CrossTalk would like to thank 309 SMXG for sponsoring this issue.

The articles in this edition of CrossTalk address the challenges and opportunities associated with Legacy Software sustainment. As DoD budgets continue to shrink, it is becoming increasingly obvious that in many cases the best way to achieve new system capability is through modification of legacy software that is embedded in an existing system. The challenges of sustaining legacy software over many years are diverse and interesting. Since the DoD is not likely to field as many new systems in the future due to reduced budgets, the pressure to keep existing legacy systems operational will probably continue to increase over time.

Numerous core elements of software sustained in the DoD were originally written 20 to 30 years ago. Even though many of the software systems in sustainment today were written two or three decades ago they still struggle with the same challenges of some new developments. Some of the main challenges faced by developers and project managers are related to improving Quality, Predictability, and Reducing Cost and Rework of software. One area that is changing rapidly is Information Assurance (IA) or system security. The changes associated with IA and system security can be significant obstacles to efficient production but are necessary in order to protect systems from intrusion, data loss, and malicious software.

In this edition of CrossTalk there are two articles related to security of systems, Identifying Trustworthiness Deficit in Legacy Systems Using the NFR Approach, and The Transformation of Software Engineering Security. There is one article specifically focused on reducing rework by catching defects earlier in the software lifecycle, that article is: Using Combinatorial Testing to Reduce Software Rework. Additionally there are three articles devoted to various aspects of improving software sustainment of legacy systems and they are: Software Sustainment – Now and Future, Modeling Software Sustainment, and Addressing Software Sustainment Challenges for the DoD.

I hope that this issue of CrossTalk is helpful to many of you because as long as it continues to be helpful to the software industry, it is worth sponsoring this format in order to share good ideas and relevant information.

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