Welcome…

The ILS Technology team has been delivering both software product offerings and system wide integrated solutions for over twenty years. Our roots date back to the original deployment of personal computing technology into production floor applications and spans the application space into large scale Unix cluster multiprocessing solutions. Our focus has always remained the same… delivering tangible value to our customers by providing connectivity and collaboration solutions that address a critical business need and exhibit a direct return on investment. Our new Linux based workstation, server, and embedded product offerings address the key business need of physical device interfacing. These exciting new products are leading the way in enabling direct integration of Linux at the data source within the manufacturing production operations domain. Should you have a business need that requires integrating controls, devices, actuation and sensory interfaces into your Linux based solutions infrastructure, be sure to contact ILS Technology. Put our software development experience and domain expertise to work for you.

Here is a brief introduction to the ILS Technology family of Linux based products…

The jDevice product offering provides a powerful development platform for Java and C/C++ programmers to rapidly interface to production devices and controls equipment across every major operating system platform.

The mqPCX product offering provides integrated production control extensions directly into IBM WebSphereMQ based messaging environments supporting user configurable XML formatted command and response data and supporting a number of production devices and controls equipment across every major operating system platform.

The Automation Connection product offering provides a complete integrated development environment optimized for creating, deploying and maintaining multiplatform production operations oriented applications and solutions. A true visual development environment allows the user to develop and debug both applications logic and user interfaces using a fully graphical tool set.

The eCentre product offering provides a state-of-the-art secure collaboration environment to support the ever growing need for remote access and advanced e-diagnostics activities required in maintaining complex and expensive mission critical capital equipment and process tooling across a wide variety of production, fabrication, and process domains.

Solutions for Manufacturing Intelligence and Secure Collaboration

www.ilstechnology.com
info@ilstechnology.com
561-982-9898

XCoupler Press Release

Company Contact:
Bill Ramus
ILS Technology
Phone: (802) 985-5400
E-mail: bramus@ilstechnology.com

Editorial Contact:
Trine Pierik
Positio
Phone: (408) 453-2400
Email: trine@positiopr.com

ILS Technology Unveils xCoupler Technology: Opens Direct Path from Real-Time Manufacturing Data into Enterprise Applications

Boca Raton, Fla.–June 24, 2004–Today, ILS Technology LLC, a subsidiary of Park-Ohio Holding Corp. (Nasdaq:PKOH), introduced xCoupler, a new turnkey solution that enables industrial manufacturers to connect logic controllers on the factory floor directly into the company's message queuing or database systems. This product is designed to replace the existing but more expensive and problematic use of personal computers (PCs) put in place just to handle logic controller device drivers and the resulting data manipulation to multiple systems in an enterprise. It also is immediately applicable in automated factories where logic controller data is re-keyed between the factory floor and enterprise databases, resulting in costly delays and often incorrect data when routing crucial factory data.

"Where factories are using standard Windows based PCs and device drivers to make their data connections from the factory floor into enterprises systems, xCoupler eliminates the headaches and expenses associated with maintaining a PC-based communications connection, eliminating the need for production engineers to maintain PC drivers," said Joe Cestari, president of ILS Technology. The PC approach, which is often accessible across a manufacturer's network, is susceptible to Windows viruses and security issues; in addition, a PC-based gateway is lost when these systems are down. "We anticipate that xCoupler will help factories reduce their IT and production control systems infrastructure by $15,000 to $50,000 per logic controller connection," he said.

The initial application of xCoupler is for the Allen-Bradley line of Control Logix™ programmable logic controllers (PLCs) being used in the manufacturing industry, but xCoupler technology is broadly applicable to any industrial application using logic controllers. "We intend to propagate the xCoupler solution across many industrial markets using logic controllers," said Cestari. "Beyond our initial application, xCoupler is a general purpose solution applicable to any application where you need logic

controller-based information flowing up into the business and engineering enterprise. (Logic controllers, which are ubiquitous in industrial manufacturing applications, are locally programmed rack mounted "boxes" that use machine output to generate machine control and other manufacturing data. As a point of reference, one logic controller manufacturer has over 1.5 million of just two of its models installed across industrial applications.)

Simply described, xCoupler puts the needed computer and logic controller driver code into a rack-mountable module that plugs directly into the logic controller racks on the factory floor. xCoupler is built on a highly reliable, low maintenance platform capable of 24/7/365 operation, being provided by Online Development Inc. (OLDI) of Knoxville, Tenn.

There are two components to xCoupler:

- WorkBench, a Java based tool that runs across Windows, Unix or MacOS platforms, is used to configure the module by emulating the specific logic controller and then enabling production engineers to link (via drag and drop) the logic controller "tag data" to enterprise queuing and databases systems. Workbench provides diagnostics, transaction definitions, status and transaction monitoring, and, most importantly, a security infrastructure used to control setup rights and access to the manufacturing data.

- The rack mountable xCoupler module with embedded software provides the direct path between logic controllers in manufacturing and the data they provide to business and engineering applications. xCoupler is open architecture with direct interface support for web services (XML/SOAP) and JMS. ILS Technology offers two different xCoupler modules. 1) xCoupler MQLink links LOGIC CONTROLLER data to IBM WebSphere MQ and Microsoft Message Queuing (MSMQ), the two most common data queuing systems used between applications in industrial situations. 2) xCoupler DBLink links logic controllers to relational databases, including Oracle, IBM DB2, Microsoft SQL Server, SyBase, MySQL, and MaxDB.

