OMG's Third Workshop on
UML™ for Enterprise Applications:
Model Driven Solutions for the Enterprise

Workshop Program

MONDAY – October 21, 2002

TUTORIAL TRACK 1

0900 - 1230   ***MDA for Enterprise Collaboration with UML for EDOC-ECA***
Cory Casanave, Data Access Technologies

Collaboration and agility are the cornerstones of the modern enterprise. Being able to bring together customers, suppliers and diverse parts of the enterprise improves both efficiency and customer satisfaction. Technologies such as CORBA, Web Services, J2EE and .NET provide the technical basis for integration but do little to help us understand or provision these crucial collaborations. The OMG has recently adopted the Enterprise Collaboration Architecture (ECA) as part of the UML for EDOC set of specifications. ECA describes how to model enterprise collaborations with UML and use model driven development to implement collaborative business processes using a variety of middleware technologies.

This tutorial will cover enterprise collaboration modeling concepts, process and examples - showing how to go from abstract concepts of collaboration to precise specifications leveraging reusable components in a variety of technologies such as WSDL, Soap, ebXML, EJB and CORBA. It will also discuss how to use ECA as a technology independent model supporting web services and distributed objects. Applying these techniques can result in the enterprise being more agile, more efficient and better able to collaborate inside and outside the corporate boundary.

1330 – 1700   ***Implementing Model Driven Web Services Architectures using UML, XML, WSDL***
Sridhar Iyengar, IBM

The software industry continues to grapple with the challenging problem of dealing with multiple industry standards and competing middleware architectures and information models/vocabularies without much regard for software architecture and design discipline. The OMG Model Driven Architecture (MDA) simplifies this problem by unifying these diverse technologies using information models/designs and mapping these models to one or more implementation technologies (middleware, databases, languages etc). MDA also raises the level of abstraction at which these applications and integration scenarios can be designed and implemented, a key requirement to manage software integration complexity.

MDA defines a software architecture that complements existing middleware, modeling and tools and allows integration and interoperability to be addressed across the application life cycle and not just between individual objects or components. It exploits the strengths of Modeling, Metadata, Middleware and Mappings, the 4 M's, into a unifying framework with UML and XML taking on a foundational Role.

MDA allows a developer to design a model of an application or component once and automatically map these designs to several technologies. A key tenet of MDA includes reverse engineering that allows developers not familiar with modeling to incrementally gain the benefits of modeling and software architecture.

This presentation will define the basic principles of MDA and Web Services, some of the core standards that are part of them and show with examples of how this vision of mapping an abstract model to web services technologies (XML,WSDL, SOAP) is realized. The benefits and pitfalls of this approach and early experiences are described as well.

TUTORIAL TRACK 2

0900 – 1230 *Executable UML Tutorial*
Stephen J. Mellor, Project Technology, Inc.

Executable UML is here. It is possible today to add code to UML models and then execute them, but in so doing you must make a series of decisions about implementation that may not be correct, appropriate or even knowable. Executable UML, on the other hand, models systems at a higher level of abstraction, thus avoiding the costs involved in a premature design. Executable UML offers the benefits of early verification through simulation, the ability to translate the UML model directly into efficient code and the ability to delay implementation decisions until the last minute.

This tutorial defines the components of executable UML and how they fit together. It describes a method to be used to derive the executable UML models, and it shows how the elements form a coherent, streamlined whole. Special attention will be paid to the newly adopted action semantics that are required to make the models executable. In addition, we will show how to translate the model into code and what decisions need to be made and at what time during the process.

The tutorial will also demonstrate how execution and translation form two foundation pillars of the OMG's latest initiative, model-driven architecture (MDA).

1330 – 1700 *Using UML and ODP for Enterprise Architecture*
Joaquin Miller, Financial Systems Architects

Every enterprise of any size uses many software applications. Most have a variety of operating systems, hardware, and networks. The applications often exhibit a variety of architectural styles. It can be a challenge to model all this. Modeling the integration of existing and new systems is particularly challenging. Some folks claim that UML is not suitable for this job.

Although UML is not compatible with the architecture for system distribution defined in X.900, the International Standard Reference Model of Open Distributed Processing (ODP), this tutorial demonstrates in three steps how UML can be adapted so that it is suitable for specifying ODP models. Participants learn the steps in detail: Representation of the ODP foundation concepts using UML; Use of UML as a viewpoint language for enterprise, information, computational and engineering models; Modeling the systems of an enterprise and their interactions, whatever the technologies and architectural styles, and specifying new systems and their integration, using the viewpoint languages.

