

September 17-18, 2008 in San Francisco, California

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

Track 1, Session 3
Tailoring Risk Management to
HPCCs

**Risk Management—Tools, Tips, and
Tricks: "Please sign the register." or
"There's nothing up my sleeve."**

September 17-18, 2008 in San Francisco, California

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

- What risk management practices are required by DOE 413.3 and similar formal project management descriptions? Is there a common tool or set of tools currently in use by the participants? What additional tools are available and have been used in the HPC environment and found useful or not useful? What about practical techniques that are not associated with formal tools, such as reviews that escalate in frequency and visibility or requirement for interim deliverables? Are there any tools or techniques that are especially good for incorporating unknown risks?

September 17-18, 2008 in San Francisco, California

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

Session 3 Participants

- Craw James NERSC LEAD
- Rheinheimer Randal LANL LEAD
- Hamilton Pam LLNL NOTES

- Culhane Candace DOD
- Goldberg Ira ANL
- Knutson Dale PNNL
- McMahon Charlie LSU
- Louis Steve LLNL
- Pennington Rob NCSA
- Sekine Yukiko ASCR, DOE/HQ

September 17-18, 2008 in San Francisco, California

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

Canonical Areas of Risk Management

Identification	Control
Analysis	Mitigation
Tracking	Reporting

Are tools necessary for all these areas, or are they far more useful in some areas than others?

Knutson - I don't need a tool for all the above areas. The tool I need is the one that helps me keep track of the interdependencies between them.

September 17-18, 2008 in San Francisco, California

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

Tool Survey

- LANL – uses standard probability/impact assessments to generate risk registers. The outcome was to take action to reduce the risk. Excel is used to track using a 5 X 5 matrix. Sees value in keeping the risk management plan and the project plan separate because tying them tightly together requires significant resources. It also makes it easier to do the required reporting to OMB.
- ANL – Using low/medium/high is adequate. Has used RiskRadar but switching to Pertmaster. Staff has determined features of Pertmaster are superior to RiskRadar. Pertmaster also has the ability to work with Primavera so there is an integration between project management and risk management.

September 17-18, 2008 in San Francisco, California

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

Tool Survey, continued

- NCSA – Each major component (e.g. vendor, facilities, software development) has its own SOW with an SOW owner. Each SOW has its own set of risks identified and managed. There is the potential for issues because the risks are so segregated and there is a need to have higher level oversight that sees the big picture (has a view of all the risks *and their interdependencies*).
- LLNL – Informal processes centered around risks identified in vendor SOW and based on past experience (Regular conference calls with vendor partners). The Sequoia procurement is driving a formalization of processes.
- DOD – Has found external reviews helpful and uses a number processes
- NERSC – RiskRadar and Lehmen review, standardized monthly risk reporting for NERSC, ANL, and ORNL (Driven by Office of Science).

September 17-18, 2008 in San Francisco, California

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

How well are the generic HPC risks handled by the processes (tools)?

- The processes (tools) currently being used are just adequate but have been sufficient to successfully field HPC systems in the past
- Our current processes don't lend themselves well to effectively reporting to our stakeholders

September 17-18, 2008 in San Francisco, California

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

Key Lessons Learned

- We should pool our experiences
- What we need are tools to manage risks efficiently and be able to report effectively to our stakeholders
- We should draft a template of the “typical” risks associated with HPC procurements
- Formal project management functions in our local organizations are not geared toward HPC projects
- Funding resources to do the formal project management efforts are not readily identifiable within the existing programmatic budgets

September 17-18, 2008 in San Francisco, California

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

Best Practice Models for HPCC (Tools/Processes)

- We don't believe we have enough information to declare a Best Practice Model
- Office of Science has recently implemented standard project/risk management processes
- Software tools in use include RiskRadar and Pertmaster

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

- Create an HPC wide body of knowledge with regard to risk
 - Broad generic risk register template
 - Common risk reduction strategies