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News

THE ARCHITECTURE FOR A CONNECTED WORLD

July 2001



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There is a multitude of work being done at OMG these days. In particular, OMG is excited for its next Technical Meeting, sponsored by IONA in Boston this July, which is very close to OMG world headquarters in

Needham, MA. Attendance is expected to be strong with a special seminar by the Objects in Bio- and Chem-Informatics Group and the kick-off of a new initiative, Pharmaceutical Supply Chain Management.

As OMG's Model Driven Architecture initiative picks up steam, we thought it might be interesting to include a story about Secant's ModelMethod's product. ModelMethods is one of the first products on the market to incorporate a methodology similar to that of the MDA.

Have you ever wondered what kind of technology is behind sophisticated hearing aid implants? Find out by reading how Rational Software offered Cochlear a UML solution in order to maintain and support the vital technology within each hearing device it releases.

Also be sure to check out Kabira Technologies solution for the largest telecommunications company in Iceland, TAL. Through the use of UML and CORBA, Kabira was able to provide TAL

with a viable way to generate and bill for new applications and services, and to introduce the world's first pre-paid GPRS network to access those services.

Within the organization, OMG is happy to announce the formation of a new Domain Special Interest Group, the Software Radio group. Software Radio formed in order to develop an architecture that allows applications to be independent from the operating environment within a radio. The group's founders are very excited that work has begun and welcome anyone who would like to become involved.

Remember to mark your calendar for the upcoming Integrate 2001 conference presented by OMG and Camelot Communications, September 19-21 in New York City. Titled, "Strategies and Techniques for Building the Enterprise," this conference will provide valuable insight for IT managers charged with coordinating and defining the next generation of eBusiness applications within their organizations. More than 2,500 attendees from the IT community are expected to be there. Don't miss it!

If you are not already receiving your free copies of *OMG News* and *OMG in Motion* (the OMG member newsletter), or if you would like to notify us of an address change, please fill out the form on the last page of this issue. You may either mail, fax or email your request to us.

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MANUFACTURING

Cochlear

Tools Used:

Rational Rose, Rational TeamTest, Rational SoDA

Problem:

Cochlear needed to maintain and support the software for every device they have ever released, while continuing their work on the leading edge of cochlear implant technology.

Description:

A cochlear implant is not a conventional hearing aid. Hearing aids amplify sounds, making them louder. However, even the most sophisticated hearing aids will not offer much benefit to people with profound hearing loss. The inner ear contains the cochlea that includes the sensory cells for hearing, called hair cells. People with sensorineural hearing loss have damaged hair cells, which do not allow the electrical impulses to reach the nerve fibers that carry information to the brain. Unlike a hearing aid, a cochlear implant does not make sounds louder; it bypasses the damaged or absent hair cells by providing direct electrical stimulation to the nerve fibers in the inner ear, allowing the individual to perceive sound.

A small, directional microphone located in a headset near the ear picks up sounds, which are then filtered, analyzed and digitized by a small microprocessor, called a speech processor. The coded signals are then sent to the implant where they are used to stimulate the auditory nerve fibers. The entire processing time is just microseconds, enabling implant recipients to hear sounds essentially as they occur. Because each recipient is unique, the speech processors are programmable, allowing audiologists to fine-tune each processor to an individual's hearing needs and preferences.

Cochlear engineers use Rational Rose, Rational TeamTest, Rational SoDA and the Rational Unified Process™ to develop software for this state-of-the-art technology which helps individuals with profound hearing loss.

Some companies choose to support their legacy systems for budgetary reasons, others simply because the challenge of making the most of new technology is too

daunting. Cochlear, a leader in cochlear implants, has a much better reason: as "Partners in Hearing for Life," it is their corporate mission to support every one of their older systems. Since 1982, Cochlear has been the pioneering force in cochlear implants, technologically advanced medical devices which simulate sound in the cochlea by electrically stimulating the hearing nerve. Because Cochlear and their users expect the implants to last for the rest of their lives, Cochlear does not have the option of discontinuing support for even the earliest generations of their products. And because Cochlear is committed as an industry leader, they continue their work on the leading edge of this extraordinary technology. Cochlear continues to support every device they have ever manufactured while continuing to make dramatic new advances.