The tutorial will focus on models for enterprise architecture. The same techniques are suited for specifying any distributed system. A worked example from an actual project will be presented. The example models will be provided to attendees on a CD, along with all the tutorial material. We will also work out examples based on problems you propose. When you sign up for this tutorial, please send your problems to: (joaquin@acm.org) . The tutorial will close with an overview of the use of a MOF to improve the ease of modeling enterprise architecture.

1030 - 1045 **Morning Refreshments**

1230 - 1330 **Lunch**

1500 - 1515 **Afternoon Refreshments**

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TUESDAY - October 22, 2002

0830 – 0845 *Opening Remarks* (Program Committee Co-Chairs)

Robert France, Colorado State University

Fred Waskiewicz, Object Management Group

0845 - 1130 **Session 1 -** *Integration*

Chair: Dr. Jon Siegel, Object Management Group

Integration projects that start with a UML model enjoy many advantages: improved quality, sound architecture, adherence to planned functional and non-functional specifications, and more. OMG's Model Driven Architecture (MDA) establishes an industry standard for tool-based automation of the process, from model to running application. In this session, we'll examine four aspects of UML-based integration: The first talk introduces MDA in a general, platform-independent context. The next two specialize to different platforms: Web Services first, Enterprise Information (i.e. data) Integration next. Our final presentation looks at the emerging future of OMG's MOF and XMI standards and how they will support W3C's Semantic Web and other technologies.

Model Driven Enterprise Integration

Dr. Vladimir Bacvanski & Dr. Petter Graff, InferData Corporation

In this presentation we show the use of Model Driven Architecture approach to integration of enterprise systems. As majority of the everyday enterprise integration efforts focus on low-level technology issues, the consequence is that with the change of the technology, most of the integration efforts become wasted and must be repeated. Therefore, we will put emphasis on systems integration and the ways model driven development enables a superior integration approach. We will use examples from RosettaNet and web services based enterprise integration. At the end we will discuss the tool support and best practices for model driven development and integration.

Orchestrating Web Services from a UML Development Platform

Michel Brassard, Codagen Technologies Corp.

Web services enable a code reuse pattern that makes them available to applications without requiring physical co-location. This session will focus on how UML can be applied to the development environment to solve common challenges, including: Reusing business scenarios and Web services across multiple business processes; Enforcing a business process over a loosely coupled implementation; Enabling business analysts to work collaboratively when modeling business processes; and Implementing business processes that satisfy contracts between trading partners. Upon completion, attendees will learn, through real-world examples, how to maximize their UML investments without a working knowledge of the standard.

Enterprise Information Integration and the OMG's MDA and MOF

Randall M. Hauch, MetaMatrix, Inc.

Enterprise Information Integration (EII) represents an enterprise-wide solution for integrating and accessing all information through a single virtual database. Using a model-driven approach to EII can reduce development time by 50% or more. This talk will show how OMG's MOF and UML specifications and MDA are used to model disparate information sources, integration mechanisms, as well as mappings to XML Schemas such as to decouple applications from the integration mechanisms yet directly support real-time access with SQL via JDBC and XML via SOAP. Case studies will show how model-driven information integration has been successfully applied to enterprises and government organizations.

1015 - 1030 **Morning Refreshments**

Session 1 - *Integration (Cont'd)*

MOF 2.0 and XMI for MOF 2.0 - What Next for Metadata Management?
Sridhar Iyengar, IBM

How will the worlds of OMG MDA and the W3C Semantic Web work together? The work underway in the OMG and W3C is shaping how these important technologies will complement each other. This presentation outlines MOF 2.0 and the XMI for MOF 2.0 proposals and describes how OMG MDA and W3C Semantic Web technologies can complement each other.

1130 – 1200   *(Co-sponsor Presentation)*

1200 – 1830   *Demonstration Area*

1200 - 1300   **Lunch**

1300 - 1500   **Session 2 -** *Executable Models*
                Chair: Sridhar Iyengar, IBM

>A significant aspect of MDA is to define models precisely enough so they can be directly executed. This session explores the topics of model transformation and model execution. The first presentation explains how annotations can be used to augment the model of an application with necessary target platform information to enable optimal code generation while preserving independence at the source model level. The second addresses the inverse problem - How do you take an existing definition of a system from its source code and recover higher level models for better understandability in the context of application integration? The last addresses how model transformation techniques can be combined with direct execution of models to enable application integration and business process orchestration.

