Assessing Project Performance

Audience: Project managers, subsystem managers, and other project team members who are responsible for meeting project commitments, and who would benefit from an understanding of integrated project performance assessment techniques.

Goal: This 16 hour course will provide the participants with an understanding of the techniques for assessing project cost, schedule and technical performance, and how the results of the assessment help in determining overall progress toward meeting project goals.

Learning Objectives: Project performance assessment involves the collection and analysis of cost, schedule and technical performance data, understanding its significance in relation to project objectives, and disseminating decision-oriented information to project managers and other stakeholders. The net result of this analytical activity serves to maximize the project manager's ability to make informed decisions that ensure mission success.

This course will provide students with:

1. An understanding of the importance of project performance assessment
2. Examples of how to apply performance assessment methodologies using existing project data
3. Insight on how to interpret the significance of the project performance assessment results
4. Ideas on how to more fully synthesize project performance data from multiple sources into a cohesive assessment of past, present and future performance of the project

Learning Methods: Lectures, case studies, discussions, demonstrations, and exercises

Key Topics:

- Purpose of performance assessment
- NASA Project Life Cycle
- Project performance indicators/measures and assessment techniques
- Earned Value data analysis
- Cost and schedule baseline integrity and realism
- Cost and schedule risk analysis
- Relationship of technical performance to cost and schedule
- Project Intelligence
- Cost and schedule performance assessment traps

Suggested Prerequisites:

- Understanding Earned Value Management
- Understanding Schedule Management
- Beyond EVM Basics: Baseline Control, Risk Considerations and Performance Indicators
- Beyond Scheduling Basics: Analysis, Control, and Reserve Planning
- Advanced EVM Techniques: Recognizing Gaming, Abuse and Data Manipulation
- **OR** Equivalent to above courses

Assessing Project Performance

Module Name	Topics	Learning Objectives - Participants will be able to:
1.0 Introduction	• Instructor/participant introductions • Agenda • Course Objectives • Group discussion: Why should projects assess performance?	• Articulate course objectives and outcomes • Define the ingredients required for Mission Success from an overall performance assessment point of view
2.0 Policy and Guidance Update	• Policy Refresher: GPRA, OMB, NPR 7120.5D, FAR, EIA-748, NPR 1080.1, NASA Schedule Management Handbook	• Understand the latest governing requirements for performance assessment on NASA projects
3.0 Performance Assessment and the NASA Project Lifecycle	• NASA Flight Project Lifecycle • Mission milestones	• Understand the NASA Project Lifecycle • Understand the role of performance assessment within the context of project life cycle phases
4.0 Performance Assessment Overview	• What is project performance? • What is project performance assessment? • Role of project performance assessment • Summary of project performance indicators/measures and assessment techniques • Organization Trust: competence, consistency, communication, reliability, and integrity • Group Discussion: The project “triple constraint”	• Distinguish between project performance and project performance assessment • Understand the contribution performance assessment can make to mission success • Identify types of project performance indicators/measures and performance assessment techniques • Realize the effect of the performing organization’s trustworthiness and credibility in the performance assessment process

Assessing Project Performance

Module Name	Topics	Learning Objectives - Participants will be able to:
5.0 Cost Performance Indicators/ Measures and Assessment Techniques	• This module will address leading and lagging cost performance indicators and examine the insight gained from assessing past cost performance, the current cost condition, and intended future cost performance. Topics include: • Contract/Cost Performance Report • Cost Variance • Cost Performance Index • Estimate At Completion • Variance At Completion • To Complete Performance Index • 533 Reports • Accounting for Contract Changes and Extensions • Fiscal Year Funding Constraints • Indirect cost analysis • Usage vs rate analysis • Management Reserve and Financial Contingency • Regression Analysis and Simulation • Cost Risk Analysis • Cost Estimate Confidence • Cost Baseline Integrity & Realism • Financial Statement Analysis • Cost Performance Assessment Traps (e.g. sunk cost)	• Understand how to assess: • How much the project is likely to cost when completed • Is the cost baseline and/or Estimate At Completion achievable • Is the project accomplishing what it intended to do for what has been spent • The significance of differences between the cost baseline, actual performance, and forecast future performance • The significance of changing baselines • Risk in the budget • The adequacy of Management Reserve and financial contingency • The effect of changes on future cost performance • The implications of indirect rates on past and future cost performance • The effect of rates and usage on cost performance • Common traps that can compromise meaningful cost performance assessment – and what to do about them

Assessing Project Performance

Module Name	Topics	Learning Objectives - Participants will be able to:
6.0 Schedule Performance Indicators/Measures and Assessment Techniques	• This module will address leading and lagging schedule performance indicators/measures and examine the insight gained from assessing past schedule performance, the current schedule condition, and intended future schedule performance. Topics include: • Critical Path vs. Secondary Paths • Path Convergence • Schedule Baseline Integrity & Realism • Total Slack vs. Free Slack • Schedule Reserve • Schedule Variance • Schedule Performance Index • Project Control Milestones • Resource Analysis and Leveling • Schedule Risk Analysis • Schedule Confidence • “What-If” Analysis • Activity Capabilities Assessment • Schedule Performance Assessment Traps	• Understand how to assess: • When the project is likely to finish • Is the schedule baseline and/or current/forecast schedule achievable • Is the project on schedule and accomplishing work as planned • The significance of differences between the schedule baseline and actual performance • The significance of differences between the schedule baseline and forecast future performance • Risk in the schedule • The adequacy of schedule reserve and slack • The effect of changes on future schedule performance • The implications of schedule recovery, replan, or workaround actions • Common traps that can compromise meaningful schedule performance assessment – and what to do about them

Assessing Project Performance

Module Name	Topics	Learning Objectives - Participants will be able to:
7.0 Integrating Technical Performance with Cost and Schedule	• This module will address the impact of technical performance on cost and schedule performance. Topics include: • Key Performance Indicators • Technical Performance Measures (e.g. weight, power, data rate, SLOC, mission life, requirements verified, etc.) • Integrated Master Plan/Integrated Master Schedule (IMP/IMS) Events & Criteria • Configuration Changes • Requirements/scope creep • Descope options • Critical resources • Technology development/readiness • Critical risk items (e.g. lasers, detectors, mirrors, etc.) • Cost/schedule/technical tradeoffs • Acquisition Implementation	• Understand that all aspects of the project need to be considered when assessing performance • Understand how technical performance drives cost and schedule performance
8.0 Project Intelligence: Integrating Performance Assessment	• This module explores the concept of "project intelligence" as an approach for more fully integrating the individual elements of project performance assessment into a synthesized set of decision-aiding information for the project manager.	• Understand how a total project view of performance is an important aspect of performance assessment, taking into account the entire mission as opposed to just the cost or just schedule aspects
9.0 Case Study: The Termination Review	• This module presents the scenario of a project threatened by imminent termination due to cost overruns and schedule delays. How can you tell if termination is justified in this case?	• Put into practice performance assessment techniques they have learned and recommend whether the project under review should proceed or be terminated.