The Unified Modeling Language (UML) ... is used in Rose to make complex systems easier to understand, improve communication, shorten development time, and create architectures that are easier to implement and maintain.

The software that audiologists use to fine-tune implants is the primary responsibility of Peter Wyatt, Software Manager of Cochlear's Design and Development Department in Sydney, Australia. This department, which employs 100 engineers and technicians, is the R&D branch of the industry's largest and most experienced research, clinical and technical support team. Wyatt manages a team of software engineers and testers, whose main charter is to maintain and develop the Diagnostic and Programming System (DPS) that is used by clinicians, technicians, audiologists, and speech pathologists to ensure that implant recipients are getting the best possible performance from their

devices. The DPS software enables clinicians to adjust the speech processor's maps—sets of customizable parameters that are tuned for each individual recipient. A recipient might select a different map for work, parties, evening quiet times, or sleeping. There are essentially two different versions of the DPS, both of which are 32-bit Windows applications.

The Portable Programming System (PPS) allows programming of speech processors through a serial port, enabling clinicians to travel to an implant recipient's home or school. The Clinical Programming System (CPS) uses a proprietary PC hardware to program the speech processor, and offers more features than the PPS.

The original DPS application was written primarily in C and C++, and documented through specification documents and design documents. As Cochlear developed better implants and processors, new software was developed to keep pace, but there were many devices in the field that required continuing support as well.

"When we build a product, we build it for the life of the human being. The legacy was getting bigger and bigger," Wyatt explains. The system's documentation, which has to meet the strict regulatory guidelines of the United States Food and Drug Administration (FDA) and similar agencies from other countries, was also becoming a heavier burden. "Our documentation seemed as if it were instantly out of date. We needed a way to manage information better; to stop wading through piles of paper; to understand more about our system." Cochlear made the decision to move to a more object-oriented approach and they turned to Rational Software for help.

Solution:

For the software engineers at Cochlear, the first step in developing a more thorough understanding of the software they had created was to build a visual model of the entire system. Rational Rose, Rational's visual modeling software was the perfect tool for the job. A visual model is a graphical representation of the structure and interrelationships of a system. The Unified Modeling Language (UML), which Rational pioneered and is now an industry standard

regulated by the Object Management Group, is used in Rose to make complex systems easier to understand, improve communication, shorten development time, and create architectures that are easier to implement and maintain.

Davyd Norris, a software engineering specialist at Rational Software in Sydney, worked together with Cochlear engineers. Using Rational Rose they reverse-engineered a model from the existing code base. Norris remembers, "They had this mountain of Borland C++ code and they wanted to sort it out and put some architecture around it. We started off with some training, and then we reverse-engineered the library piece by piece with Rose—creating diagrams and building up an architecture. After we pulled everything in, we asked Cochlear's lead architect to explain what it was about.

He said "In the simplest form it looks like this," and drew a quick sketch as a back-of-the-envelope kind of thing. From that diagram, we were able to drag and drop the classes directly in a new Rose diagram and the model began to take shape. It developed very quickly. When the architect saw the new model, he said "That's exactly what it looks like." All the relationships and functions became apparent as well. It took about five minutes to pull out the core architecture once it had been reverse-engineered. It was a tremendous benefit." Wyatt agrees, "The reverse engineering of C++ in Rose is very configurable. With Davyd Norris' help, we got it to work pretty easily. We found the Rational support to be very good—they have very knowledgeable people. We could not be happier with the results."

After they generated the comprehensive and accurate model, the team spent a little time reorganizing the underlying code. "We pulled out a component diagram of the dependencies from the header files—it looked like Custer's last stand—arrows going everywhere," Norris reports. "Rational Rose then rearranged the header files, and all the models looked much cleaner, and their environment and architecture was simplified enormously."

From the start Wyatt and the Cochlear engineers had wanted to be able to do round-trip engineering—to be able to make changes in the code that were automatically reflected in the model, and vice versa—and Rational Rose had enabled them to do just that. Once they achieved that goal, they decided to take a slightly

different approach. Wyatt explains, "After we were able to round-trip engineer our system, we decided that we wanted to change our work process and practices. We made the decision to live and breathe in the Rose model, not in the code. We believe strongly in the Rational Unified Process principle that you model first, and that the code is just an artifact of the model. We are finding that to be a more streamlined process, one that gives us better turnaround on our projects." He continues, "As long as our model is correct, then we know our code is correct. It is when you make changes in the code that are not reflected in the model that you get into trouble. We decided that was not the way we were going to work." Wyatt's team then added comments to the Rose model, and began to work in the model directly.

