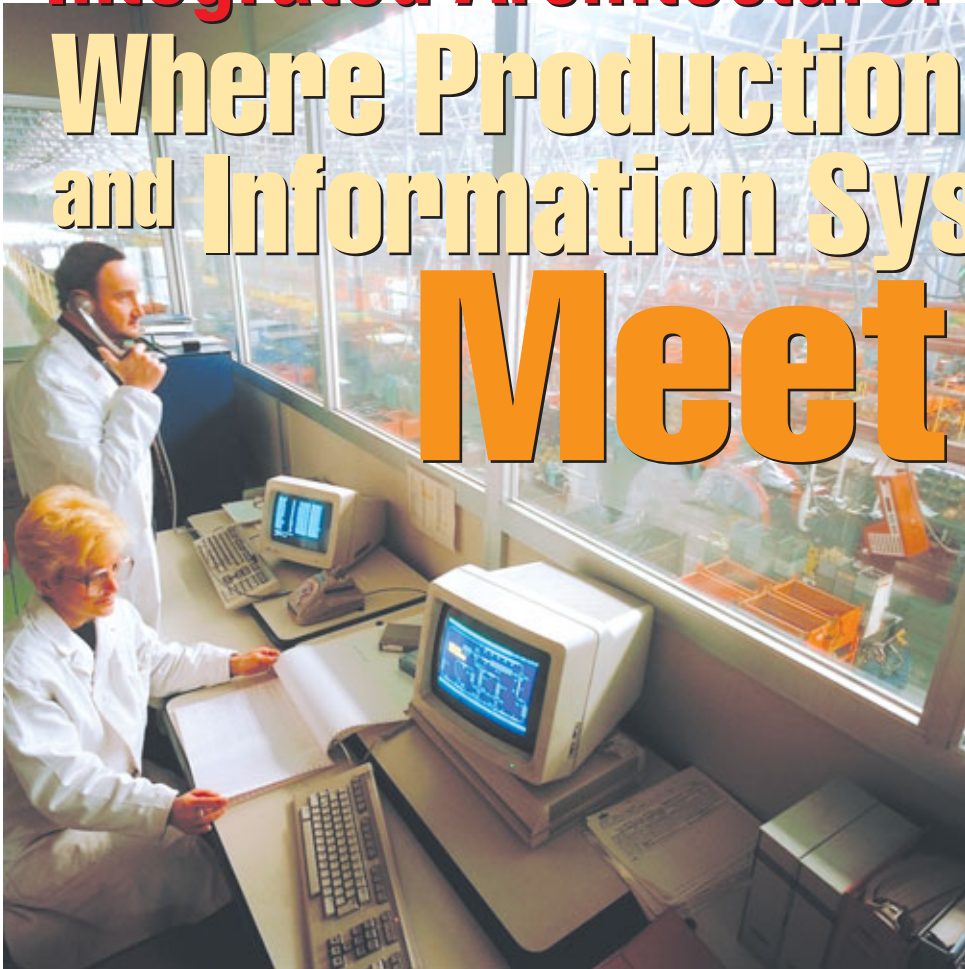


Integrated Architecture: Where Production Control and Information Systems Meet



The combination of the FactoryTalk application suite and the Logix control platform enables peak performance throughout the enterprise.

Real-time information exchange between manufacturing and the rest of the enterprise is critical for making informed business decisions, improving agility, increasing productivity, reducing costs and assuring regulatory compliance.

That is why savvy manufacturers are integrating their control and information systems. Tight integration between the two captures essential data that—when put into the proper format and into the appropriate hands—improves the overall manufacturing and business processes.

Integration of manufacturing information with the rest of the enterprise requires careful deployment

of the various core production and control disciplines as well as appropriate methods for enterprise application integration. Rockwell Automation has expanded its Integrated Architecture™ to address these requirements, enabling end users and OEMs to improve their profitability and gain the competitive edge.

A Dual, Powerful Platform

Rockwell Automation's expanded Integrated Architecture involves a two-pronged strategy: it combines the power of production control with information systems.

Jeff Sladeczek, business manager, Rockwell Software Asia Pacific,

explains that two key components now comprise Integrated Architecture. On the production control side is the Logix control platform, and on the information systems side is the FactoryTalk® integrated production and performance suite.

Rockwell Software unveiled its FactoryTalk strategy in the United States in October 2005. Since then, Rockwell Automation has methodically taken steps to enrich its production software suite, putting into place applications to create a common, multi-industry platform that supports multiple production disciplines. The company also is unifying appropriate software under a single brand—the FactoryTalk integrated production and performance suite.

One step Rockwell Automation has taken to support its new FactoryTalk initiative is to acquire technology that complements its own software. For example, in November 2005, the company purchased U.S.-based Datasweep, a leader in production management software. In May 2006, the company bought GEPA mbH, a European provider of change management software for industrial automation, process control and industrial information technology.