"Compared to applications using PCs, the module level is straightforward for plant engineers and maintenance to work with because they are already using this form factor to look from the logic controllers into the factory's machines for the analog and discrete signals they need for logic controller-based control," commented John Keever, senior vice president and CTO at ILS Technology. "Now they can add a rack module to send the logic controller data upstream into any or all of the manufacturer's databases throughout the enterprise, simultaneously. xCoupler lets the factory floor put logic controller

'tag' data right into the IT queuing or database systems." ("Tag data" is the internal structure of logic controller information typically consisting of a name, descriptor, setpoint and actual value.)

"The bottom line is that xCoupler provides an effective pipeline for data coming directly off the factory floor into enterprise systems," said Cestari. "Increasingly, operations managers are demanding this kind of information so they can make e-business decisions about orders, manufacturing and distribution based on near real-time manufacturing data."

The ILS Technology xCoupler is the first product to come out of the previously announced technical-development, marketing and sales agreement with OLDI. The agreement brought together complementary expertise in ILS Technology's control software and OLDI's control hardware solutions for manufacturing-floor-to-enterprise connectivity. Further development work between ILS Technology and OLDI will include controllers for other major suppliers of logic controllers. ILS Technology also plans to extend xCoupler technology to other industrial components.

About ILS Technology

ILS Technology LLC, a subsidiary of Park-Ohio Holding Corp. (Nasdaq:PKOH), is a highly specialized software development organization that develops and installs applications and software tools to help semiconductor manufacturers of devices and equipment and automotive manufacturers to achieve greater production efficiencies through the use of technology. Its solutions for real-time manufacturing intelligence help its customers extract the information they need from production operations to make informed decisions and reduce the costs of manufacturing. ILS Technology solutions are computer system independent - capable of running across multiple operating system platforms to fit any chosen information technology environment, whether it is Linux, Unix, Windows, AIX, Solaris, WinCE or PalmOS. Its software solutions, eCentre™ and xCoupler™, are being used in e-manufacturing applications in both the semiconductor and automotive industries as well as other turnkey embedded industrial applications.

# # #

Automation Connection Brochure

Software tools for production productivity

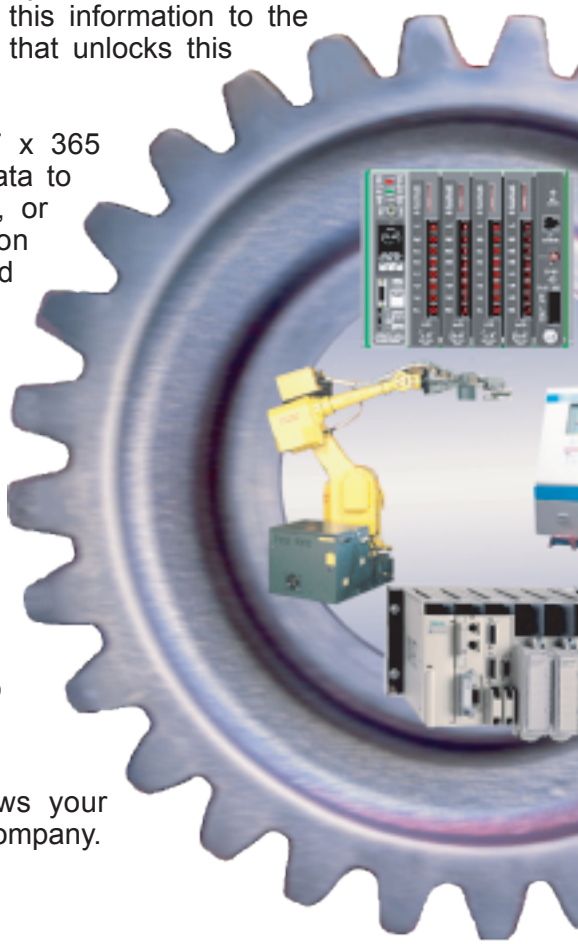
Automation Connection

"The integrated development environment you need for production solutions"

Increase the bottom line. That's what business is all about. If you are a manufacturing company, you might be making critical decisions every day based on old information. What if you could make decisions using real time production information? What is the value of knowing what you produced during the last shift, how much material was used in the last hour, which machines are currently down, and the cost of today's scrap? Could you positively impact that bottom line? We know you can!

Overview

Valuable information is locked away on your plant floor. Production counts, material consumption, work in progress, and machine utilization are updated frequently by controllers and other devices in your plant. A major problem is that there is no way to get this information to the enterprise business systems or the decision makers. The key that unlocks this wealth of information is ILS Technology's Automation Connection.