Today, as they add new functionality, the developers at Cochlear first make the changes in the model, and allow Rational Rose to generate all their headers, dependencies, and stubs. They rarely reverse-engineer any of the code, although they can if they want to.

In addition to improved team communication, a cleaner architecture, and shorter release cycles, Wyatt has found that Rational Rose offers another considerable advantage. In today's IT employment climate, with qualified IT professionals in short supply, and the high frequency with which workers are switching jobs, small development teams are at the greatest risk of losing information and vital development time when an employee leaves for greener pastures. "When you have a small team like ours, and people leave, knowledge walks out the door. It is especially dangerous in our business where the knowledge is very specialized, and people require about 6 to 8 months of training to come up to speed on the basics. One of the things we like best about Rational Rose is that we have captured our architecture and the obscure dependencies of our system. When new people join the team we can walk through the commented model, and they can easily see how the system works. They do not have to resort to reading source code. That to us is a huge plus," Wyatt notes.

Key Benefits:

- Quickly reverse-engineered a visual model from their existing code base
- Simplified the transition to object-oriented development processes with training and

assistance from Rational's support team

- Developed a clear, easily understood architecture with effective visual modeling
- Streamlined the development process, and achieved faster turnaround on projects by focusing on model-driven development, and treating code as an artifact of the model
- Shortened training time for new team members by providing a commented model of the system instead of pages of source code
- Automatically generated documentation to meet the auditing requirements of various government agencies that regulate their industry
- Accelerated test cycles with integrated functional testing that verifies all of the hundreds or thousands of properties of an object, even if they are invisible

Conclusion:

Wyatt is proud of his team and the work they are doing. "We do not have hackers. No one here is called a programmer; everyone is a software engineer. We believe software engineering is a discipline." More fortunate than many engineers, the Cochlear team occasionally gets to see the impact of their work directly. Wyatt explains, "As an engineer that has worked in a number of areas, I get a real thrill when I see how a person's life is improved. When we get to go along to a clinic and help switch on a 10-month old baby that can hear for the first time—and the parents are emotional—it is just a great feeling."

In the near future, Cochlear is preparing for new markets opening in Europe and Asia. They are continuing their internationalization efforts and trying to make the user interface as "thin" as possible. And, of course, they are working with Rational Software at every step of the software development and testing process to make sure they reach their goals. Wyatt summarizes Cochlear's success with Rational simply, "We are very happy with Rational. We are more conservative than most companies for two reasons: first, because of the nature of the business, and second because of our small size. We cannot just throw money at a problem. We find that Rational has optimized the productivity of our team, given us great support, and encouraged us to move forward and expand our efforts." ■

WIRELESS TELECOMMUNICATIONS

TAL hs

Tools used:

Kabira ObjectSwitch; Rational Rose; IONA Orbix

Description:

TAL has been providing commercial GSM¹ wireless service since May 5th, 1998. This was a historical day for Icelandic mobile phone users; as TAL was the first company to break the monopoly of Iceland Telecom (Landssiminn) in the area of telecommunication. In April 1999, TAL bought Islandia Internet, creating a commercial combination of wireless telecommunications and Internet services. TAL's customers enjoy a rich offering of GSM communications, pre-paid services, SMS², GPRS³ and Internet access—a true 2.5G⁴ set of wireless offerings.

Problem:

The introduction of next generation mobile networks and services including GPRS has resulted in an order of magnitude increase in complexity at every level of a service provider's network. This complexity extends from the network switching level⁵ through the Operational Support Systems (OSS⁶), including mediation and provisioning systems and Business Support Systems (BSS⁷), such as mobile commerce, content and billing systems.

At the same time, TAL's business plan calls for rapidly bringing a continuous supply of new services to market. Traditional IT methods of hand coding don't allow for a high level of efficiency for the deployment of news services in order to do that. Specifically, TAL needed to deploy pre-paid GPRS (Global Packet Radio Service or wireless internet access) to its customers in record time. Yet, most of the 3rd party suppliers required a wait of many months and charged for numerous extra licensing charges for new software and equipment.

