CHINA, EUROPE, AND THE USE OF STANDARDS AS TRADE BARRIERS: HOW SHOULD THE U.S. RESPOND?

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS

COMMITTEE ON SCIENCE

HOUSE OF REPRESENTATIVES

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CHINA, EUROPE, AND THE USE OF STANDARDS AS TRADE BARRIERS: HOW SHOULD THE U.S. RESPOND?

WEDNESDAY, MAY 11, 2005

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS,
COMMITTEE ON SCIENCE,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:12 p.m., in Room 2318 of the Rayburn House Office Building, Hon. Vernon Ehlers [Chairman of the Subcommittee] presiding.

COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES

China, Europe and the Use of Standards as Trade Barriers: How the United States Should Respond

Wednesday May 11, 2005

2:00 PM – 4:00 PM
2318 Rayburn House Office Building (WEBCAST)

Witness List

Dr. Hratch Semerjian
Acting Director
National Institute of Standards and Technology

Mr. Robert Noth
Manger, Engineering Standards
Deere and Company

Dr. Don Deutsch
Vice President, Standards Strategy and Architecture
Oracle Corporation

Mr. Joe Bhatia
Vice President and Chief Operating Officer
Underwriters Laboratory

Mr. David Karmol
American National Standards Institute

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HEARING CHARTER

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS
COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES

China, Europe, and the Use of Standards as Trade Barriers: How Should the U.S. Respond?

WEDNESDAY, MAY 11, 2005
2:00 P.M.—4:00 P.M.
2318 RAYBURN HOUSE OFFICE BUILDING

Purpose:

On Wednesday, May 11, at 2:00 p.m. the House Science Committee's Subcommittee on Environment, Technology, and Standards will hold a hearing to review the increasing use by U.S. trading partners of technical standards and other standards-related requirements as barriers to trade, and what U.S. companies, standards development organizations, and the Federal Government are doing, and could do, to overcome or reduce these barriers.

Witnesses:

Dr. Hratch Semerjian is the Acting Director of the National Institute of Standards and Technology (NIST).

Mr. Robert W. Noth is the Manager of Engineering Standards for Deere & Company, headquartered in Moline, Illinois.

Dr. Don Deutsch is the Vice President for Standards Strategy and Architecture for Oracle, headquartered in Redwood Shores, California.

Mr. Joe Bhatia is the Vice President for International Operations at Underwriters Laboratory (UL). UL is a commercial laboratory company that tests products against U.S. and international standards, headquartered in Northbrook, Illinois.

Mr. David Karmol is the Vice President of Public Policy and Government Affairs at the American National Standards Institute (ANSI).

Overarching Questions:

The Subcommittee plans to explore the following overarching questions:

1. What are standards and why are they important to the global competitiveness of U.S. companies?
2. How are standards developed in the U.S.? How is this different from the way standards are developed in our major trading partners such as Europe and Asia?
3. Is the U.S. system at a disadvantage in the global standards arena? If so, what should the Federal Government, states, U.S. standards development organizations, and companies be doing to reduce their vulnerability to the use of standards as trade barriers, and how could they promote the adoption of non-exclusionary standards in the global marketplace? What are the merits and drawbacks of these different systems?

Background:

What Is a Standard?

A standard is a technical specification for a product, process, or service. Standards are used to ensure uniformity and inter-operability. For example, standards make it possible for cellular phones made by different companies to communicate with each other regardless of location. Standards ensure that the electrical power grid provides electricity to homes and businesses in the same way across the U.S. An-

other example of a standard is the worldwide uniform electronic standard that governs the format of credit cards, enabling them to processed anywhere in the world where credit cards are accepted. Standards are frequently referenced by or tied to government regulations to describe or even dictate the technologies or processes expected to achieve the goals of regulations, and to ensure compliance. For example, the Federal Communications Commission (FCC) regulations for the formats for black and white, color, and high-definition television are based on technical standards.

Why Are Standards Important?

Standards play a powerful role in domestic and international markets. If a standard achieves broad acceptance in a market, it may lead to the abandonment of technologies supported by alternative standards and the domination of a market by a specific technology. An example is the gradual loss of market share by Sony's Betamax video recording standard in the 1980s during the early years of video cassette recorders (VCRs), as the Matsushita VHS standard became more popular. Once the competition between the two standards had been resolved by the dominance of one over the other, the uncertainty of which technology to invest in disappeared, and the market for VCRs grew rapidly.

Standards facilitate the growth of markets by assuring predictability and interoperability. For example, agreements between manufacturers on communications standards provide certainty for the entire cell phone market, "telling" designers and providers of peripheral services such as e-mail, web services, and the ability to take and send pictures what formats they need to use to provide compatible add-ons to consumers. If there are multiple standards for a type of product, the uncertainty about which standard will eventually dominate can paralyze investments into related technologies, or result in a fragmented market with multiple technologies that cannot work together. International standards promote international trade by ensuring that the same product can be sold and used anywhere, regardless of origin, which is convenient for manufacturers and customers alike.

How Are Standards Used as Trade Barriers?

Countries can use standards as trade barriers by setting domestic standards that are different from those which foreign manufacturers would have normally used. (This can happen inadvertently as well as deliberately.) This increases the costs of exporting to the country in question because the companies trying to export there must change their product lines to meet the special standards requirements of that country. The existence of unique standards is also a bureaucratic disincentive for exporters to do business, particularly small and medium-sized enterprises that do not have the resources to learn about, understand, and work through often complex or obscure specifications. For example, countries may require a different standard for safety belts or emission controls in automobiles that must be tested for, or institute a complicated testing procedure for imported telecommunications goods.

Companies worldwide are worried that such measures could escalate into "standards wars," with countries closing their markets to imports with technical requirements, rather than tariffs. This concern was partly responsible for the creation of the World Trade Organization (WTO), which includes the Technical Barriers to Trade (TBT) agreement, a very detailed document that lays out the principles that countries should not use technical standards as trade barriers, should adopt international standards whenever possible or practicable, and should work on harmonizing standards through international standards organizations. However, the TBT includes fairly significant exceptions for countries to exercise their authority in the areas of health, safety, and national security, and it is these exceptions that are often cited when a country sets a new standard to block imports. It is important to note that although U.S. companies frequently complain about technical standards as trade barriers abroad, our trading partners frequently voice similar concerns about standards barriers in the U.S. market, particularly with respect to telecommunications and information technology equipment.

The following are some examples of standards-related problems U.S. companies are beginning to report as presenting or potentially presenting serious barriers to U.S. trade:

China: Wi-Fi versus WAPI

In an effort to promote an independent economy based on home-grown technologies, China has stated in its standards strategy that it plans to develop mandatory domestic technical standards based on Chinese technology and intellectual property, rather than adopt existing industry or international technical standards and having to pay license fees for non-Chinese technology.

To this end, in 2004, the Chinese government announced that it would require all wireless-enabled devices to meet a Chinese wireless standard, beginning June 1 of that year. The Chinese standard is called "WAPI"—Wireless Authentication and Privacy Infrastructure. The Chinese cited the WTO TBT national security loophole, saying that the WTO principles of non-discrimination did not apply in this case for national security reasons. The globally accepted standard for wireless internet (Wi-Fi) is IEEE (Institute of Electrical and Electronics Engineers) 802.11i. The global semiconductor industry had been manufacturing their silicon chips to meet this standard and a variety of related electronics manufacturers were designing products to be compatible with it. What was most distressing to non-Chinese manufacturers, however, was China's requirement that a limited number of Chinese companies would be licensed to build and certify products to WAPI, and any foreign manufacturer who wanted to comply with the standard and do business in China would have to partner with a Chinese company.

Responding to vigorous lobbying by U.S. industry, in March 2004, U.S. Secretary of Commerce Don Evans, U.S. Trade Representative Robert Zoellick, and Secretary of State Colin Powell intervened, and in April 2004, the Chinese government agreed to postpone the implementation of the standard indefinitely, and participate in the implementation of a global standard.

Since then, China has been working to get the WAPI standard accepted via the International Standards Organization (ISO) process in order to make it an international standard. The ISO is a body made up of representatives from 100 countries, and is a forum for the development of global standards. Its deliberations are extremely formal and process-oriented. WAPI was considered in February 2005, but when the ISO voted to take the WAPI standard off its "fast-track" process, China walked out of the negotiations, citing unfair treatment. Some Chinese accused the U.S. of blocking the process. Meanwhile, IEEE's 802.11i standard was fast-tracked for approval by ISO. There have been no significant developments since then, but China plans to manufacture products for the Chinese market according to the WAPI standard, and hopes that market forces and the size of its domestic market will cause the WAPI standard to be widely adopted.

Standards experts say that, in spite of the apparent setback, China will continue to try to promulgate unique, exclusionary standards for its domestic market. They also say that China intends to increase its presence within international standards bodies such as the ISO, and is eager to assume a leadership role on several of ISO subcommittees in order to better position itself to set standards-setting agendas in the future.

Europe: Domination of International Standards Bodies

Some U.S. companies and industries are very alarmed that the European Union, having harmonized most of its technical standards among its membership, has exhibited a tendency to vote as a bloc at international standards meetings. With 15–25 votes, the EU can exercise significant influence in the 100-member ISO. More broadly, U.S. companies that are active in international standards are concerned that the U.S. commitment to and consistency of participation in international standards processes is not as great as that practiced by the Europeans, and the lack of a coherent strategy to guide U.S. participation is impeding the U.S. ability to act forcefully in the standards arena.

Europe: Standards Aid to Developing Countries

In contrast to China, the European Union has adopted a very outward-looking, export-oriented standards strategy which is geared towards developing new markets for EU-made goods. In addition to using its national standards as barriers to foreign imports, the EU is actively promoting its standards among developing countries as a way to give an advantage to EU-made goods. U.S. manufacturers are worried because the European Commission has an explicit policy on this issue, provides significant financial support for these efforts, and sends European delegations to developing countries to help them launch their own standards initiatives, based on European standards and the European system of standards development, which is a government-run and supported process.

U.S. companies warn that, because the U.S. has not been actively promoting its more de-centralized standards system in the emerging markets of developing countries, these governments are unfamiliar and thus less comfortable with that concept. As a result, they are less apt to adopt the U.S. model, even though it is less bureaucratic, more flexible, and more market-oriented. The U.S. system uses an open and transparent process that solicits the opinion and permits the direct participation of all interested firms and other entities. Instead, these countries adopt centralized, government-controlled standards development systems that are more likely to take

an active, interventionist role in creating standards specifically designed to protect domestic industries. When they do adopt foreign standards, these governments are more likely to adopt a European standard over a U.S. one.

How Can the U.S. Respond?

Standards experts argue that the U.S. must take a more active role in the international standards arena and take steps to increase its support for domestic and international standards development, negotiation, and technical assistance. There are several basic ways in which the U.S. Government or U.S. companies could reduce the use of standards as trade barriers to U.S. products:

- **National Standards Strategy**

The American National Standards Institute (ANSI) is developing a U.S. Standards Strategy document in collaboration with its membership, independent standards consortia, and federal agencies, particularly the Department of Commerce. This document, currently in draft form, contains a number of recommendations on what steps ought to be taken to reduce the incidence of standards-related trade barriers. This document emphasizes that the current system of standards development in the U.S. works well, but that government (both State and Federal) and industry must work together in a more coordinated fashion and commit more resources to ensure that the system is adequately supported. The strategy also says that standards should be developed in as fair and open a process as possible, and that the Federal Government should work with its counterparts in other countries to prevent standards from becoming trade barriers.

- **Department of Commerce Standards Initiative and Report**

In 2003, the Department of Commerce launched a standards initiative to bring more focus and resources to address the trade barriers problem. The Department of Commerce in 2004 published a paper entitled "Standards and Competitiveness: Coordinating for Results," which included 57 recommendations. As a result, some efforts have been made within the Department of Commerce to ensure that different agencies that are involved in standards coordinate their activities and share information, most notably NIST and the International Trade Administration (ITA). Observers have commented that more funding is needed to hire subject-matter experts and place them in strategic locations around the world, and pay for standards training for existing trade officers. Furthermore, they note that the Department of State and U.S. Trade Representative's office and other agencies involved in trade need to be brought into the process to address the issue most comprehensively.

- **Standards Outreach to Trading Partners**

Although the China–Wi-Fi case is cited as a victory by some, others say that this incident should not become a model for how to resolve a standards conflict, because the incident soured relations between the U.S. and China in the standards arena at a time when standards experts say the U.S. should be reaching out to China. U.S. industry groups have urged the U.S. Government to work on improving interactions with China in the standards arena, such as providing technical assistance to China and other key Asian countries to help them meet their WTO TBT obligations. Standards development organizations point out that the standards development environment is often collegial and cooperative, and provides many opportunities to settle technical differences before they manifest themselves in standards wars. ANSI and other participants in international standards negotiations say that a substantial effort should be made by all U.S. participants in the standards development process to build a constructive educational dialogue with the Chinese, not just on standards themselves, but also on the process issues: how the U.S. method of industry-driven standards development works, and what its advantages are.

To counter the European Union's outreach to developing countries, standards experts recommend that the Federal Government and/or U.S. companies begin a similar campaign to tout the benefits of the U.S.-style of standards development in emerging markets in South America and Southeast Asia. Industry groups such as the National Association of Manufacturers warn that the U.S. has a significant amount of catching up to do in this area, and should increase funding for technical assistance to these countries through such agencies as the U.S. Agency for International Development (USAID), and ensure these programs are promoting U.S., rather than European standards and standards-development processes.

