



Emerging Technologies

built on 25 years experience with generative tools

Generative Programming

Over the past 5 years Delta has carefully monitored advances in Generative Programming – a new paradigm for solving the very common “similar but not exactly the same” problem. Delta is now able to reveal the results of development projects in this exciting area.



Generative Programming is a “hot topic” in the world of advanced software development.

There is a tremendous amount of repetition in the process of creating large software systems. We are continually faced with developing something “similar but not exactly the same” as something we have done many times before.

With 25 years experience of building generative software tools, the “similar but not exactly the same” problem is a core competency for Delta. This flyer introduces the projects and products that Delta has been working on in this area.

Improving Software Engineering

Modular programming, structured programming, object-oriented programming – these were all steps on the road

to improving the software engineering process. While these methods each lead to improvements at the programming level, they did not address a key issue – that applications are assemblies of large numbers of programs. Improvements are therefore needed not just in how we build individual programs, but in how we build complete applications.

Generative Programming

Generative Programming aims to bring proven assembly line techniques to software development. Instead of developing a custom application by hand the system should be “manufactured.”

The key difference to more traditional approaches is that instead of focusing

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on building one specific application, we take a step back and think about building a family of systems. This gives us a solid foundation for solving the “similar but not exactly the same” problem.

Generative Programming provides tools and techniques to model “system families” of software. We can now build software components that enable us to generate on demand the specific, highly customized and optimised end products (software systems) that meet our specific business and technical requirements.

Over the past 5 years Delta has carefully monitored advances in Generative Programming as these concepts exactly match Delta’s view of how software development can, and should, be done.

Emerging Technologies

Delta has made significant investments to bring together more than 25 years practical experience building generative software tools, experience of large-scale development projects, the current research work on Generative Programming and the latest thinking on software development. The result is the new technologies at the heart of Delta’s current and future product offerings:

– **ANGIE Frame Generator™** – A frame-based solution for building generators. ANGIE provides a set of common features that are required by a family of generators. A domain specific generator is “manufactured” to solve a specific problem, for example code generation or model transformation.

– **ANGIE Generation Now!™** – A freeware tool that allows experimentation with the ANGIE frame generator.

– **Pattern By Example™** – A freeware tool that allows experimentation with Delta’s core technology for generative programming using adaptive patterns. Pattern By Example makes patterns adaptive and reusable components rather than just patterns documented on paper. Pattern By Example focuses on the creation of adaptive patterns that can be used with ANGIE for code generation and many other tasks.

– **HyperSenses™** – Implements the concepts of flexible programming environments (Intentional Programming) where domain specific languages specify the problem to be solved. The program is not stored as syntax in a text file, rather as a model in a repository. Textual, semi-graphic and graphical views are used to define, maintain and understand the specification.

Real-World Results

The ANGIE frame-based generator technology is already proven in large-scale projects and is the core of SCORE® Adaptive Bridges™ and SCORE® Transformation Suite™. Pattern By Example and HyperSenses are now being gradually introduced into customer projects and Delta’s enterprise-class products.

Research Community

Delta works closely with leading Universities and research groups, making selected new technologies directly available to the global academic and development communities. Early exposure of new technologies is a core element of Delta’s R&D process, ensuring early and comprehensive feedback that helps Delta to build products that are rock-solid and suitable for enterprise use.

Delta Software Technology

Delta Software Technology creates the world’s leading family of generative software tools that maximize your return on existing investment (ROEI) in your unique and valuable application assets.

Delta’s family of products help you to profit from, care for, renew and grow your existing application assets:

- **SCORE® Adaptive Bridges™** – Service-oriented integration of your application assets, non-invasive and using open standards.
- **SCOUT™** – Stop “fighting the infrastructure”. Maintain your application assets in a simple and cost-effective way.
- **SCORE® Transformation Suite™** – Liberate your application assets from old implementation technologies and deployment platforms.
- **ADSplus™** – Grow your existing application assets. Add new functionality to your application assets using existing technologies and platforms.

Delta has 25 years experience in creating enterprise class application development and integration technology for more than 750 customer installations.

Delta is a privately held German company with partners throughout Europe.

More Information?

Please visit our Web site if you would like further information about our products and services, or to locate your local sales partner.

www.d-s-t-g.com

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