BLU AGE

AGILE MODEL TRANSFORMATION
2009 EDITION

Agile Model Driven workbench for Legacy Modernization & Application Generation

The increasing demand for agile business Information Systems combined with the increasing technical complexity of software, make meeting the budget and deadlines of your Application Development and Legacy Modernization more and more difficult.
By using BLU AGE®, our MDA® compliant software workbench, you reduce the elapsed time of your Legacy modernization and application development projects from 30% to up to 50% and cut corresponding workload from 20 up to 40%. Thanks to its pre-loaded transformation cartridges, BLU AGE® extracts UML models (PIM) from Legacy applications and generates SOA applications that do not require any "run time". BLU AGE® makes valuable sense of Business Process analysis investments by enabling 100% automated transformation of UML diagrams into agile JAVA EE and .Net business applications.

BLU AGE® benefits

■ **Take your Enterprise's Business Process Modeling and turn it into a valuable business oriented application in just a few clicks.**
The BLU AGE® Software Workbench transforms your business requirements (UML® 2.x models) into agile and valuable business applications.
Thus, it becomes the corner stone of your Model Driven Software Development.
BLU AGE® allows your business analysts, data designers and architects to collaborate towards effective Business Process Modeling. This means being able to build new applications, create new services or transform and enhance existing business applications, with no need of any application development skills.

■ **Drastically improve your business analyst productivity by choosing the Model Driven approach.**
MDA provides a comprehensive description of your business needs. This is independent from the Languages and Frameworks used to develop your Business Oriented Applications. With the BLU AGE® Software Workbench, your Platform Independent Models (PIMs) designed and refined by using the UML language, is 100% automatically transformed into Platform Specific Models (PSMs) and into the application source code of your choice.
With BLU AGE® your software engineer involved in 12 months UML business modeling project, will deliver (in the same amount of time) a 12 months UML analysis and a 24 to 36 months source code workload, without having to bother with any JAVA or .NET languages.

■ **Save Time and cut costs throughout the business application development lifecycle.**
With BLU AGE® software workbench, you can use the appropriate MDD™ methodology to reduce the elapsed time of your project from 30% up to 50% and cut corresponding workload from 20% up to 40%. That cost cutting, combined with the increasing quality of generated code provides you with the 4 main advantages of BLU AGE®:
- The direct transformation of business needs into source code with no intermediate translation,
- The possibility of the iterative and practical refining of business needs. This enables better user acceptance and more active involvement with business process changes,
- A fully automated transformation process which suppresses all former application development steps and significantly reduces translation errors,
- Increasing the speed and power of the transformation process which eliminates all the traditional budget mismanagement adjustments that are usually incurred with other application development projects.

■ **Keep compliant with IT standards and generate business oriented applications without any proprietary components.**
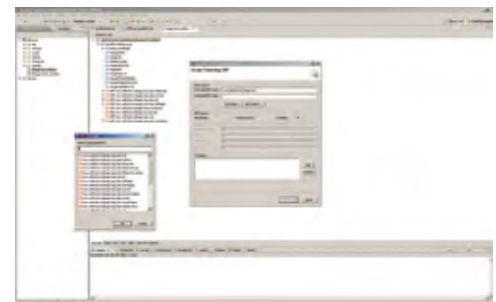The BLU AGE® Software Workbench supports MDA™ and Eclipse™ standard technologies. The BLU AGE® Software Workbench automatically transforms UML2.x models, a set of diagrams that are compliant with MOF or EMF meta model standards and that are enriched with OCL2 (Object Constraint Language) notations. This is done through XMI® (XML Metadata Interchange), combined with XHTML files, querying with a QVT (Query/Views/Transformations) method. This Software Workbench, when plugged with transformation cartridges that you can easily build yourself, lets you generate Business Oriented Applications in compliancy with your own development framework and/or architectural components, with no proprietary embeded components.
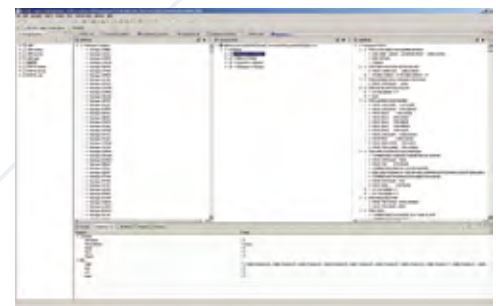
BLU AGE® Reverse - Model Annotation

BLU AGE® Build - Model Debugger

BLU AGE® Deliver - BSF (BSPs creation / modification)

Ready for
IBM | **Rational**
software

BUILT ON
eclipse

BLU AGE is co-financed by the European Union.
Europe is committed in Aquitaine with the European Regional Development Fund.

BLU AGE® key features highlights

■ **Modernize and Generate turn key application**
All application components are fully generated:
- **Service layer:** Business objects, application services and web services,
- **Presentation layer:** User interface, user roles and security policies
- **Persistence layer:** persistence to all major RDBMS,
- Application is packaged and ready for deployment and execution.