- **Domestic Standards Awareness and Education**

U.S. industries, the Federal Government, and to a lesser extent State and local governments, appear to be developing a greater awareness of the importance of standards in international trade, and their significance as an instrument of trade policy. However, academics and industry experts together have pointed out that the

subject of standards and their relevance are not part of engineering or business school curricula, and therefore are not "baked in" to the fundamentals of running a business or designing products. These experts suggest grant programs to encourage the development of standards curricula for use in business and engineering schools, as well as a broader effort to encourage these institutions to incorporate some kind of standards education into their programs. Greater awareness should also be cultivated within companies, particularly small and medium-sized enterprises that are not as exposed to international trade issues, but are increasingly becoming so.

- **Standards Assistance to Small and Medium-Sized Enterprises**

Major corporations with an international presence are usually more aware of standards issues, and can afford to hire standards experts or create an office to manage, track, and participate in international standards processes. Small businesses, however, are generally not as knowledgeable about international trade, and do not have the resources to hire experts and translators necessary to work through the complex business of getting their products certified in a foreign country. The ITA has begun to make some efforts to educate its own staff, particularly the Foreign Commercial Service (FCS), on the standards issues. In addition, ITA plans to place standards experts in several countries, including a standards liaison in Beijing in the summer of 2005.

- **Standards Infrastructure Support**

European Union members of international standards-setting bodies, and increasingly China and other Asian countries, provide greater levels of support (funding, logistics, technical resources, etc.) to their standards representatives than does the U.S. Government. Frequently, many of the delegates sent to international standards setting organizations by other countries are not only subject matter experts, but also government representatives. The U.S. participants in these processes have suggested that more resources be provided by the U.S. Government for technical support by NIST, whose representatives participate extensively in international negotiations. They also suggest that either U.S. companies or the U.S. Government should provide funding to standards development organizations and ANSI to boost representation in the international arena, since a more consistent and forceful U.S. presence at the standards meetings would lead to international standards that are more in line with U.S. interests.

Additional Background:

How Does the U.S. Standards Development System Work?

Any standard is the product of a collaborative process. In the United States there are hundreds of Standards Development Organizations (SDOs) and Standards Consortia. They are known collectively as Standards Setting Organization (SSOs). The membership of SSOs may consist of companies, federal agencies, non-profits, and other participants. SSOs develop and adopt standards acceptable to their members through a consensus process.

The traditional U.S. SDOs support themselves by selling the documents containing the standards to users. Many SDOs represent well-established industries that over the years have developed highly formal processes for the proposal, consideration, and acceptance of standards.

"Open Standards" are a popular way of developing standards, where the standards are developed in open forums and made available on a royalty-free basis on the premise that the more inclusive and cost-free the standard, the wider will be its adoption. This method of developing standards is particularly common in the Internet-related hardware and software industries.

"Global Standards" are standards that are uniform around the world. Internet protocols, for example, which govern how information is organized and transmitted through the Internet, are global standards, developed by the World Wide Web Consortium, or W3C. Another example is the standardized dimensions for shipping containers. The field of global standards can be a contentious one, for a global standard often compromises between existing standards, or requires abandoning many standards for a single one. The European Union has extensive experience in this area from harmonizing the standards of its members. Global standards are unusual, but there is a movement to try to develop and promote them because of their convenience and growing necessity in an increasingly interconnected world.

The American National Standards Institute (ANSI)

ANSI is a non-profit umbrella group for SDOs that accredits the standards development procedures of its member organizations, helps coordinate standards activi-

ties in the U.S., provides a forum for its members to discuss standards issues, and is the U.S. representative at two major international standards bodies: The ISO and the International Electrotechnical Commission (IEC). ANSI's membership includes most of the major U.S. manufacturers, as well as universities, government agencies, testing laboratories, and other entities. About two hundred SDOs in total are accredited by ANSI.

Although it represents the U.S. in the ISO and other international groups, unlike its foreign counterparts, ANSI is a non-governmental entity. Hence, ANSI's role as a coordinator of the U.S. is similar to, but not exactly the same as the role that foreign governments play in standards development abroad. In the U.S., the role of the government is largely one of support, providing input where government input is required, and providing some of the scientific and technical expertise and research that is needed for any effective standards regime, mostly through NIST, but also through other federal agencies that relate to health and safety.

Testing Laboratories and Testing Procedures in Trade: Conformity Assessment

Companies that decide to manufacture products based on a given standard have to show that their products are compliant with it. This is verified by having their products tested against the standard at a testing lab, and the procedure is known as "conformity assessment." These non-profit and for-profit laboratories test products to ensure that they meet the specifications of the appropriate standards and provide verification of this to consumers and other companies. There are hundreds of testing laboratories in the U.S. and thousands world-wide. The testing procedures can also constitute trade barriers through the imposition of lengthy and complicated requirements for foreign manufacturers. For example, China has instituted the China Compulsory Certification Mark, which requires companies exporting in a wide range of categories to have their products tested first. Often, national standards require that the tests be performed in the laboratories of the country in question, in some cases the government-run standards laboratories there. This is also a cause for concern to U.S. companies that fear possibility of having their intellectual property stolen during the testing process.

As markets have become more global and more companies sell their products out of their home countries, nations have started engaging in Mutual Recognition Agreements (MRAs) which allow testing laboratories in other countries to test products against foreign standards. The WTO TBT agreement includes language encouraging the use of MRAs to facilitate the testing process, but the use of MRAs worldwide is not comprehensive.

How Are Standards Developed in Other Countries?

In Europe and Asia, the system of standards development is different from that in the U.S. Although the standards development processes in other countries is still a collaboration between companies and other groups, the government play a much more direct role. Governments provide secretariats to manage their domestic standards development processes, publish the standards, and support the country representation at international standards meetings. Moreover, the standards developed are government-subsidized and are provided to the user community for free. This makes the adoption of these standards more attractive, and this policy is being pushed, particularly by the European countries, into emerging markets which may not necessarily have standards of their own. This approach to standards development is more top-down, although companies still participate heavily in the processes.

National Standards Strategies

In recognition of the importance of standards to their domestic economic development and ability to penetrate markets abroad, several countries have developed and published national standards strategies which outline how they will promote their standards in the global trade system. They believe that standards are an effective strategic tool in the world trade arena, and these opinions are borne out in these standards strategies. Standards strategies are being developed to help focus the resources and management of countries' standards infrastructures as a way of extending specific standards regimes to emerging markets and thus ensure access to these markets for their products.

These governments see participation in international standards activities as a way to promote their economic interests. Recently, the Europeans have been promoting their standards development system in other countries to enable access to these markets by European goods.

For example, the German Standardization Strategy states:

In the face of increasing market globalization and growing competition, the international standardization system needs to be strengthened as the basis for uniform regional and national standards. Alliances should be created to support the introduction of the European model. . .this approach could effectively promote the goals of German industry in accessing global markets. Given the importance of establishing German industry in emerging economies and in the markets of the new and future EU member states, appropriate action must be taken to gain an early market presence. A vital task in this context is to communicate an appreciation of the benefits of the European standardization system and to offer assistance in its adoption.

Questions for the Witnesses:

Dr. Hratch Semerjian, Acting Director, National Institute of Standards and Technology (NIST)

Briefly describe how NIST supports standards development and answer the following questions:

1. What is NIST's role in the international standards arena?
2. Describe the Department of Commerce's standards document "Standards and Competitiveness: Coordinating for Results" and the status of the implementation of its recommendations. What remains to be done?
3. How would NIST's FY 2006 budget request improve the U.S. position with respect to standards development? Describe any other NIST standards initiatives that would contribute to the competitive position of U.S. industry.

Mr. Robert W. Noth, Manager of Engineering Standards, Deere & Company; *Dr. Don Deutsch,* Vice President for Standards Strategy and Architecture, Oracle; *Mr. Joe Bhatia,* Vice President for International Operations, Underwriters Laboratory

1. What has been the experience of your company with Chinese and European technical standards, and how do you work with these countries in this area? What are your concerns regarding the technical standards and standards practices of other countries?
2. For your industry, how are standards developed in the U.S.? How is this different from the way standards are developed in our major trading partners such as Europe and Asia? What are the merits and drawbacks of these different systems? Is the U.S. system at a disadvantage in the global standards arena, and if so, why?
3. What should the Federal Government, States, U.S. standards-setting organizations, and companies be doing to reduce your vulnerability to the use of standards as trade barriers, and how could they promote the use of non-discriminatory standards in the global marketplace? How should these efforts be coordinated?

Mr. David Karmol, Vice President for Public Policy and Government Affairs, American National Standards Institute (ANSI)

Briefly describe ANSI's role in national and international standards development and answer the following questions:

1. What has been China's and Europe's approach to the development and use of standards? How is this approach changing international standards development in organizations such as the International Standards Organization, and through bilateral relations with other countries? What are the implications for U.S. trade with China and the rest of the world?
2. Based on the U.S. Standards Strategy that ANSI has been developing, what should the Federal Government, States, U.S. standards development organizations, and companies be doing to reduce their vulnerability to the use of standards as trade barriers, and how could they promote the adoption of non-exclusionary standards in the global marketplace? How should these efforts be coordinated?

Chairman EHLERS. Good afternoon, and welcome to today's hearing entitled "China, Europe, and the Use of Standards as Trade Barriers: How Should the United States Respond?"

I apologize for the delayed start. We are waiting for the Ranking Member to arrive, but he has been delayed, and so, with the permission of the staff, the Minority staff, we will begin.

I also want to apologize ahead of time. We may be able to keep things rolling here, but I am in a committee that is having votes today, and they—I was told they desperately need my vote, even though they don't know how I am going to vote yet. Maybe if I cast one wrong vote, they will send me back. But we have someone who will be here in a bit to substitute for me in the event that that happens. If I get called for this vote before that happens, we will have to recess momentarily while I go vote.

So I apologize ahead of time if that happens.

This hearing is an opportunity to examine some of the most serious problems facing U.S. companies as a result of other nations using standards as trade barriers. We will also learn what the U.S. Federal Government, U.S. companies, and U.S. standards-setting organizations can do to reduce, avoid, or eliminate these barriers.

A standard is a technical specification for a production, process, or service. Standards are used to assure uniformity and inter-operability. For example, standards make it possible for cellular phones made by different companies to communicate with each other, regardless of location in the United States. But, because Europe and many other nations have different standards, our U.S. cell phones generally don't work in those areas. When they do, it is generally at considerable extra expense.

It is estimated that 80 percent of the total value of global trade, $7.3 trillion in 2003, is affected by standards and related technical regulations and testing procedures. Thus, this issue has enormous implications for U.S. companies.

U.S. companies and standards-setting organizations are concerned that our trading partners are using technical standards as trade barriers to U.S. products to protect their own domestic industries. This practice seems to be increasing as traditional tariff barriers are being lowered.

A recent example comes from China's attempt last year to use a different standard for wireless computer chips, which would have required all companies to make two sets of chips: one for China, and one for the rest of the world. Fortunately, the U.S. Government was able to pressure China to back down. But China will continue to attempt to use standards to favor Chinese manufacturers to the detriment of U.S. companies.

This hearing will help us to better understand these complex problems and find ways to help U.S. companies. We also hope it will enable us to stave off any "standards wars."

[The prepared statement of Chairman Ehlers follows:]

PREPARED STATEMENT OF CHAIRMAN VERNON J. EHLERS

Good afternoon and welcome to today's hearing entitled "China, Europe, and the Use of Standards as Trade Barriers: How Should the U.S. Respond?"

This hearing is an opportunity to examine some of the most serious problems facing U.S. companies as a result of other nations using standards as trade barriers.

We will also learn what the U.S. Federal Government, U.S. companies, and U.S. standards-setting organizations can do to reduce, avoid, or eliminate these barriers.

A standard is a technical specification for a product, process, or service. Standards are used to ensure uniformity and inter-operability. For example, standards make it possible for cellular phones made by different companies to communicate with each other regardless of location in the U.S. But, because Europe and many other nations have different standards, our U.S. cell phones generally don't work in those areas. When they do, it is generally at considerable extra expense.

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A recent example comes from China's attempt last year to use a different standard for wireless computer chips, which would have required all companies to make two sets of chips, one for China and one for the rest of the world. Fortunately, the U.S. Government was able to pressure China to back down. But, China will continue to attempt to use standards to favor Chinese manufacturers to the detriment of U.S. companies.

This hearing will help us to better understand these complex problems and find ways to help U.S. companies. We also hope it will enable us to stave off any "standards wars."

Chairman EHLERS. With great pleasure, I now recognize the Ranking Member, the gentleman from Oregon, Mr. Wu, for his opening statement. Good timing.

Mr. WU. Thank you very much, Mr. Chairman.

Standards and timing are everything.

Good afternoon, and I want to join Chairman Ehlers in welcoming everyone to this afternoon's hearing.

I will be brief in my remarks, because I am here to learn from you all.

While standards support the development of new technology and form the basis of commerce, their role and importance is not well understood by either the general public or policy-makers. I welcome the opportunity we have today to learn more about the role of standards in an increasingly global marketplace.

I have some understanding of the importance of standards from my prior experience as an attorney representing high-tech companies in international trade issues in both India and China. While standards can support commerce, they can also be used as non-tariff barriers to trade and to promote one technology over another. We need to ensure that there is a level playing field to ensure that standards are used to promote rather than hinder trade.

