



Quality Programming Begets Software Quality



Joe Jarzombek, Director for Software Assurance in the National Cyber Security Division (NCSA) of the Department of Homeland Security (DHS, CROSSTALK's co-sponsor), has given many keynote presentations at conferences in which he advocates the need for security-enhanced processes and practices. His message at the Software Engineering Process Group Conference in March was a snapshot of the session he facilitated on February 8, 2008, on "Security-Enhanced Quality Assurance and Project Management: Mitigating Risks to the Enterprise" at the Defense Acquisition

University's (DAU) Advanced Software Acquisition Management course. His opening message set the theme for his DAU presentation and this issue of CROSSTALK. Jarzombek said, "With today's global supply chain for information technology and software, the processes associated with software engineering, quality assurance (QA), and project management must explicitly address security risks posed by exploitable software. However, traditional processes do not explicitly address software security risks that can be passed from projects to using organizations.

"Mitigating supply chain risks requires an understanding and management of suppliers' process capabilities, products and services. Enterprise risks stemming from the supply chain are influenced by suppliers and acquisition projects (including procurement, QA, and testing). Software assurance processes and practices span development and acquisition.

"Derived (non-explicit) security requirements should be elicited and considered. QA and testing can integrate security considerations in their practices to enhance value in mitigating risks to the enterprise."

He then asked the audience, "What legacy do you intend to leave from the programs in which you have project responsibilities? Is it one that contributes to a more resilient system and enterprise or one that was simply good enough to get the customer to accept without an understanding of the residual risk passed to the end user?"

Along those lines, this month's issue of CROSSTALK deals with software quality. In his article *The Software Quality Challenge*, Watts S. Humphrey discusses how today's more complex software offers greater challenges in the areas of safety, security and reliability. Capers Jones talks about two measures that have a strong influence on the outcomes of software projects in *Measuring Defect Potentials and Defect Removal Efficiency*. Asking the tantalizing question, "Would your company like to save \$100,000 per day?" Thomas D. Neff offers insights into how that is possible in *Quality Processes Yield Quality Products*; while Dr. Paul Anderson discusses the advantages and limitations of using static-analysis tools in *The Use and Limitations of Static-Analysis Tools to Improve Software Quality*. Next, D. Richard Kuhn, Dr. Yu Lei, and Dr. Raghu Kacker offer new tools for automating the production of complete test cases covering up to 6-way combinations in *Automated Combinatorial Test Methods – Beyond Pairwise Testing*, and Dr. Jeffrey Voas gives us a look at the misunderstood term *software quality* in *Software Quality Unpeeled*.

For additional information, I want to remind everybody that DHS' NCSA offers free resources related to *security-enhanced quality assurance, project management, and software engineering* via their software assurance and BuildSecurityIn Web sites at: <www.us-cert.gov/swa> and <<https://buildsecurityin.us-cert.gov>>. More can also be learned at the World Congress for Software Quality, a major international gathering of software quality professionals that will take place September 15-18, 2008 in Bethesda, Maryland. For more information on the conference, visit <www.asq.org/conferences/wcsq>.

Finally, I would like to thank Beth Starrett for the exemplary work she has done over the past eight years as publisher of CROSSTALK. During her tenure at the helm the publication has thrived, and has broadened both its scope and depth in the field of defense software engineering. With her departure, we welcome Kasey Thompson as our new publisher. Kasey has long been associated with CROSSTALK, and we look forward to a new era of cutting-edge articles, innovative features, and ever-evolving quality information on the subjects that you, our readers, demand.

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