

# Model Engineering for Software Modernization

Jean Bezivin  
ATLAS Group (INRIA & LINA)  
University of Nantes, France

In November 2000 the OMG proposed a new approach to interoperability named MDA<sup>a</sup> (Model-Driven Architecture). MDA is one example of the broader Model Driven Engineering (MDE) vision, encompassing many popular research trends like generative programming, domain specific languages, model-integrated computing, model-driven software development, model management and much more. Considering models as first class entities and any software artifact as a model or a model element constitute the core principle of MDE.

The original motivation for this paradigm change in software engineering was the separation of aspects, mainly between platform dependent and platform independent parts of software systems. Progressively the operation of model transformation appeared as the key technology to map neutral and relatively stable business models to rapidly evolving technological platforms of the present and the future. In this approach any model including transformation models conforms to a metamodel.

More recently it became obvious that the techniques used to generate executable systems on these platforms of the present and the future (like Corba, EJB, DotNet, Grid computing, P2P computing, etc.) could also be applied to extract business models from the platform of the past (RPG, COBOL, PL/1, ADA, 4GLs, etc.). The combination of backward and forward engineering is thus taking, in the context of MDE, an increasing importance.

The present transition to model engineering will have probably a much deeper impact on software practices than the move from procedural to object technology that took place in the 80's. Areas like software modernization will have much to gain from this rise in abstraction. The presentation intends to show how the basic principles of MDE may help to unify and integrate good reengineering practices.

Jean Bezivin is professor of computer science at the University of Nantes, France and a member of the newly created ATLAS INRIA research group. He got his Master degree from the University of Grenoble and PhD from the University of Rennes before spending several years, as an assistant professor, at the University of Brest. He also spent a year as a research fellow at the Queen's University of Belfast (Northern Ireland) and one year at the Concordia University of Montreal (Canada). He has been very active in Europe in the object-oriented community, starting the ECOOP series of conference (with P. Cointe), the TOOLS series of conferences (with B. Meyer), and more recently the <<UML>> series of conferences (with P.-A. Muller). He published research papers on various subjects related to concurrency, software engineering, distributed simulation, object technology, etc. His present research interests are in the domain of model driven engineering.