I realize that we can't force other countries to adopt the standards system that is used in the United States. However, we can ensure that the Federal Government is using its resources to support U.S. standards, businesses, and industry.

What I hope to learn today is: How can the Federal Government do a better job in supporting U.S. standards and be responsive to our industry's concerns about standards or abuses of standards by other countries in the form of non-tariff trade barriers? How can coordination among federal agencies dealing with standards be improved? If countries violate standards provisions in the WTO, is the Federal Government currently sufficiently vigorous in its prosecution of these violations? And finally, how do the witnesses see U.S.

standards development organizations evolving over the next five, 10, or 20 years?

I applaud the development of a National Standards Strategy under the direction of the American National Standards Institute; however, I want to gain a better understanding of the actions and resources required for its implementation. While the National Standards Strategy lays out a series of ambitious goals, we need to also lay out a plan on how to achieve these goals.

I want to thank our witnesses for taking the time to appear before the Subcommittee today, and I want to assure them that I consider today to be the first step in a continuing dialogue on how to best improve the competitiveness of American industry.

I yield back to the Chairman.

[The prepared statement of Mr. Wu follows:]

PREPARED STATEMENT OF REPRESENTATIVE DAVID WU

Good Afternoon and I want to join Chairman Ehlers in welcoming everyone to this afternoon's hearing.

I will be brief in my remarks, because we are really here to learn about the problems facing industry and what role the government can support them.

While standards support the development of new technology and form the basis of commerce, their role and importance is not well-understood by the public or most policy-makers. I welcome the opportunity we have today to learn more about the role of standards in an increasingly global marketplace.

I have some understanding the importance of standards from my prior experience as a lawyer representing high-tech companies on international trade issues in both India and China. While standards can support commerce, they can also be used as barriers to trade and to promote one technology over another. We need to ensure that there is a level playing field to ensure that standards are used to promote trade not hinder it.

I realize that we can't force other countries to adopt the standards system that is used in the United States. However, we can ensure that the Federal Government is using its resources to support U.S. standards and industry. What I hope to learn today is:

- How can the U.S. Government a better job in supporting U.S. standards and being responsive to industry's concerns about standards abuses by other countries?
- How can coordination among federal agencies dealing with standards issues be improved?
- If countries violate standards provisions in the WTO, is the Federal Government vigorous in its prosecution of these violations?
- And how do the witnesses see U.S. standards development organizations evolving over the next five to ten years?

I applaud the development of a National Standards Strategy under the direction of the American National Standards Institute, however I want to gain a better understanding of the actions and resources required for its implementation. While the National Standards Strategies lays out a series of ambitious goals, we need to also lay out a plan on how to achieve these goals.

I want to thank our witnesses for taking the time to appear before the Subcommittee today. And I want to assure them that I consider today to be a first step in a dialogue on how best to improve the competitiveness of U.S. industry.

Chairman EHLERS. I thank the Ranking Member.

If there is no objection, all additional opening statements submitted by the Subcommittee members will be added to the record. Without objection, so ordered.

At this time, I would like to introduce our witnesses. I am pleased that we have a distinguished panel, which will help us zero-in on the problems that we are discussing today.

The first person is Dr. Hratch Semerjian. He is the Acting Director of the National Institute of Standards and Technology, better known as NIST. Next is Mr. Robert Noth. He is the Manger of Engineering Standards for Deere and Company, "Nothing runs like a Deere," headquartered in Moline, Illinois. And I grew up to the—as I told him earlier, I grew up to the sounds of the putt-putt of the two-cylinder John Deere tractor, which is a mainstay in the community where I grew up. Third is Dr. Don Deutsch. He is the Vice President for Standards Strategy and Architecture for Oracle, headquartered in Redwood Shores, California. Every hearing should have an "oracle" present. Next is Mr. Joe Bhatia. He is the Vice President for International Operations at Underwriters Laboratory, headquartered in Northbrook, Illinois. And the final witness is Mr. David Karmol. He is the Vice President of Public Policy and Government Affairs at the American National Standards Institute, better known as ANSI.

As our witnesses presumably know by now, spoken testimony is limited to five minutes each, after which the Members of the Committee will then have five minutes each to ask questions. If your testimony is longer than five minutes, we will automatically enter all of your testimony into the record, so you can just give an oral summary and conclude that way.

I am pleased to call on Dr. Semerjian.

STATEMENT OF DR. HRATCH G. SEMERJIAN, ACTING DIRECTOR, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Dr. SEMERJIAN. Thank you, Mr. Chairman and Ranking Member Wu. Thank you for the opportunity to testify today on the topic of the role of standards in international competitiveness.

We need to take seriously the challenges posed by the growing impact of standards on market access, so that we can better position the United States and the U.S. companies to compete in the global market. There is much work to be done to ensure that the U.S. standards interests have fair opportunity to be reflected in standards used globally and that these interests are more effectively promoted in our most important markets, such as China.

The decentralized private sector demand-driven U.S. standards system has many strengths. U.S. companies derive significant advantage from the system's flexibility and responsiveness. The government also derives great benefit, both as a customer and user of standards.

The system serves the country well, but there is room for improvement. In particular, the growing importance of standards to international competitiveness dictates that the United States, both private and public sectors, move quickly to strengthen the interface between the U.S. standards system and the international system. This need was pointed out clearly two years ago by industry in response to questions by the Department as our Standards Initiative, launched by then-Secretary Donald Evans. The Standards Initiative was bolstered last year with a comprehensive report on "Standards and Competitiveness: Coordinating for Results," which contains some 50 recommendations for moving forward, including

intensifying Departmental efforts in China and in collaboration with the private sectors in international standards organizations.

The Department's May 2004 report also noted the importance of Department representatives participating in the revision of the U.S. Standards Strategy. NIST is an active participant in the work being done by ANSI and the U.S. Standards Strategy Committee to pull together a diverse set of stakeholders to update and revise this strategy.

In the United States, standards are typically developed in response to specific concerns and constituent issues expressed by both industry and government. Department agency supports standards through direct participation in standards development activities of ANSI and standards-developing organizations. More than 3,200 staff from 26 federal agencies participate in private sector standards development activity. Government agencies are also major users of some 13,000 standards. Both the U.S. Government and private sector participate in international standards development in numerous venues. We need to make effective use of our participation in each of these venues to ensure that U.S. interests are advanced.

NIST has a variety of roles in the U.S. standards system. We are frequently looked to for research and measurements that provide the technical underpinning for standards. NIST is tasked with promoting the efficiency of the U.S. standards system by coordinating federal agency use of non-government standards and participating in the development of relevant standards and through promoting coordination between the public and private sector in both the standards and conformity assessment arenas.

NIST is also directed by law to develop specific standards, cryptographic standards and applications for federal IT security, biometric, and voting system standards, and to help industry develop enterprise integration standards.

By the way, Mr. Chairman, you will pleased to know that NIST and the Technical Guidelines Development Committee, submitted the initial set of voluntary voting system guidelines to the Election Assistance Commission last Monday in timely compliance with the legislation.

NIST's technical programs support global recognition of U.S. standards. These programs take advantage of synergies with related Department of Commerce programs and with the private sectors and are critical to U.S. manufacturers' access to export markets. They include our Standards and Trade Workshop program, maintaining good working relationships with foreign standards officials, leadership in key standards-development activities that impact trade, and notifying U.S. exporters of proposed technical regulation standards in key foreign markets.

NIST's fiscal year 2006 budget proposal addresses the need pointed out by the Committee to strengthen the scientific and technical infrastructure needed to support the U.S. standards base. The proposal supports advances in manufacturing, combining activities to help U.S. manufacturers meet measurement, integration, and international standards challenges. It includes activities relating to standards for manufacturing enterprise integration, nano-manufacturing, and expanding access to global markets.

In fact, to understand the global standards arena fully, you need to consider not only documentary standards, but also measurement standards. Manufacturing and measuring are two sides of the same coin. If you can't measure, you can't manufacture. And if you can't assure those measurements to other companies and consumers, here and abroad, you probably will lose them to competitors.

So I am very pleased to announce today that NIST is launching a comprehensive effort to roadmap America's measurement needs. The Nation's measurement system is a vital element of our innovation infrastructure. The goal of this very important initiative is to ensure that the Nation's highest priority measurement needs are identified and met. The initiative recognizes the growing importance of both the international measurement system and its intersection with international standards.

In summary, we recognize the global challenges posed to U.S. competitiveness in both the documentary and measurement standards arenas. Now, more than ever, in an environment of increasingly scarce resources and many competing demands, we need to create and implement mechanisms that will enable the public and private sectors to make informed choices about how best to invest resources to achieve the greatest impact. NIST is committed to the success of this effort.

Thank you, again, for providing a forum for discussion of these important issues for the U.S. economy.

[The prepared statement of Dr. Semerjian follows:]

PREPARED STATEMENT OF HRATCH G. SEMERJIAN

Mr. Chairman and Members of the Committee, thank you for the opportunity to testify today on the topic of the role of standards in international competitiveness. Standards impact an estimated 80 percent of world trade and are a significant factor in competitiveness worldwide. We need to take seriously the challenges posed by the growing impact of standards on market access so that we can better position the United States and U.S. companies to compete in the global market. There is much work to be done to ensure that U.S. standards interests have fair opportunity to be reflected in standards used globally and that these interests are more effectively promoted in our most important markets, such as China. This need has become more real and apparent as more countries become active in the global market and the global standards arena.

To understand the global standards arena, you need to look at two types of standards—measurement standards and documentary standards. Measurement standards, which are the technical forte of the National Institute of Standards and Technology, are generic tools that are widely used by industry to support efficiency in the marketplace. These measurements are vital to international trade. For example, the way that I measure electromagnetic compatibility (EMC) or flow rates may not be the same way that a European or Chinese lab measures EMC or flow rates. Differences in measurements and lack of equivalency among national measurement systems can delay, and sometimes block, entry into foreign markets.

Documentary standards—standards embodied in written documents and promulgated by Standards Development Organizations (SDOs)—establish the fitness of a product for a particular use. These standards may address product features, performance, quality, compatibility, or other product attributes. Examples include the dimensions of lumber, rules for the construction and operation of steam boilers and pressure vessels, and specifications for film speed. There also are documentary standards that set specifications for the function and operation of a device or system, covering everything from elevators and refrigerators to handicapped access. There are thousands upon thousands of standards like these that are invisible to most consumers but play a vital role in facilitating global trade.

The United States is a demand-driven, highly diversified economy and society, and its standards system reflects this framework. Our decentralized, sector- and technology-based standards system is diverse and inclusive. The system is based on a strong private-public partnership. In the United States, standards are typically

developed in response to specific concerns and constituent issues expressed by both industry and government. This demand-driven approach contrasts with that of many of our trading partners, who favor a much more top-down, government-driven approach.

The U.S. standards system is highly decentralized and naturally partitioned for most applications into industrial sectors that are supported by numerous independent, private-sector standards development organizations (SDOs)—currently more than 450 such organizations, with at least 150 more consortia standards development activities underway. Approximately 20 SDOs develop about 80 percent of standards in the United States.

Without any central authority or direction from government, a wide variety of U.S. voluntary standards activities have proceeded very successfully along sector-specific lines for over a century. Although U.S. decisions about standards authority and responsibilities were not made deliberately with a view to providing support for U.S. efforts in international trade, they work well to support the domestic goals of protection of health, safety and the environment as well as specification of products, processes and systems.

The American National Standards Institute (ANSI), a private sector, non-profit organization founded in 1918 by several SDOs and U.S. Government representatives, including the Department of Commerce, functions as a central clearinghouse and coordinating body for its member organizations, which in turn develop standards on a decentralized, consensus basis. ANSI is composed of more than 700 company members; 30 government agencies; 20 institutions; and 260 professional, technical, trade, labor and commercial organizations.

Government agencies support standards through direct participation in standards development, as well as through participation in policy activities of ANSI and specific standards developing organizations in which they have a direct interest. Many agencies are active participants in standards development, at both the national and international levels. This participation is encouraged by both law and policy. More than 3200 staff from 26 federal agencies participate in private sector standards development activities. At NIST, there are more than 350 participants, more than a quarter of our technical staff.

Government agencies are also major users of standards, to support regulation of health, safety, and the environment, as well as for procurement of products and services for federal use. We currently count more than 13,000 private sector standards in use by the Federal Government. This substantial federal agency reliance on private sector standards reinforces the importance of globally recognized standards that facilitate the seamless flow of products and services across borders.

Both the U.S. Government and private sector participate in international standards development in a variety of ways: through private, voluntary organizations whose membership is on a national body basis; through treaty organizations (governments are members); through professional and technical organizations whose membership is on an individual or organizational basis; and through consortia, whose membership is typically company and industry-based. We need to make effective use of our participation in each of these venues to ensure that U.S. interests are advanced.

Our decentralized, private sector and demand-driven U.S. standards system has many strengths. U.S. companies derive significant advantage from the system's flexibility and responsiveness. The government also derives great benefit from the system, both as a customer and user of standards. Government agencies play an important role in the U.S. standards system as advocates for the national interest, both here at home and globally.

The system serves the country well, but there is room for improvement. In particular, the growing importance of standards to international competitiveness dictates that the United States—both private and public sectors—move quickly to strengthen the interface between the U.S. standards system and the international system. This need was pointed out clearly two years ago by industry in response to questions posed by the Department of Commerce as part of its Standards Initiative.

