that instead of using one central control room, this site has multiple workstations distributed across the process floor.

In 1994, BASF Windsor installed its first distributed control system; an INFI 90 system with Conductor VMS (OIS 42) workstations.

### The Solution

"Our INFI 90 system does everything we ask of it," said Jiri. "It has been robust and flexible. Our familiarity with the system has helped us to operate very efficiently. But as we looked at the age of the system, we knew we needed something that would continue to have minimum maintenance costs and delays. We knew it was time to investigate our upgrade options."



New System 800xA cabinet (left)  
next to INFI 90 cabinets (right).

In 2006, Jiri requested competitive bids from the top three qualifying suppliers, including ABB. After a comprehensive technical evaluation, ABB was awarded the contract and began the project to evolve BASF Windsor's Conductor VMS workstations to System 800xA.

This was done through utilization of 'System 800xA for Harmony.' This evolution solution combines the Harmony control environment with System 800xA extended functions including tags, faceplates, displays and all associated Aspects. It also enables BASF to extend their system to include System 800xA Process Portal, Asset Optimization and Information Management.

Reduced time to decision and action is achieved with 800xA Process Portal personalized workplaces. Information and workplace layouts are optimized to satisfy maintenance, engineering, management and operating personnel preferences and needs.



*“Achievement of my annual goal to provide and maintain high availability of our control system is not difficult. It can be done every year, when BASF works together with ABB.”*

*Jiri Prochazka  
I & E Engineer  
Process Automation  
BASF, Windsor Facility*

Information Manager raises the visibility of data from all functions in the control system - providing the information needed, *when* it's needed, to achieve a sustainable competitive advantage. It combines the MES/PIMS environment and functionality with the control environment, so that information from these systems is readily available for use by operators, engineers and managers. Information Manager can be integrated with commercial data analysis and business systems, providing real-time and historical data analysis. It enables manufacturers to map out a plan to achieve significant KPI (Key Performance Indicator) improvements.

By extending his Harmony system with System 800xA, Jiri provided the “one call does it all,” fully integrated solution needed to ensure quick, simple and cost-effective operation and maintenance of BASF Windsor’s control system.

### Project Requirements

ABB’s evolution plan to evolve the existing Conductor VMS workstations to System 800xA Process Portal allowed BASF to take advantage of modern technology to maintain their competitiveness in the marketplace. It also provided BASF with the ability to further enhance their system with ABB’s System 800xA historian and optimization capabilities.

It was also critical that the upgrade project not impact running production. BASF required the upgrade to be performed online.

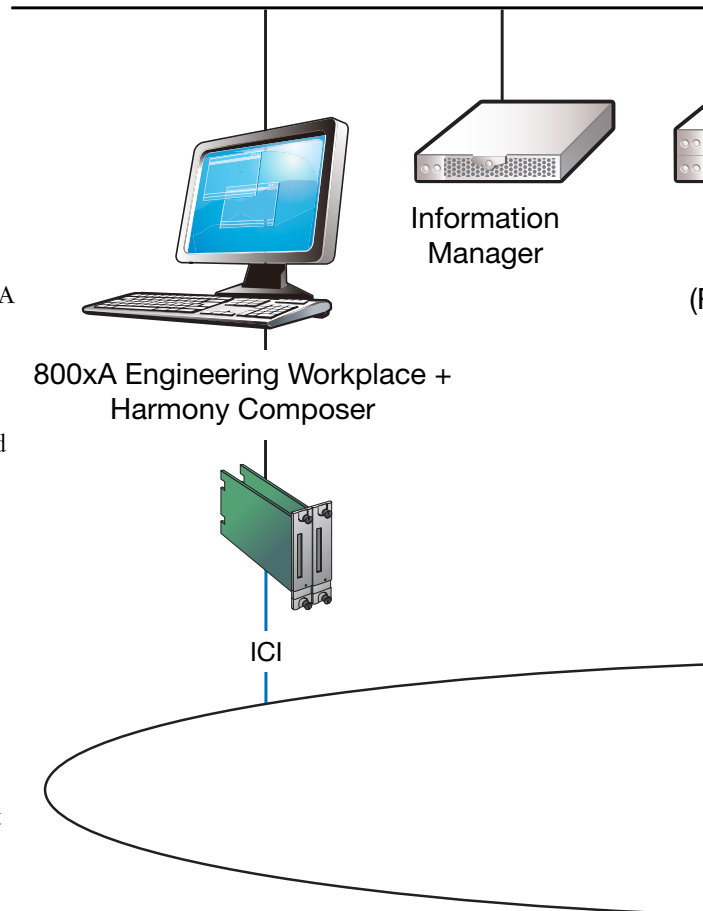
ABB successfully met these challenges with 800xA for Harmony and System 800xA Process Portal, providing needed functionality today and an evolutionary path forward for the future.

