Core Workshop

Overview

This three-day core workshop provides attendees with a thorough overview of the many functions, features, and applications of the SEER for Hardware, Electronics & Systems model (SEER-H). Attendees will become familiar with the SEER-H methodology for estimating hardware and electronics lifecycle cost, system level costs (SLCs), schedule, and risk. Students will also 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. At the end of this course, students will be familiar with how to use SEER-H to estimate a project of any size and complexity, from individual components to a variety of complete product assemblies. Students will also gain insight into the risks, uncertainty and cost drivers associated with hardware development, acquisition and integration.

For convenience, this workshop can be taught at a requested on-site location or at our headquarters in El Segundo, CA. At our offices, we will provide a comfortable and highly effective learning environment, utilizing only the most up-to-date technologies. Along with the training, our instructors bring with them years of extensive industry experience. Our instructors don't just teach—they are actual practitioners and consultants with intimate knowledge of the application domains. Their extensive involvement with the application of SEER-H includes Space, Military, Telecommunications, and much more. Instructors will augment the training with "lessons learned" from use of the model in real situations and demonstrate ways to use the model for simple and efficient analysis—things that cannot be learned from just reading the manual! Upon completion of the three-day SEER-H core workshop, students will have gathered 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

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

- Define hardware configurations
- Understand the model in context to their environment
- Quantify management and engineering decisions into labor cost and material cost
- Prepare 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 adjustments to key element parameters, and outputting the risk-ranged data to various report and chart formats
- Understand specific details on parametric cost methodology, including strengths and validity
- Explain all input parameters in detail
- Estimate systems engineering and program management costs inherent in most estimates and understand how the model generates them using its System Level Costs (SLCs) feature
- Generate reports and charts to facilitate cost and risk analyses and trade studies

SEER for Hardware Core Course Outline

<u>Day One</u>

    I.   Introduction & Background
        a. Schedule, course objective, introductions
        b. Company and tool history, tool uses
        c. Data Sources
    II.   General Model Overview
        a. Files & *Guided Exercise #1: Create a Simple Estimate*
        b. Work Elements & *Guided Exercise #2: Creating Work Elements and Setting K-Bases*
        c. Modifying the Work Breakdown Structure & *Guided Exercise #3: Modifying the Work Breakdown Structure*
        d. Setting Parameter Values & *Guided Exercise #4: Parameters*
        e. Charts and Reports
    III.   Hardware Development and Estimation
        a. The Work Breakdown Structure
        b. Input Uncertainty
        c. Learning Curves
        d. Cost Estimation process
        e. Estimating Pitfalls
        f. *Case Study A: Creating the Initial WBS*

<u>Day Two</u>

    I.   SEER-H Architecture
        a. Defining Mapping and Knowledge Bases
        b. What are the differences between Mapping and Knowledge bases?
        c. Model tuning
        d. Ease of Use

II.   Model Inputs
    a. Estimating electronics
    b. Estimating Mechanical/ Structural Work Elements
    c. *Case Study B: Creating the Initial Estimate Structure*
    d. Environment and Programmatic Factors
    e. *Case Study C: Adding More Detail*
    f. *Case Study D: Qualitative Parameters*

Day Three

I.   System Level Cost
    a. Systems Engineering and Integration
    b. System Program Management
    c. Integration, Assembly & Test
    d. System Test Operations
    e. System Support Equipment
II.   Model Outputs
    a. Cost activities, labor categories
    b. Review Charts and Reports & *Guided Exercise #5: Navigating Charts and Reports*
    c. Elements of the estimate
    d. Extracting Data & *Guided Exercise #6: Flexible Export*
    e. References and Tradeoffs & *Guided Exercise #7: Tradeoff Analysis*
    f. Uncertainty & *Guided Exercise #8: Risk*
    g. *Case Study E: Output Analysis*
III.   Summary