The Department of Commerce's Standards Initiative was launched in March 2003 by then-Secretary Donald Evans specifically to address U.S. industry concerns that issues relating to standards and assessment of conformity to those standards in foreign markets were among the greatest barriers to expanding exports. U.S. businesses want a fair and equitable standards playing field and Secretary Evans directed the Department to assist them in achieving that balance where standards would ideally be judged not only on their technical merits but also on their developers' adherence to the principles of openness, transparency, balance or interests, due process and consensus. The Secretary's Standards Initiative was bolstered last

year with a comprehensive report on Standards and Competitiveness: Coordinating for Results, which contains some 50 recommendations for moving forward. These recommendations respond in part to specific industry requests to the Department for action in key areas.

Examples of industry requests of the Department on standards issues include a desire for the Department to focus on China as the primary market where the United States should attempt to influence standards development and trade policy relating to standards; counter the aggressive promotion of European standards throughout the world; limit the potential for EU block voting on standards in international standards development organizations; increase pressure on countries to implement their World Trade Organization (WTO) or Free Trade Agreement (FTA) obligations; and coordinating more closely interagency on standards issues.

In close collaboration with industry, the Department is pursuing an active multi-pronged strategy with respect to standards-related issues in China. This strategy includes continued engagement at the policy and technical levels to deal with specific issues as they arise, providing grant support where appropriate to U.S. standards developing organizations to open offices in China, posting a standards attaché to the U.S. Embassy in Beijing this summer, and sponsoring an ongoing series of both general and sector-specific workshops involving Chinese officials and relevant U.S. private and public sector interests. Regarding the issue of EU influence in standards on the international level, the Department is working with ANSI and industry to define and address these concerns at the policy level and also on a case-by-case basis.

The Department's May 2004 report also noted the importance of Department representatives participating in the revision of the U.S. Standards Strategy, which was first created in 2000 under the auspices of ANSI. The purpose of the strategy is to strengthen the U.S. standards system and to establish a framework for achieving goals related to both the competitiveness of U.S. industry and achieving a balanced global trading system. ANSI initiated the first effort to develop a national standards strategy in 1998, in response to a challenge from Ray Kammer, then Director of NIST. The strategy was published in August 2000.

The Strategy, currently under revision to reflect the new global environment, provides an excellent framework for strengthening the interface between the U.S. standards system and the international system. The purpose of a standards strategy for the United States is to establish a framework that can be used by all interested parties to further advance trade issues in the global marketplace, enhance consumer health and safety, meet stakeholder needs and, as appropriate, advance U.S. viewpoints in the regional and international arena. The U.S. Standards Strategy provides both a statement of the purpose and ideals that underlie the U.S. system and a vision for the future of the U.S. standards system in a more globally competitive economy.

The revised U.S. Standards Strategy is being developed in an open, balanced, transparent and participatory process. More than 100 representatives of industry; small, medium and large enterprise; standards developers and consortia; consumer groups; and Federal and State governments have participated in the development and review process. The Strategy highlights key strategic imperatives that will maximize the strengths of the U.S. system and minimize weaknesses. NIST , and the Department as a whole, are strong supporters of the work being done by the American National Standards Institute and the U.S. Standards Strategy Committee to pull together a diverse set of stakeholders in the future of the U.S. standards system to update and revise the strategy.

A sectoral approach recognizes that there is no simple prescription that can be handed down to fit all needs. Sectors must develop their own plans; the purpose of the U.S. Standards Strategy is to provide guidance and coherence without constraining creativity or effectiveness. The Strategy consists of a set of strategic initiatives having broad applicability which will be applied according to their relevance and importance to particular sectors. Stakeholders are encouraged to develop their own tactical initiatives where needed and this strategy suggests some which have widespread applicability.

The Strategy addresses opportunities for improvement in getting the message out about the principles and policies that both underlie the U.S. system and are key to the development of globally relevant standards, whatever venue stakeholders choose for their work. The Department will work closely with key players in the U.S. system to implement relevant elements of the Strategy. We will also continue our strong partnership with ANSI to support its role of coordination of the U.S. system and as member body of the International Organization for Standardization (ISO) and the International Electrotechnical Commission. U.S. membership in the IEC is coordinated by the U.S. National Committee to the IEC, through ANSI.

NIST has a variety of roles in the U.S. standards system. As the national measurement institute, NIST is frequently looked to for research and measurements that provide the technical underpinning for standards, ranging from materials test methods to standards for building performance, and for a range of technologies, from information and communications technologies to nano- and biotechnologies. Under the provisions of the National Technology Transfer and Advancement Act and OMB Circular A–119, NIST is tasked with promoting the efficiency of the U.S. standards system, by coordinating federal agency use of non-government standards and participation in the development of relevant standards, and through promoting coordination between the public and private sectors in both the standards and conformity assessment arenas.

NIST is also directed by law to develop specific standards—cryptographic standards and applications, as well as guidelines, procedures and best practices for Federal IT security; biometric and voting system standards—and to help industry develop enterprise integration standards.

NIST technical programs support global recognition of U.S. standards, where relevant, as well as harmonization of standards to avoid barriers to trade. These programs take advantage of synergies with related Department of Commerce trade-related programs and with the private sector, and are critical to U.S. manufacturers' access to export markets. Two key outcomes of these programs are an expanded network of foreign officials knowledgeable about the U.S. system, and wider use and acceptance by foreign governments of U.S. products and standards that incorporate U.S. technology.

NIST's proposed FY06 initiative on standards in support of global trade addresses specific needs of U.S. businesses seeking to compete successfully in global markets. The initiative supports U.S. competitiveness by ensuring that innovative U.S. businesses are equipped to satisfy global as well as U.S. measurement and standards requirements, thus enabling rapid response to changes in technologies and early identification of new and non-traditional measurement and standards needs. Specific activities include targeted measurement inter-comparisons with national measurement institutes in key markets, leadership in key documentary standards development activities in new technology areas, and expanded standards-related information relevant to key markets.

With this year's National Export Strategy, the U.S. Government is also making improvements on the trade promotion front. U.S. Government agencies, led by the Secretary of Commerce under the Trade Promotion Coordinating Committee (TPCC), are collaborating to improve the government's standards-related trade promotion efforts. We are currently developing a strategy through which we can—working with the private sector—do a better job of promoting U.S. standards interests in our most important markets, such as China.

We intend to partner with U.S. industry and standards developers to more effectively promote the virtues of an open, transparent and impartial approach to standards development and implementation. Both U.S. standards interests and policy objectives will be served when the governments of our most important export markets are convinced of the strengths of this approach versus alternatives that are less open and transparent, and more subjective.

We recognize that the government and private sector must each leverage our scarce resources. The TPCC strategy endeavors to develop an ambitious partnership with U.S. manufacturers and service providers, and the U.S. standards community, to better promote U.S. standards interests in our most important markets.

NIST plays a major role in maintaining the measurement infrastructure necessary to advance U.S. interests in international trade, commerce and regulatory affairs. Manufacturing and measuring are two sides of the same coin. If you can't measure, you can't manufacture, at least not up to the expectations of increasingly demanding customers. And if you can't assure those measurements to other companies and consumers here and abroad, you probably will lose them to competitors.

So I am very pleased to announce today that the National Institute of Standards and Technology is launching a comprehensive effort to roadmap America's measurement needs. The Nation's measurement system is a vital element of our innovation infrastructure. The goal of this very important initiative—which will be undertaken in close cooperation with the private sector and other agencies—is to ensure that the Nation's highest priority measurement needs are identified and then met. *Working with others, NIST will develop and publish a U.S. Measurement System roadmap on a regular basis. We will report to our customers and stakeholders on what needs to be done by NIST—and others—to address American's measurement needs. NIST will hold workshops in specific areas and encourage others to also hold workshops to identify priority needs. NIST then will sponsor a summit in January 2005 to focus discussions on how to meet those needs.* We need to be certain that the U.S.

measurement system is robust so that it can sustain America's economy and citizens at world-class levels in the 21st century. The initiative recognizes the growing importance of both international measurement system and its intersection with international standards.

We recognize the global challenges posed to U.S. competitiveness, in both the documentary and measurement standards arenas. Now more than ever, in an environment of increasingly scarce resources and many competing demands, we need to create and implement mechanisms that will enable both the public and private sectors to make informed choices about how best to invest resources to achieve the greatest impact. Together, stakeholders in the U.S. standards system are collaborating to lay out a comprehensive strategic approach, implemented through effective private-public partnership, to better position the United States and U.S. companies to compete in the global market. Progress will require communication, cooperation, planning, and a commitment to action. NIST is committed to the success of this effort. Thank you for allowing me to testify today, and I would be happy to answer any questions.

BIOGRAPHY FOR HRATCH G. SEMERJIAN

Hratch G. Semerjian is the Acting Director of NIST. NIST's former Director, Arden Bement, Jr., began serving a six-year term as Director of the National Science Foundation in November 2004.

Dr. Semerjian has served as the Deputy Director of NIST since July 2003. In this position, Dr. Semerjian is responsible for overall operation of the Institute, effectiveness of NIST's technical programs, and for interactions with international organizations. NIST has a total budget of about $858 million, and a permanent staff of about 3,000, as well as about 1,600 guest researchers from industry, academia, and other national metrology institutes from more than 40 countries. Most of the NIST researchers are located in two major campuses in Gaithersburg, Md., and Boulder, Colo. NIST also has two joint research institutes; the oldest of these is JILA, a collaborative research program with the University of Colorado at Boulder, and the other is CARB (Center for Advanced Research in Biotechnology), a partnership with the University of Maryland Biotechnology Institute.

Dr. Semerjian received his M.Sc. (1968) and Ph.D. (1972) degrees in engineering from Brown University. He served as a Lecturer and Post Doctoral Research Fellow in the Chemistry Department at the University of Toronto. He then joined the research staff of Pratt & Whitney Aircraft Division of United Technologies Corp. in East Hartford, Conn. In 1977, Dr. Semerjian joined the National Bureau of Standards (now NIST), where he served as Director of the Chemical Science and Technology Laboratory (CSTL) from April 1992 through July 2003. Awards he has received include the Fulbright Fellowship, C.B. Keen Fellowship at Brown, the U.S. Department of Commerce Meritorious Federal Service (Silver Medal) Award in 1984, and the U.S. Department of Commerce Distinguished Achievement in Federal Service (Gold Medal) Award in 1995. In 1996, he was elected a Fellow of the American Society of Mechanical Engineers. In 1997, he received the Brown Engineering Alumni Medal. Dr. Semerjian was elected to the National Academy of Engineering in 2000.

Chairman EHLERS. Thank you very much.

Mr. Noth.

STATEMENT OF MR. ROBERT W. NOTH, MANAGER, ENGINEERING STANDARDS, DEERE AND COMPANY

Mr. NOTH. Good afternoon.

Chairman EHLERS. Turn on your microphone, please.

Mr. NOTH. Thank you, Mr. Chairman.

My name is Bob Noth, and I am the Manager of Engineering Standards for Deere and Company. I have been involved with standards now for about 15 years, so I have a little experience.

For those of you who may not know us, we are a U.S.-based manufacturer of machinery and equipment for the ag and construction, forestry and turf care commercial markets, and our products are sold in 160 countries around the world currently, and we have more than 50 manufacturing operations located in 17 countries.

We consider it both an honor and a privilege to share our——

Chairman EHLERS. Excuse me. We will have to go into recess briefly, and I will be back as soon as I can.

[Recess.]

Chairman EHLERS. I apologize to everyone, including—especially Mr. Noth, for interrupting the proceedings, but my presence was demanded elsewhere. And since we did not have an alternative Chair, I had little choice.

You may proceed, Mr. Noth.

Mr. NOTH. Thank you, again, Mr. Chairman.

As I was just concluding, we consider it an honor and a privilege to share our experiences regarding standards today.

John Deere products, and those of our competitors in the markets we serve, are not heavily regulated compared to some other products in other industries. Active participation in the development of and compliance with voluntary standards has been a longstanding John Deere, and in fact, off-highway industry practice. We involve John Deere employees as subject matter experts on relevant standards committees in the markets we serve. We have been involved in Europe since the 1960s, and the level of engagement has escalated significantly since 1992 to keep pace with standards development for the European Common Market. We are not as heavily engaged in China, but we anticipate a growing involvement as the Chinese market develops and we learn our ways through the Chinese standards-development system.

This has worked effectively for us, but we do have concerns for the future based on recent experience and anticipated changes in the global market. Specifically, the European top-down, all-encompassing approach to regulation, as opposed to the U.S. approach, which is based more on addressing specific needs, coupled with their linking of regulatory compliance to voluntary standards through what they call the "presumption of conformity" and the "best available technology" mindset that they have has dramatically increased regulatory coverage and voluntary standards development and had a significant increase in the cost of delivering product in the European market.

In addition to that—excuse me. I got something out of order. I am sorry.

The Europeans are aggressively exporting their system and their standards to the other countries and developing markets around the world. The EU itself and member-states are providing millions of Euros in technical assistance in exchange for agreements to prefer European-based standards, technology, and of course, European producers. Countries like Brazil, Mexico, Russia, and Israel are making such agreement, even when their markets show clear preferences for U.S. goods and services.

Many countries within the WTO and signatories to the TBT agreement continue to be slow in implementation of the provisions and mechanisms within the agreement. This includes their failure to recognize standards set according to the TBT principles as "international" and thereby creating potential problems for the acceptance of U.S. goods exported into those markets.