### Results

Installation of the System 800xA equipment began in 2007 and was completed in July of that year. BASF Windsor began introducing

operators to the new 800xA Process Portal workstations by first replacing one Conductor VMS console, then using the new workstation as a training platform, while keeping the rest of the VMS consoles running in parallel.

“This enabled us to test the new system, confirm that it was reliable and fully prove that we could control the process in an efficient manner,” said Jiri Prochazka. “In addition, this

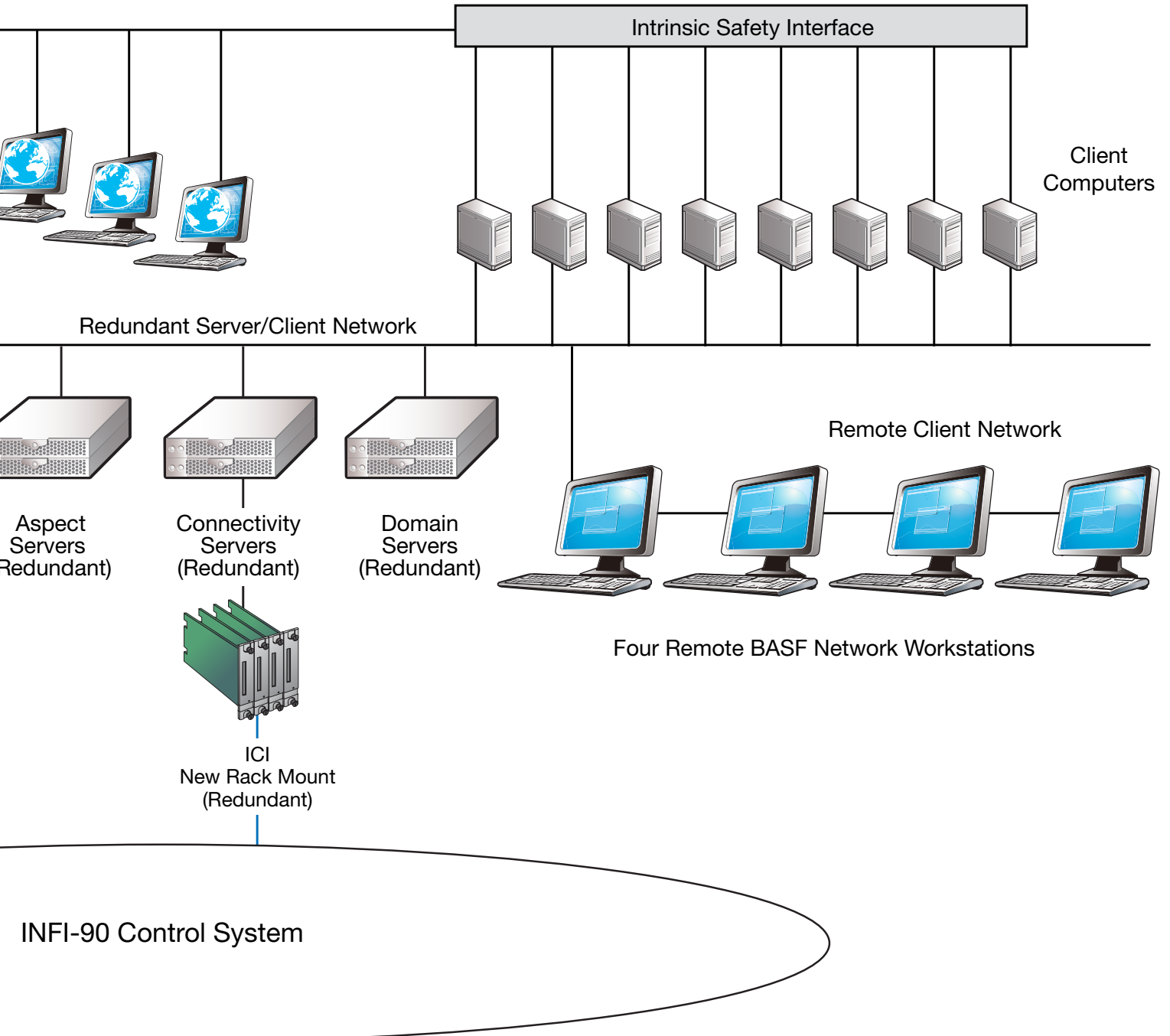


validation period allowed us to train all of our operators to become fully familiar with the new system environment before committing the whole process to System 800xA. We trained operators in small groups of four or five at a time. The training process went very quickly, and after ten to fifteen minutes, our operators

were ready to get to work with the new system.”