Solution:

TAL chose the following solutions:

- **Kabira Technologies ObjectSwitch⁸**, a provider of infrastructure software for revenue-generating convergent services over the Internet, broadband and wireless networks was chosen by TAL to solve the problem of speed to market

and cost efficiency to offer its customers high level wireless service.

- **Rational Rose⁹**, a UML modeling tool was used for development in conjunction with Kabira ObjectSwitch.
- **IONA Orbix¹⁰** was used for industry standard, OMG CORBA interfacing between software and hardware. Kabira's product is called ObjectSwitch, a software platform. The ObjectSwitch software platform integrates all levels of its network systems and aggregates them into one cohesive system view. This enabled TAL to generate and bill for new applications and services and to introduce the world's first pre-paid GPRS network to access those services. Furthermore, Kabira ensures that TAL has the ability to rapidly accommodate inevitable but presently unknown new services and functionality.

“UML was chosen for service engine development because it is the most powerful, standard model for the definition of services containing objects, state and event controls”

Dirk Epperson, Kabira

ObjectSwitch enables these new services to be created quickly due to high-level UML models. By using standard UML models designed in Rational Rose and the Kabira platform, TAL's IT department was one of the first in the world to bring pre-paid GPRS services to its customers. “UML was chosen for service engine development because it is the most powerful, standard model for the definition of services containing objects, state and event controls,” said Dirk Epperson, Kabira's Vice President of Product Strategy.

Kabira's ObjectSwitch software platform also enables next generation service providers to both create and deploy new services while leveraging their investment in current network and services infrastruc-

ture. It meets the carrier-grade requirements of performance, scalability and high availability.

Customer Statement:

“We cannot afford to rely on conventional tools to compete in today's market, particularly with limited engineering resources,” said Óskar B. Hauksson, Information Technology Director of TAL. “The Kabira platform allows us to rapidly build, provision and collect revenue for the most innovative GPRS services, enabling us to maximize our engineering productivity and provide our customers with the most compelling services faster than our competitors.”

Consumer & Business Benefits:

End customers in Iceland benefit directly from the availability of pre-paid GPRS, pre-paid SMS and reliable, innovative services. All of Iceland benefits from having multiple competitive carriers and the most modern services available in the marketplace.

Financial improvements were largely based upon lower cost-to-deploy and earlier revenue-generation ability. Many months of delays were avoided by using UML and Kabira ObjectSwitch. TAL's IT department and system integrators required far less time than a normal project would require. ■

- 1 GSM: Global System Mobile – Digital Wireless Telecom Service – www.gsm.org
- 2 SMS: Short Message Service – Digital Paging for GSM wireless phones
- 3 GPRS: Global Packet Radio Service – A stateless, wireless Internet packet access method that does not require a modem for data access
- 4 2.5G: Wireless services that support simultaneous voice and data access
- 5 Switching: Session based Circuit Switched telecommunications and session-less Packet Switched networking
- 6 OSS: Operational Support Systems
- 7 BSS: Business Support Systems
- 8 Kabira: ObjectSwitch is a software server platform including both an entirely new model of massively cached application server and what Gartner analysts are calling a “self adaptive infrastructure”.
- 9 Rational: Rose is a visual modeling solution and tool for translating high-level requirements into a resilient, component-based architecture.
- 10 IONA -Orbix 2000 is IONA's flagship enterprise CORBA product. Orbix 2000, a CORBA 2.3-compliant engine, is available in versions for both C++ and Java developers. It is built on IONA's patent-pending Adaptive Runtime Technology (ART), which forms the foundation for the entire IONA Suite.

OMG Software Radio Goes "Live on Air" at Paris TC Meeting

April in Paris proved to be a very eventful time for the Software Radio Special Interest Group (SWRADIO SIG) which was officially voted in by members as a new Domain Special Interest Group (DSIG) on April 27, 2001 at OMG's Paris Technical Committee meeting.

The group was formed by Jerry Bickle and Dan Mock, both of Raytheon, and Dominick Paniscotti of BAE SYSTEMS with a primary focus to develop an architecture that allows applications to be independent from the operating environment within a radio. This group is continuing the effort initially sponsored by the U.S. Joint Tactical Radio System (JTRS) Joint Program Office (JPO) for whom the MSRC (a consortium of radio manufacturers led by Raytheon and including BAE SYSTEMS, IIT, and Rockwell-Collins) developed the Software Communication Architecture (SCA) specification. The SWRADIO DSIG initial co-chairs are Jerry Bickle, Dr. Jeff Smith from Mercury Computer Systems, and Mike McClimens from Mitre.