And an even larger concern for our industry beyond the proliferation of country-unique or regionally-unique standards and regulatory requirements is the issue of compliance, otherwise known as

Conformity Assessment. Most countries outside the U.S. and Europe insist on conducting their own assessments of conformity before products can enter their markets. For our products and our industry, these requirements represent a huge redundant and unnecessary cost that must be passed on to the consumer with no additional value. Based on the methods employed by some countries, it appears that some of these requirements are more motivated by technology transfer than by consumer protection.

The demand for John Deere products grows globally and the cost of configuring products to unique local standards, especially those required by governments and not valued by the consumers, becomes prohibitive for both the manufacturer and the customers. The need for globally-recognized and accepted standards that minimize the need for unnecessary expensive product variation increases. As a result, the off-highway equipment industry has gravitated to the development of a portfolio established under the auspices of the International Organization of Standards. This, of course, has forced some changes in how we deal with our American-based standards-developing organizations, like SAE and ASAE, and over the past few years, we have been morphing them to a different business model for our particular standards and changed some of the funding that we provide in order for them to provide the appropriate infrastructure. It also makes ANSI a more strategic player for us, and that is why we have been engaged with ANSI so aggressively.

The off-highway industry prefers the ISO process, because it offers broad political acceptance to our standards, and we have a good argument for the international recognition of those standards when we build product to them. We can have a seat at the table, and our delegation includes subject matter experts from our companies. And any dependence on alternative international processes leaves the door open for competing standards to be developed and gain political acceptance in competition with the standards we may be using.

The primary drawbacks, of course, are that the process—the U.S. can be disadvantaged by the "one country-one vote" principle if there are not enough "P" members, or participating members, at the table to represent the full extent of the global market. And when many stakeholders are at the table, of course, it can take longer to reach a consensus on what ultimately becomes a standard, as you have to debate the issues.

However, up to this point, we feel the advantages outweigh the disadvantages, and we know that the—that you can, in fact, by the basis of early involvement, the quality input, and because we have been able to deliver excellent products and support services where we do business, we have been successful in this process, not to say we haven't had setbacks.

However, as governments that control access to markets outside of the developed world start to move toward more regulation, unique and sometimes unjustified standards requirements and insist on mandatory but redundant testing, regardless of brand recognition and excellent product experience. We believe better communication between the private sector and government and better alignment between the private sectors and the multiple depart-

ments and agencies of government is essential to maintaining a level playing field for U.S.-based industry.

First of all, the Federal and State governments need to educate themselves on issues relating to standards and trade, because, like other issues before Congress, they are complex and will not yield to simple fixes. Hearings, such as this one today are a good start, and John Deere applauds the Chairman's initiative on scheduling it, but while one hearing is necessary, it is not sufficient, given the magnitude of the challenge.

In this vein, we seriously urge Congress to consider endorsement of the United States Standards Strategy that is currently being developed by a large cross-section of U.S. industry, standards-developing organizations, standards-developing consortia, government agencies, consumer groups, and conformity assessment organizations under the auspices of ANSI. It highlights and takes advantage of the inherent strengths of the U.S. standards system and recommends activities that, if undertaken and executed effectively, may neutralize much of what is currently perceived by some as the disadvantage to U.S. interests.

Beyond endorsing the strategy, though, we believe that the Federal Government also needs to put a higher priority—a high priority on providing technical assistance to our trading partners and into the promotion of U.S.-based standards and technology as an alternative to the European approach.

We believe that we do not have to match the European Union dollar for Euro, but a great percentage of the funding currently going to facilitating development, through organizations like USAID or the Trade Development Agency, should be allocated to technical assistance with due consideration to priorities based on trading volumes and strategic relationships with our partners.

One of the things that these organizations need is a checklist that includes standards-related infrastructure and issues. They often get input on what they should fund based on in-country input, but because that in-country input often doesn't know what it doesn't know, we need something that ultimately puts some priority on standards for our agencies.

Similarly, we need consistent and predictable funding of the standards and trade activities in the Department of Commerce, NIST, the International Trade Administration, USTR, and the Department of State, Energy, and other agencies, but with the assurance that more effective coordination between these agencies and more interaction with the private sector occur. The existing Interagency Council on Standards needs broader participation from some departments and agencies, like State. What is missing, though, is a policy-level council responsible for coordination at a strategic level. To this end, we respectfully suggest Congress might consider amending the National Technology Transfer Act of 1996 to put more emphasis on that policy-level communication, coordination, and alignment with consideration of creating a standards "czar" to provide appropriate accountability.

In 1992, we were very much where we are with China today, and things have improved a great deal. We need to, I think, share that we use the lessons learned in what we did with Europe and apply

that to China and the other countries of the developing world as the market changes.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Noth follows:]

PREPARED STATEMENT OF ROBERT W. NOTH

Introduction

Deere & Company is a U.S. based manufacturer of machinery and equipment for the agricultural, construction, forestry, and turf care commercial markets. John Deere products are currently sold in 160 countries around the world and we have more than 50 manufacturing operations located in 17 countries around the world. We consider it both an honor and privilege to share our experiences regarding standards and trade with this subcommittee here today.

We have been asked to provide testimony addressing questions in three areas of interest:

1. *What has been the experience of your company with Chinese and European technical standards, and how do you work with these countries in this area? What are your concerns regarding the technical standards and standards practices of other countries?*

John Deere products and those of our competitors in the markets we serve have not been heavily regulated compared to some other industries. Active participation in the development of and compliance with voluntary standards has been a long standing John Deere and in fact, industry practice. Primary reasons for this include:

- Demonstrating social responsibility by addressing health, safety and environmental concerns regarding our products and their use.
- Avoiding unnecessary regulation
- Managing risk regarding product liability
- Creating a supply base of affordable & readily available components
- Maintaining a level playing field for competition
- Documenting the "state-of-the-art"

To these ends, we have involved John Deere employees who are "subject matter experts" on relevant standards development committees in the markets we serve. We've been involved in Europe since the 1960s and the level of our engagement has escalated significantly since 1992 to keep pace with standards development for the European Common Market. We are not yet as heavily engaged in China but we anticipate a growing involvement as the Chinese market develops.

Standards are a form of product specification for build and test. The cost of compliance is reflected in the market price for our products. However, as the demand for John Deere products grows globally, the cost of configuring product to unique local standards, especially those required by governments but not the consumers, becomes prohibitive for both manufacturer and the customers. The need for globally recognized and accepted standards that minimize the need for unnecessary and expensive product variation increases. As a result, the off highway equipment industry has gravitated to the development of a portfolio established under the auspices of the International Organization for Standards (ISO).

This "strategy" has worked effectively for us up to now but we do have concerns for the future based on recent experience and anticipated changes in the global market.

- In establishing the Common Market, the European top down, all encompassing approach to regulation, (as opposed the U.S. approach, based on addressing specific needs) coupled with linking regulatory compliance to voluntary standards through the "presumption of conformity" and a "best available technology" mindset has dramatically increased regulatory coverage and voluntary standards development.
- The European approach often results in horizontal type standards proposals setting requirements on broad, dissimilar types of off highway equipment. Examples include Environmental type standards (and Regulations) on Engine Emissions, Fuels, Environmental Noise, and "End of Life" standards that place additional burdens on manufacturers. While we are not opposed to goals and objectives of some of these initiatives, we have concerns that some proposals will not yield the desired results while timetables put our industry at risk of survival in terms of our abilities to recover the cost of the R&D invest-

ment while remaining competitive in the marketplace. The impacts, already being felt, are substantially higher product costs to the consumer with little direct value perceived by the customer. We would prefer a more vertical, product oriented approach to standards and regulation so the solutions can be more effectively tailored to product use and more effectively deployed in global markets consistent with developing demand.

- The Europeans are aggressively exporting their system and their standards to other countries and developing markets around the world. The EU itself and individual member-states are providing millions of Euros in technical assistance in exchange for agreements to prefer European based standards, technology and EU producers. Countries like Brazil, Mexico, Russia and Israel are making such agreements, even when their markets show a clear preference for U.S. goods and services.
- Many of the governments that control access to markets outside of the U.S. are skeptical of products complying with "voluntary" standards, no matter how broadly used, accepted and successful. Some have declared their intentions to regulate all aspects of the products entering their markets. In some cases, even products built to internationally recognized and accepted standards from ISO or IEC are not immediately acceptable.
- Many countries within the WTO and signatories to the TBT agreement continue to be slow to implement the provisions and mechanisms within the agreement. This includes their failure to recognize standards set according to the TBT principles as "international" thereby creating potential problems for the acceptance of U.S. goods exported to those markets.
- An even larger concern for our industry beyond the proliferation of country or regionally unique standards and regulatory requirements, is the issue of compliance, otherwise known as Conformity Assessment. Most countries outside the U.S. and Europe insist upon conducting their own assessments of conformity before products can enter their markets. For our products and our industry, these requirements represent a huge redundant and unnecessary cost that must be passed on to the consumer with no added value. Based upon the methods employed by some countries, it appears some of these requirements are more motivated by technology transfer than by consumer protection.

2. *For your industry, how are standards developed in the U.S.? How is this different from the way standards are developed in our major trading partners such as Europe and Asia? What are the merits and drawbacks of these different systems? Is the U.S. system at a disadvantage in the global standards arena, and if so, why?*

The primary players in developing standards for our industry include our trade associations where we can legally collaborate with our competitors on needs for new or revised standards requirements. For Agricultural, Construction and Forestry equipment we work through the Association of Equipment Manufacturers (AEM); Turf care equipment, the Outdoor Power Equipment Institute (OPEI) and for Engines, the Engine Manufacturers Association (EMA). Standards proposals are then worked either through the American Society of Agricultural Engineers (ASAE) for Agricultural and Turf care, or the Society of Automotive Engineers (SAE) for Construction, Forestry and Engines where the U.S. Technical Advisory Groups for the relevant ISO committees are administered. The U.S. developed proposals and positions are then introduced in their relevant ISO committees with the ultimate objective of obtaining an internationally recognized and accepted document so that machines made to comply have the broadest possible market access. To ensure the broadest acceptability of U.S. positions we also encourage our U.S. Trade Associations to coordinate with European, South American and Asian Trade Associations where we maintain membership and "socialize" our proposals and address any expressed concerns from the global stakeholders.

In the past, ASAE and SAE often published their own versions of Standards. As the industry has become more globally focused, we have evolved to using ISO as our primary development mechanism and have moved to eliminate the need for redundant documents. This has forced some changes in how the industry funds ASAE and SAE for executing their role in the process and elevated the strategic importance of ANSI as the U.S. member body of ISO. That is why John Deere and some of our competitors are active participants in ANSI.

Because of our industry commitment to ISO, the differences between the U.S. process and those in other countries are not as great as they are for some other industry sectors. The primary difference is that many participants in ISO Technical Committees are not "subject matter experts" who have a working knowledge of the

industry, the products and technologies, but are National Standards Body bureaucrats or even government representatives who do not contribute to the technical debate, but do have a vote in the final outcome. This brings an element of international politics into the process that is often frustrating.

For the Off Highway Industry the ISO process is preferred to the national or regional alternatives for the following reasons.

- It offers broad political acceptance of the standards.
- We can have a seat at the table and our delegation can include "subject matter experts."
- Any dependence on alternative "international" processes leaves the door open for competing standards to be developed and gain political acceptance.

Compared to most U.S.-based standards developing organizations, National or Regional Standards Bodies are more closed to outside participation, less transparent regarding what is being considered and often less balanced and occasionally biased against industry participation. Europe is now somewhat more participative and open than it was in 1992 but still not up to U.S. expectations. China is just starting to emerge as a significant international force in standards but at this point, does not appear to be quickly embracing open participation.

The primary drawbacks to the ISO process are:

- The U.S. can be disadvantaged by the "one country—one vote" if there are not enough "P" members at the table to represent the full extent of the global market.
- When many stakeholders are at the table it can take longer to reach consensus.

Up to this point in time, John Deere does not believe our industry has been seriously disadvantaged in the global standards arena because of our early involvement, the quality of our input and because we've been able to deliver excellent products and support services wherever we do business. We have not often seen the need to appeal to government for assistance, preferring instead to work the challenges ourselves.

However, as the governments that control access to markets outside of the developed world start to move toward more regulation, unique and sometimes unjustified standards requirements and insist on mandatory but redundant testing regardless of brand recognition or excellent product experience, we believe better communication between the private sector and government and better alignment between the private sectors and the multiple departments and agencies of government is essential to maintain a level playing field for U.S. based industry.

3. What should the Federal Government, State governments, U.S. standards-setting organizations, and companies be doing to reduce your vulnerability to the use of standards as trade barriers, and how could they promote the use of non-discriminatory standards in the global marketplace? How should these efforts be coordinated?

First of all, the Federal and State governments need to educate themselves on the issues relating to standards in trade because, like other issues before Congress, they are complex and will not yield to simple fixes. Hearings such as this one today are a good start and John Deere applauds the Chairman's initiative in scheduling it, but while one hearing is necessary, it is not likely sufficient given the magnitude of the challenge. While we believe most if not all U.S. standards setting organizations are already well aware of the issues, many companies are just starting to understand the implications and many small- and medium-size manufacturers and service providers remain unaware.

In this vain, we seriously urge Congress to consider endorsement of the United States Standards Strategy (USSS), currently being developed by a large cross-section of U.S. industry, standards developing organizations, standards developing consortia, government agencies, consumer groups and conformity assessment organizations under the auspices of ANSI. It highlights the inherent strengths of the U.S. Standards system and recommends activities, if undertaken and executed effectively may neutralize much of what is currently perceived by some as a disadvantage to U.S. interests.

