SEER for Hardware, Electronics & Systems Workshops

Core

This three-day workshop provides attendees with a complete methodology for hardware cost, schedule, and risk estimation using SEER for Hardware, Electronics & Systems. The course material also looks at the SEER for Hardware model in the context of the full set of applications offered by Galorath, Incorporated: SEER for Software (SEER-SEM), SEER for Manufacturing (SEER-DFM) and SEER for Information Technology (SEER-IT) with SEER for Hardware being the integrating platform for the SEER product suite. The course material will familiarize the student with the model Graphical User Interface (GUI) as well as provide detailed information on the model inputs and outputs. Users will also learn how to use SEER for Hardware to estimate Systems Level Cost (SLCs), which are costs associated with systems and project level systems engineering/program management activities and apply risk analysis to outputs. SEER for Hardware's ability to estimate Life Cycle Costs is also introduced by demonstrating the Operations and Support cost feature in the core model.

Each student has a working partner for optimum learning, and we provide a comfortable, highly effective, technically up-to-date learning environment. The instructors don't just teach; they are actual practitioners and consultants with extensive experience as well as intimate knowledge of the applications. Instructors augment the training with 'lessons learned' from actual use of the model and demonstrate ways to use the model for simple and efficient analysis - things that cannot be learned from just reading the manual! Students can learn tactics on how to use the model to improve the efficiency of cost proposals, as well as benchmark and cross-check in order to allow for maximum return on investment. Also, students will gather valuable perspective on how the model has been used by many other organizations under a variety of environments and circumstances.

Audience:

This course is designed for:

- Cost estimators
- Business analysts
- Project/Team leads
- Engineers
- People who will be using the application to generate estimates of cost and schedule
- People who will be using the application for an overall organizational cost process

Upon completion of the class, users will be able to:

- Define hardware configurations
- Understand the model in context to its environment
- Quantify management and engineering decisions into labor cost and material cost
- Prepare a credible and traceable proposals for hardware development and production
- Evaluate vendor bids and proposals
- Create a life cycle cost estimate from a Work Breakdown Structure (WBS) consisting of mechanical and electronic work elements with manipulation of key element parameters and output the risk-ranged data to various report and chart formats
- Understand specific details on parametric cost methodology including strengths and validity
- Have a detailed explanation of all input parameters
- Include system and project level systems engineering/program management costs inherent in most estimates and how the model generates them using its System Level Cost feature
- Generate reports and charts including risk analysis and trade studies

SEER for Hardware Core Course Outline

Day One

1. Intro & Background
2. Schedule, course objective, introductions
3. Company and tool history, tool uses
4. General Model Overview
5. Files
6. Guided Exercise #1-Create a Simple Estimate
7. Work Elements
8. Guided Exercise #2-Creating Work Elements & Setting Kbases
9. Modifying the Work Breakdown Structure
10. Guided Exercise #3-Modifying the Work Breakdown Structure
11. Set Parameter Values
12. Guided Exercise #4--Parameters
13. Charts and Reports
14. Guided Exercise #5-Navigating Charts and Reports
15. Hardware Development and Estimation
16. What is hardware; hardware estimating; types of estimating
17. The Work Breakdown Structure
18. Input Uncertainty
19. Learning curves
20. Cost estimation process
21. Estimating pitfalls
22. Parametric Tools
23. Defined; advantages
24. Examples

Day Two

1. SEER-H Architecture
2. Mapping and Knowledge Bases; defined , differences
3. Model tuning; ease of use
4. Model Inputs
   i. Structured Case Study A: Building a WBS and Selecting Kbases
5. Estimating Electronics
   i. Structured Case Study B: Electronics Parameter Inputs
6. Estimating Mechanical/Structural Work Elements
   i. Structured Case Study C: Mechanical Parameter Inputs
7. Environment & Programmatic Factors
   i. Structured Case Study D: Environment & Programmatics
8. System Level Cost
9. System Engineering & Integration
10. System Program Management
11. Integration, Assembly & Test
12. System Test Operations
13. System Support Equipment
    i. Structured Case Study E: System Level Costs
14. Model Outputs
15. Cost activities, labor categories
16. Review Charts and Reports
17. Elements of the Estimate
18. Extracting Data
    i. Guided Exercise #6-Flexible Export
19. References & Tradeoffs
    i. Guided Exercise #7-Tradeoff Analysis
20. Uncertainty
    i. Guided Exercise #8--Risk
21. Structured Case Study F: Evaluating an Estimate

Day Three

1. Summary
2. Review as needed
3. Capstone Case Study
4. Establish Technical Baseline
5. Estimate Development & Production of Mechanical and Electronic Items
6. Evaluate People, Process & Product Parameters
7. Incorporate Constraints
8. Conduct Risk Analysis
9. Evaluate System Level Costs

Read how past attendees have benefited from our SEER for Hardware Workshop:

- "The exercises allowed us to pick our own knowledge bases and parameters, which allowed us to become more familiar with choosing the appropriate settings."
- "Very good instructor. Extremely knowledgeable."
- "Easy to follow and gives a general introduction to SEER-H features"
- "Learning the software by doing an example directly applicable to my job."
- "Course and manuals were user friendly even to someone never exposed to SEER-H."
- "Overall review of everything in the SEER product and using real world scenarios to explain those."
- "The class moved along very nicely. I like the way the course was presented with hands on exercises as well as lectures. This helps in understanding the concepts behind the tool."

Earn Project Management Institute PDU credits for attending Workshops:

- Attend Core Workshops and earn 21 PDUs.
- Attend Advanced Workshops and earn 14 PDUs.

Advanced Power User

Advanced workshops are intended for those who have used SEER for Hardware, Electronics & Systems to develop and evaluate estimates and are ready to move to the next level in using SEER models to support their projects. These workshops cover specific topics, including:

- Power-user functions for the SEER expert
- Calibration, customization and integration features
- Project Management
- Estimating advanced technologies, including electro-optical sensors and integrated circuits
- Operations & Support cost estimation

Day One

1. Intro & Basic Concepts (Refresher)
2. Using SEER H (Refresher)
3. Files
4. Work Elements
5. Modifying the Work Breakdown Structure
6. Set Parameter Values
7. Charts, Reports, Tradeoff and Risk Analysis
8. Core Refresher Guided Exercises 1-5
9. Advanced Calibration
10. Review Kbase and Parameter Calibration
    i. Structured Case Study-Kbase and Parameter Calibration
11. Statistical Calibration Concepts
12. Developing Statistical Calibration Factors
    i. Guided Exercise #-Develop a Calibration Data Points
13. Applying Statistical Calibration Factors
    i. Structured Case Study C-Developing Calibration Factors

Day Two

1. Customization and Automation
   a. Custom Knowledge Bases
      i. Guided Exercise #4-Construct a Custom Knowledge Base
   b. Scenarios
      i. Guided Exercise #5-Develop a Scenario
   c. Server Mode
      i. Guided Exercise #6-Server Mode Scripts
      ii. Structured Case Study D-Customization and Automation
2. Operations and Support Estimation
   a. Structured Case Study-Operations and Support
   b. SEER H Specialty Track Training
   c. Summary

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Private SEER Workshops

Most SEER customers prefer to select the date and location for SEER workshops to ensure that their specific estimating and project planning concerns are addressed in a confidential environment. These workshops are priced on a per-event basis (including instructor travel expenses). Private workshops are typically more economical where multiple students can benefit from training.