NIST Director's Update

Smart Grid Federal Advisory Committee
Thursday, March 24, 2011

Dr. Charles Romine

Associate Director for Laboratory Programs/Principal Deputy, Acting

Overview

NIST Organizational Structure

Context
- Administration's Agenda
- Congressional Landscape
- Budget Situation

NIST Role in Key Issues
- Interoperability Standards for Smart Grid, Healthcare IT, Cloud Computing
- Inter-departmental Standards
- Smart Grid Approach as Model

Q&A

NIST Organizational Structure

Executive Officer for Administration
Management and Organization
Administrative Support

Director
Under Secretary of Commerce for Standards and Technology
Patrick Gallagher

Chief of Staff
Program Coordination
Public and Business Affairs
Congressional and Legislative Affairs
International and Academic Affairs

Associate Director for Laboratory Programs/ Principal Deputy
Charles H. Romine, Acting

Staff Offices
Standards Coordination
Special Programs

Associate Director for Innovation & Industry Services
Phillip Singerman

Staff Offices
Technology Partnerships
Economic Analysis
Grants Management

Associate Director for Management Resources
David Robinson

Staff Offices
Boulder Site Management
Civil Rights and Diversity
Research Support Services
Strategic Resources

Material Measurement Laboratory
Willie May

Physical Measurement Laboratory
Katharine Gebbie

Engineering Laboratory
Shyam Sunder

Information Technology Laboratory
Cita Furlani

Center for Nanoscale Science and Technology
Robert Celotta

NIST Center for Neutron Research
Robert Dimeo

Baldrige Performance Excellence Program
Harry Hertz

Hollings Manufacturing Extension Partnership
Roger Kilmer

Technology Innovation Program
vacant

Office of Facilities and Property Management
Stella Fiotes

Office of Financial Resource Management
vacant

Office of Workforce Management
Michael Culpepper

Office of Information Systems Management
Delwin Brockett

Office of Safety, Health and Environment
Richard Kayser

State of the Union

"We know what it takes to compete for the jobs and industries of our time. We need to out-innovate, out-educate, and out-build the rest of the world."

- President Obama, January 2011

❑ Jobs and infrastructure ($148 Billion for R&D in 2012 budget)

❑ Vision for a clean energy economy

❑ Invest in skills and education of our people

❑ Small businesses will be key to economic recovery

❑ Export more goods around the world

❑ National Security and Leadership in World Diplomacy

Official White House Photo by Pete Souza

Congressional landscape

111th Congress:

- America COMPETES reauthorization
- Health care (including HITECH Act)
- Economy: American Recovery & Reinvestment Act
- Energy – Smart Grid

112th Congress:

- **Spending!**
- Oversight
- Economic growth: jobs
- New relationships to build

Official Speaker of the House Photograph

Current Budget Situation

FY2011 Budget

- President's request submitted Feb 2010
- Government on Continuing Resolution until April 8th
- Budget negotiations ongoing

FY2012 Budget

- Request submitted to OMB in October
- OMB "Passback" in early December
- President's request submitted to Congress in February shows strong support for NIST – budget request crosses $1B mark

FY2013 Budget

- Budget priorities in 3 year plan
- Budget initiatives under development in OUs

NIST FY 2012 Budget Request Compared to FY 2010 Enacted (Dollars in millions)

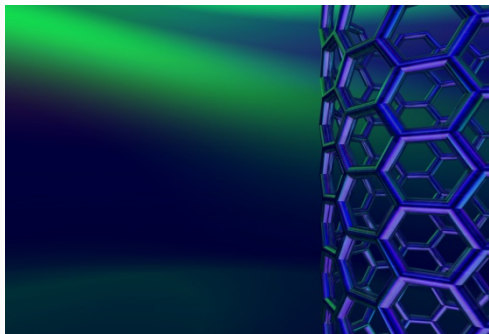|	FY 2010 Enacted	FY 2011 Annual CR	FY 2012 Request	+/(-) Over FY10 Enacted
STRS	$ 515.0	$ 505.4	$ 678.9	$ 163.9
Laboratory Programs	460.6	460.6	630.2	169.6
Baldrige Perf. Excellence Prg. [1]	9.6	0.0	0.0	(9.6)
Corporate Services	18.9	18.9	19.5	0.6
Congressional Projects	10.5	10.5	0.0	(10.5)
Stds Coord. and Spec. Prgs.	15.4	15.4	29.2	13.8
ITS	$ 194.6	$ 204.2	$ 237.6	$ 43.0
Advanced Manu. Tech. Consort.	0.0	0.0	12.3	12.3
Technology Innovation Prg.	69.9	69.9	75.0	5.1
Baldrige Perf. Excellence Prg. [1]	0.0	9.6	7.7	7.7
Hollings Manuf. Ext. Prg.	124.7	124.7	142.6	17.9
CRF	$ 147.0	$ 147.0	$ 84.6	$ (62.4)
Const. & Major Renovations	22.0	22.0	25.4	3.4
Saf. Cap., Maint., Maj. Repairs	58.0	58.0	59.2	1.2
Competitive Const. Grant Prg.	20.0	20.0	0.0	(20.0)
Congressional Projects	47.0	47.0	0.0	(47.0)
PSIF	$ -	$ -	$ 100.0	$ 100.0
Public Safety Innovation Fund	0.0	0.0	100.0	100.0
Total NIST	$ 856.6	$ 856.6	$1,101.1	$ 244.5

[1] Consistent with the NIST reorganization, the Baldrige Performance Excellence Program moved from STRS to ITS effective FY 2011.