Going beyond endorsing the strategy, we believe that Federal and State governments need to put a high priority on providing more Technical Assistance to our trading partners and into the promotion of U.S.-based standards and technology as an alternative to the European approach. Specific activities funded by the industries like ours have helped in some sectors but are not sufficient given the scope of the

European effort. We do not believe we have to match the European Union dollar for Euro, but a greater percentage of the funding currently going to facilitate development through organizations like USAID, should be allocated to Technical Assistance with due consideration to priorities based on trading volumes and strategic relationships.

Similarly, we need consistent and predictable funding of the Standards and Trade activities in the Department of Commerce, NIST, the International Trade Administration, USTR, the Departments of State, Defense and Energy and other agencies but with the assurance of more effective coordination between these agencies. The Interagency Council on Standards already exists but needs broader participation from some Departments and Agencies and a higher level of visibility to its recommendations. To this end, we respectfully suggest Congress might consider amending the *National Technology Transfer Act of 1996* to put more emphasis on such communication, coordination and alignment with consideration of creating a Standards "czar" to provide appropriate accountability.

BIOGRAPHY FOR ROBERT W. NOTH

As Manager of Engineering Standards for Deere & Company, Bob Noth is responsible for overseeing the development, deployment, utilization and administration of standards affecting the Deere product line worldwide. This includes responsibility for development and implementation of strategies and processes that effectively avoid redundant and/or unnecessary parts and components from entering Deere's products and product support system.

Bob joined Deere in 1965 as an Industrial Engineer at the Dubuque Works. Over his 40-year career at Deere he has held a variety of positions in Manufacturing Engineering, Value Analysis, Production Supervision and Management at Deere units in Dubuque, Iowa, Horicon, Wisconsin and at Corporate Headquarters. He assumed his current position in July of 1992.

Bob is active on a global scale in professional societies, trade associations and standards development organizations. His past service includes Chairman of the SAE Technical Standards Board, the SAE Board of Directors, and Committee PM 03 of the American Society of Agricultural Engineers (ASAE). He became involved with the ANSI Company Member Council Executive Committee in 1991 and has since served ANSI in a variety of capacities including Vice Chairman of the Standards and Data Services Committee (SDSC) where he was involved with development of ANSI's National Standards System Network (NSSN). Appointed as Chairman of the ANSI Regional Standing Committee on Europe, the Middle East and Africa, in 1999, he has presided over three annual bilateral discussions with the European Commission, CEN, CENELEC and ETSI. He also served on the Drafting Committee for the National Standards Strategy.

He is currently on the ANSI Board of Directors where he was elected to the position of Vice Chairman in 2002 and in that role, chairs their International Policy Committee.

Other current responsibilities include representing Deere & Company on ICSCA, the International Cooperation on Standards and Conformity Assessment and IFAN, the International Organization of Standards Users.

Chairman EHLERS. Thank you.

Dr. Deutsch.

STATEMENT OF DR. DONALD R. DEUTSCH, VICE PRESIDENT, STANDARDS STRATEGY AND ARCHITECTURE, ORACLE CORPORATION

Dr. DEUTSCH. Thank you, Mr. Chairman.

Mr. Chairman, Ranking Member Wu, Members of the Subcommittee, my name is Don Deutsch. I am Vice President of Standards Strategy and Architecture at Oracle.

I am here today as Chair of the Standardization Policy Committee of the Information Technology Industry Council, ITI, a trade association of 31 global and market-leading high-tech companies. In addition to personally participating in a variety of standards-setting organizations, I am responsible for orchestrating my company's participation in standards and consortia forums. More than

200 Oracle engineers are involved in 100-plus working groups and over 70 consortia and formal standards bodies around the world. All ITI member companies, as well as the entire technology industry, have comparable levels of investment and standards body participation.

ITI appreciates the Committee's focus on standards and your understanding of the critical impact on the continued competitiveness of the U.S. high-tech industry. Many of the most pressing policy issues before the Congress today have significant inter-operability in its standardization components, such as ensuring our national security, improving access to and quality of medical care, and protecting the environment.

My remarks today will cover three areas: the diverse worldwide IT standardization process that has served the U.S. industry well, international trends that are at odds with the U.S. approach, and the use of standards advocacy to stimulate openness in trade and market.

In the technology industry, a focus on how standards are developed in the United States misses the mark. Our industry designs and builds products for global markets, and we develop globally-relevant standards in multiple venues and organizations around the world. Standards are at a foundation of the new global technology economy. The growth and success of the U.S.-led global IT industry is attributable, in large part, to the development and use of market-led, voluntary standards.

To frame our perspective, I would like to highlight a recent experience, which the Chairman mentioned in his opening remarks, that our industry had in China. You may have heard of this issue referred to by its popular acronym, "WAPI." This example highlights the many challenges the industry is facing, not only in China, but also around the globe. Last year, the Chinese government proposed a mandatory standard for Wireless Local Area Network products in China, mandating the specific technology incompatible with international standards and requiring local Chinese production of that technology. U.S. technology companies faced a major dilemma. They could either be forced to collaborate with a select few Chinese competitors or abandon the Chinese market and its opportunities altogether.

After facing coordinated pressure from the highest levels of the Administration and Congress, the Chinese government agreed to indefinitely suspend implementation of "WAPI", revise the specification based on comments from foreign and domestic firms, and participate in international standards bodies. By standing firm, we avoided a terrible precedent that would have encouraged China and other countries to follow similar paths of discrimination against foreign firms through the standards process.

While we may attribute the Chinese approach to standards-setting to their status as an emerging and rapidly-developing economy, the EU and other regions of the world are increasingly using top-down approaches to standardization driven by regulatory interests rather than by market-led requirements.

We believe that the best role for the Federal Government in standardization is in partnership with industry. Specifically, we look to the U.S. Government to promote the voluntary, market-

driven standards process that has served industry well and to stimulate openness in trade and markets by helping to defend against the use of standards as barriers to innovation and market access.

Moving toward these items, ITI recommends that the U.S. Government strengthen current standards liaison and attaché programs of the Department of Commerce, including additional staff and resources to ensure effective coordination and promotion of standards, technical, regulatory, and market access activities across all relevant government agencies, redouble advocacy efforts to promote global, market-led, voluntary standards that support innovation and inter-operability. In this role, the U.S. Government should directly engage with other governments about how internationally-recognized market-led technology and standards can grow economies and benefit all parties.

And finally, Mr. Chairman, we must, together, look at how to develop metrics to provide much-needed standards impact analyses. For example, there would be real policy and commercial use for analyses of global economic impact of standards. With this information, we can promote together global, market-led, voluntary standards that benefit consumers' industry economies around the world.

Again, Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to discuss these important issues with you today.

[The prepared statement of Dr. Deutsch follows:]

PREPARED STATEMENT OF DONALD R. DEUTSCH

Mr. Chairman, Ranking Member Wu, Members of the Subcommittee, my name is Don Deutsch, and I am Vice President, Standards Strategy and Architecture at Oracle. For over 25 years I have chaired the INCITS H2 Technical Committee that defines the SQL language standard that all relational database system products, including Oracle's, support. I am responsible for orchestrating and coordinating my company's participation in standards and consortia forums across all business units and geographies. In that capacity I represent Oracle at the policy level in various consortia as well as in formal standards bodies, including the INCITS Executive Board, the Executive Committee for the Java Community Process, and the American National Standards Institute (ANSI) Board of Directors. I also serve as President of the Enterprise Grid Alliance, a consortium focusing on accelerating the application of Grid technology in commercial and public sector data centers. In many respects the diversity of the bodies in which I participate is reflective of the nature of standards development in the technology industry.

I am honored to appear before this subcommittee today in my capacity as Chairman of the Standardization Policy Committee for the Information Technology Industry Council. ITI is an elite group of the Nation's top high-tech companies and is widely recognized as the tech industry's most effective lobbying organization in Washington. ITI helps member companies achieve their policy objectives through building relationships with Members of Congress, Administration officials, and foreign governments; organizing industry-wide consensus on policy issues; and working to enact tech-friendly government policies.

ITI would like to address three very important issues:

1. The Chinese and European approaches to standardization;
2. The U.S. approach to standardization; and
3. The U.S. Government's role in promoting the recognition of industry-led, voluntary standards, as well as in preventing standards from being used as barriers to market access.

ITI appreciates your focus on standards and their impact on the competitiveness of the U.S. high-tech industry. Technology standards are directly and critically related to innovation and the creation of competitive global markets. Many of the most pressing policy issues before the Congress today have a significant standardization component, such as ensuring our national security, improving access to and quality of medical care, and protecting the environment.

Background

Let me begin by emphasizing the critical importance of standards to the technology sector. Standards are at the foundation of the global information and communications technology (ICT) economy. They create value and aggregate markets. They facilitate technology diffusion, promote production efficiency, product compatibility, inter-operability, and enhanced competition. They help drive down costs for consumers, facilitate communication among buyers and sellers of important commercial information. In many cases, they advance the public welfare, through the adoption of product safety standards, for example.

Industry recognizes that standards are not only the domain of the technical and business communities. Policy makers in the U.S. and abroad are increasingly interested in and actively influencing a range of standards and technical regulatory issues. Governmental interest and activity plays a critical role in today's global economy and influences the competitiveness of the ICT industry. Representatives of the technology industry work very hard to carefully frame our discussions with policy makers as we work cooperatively to address critical standards policy matters and define appropriate roles. As important as these issues are, they are not simple. There is often a need for nuanced understanding of standardization policy issues as the objectives of different interests, both domestically and abroad, are not always aligned.

One way to help clarify matters is to explain what the high-tech industry means when we talk about "standards." In our sector, the majority of ICT standards are developed in a variety of open, international standards development processes and are adopted and implemented on a market-driven, voluntary basis. In few cases is the adoption of ICT standards mandated by governments.

Chinese and European Approaches to Standardization

China's approach to and use of standards is a complex set of issues. It is a well-publicized fact that the Chinese Government wants to develop a robust domestic high-technology industry. This is not unique to China, as many governments around the world, including our own, want to see healthy and competitive domestic industries. The use and promotion of national or regional standards is one mechanism that some governments use to achieve their industrial policy objectives. Perhaps I can best illustrate this point with a recent experience that our industry had, one that we believe highlights many challenges the industry is facing, not only in China, but also around the globe.

The Chinese Government proposed the mandatory adoption of a Chinese-developed Wireless Local Area Network (WLAN) standard, best known by its acronym, "WAPI."

In May of 2003, The Chinese Government issued compulsory "WAPI" security standards that were set to go into effect on June 1, 2004, and were incompatible with the international standards upon which most WLAN products are based. Moreover, China only provided the technology underlying this mandatory technical standard to several of its domestic producers of wireless equipment, and designated these companies as the obligatory production partners of any foreign manufacturers willing to license the mandated technology and seeking to market these products in China.

Thus, in order to comply with the proposed regulations, U.S. technology companies faced a major dilemma: either collaborate with a select number of their Chinese competitors to co-produce products for the Chinese market, and thus potentially be forced to share valuable intellectual property with their Chinese competitors and run afoul of U.S. export control regulations, or abandon the Chinese market and its opportunities altogether.

These regulations also would have effectively excluded China from the world market because WLAN products made outside China would not have worked, essentially segmenting the world market for these products.

ITI worked very closely with our industry colleagues around the world, and also brought together the various groups in the U.S., to closely collaborate and maintain a strong industry voice on this issue. ITI worked hard to keep our government informed and to make sure this issue was on the agenda of both the Administration and the Congress. After considerable dialogue culminating in the April 2004 meeting of the Joint Commission on Commerce and Trade, the Chinese Government agreed to indefinitely suspend implementation of this mandatory standard, revise the standard based on comments from foreign and domestic firms, and participate in international standards bodies.

Yes, this was an important result for U.S. industry, but it was an equally important precedent for global competition. ICT is a leading U.S. export to China, accounting for 26 percent of all U.S. exports to China in 2002. This amounts to several

billion dollars per year of U.S. tech exports to China. Many of these current and as yet to be designed U.S.-made products and components would have been affected by this standard, jeopardizing high-end U.S. jobs. By standing firm against WAPI, the U.S. Government has ensured that the fast growing wireless market in China (forecast to grow by 25 percent per year) remains open to global competition. Additionally, the U.S. high-tech industry avoided the precedent that would have encouraged China's bad behavior, and, potentially encouraged other countries that might choose to similarly discriminate against foreign firms through the standards process.

This example illustrates the concerns that many industrial sectors, particularly the U.S. high-technology sector, are currently facing in China. The damaging precedent that could have been set with WAPI, in which a government—a signatory to the WTO agreement—mandates a technology and forces domestic production of that technology, would have had significant, negative implications for technological development and global economic growth.

I would like to shift now to Europe. As a global industry, the IT sector recognizes that the European standards infrastructure—which includes the national and European standards organizations (ESOs) and the European Commission (EC) and member state governments—is sophisticated, complex, and effective. The European standards infrastructure has demonstrated a considerable ability to set a single standard for the internal European market, drive it through the ISO/IEC system and promulgate it globally by leveraging its market power and Commission-funded trade promotion efforts.

The impact of European standards activity reaches well beyond the EU. Many developing countries in Asia and the Americas look to Europe for leadership on standards and regulatory processes. For example, the European Commission funds, with more than 60m Euro, an alliance for the Information Society with Latin America. This initiative includes a specific standards component, with the stated objective of promoting the European system of standardization and creating medium- and long-term partnerships between the EU and Latin America. This is an explicit strategy targeted directly at our industry with the objective of extending European influence to the standards and regulatory bodies in third markets.