Approaches to Retargeting within Model Transformations
Stephen J. Mellor, Project Technology, Inc. - Kendall Scott, Consultant
Axel Uhl and Dirk Weise, Interactive Objects Software GmbH

Model transformations map one or more source models to a target model. Typically, the source model(s) are more abstract than the target model and thus have to know little or nothing about the target platform. However, in order to produce valid and reasonable target models, the transformation may require additional input that has knowledge of the target platform. In order to keep the source model(s) clear of any target platform dependencies, this additional transformation input can be kept in annotations. This paper explains the concept of annotations and shows how they help in keeping models portable across different target platforms.

Reverse Engineering Procedural Code using UML
Krupa Benhur, Patrick DJ Kulandaisamy and Venugopal Subbarao, SETLabs, Infosys Technologies Limited

This presentation prescribes meta-model based techniques for recovering design elements (e.g. rules, control flow, process controller) from procedural programs. It elaborates on mapping rules to depict these elements in UML diagrams. It describes the immense benefits of applying UML modeling to procedural programs in legacy modernization.

Executable Enterprise Modeling with UML
Michael Latta and Yngvar Tronstad, Ceira Technologies

Work is being done that uses UML to model enterprise class problems, focusing on the dynamic aspects of the enterprise using State Machines augmented with the Action Semantics. These models are then executed to orchestrate processes, data, and integration activities. This presentation describes an environment that executes UML State Machines with OCL+ and CWM data transformations to carry out enterprise processes. Issues related to executing UML and OCL and using these to accomplish Enterprise Application Integration will be reviewed. Proposals within a UML 2.0 submission that will improve model execution and semantics will be addressed. The business case for model driven execution of system integration activities within a large organization will be offered.

1500 – 1530   **Afternoon Refreshments**

1530 – 1800   **Session 3** - *Case Studies I*
Chair: Fred Waskiewicz, Object Management Group

This session initiates the theme of experience reports by focusing on model-driven and architecture-centric approaches to systems' design and implementation. Providing concrete examples of the role of UML in OMG's Model Driven Architecture (MDA) and offering a chronology of tool development and usage, the four presentations give insight into approaches taken and development steps; describe architecture and models employed; and explain derived benefits, lessons learned and unresolved issues.

An Early MDA Project in Hindsight
Frank Truyen and Ernest Stambouly, Cephas Consulting Corp

The presentation describes a real enterprise project that followed a development approach that could be considered an early case of MDA. We present the overall enterprise application architecture and its various models, and describe the role and usage of UML in the project. We draw similarities between the taken approach and MDA. We also explore the question: "What if MDA was available at the time, along with its proposed UML support?"

Case Study at Austrian Railways Illustrating Concepts, Application and ROI of Convergent Architecture with MDA
Jens-Hagen Syrbe, Interactive Objects Software GmbH

Convergent Architecture defines a holistic, architecture-centric approach to managing evolutionary and revolutionary changes in both business design and technology. Based on models as the means of design expression, communication, automation and management, it is the logical next step in software engineering. Real-world projects repeatedly bear witness to significant advantages and high returns as demonstrated in this case study at the Austrian Railways (Oesterreichische Bundesbahnen, OeBB). The presentation gives insights into the approach taken and explains the steps from business object modeling, refinement to UML models, model verification to generating the source code and build and test environments.

Qualitative Return on Investment for an MDA Project
Ken Sayers, Chubb and Son, Inc.

This presentation relates Chubb's experience with MDA. An application development platform was built around MDA. By placing UML at the center of the development process, architecture, frameworks and code generation combined to increase developer productivity. One architect worked with a team of java developers to build a robust, flexible, maintainable, high-quality system in four months. All while the architecture and platform evolved underneath. This was made possible by the heavy use of MDA. This session discusses how MDA contributed to the project's success.

From a Specification Level PIM to a Design Level PIM in the Context of Software Radio
Juan Pablo Zamora Zapata and Francis Bordeleau, Carleton University

The objective of the OMG's Software Radio DSIG is to develop specifications for a new generation of radios that can be reconfigured at run-time. This presentation describes a project in which a set of mappings have been defined that refine a Software Radio PIM into an executable UML real-time model containing design details. The more abstract model describes high-level relationships between classes that correspond to the main entities composing a Software Radio architecture. Although an executable model, it abstracts away platform specific issues, thus remaining under the category of a PIM. Results and unresolved issues are also discussed.

