

CONTACT:

Dave Park
Vice President, Business Development, Coverity
(650) 368-4952
dave@coverity.com

OR

Kathy Keenan
Keenan Strategic Communications
408-358-7358 (office)
408-250-6451 (cell)
kathy@keenancomm.com

New Software Analysis Product Dramatically Reduces Cost of Software Development and After-Sales Support

February 2, 2004 — Menlo Park, Calif. — Coverity, Inc. has announced **Deduce**, a new software analysis tool that reduces the cost of development, after-sales support and cost of ownership by comprehensively testing large code bases and pinpointing virtually all defects.

“Coverity’s technology has the potential to make a profound impact on the software industry by increasing security and reliability,” said William F. Zachmann of Canopus Research, a Massachusetts-based provider of information technology consulting services. “Software vendors have been struggling with how to adequately test today’s code bases in the millions of lines. **Deduce** appears to handle these huge code bases quickly and comprehensively, finding defects that would be hard to track down otherwise.”

As code bases have ballooned to millions of lines, software testing has become increasingly difficult and software quality has diminished accordingly. The National Institute of Standards & Technology (NIST) estimates that as of 2002¹², the impact of inadequate software testing on the U.S. economy totaled

¹ The Economic Impacts of Inadequate Infrastructure for Software Testing,” National Institute of Standards & Technology, May 2002, Table 5-1, p. 5-4

² *Ibid.*

\$59.2 billion annually — even while *excluding* catastrophic software failures. As software projects become larger and more complex, software quality is reduced and more bugs are detected post-release, when they are exponentially more expensive to address. (See table below.)

Relative Cost to Repair Defects When Found at Different Stages of Software Development
 (Example only. X is a normalized unit of cost and can be expressed in terms of person-hours, dollars, etc.)

Requirements Gathering and Analysis/ Architectural Design	Coding/ Unit Test	Integration and Component/RAISE System Test	Early Customer Feedback/Beta Test Programs	Post-product Release
1X	5X	10X	15X	30X

The NIST Report indicates that the feasible, cost-saving improvements in the software testing industry are (1) the detection of defects earlier in the development cycle and (2) more precise error diagnoses. **Deduce** addresses both issues by pinpointing defects as soon as they occur in the development process and by providing a precise report of the root cause and location of each error.

“ **Deduce** is much more practical and flexible than run-time verification tools,” said Dr. Joseph I. Chamdani, co-founder and vice president, systems integration at Sanera Systems (a division of McData Corporation). “We’ve run it on about 5 million lines of code and it’s saved us time and money. We’ve found certain bugs in our code that are unique to our implementation — other test tools can’t do that.”

Dr. Stephen A. Harrod, senior director of engineering at VMware, Inc., said that **Deduce** enabled his team to find defects that would have been difficult or impossible to catch using traditional tools and techniques. “We now run **Deduce** on our entire source tree, because enterprise-class reliability and security are VMware’s top priorities. We think it’s a vital tool to maintaining our high level of quality.”

Deduce is the *only* software tool that analyzes 100% of all paths through the code while scaling to millions of lines of code. Unlike other software analysis tools, **Deduce** reports very few false alarms and uses sophisticated statistical analysis to automatically retarget itself to each new code base, adapting transparently to company-specific interfaces and coding conventions. It also catches defect types that other tools cannot, without requiring manual testing, changes to the code, or changes to the build system. **Deduce** runs on all major

platforms, and can be applied whenever source code is compiled. As the above table demonstrates, identifying bugs at this stage in the development cycle is many factors less expensive than it is in the latter stages of the cycle.

Deduce is based on patent pending source code analysis technology developed by a team of researchers headed by Dr. Dawson Engler, professor of computer science at Stanford University. At present, **Deduce** is available for analyzing C code. It will soon be available for C++ and Java.

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About Coverity: Coverity was founded in November of 2002 by Prof. Dawson Engler and a team of computer scientists from Stanford University. Customer-funded from inception, Coverity has gained rapid traction bringing state-of-the-art source code analysis solutions to market. Coverity's headquarters are in Menlo Park, California. For more information on Coverity and **Deduce**, see <http://www.coverity.com>.