After training on the new Human Machine Interfaces (HMI's) and running both existing and new in parallel, it took another week to complete the upgrade of the remainder of the operator stations; at a rate of one day per

## System 800xA for Harmony/INFI-90



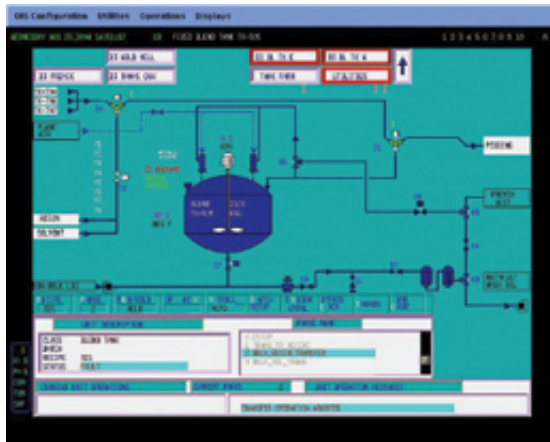
station. This work was all done on-line *under full production, without a plant shutdown.*

Mr. Prochazka again: “Now I have restful nights and fewer worries! In fact, I haven’t had a single late night, or any emergency phone calls since we evolved to System 800xA for Harmony – the system is always running. If there is a question or a problem, I make one phone call. Our system evolution to one control system supplier and the ability to upgrade our existing system to the latest

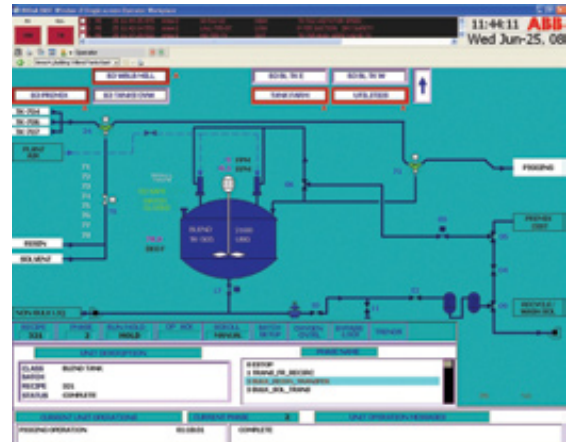
technology – while maintaining our control system integrity – is great. It saves BASF time and money with regard to maintenance. The system enables future expansion and flexibility. It helps us to be as productive as possible.

ABB’s general focus is on people and on the details. They can draw from a large group of people and large base of expertise to resolve any issues that may arise during a project. If one person doesn’t know the exact answer, they have a vast pool of knowledge to draw

Before



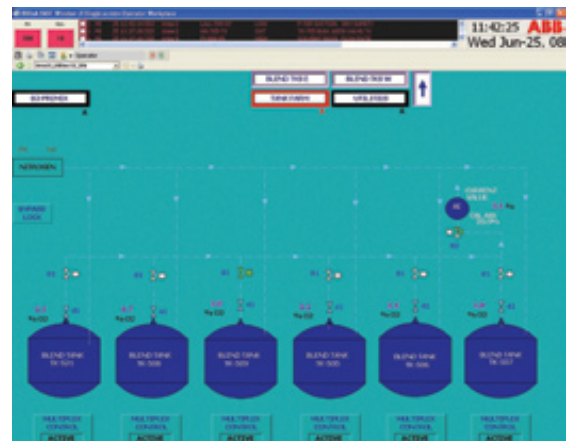
After



Before



After



BASF Windsor's approach to conversion of their old graphics was to maintain the original control philosophy, which minimized operator re-training while providing an extended operator environment.

from and the resources to address any issues we've faced."

## Conclusion

BASF is pleased with the results of this control system evolution project.

BASF has maximized and protected its original control system capital investment by upgrading its HMI's to new Windows-based technology while maintaining the original control structure, including I/O modules and field installation. ABB provided BASF Windsor with an evolution plan spanning several years. The plan has been followed thus far and is working very well in terms of system expandability, flexibility and reliability. The next step in the evolution process will be to upgrade and consolidate control processors. Mr. Prochazka again: "Achievement of my annual goal to provide and maintain high availability of our control system is not difficult. It can be done every year, when BASF works together with ABB."

For more information on how ABB can help you address your chemical and / or control system needs, visit us at: [www.abb.com/chemical](http://www.abb.com/chemical) or [www.abb.com/controlsystems](http://www.abb.com/controlsystems).

## WHY CHOOSE ABB?

- Protect current control system investment by adding System 800xA on top of your existing system – no expensive rip-and-replace tactics
- Open, (off-the-shelf) PC based platform means nothing is proprietary; ensures ease of maintenance
- Cost of maintenance is reduced – parts readily available. Minimum time lost
- 800xA for Harmony offers -
  - superior diagnostic capability and tuning functionality
  - ability to drill down into logic from the HMI
  - commonality with existing operating graphics and symbols - and more
- Add additional capabilities later (historian, optimization), as your budget allows
- Speedy ramp-up / training time – operation is simple, intuitive and user-friendly
- Make one call for quick, correct action
- Excellent response time and support from local ABB personnel



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Jiri Prochazka  
I & E Engineer  
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