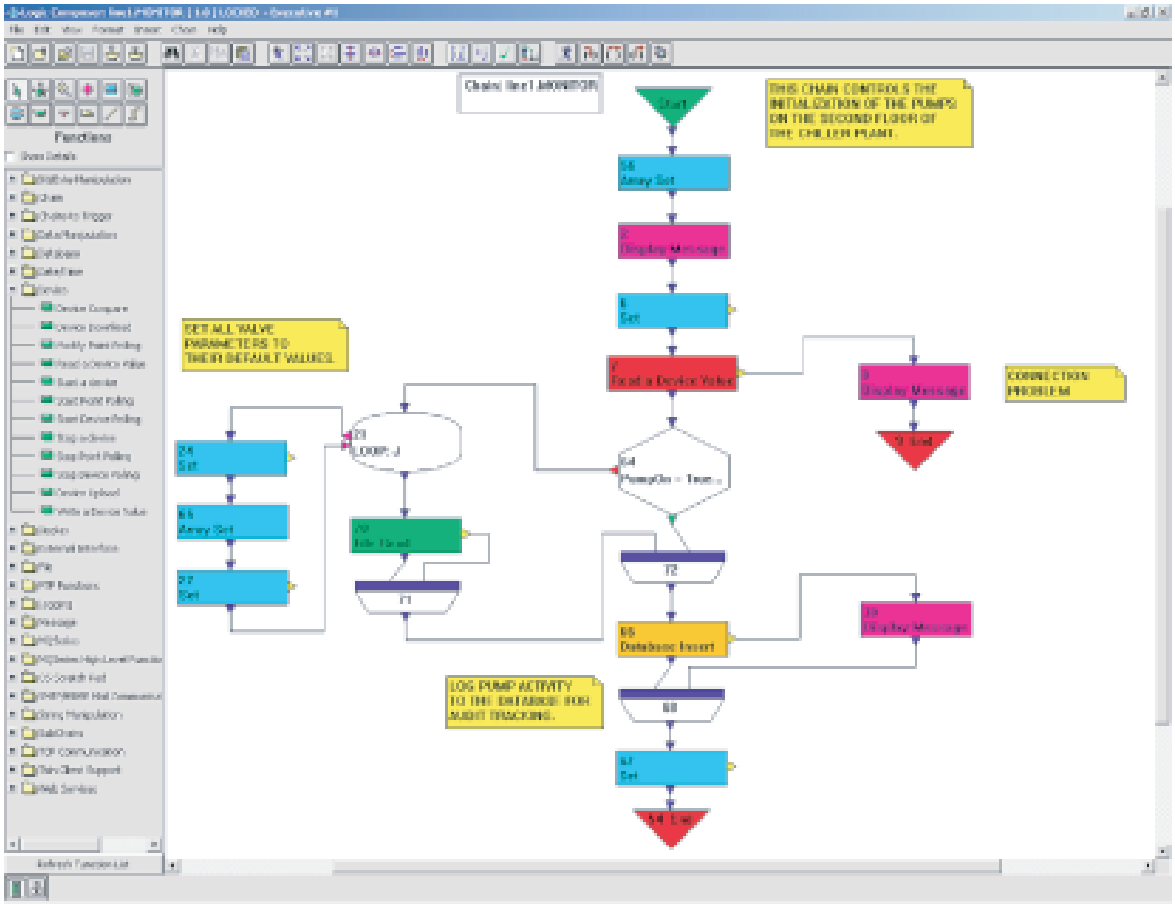
Whether it is a mission critical application requiring 24 x 7 x 365 availability, or a data collection application obtaining as-built data to address product liability issues, warranty claims containment, or effective scheduling of production equipment, Automation Connection is the answer. Offering integrated component-based software, Automation Connection bridges the gap between production data and business intelligence with these features:

- A device server provides device connectivity to collect plant floor data
- A logic composer allows you to develop application logic in a rapid, intuitive manner
- A logic engine allows you to convert the data into usable information
- A native Web-based graphical interface allows you to view the process over an intranet or internet
- An object server enables delivery of the information to enterprise applications and databases

Automation Connection is the information pipeline that allows your decision makers to convert production data into dollars for your company.

Product Highlights

Automation Connection is a suite of advanced application development tools for developing and deploying production execution systems. Designed for a variety of industries, including automotive, semiconductor, and discrete manufacturing, Automation Connection provides companies the ability to integrate plant tools and devices into the enterprise business processes. Automation Connection supports multiple platforms including Windows, Sun Solaris, IBM AIX, and Linux. For example, an application might be developed on Windows and simply exported for deployment on AIX, Linux, or Solaris. The distributed design of Automation Connection allows applications to execute on local computers and share information across many workstations throughout the network, the intranet, and the Internet.



Product Features

Logic Composer

The intuitive Logic Composer enables engineers to quickly develop application code by drawing flowcharts, thereby minimizing the need to program in a low-level or procedural language. Significant development cost savings are realized with this approach. In addition, application deployment costs and maintenance costs are greatly reduced.

Object Composer

A tool to easily define other application objects, such as devices, device data points, global data variables, and user roles and authorities.

Display Composer

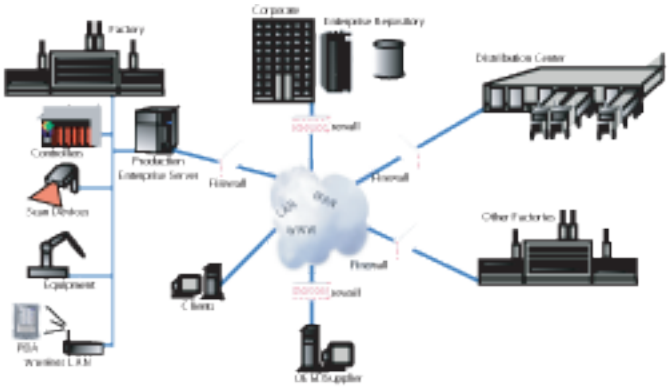
A run time display component used to create application screens that can be viewed with a standard Internet browser or as a stand-alone Java application.