The Datasweep products add capabilities for manufacturing execution system (MES), quality assurance, corrective and preventive action, complaint-handling, business intelligence, returned merchandise authorisation and repair manufacturing

solutions. GEPA provides a change management program that schedules automation program backups from controllers and other industrial devices, documents change processes required for regulatory compliance and recovers data following a disaster.

The new offerings and Rockwell Automation's current production applications will run on top of the FactoryTalk service-oriented architecture (SOA), an extensible, standards-based data model and common set of shared services. Sladeczek says that FactoryTalk services enable a common address book of plant resources, centralised security authority for components in the system and enterprise-wide access to real-time information. They also enable comprehensive record of any changes made to the system and common software license management for all products.

"Having all applications run on the FactoryTalk SOA," notes Sladeczek, "simplifies a user's experience by eliminating the need to write and test the services multiple times for each application. This, in turn, results in less maintenance and a more consistent user interface."

Sladeczek adds, "FactoryTalk services' compatibility with other commercially available SOA applications, such as IBM WebSphere®, SAP NetWeaver® and Microsoft BizTalk®, improves plant-to-enterprise connectivity. What's more, this unified plant model integrates to Rockwell Automation and third-party controllers and networks, helping to further simplify the user's experience, and connect to many mixes of device and application assets within a manufacturing facility."

Production Power

The FactoryTalk integrated production and performance suite includes applications focusing on plant information needs such as human machine interface (HMI), supervisory control and data acquisition (SCADA), MES, asset management, control system connectivity, enterprise and plant systems integration, simulation modeling and programming

Making the Move to FactoryTalk Applications

The FactoryTalk® service-oriented architecture (SOA) is an extensible, standards-based data model and common set of shared services. To carry the FactoryTalk brand name, Rockwell Automation's existing software must support this architecture. Listed below are some applications that subscribe to FactoryTalk SOA—and the production disciplines under which you will find them.

Old Name	New Name/Edition	Production Discipline
RSBizWare™ Batch	FactoryTalk Batch	Production Management
RSBizWare Batch Historian™	FactoryTalk Historian	Data Management
RSBizWare Historian™	FactoryTalk Historian	Data Management
RSBizWare PlantMetrics™	FactoryTalk Metrics	Performance and Visibility
RSBizWare Scheduler™	FactoryTalk Scheduler	Production Management
RSOPC™ Gateway™	FactoryTalk Gateway	Data Management
RSSqI™	FactoryTalk Transaction Manager	Data Management
RSView® ME	FactoryTalk View/ME	Performance and Visibility
RSView SE	FactoryTalk View/SE	Performance and Visibility
RSView Studio™	FactoryTalk View/Studio	Performance and Visibility
RSAssetSecurity™	FactoryTalk Security	Asset Management

EE: Enterprise Edition

SE: Site Edition

ME: Machine Edition

Studio: Authoring Edition

environments. These applications are classified under the following disciplines:



Design and Configuration:

Provides integrated software environments for creating, modeling and programming production processes. This integrated approach streamlines the overall planning, development and deployment processes, resulting in faster, lower-cost implementations.



Production Management:

Addresses order scheduling, sequencing and execution, tracking and genealogy, and interactive manufacturing process control. By synchronising actionable, real-time information across manufacturing methods, materials, manpower and machines, companies can improve coordination of various production processes spanning multiple sites.



Data Management:

Provides tools and methods for collecting, transforming and integrating production information. Tools organise, synchronise, archive and aggregate data collected by automated or manual systems.



Quality and Compliance:

Helps companies adhere to established standards and specifications throughout the execution of operational processes and procedures. An automated, proactive environment improves first-pass quality and product consistency, and simplifies the regulatory reporting process.



Asset Management:

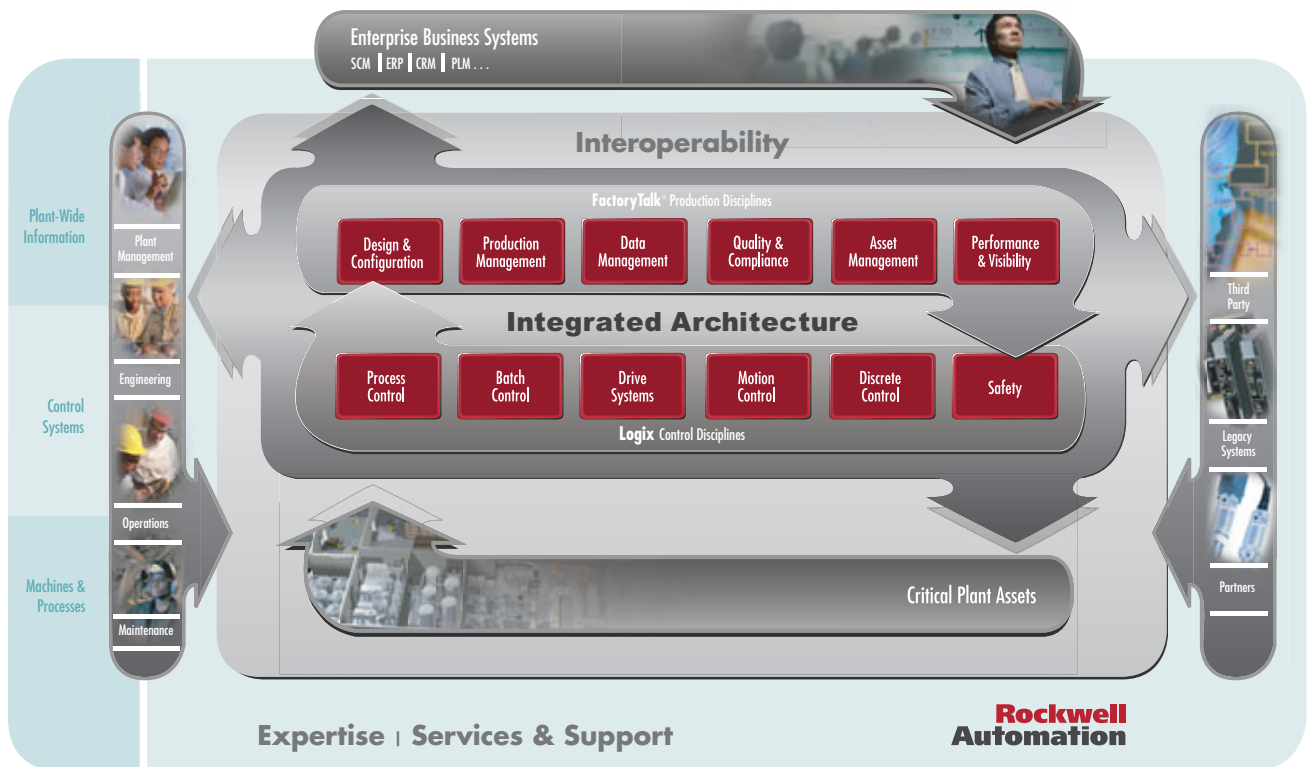
Creates a foundation for optimising maintenance and plant operations through risk mitigation procedures across discrete, drives and process applications. This includes comprehensive diagnostics, calibration and real-time monitoring as well as auditing equipment and network health to improve overall resource availability.



Performance and Visibility:

Provides a window into the process to enable better decision-making. Reporting and analysis tools, operator interfaces and dashboards deliver contextual, localised, role-based information for better decision-making.

Moving forward, Rockwell Automation will reclassify existing applications under these disciplines once the



Copyright © 2006 Rockwell Automation, Inc. All Rights Reserved.

software adheres to certain elements of the SOA. In some instances, the software will cross multiple disciplines (See *Making the Move to FactoryTalk Applications* to learn the new names of familiar Rockwell Automation® software.)

On the Plant Floor

With its FactoryTalk strategy in place, Rockwell Automation has recently launched several products—FactoryTalk ProductionCentre, FactoryTalk Integrator and FactoryTalk Portal.

FactoryTalk ProductionCentre leverages the technology acquired from Datasweep to improve process visibility, backward and forward product traceability and quality assurance across multiple industries. In addition to a set of standard applications, the integrated solution set consists of reporting and analysis, configuration, integration and data-management tools.

This software suite, under the Production Management discipline, sits at the MES level, between the Enterprise Resource Planning (ERP) and factory-floor information systems. Because of its robust capabilities, the suite can cross various disciplines.

FactoryTalk Integrator allows manufacturers to more easily connect their plant-floor applications with higher-level business systems for more

responsive and informed decision-making. It allows plant systems to transmit data and exchange transactions with virtually any other system by supporting open industry communications—such as XML, COM and J2EE—and linkages to commonly used ERP applications like SAP, Oracle and PeopleSoft.

FactoryTalk Portal is a Web-based framework for building highly scalable portals. It is designed to improve employee productivity through personalised and collaborative access to information, applications and people. It consolidates the MES reporting space into an enterprise-level portal that

Why Choose Integrated Architecture?

Individually, an information-enabled control architecture and an automation-enabled suite of plant-wide information software bring significant benefits to any manufacturing organisation. But premier integration between the two—as evident in the Logix control platform and the FactoryTalk® integrated production and performance suite, components of Rockwell Automation's Integrated Architecture™—delivers a host of additional benefits:

- **Scope of Delivery:** The Logix control platform offers the capability to execute discrete, batch, process, motion and safety control from a common platform. The FactoryTalk production disciplines bring visualisation, design, configuration and management of performance, production quality and assets from within a single FactoryTalk service-oriented architecture to reduce startup and training costs, and facilitate more efficient exchange of information.

