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POSCO
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ILOG Connection

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EDITORIAL

by Stanislas Berteloot
ILOG Communications Manager

Staying Alive in a Global Economy

Although much hype surrounds the concept of a single, "global" economy, its implications affect all of us. Today's enterprises use time zones in offering 24-hour services; competition is on an international scale; service is now a concept endorsed by all; and in Europe, old state monopolies are finding themselves competing against private start-ups.

ILOG's motto has always been, "Software components for efficient strategic application development." With globalization, immediacy is the rule and our product line the enabler. No matter the industry, we provide software parts that add value to the activities of both the developer and the end user.

Perfectly addressing today's concerns, our technology increases the service quality of our clients and helps them make better use of their resources. In some cases we help reduce pollu-

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FOCUS

ILOG: The Added Value

OF YOUR ERP SYSTEM

The smart choice for the new millennium

For the enterprise resource planning (ERP) systems vendor, the Millennium Problem has proven to be a golden opportunity. Many companies, faced with the burden of rewriting applications, have instead decided that now is a good time to switch to an ERP system.

The switch is smart! In theory, when a salesperson enters an order into an ERP system, the transaction is immediately conveyed throughout the entire company. Inventories are updated and merchandise is ordered, and worldwide, production schedules and balance sheets reflect the changes—all this by providing each employee with a relevant bit of information. ERP means more accurate delivery dates for the customer and better decision-making for the manager.

ERP is a booming field that analysts at Morgan Stanley predict will grow 35% a year for the next three years. In 1997, more than 20,000 companies worldwide paid \$10 billion to ERP vendors—a 40% increase over the previous year.* Although ERP systems can revolutionize a company, a system is only as



ERP has been used strategically in production management.

good as its core optimization component is powerful.

Realizing that writing an optimization engine is an extremely complex business, ERP vendors such as J.D. Edwards and Fyfir have switched to focusing on their business know-how while relying on specialists like those at ILOG to develop optimization engines for them.

For J.D. Edwards, the ILOG Optimization Suite's™ open, scalable architecture and portability across platforms are very important features. By embedding ILOG algorithms in OneWorld™, a new highly ad-

vanced planning and scheduling system, J.D. Edwards has reduced its time to market while benefiting from ILOG's scheduling expertise.

At supply-chain management (SCM) systems vendor Manugistics, ILOG and CPLEX engines are empowering their applications with advanced optimization algorithms.

Unlike systems vendors who provide full-fledged enterprise packages, ILOG focuses exclusively on generic optimization engines that provide the most

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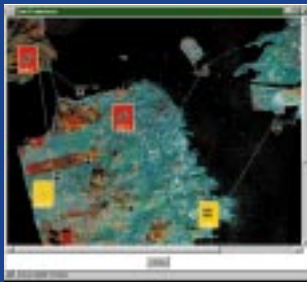
COMPONENTS

ILOG JViews™: fast prototyping and rapid dialog management

ILOG's new 100% Pure Java product, ILOG JViews™, is a high-performance 2D Java graphics library.

ILOG JViews enables developers working on sophisticated strategic Java applications to create interfaces that are far more powerful and intuitive than ever before possible.

It offers a rich set of application-specific objects and behaviors for appli-



cations requiring more than simple GUI widgets.

These objects can be readily customized to create a wide variety of mission critical applications, including network topologies, maps, displays, customized editors and much, much more.

It also has a completely open architecture that works with existing Java GUI builders and standard web browsers.

You can download a free ILOG JViews evaluation copy from our web site: www.ilog.com.

PARTNERS

ILOG TGO:

The First Graphics Library for Telecommunications and Data Network Management

ILOG launches ILOG TGO™, a unique graphics library for ergonomic network displays

ILOG TGO, an add-on module to ILOG Views™, provides industry-specific graphic objects commonly used by the operators of telecommunications and data networks. The new software component will increase the end user's productivity by giving him objects for network elements, links and physical equipment such as racks, shelves and cards.

ILOG also plans to release a Java™ version of the ILOG TGO C++ class library. To be available in the second half of this year, the Java version will make telecommunications and data network management applications portable across the Internet. The version will also extend ILOG TGO's application field, platform independence and development ease.

