Beyond Greenfield Systems Engineering

Moving beyond "Clean-Sheet" Traditional Systems Engineering

Summary

- Three-day course (customizable)
- Provides a systemic overview of how to move from greenfield (clean-sheet) to non-greenfield (non-clean-sheet) development projects
- Focuses on the approaches for the following:
  - Commercial-off-the-Shelf (COTS)-Based Systems
  - Brownfield/Legacy Systems
  - Product Line/Modular Systems
  - Systems of Systems (SoS)
- Follows the basic outline and conventions of the INCOSE Systems Engineering Handbook, ISO/IEC/IEEE 15288, and the Guide to the Systems Engineering Body of Knowledge (SEBoK)
- Practical information and tools are provided
- Includes several in-class exercises to solidify the concepts being presented
- Each student will receive a complete set of lecture notes and an annotated bibliography

What You Will Learn

- The latest theory on, and practical insights into, non-greenfield development approaches
- The key characteristics of non-greenfield development efforts
- How to effectively plan and manage a non-greenfield systems development or procurement effort
- How a non-greenfield development affects your requirements, architecture, and design
- Effective integration, verification and validation in a non-greenfield development environment
- How a non-greenfield development affects your decision, risk, and life cycle analyses

Instructor – David D. Walden, ESEP

- An internationally recognized expert in the field of Systems Engineering
- Over 30 years of industry experience
- Taught over 100 courses to over 1600 students since 2006
- INCOSE Expert Systems Engineering Professional (ESEP)
- Senior Member of the IEEE
- Lead Editor of the INCOSE SE Handbook Fourth Edition
- Education
  - MS in MOT, University of Minnesota
  - MS in EE & CS, Washington University in St. Louis
  - BS in EE, Valparaiso University

Course Outline & Topics

1. Key Systems Engineering Concepts and Principles. Review of Key Greenfield Systems Engineering Concepts. Introduction to Non-Greenfield Systems Engineering.

2. Moving to COTS-Based Systems Engineering. Key COTS and COTS-Based Systems Engineering (CBSE) Concepts. CBSE Influences on Traditional Systems Engineering. Key Challenges and Expected Benefits of CBSE. COTS Lessons Learned.

3. Moving to Brownfield (Legacy) Systems Engineering. Key Brownfield and Brownfield Systems Engineering (BSE) Concepts. BSE Influences on Traditional Systems Engineering. Key Challenges and Expected Benefits of BSE. Brownfield Lessons Learned.

4. Moving to Product Line (Modular) Systems Engineering. Key Product Line and Product Line Engineering (PLE) Concepts. PLE Influences on Traditional Systems Engineering. Key Challenges and Expected Benefits of PLE. Product Line Lessons Learned.

5. Moving to SoS Engineering. Key SoS and System of Systems Engineering (SoSE) Concepts. SoSE Influences on Traditional Systems Engineering. Key Challenges and Expected Benefits of SoSE. SoS Lessons Learned.

6. Summary & Wrap-up. Non-Greenfield Systems Engineering Compared and Contrasted with Greenfield Systems Engineering. Key Challenges and Expected Benefits of moving beyond Greenfield SE. Combining Multiple Non-Greenfield Approaches. Course Wrap-up.

Typical Course Duration - 3 Days
Typical Schedule 8:30am-4:00pm

Earn up to 18 INCOSE PDUs!

Please contact Sysnovation for availability, customization, and pricing.

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