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WEDNESDAY - October 23, 2002

0900 - 1200 **Session 4 -** *Tools, Techniques and Methods*
Chair: Robert France, Colorado State University

This session offers a variety of techniques, methods and tools used in the model driven development of enterprise software. The session begins with a presentation on employing OMG's Enterprise Collaboration Architecture specification to model and implement business process in a technology-independent manner. The second presentation discusses the use of Activity Diagrams to design technology-independent pervasive security services. After the break, the session continues with a description of a technique that employs metamodels to provide generic and flexible Quality of Service support between software components. The session concludes with the description of several techniques that assist scenario-based testing.

MDA for the Enterprise: The OMG Enterprise Collaboration Architecture
Cory Casanave, Data Access Technologies

The OMG has recently adopted the Enterprise Collaboration Architecture (ECA) as part of the UML for EDOC set of specifications. ECA describes how to model enterprise collaborations, processes, information, events and patterns with UML and use model driven development to implement collaborative business processes using a variety of middleware technologies. This presentation will cover ECA modeling concepts, process and examples - showing how to go from abstract concepts to precise specifications leveraging reusable components in a variety of technologies such as WSDL, Soap, ebXML, EJB and CORBA. We will also see how to use ECA as a technology independent model supporting web services and distributed objects.

Domain Modeling for MDA using UML Activity Diagrams
Srinivas Nedunuri, Texas Dept. of Human Services

This talk proposes the use of a form of activity diagrams for specifying the behavioral aspect of PIMs. They are intended as an alternative to the use of state models in cases where the interesting behavior is in the inter-object communication. The architecture being modeled is based on implicit invocation, and we explain why such an architecture is important to developing reusable assets. We illustrate the ideas on some security domains.

1000 - 1800 *Demonstration Area*

1000 - 1030 **Morning Refreshments**

Session 4 - *Tools, Techniques and Methods (Cont'd)*

UML in Telecoms - Modeling Quality of Service and Continuous Media Communication
Tom Ritter and Dr. Marc Born, Fraunhofer FOKUS

This contribution presents a generic model driven approach to enable Quality of Service (QoS) modeling and realization for component based middleware platforms. A QoS metamodel is described that makes it possible to support multi category QoS instead of introducing a static set of QoS properties into the modeling method. The metamodel is integrated with the UML metamodel (in terms of a modeling profile) and the Component Implementation Framework (CIF) metamodel of the CORBA Component Model (CCM).

Adaptive Scenario-Based Testing Using UML

W. T. Tsai, Z. Cao, B. Xiao, L. Yu, Department of Computer Science and Engineering, Arizona State University
R. Paul, Department of Defense

This paper described several techniques to assist a test engineer to perform scenario-based testing adaptively and rapidly using UML. Scenarios can be organized into a tree structure according the commonality, and each scenario can be classified into different levels. Each sub-tree groups a set of functionally related scenarios together in a consistent manner. Each scenario is further annotated with dependency, relationship, and risk information. Even though a typical system has numerous scenarios, most of them can be classified into few scenario patterns or templates, which furthermore map to verification patterns using UML and then coded into an object-oriented test framework.

1200 – 1230   *(Co-sponsor Presentation)*

1230 - 1330   **Lunch**

1330 – 1530   **Session 5 –** *Profiles and Transformations*
Chair: Fred Waskiewicz, Object Management Group

A UML Profile is an extensibility or transformation mechanism such as a stereotype, tagged value or constraint that customizes UML model elements for a specific domain or purpose. This session offers two examples of profiles: one for modeling CORBA components and one for modeling knowledge representation as expressed by W3C's Web Ontology Language. It also provides an example of the role of OMG's Meta Object Facility in model transformations in component construction.

A UML Profile for CORBA Components

Julia Reznik and Dr. Marc Born, Fraunhofer FOKUS

This presentation will detail a UML profile for modeling of CORBA Components. The relations to the Enterprise Distributed Object Computing (EDOC) standard in the context of a model driven approach with EDOC as Platform Independent Model and the presented profile as Platform Specific Model and the impacts of the upcoming UML 2.0 will be discussed.

A UML Profile for the Web Ontology Language (OWL)

Mark Dutra & Elisa F. Kendall, Sandpiper Software, Inc.