"We are very enthusiastic about ILOG's TGO product and feel this is a clear breakthrough in standardization of ready-made visual components for the telecom operator's desktop and the telecom developer's environment," said Toni Graham, R&D Manager of Hewlett-Packard's Openview Telecom Management Division.

"ILOG TGO is ILOG's first industry-specific C++ class library. This telecom-specific module illustrates ILOG's commitment to a sector representing over 42% of the company's latest annual turnover," said Hassan Laasri, ILOG Telecommunications Market Director. *"We've decided to build on our partnership with a major telecom player and leverage*

our customers' requirements and wishes to come up with a class library strictly matching the needs of the profession. We believe that TGO will provide at least 70% of the code needed to display networks and their information. The ratio goes up to 80% for ATM, Sonet and SDH networks."

ILOG TGO will provide all the graphic objects commonly used by the operators of data and telecommunications networks at each management level.

For instance, at the network level, ILOG TGO will include rectangle, polygon and line groups, and node, link and traffic displays. At the network element level, it will include equipment, racks, shelves and cards.

Defining new settings will also be possible through an API, enabling the developer to dynamically apply an existing setting to a network or equipment object.

Benefits to network management

For the network management suppliers, ILOG TGO will reduce time to market by cutting development costs. ILOG TGO has inherited all the advanced features of ILOG Views. For the network management users, ILOG TGO will increase the response time of the net-



TGO's high-quality, ergonomic displays show only necessary information.

work operator by reducing the time it takes to get the global picture from minutes to seconds.

Performance features

Network management developers will be able to create animated graphic objects and gain access to the structures and behaviors of existing graphic objects through the API. Giving the objects characteristics such as colors, flashing lights and distinct shapes improves the operator's recognition of network elements and their statuses.

ILOG TGO will also provide layering, allowing a network display to be built in tiers, with each tier addressing a specific group of network objects.

All these features are aimed at providing realistic visualization and a self-managed application that updates its data in real time.

Continued from Page 1

powerful constraint and linear algorithms for computing better solutions to optimization problems.

ILOG's recognized position as a leader in the business of optimization software components will successfully maintain ILOG as the best choice for ERP and supply-chain software vendors. Today, ILOG is the only software provider offering a complete optimization suite, with modules both for short- and long-term planning and scheduling.



Moreover, with the expertise of CPLEX now on board, ILOG offers the power of linear programming along with that of constraint programming, which is well known for its modeling and search control capabilities.

Many of today's most successful ERP applications are powered by ILOG™. Companies use ERP and SCM systems embedded with ILOG optimization engines. J.D. Edwards and other ERP vendors trust ILOG's technological know-how, just as Chrysler, Motorola and other major global companies trust ILOG for their strategic in-house applications.

Embedded in the heart of major ERP systems, ILOG has become a strategic added value to ERP vendors and users alike. ■

*Source: Fortune Magazine, February 2, 1998.

QUALCOMM

QUALCOMM is the second global satellite communications company after MOTOROLA to choose ILOG components. QUALCOMM chose ILOG Views™ to build the graphical user interfaces (GUIs) of Globalstar™ Gateways. Globalstar is a low earth orbiting (LEO) satel-



lite digital telecommunications system that will start offering wireless telephone and digital telecommunications services worldwide this year.

ILOG Views allowed QUALCOMM to create a sophisticated GUI framework upon which to develop network management applications. The framework helps maximize code reuse and provide a uniform look and feel across the highly specialized applications. ■

IBM

IBM's newly released data-mining solutions are based on ILOG Views. The applications classify and segment numerical and textual information in databases containing several million records.

With ILOG Views, IBM can show interactive graphics or statistics in table form, and can

access information with self-generating thematic maps. IBM offers three ILOG-based solutions, each covering a different data type:

- **InfoDetector:**
Processes numerical data
- **Technology Watch:**
Checks patent databases to track technological evolution and research tendencies in a specific industry or country.
- **Text Navigator:**
Adds a linguistic engine to InfoDetector, analyzing texts to extract the main themes of document sets. ■



ALCATEL

The worldwide supplier of telecommunications equipment is using ILOG Views, ILOG Rules, ILOG Server and ILOG Broker in its companywide network management platform, ALMAP™.