■ **MDA Transformation**
- Model Driven Architecture support which transforms user friendly model elements into business application,
- Fully template driven transformations, BSP cartridges implement off the shelf transformations,
- 100% independent from source and target technologies. Platform Independent Models (PIMs) are extracted from OO and non OO existing source code, and then generated into Platform Specific Models (PSMs) thanks to the BSP technical cartridges (template transforms),
- Easy to write and modify: transforms templates by using the BLU AGE® Software Factory (BSP cartridges),
- Define your own UML Profiles to support "Customized Requirement" elements.

■ **Advanced MDA**
- Model-to-model transformations raise the abstraction level to the specific rules of transformations by using a QVT-like Atlas Transformation Language (ATL),
- The reverse modelling of existing applications: regenerate undocumented legacy applications,
- Complete debugging life cycle: Model debugging, automatic sandbox deployment and debugging, ready to deploy non bugged applications,
- Agile methodology: add features to your business application through iteration.

■ **UML modelers compliancy**
- Support for major UML tools like MagicDraw™15.x and 16.x, Rational® 7.X (RSM, RSD, RSA), and more,
- Comes with the complete UML 2.1 meta model. Otherwise, you can bring in your own meta model (MOF XMI 1.4+ or EMF) and generate code from those frameworks.

■ **Model completeness and consistency**
- Model debugging at all stages, from the platform independent model to the deployed application,
- Real time model generation, and validation,
- Validation of input models by using OCL 2.x constraints that are related to the meta model classes.

■ **Business performance and availability**
- Out of the box application server clustering capabilities,
- Load balancing and transparent application failover for major application servers,
- Database clustering support.

■ **Database modelling**
- Model database tables, columns, keys, foreign keys and other complex relationships by using UML and the inbuilt data modelling Profile,
- Generate DDL scripts to create target database structures for leading RDBMS,
- Model mapping from existing databases to business objects.

■ **Support for "pluggable technologies"**
- Add support for new languages, modeling profiles, a complete set of templates, data types or profiles and Design Patterns,
- Easy to build and maintain with Eclipse™ wizard,
- Templates are based on Java Emitter Template (JET) engine.

■ **Project documentation Generation**
- BLU AGE® produces the functional documents of the project by using information extracted from the models, in accordance with the selected document templates that support the methodological rules that have been defined.

■ **Leverage current SOA investment**
- Implement Business Process Management (BPM) independently from proprietary vendor systems and easily coordinate your enterprise core applications' business processes,
- Provide clear and simple UML Profile for SOA Platform integration with web services, business events and automated business processes,
- Create, manage and generate BPEL executable processes packaged and ready to deploy on the orchestration runtime server.

BUILD Module quick overview

Integrated Modeling Environment to build and debug your models and generate -in real time- a fully bug-free Java EE application (for PIM validation)

■ UML 2 model debugger (Executing the generated application & debugging it from model),
■ WYSIWYG Editor to map UI HTML mockups with models,
■ Real time application generation & deployment within Eclipse or Eclipse-based IDE.

DELIVER Module quick overview

Integrated Generation Environment to fully generate your applications into the majority of existing (and forthcoming) frameworks and web-applications servers thanks to a large range of customizable transformation cartridges (BSPs)

■ Fully generate production applications compliant with your custom frameworks and architecture:
- use 'standard' cartridges (BSPs) for common enterprise architectures support,
- leverage BSF to create and modify your own BSPs and improve generated application performance,
- directly generates EAR / MSI.
■ Manage your projects, iteration and generation workflows through a single interface:
- Collaborative workspace for Project Managers, Business Analysts, and Architects,
- Generated Application Life Cycle Management.

REVERSE/MODERNIZATION Module quick overview

Automatic UML models (PIM) extraction from Legacy applications source code and data, in order to afford their re-engineering through 'Build' and 'Deliver' modules

■ Allows valuable Reverse Engineering even when original developers are not available and documentation is missing or outdated,
■ Offers valuable solutions for both technical and functional application modernization:

- Once extracted, the PIM can be easily updated by Business Analysts or developers to take into account end users' new business requirements,
- A brand new application is then automatically and fully generated from this PIM according to your JAVA EE or .NET specific framework requirements, and optimized for IBM, Oracle, Microsoft and OpenSource application servers and databases.
■ Leverages Model Driven Software Development techniques and agile methods to quickly, efficiently and durably modernize your Legacy application portfolio.

Available cartridges (June 2009)

For Legacy modernization / Model extraction (source technologies)
■ **Procedural languages:** COBOL / PACBASE®
■ **Object Oriented languages:** J2EE, .NET

For Java EE 5 & .NET 3.5 Application Generation (target technologies)
■ **Presentation Layer:** Struts, JSF (MyFaces/IBM), ASPX.NET C#, PRISM/WPF (RIA XAML)
■ **Service Layer:** SPRING, NSPRING, Axis,
■ **Business Layer:** Hibernate, JPA, MS Link2Sql, NHibernate.

These cartridges are available for:
■ **Application Servers:** IBM WAS 6.x, Weblogic 9.x/10.x, JBOSS 4.x, Tomcat 5.x, IIS 6.0,
■ **DBMS:** Oracle 9i/10g, SQL Server 2000/2005, My SQL, PostgreSQL, DB2 UDB.
■ **Business Process orchestration runtime server:** Oracle BPEL Process Manager, ActiveOS BPEL.

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