Let me briefly speak to one very costly example of this dynamic. It involves standards related to Electromagnetic Compatibility (EMC) for high-tech products.

In 1989, the European Commission issued the EMC Directive requiring that the electrical system in the EU be protected from unacceptable disruption from radio frequency and harmonic interference. The directive was based upon the precautionary principle. The resulting harmonic emissions standards have no technical justification. There is a complete absence of data demonstrating any widespread unacceptable levels of harmonic interference from consumer electronic products. As this standard is now implemented, it places the burden of mitigating a potential and undocumented EU electrical grid issue on manufacturers with no corresponding mitigation measures on the utility companies. The standards (EN 61000–3–2 and EN 61000–3–3) are overly restrictive, apply to every piece of equipment produced, and increase the consumer cost of products by over $1B annually in Europe.

Unfortunately, despite the lack of technical justification for this standard and the fact that it has been created under irregular procedures, we now see other countries, including China, Indonesia, India, Russia, and potentially others in Africa, Asia, and South America, considering the adoption of these standard. This is a concern to product manufacturers, and for an obvious reason: the growth of this standard will drive a significant increase in unwarranted additional costs and technical requirements for the impacted equipment.

ITI's view is that the objectives for technical regulations should be to ensure safe and legal products. Technical regulations should never be more trade-restrictive than necessary and governments should consider alternatives whenever possible. This one European example demonstrates the impact on the marketplace of technical regulations. Governments should reference standards as the basis for technical regulations under certain, limited circumstances. When standards are intended for use by governments in regulations, the content of the standard and the process for developing it are critically important. Governments should reference only those standards that meet the test of real usage (i.e., they are responsive to real world conditions, performance (not design) based, and technically sound and relevant to the regulation). Additionally, we believe governments should limit the use of standards in regulations to only those standards that are developed through a process that is truly open and global.

The U.S. Approach to Standardization

For our industry, the focus is not on how domestic standards are developed "in the U.S.," but rather on creating global technical standards that support the growth of the worldwide ICT market. Because our industry designs and builds single products for a global market, we actually develop international, globally relevant standards in different venues and organizations around the world—not simply American National standards in a U.S. standardization infrastructure. We need that flexibility, because the ICT sector depends on standards today more than ever. The rapid pace of change in our sector, with product cycles measured in months, not years, requires companies and their suppliers constantly to modify, improve, and re-develop their technologies, products, and services in order to satisfy worldwide consumer demands. Standards and their development process must stay relevant and keep pace with this fast changing, global marketplace.

That being said, of course it is a reality that governments do have a perspective on standardization. How governments act on that perspective can and does affect global commerce and competitiveness. I have spoken a bit already about perspectives and approaches in Europe and China. Now I would like to say a little bit about the situation here.

We believe that the growth and success of the global IT industry (much of which is based here in the U.S.) is built in large part upon the development and use of market-led, voluntary standards that provide customer value and facilitate market development. Voluntary standards are completely market and consumer-driven. They are not mandated by government regulations, though public sector input as technical experts and consumers is valuable. In almost all circumstances, the development and use of voluntary standards are a key means to create and expand ICT markets and maximize benefits to societies, consumers, and companies. Industry responds to consumers as the ultimate arbiters when it is developing and using voluntary standards.

We firmly believe that a shared commitment in the U.S. by industry, consumers, and government to this kind of voluntary and market driven approach to standardization benefits the entire marketplace by creating real customer value through consumer choice, lower costs, etc., and by facilitating market development by promoting innovation, product inter-operability and the voluntary adoption of open industry standards.

We think this approach to standardization is clearly the optimal one. The success of the global IT industry demonstrates that. However, we do believe that this approach to standardization is not simple to explain, particularly in developing economies, where a more top-down and government-influenced approach is more readily understood and accepted. Explaining the strengths of our perspective and approach to standardization is a real challenge that we face in markets around the world.

The U.S. Government's Role

When asked what should be the role of the Federal Government in standardization, we are always very careful. We believe there is indeed a role. It is a limited and clearly defined role that is responsive to industry needs and performed in partnership with industry. It is an increasingly important role. Specifically, we look to the U.S. Government to perform two functions related to standardization—to promote the creation and use of voluntary, market-driven standards and to stimulate openness in trade and markets by helping to defend against the use of standards as barriers to innovation and market access.

We can point to important and useful examples of how the USG has effectively played that role. As we've seen with WAPI, positive results were achieved without the delays associated with the lengthy legal process of the WTO dispute settlement procedures. The well-executed cooperation and coordination at a variety of levels within and among U.S. Government agencies and the Congress was highly impressive and crucial to the success of this issue. We believe exactly this type of continued coordination will be necessary going forward. With WAPI, we may have struck at the symptoms, rather than the underlying cause itself, which means we could very well see similar attempts by China and other countries to utilize standards to force the creation of their own domestic industries, and we must be prepared, as industry and government, to address and resolve them.

We can also point to three specific initiatives that can help the U.S. Government to play that role—two that exist to a degree and one that does not exist as yet. In 2002, ITI released its *Vision for Standards and Technical Regulations* and presented a *Recommended Standards Action Plan* to the Department of Commerce. I will talk first about the initiatives that were the focus of that Action Plan. The Commerce Department has taken some actions on these initiatives since 2002. We are

now in the process of evaluating progress against that Action Plan and suggesting steps for the future.

In 2002, we recommended that the Commerce Department create a high-level standards and technical regulatory policy function to work with industry to identify and address both immediate and more long-term commercial policy issues in countries and regions around the world. The Commerce Department has taken steps through a Standards Liaison function to coordinate standards-related activity within the International Trade Administration and, to an extent, across the Department. The Department has worked to understand the global standards objectives of the IT industry and to assist, including by coordinating Commerce Department resources, in pursuing those objectives. Moving forward, we will recommend that the Department take additional steps to strengthen the Liaison function, including with additional staff and resources, in order to ensure the most effective standards, technical regulatory, and market access activity across all its agencies. ITI is committed to working with the Commerce Department to continue making progress in this area.

In our 2002 Standards Action Plan for the Commerce Department, we also recommended that it strengthen the existing Standards Attaché Program. In particular, we sought a program expansion to include attaches for China, the rest of Asia, and Geneva to supplement existing attachés in Brussels (to deal with European standards issues) and in Brazil. Because of the strategic utility of this program, we also recommended that the Commerce Department take necessary steps to ensure that it is both managed and located within the Department to retain an exclusive focus on standards and technical regulatory issues around the world. We are pleased to learn that we will likely see a standards attaché in China very soon. We appreciate the Department's efforts in making that happen. Moving forward, we would like to position the program for ongoing effectiveness, and we recommend that the Department support a formal assessment of the Attaché program's results, its training program, location within the department, and budgetary needs. ITI is committed to working with the Commerce Department to continue making progress on these recommendations.

Finally, I would like to speak briefly about another potential activity for the USG and the Commerce Department that we believe is critically important moving forward and one that should be given serious consideration. In our 2002 Standards Action Plan for the Commerce Department, we recommended that it provide much-needed standards impact analysis. For example, there would be a real policy and commercial use for some analysis of key policy issues (e.g., defining what is the global economic impact of standards, developing a comparison of government support and promotion of standards, forecasting global standards participation trends, etc.). Related to this analysis, we also recommend that the Department create an early warning system to detect and alert industry to global standards and technical regulatory issues that could impact market access.

Since 2002, the Commerce Department has worked with ITI and others to create, on a pilot basis, an ICT Standards Dialogue between the U.S. Government and the European Commission (EC) as a form of "early warning system." The ICT industry has used this Dialogue to work with the Commerce Department (and other agencies) on important ICT accessibility standardization issues in Europe.

Moving forward, we think that the Commerce Department can work with industry to continue strengthening and examining the pilot U.S.–EU ICT Standards Dialogue. Additionally, we see today even more clearly than in 2002 a critical opportunity to support industry's standardization policy and market access objectives around the world by working with industry to develop a standards and market access research and analysis program to better understand the key issues that we have been discussing at this hearing today. The Commerce Department has existing staff expertise that could be valuable in designing and implementing this research and analysis program. ITI is committed to working with the Commerce Department to continue making progress on these recommendations.

Finally, Mr. Chairman, I would like to conclude by saying that from our various experiences with standards policy issues in markets around the world, we have learned that our industry needs to engage in an ongoing basis at the policy level directly with our government and other governments, particularly in emerging markets, about how technology and standards can help grow their economies and why it is in their interest to adopt and deploy internationally-recognized, voluntary, market-driven standards. We need to redouble our already considerable efforts promoting processes that support such standards since they address user needs and promote innovation and inter-operability. We need to encourage market access so that consumers, industry, and economies around the world can benefit from innovative technological advancements.

Again, Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to discuss these important issues with you today.

BIOGRAPHY FOR DONALD R. DEUTSCH

A 30-year veteran of the Information Technology industry, Don Deutsch is currently Vice President, Standards Strategy and Architecture for Oracle Corporation in Redwood Shores, CA. For over 25 years he has chaired the INCITS H2 Technical Committee on Database that defines the standard that all relational database management system products support. In addition to continuing to lead H2's development of database language SQL specifications, Don represents Oracle at the executive/policy level in various consortia as well as in formal standards bodies including: the INCITS Executive Board, the Executive Committee for the Java Community Process, and the American National Standards Institute (ANSI) Board of Directors.

Don was recently named President of the Enterprise Grid Alliance, a consortium focusing on accelerating the application of Grid technology in commercial and public sector data centers, and is serving as Chairman of the JTC 1 Web Services Study Group. ANSI recognized Dr. Deutsch for his leadership of national and international information technology standardization as the 2002 recipient of the Edward Lohse Information Technology Medal.

Prior to joining Oracle he held senior software engineering management positions with Sybase and the Information Services Division of General Electric Co. Before working in industry Don managed the database management systems standards and supporting research program at the U.S. National Bureau of Standards (now the National Institute for Standards and Technology/NIST), held a full-time faculty appointment in the Information Systems Management Department of the University of Maryland, and worked as a consultant for an international public accounting firm.

Dr. Deutsch earned a BS from Miami University in Oxford, OH, and MBA and doctorate degrees from the University of Maryland, College Park. He has published numerous articles and papers, and co-authored an undergraduate textbook on Database Concepts; the National Bureau of Standards published his doctoral research on Modeling and Measurement of Database Management Systems.

Chairman EHLERS. Thank you. And it is interesting, we have problems ranging from two-cylinder tractors to large earthmovers down to tiny transistors.

Mr. Bhatia, let us hear from the Underwriters.

STATEMENT OF MR. JOE S. BHATIA, VICE PRESIDENT AND CHIEF OPERATING OFFICER, UNDERWRITERS LABORATORY

Mr. BHATIA. Good afternoon, Mr. Chairman.

Thank you and the distinguished Members of the Committee for this opportunity to appear before you.

In addition to being affiliated with Underwriters Laboratories, I am also the Chairman of I–Tech 16, which is the advisory committee to U.S. Congress, USTR, and Department of Commerce on issues related to trade, technical barriers, and standards. I am also the current Chairman of the U.S. Standards Strategy Committee. The U.S. Standards Strategy that has been discussed by several panel members is in the purview of our Committee and working fast and furiously to develop that and finalize it.

UL is pleased to see the increased attention being given to standards and technical regulations in trade. We believe that your focus and the U.S. Government's support on these issues will help U.S. industry competitiveness. I would note, though, that testing and certification, in other words, conformity assessment, is as critical for product market access and market acceptance as the standards themselves, so the two issues must be addressed simultaneously.

But the standards and conformity assessment systems currently operating in the global market are not harmonized. Compare this

with the trade liberalization that is going on and that is opening up markets and prompting manufacturers to globalize their production processes and their supplier networks to remain competitive worldwide.

In the brief time we have to present oral comments, I would like to highlight the following themes.

On the standardization front, I would like to suggest that the U.S. system actually does work. Though decentralized, it effectively serves the needs of all stakeholders. It promotes comprehensive expertise by encouraging participation of all public and private sector experts in bringing all of the affected parties to the table.

The U.S. Government is an active participant and a true partner. Many U.S. SDOs produce internationally-recognized and relevant standards, which are used all over the world. As we look ahead and see ISO and IEC standards gain greater use and acceptance globally, it is critical that all affected U.S. organizations participate in these forums to ensure that U.S. safety systems and principles are not compromised and that U.S. products and technologies are not excluded.

There is much opportunity for U.S.-China collaboration in developing standards and technical regulations. U.S. Government can help open up additional venues. UL, and other organizations like NFPA, have been working for a long time with China on standards development, specifically in the areas of fire protection and signaling. There is a lot of room to enhance cooperation and participation in each other's standards committees and panels on an ongoing basis.

Now shifting to the conformity assessment arena, we all recognize that manufacturers must demonstrate that their products comply with the requirements and standards in local markets. Local governments often, though, exclude non-domestic entities from conducting the necessary testing and certification. This impedes all manufacturers' ability to streamline the certification process, which is necessary to obtain the necessary certification marks to sell in those local markets. This ultimately increases the costs associated with compliance. National treatment, which I will talk about more in the later comments, for conformity assessment organizations is, perhaps, the most effective approach to providing manufacturers with a seamless certification program where services can be bundled and streamlined to facilitate simultaneous, multiple-market access when necessary.