ILOG components monitor and control the distributed processing of telecommunications management networks (TMNs), the systems generally used by telecommunications companies and carriers in managing their public telephone switching networks.



According to Alcatel, "This deal saves development costs and time, and will bring a groundbreaking solution to the industry." ■

Product focus

ILOG Dispatcher Tollpost-Globe cuts emissions

ILOG Dispatcher™ is a new ILOG Solver™ add-on module for vehicle routing and technician dispatching. The module can be used by application developers as a key building block in routing applications that dramatically cut transportation costs and improve the efficiency of technician deployment.

Used by Tollpost-Globe, one of Norway's largest transportation and freight forwarding compa-

nies, ILOG Dispatcher's technology successfully helped reduce the company's driving in Oslo by 25%, thus averting unnecessary traffic pollution.

ILOG Dispatcher is a software component that solves vehicle routing and technician dispatching problems, known in the trade as vehicle routing problems (VRPs).

The dispatcher is assisted in planning service rounds at the lowest possible cost while accommodating business constraints such as customer orders, visit time windows, fleet capacity and other variables, including drivers' timetables and work-hour regulations. Dynamic



NEWS

■ Stuart Bagshaw: *ILOG's No. 2*



ILOG has named Stuart Bagshaw its Chief Operating Officer. Bagshaw will report to Pierre Haren, Chief Executive Officer, in overseeing the worldwide operations, including sales, consulting and business development. ■

■ Bill Scull: *An American at the helm of ILOG Marketing*

William A. Scull has also joined ILOG, as Vice President of Worldwide Marketing. Scull, now based in Mountain View, California, was president of Catalyst Consultants, a firm in Los Altos, California, before joining ILOG. ■

In addition to Catalyst, he has spent five years at Tandem Computers, where he ran Corporate Development as Director of New Ventures.



Scull is not completely new to ILOG, having helped it raise venture capital in 1995. ■

WEB

ILOG web site meets New Year's resolution

The year has ushered in a new design for ILOG's web site. The site has been redesigned with usability as the top priority.

On the homepage you'll find the headlines of the latest company news, a new navigational interface to help you find the information you want, and content-sensitive navigation buttons for showing you where you are in the site and linking you to related information.

You can subscribe to a quarterly e-mail newsletter that provides a summary of the new material on the web site by filling out the site's information request form.

Our web site is mirrored globally, so use the connection closest to you for the best performance:

www.ilog.com, www.ilog.fr,
www.ilog.com.sg, www.ilog.co.uk,
www.ilog.de ■



The new ILOG homepage

J.D. Edwards

The ILOG Optimization Suite™ has been selected by J.D. Edwards as an enabler in the advanced planning and scheduling application OneWorld™, J.D. Edwards' network-centric, enterprise resource planning (ERP) solution.



J.D. Edwards says it is embedding ILOG components into the application to reduce time to market and leverage the scheduling expertise ILOG incorporates in its products. This new planning system will offer users optimized planning and scheduling decision support with real-time capable-to-promise functionality.

J.D. Edwards' network-centric ERP solutions operate on widely used computer platforms in supporting manufacturing, logistics, finance and human resources in multinational organizations. ■



routing allows immediate rescheduling when last minute orders are added to the workload or vehicles go out of services.



The ILOG Dispatcher module is completely flexible and readily takes new business requirements into account with minimal reconfiguration. It is provided as a C++ class library that is fully portable across the leading operating platforms (UNIX and Windows 95/NT) and can be used with any database, geographic information system or management application. ■

RECENT QUOTES

JAPAN

"The plastic film manufacturers told us it couldn't be done: reducing cutting loss and excess products was impossible. With ILOG Solver, we have achieved the impossible. Its constraint-based structure enabled us to create an application that generates zero-loss solutions in seconds that were impossible in hours."

*Shoichi Hatori
CUP-F Project Manager
Tonen System Plaza*

AUSTRIA

"The ILOG-driven system based on ILOG Server, which let us distribute over 5 million objects, helped us slash costs and stocks at our steel plant and achieve unprecedented precision in customer delivery."

*Wilhelm Nitterl
Chief Information Officer
Voest-Alpine Stahl Linz*

FRANCE

"We didn't use ILOG products in the first release of our tool. But we have decided to use ILOG Views because the market required more interactivity in the graphical user interface and more flexibility in the way data can be represented."

