The Instructors

John FAVARO has more than twenty years of experience in the information technology field. After spending several years at CIT-Alcatel in Paris and Siemens AG in Germany, he joined Intecs where he has been the leader of different projects to develop UML-based methods and tools. He now coordinates R&D activities at Intecs and is on the steering committee for the International Conference in Software Reuse. Mr. Favaro took his degrees in computer science at Yale University and the University of California at Berkeley.

Silvia MAZZINI has more than twenty years of experience in the Software Engineering field. She is involved both in technical and management activities in the context of several international industrial and research projects. She is Methodologies and R&D Manager at Intecs. Mrs. Mazzini took his degree in computer science at Pisa University in Italy.

The Company

Since 1974, INTECS has been operating at the forefront of the software market, where safety, reliability, innovation, and quality are essential ingredients for success. INTECS provides leading-edge software technologies to support the major European and Italian organisations in the design and implementation of advanced electronic systems for Defence, Space, and Civilian markets.

Intecs is ISO-9000 certified since 1994. Currently it holds **ISO 9001:2008** quality certification for software development in Defense, Space, and Civilian domains. Moreover, Intecs Defence and ATC Divisions were positively appraised at **CMMI® Maturity Level 3**.

General Information

Location

Courses may be arranged in-house at the customer site upon request.
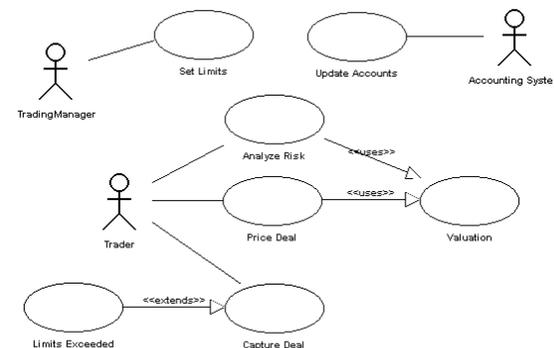
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intecs
the Brainware company

Mastering the UML

UNIFIED MODELING LANGUAGE

A three-day intensive course

The Unified Modeling Language

Ratified by the Object Management Group in November 1997, the Unified Modeling Language, is the universal vehicle for communication among designers, analysts, implementers, and customers of today's most advanced information technology systems. UML is used in all areas of our industry, from software architecture to system engineering and business process modeling.
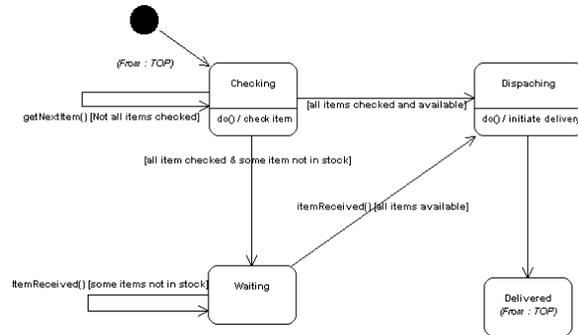
The Course

A comprehensive three-day introduction to all of the major features of the UML and related profiling, together with practical issues of the specific uses and available tool support. Special emphasis is placed on the use of the notation in the context of space system and software engineering processes and activities.

Intended audience

The course addresses:
• project managers who want to have a deep view and knowledge of the OMG UML standard and be able to fully understand and apply it in their projects
• software engineers who are operationally involved in the requirement analysis, design, development and test of space software systems using UML.

Material

The participants are provided with copy of the course handouts

Course Outline

Day 1

History and Status of the UML
　　The road to unification
　　OMG standardization
　　Current status

A Tour of the UML
　　Fundamental concepts of UML
　　Grand tour of the Diagrams of UML

Break

Use Case Modeling
　　Introduction to Use cases
　　Use Cases and System Requirements

Lunch break

Exercise Session 1

Break

From Requirements to Design
　　The gap between analysis and design
　　Finding objects

Exercise Session 2

Day 2

Modeling Static Structure
　　Introduction to Class Diagrams
　　Perspectives in class modeling
　　Associations and attributes

Break

Advanced Static Modeling
　　Generalization, interfaces and delegation

Lunch break

Exercise Session 3

Managing Hierarchy
　　Composite structure diagrams

Object Oriented Design with Design Patterns
　　From actions to objects: object oriented design
　　Effective use of patterns in architectural design

Break

Modeling Dynamic Behavior
　　Sequence, Communication and Activity Diagrams

Day 3

Advanced Dynamic Behavior
　　State Diagrams

Exercise Session 4

Break

Modeling the Physical Architecture in UML
　　Deployment Diagrams

Model-based Engineering with UML
　　Introduction to MB principles
　　Impact of MB on the lifecycle
　　Practical Issues in the use of UML
　　Approaches for formal UML semantics
　　Verification and validation of models

Lunch break

Extending the UML notation
　　Basis of the extension mechanisms
　　OMG standard UML profiles

UML for Systems Engineering
　　SysML design principles
　　An overview of SysML Diagrams
　　Using SysML for space system engineering

Break

UML for Real-Time
　　Overview of MARTE

UML2 Commercial Tools
　　Survey, features and limitations of the most relevant tools