



ASCR COV Report (Program Response)

Responses to COV recommendations on Next-Generation Networks for Science Research Program COV Date: October 10-11, 2011

ASCAC Meeting

March 27-28, 2012, AGU Building, Washington DC.

Next-Generation Networks Research
(Richard Carlson, Thomas Ndousse)



Next-Generation Networks for Science Program COV

- **Date of COV:** October 10-11, 2011
- **Program:** Advanced Networking Program
- **Office:** Advanced Scientific Computing Research (ASCR)
- **Agency:** United States Department of Energy

Committee Membership:

- Dr. Ty Znati, University of Pittsburgh – (Chair)
- Dr. Victor Frost, University of Kansas
- Dr. Peter Steenkiste, Carnegie Mellon University
- Dr. Gregory E. Monaco, The Great Plains Network
- Dr. George N. Rouskas, North Carolina State University
- Ms. Victoria White, FermiLab

Summary of COV Charge

COV Charge Summary

- The Advanced Scientific Computing Advisory Committee (ASCAC) for the Office of Science, United States Department of Energy (DOE), was charged by W. F. Brinkman, Director of Office of Science, with assembling a Committee of Visitors (COV) to review the management processes for the Next Generation Networking for Science (NGNS) elements of the ASCR Networking Research Program. The program is focused on high performance networking tools and middleware to help the ASCR research communities utilize the capabilities of current and future computing infrastructure.

Specific charge to the COV

- **For both the DOE laboratory projects and the university projects, an assessment of the efficacy and quality of the processes used to:**
 - Solicit, review, recommend proposals;
 - Document proposal actions; and
 - Monitor active projects and programs
- **Within the boundaries defined by DOE missions and available funding, an assessment of how the award process has affected:**
 - The breadth and depth of portfolio elements, and
 - The national and international standing of the program with regard to other computer science research programs that are also focused on high performance networking tools and middleware for science.

Summary of COV Comments

Efficacy and Quality of the Peer-Review Process

- *The COV considers the NGNS program under review to be **generally effective and reasonably well managed**. The objectives of the High-Performance Networks and High-Performance Middleware Program elements are well-aligned with DoE's priority to deliver the forefront computational and networking capabilities needed to enable world class research in the physical sciences and to facilitate collaboration among scientists across the world.*

Charge 1(a): Assess the efficacy and quality of the processes used to solicit, review and document applications and proposal actions.

- *The COV found that the review process was **conducted in accordance with the DOE normal standards of peer review**. Proposals are evaluated using a combination of mail-in reviews and panel reviews. Normally, panel reviews are used (possibly combined with mail in reviews from experts), although if a solicitation has few proposals, evaluation may be purely based on mail-in reviews.*

Charge 1(b): Assess the efficacy and quality of the processes used to monitor active awards, projects and programs.

- *An important role of the NGNS office is to monitor progress of the research projects funded by the Program. The COV found that the NGNS Program Managers use effective mechanisms to monitor ongoing awarded projects, **including progress and final reports, site visits, and PI teleconference meetings**.*

Charge II: Within the boundaries defined by DOE missions and available funding, assess how the award process has affected the breadth, depth, and national and international standing of the portfolio elements.

- *The NGNS has **engaged top-level network researchers and large-scale, high-performance network infrastructure developers** both in first-class research and innovations and persistent development that lead to world-class networking capability to enable unprecedented science critical to DOE missions and priorities.*

Charge 1(a): Assess the efficacy and quality of the processes used to solicit, review, and document applications and proposal actions

The COV found that the solicitation development process to be effective and fairly well-administrated:

COV Recommendation: NGSN is encouraged to seek active means to broaden participation in all phases from workshop and solicitation development to solicitation announcement.

- *NGNS Response: NGNS workshops are generally organized by a committee charged with the responsibility to identify and invite highly qualified workshop attendees familiar with DOE's science mission from the broader community (Labs, academia, & industry).*

COV Recommendation: NSGS should maintain consistency in handling the review criteria across solicitations, clarify role of LOIs and enforce LOI policy.

- *NGNS Response: Letters of Intent (LOIs), when required in NGNS announcements, are enforced. A single proposal was identified with incomplete documentation resulting from lack of a good portfolio management IT infrastructure. This problem will be corrected with the new portfolio management system (PAMS) under development.*

COV Recommendation: NSGS solicitations should be more explicit in the expectation of “deployment” on ESnet and other DOE networking infrastructure to ensure fair and appropriate reviews of the proposals.

