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POLICY:

Testimony Before the U.S. House of Representatives Committee on Science and Technology Subcommittee On Technology and Innovation

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Recently I was invited to present testimony before a House subcommittee considering a portion of a wide-ranging House bill (H.R. 5116), part of which would amend sections of the Act under which the authority of the National Institute of Technology (NIST) is established. One of these changes was intended to elevate the status of this non-regulatory agency by raising the rank of its Director to Undersecretary within the Department of Congress, and another would consent to a reorganization of the National Laboratories recommended by President Obama's appointed head of NIST, Dr. Patrick D. Gallagher. A third would enlist NIST to assist the Federal agencies in addressing standards-related issues internally, and to assist Congress in recognizing and addressing standards-related issues of external importance.

It was the third series of changes that was of interest to me, and about which the Subcommittee had asked me to share my views, based in part on the recommendations that I had made in earlier issues of *Standards Today*, and in particular in two articles from the October/November 2008 issue: Behind the Curve: Addressing the Policy Dependencies of a "Bottom Up" Standards Infrastructure and 10 Standard Recommendations for the Obama Administration.

The text in question appears in Section 405 of the H.R. 5116, and as currently drafted, would add the following two new functions to the existing list of tasks previously assigned to NIST by Congress under Section 272(b) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b):

> (14) to promote collaboration among Federal departments and agencies and private sector stakeholders in the development and implementation of standards and conformity assessment

frameworks to address specific Federal Government policy goals; and

(15) to convene Federal departments and agencies, as appropriate, to—

(A) coordinate and determine Federal Government positions on specific policy issues related to the development of international technical standards and conformity assessment-related activities; and

(B) coordinate Federal department and agency engagement in the development of international technical standards and conformity assessment-related activities.

The bill would also assign a new reporting function to NIST, described as follows:

(b) REPORT.—The Director, in consultation with appropriate Federal agencies, shall submit a report annually to Congress addressing the Federal Government's technical standards and conformity assessment-related activities. The report shall identify-

(1) current and anticipated international standards and conformity assessment-related issues that have the potential to impact the competitiveness and innovation capabilities of the United States;

(2) any action being taken by the Federal Government to address these issues and the Federal agency taking that action; and

(3) any action that the Director is taking or will take to ensure effective Federal Government engagement on technical standards and conformity assessment-related issues, as appropriate, where the Federal Government is not effectively engaged.

In my written testimony, as well as in my oral testimony and responses to later written questions, I strongly supported the amendment, as did the other witnesses. My testimony appears below, and links to the statements of each witness, as well as video and audio recordings of the hearing, can all be accessed through the meeting Web page:
http://science.house.gov/Publications/hearings_markups_details.aspx?NewsID=2774

Introduction

Chairman Wu, Ranking Member Smith, and Subcommittee Members. Thank you for the opportunity to testify on this important topic.

I ask that my written testimony be accepted into the record.

My name is Andrew Updegrove, and I am a partner in the Boston law firm of Gesmer Updegrove LLP. I am also on the Board of Directors of the American

National Standards Institute (ANSI), but the opinions I will express today are mine alone. Those opinions are primarily informed by my experience in representing almost 100 non-profit membership organizations that develop and/or promote standards over the past 22 years.

I will seek to frame my testimony today in the context of three important areas where standards play a crucial role: achievement of policy goals, maintaining national competitiveness, and ensuring the efficient use of taxpayer dollars.

Over the last hundred years, our "bottom up," private sector-led standards development structure has served this nation well. This approach was wisely affirmed and strengthened by Congress in 1995 when it passed the Technology Transfer and Advancement Act (TTAA). But today, the world is changing in ways that I believe require us to optimize this "bottom up" partnership.

To whom can Congress turn when it determines that multiple industry sectors must be motivated to provide the standards tools needed to address ambitious policy goals? In the examples noted above, the answer has been clear: to NIST.

As we have become ever more dependent on technology in general and the Internet in particular, thousands of new standards have been required to simply make things work. Major policy initiatives such as the SmartGrid and lowering healthcare costs through national adoption of Electronic Health Records (EHRs) are each dependent on the availability of scores - and even hundreds - of standards, many of which did not exist when these initiatives were launched.

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Unfortunately, while the private sector is capable of developing individual standards quickly for specific purposes within a single sector, it lacks the will to tackle complex, cross-sectoral challenges rapidly, in part due to the inherent difficulties of resolving competing economic interests. While adequate cross-sectoral solutions can, and usually do, evolve over time, urgent challenges such as cybersecurity and the rising costs of healthcare do not permit us the luxury to allow normal market forces to provide solutions.

As a result, when the national interest demands the rapid development of a wide, cross-sectoral range of coordinated standards, a catalyzing force is needed. And note this well: challenges such as the SmartGrid and EHRs are but the advance party of a host of similarly cross-sectoral, complex, standards-dependent challenges that policy makers will face in the future.