The Ontology Web Language (OWL) is a W3C working draft of a language which can formally describe the semantics of classes and properties used in web documents. Based on the Darpa Agent Markup Language (DAML), which in turn is based on RDF, OWL is moving towards standardization later this year. In addition to the OWL standardization effort, work is progressing on a UML presentation syntax for OWL. With previous experience in building a UML profile for knowledge representation, Sandpiper Software is contributing to the effort to define the mapping between UML and OWL. This presentation will provide an overview of OWL and also describe some of the current thinking and issues related to using the UML to model OWL.

Realizing Meta-Data Architectures Using the CORBA Component Model

Dr. Olaf Kath, IKV++ Technologies AG and Dr. Marc Born, Fraunhofer FOKUS

The presentation will show how meta-data architectures can be realized on top of a CORBA Component Model (CCM) infrastructure and what are the possible benefits of that approach. The approach is presented as a model transformation between the Meta Object Facility (MOF) 2.0 Core and the meta-model of the CCM by application of UML and OCL. As a result of that approach, MOF 2.0 compliant metamodels can be transformed into a set of CORBA Components, which together form a distributed repository for a specific metamodel.

1530 – 1600   **Afternoon Refreshments**

1600 – 1800   **PANEL - *UML 2.0--The News from Helsinki***
               Moderator: Robert France, Colorado State University

The OMG is considering submissions for version 2 of the UML. Initially six different submissions were offered to OMG. Revised submissions will be presented at the Technical Committees meeting in Helsinki in early October. The panel will bring the news from that meeting.

In addition to UML proper, there are also submissions for the OCL language, for XMI model interchange, for diagram interchange, for a textual notation, and several for MetaObject Facility capabilities. This panel will focus on the UML language as supported by modeling tools through diagrams and property sheets.

Four of the panelists are from companies that are working on one of the several submissions; one is from a company that uses UML in enterprise architecture. Each panelist will briefly outline what is important to them about the current status of UML 2.

[Panel organized by Joaquin Miller, Financial Systems Architects]

Panelists: William Frank, Financial Systems Architects
                     Stephen Mellor, Project Technology
                     Hiroshi Miyazaki Fujitsu Limited
                     Chalon Mullins, Charles Schwab & Company
                     Jochen Seeman, Rational Software

1830 - 2030   ***Workshop Reception hosted by:***
               Rational Software *and* TogetherSoft

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THURSDAY - October 24, 2002

0830 - 1030   **Session 6 - *Case Studies II***
               Chair: Joaquin Miller, Financial Systems Architects

This session returns the workshop focus to actual experience in using UML for enterprise applications. The speakers report on the issues faced in using UML for a platform independent model of a product line architecture, experience in making a UML modeling tool an integral part of a development platform for integration adapters, and the fitness of UML for enterprise application modeling at various scales. These are all sizable undertakings with substantial complexity. The speakers discuss the problems encountered and describe the solutions they worked out.

Experiences in Model Driven Enterprise and Web Services Management Architecture
Nathan Dykman, Dan Matheson, and Jishnu Mukerji, Hewlett-Packard Company

In this presentation we discuss how we used UML and MDA techniques to develop a large-scale model of the OpenView family of system and network management products. The purpose of the modeling was to move towards a "One OpenView" set of products. We are faced with a wide array of products on different technology bases with overlapping capabilities and the need to remain a profitable business while improving our products. We discuss the issues and problems that arose in this (continuing) effort, the solutions developed and some suggestions for UML, MDA and the tools.

MetaData Alchemy: Turning Metadata into Integration Gold with MDA
Ken Sayers, Chubb and Son, Inc.

This presentation relates Chubb's experiences building an integration development platform using MDA and other OMG standards. The platform facilitates generation of UML models from heterogeneous metadata, then Java code from the UML. The UML generation process flows through several steps that utilize Java, XML, XML Schema, XSLT and XMI. The Java code generation process utilizes MDA. The end result is skeletal code for an integration adapter, a component used to connect a system to a runtime integration platform. Attendees of this session will hear how OMG standards facilitate development of integration solutions at Chubb.

Unisys IT EAI Modeling Strategy with the UML
Bob Cherluck, Charles LeFevre, Russell Levine and Doug Tolbert, UNISYS

This presentation will explain the Unisys Information Technology EAI modeling strategy and how we have implemented it with UML. We use map analogy to describe our modeling process. At the top level we provide a road atlas that describes the major applications and business objects in the Unisys landscape. At the middle level is a route plan that is used to analyze what we call "value chains." Finally, at the bottom level we provide street maps that document how we will implement specific interfaces. For each of these levels of modeling, we will describe its purpose, provide an example and discuss some of the issues we encountered.

