Stronger Than Ever

On behalf of the CROSSTALK staff, welcome to our final issue of 2001. As CROSSTALK concludes another publication year with its fourteenth volume, we remain committed to our mission of providing the defense software community with informative articles on software engineering best practices, proven methods, and lessons learned. We head into 2002 aiming to provide managers, practitioners, and users with the information they need to buy and build quality software – on time and within budget.

As we reflect back on this past year, it is the Sept. 11 attack on our nation that seems to cloud the year's events. We wish to express our sincere sympathy to those families and friends of the many victims. May our American pride remain strong and your loved ones never forgotten.

At CROSSTALK, 2001 was an exceptional year. As our annual index shows on pages 29-30, we published articles on a wide variety of software engineering topics that included Avionics Modernization, Distributed Development, Open and Common Systems, Testing and Configuration Management, and more. All of our 2001 issues are accessible from our Web site at <www.stsc.hill.af.mil>.

In this last issue of the year, we bring you information on upgrading and maintaining legacy system software. This topic is very important to the many organizations that regularly address how to migrate irreplaceable legacy software to modern platform-independent computing environments. Our issue begins with *Reengineering: An Affordable Approach for Embedded Software Upgrade* by Kenneth Littlejohn, Michael V. DelPrincipe, Jonathan D. Preston, and Dr. Ben A. Calloni. In this article, the Air Force Research Lab Information Directorate (AFRL/ID) and Lockheed Martin Aeronautics share what they have learned from the Embedded Information System Reengineering project that resulted in an automation-assisted JOVIAL-to-C reengineering capability.

Next, *The IULS Approach to Software Wrapper Technology for Upgrading Legacy Systems* is brought to us by Dr. David Corman, The Boeing Company, where the Incremental Upgrade of the Legacy Systems program has found that software wrappers play a major technological role for modernizing legacy systems. *A COTS-Based Replacement Strategy for Aging Avionics Computers* describes another AFRL/ID-sponsored effort that demonstrates a TRW-developed generic commercial off-the-shelf (COTS)-based software technology. Here Douglas G. Haldeman, William J. Cannon, and Jahn A. Luke explain how this scalable technology allows for the execution of legacy binary code on the latest generation of COTS microprocessors.

Our feature section concludes with *Automated Transformation of Legacy Systems*. This article by Philip Newcomb and Randy A. Doblar is a look at how artificial intelligence technology tools can be used for reengineering legacy computer languages into modern environments. Rounding out this issue, our supporting article this month is *Balancing Discipline and Flexibility With the Spiral Model and MBASE* by Dr. Barry Boehm and Dr. Daniel Port. See how this model and its recent extension can be used to tailor a project's balance of discipline and flexibility through risk considerations.

Finally, as we wrap up the year, we wish to provide a special thanks to all of our 2001 authors for contributing such informative articles. We also thank our many readers for their feedback and continued interest in our journal. We are excited about our upcoming January 2002 issue in which we will announce the Top 5 Government Software Projects. We had almost 100 entries, and what a tough choice it was to narrow this list down to five. Also, coming up in 2002, we will be featuring themes such as Capability Maturity Model®-Integrated℠, Requirements Risk, Software Estimation, and Information Assurance to name a few.

As CROSSTALK remains stronger than ever, may our nation also remain strong and prosper. Best wishes to you for a happy and healthy New Year.

Tracy L. Stauder

Tracy L. Stauder
Publisher