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Let me turn now to the topic of National Competitiveness

The development and deployment of standards is essential to creating new technologies and new product markets – and therefore to jobs creation and maintaining a healthy balance of trade as well. This lesson has not been lost on many governments abroad. In particular, policy makers in the European Union and China have integrally woven standards development and adoption into their national strategies.

Indeed, in 2005, a U.S. aerospace industry working group concluded:

> Without a clear strategy and support from industry and government space agencies, the US is in the process of ceding the development of standards for the commercial space industry to venues outside of our influence.

The Chinese government has observed this process, and today is sponsoring the creation of more and more "homegrown" standards for the benefit of its domestic industries. This is especially worrisome, because standards are essential to every emerging area of potential manufacturing job growth on the horizon today.

But how are we to achieve such sophistication without abandoning our "bottom up" model? The answer, I believe, is to charge a single agency or department with the role of tracking emerging needs for public-private coordination, with marshalling facts and data for lawmakers and the administration to support the development and deployment of standards-aware international trade policy, and with providing a coordinating function between the public and private sectors.

Who could provide such a function better than NIST, which is not only the governmental domain expert in the area of standardization, and has acted in this capacity in the past with respect to multiple individual initiatives, but a part of the Department of Commerce as well?

Lastly, let me highlight the relevance of standards to the Efficient Use of Resources

There is no argument that widely adopted standards create competition, increase product choices and drive costs down. Hence, supporting the

development of standards can have a very material impact in lowering government costs directly in procurement, especially where any agency can buy products from a single approved list. The same support can lower costs indirectly, because government-side standards adoption allows information to be entered once, and then exchanged widely, securely and rapidly across departments and agencies.

Because of the immense "soft power" of government purchasing, government can also provide incentives to industry to move rapidly in directions that are beneficial to society in general, such as towards greater cybersecurity, and towards greater accessibility for those with disabilities.

With these observations as background, let me turn to the three questions posed to me in your invitation.

1. Why is coordination amongst Federal agencies and departments on technical standards issues important? How can it be improved?

Achieving goals such as protecting Homeland Security and making government more open, interactive and transparent requires the ability to seamlessly and securely exchange data among agencies, and in a consistent fashion with citizens, first responders and others externally. In order to meet that goal, I believe that it will be necessary to charge a single agency or department with the responsibility of facilitating the exchange of information and the coordination of action across agency and departmental boundaries. That body should also be required to report back to Congress on compliance with the program.

Given NIST's competence in the standards area, as well as its experience in compiling and reporting Agency compliance data under the TTAA, it appears to be the obvious candidate for this task.

2. What could a future NIST role in technical standards be? How can NIST foster federal agency collaboration on international technical standards issues?

I believe that there are three ways in which our "bottom up" process needs to be optimized. In each case, NIST would be the logical choice to act on behalf of government:

- Most crucially, I believe that the role that NIST has played in initiatives such as the SmartGrid and EHRs should be institutionalized and optimized over time. The private sector simply does not have the will to self-organize and drive large, cross-sector, standards-based initiatives through to a rapid conclusion without the support and, frankly, the prodding of the government.

- In contrast to most other nations, there is no government-appointed spokesperson for the United States in all but one of the major formal international standards bodies, or in the hundreds of "informal," but often more influential, SSOs generally referred to as "consortia." ANSI is internationally recognized as the United States representative in several of

the formal organizations, but it lacks an explicit Congressional appointment to serve in that capacity. In fact, NIST and ANSI have worked together productively on many initiatives in the past, and I believe that this relationship should be formalized as the principal conduit between government and private industry, thereby ensuring an ongoing and efficient flow of information. Among other benefits, NIST and ANSI could facilitate formulating joint positions between government agencies and relevant industry sectors on international issues when such unanimity would be useful.

- With the convergence of technologies and the rising importance of systemic concerns such as global warming, the need to develop positions relating to standards will regularly cross agency and departmental boundaries. NIST can act as a clearinghouse for communication between agencies to help them understand their respective needs and priorities. Similarly, NIST can coordinate their participation in SSOs to minimize cost, and maximize government input into the standards development process.

3. Please share any perspectives on the proposed NIST realignment.

For historical reasons, NIST has become the custodian of a variety of missions, each of which must compete for necessarily limited resources. To the extent that realignment will help NIST support the goals that I have highlighted above, I think that it is crucial for Congress to support that realignment.

Conclusion

For decades, the United States has been a global leader in standardization, led in large part by private industry. The leadership of the private sector remains necessary, but it is no longer sufficient. The U.S. needs a more empowered, more activist NIST to bring our historical public-private partnership in the standards arena up to the demands of the present and the future, and to assist the Federal agencies and departments in efficiently managing the jobs that they have been asked to perform.

Mr. Chairman, ranking member Smith, and Subcommittee members, I would like to thank you for committing your time to these important matters, and for the opportunity to testify before you today.