Alarm Composer

A tool to define alarms representing exception conditions on the plant floor.

Library of Predefined Functions

With over 130 predefined functions, application development time is reduced since most common programming tasks are built in, such as reading/writing devices, database access, and middleware messaging.



Web Services
This emerging technology enables two-way communication using Web protocols and open standards such as SOAP, WSDL, and XML messaging. You can access external Web services from within your application, as well as respond to Web service requests from other external applications.

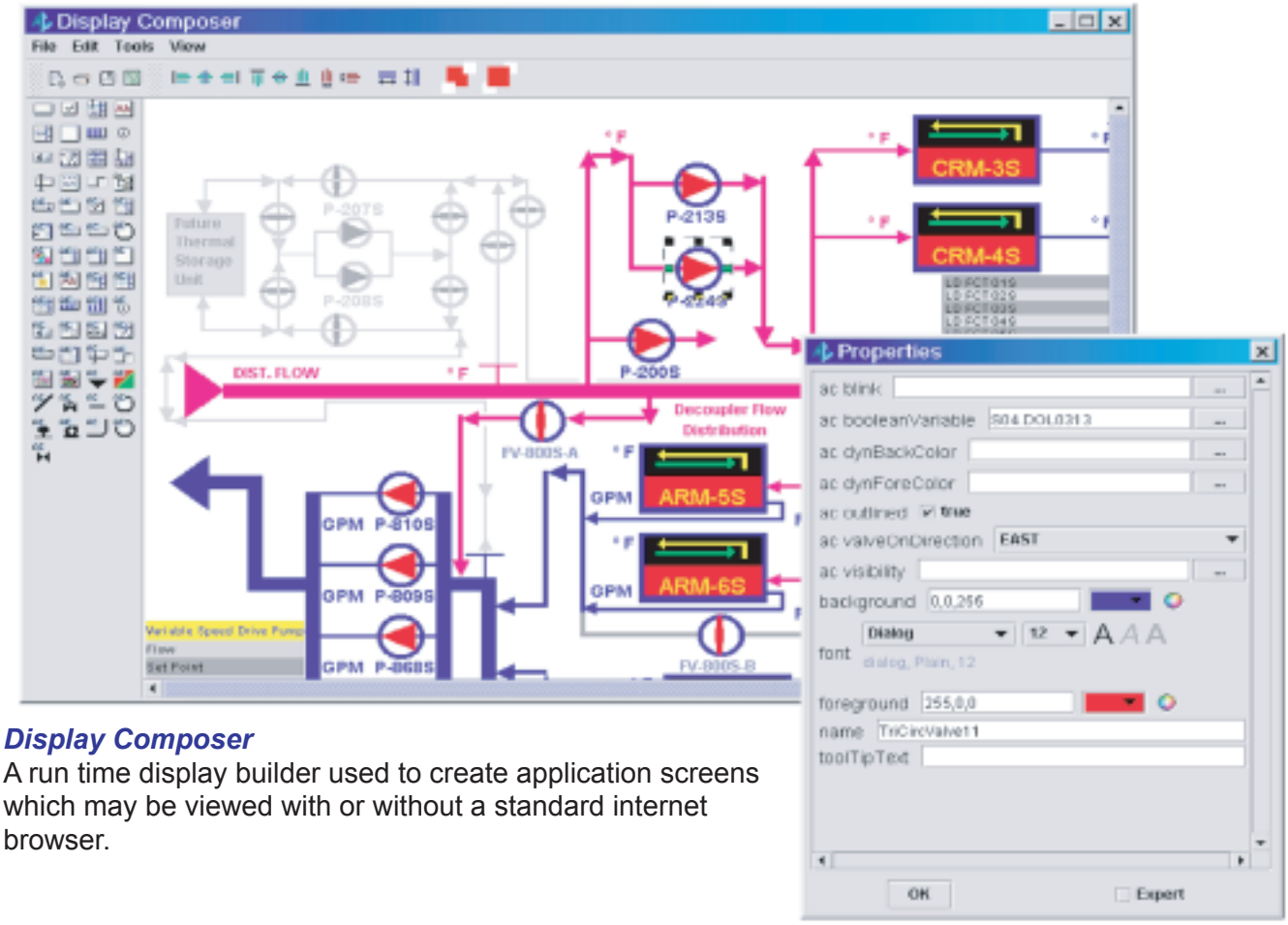
Updates on-the-fly
Without stopping runtime operations, users have the ability to start and stop a device, create and install a chain, update or delete a variable, and more.

Version-level Control
This feature provides the ability to maintain multiple copies of the same device, chain, subchain, and display by applying different version identifiers.

Run Time Components
A set of run time tools is provided to manage application logic, devices, data, and alarms. Other tools enable administration of the system, as well as viewing system logs.

Device Drivers
A library of device drivers enable communications with most production floor devices.