*Jean-Louis Moise
Consultant
Steria Telecommunications*

USA

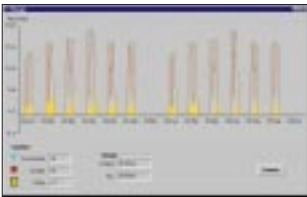
"JViews will allow us to build intuitive interfaces rapidly for our end users in pure Java while maintaining outstanding performance and reliability, as well as reducing maintenance costs."

*Olivier Helleboid
General Manager
Hewlett-Packard*

ILOG Planner 2.2

The new version of the ILOG Solver™ add-on slashes computing time by more than half in supply-chain optimization applications. ILOG Planner™ 2.2 is the first C++ class library to combine both constraint programming and CPLEX know-how. It applies Simplex optimizers and CPLEX expertise in solving planning problems involving a mix of linear and logical constraints, and conflicting preferences and objectives.

These problems are typically encountered in enterprise resource planning (ERP) applications when creating plans and schedules for human and material resources in the manufacturing, transportation and telecommunications industries.



Maximum workload coverage

Already used by leading companies Michelin, Fyfir, Air France, France Telecom and Eurocontrol, ILOG Planner has long been an ideal choice for production and procurement planning, staff scheduling and satellite mission planning. ■

POSCO Continued from Page 6

The results of the system have been extremely impressive. "The ILOG based application is directly responsible for a considerable reduction in our stock," says Mr. Jin-Gwon Che, POSCO Production Systems Manager. Based on test runs with the system, POSCO expects to achieve a 30% to 40% reduction in stock.

Using ILOG Solver's constraint-based planning and scheduling engine and ILOG

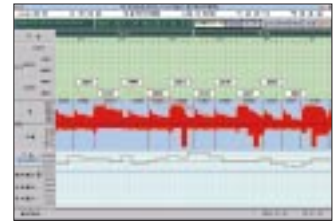


POSCO work screen

Views for a highly responsive real-time user interface, the system optimizes steel production by controlling the plant's inventories and maximizing the total throughput. In other words, it increases the time the steel is rolled without having to be reheated, reducing costs by saving time and energy, and targets customer orders, scheduling them by deadline and volume into the most productive mix.

POSCO

POSCO (Pohang Iron & Steel Ltd.) has become the world's No. 1 producer of crude steel in the world by producing 27.5 million tons in 1997. In 1996, the company's sales revenues reached 9.6 trillion won (US\$11.4 billion), and net profits after taxes reached 591 billion won (US\$698 million). Its crude steel production reached 24.3 million tons in 1996, 886 thousand tons more than the previous year. Sales volume in 1996 also jumped, by 701 thousand tons to 23.6 million tons. ■



Caster and hot strip mill synchronization

ILOG ABROAD

ILOG Germany

ILOG's German subsidiary has been growing steadily since its opening in January 1996. ILOG Deutschland GmbH's Managing Director, Wilfrid Vogel, has focused the company's main efforts on telecommunications and optimization. Enlarging the team to keep up with business has lately been a

high priority at the subsidiary. Vogel has brought a consultant and two sales people aboard, and is still looking for additional qualified people.

ILOG Germany's leading customers include German Telecom, Bayer AG Thyssen Steel and Mannesmann. As you might imagine from such a roster, helping manufacturers optimize their enterprises is a

significant portion of ILOG Germany's business.

The Austrian Voest-Alpine Stahl Group, one of the largest steel producers in Europe, is among ILOG Germany's leading clients. Voest has developed a distributed production management system based on ILOG Server, ILOG Broker and ILOG Views.

resource allocation and process monitoring. Its purpose is to help Voest achieve 60% precision in customer delivery.

ILOG Deutschland expects to continue to report solid, steady growth and enlarge its already substantial portfolio of success stories. ■



Mr. Vogel (far right) with his ILOG Germany team

The ILOG components organize the system around 16 servers that manage all the business objects, including material units, machine programs, production parameters and associated work flow. ILOG Server helps manage the cooperative servers that control more than 5 million business objects. It also integrates real-time scheduling, production follow-up and work-flow management functions. The application has reduced production costs and stocks by 30%. It allows real-time task scheduling,

Editorial Continued from page 1

tion, while in others we organize complex employee schedules.