A Software Radio is a radio that realizes in software a variety of waveforms and applications in support of current and evolving standards, including but not limited to:

- Modulation techniques (wideband or narrowband) supporting broad frequency ranges
- User and network interfaces
- Deployment and configuration of applications
- Privacy and security functions

Software Radios enable technology insertion and feature enhancements for:

- Re-programmability—download onto a radio the information required to deploy or update software functionality deploying, executing, or terminating installed software functionality
- Re-configurability—the ability to dynamically modify the characteristics of executing software
- Scalability—the ability to increase the capacity of a radio without impacting existing software
- Portability—reuse of software across radio platforms using open, well defined interfaces

In particular, waveform applications, which transform digital data into over-the-air analog transmissions, should be portable across a variety of hardware configurations. Achieving such portability requires hardware interfaces to be abstracted and application management interfaces to be standardized. A final requirement is to define common meta-data and loading processes so that applications, which are viewed as a set of software components, can be deployed on a variety of hardware configurations.

The SWRADIO SIG will seek to enhance waveform application portability without placing burdensome restrictions on programming languages, operating systems, object request brokers, or hardware configurations.

The operating environments (OEs) used in today's radios present several difficulties affecting application portability. The OEs are frequently distributed across several non-heterogeneous general-purpose processors and include special purpose hardware such as digital signal processors and field programmable gate arrays. These OEs often include a wide array of I/O devices. Moreover, some radio applications must meet real-time requirements, must process high data throughput, or must respond to dynamic networking requirements.

The SWRADIO SIG will seek to enhance waveform application portability without placing burdensome restrictions on programming languages, operating systems, object request brokers, or hardware configurations.

The work of the SWRADIO SIG will cover several unique areas, as well as supporting interests common to other Task Force groups within OMG such as Telecom, C4I, and Space. More specifically, as proclaimed in their mission statement, the group plans to:

- Provide a standard means, by which software radio-based applications are developed, deployed and managed.
- Promote the use of OMG technologies within the software radio community by use of existing and emerging OMG specifications, proposing software radio-related extensions to existing and emerging OMG specifications and applying UML modeling techniques.
- Promote portability, reusability, scalability, and interoperability of software radio-based platforms and applications.

The group also plans to identify and propose new OMG specifications for the software radio community. If you are interested in more information about the group, the following Software Radio documents are available on the OMG server at the following URLs:

- Software Radio Mission Statement (draft) (document number swradio/2001-03-01)
<http://www.omg.org/cgi-bin/doc?swradio/2001-03-01>.
- Software Radio Draft roadmap (document number swradio/2001-03-02)
<http://www.omg.org/cgi-bin/doc?swradio/2001-03-02>.
- The Software Radio web page is <http://swradio.omg.org>.
- The Software Radio email is swradio@omg.org. ■

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Wiley Publishes *Quick CORBA 3*

Quick *CORBA 3* by Jon Siegel, the latest book in John Wiley and Sons' *OMG* series, collects descriptions of the Object Management Group's most powerful new *CORBA* and modeling specifications into a single volume. These specifications combine to give *CORBA* the capabilities it needs to support advanced Internet and enterprise computing. The book includes almost all of the ten specifications originally labeled *CORBA 3* (most of which have already been issued by the *OMG* as part of various *CORBA 2.X* point releases), and adds descriptions of important new ones including the XML/Value mapping that represents an XML document as a multiply linked list of *CORBA* valuetypes. It also includes descriptions of *OMG*'s modeling standards: the Unified Modeling Language (UML), Meta-Object Facility (MOF), and XML Metadata Interchange (XMI). With these infrastructure and modeling specifications, *OMG* defines the state of the art in distributed enterprise and Internet computing.