- *NGNS Response: 3. NGNS announcements solicit R&D projects that support DOE's science mission. Announcements usually cite the appropriateness of work to DOE's infrastructures as a review criteria. Future announcements will include an explicit text on the “deployment” to DOE's infrastructure will be included where appropriate.*

Proposals Process Fairness

The COV found that the review process was conducted in accordance with the DOE normal standards of peer review:

COV Recommendation: No central repository for reviewers.

- *NGNS Response: Federal policies on the confidentiality of Personally Identifiable Information (PII) make it difficult for NGNS to collect and store information of reviewers in a single centralized repository.*

COV Recommendation: No panel summary - It would be useful to ask panels to collectively develop a short summary document reflecting the discussion of each proposal. .

- *NGNS Response: A peer-review panel summary is not required by the current Office of Science peer-review guidelines.*

COV Recommendation: No review analysis for highly ranked, yet declined proposals. Such a review would be useful in assessing overall funding decisions and helpful to PIs in future submissions.

- *NGNS Response: This type of analysis were not required for the set of proposals reviewed by the COV. ASCR now requires a detailed analysis of proposals in this category*

Solicitations Development

The COV was pleased to learn of NGNS participation in the Early Career PI Program, but was disappointed that no proposals were funded under this program:

COV Recommendation: NGNS must find ways to reach out and clearly convey the objectives and priorities of the NGNS Program to young investigators. No central repository for reviewers.

- *NGNS Response - NGNS R&D activities are open to all researchers, including those in the early stages of their career in academia, national laboratories, and industry through the same competitive peer-review process.*

COV Recommendation: NGNS is encouraged to periodically revisit the balance between long term and short term research. Longer term research may also provide an opportunity to engage and attract young investigators.

- *NGNS Response: NGNS continuously evaluates the DOE Office of Science program needs to ensure that program respond timely and effective to those needs.*

Charge 1(b): Assess the efficacy and quality of the processes used to monitor active awards, projects and programs.

NGNS uses effective mechanisms to monitor awards – progress reports, site visits, and PI teleconferencing

COV Recommendation: - Prior to award, PIs must be asked to address reviewers' concerns to the satisfaction of the program managers. .

- *NGNS Response - NGNS program managers use reviewers' comments, along with the project deliverables, to make funding decisions and manage the resulting awards.*

COV Recommendation: NGNS is encouraged to formalize and document the negotiation of awards, particularly in cases of budget reductions

- *NGNS Response: NGNS concurs with the COV on the need to formally document negotiated changes that result in budget adjustments and in the project scope. These negotiations do occurs via emails. Thy will be archived in the new PAM system in the future.*

COV Recommendation: NGNS is encouraged to make all annual progress reports available online for analysis and review

- *NGNS Response: The current DOE currently policy requires that only the final reports at the end of projects be published online in the science.gov website.*



Charge II: Within the boundaries defined by DOE missions and available funding, assess how the award process has affected the breadth, depth, and national and international standing of the portfolio elements.

NGNS has engaged top-level scientists and network infrastructure developers in first-class research and innovations.

COV Recommendation: NGNS office should establish clear strategic goals regarding future funding allocations between long-term fundamental research, near-term research and development, and testbed support.

- *NGNS Response - ASCR does not have a policy that explicitly differentiate between short and long term R&D projects. Announcements are structured to target high priority needs in timely manner.*

Recommendation: NGNS must find effective ways to nurture and engage the next generation of leading network researchers in research and development within the context of DOE's mission, goals and priorities.

- *NGNS Response: NGNS collaborates and co-sponsors workshops, conferences, and seminars with leading professional organizations such as IEEE Communication Society, ACM Parallel and distributed Systems, the Global Grid Forum, the optical internetworking forum (OIF), IEEE Optical Fiber Conference (OFC), and related national and international conferences.*

COV Recommendation: NGNS is encouraged to continue to develop synergistic and collaborative activities with other federal funding agencies, critical to leveraging resources across all agencies

- *NGNS Response: NGNS was pleased to be commended on its inter-agency collaboration and coordination activities, especially in organizing and sponsoring joint conferences and workshops, sharing experimental/testbed facilities, and coordinating PIs meeting, and related panel review activities.*

- Q&A