1030 - 1045   Morning Refreshments

1045 - 1215   Session 7 - *System Modeling*
Chair: Robert France, Colorado State University

Modeling enterprise systems presents a challenge in the complexity that must be addressed. Concurrency, distribution, performance, integration of diverse architectural styles, and interoperability in a heterogenous computing environment are some of the aspects that contribute to system complexity. The two presentations in this session provide insight into how this complexity can be managed through analysis and the use of models based on the UML and Meta Object Facility (MOF).

Relating Dynamical Systems Concepts to Software Engineering
Kenneth A. Lloyd, Jr., Watt Systems Technologies, Inc.

We will show what dynamical systems are and their relationship to software development, engineering and modeling. We will explore some properties, contexts and constructs that may have great impact on how we view, analyze, and validate software models – even including the UML and MOF metamodels. We will also discuss various time contexts, new insights into different kinds of space, quirks about our mathematics, chaos and entropy in our systems.

Using UML and ODP for Enterprise Architecture
Joaquin Miller, Financial Systems Architects

Every enterprise has many software applications, exhibiting a variety of architectural styles, and using various operating systems, hardware, and networks. It can be a challenge to model all this. Some folks claim that UML is not suitable for this job. This presentation describes briefly how UML can be adapted to be suitable for specifying ODP models: Representation of the ODP foundation concepts using UML; Use of UML as a viewpoint language; Modeling the systems of an enterprise and their interactions, whatever the technologies and architectural styles, and specifying new systems and their integration, using the viewpoint languages.

1215 - 1315   Lunch

1315 – 1515   **Session 8 -** *Business Models*
                 Chair: Cory Casanave, Data Access Technologies

Since the dawn of the information age, business information systems have been moving closer to dealing directly with business problems and further away from the details of particular hardware and software. "Raising the level of abstraction" in this way has made us able to deal with the ever-increasing importance, scope and complexity of these systems. Will this process continue until we are able to directly execute business models? This session will explore the state of the art in business modeling and the feasibility of producing information systems from high level business semantics. We will explore business modeling and business rules in the context of a model driven architecture.

Benefits of Business Rules with MDA
Stan Hendryx, Hendryx & Associates - Paul Vincent and John Cribbs, Fair, Isaac and Company

This presentation shows how business rules fit into the MDA model architecture and illustrates the power and utility of business rules in each phase of the software development life-cycle. Through a real-world case study, we show how formalizing inter-model rule transformations provide needed traceability from specification to implementation. We also show how the separation of concerns across models provides insurance against technological obsolescence by allowing business rules to be specified and maintained separately from the software architecture; thus providing a way for companies to directly manage one of their most valuable assets – the collective business processes, policies, and procedures knowledge.

Patterns for Modeling Inference Rules in the PIM
Dr. Kirk D. Wilson and Dr. Ian Maung, Computer Associates International, Inc.

Business rules are typically considered to be constraints; however, inference rules constitute a recognized type of business rule that derives new facts from existing facts. Inference rules are If/Then rules. The "Then" part represents the "Action" of the rule. Modeling inference rules as constraints poses a challenge because constraints must be free of side effects. This presentation seeks to address this challenge through UML/OCL patterns for modeling the semantics of inference rules in a PIM. We define UML profiles for both zero-order and first-order inference rules by means of invariant and liveness conditions.

Business Models, Design Models and Platform Independence: an Investigation in Model Driven Engineering
Jean Bézivin and Abdessamad Belangour, CRGNA, University of Nantes - Mounia Fredj, ENSIAS, University of Mohammed V

The necessity to decouple platform-neutral and platform-bound software assets has been recognized as the only possibility to practically cope with the constantly evolving technology. This idea was at the centre of the definition of the MDA by OMG. However we are still far from having a complete and precise understanding of what a Platform-Independent Model (PIM) is and a clear view of the technical, methodological and strategical associated aspects. The simple illustrative application used in this work will serve as a basis to discuss some of the main ideas of model driven engineering and to propose some more precise definitions for the basic MDA notions.

1515 – 1530   *Wrap-up*

UML for Enterprise Applications
Workshop Program Committee

Co-chairs:	Robert France	Colorado State University
	Fred Waskiewicz	Object Management Group
Members:	Conrad Bock	Kabira Technologies, Inc.
	Philippe Desfray	SOFTEAM
	Sridhar Iyengar	IBM
	Cris Kobryn	Telelogic
	Kevin Loughry	Object Management Group
	Joaquin Miller	Financial Systems Architects
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