Unlimited Extensions
Users can extend an application to interface with other systems using supplied C/C++ language transactions and Java class libraries. In addition, a library of pre-defined application logic can be customized by writing new function and then installing the function into the library.



Display Composer
A run time display builder used to create application screens which may be viewed with or without a standard internet browser.

Customer Solution Briefs

Automotive factory as-built data collection

A large auto manufacturer is using Automation Connection to collect as-built data from their engine assembly lines. The as-built data is transmitted from production floor controllers and other automated machinery (robots, conveyors, presses, torque guns, and so forth). This data is collected and processed real time to meet critical cycle time constraints and then converted into useful information that guides the overall path an engine might take along the assembly line. More importantly, the engine data is persisted using IBM WebSphere MQ for later insertion into an IBM DB2 data warehouse to support engine quality and defect containment programs, as well as addressing warranty issues. In this plant, Automation Connection is deployed on a multi-user symmetric multi-processing IBM AIX-based system where data is continuously collected from over 50 logic controllers representing over 5,000 data points per engine

Plant monitoring

A manufacturer of specialized wire and cable uses Automation Connection to monitor, control, and record fluid pressures, temperatures, and yields of their superconductor manufacturing process. Due to the mission-critical nature of this process, support engineers are able to log on to the system from home and view the system status through their Web browser. They can also give online direction to maintenance personnel. For this manufacturer, Automation Connection is deployed on an unattended, low-end UNIX-based system where data is continuously collected from the process systems and published through a Web browser interface to both local and remote user groups.

Semiconductor embedded tool control

A leading semiconductor tool manufacturer has embedded Automation Connection into their tool controller to provide supervisory control of the system. This approach provides a higher level of control of the system and better graphical feedback to the users than was possible with their original custom controllers. Automation Connection allows their customers to coordinate different portions of the system such as the input conveyor, the pick and place robot, and the semiconductor process chambers. In addition to basic control and feedback, the ease of Automation Connection configurations allows the end customers to request additional in-situ monitoring of the wafer production process. For this manufacturer, Automation Connection is deployed on an unattended Windows-based system where data is collected at high speeds from within the semiconductor tool using numerous device protocols and interfaces.

Services and Technical Support

A partnership is a critical association of two or more persons or organizations who share a common vision and are focused on a common goal. At ILS Technology, we recognize that an ineffective partnership is much worse than no partnership at all. Creating a solid business partnership is hard work, but if you choose partners who complement your strengths, your business is sure to benefit. We understand that the work does not end when the customer project is complete. More often than not, that is just the beginning. ILS Technology is serious about selecting business partners who share our technology vision and commitment to customer success.

Contact us at:
www.ilstechnology.com
ILS Technology LLC
info@ilstechnology.com
561-982-9898

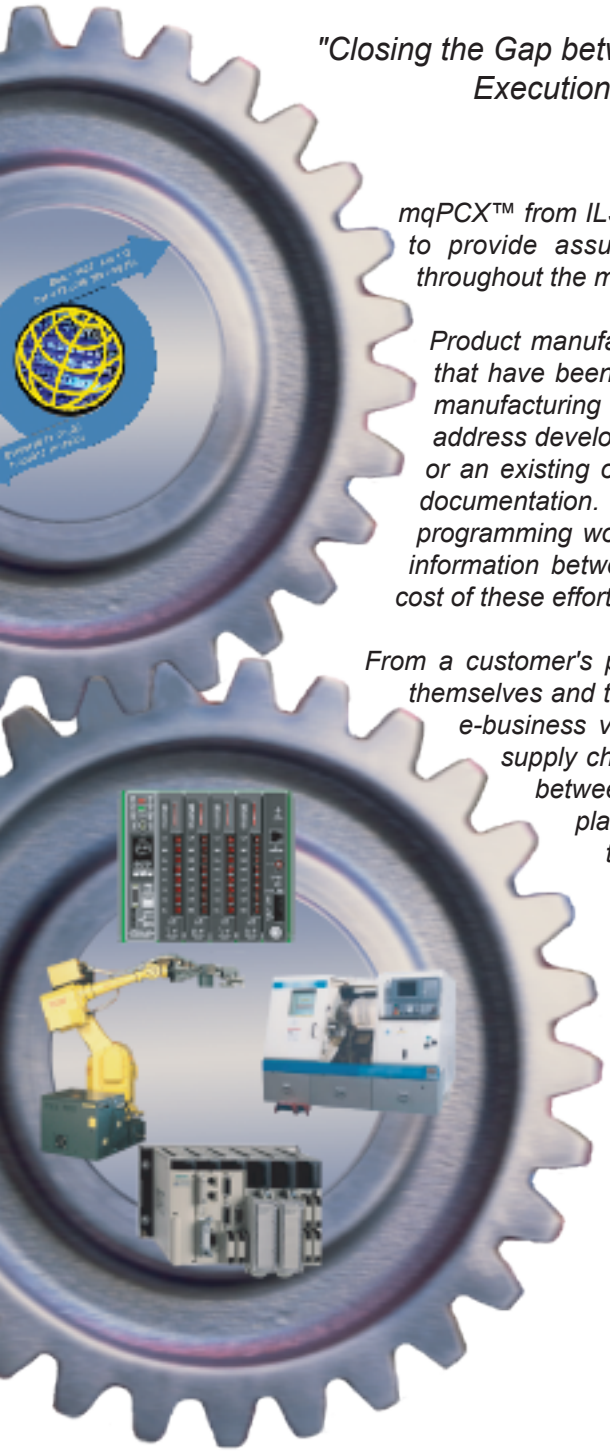
ILS Technology

mqPCX Brochure

Software tools for production productivity

Process Control eXtensions

for IBM Websphere MQ
(MQ Series)