There are two groups of people who should read this book:

- First, if you are an *experienced CORBA programmer or architect*, curious about *OMG*'s newest specifications, this is the book for you. It describes the new *CORBA* specifications that you need to know about, plus *OMG*'s modeling specifications. Since the book does not include an introduction to basic *CORBA*, it is an "advanced" book even though the presentation of each specification is no more advanced than the presentations in the introductory-level book *CORBA 3 Fundamentals and Programming*. It provides experienced *CORBA* users with a book that discusses *OMG*'s new specifications without yet another introduction to IDL, or how IIOP and the IOR let a *CORBA* client invoke an operation on another vendor's *CORBA* server over the network.
- Second, if you are an *enterprise architect* and are considering using *CORBA* for your infrastructure, even if you haven't studied basic *CORBA*, you can benefit from this book as well but in a different way. The specifications described in this book give *CORBA* the capabilities it needs to play in the the enterprise and Internet worlds—in fact,

they put it in the forefront. You will be able to understand the capabilities of the specifications from the descriptions and figure out how they fit into your enterprise architecture. But you will find the technical (as opposed to architectural and functional) parts of the descriptions opaque, so you should go back and study basic *CORBA* after you're done to fill in the blanks. As much as possible, the technical and programming aspects are found towards the end of each chapter so that architects can read as far as possible into each chapter before coming to programming detail.

Brief Overview:

The book starts with a *Prologue*, which pulls together the many parts of *CORBA 3* from an architectural point of view, covering both client and server sides. The prologue also lists all of the specifications originally grouped under the label *CORBA 3*, plus the others presented in this book, and tells when each was adopted and formally issued by *OMG* as part of a numbered *CORBA* release. (More on this below.)

Part I covers *Integration with Java and the Internet* including the valuetype, the reverse Java-to-IDL mapping, the XML/Value mapping which lets you manipulate XML documents (including those described by DTDs) as a collection of native *CORBA* types, and the Interoperable Naming Service.

Part II covers *Quality of Service control* including asynchronous and messaging mode remote invocations, setting policies for timeout and priority control, and the three specialized *CORBA* modes: Real-Time, Fault Tolerant, and minimum*CORBA* for embedded systems.

Part III leads up to and presents the *CORBA Component Model (CCM)*. The first two chapters present the Portable Object Adapter (POA) and Persistent State Service (PSS). The last presents the CCM itself, starting with a programming example and moving on to a description of all of its parts.

Part IV presents *OMG's modeling specifications*, starting with UML and the MOF, and finishing with *OMG*'s new Model Driven Architecture (MDA). An extension to *OMG*'s basic architecture (*OMG* members are currently drafting

technical documents that will enable this extension to be adopted as the organization's direction), the MDA defines services and facilities as a platform-independent UML model first, which it then maps to the various platforms for either implementation or interoperability. The end of this book, this chapter represents a new beginning for *OMG*, which soon expects to be adopting specifications for facility interfaces, based on platform-independent UML models, on a variety of middleware platforms such as EJB, XML/SOAP, COM/DCOM/MTS, .Net, and others.

Even though *OMG* has not yet released a book labeled *CORBA 3*, the specifications described here are real. All of the specifications originally grouped under that label were adopted on schedule or nearly so, but formal release (a subsequent step which requires a maintenance revision of the original adopted specification, and a vendor commitment to produce and market an implementation) occurred in stages, rather than all-at-once. The first few (including the important valuetype, foundation for the XML/Value mapping) were formally issued with *CORBA 2.3* in June 1999; several more as part of *CORBA 2.4* in late 2000. It appears likely that others will be issued as part of a *CORBA 2.5* point release around mid-2001, preceding the formal release of the few remaining (mainly the Persistent State Service and *CORBA* Component Model) as *CORBA 3.0* late this year. The CCM is being implemented in quite a number of places; check out www.ditec.um.es/~dsevilla/ccm/ for details. (After the page comes up, search for "CCM implementations.") There's a table of release dates for all of these specifications in the Prologue.

Some of the material in this book was taken from Siegel's previous book, *CORBA 3 Fundamentals and Programming*, published in mid-2000 by John Wiley and Sons. New chapters cover the XML/Value mapping which lets you manipulate an XML document as a collection of native *CORBA* types, Fault Tolerant *CORBA*, minimum*CORBA* for embedded systems, and *OMG*'s new Model Driven Architecture. The discussion of the Interoperable Naming Service was updated to take into account a maintenance revision to the specification, as was the chapter on Real-Time *CORBA*. ■

Secant's ModelMethods Software in Stride with OMG's MDA

This past spring, Secant Technologies launched its ModelMethods™ Software, one of the first products on the market that clearly follows OMG's Model Driven Architecture™ methodology. That is, ModelMethods strives to provide a solution to the challenge of interoperability, building upon and leveraging the value of OMG's adopted modeling standard, the Unified Modeling Language™ (UML™). Platform-independent Application descriptions built using this modeling standard can be realized using any major open or proprietary platform, including CORBA®, Java, .NET, XMI™/XML, and Web-Based platforms.

