

SURA 2008 IT Strategic Planning Process Summary

On March 19, 2008 the SURA IT Committee Steering Group began a planning process to update the strategic vision for SURA's Information Technology program. This process was conducted through a series of telephone conference calls and meetings that were scheduled over the course of the Spring and Summer of 2008 and culminated in a meeting at the Atlanta Airport on August 28 – 29, 2008. The goal of this process was to produce an updated strategic vision for the SURA IT Program to be shared with the SURA Board of Trustees at their Fall 2008 meeting.

Participants in the 2008 SURA IT Strategic Planning Process Included:

JL Albert	Associate Vice Provost/CIO Georgia State University
Guy Almes	Director for Advanced Telecommunications and Learning Technologies – Texas A&M University
Alan Blatecky	Interim Director – Renaissance Computing Institute
Larry Conrad	Vice Chancellor for IT and CIO – University of North Carolina – Chapel Hill
Jerry Draayer	President & CEO - SURA
Doyle Friskney	Associate VP of Information Technology & CTO - University of Kentucky
Phil Halstead	CEO – Florida LambdaRail
Sandra Harper	Research Scientist – University of Alabama in Huntsville
Mark Johnson	CTO and VP Operations and Infrastructure, MCNC and Chair of TheQuilt Executive Committee
Dave Lambert	Vice President and CIO – Georgetown University
Charlie McMahon	Executive Director CCT - Louisiana State University
John Mullin	CIO – Georgia Institute of Technology
Dick Newman	Director School of Computing - Florida Institute of Technology
N. Radhakrishnan	Vice Chancellor for Research and Economic Development – North Carolina A&T University
Ed Seidel	Director, Center for Computation and Technology (CCT) – Louisiana State University
James Pepin	Chief Technology Officer – Clemson University
Don Riley	SURA IT Fellow and Professor; Special Asst. to President BMGT-Decision & Information Technology – University of Maryland College Park
Jim Siedow	Vice Provost for Research – Duke University
Art Vandenberg	Director Advanced Computing Services – Georgia State University and Chair of SURAGrid Governance Committee
Brian Voss	Vice Chancellor, Chief Info Officer – Louisiana State University

SURA IT Staff

Gary Crane	Director IT Initiatives
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Mary Fran Yafchak	Senior Manager IT Programs
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Sue Fratkin	Consultant

Background

The NSF is investing hundreds of millions of dollars to create Tier 2 (100+ TF) and Tier 1 (10+ PetaFlop) systems that will be coming on-line over the next several years. There are significant challenges to making these systems available to and usable by researchers. Given the characteristics of SURA (well established organization with a long history of multi-state collaboration) and the SURA region (low historical use of national HPC facilities, high concentration of EPSCoR and MSI institutions) and the significant CI investments by the SURA region states (Regional Optical Networks), SURA (SURAGrid), and SURA member institutions investments in HPC systems, we are extremely well positioned to develop a regional approach to CI-enabled scientific research. Building on the work of the SURAGrid community and the substantial pools of CI resources and expertise at RENCI, LSU-CCT, TACC, UTK/ORNL and NCSA, SURA has the potential to facilitate the development of a comprehensive cyberinfrastructure outreach and enablement program that will serve as a national model for engaging scientists in the use of CI tools.

Data Driven Process

The SURA IT strategic planning group participants requested that the SURA staff provide an overview of the SURA region, its membership and the region's relative standing with the rest of the nation with regards to the current use of cyberinfrastructure services in support of research. The SURA staff compiled a detailed analysis of the SURA region. Summary conclusions from the regional data analysis include:

Geography is important

- 37% of the US population
- 10 EPSCoR states
- 92% of the nation's Historically Black Colleges and Universities (HBCUs)
- 22% of the nation's Hispanic Serving Institutions (HSIs)



Five states comprise more than 50% of SURA's members.

High number of HBCUs in region, low involvement in SURA.

Does the density of HBCUs in SURA region warrant a SURA program in this space?

Region is Building CI Capabilities

Indicator	National Total	SURA Region Total	SURA Members Total	SURA Members % of Region Total	SURA Region % of National Total
CASC Members	55	23	19	82.6%	41.8%
NSF HPC Awards (Track 1/Track 2)	3	2	2	100.0%	66.7%
Top 500 Supercomputers	257	25	11	44.0%	9.7%
Top 500 Academic Supercomputers	33	11	11	100.0%	33.3%

- SURA has built a strong base of advanced networks and HPC
- SURA members are major contributors to region's CI capabilities

Regional Use of National CI Resources is Very Low

Indicator	National Total	SURA Region Total	SURA Members Total	SURA Members % of Region Total	SURA Region % of National Total
CI (HPC and Networking) Profile					
CASC Members	53	23	19	82.6%	43.4%
NSF HPC Awards (Track 1/Track 2)	3	2	2	100.0%	66.7%
Top 500 Supercomputers	257	25	11	44.0%	9.7%
Top 500 Academic Supercomputers	33	11	11	100.0%	33.3%
TeraGrid SUs MRAC/LRAC/DAC (2007)	215,113,415	29,760,224	26,812,252	90.1%	13.8%
TeraGrid SUs MRAC/LRAC only (2006)	95,120,641	13,724,701	12,897,121	94.0%	14.4%
TeraGrid SUs MRAC/LRAC only (2005)	89,451,805	15,593,409	15,145,130	97.1%	17.4%

Possible reasons for low regional use of TeraGrid

- Difficulty of using non-local CI resources
- Sufficient resources available locally
- Low level of research requiring HPC resources
- Inability to scale research apps to large machines

Is Our Funding Dialogue Aligned with Funding Sources?