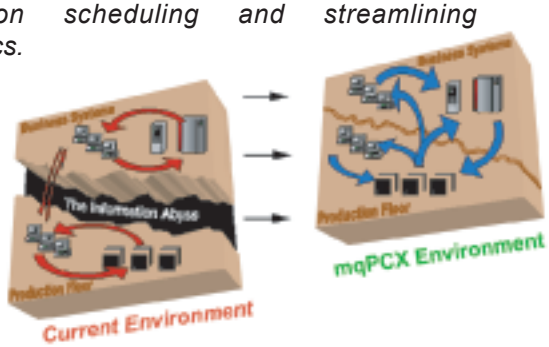


"Closing the Gap between Production Execution and Information Management Systems..."

mqPCX™ from ILS Technology extends the IBM WebSphere™ MQ messaging environment to provide assured, asynchronous delivery of process control and production data throughout the manufacturing enterprise.

Product manufacturers are often entangled in a web of custom, point-to-point interfaces that have been incrementally developed and extended over time to meet ever changing manufacturing requirements. As a result, a large amount of effort is often required to address development changes. Interfaces must be modified if a new application is added or an existing one enhanced. This is often further complicated by inaccurate or missing documentation. As a point of reference, the Gartner Group reports that 35% to 40% of all programming work is devoted to developing and maintaining applications to simply move information between systems. In addition, according to a Forrester Research study, the cost of these efforts can account for up to 30% of all information technology spending.

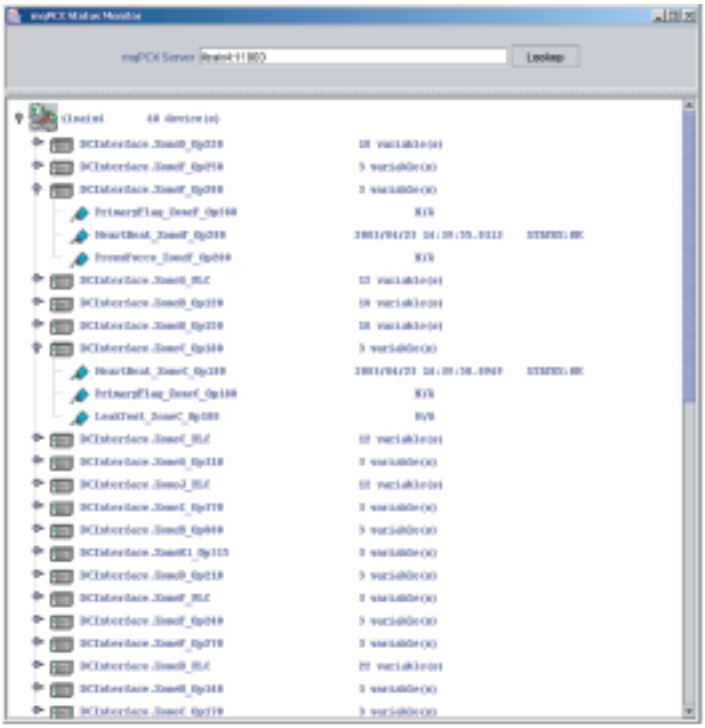
From a customer's perspective, the value of e-business is to shorten the distance between themselves and the product manufacturer. From a product manufacturer's perspective, the e-business value statement lies in their ability to establish real-time exchanges with supply chain partners and end customers alike. As a result, the tighter the linkage between the manufacturer's business systems and the production signals on the plant floor, the more accurate the information. The more accurate and timely the information, the more quickly the business can react to production and market fluctuations. Timely and accurate information is critical when removing cost from the supply chain, lowering inventories, supporting accurate production scheduling and streamlining intercompany logistics.



mqPCX eliminates "The Information Abyss"...

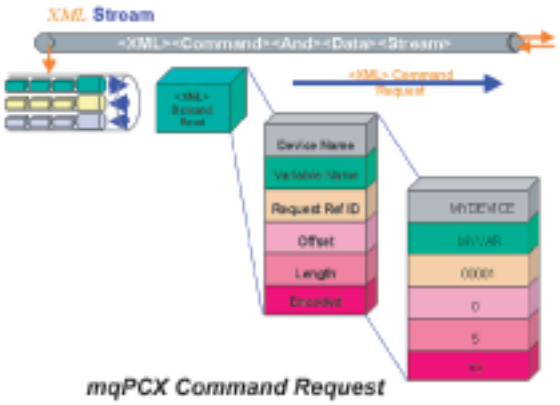
3/2004

Manufacturing systems often rely on programmable logic controllers and assorted intelligent devices to support the production process. The issue of maintaining the correct level of application logic in these devices is critical when controlling scrap and minimizing parts rework. Version control is a key concept in solving this problem.