"The OMG's Model Driven Architecture initiative goes beyond middleware to provide a comprehensive, structured solution for application interoperability and portability into the future. Secant's ModelMethods suite of software provides a good example for the practicality of this vision," said OMG's chairman and CEO, Richard Soley.

The ModelMethods software enables developers to automatically generate up to 80% of the code for Java (J2EE 1.2) and C++ applications from a model in the Rational Rose or TogetherSoft Control Center UML tools. These applications can then be deployed, managed and exponentially scaled on the ModelMethods distributed application server platform.

Future functionality planned for the ModelMethods software includes the model-driven generation and run-time support of code for business rules and workflow processes, support for XML, and the ability to build, power and evolve Java/J2EE 1.3 and C#/ .NET applications.

"We have long recognized the need for, and provided solutions based upon, a model-driven platform-independent approach," stated John Pompeii, chief technology officer of Secant. "Secant is pleased to support the OMG's Model Driven Architecture initiative and their efforts to advance the standards for functionality that can be realized in existing and future releases of our ModelMethods software. In the future, it is our intent to evolve our technology to generate nearly 100% of the code for all major current and future middleware platforms."

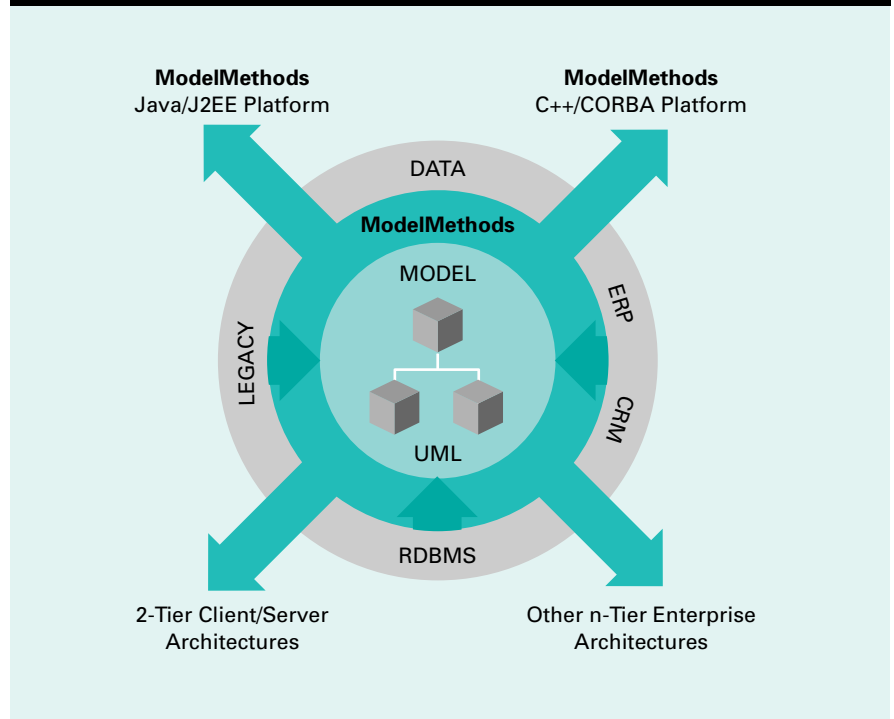
In January, ModelMethods (formerly named the Extreme Enterprise Server) won a 2001 Crossroads A-List award from

Open System Advisors, Inc. of Boston, Massachusetts. Secant received the award for "Model-Driven Infrastructure for Custom e-Business Applications" within the Business and Technology Infrastructure category. In addition to its ability to accelerate the time-to-market of custom applications through use of Java and C++ code generation from UML, "Secant delivers a good financial value for businesses in several respects. It uses hardware efficiently,

the cornerstone of the judgment process.

