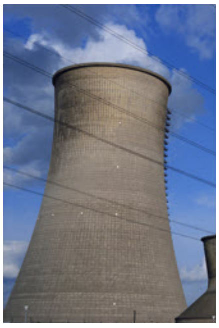
ESCHER TECHNOLOGIES

PERFECT DEVELOPER

Making software bugs extinct!

Critical Systems Edition



Reduce the cost of developing critical software

To maintain your competitive advantage, you need high developer productivity and you need to get your critical software right first time.

Perfect Developer meets these needs by combining the unrivalled integrity of formal methods with automated proof in an easy-to-use development environment.

What is *Perfect Developer?*

Perfect Developer is a tool for modelling software systems, providing formal proofs of correctness, and (optionally) generating code from the model.

Unlike other formal tools, *Perfect Developer* delivers high productivity by generating a very high proportion of software verification proofs without user intervention, using state-of-the-art automated reasoning technology.

Reduces testing costs

By using *Perfect Developer* to prove the system correct before it is built, you avoid the need for debug/re-work/re-test cycles. When used within a mature software development process, *Perfect Developer* can reduce the need for unit testing by facilitating correct-by-construction software development.

Easy to introduce into your process

You can use *Perfect Developer* just as a specification and modelling tool, and write code by hand once *Perfect Developer* has proved that the specification and design satisfy the stated functional requirements.

You can go on to use *Perfect Developer* to generate code, either for rapid prototyping or for the finished system.

If you prefer to define system architecture in UML, *Perfect Developer* can import class diagrams from several UML tools.

Easy to learn and use

Perfect Developer uses a notation based on syntax and concepts drawn from programming languages. Its automated reasoning technology avoids the need for user involvement in constructing proofs. These features make *Perfect Developer* easier for today's software developers to learn and use than traditional formal methods.

In fact, *Perfect Developer* is so easy to learn that several universities use it in undergraduate software engineering courses.

Suitable for large and small systems

Perfect Developer has been used in a wide variety of applications, both large and small.

These include embedded SIL 4 defence software, verifying business application logic, and of course *Perfect Developer* itself.

Try *Perfect Developer* for yourself!

Others are already using *Perfect Developer* in their critical software development processes. Isn't it time that you joined them?

To discuss how *Perfect Developer* can reduce your critical software development costs, email **critical@eschertech.com** or telephone us on 020 8144 3265.

What others say

“Our need is to meet the requirements of defence standard 00-55 to Safety Integrity Level 4. Escher Technologies software met our requirements best.”

“We were especially impressed by the automation of verification proofs, which will substantially reduce our costs, and by the level of support provided by Escher Technologies.”

Guy Mason, Senior Software Engineer at General Dynamics UK Ltd.

“We have used Perfect Developer for about four years and we have received excellent support from Escher Technologies throughout.”

“The ability of the theorem prover to identify problems in specifications is extremely valuable and leads directly to high-quality code. We were impressed by the code generator.”

John Warren, Precision Design Technology Ltd.

"PD is the only tool of the four that comes close to the ideal of automatic and easy program verification."

Ingo Feinerer, MSc Thesis, Vienna University of Technology.

http://www.logic.at/people/feinerer/publications/fpv.pdf

"[Perfect Developer] is relatively easy for software engineers to learn, even if they are not mathematically inclined. Once learned, it rewards the user with some surprisingly good verifications, and often enough uncovers unexpected errors in code."

Gareth Carter, Rosemary Monahan and Joseph Morris in a paper presented at Software Engineering and Formal Methods 2005.

http://www.cs.nuim.ie/toolap/pd/RefinementPD/RefinementPD.pdf

Technical Specifications

Development platform requirements

PC with fast x86 or x64 processor and 2Gb or more main memory.

Windows XP, Vista or 7 operating system, 32- or 64-bit. Contact us if you require a Linux edition.

Text editor (syntax configuration files supplied for several popular editors).

Verification proofs

Proofs of verification conditions can be saved in HTML, Latex or plain text format.

Generated code

C++ (subset) code to ISO/IEC 14882:1998 specification.

Ada 2005 code with SPARK annotations (under development).

C# 2.0 code to ISO/IEC 23270:2006 specification.

Java code to Sun Microsystems Inc. Java Language Specification, third edition (J2SE 1.5/1.6 compatible).

About Escher Technologies

Escher Technologies was founded in 1995 to research and develop leading-edge software development technology.

Our mission is to reduce the cost of developing dependable software, so that reliability can be the norm rather than the exception even for non-critical software.

Although our team has a strong commercial background, we maintain close links with the automated reasoning and formal methods research communities in leading universities worldwide.

For more information visit **http://www.eschertech.com** or email **critical@eschertech.com**

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