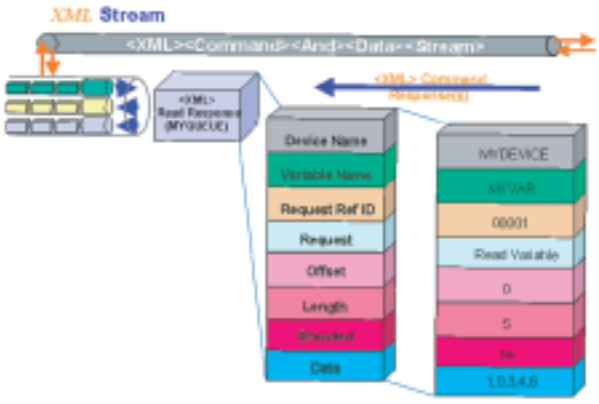
mqPCX for IBM WebSphere MQ provides an ideal solution to these problems by providing an information pipeline between production and business systems. mqPCX utilizes WebSphere MQ middleware (formerly IBM MQ Series) and XML message standards. By using XML messages, mqPCX insulates information system providers from having to continuously change complex, customized interfaces between the production floor and business systems.

mqPCX allows you to extend your current plant floor data to MES, ERP, and legacy information systems in a coexistent manner without interfering with your current plant floor HMI/SCADA systems. Using IBM WebSphere MQ, mqPCX provides a bidirectional, transaction oriented data channel between plant floor and business systems on any WebSphere MQ supported platform (Windows, IBM AIX, Sun Solaris, HP-UX, IBM OS/390, IBM OS/400, and Linux). mqPCX presents production floor information in standard XML messages which can be directly delivered to your current installed business systems and browser technologies.



mqPCX Command Request

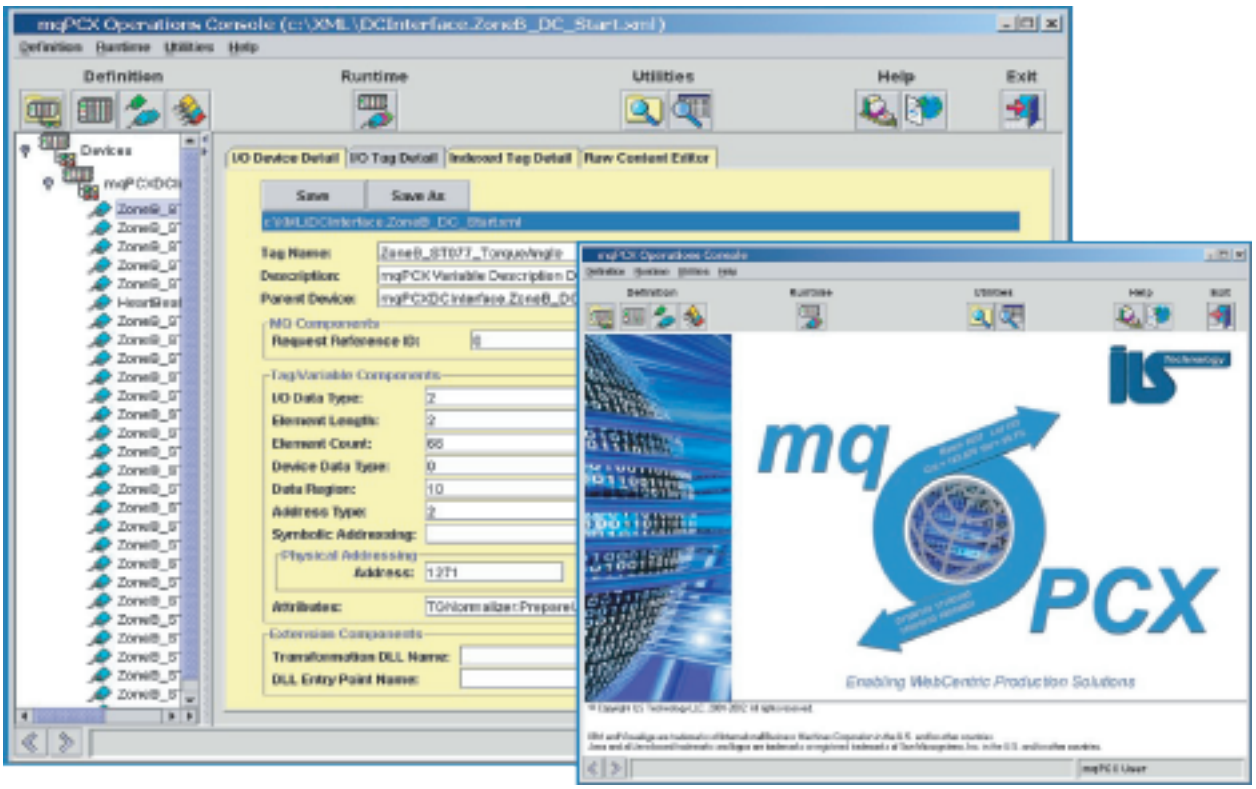
Existing HMI/SCADA systems use PC based systems to collect raw data and store it into a database to support periodic reporting and decision making. This information is the responsibility of the plant floor IT specialists who are typically focused on providing process visualization to operators for machine operation. Business related information access is most often an afterthought. Typically, the IT specialist implementing an HMI/SCADA solution summarizes production data into a database for uploading to the business systems. It is not uncommon for this data to be transferred as files in batch mode. mqPCX provides a direct, coexistent, real-time, bidirectional linkage between the plant-floor execution devices, controls and enterprise business systems.



