

# PathMATE™ for high performance systems development

*Automate high performance software development with Model Driven Architecture® and PathMATE*

Software organizations today are challenged to rapidly respond to changing competitive, regulatory, and technological requirements - and the additional pressure to control or reduce costs. How do you address the universal mandate to "do more with less"? Replace expensive senior talent with less experienced or off-shore resources? Make quality or architectural sacrifices to meet time to market demands? These common responses often fail to deliver in the short term, and are universally flawed in the longer term.

Pathfinder Solutions customers meet these challenges and achieve substantial efficiency gains by *automating development* - applying the MDA approach for high-performance and embedded systems development with the PathMATE Model Automation and Transformation Environment. Based on industry standards and available in leading development platforms, **PathMATE delivers key strategic benefits:**

## Higher Developer Capacity

PathMATE automatically transforms UML PIMs into high-performance embedded C, C++ or Java software. By moving development up-abstraction, PathMATE shifts the focus of development from code-centric architecture-centric, enabling developers to maintain their product vision directly. *PathMATE customers have measured development productivity gains of up to 40% within the first year.*

## Implementation Consistency

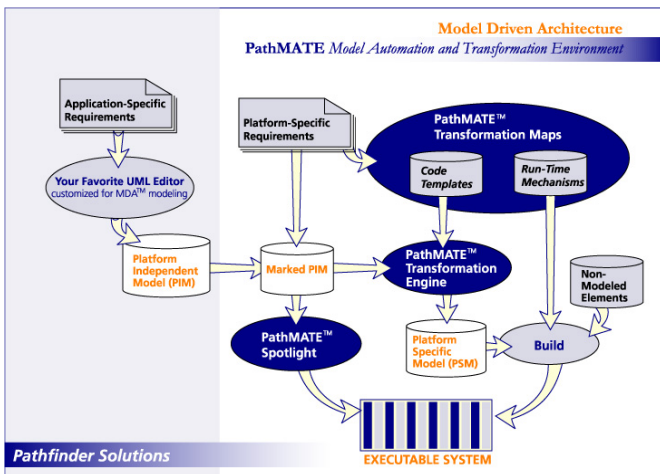
In a team setting, code inconsistency can seem inevitable, negatively affecting maintenance, quality and performance. Through automation PathMATE makes the production of tight, readable and consistent code—including your project-specific implementation optimizations—a highly repeatable process. *Automated code generation improves system quality.*

## Architectural and Platform Agility

PathMATE transforms your UML PIMs into high performance deployable code. Rapidly change implementation language, platform and topology, leveraging the power of platform independence, while maximizing implementation efficiency. *PathMATE customers gain superior product agility as a strategic competitive advantage.*

## Large-Scale Software Reuse

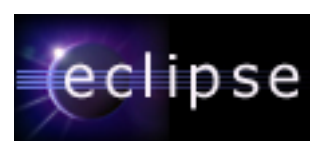
With PathMATE, you define component functionality once—in a PIM, and by separately adjusting model properties and deployment settings, you redeploy your system in different implementation languages, platforms and topologies, controlling a wide range of optimization tradeoffs. *Many traditional reuse limitations of hand-coding disappear, greatly enhancing your ROI and ability to respond to dynamic opportunities.*



*PathMATE transforms MDA Platform-Independent Models (PIMs) into high-performance embedded C, C++ & Java. Fully integrated with Eclipse and the Rational Software Developer Platform, PathMATE is the most open and advanced environment for the development and deployment of high performance systems.*

*"With PathMATE, I focus on high-level objectives, requirements and overall architecture, not memory management and I/O details—I'm much more informed and productive than I used to be."*

*Software engineer  
Factory Control Solution Provider*



## PathMATE™ Features

PathMATE's distinguishing features help customers produce the highest quality systems:

- **Most Configurable** - Easily control optimizations and topology of generated system
- **Most Open** - Integrates with leading UML environments & provides open transformation logic
- **Fastest** - Delivers quickest -turnaround iterative model development - edit/transform/build/test

### Open Integration

- Integrates with popular UML editing platforms such as IBM Rational Software Developer and Rational Rose
- Model versioning & archival via leading change management systems
- Integrated with popular requirements management systems
- Eclipse 3.0 plugin architecture for full extensibility

### Industry Standards Based

- Reference technology for the OMG MDA Model-to-Code standard
- Supports MDA Model Marking
- XMI data import
- Tracks emerging MDA Executable UML (xUML) standard

### UML 2.0 Modeling Support

- Architectural-level Domain Models/Packages and interfaces
- Classes, attributes, class operations, signals
- Associations and association classes
- Generalization including polymorphism support
- Interface classes, realization
- Harel State Semantics including state entry and exit actions, transition actions and guards, composite states, pseudo states, and history
- UML 2.0 Standard Action Semantics
- Supports full UML diagram set: Class, State Chart, Use Case, Sequence Chart, Interface, Subsystem, Deployment & Collaboration
- Model differencing and merging
- Flexible model storage for component-level management and reuse
- Eclipse 3.0 and Rational Software Development Platform integration

### Model Checking and Static Analysis

- Built-in model syntax, completeness and consistency checks
- Automated error correction
- Run-time performance, safety-critical, high-availability, and modeling consistency analysis (customizable for project-specific requirements)

### Transformation Performance

- Generates > 50,000 SLOC/minute
- Fastest edit-transform-debug cycle for effective iterative development and testing

### Architectural Configurability

- Reconfigure across task & processor topologies for performance prototyping, varying product line configurations, etc.

### Documentation & Report Generation

- Generates formatted Word documents
- Injects diagrams into generated target documentation
- HTML output for web-based collaboration and reference lookup
- XML output for open data interchange
- Rich document template library provides a range of reports, and starting points for custom reports

### Product Support

- PathTECH on-line tech resource site
- MDA Mentor training & consulting
- Fully-executable sample systems

### Platform Support

- PathMATE runs on the Eclipse and Windows platforms. Browse our wide range of supported deployment platforms, refer to the PathMATE Transformation Maps datasheet

*To access white papers, see demos or to request product evaluations, please visit [www.PathfinderMDA.com](http://www.PathfinderMDA.com)*