Companies use ILOG to slash global costs and increase output. ILOG, a global company itself, understands the challenges of today's business environment. In these pages, you will read about the successes companies have experienced with our products in increasing their competitiveness. ■

CALENDAR

MARCH

- **Software Automation**
March 5-6, Kortrijk,
Belgium
- **GPAO**
March 18-20, Paris,
France
- **CeBit**
March 19-25, Hanover,
Germany
- **PACT**
March 23-25, London,
England
- **JavaOne**
March 25-27,
San Francisco, California

APRIL

- **Solutions Ressources Humaines**
April 2, Paris, France
- **Object World '98**
April 6-9, Tokyo, Japan
- **Software Development Exhibition**
April 8-10, Tokyo, Japan
- **1998 UTECA**
April 21-23, Cromwell,
Connecticut
- **Computer 98**
April 22-25, Lausanne,
Switzerland
- **INFORMS Montreal Meeting**
April 26-29, Montréal,
Quebec

MAY

- **Computer Fair & Bexa**
May 14-17, Midrand,
South Africa
- **Journée Syntec**
May 27, Paris, France

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CUSTOMERS

POHANG IRON & STEEL LTD.:

POSCO



Optimizing production while meeting customer demand

POSCO has long wanted to be the world's No. 1 steel maker. Among the problems holding it back, however, have been bottlenecks in production. Like most steel makers, POSCO has to operate its facilities at full capacity to make a profit. This reduces setup costs and increases throughput, but also leads to large inventories and delays in filling customer orders.

Finding a way to maintain full production while meeting customer demand became a challenge for POSCO, and its search led to a system based on the ILOG Optimization Suite.

The Suite gave the South Korean steel maker a system able to exactly match production to demand, meeting customer orders while cutting its hot coil rolling ratio by 10%.

Getting the most out of production

In a POSCO steel plant, there are four types of thin plate rolling mill: hot, cold, annealing and galvanizing. Each is closely coordinated with the others, and because each has unique technical limitations, POSCO keeps a separate invento-

ry for each mill.

This ensures stable production but also results in high inventories, causing low delivery performance and loss in production opportunity.

To solve this problem, POSCO needed a highly efficient system for scheduling its mills.

The new system needed to schedule every process to satisfy all the variables and control fully the inventories. High inventory levels meant longer processing times and loss of opportunity, while low inventory levels meant insufficient production.

A balancing act was needed, and ILOG Solver and ILOG Scheduler were called to center ring to do the performance. POSCO's ILOG-based mill balancing system gathers information throughout a production run.

It acquires information on capacity and repair from the mill's capacity allocation system and makes a schedule meeting the inventory level constraints.

Project

POSCO experienced a 70% reduction in development time, creating the application in two years at a cost



One of POSCO's plants

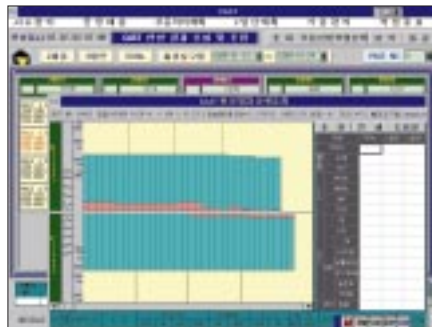
of US\$590,000. The main program is run on a workstation that is accessible through several terminals and a PC with Windows 3.1. The C++ libraries of the ILOG Optimization Suite make the scheduler potentially portable across the leading computer platforms, as ILOG components can be run on computers using Unix and Windows 95/NT.

ILOG's object-oriented programming environment facilitated development, and the suite's modular structure aided not only creation but also enhancement, allowing POSCO to readily change the system to meet new constraints and production environments.

POSCO plans to develop a similar system for its thick plate mills once the new system has been fully introduced in its thin plate operations.

Benefits

For development purposes, POSCO concentrated on the thin plate rolling mills at its Pohang, South Korea, plant, where the constraints included the number of steel coils fed into a mill and the thickness of the sheet metal produced.



POSCO work screen

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