- **Scalability/Modularity:** The Logix control platform is available through a range of controller offerings designed to match individual application needs. FactoryTalk software can be implemented as embedded, stand-alone, plant-wide or multisite solutions. This allows customers to implement precisely the right configuration for their unique needs with flexibility to easily expand.

- **Real-Time Information:** The Logix control platform and FactoryTalk suite feature premier integration as well as connectivity to legacy and third-party systems. This helps provide low-cost integration and a more efficient flow of real-time information.

- **Faster ROI:** A modular approach, coupled with an improved ability to take action on factory-floor analysis, eliminates risk and leads to a significantly faster return on investment.

Talk of the Town

Rockwell Software FactoryTalk® integrated production and performance suite has won “Technology of the Year—Integrating Factory Data” in *IndustryWeek* magazine’s Technology and Innovation Awards Program.

The program, which began in 1993, celebrates the primary drivers of the world’s economic progress—innovators and technologies. Awards are given in the spirit of Josef Schumpeter, the distinguished, U.S.-based Harvard economist and social theorist who posited more than 50 years ago that the mission of both organisations and societies should be to accelerate the pace of innovation.

Rockwell Automation has adapted for the manufacturing environment.

Sladeczek explains that FactoryTalk Portal provides access to performance metrics and the display of manufacturing information at the machine, line, plant and enterprise levels. Simple content management features let users manage portal pages and the portlets on those pages, eliminating the need for programming. Reporting and analysis tools, operator interfaces and management dashboards deliver contextual, localised, role-based information for better decision-making.

Over the next several months, Rockwell Automation will roll out even more products to help manufacturers build successful plant-wide information applications and MESs using the FactoryTalk integrated production and performance suite.

The Control Connection

While the FactoryTalk suite focuses on customers’ information needs, the Logix control platform focuses on control system needs. It addresses a range of control applications while providing information integration with the rest of the enterprise.

The Logix control platform is multidisciplined, scalable and information-enabled, says Sladeczek. It is multidisciplined in that it provides solutions for discrete, motion, process control, drive control, safety and information using a single platform. “Unlike competing control platforms,” says Sladeczek, “control disciplines are fully integrated throughout the controller family using a single programming and configuration software package.”

The Logix control platform is scalable in that it is available in a range of control, network and visualisation functionalities and sizes tailored to meet the needs of the application. And, it is information-enabled in that it can be easily integrated with information systems.

The combination of the Logix control platform and the FactoryTalk integrated performance and production suite differentiates Rockwell Automation from other competitors. “Our controllers,” says Sladeczek, “will be information-enabled, allowing for premier integration of traditional MES functions at the controller level. Our controllers can

now provide capabilities above and beyond what traditional controllers can offer. The extra functionality will put intelligence closer to where the action is.”

Sladeczek concludes, “The Integrated Architecture provides fully integrated, scalable solutions for the full range of control and information disciplines, providing manufacturers with the insight and performance to optimise production, respond more quickly to customer or market demands, and reduce costs. The Integrated Architecture provides our customers a competitive advantage by creating actionable information at the closest source to manufacturing production. Speed and agility to make an informed decision related to productivity is what gives ‘best-in-class’ manufacturers the competitive edge in this evolving global economy.” **AT**

o n t h e w e b

For more information on Integrated Architecture Tools, visit:

www.rockwellautomation.com/solutions/integratedarchitecture

Going with Integrated Architecture

U.S.-based Engauge Controls, Milwaukee, Wisconsin, is a leading designer and builder of control systems for robotic gantries. As an OEM, it has firsthand knowledge of how implementing Rockwell Automation’s Integrated Architecture™ has helped to simplify programming and configuration, reduce development costs and speed system installation.

On its latest gantry units, Engauge relied on Allen-Bradley® ControlLogix® controllers with integrated motion control and FactoryTalk® View human-machine interface (HMI) software. “The Allen-Bradley controls have helped increase our design speed and improve our profitability,” says James Britnell, president, Engauge Controls.

The company’s previous control platform consisted of PC-based computer-numerical control (CNC) running on proprietary software. The sequential-based logic inherent in this type of system offered little flexibility in the execution of required tasks. In addition, the customised programming was overly complex for the control functions.

With the ControlLogix controllers, the company was able to consolidate two programming packages, helping to reduce programming time by 50 percent while substantially cutting time to market.

“With all motion parameters now stored in the ControlLogix controllers, configuration information is automatically communicated to the drives at startup,” explains Britnell. “When operators restart the system, the machine automatically picks up right where it left off, resulting in significant time savings for the end user.”

Engauge’s new gantry units also feature FactoryTalk View Machine Edition HMI software and SERCOS interface fibre-optic communication. System programming is accomplished using Rockwell Software® RSLogix™ 5000 software.