Project Engineering and Costing

Plenary Session
Project Engineering and Costing

Overview

• General Explanation and Specific Examples of Key Approaches/Emphasis/Solutions
  • Project Engineering Session
    • Management Systems (Project Data Management - PDM)
    • Cost Estimating (Cost Modeling)
    • Reliability Engineering
    • Cost Contingency
  • Machine/Functional Area Breakout Sessions
    • Physics Choices/Issues
    • Engineering Choices/Issues
    • R&D Plans/Choices
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Management Systems Overview

- Management Systems Required for CDR
  - Planning
  - Scheduling
  - Budgeting
  - Control
- Project Information
  - Physics and Engineering Data
  - Background and Administrative Information
  - Activities, Results/Progress, Problems/Challenges
- All Accessible, Usable
Management Systems Plan

- Rank System Needs in Perceived Order of Importance/Criticality
- For Each Ranked System:
  - Evaluate Alternate Solutions
  - Make Preliminary Choice
  - Beta Test
  - Implement or Start Over
- Upward Compatibility for Post-CDR Phases
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Management Systems Status

- Implemented
  - Physics Parameters/Data (Website)
  - Project Information (Website)
- Beta Testing
  - Task Identification, Definition, Costing (WBS)
  - Project Scheduling of Tasks
  - Engineering Data Management (Partial)
  - Project Information (Website)
- Initial Review/Deferred
  - Complete Engineering Data Management System
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Cost Estimating (Cost Modeling)

• Need Acceptable and Supportable Costs for CDR

• Approach
  • Establishment/Definition of Cost Models
  • Utilization of Appropriate Tools
    • Component Definition
    • Project Task Definition and Roll-Up
    • Cost Estimate Documentation
    • Learning Curves
    • Industrial Involvement/Validation
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Reliability Engineering

• Disciplined Engineering Approach Required
• Formal Methodology Adopted (FMEA)
• Reliability Designed In
• Process Underway
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Cost Contingency

- Extension of Existing Approaches
- Clearer Relative Distinctions Designed In
- Multiple Uses
- Draft Under Review
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R&D Plans/Choices

• Focus and Size of R&D Efforts Carefully Planned and Time-Phased to Address:
  • Physics Issues
  • Engineering Issues
  • Cost/Cost Risk Issues
  • Scheduling Issues
  • Reliability Issues
  • Performance Demonstration Issues