mqPCX Command Response

mqPCX Benefits and Advantages:

- Available on Windows, IBM AIX, Sun Solaris, HP-UX, and Linux platforms
- Based on XML standards
- High speed, low CPU and memory utilization performance
- Highly integrated with IBM WebSphere MQ (MQ Series)
- Message integrity and guaranteed delivery
- Highly scalable
- Lowers total ownership cost by replacing numerous PCs providing data collection with a single larger server
- Reduces time and transaction costs when used to extend enterprise network to suppliers, trading partners and customers
- Efficient high performance multi threaded implementation
- Easy integration with Java via JMS and IBM WebSphere
- User-exit support to allow customized post-processing of device data

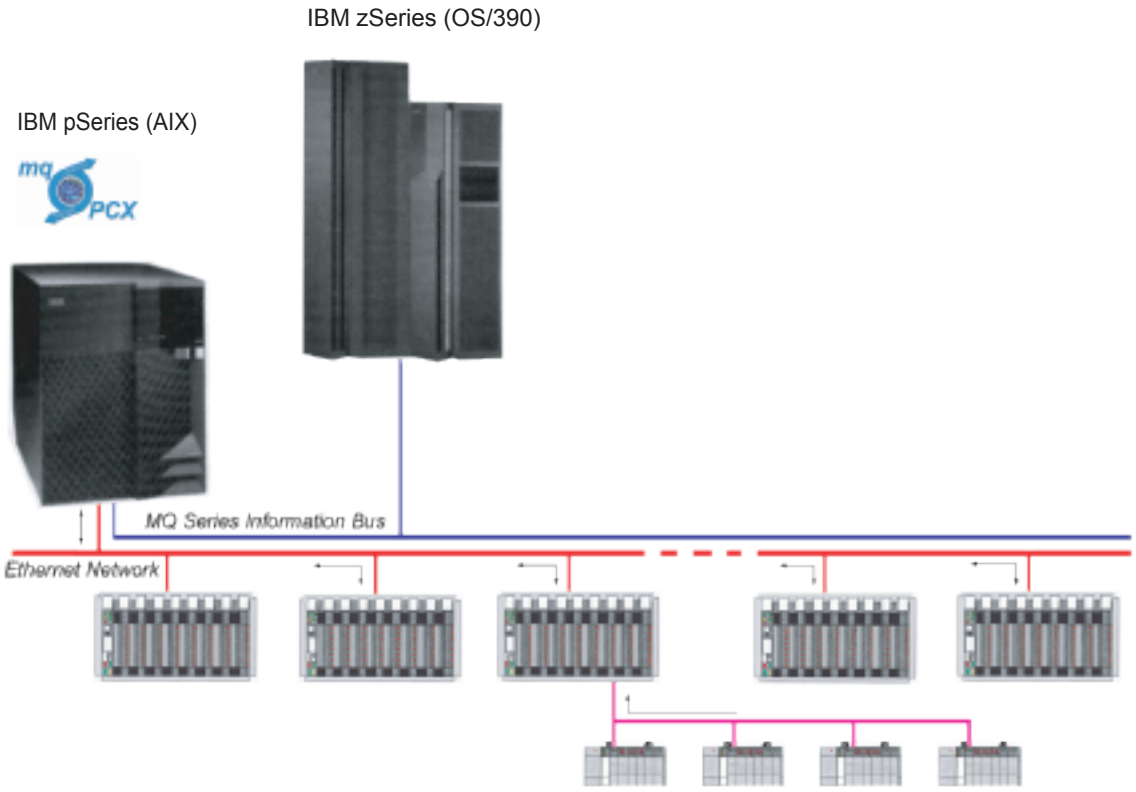


mqPCX supports the following popular plant floor devices:

- Allen-Bradley
- Siemens
- Modicon
- GE-Fanuc
- OMRON
- Mitsubishi
- Telemecanique
- Moore Products
- Square-D
- Opto-22
- Generic Serial/ASCII Devices
- Scanners, Scales, Signs, ...

mqPCX supports the following production device commands:

- DefineDevice
- DeleteDevice
- ChangeVariable
- WriteVariable
- ReadVariable
- StartNotification
- StopNotification
- DeviceUpload
- DeviceDownload
- DeviceCompare
- StartDeviceProgram
- StopDeviceProgram



Customer Case Study:

A large multi-national automotive manufacturer has implemented an mqPCX based as-built data collection solution using an IBM RS/6000 SMP based system running IBM AIX. The system concurrently communicates to over 500 Allen-Bradley logic controllers using Ethernet. Information sent from the logic controllers is delivered directly to MQ Series queues where Java-based IBM WebSphere applications process the information in real-time. The data collection component of this solution manages in excess of 1,000,000 messages per day with an average system CPU usage of less than 1%.

Contact us at:
www.ilstechnology.com
ILS Technology LLC
info@ilstechnology.com
561 982-9898

3/2004