GSAW 2010 Tutorial H:

Assessing Software Technology Readiness for National Security Space Programs

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). 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 offers quite substantial help on assessing hardware technologies, but with respect to software, particularly software used in space 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, the tutorial's objectives are to offer tangible guidance on identifying CTEs and establishing Technology Readiness Levels for space software, and to provide further insights into several, related dimensions of technology risk mitigation. The tutorial incorporates considerations for new developments in this area, such as the 2008 version of the DOD 5000.02 instructions and the most recent release of the TRA Deskbook.

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 was the software leader of the Technology Development (TD-1-12) team in the context of the Air Force Smart Operations 21 initiative, working on the improvement of technology maturity assessments for the development and sustainment of war fighting 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 70 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 TRA logistics context

    - with TRA stakeholders and their processes
    - with the legal and compliance considerations
- The participants will learn
    - to identify critical software technology elements
    - to deal with hardware-software dependencies during TRL determination
    - to rate the maturity of software CTEs
    - to understand the difference between the TRA and customary risk management practices

Who Should Attend:

The tutorial is introductory in nature, targeting a broad audience. Conducting TRAs is a mandatory requirement for large Air Force acquisition programs. Consequently, Aerospace and Air Force personnel of government program offices and personnel of the competing contractors might have to support a TRA as part of their KDP review and Source Selection preparations, and Aerospace ETG personnel might be drafted in the Independent Review Panel that is conducting the TRA. There are no formal, topical pre-requisites 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.