As an example of Secant's acceptance in the market, Incyte Genomics used Secant's ModelMethods Model-Driven Infrastructure' software as the foundation for developing the Genomics Knowledge Platform, a software environment that represents a major breakthrough for life sciences research. Incyte's Genomics Knowledge Platform (GKP) enables developers to rapidly build applications

Secant's ModelMethods architecture for building, powering and evolving custom software applications



its clustering provides fail-over for increased robustness, and the administration costs are low. The applications developed in UML are flexible and extensible," said Nina G. Lytton, president of Open Systems Advisors, Inc. and editor of the Crossroads A-List Awards.

The Crossroads A-List Awards focus on enterprise computing, the integrated system supporting the business process from the supply chain through the back office all the way to customer interaction. Winners are determined after a detailed review of the vendors' products or services and strategies. In-depth, confidential interviews with experienced customers are

for the platform using Secant's extensive code generation technology which is integrated in the Rational Rose® UML tool. "Secant's technologies have been key to the success of our new Genomic Knowledge Platform enabling us to efficiently map complex biological models to our multiple genomic information sets," said Roy Whitfield, Incyte's chief executive officer.

OMG's members are excited about MDA and the hope is that companies like Secant will start a undeniable momentum to bring newer and better products to the marketplace, creating more solutions and less headaches for companies. ■

Paris Meeting Enhances CORBA and Modeling Standards

During OMG's technical meeting week in Paris, France in April, members of the Object Management Group (OMG) issued Requests for Proposals (RFP) initiating adoption of seven new standards. Building on the existing OMG general ledger facility, one of the new standards will provide interoperability between Accounts Receivable/Accounts Payable and other accounting functions; another will define a Distributed Accounting Facility for Telecommunications. A third new effort in the business area will standardize representation, storage, and retrieval of skill and competency data used in human resource management. Supporting healthcare, another facility will automate entry and tracking of caregivers' orders in healthcare delivery settings such as hospitals, nursing homes, and doctors' offices. These four new efforts were initiated by OMG's Domain Technology Committee (DTC), which standardizes technology in vertical industries including Manufacturing, Transportation, Telecommunications, Finance, and Insurance.

Platform Technology Committee (PTC) Standards Efforts

OMG's PTC works on CORBA infrastructure standards, and on object-oriented analysis and design. Two new efforts from the PTC will work together to extend OMG's

data modeling standard, the Common Warehouse Metamodel (CWM), with methods that use the Internet to exchange data models and information about them, and build an infrastructure of standard web- and Internet-based services around these exchange methods. The final new RFP will standardize a management interface for CORBA's existing load-balancing capability. One new specification, defining an infrastructure for authorization tokens in CORBAsecurity, finished member evaluation and started the series of votes leading to formal adoption.

Any company may join OMG and respond to the RFPs that define new standards efforts. To access the RFPs, see www.omg.org/schedule. For membership information, see www.omg.org/membership. Dates and locations of future meetings are listed on <http://www.omg.org/news/schedule/upcoming.htm>.

Meeting Participation and Activities

This OMG Technical Meeting Week, sponsored by Alcatel (www.alcatel.com), Sun Microsystems (www.sun.com), and Thales (www.thalesgroup.com), attracted over 400 OMG members and guests to Paris, France, from April 23 through 27, 2001 where they advanced these and many more standards efforts and partici-

pated in other related activities. Over 40 specialists in military and civilian emergency logistics from many countries attended a special Coalition Day devoted to the role of computer interoperability in crisis and logistics management; keynotes were presented by Lt. Gen. (Ret.) Christian Delanghe of France and Lt. Col. (G.S.) Pasi Rikkinen of the Finnish Defense Force. OMG members viewed live demonstrations of CORBA interoperability and of six different CORBA products, and attended tutorials on CORBA, the Object Management Architecture, XML in CORBA systems, event passing in distributed systems, and the Unified Modeling Language (UML).

Election to OMG's Architecture Board

OMG's Architecture Board (AB) evaluates all RFPs and candidate specifications for consistency with the organization's Object Management Architecture and existing specifications. Elected by vote of the organization's Contributing, Platform, and Domain category member companies, AB members normally serve two-year terms. At the Paris meeting, Desmond D'Souza of Kinetium was elected to fill the remaining year of the term of a retiring member. ■



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