NIST – Targeting Investments to Advance U.S. Innovation and Boost Economic Recovery

FY 2012 Request Addresses Challenges in Key Priority Areas:

- Manufacturing
- Information Technology and Cybersecurity
- Healthcare
- Environment and Consumer Safety
- Energy
- Physical Infrastructure

Photo Courtesy: Eric Brandt

Physical infrastructure: Improved infrastructure codes and standards

Credit: Shutterstock/S. Ekatarina

Nanomanufacturing: New measurement tools for advanced materials manufacturing

Credit: Shutterstock/Junede

Cybersecurity: Improved response to cyber threats

Courtesy: techibuzz.com/GM Autos

Energy: Measurements and standards for energy security

NIST FY 2012
Scientific and Technical Research Services (+$178.4M)

❑ Tools for Manufacturing Competitiveness
  - Strengthening Measurement Science and Standards in Support of Industry Needs (+$20M)
  - Advanced Materials for Industry (+$14.2M)
  - Innovations for 21st Century U.S. Manufacturing: Faster, Smarter and Cleaner (+$13.3M)
  - Measurement Services and Standards to Support Biomanufacturing (+$9.5M)
  - Measurements to Support the Manufacture and Production of Nanotechnology-based Products (+$28.3M)

❑ Ensure a Secure and Robust Cyber Infrastructure (+$43.4M)

❑ Interoperability Standards for Emerging Technologies (+$22.8M)

❑ Measurements and Standards to Support Increased Energy Efficiency and Reduced Environmental Impact (+$13.3M)

❑ Measurements to Support Advanced Infrastructure Delivery and Resilience (+$10.6M)

❑ Postdoctoral Research Program (+$3.0M)

Photo by Kathie Koenig Simon

Courtesy: Inhabitat.com

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Interoperability Standards for Emerging Technologies (+$22.8M)

This initiative addresses the need for the development of interoperability standards for Smart Grid, Healthcare IT/Electronic Health Records, and Cloud Computing.

The need for these standards has been mandated by legislation and are essential to guide government utilization of these productivity enhancing technologies.

Courtesy: techibuzz.com/GM Autos

Lack of standards stifle technology development and discourages innovation and competition:

- Half of U.S. power producing coal plants over 40 years old use antiquated systems - upgrade and replacement will cost $560 B by 2030
- Estimated $150 B market for cloud services in 2013 with little or no interoperability
- Only 13% of doctors use EHRs and 1.5% of hospitals have comprehensive electronic records system - huge potential for cost saving, reduced medical errors

NIST will coordinate the development of interoperability standards and conformity assessment requirements through public-private sector partnerships:

- Identify standards needs – in Smart Grid the needs are driven by over 3000 utilities, hundreds of vendors and 27 different Standards Organizations
- Accelerate standards development processes – reduce time from 2-3 years to 6-9 months
- Develop demand driven conformity assessment requirements – ensure interoperability of the products of over 300 Health IT vendors and thousands of potential Smart Grid vendors.

SGIP Accomplishments (since 9/29/2010)

- The Governing Board voted to recommend standards coming out of several PAPs:
  - IETF Smart Grid Internet Protocols [PAP01]
  - SAE J1772 PEV Connector Standard [PAP11]
  - SAE J2836-1 PEV Use Cases Standard [PAP11]
  - NAESB Standardized Energy Usage Information Model [PAP10]

- The SG Testing and Certification Committee (SGTCC) completed its Interoperability Process Reference Manual (IPRM).

- The SG Architecture Committee (SGAC) began working on an architecture to support the conceptual model that traces back to national goals.

- The Cyber Security Working Group (CSWG) began formal outreach to stakeholders to discuss the NISTIR.

- The SGIP PMO has formalized and streamlined its PAP close-out process, including reviews by the SGAC and the CSWG.

- International participation in the SGIP has expanded, most recently welcoming Japan, Korea, Brazil and China.

Review of NIST Standards Efforts

Standards Policy

Smart Grid

- NIST-initiated SGIP made significant progress with first set of standards released
- Ongoing work on interface between standards efforts and FERC

Healthcare IT

- NIST released new HIT test methods and related software

Cloud Computing

- NIST launches effort to develop roadmap for cloud computing

Inter-agency Leadership in Coordinating Standards

2009 VCAT Recommendation: *Serve as the principal inter-agency convener for documentary standards affecting national, international, and/or inter-agency interests.....*

Progress to-date:

- Establish and lead the National Science and Technology Council's Sub-committee on Standards
- Dialog on federal government's role in standards to address national priorities:
  - RFI – issued Dec. 8, 2010 (3 month deadline)
  - Jan. 26th Standards Roundtable
  - CTO-level industry panel
  - Senior administration engagement
  - Extensive industry and govt. interest

Photo Credits:
Peter Cutts

Questions?