Indicator	National Total	SURA Region Total	SURA Members Total	SURA Members % of Region Total	SURA Region % of National Total
2006 DoE Awards (\$)	737,469,000	158,941,000	100,003,820	62.9%	21.6%
2007 NASA Awards (\$)	12,677,099,417	7,577,088,190	1,442,032,081	19.0%	59.8%
2007 NSF Awards (\$)	5,704,466,000	1,746,124,000	768,391,665	44.0%	30.6%
2007 NIH Awards (\$)	21,067,129,294	5,454,531,331	2,704,508,679	49.6%	25.9%
EPSCoR States	27	10	n/a	n/a	37.0%
2007 DoE EPSCoR Awards (\$)	4,045,688	2,476,171	2,281,171	92.1%	61.2%
2005 - 2007 NSF EPSCoR Awards	138,670,400	52,966,064	22,199,689	41.9%	38.2%

- Majority of agency funds coming into the region are from NIH and NASA
- Should we pursue opportunities that don't fit the traditional SURA targets?

August Meeting Summary

On August 28 and 29, 2008 the SURA IT strategic planning group met in Atlanta to develop a set of prioritized programmatic objectives that would serve to focus the SURA IT program for the next several years. Prior to the Atlanta meeting the planning group had identified several possible programmatic objectives, key stakeholders and leadership challenges associated with defining a future direction for the SURA IT program.

The meeting started with a discussion of the regional data analysis and a review of the possible SURA IT programmatic objectives developed prior to the meeting. The group worked to reduce the set of possible programmatic objectives to the following set of three:

- 1) Identify SURA research domains that can utilize existing and/or innovative CI and support the development, implementation, and sustainability of transformative programs that accelerate those areas.
- 2) SURA leads externally funded programs that target improving the availability and use of CI services by underserved communities (EPSCoR, MSI and HBCU institutions)
- 3) Align SURA regional initiatives with capabilities/infrastructure supporting disaster recovery, emergency response and regional research capabilities utilizing campus and commercial services as appropriate.

Through a series of break-out sessions the group then worked to further explore the issues involved in identifying key SURA IT stakeholders, the leadership challenges associated with advancing a regional IT strategy and a closer examination of the three programmatic objectives.

Key Stakeholders

This discussion resulted in the identification of the following key stakeholder groups that could help to build support for well articulated and compelling SURA region IT initiatives:

- SURA member Vice Presidents for Research
- Engagement with the Southern Governors Association (SGA) to gain key state level support
- Identification of a key political leader to endorse/support a program

Leadership Challenges

Two broad challenges to improving the engagement of regional leaders in SURA's IT program activities were identified:

Researcher Involvement

- Need to demonstrate to key researchers in the SURA region that engagement in SURA regional IT initiatives can benefit their research programs.

CIO Involvement

- Campus CIOs and IT leaders are overloaded with campus issues making it increasingly difficult to engage in volunteer efforts like SURA regional programs. SURA IT initiatives need to be seen by participating CIOs as returning value to their campuses.

Individual programmatic objective breakout sessions

Participants then broke into three groups each focused on one of the three long term programmatic objectives defined earlier. Each break-out group was tasked with developing recommendations for next steps in advancing each of the three programmatic objectives that were selected for further development:

- 1) Identify SURA research domains that can utilize existing and/or innovative CI and support the development, implementation, and sustainability of transformative programs that accelerate those areas.
- 2) SURA leads externally funded programs that target improving the availability and use of CI services by underserved communities (EPSCoR, MSI and HBCU institutions)
- 3) Align SURA regional initiatives with capabilities/infrastructure supporting disaster recovery, emergency response and regional research capabilities utilizing campus and commercial services as appropriate.

Conclusions

While the goal of this strategic planning process was to identify a compelling long term vision for a major new SURA IT initiative, the results were more aligned with a shorter term, incremental plan to build on existing SURA IT initiatives. Three main themes were identified through this process:

- SURA IT should focus on improving the ability of researchers in the SURA region to access and use local, regional and national CI services.
 - This objective maps well onto the current efforts of the SURAGrid program to identify and provide targeted assistance to researchers with CI needs that surpass those available on their campuses.
- SURA IT should develop a program targeted at lowering the barriers to the use of local, regional and national CI services by underserved communities (MSIs, HBCUs, EPSCoR).
 - This objective also maps well onto the current efforts of SURAGrid to developed funded outreach and training capabilities targeted at assisting underserved institutions in the SURA region with access to CI services.
- SURA IT should investigate ways to leverage state and regional political priorities and engage with corporate partners to improve the use of CI services in support of research, emergency response and disaster recovery.
 - This objective maps onto the goals of the SERON (SouthEast Regional Optical Networks) group.