

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop
for High-Performance Computing Centers

Track 1, Session 1
Tailoring Risk Management to HPCCs

Risk Ownership and Analysis

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

- Session 1 will focus on risk ownership and analysis. In this session, the team will briefly discuss risk identification but will move quickly into an in-depth discussion of risk ownership and analysis. We will walk through the classic analysis process and methods, with a focus on where HPC is unique and what types of risk analysis tools and methods do and do not work for HPC projects. The discussion will cover methods for determining how to assess the risks once they are identified, including how to quantify, compare and prioritize risks, and a discussion of how a project measures the likelihood or consequence to determine risk ranking. The discussion will also cover how analysis should take into consideration the various baselines (cost, schedule and technical).

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Session 1 Participants

- Coghlan Susan ANL LEAD
- Regimbal Kevin PNNL LEAD
- Gorda Brent LLNL NOTES

- Cook Paul SGI
- Embry Bryan DOD
- Foster Jim TACC
- Meacham Steve NSF, HQ
- Showerman Mike NCSA
- Stearley Jon SNL
- Tomlinson Bob LANL
- Verdier Francesca NERSC
- Vigil Manuel LANL
- Zosel Mary LLNL

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Session Plan

- Key Topics
 - Risk identification (briefly)
 - Risk ownership
 - Risk analysis
- Classic analysis process and methods
 - Quantify, compare and prioritize risks
 - Measure likelihood/consequence to rank
 - Baselines [cost, schedule and technical]

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

How well do the typical risks encountered in HPCC fit the standard risk model in the area of analysis

- Traditional risk management process and tools seem to work ok for HPCC if applied at the right level
- More one off than standard, the consequence of that is we have to rely on more qualitative than quantitative analysis
- These projects are more collaborative in nature than typical projects

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Key Lessons Learned

- Complicated tools can make your risk management less effective
- There is a lot of subjectiveness in the qualitative, the quantitative forces more thought
 - But there isn't always enough historical data
 - Maybe a broader input for qualitative would be more useful
- Don't forget about opportunity risks (upside)
- Risk management can provide benefit, particularly in the area of providing focus, credibility

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Best Practice Models for HPCC

- Technique for Risk Identification: Include all the things that are different from the current systems
- Don't outsource risk management
- Bring in someone with outside perspective and experience
 - Having multiple labs/facilities on the procurements
- Watch list – top 10 risks, frequently reviewing

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Opportunities to share / improve practices and terminology

- Collecting SOW best practices
- Understanding how to bound shared risk with vendors
- Probability calculation input
- Consequence matrix and likelihood and make them more concrete for HPC

September 17-18, 2008 in San Francisco, California

Risk Management Techniques and Practice Workshop *for High-Performance Computing Centers*

Additional Findings

- Getting this group of people together to talk about the issues and share information is very valuable
- There is no publication path for past experience
- Cost, schedule and scope are your contingency categories