GSAW 2011 Tutorial F:

The Effective Use of Architecture Standards for Software Technology Readiness Assessments

Length: Half day

Overview:

A central theme of the defense acquisition process is that the technology employed in weapon system development should be "mature" before system development begins. A Technology Readiness Assessment (TRA) is a systematic, metrics-based process and an accompanying report that assesses the maturity of selected technologies, called Critical Technology Elements (CTEs,) used in weapon systems. The final TRA report, presented to the Milestone Decision Authority, describes how these CTEs were identified and provides an independent rating of their maturity.

The DoD in its TRA Deskbook does offer quite substantial help on assessing hardware technologies, but with respect to software, particularly software used in satellite and ground systems, the guidance is weak and ambiguous. Since conducting TRAs on major space acquisition programs is mandatory, gaining a better insight into this essential acquisition process is very important.

Based on broad experiences stemming from the support provided to numerous programs and conducting extensive research in the topic, the tutorial's objective is to offer tangible guidance on identifying CTEs and establishing Technology Readiness Levels (TRLs) for software and to provide further insights into several, related dimensions of software technology risk mitigation.

Instructor: Peter Hantos, The Aerospace Corporation

Biography:

Dr. Peter Hantos is currently Senior Engineering Specialist in the Software Acquisition and Process Department at The Aerospace Corporation. He has been the leader of the software effort in the TD-1-12 team, a key component of the Air Force Smart Operations 21 initiative, working on the improvement of technology maturity assessments in support the development and sustainment of warfighting systems. He has over 35 years of experience as manager, software engineer, professor, and researcher. Prior to joining Aerospace, as Principal Scientist at the Xerox Corporate Engineering Center, he developed corporate-wide engineering processes for software-intensive systems, including the process for assessing software technology readiness. Dr. Hantos has authored over 60 technical publications and presentations. He holds MS and PhD degrees in Electrical Engineering from the Technical University of Budapest, Hungary.

What Participants Should Expect to Learn:

The participants expected to gain familiarity
- with the Software TRA logistics context
- with numerous system and software architecture standards

The participants will learn
- to deal with software-software and hardware-software dependencies during TRL determination
- the effective use of architecture standards in acquisition

Who Should Attend:

The tutorial is introductory in nature, targeting a broad audience. Since conducting TRAs is a mandatory requirement for large Air Force acquisition programs, Aerospace and Air Force personnel have a vested interest in learning of how to conduct effectively the process. Additionally, the discussion on the use of ISO/IEC 10746 Open Distributed Processing standard makes the course particularly attractive for people

involved in the management of large ground system developments. There are no formal, topical prerequisites for the class, just a basic familiarity with the system and software development process; all concepts introduced are discussed methodically, in a bottom-up fashion, in detail.