UL, and other U.S.-based testing and certification organizations, seek recognition from U.S. trade negotiators as a viable business whose services can help enhance market access for U.S. exporters.

Moving forward and looking ahead, the advancement of standards and conformity assessment interests of U.S. stakeholders would require a much stronger public and private partnership. For its part, the U.S. Government should consider several initiatives.

Let me outline a couple: ensuring that trade partners' compliance with obligations that they have signed in existing trade agreements are honored, especially in countries like China, Mexico, and Europe; linking standards and conformity assessment to broader dialogue with trade partners; negotiating new commitments and trade agreements, which enable certifiers to gain acceptance to offer do-

mestic marks in their markets; and adequately funding U.S. Government-supported outreach, promotion, and technical assistance programs all over the world.

In the end, globalization will place pressures on standards and conformity assessment system to streamline and harmonize. But doing so needs to be done in a way that does not sacrifice the high levels of product safety enjoyed in the U.S. today.

The U.S. Government has a real and meaningful role to play. We look forward to working with them to advance U.S. interests and to minimize the adverse impact of standards on trade activities.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Bhatia follows:]

PREPARED STATEMENT OF JOE S. BHATIA

Chairman Ehlers and distinguished Committee Members, thank you for this opportunity to appear before you, to offer Underwriters Laboratories (UL) Inc.'s insights on the impact of voluntary standards and mandatory technical regulations on global trade, and to recommend ways in which the United States government not only can enhance but also supplement private sector efforts. UL is pleased to see the increased attention being given to standards and technical regulations in trade and believes that U.S. Government support on these issues will help U.S. industry competitiveness and therefore create jobs. The following testimony is intended to address the specific questions posed by the Committee, as well as to offer targeted recommendations to improve the U.S. position in the global market place moving forward. My testimony will further discuss the standards and conformity assessment nexus, which is as critical for products' market access (regulated) and market acceptance (voluntary) as the standards themselves.

Underwriters Laboratories in Brief

Underwriters Laboratories (UL) Inc. is an independent, not-for-profit product safety certification organization that has been testing products and writing safety standards for more than a century. It was founded in 1894 with a mission of testing for public safety, as defined by its Articles of Incorporation, and strives to ensure that public health and safety is protected through its standards development activities and product conformity assessment services. UL has developed and maintains more than 850 product-based Standards for Safety, 80 percent of which have achieved American National Standards (ANS) status.[1] And UL is a global company, with more than 25 affiliates world wide, serving more than 71,000 manufacturers in nearly 100 countries.

UL in China and Europe:

UL entered the China market in 1980, when it established a cooperative relationship with the China Certification & Inspection (Group) Co., Ltd. (CCIC) to carry out on-site follow-up inspections at Chinese factories whose products had already been certified as meeting UL's rigorous safety requirements. Growing demand for product safety testing and certification services prompted UL and CCIC to negotiate a joint venture in 2001. The joint-venture testing facility located in Suzhou became fully operation in the Fall of 2003 and performs safety tests according to UL's Standards for Safety in the most popular product categories, including such small home appliances as lighting fixtures and lamps, fans, rice cookers, toasters, and electric tools. The facility's capabilities will expand over time to perform tests on just about anything exported from China.

Though in the 1920s UL had agreements with inspection companies in England and Germany, it was not until 1956 that UL began testing in earnest European-made products according to U.S.-based standards, initiating a major new international activity. The on-site factory follow-up service inspections in Europe rapidly grew and so UL contracted with additional European-based testing and inspection authorities. In 1996 UL acquired the Danish government-owned testing and certification laboratory DEMKO A/S (est. 1928) and formed it into a wholly owned affiliate of UL Inc. UL has since been represented in Europe via its own facilities, and has

[1] ANS is a designation conferred by the American National Standards Institute (ANSI) upon standards submitted by ANSI-accredited Standards Development Organizations (SDO). The ANS designation is awarded after the opportunity for public review and comment, and a certification by the SDO that due process was followed in the development of the standard.

grown to include operations in the United Kingdom, Italy, Sweden, Germany, France, Spain, Switzerland, Poland, and the Czech Republic.

Seeking Increased Collaboration With China. . .

Though well versed in providing testing and certification services in China and Europe for decades, UL's engagement on standards development issues largely has been the most extensive at the international level—in the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO). The level of engagement at the national and regional level through our affiliates is poised to increase. As UL's customers manufacture more products in China, they are seeking to incorporate the traditional elements of U.S. requirements in (or influence the direction of) Chinese and EU member states' standards.

China Collaboration—Present:

UL's active collaboration with China on standards development has been most evident in the fire protection and signaling (e.g., fire alarms) arenas. Discussions have intensified over the past 18 months, in part because of UL's engagement with Chinese regulators through the National Institute of Standards and Technology (NIST)'s Standards in Trade workshops and the U.S. Department of Commerce-sponsored U.S.–China Standards and Conformity Assessment workshops. UL perceives China's interest in collaboration as stemming from a desire to improve safety in the built environment, particularly as China ramps up for the 2008 Olympics, as well as enhancing the competitiveness of Chinese manufacturers' products around the world.

China Collaboration—Future:

In recent years, China has demonstrated a commendable interest in enhancing its participation in international standards development and in upgrading its standards system to comply with WTO obligations, among other things. The American National Standards Institute (ANSI)'s testimony speaks to China's recently concluded assessment of its national standards system. Among the strategic tasks presented were China's wish to "improve the market adaptability and competitiveness of Chinese technical standards," as well as "develop independently self-proprietary technical standards through effective measures, so as to improve international competitiveness of China's technical standards and therefore increase the international market share of Chinese products." With China setting a 2010 deadline for overhauling its technical standards system, the time certainly is ripe for increased U.S.–China collaboration, with the impact extending to the international stage (ISO and IEC).

China has shown some interest in adopting UL Standards for Safety. The National Electrical Manufacturers Association (NEMA) has suggested that China consider adopting the tri-national (United States, Mexico, and Canada) fuse and fuseholder standards. These talks very much remain in the preliminary stages, however.

UL also is considering the possibility of seeking observer status on select PRC standards technical panels, with the aim of encouraging the adoption of tried and true U.S. requirements as appropriate. This collaboration would serve not only to enhance market access for U.S. products designed around and certified to comply with such U.S. requirements, but also to forge a partnership that will transfer to international standards development and harmonization efforts. UL may also actively seek to engage Chinese experts for participation in UL's own standards development processes.

New technologies also pose an opportunity for collaboration with China, including radio frequency identification (RFID) and renewable energy.

. . .And Looking for Solutions to U.S.–EU Tensions on the International Stage

The development of standards and technical regulations in Europe occur at two levels—the individual member-state level, and the European Commission level. At the regional level, there are voluntary "European Norms (ENs)" and New Approach "directives" that set essential requirements for regulated products. UL has engaged somewhat in the development of European Norms (EN), but has been more actively involved with Europe in standards development at the international level.

UL has been an active participant in IEC and ISO standards development and harmonization activities for decades. In addition to participating in numerous IEC and ISO Technical Committees and related U.S. Technical Advisory Groups (TAGs), UL also adopts international standards (such as IEC and ISO) with National Differences (only when needed) to co-exist with current UL requirements and unique safety needs in the United States based on its infrastructure and traditional expectations. If necessary, existing UL Standards for Safety can be co-maintained with

the internationally harmonized standard for a limited time frame for those manufacturers only marketing products in North America. UL also promotes international harmonization by encouraging adoption of basic North American safety principles in standards developed by international standards bodies to reduce the need for National Differences in UL and ANSI/UL Standards.

UL believes that some progress has been made to incorporate U.S.-based requirements in the development of new international standards or with harmonization of existing standards. However, there is room for improvement, particularly as the United States utilizes more IEC-based standards. Some sectors within the United States believe that the IEC process is a violation of the World Trade Organization's Technical Barriers to Trade (TBT) Agreement because it results in requirements that are most favorable only to Europe. The European Union's well-financed and coordinated technical assistance program for developing countries serves only to further disadvantage U.S. interests. The degree to which different sectors are adversely affected varies, but some sectors are particularly frustrated with the IEC process and the difficulty in incorporating U.S. infrastructure and climatic essential differences in requirements (EDRs)[2] into IEC standards to make them truly more global. At this time, these sectors are committed to working within the IEC to affect the needed changes.

Recognizing the Merits of the U.S. Standards System. . .

The United States relies heavily on the private sector for voluntary standards development. Under the auspices of the 1996 *National Technology Transfer and Advancement Act* (NTTAA), U.S. Government agencies are encouraged to rely on voluntary consensus standards (VCS) whenever applicable and appropriate. While our government generally has not driven the standards development process, it has been an active participant and partner. Federal, State, and local governments develop and issue procurement specifications and mandatory codes, rules, and regulations. Openness, balance, consensus, and due process are the fundamental principles of the American National Standards process.

The U.S. system, although decentralized, effectively serves the needs of all stakeholders. It promotes comprehensive expertise by encouraging participation of all public and private technical experts. Stakeholders' needs are reflected because the process is open to all interested parties, from manufacturers, users/consumers, the government, utilities, material suppliers, regulatory agencies, educators, code organizations, and any other interested party. The process produces a "balanced" standard because all stakeholders are able to participate; the standards users' interests are protected while at the same time meeting needs of industry that the standard will affect. Standards are based on market-driven needs, not mandate. From time to time, issues and redundancies emerge as a result of the decentralized system, but careful coordination among interested parties works to rectify that. In UL's opinion, this openness is unique. How many other countries around the world invest their time and resources to get all the interested parties at the table to consider health and safety requirements?

Many U.S. standards are international in scope and application and currently are accepted in other countries. In some cases, however, a number of developing countries have adopted a policy of accepting only IEC/ISO standards. This is increasingly an issue in China, parts of Latin America, and Southeast Asia. EU enlargement presents related issues. The end result, if left unchecked, could lead to lost market share for some U.S. exports that comply with valid and internationally accepted U.S. standards and that are certified under reputable U.S. programs.

. . .And Promoting Standards Harmonization Internationally

UL has long recognized the need for increased harmonization with IEC standards and has recently adopted a more aggressive policy toward standards harmonization. U.S. manufacturers are realizing that the "world is their oyster" for their innovative and creative products. UL's harmonization priorities are largely driven by what industry perceives as priority areas for harmonization. When harmonizing UL's standards at the regional or international level, however, it is paramount that essential U.S. safety principles are protected, even if this means developing National Differences. National Differences are not unique to the United States. In international standards meetings, however, the United States is singled out whereas in many European and Asian countries, the National Differences are undeclared and out-of-country testing is not permitted. In such cases, the United States is not the barrier

[2] Criteria for Essential Differences in Requirements include needs of major segment of the global market; differences in technical infrastructure—frequencies, voltages, currents, earthing systems, and differences in climatic conditions.

to trade. The barrier is the country to which U.S. manufacturers desire to exports their products. On the other hand, UL makes every effort to avoid mutually exclusive requirements when National Differences are necessary.

UL's approach to standards harmonization incorporates several guiding principles:

- Ensure that the harmonized standards preserve, at a minimum, the current level of safety expected by the U.S. public,
- Coordinate and collaborate with other SDOs to avoid duplicate documents or requirements,
- Consider the merit(s) of harmonizing existing standards, whether by acceptance of IEC requirements or by advocating a UL standard or its essential requirements as the basis of the harmonized standard, and
- Develop "globally" relevant standards in areas where standards do not exist.[3]

The result of this approach is that standards differences are minimized, standards are streamlined, a more international approach to standards development (consistent with WTO TBT principles) is promoted, and unique locally developed standards without justification are discouraged.

As ISO and IEC standards gain greater use and acceptance globally, it is critical that all affected U.S. private and public organizations participate in these forums to ensure that U.S. safety principles are reflected and that U.S. products and technologies are not excluded. Enhancing relations and promoting cooperation with like-minded countries in these international forums is critical to promoting U.S. interests.

The Standards-Conformity Assessment Nexus

Many national, regional and international standards and conformity assessment systems around the world all share a common goal of minimizing the hazards associated with and ensuring the inter-operability of products in the marketplace. But the standards and conformity assessment systems currently operating often times are not harmonized. Contrast this with trade liberalization opening markets and prompting manufacturers to globalize their production processes and supplier networks to remain competitive. With roughly 80 percent of the global trade (of the $7.3 trillion in 2003) affected by standards and related technical regulations for conformity assessment, the potential economic impact of meeting requirements in multiple markets is staggering.

Manufacturers must demonstrate that their products comply with requirements through domestic conformity assessment processes, where applicable, to sell products in those markets. In many cases, certification by an independent third party is required, but the local governments often preclude non-domestic entities from providing those services. This impedes a manufacturer's ability to streamline the number of testing and certification organizations it engages (on global basis) to obtain the necessary certification marks, and ultimately increases costs associated with compliance—from the number of internal staff required to oversee the different compliance processes to actual dollars expended for testing. It also impedes U.S. testing and certification organizations' ability to provide global compliance solutions for their customers.

UL believes that national treatment for conformity assessment organizations is the most effective approach to eliminating many trade barriers that emerge from technical regulations and standards. National treatment enables conformity assessment bodies in one country to provide testing and certification to another country's requirements by being recognized or accredited through the same process applied to domestic bodies. Different standards and technical requirements can result in multiple testing and certification requirements for manufacturers seeking to sell products into multiple markets. But national treatment across markets would enable UL and other conformity assessment organizations to provide customers with a seamless certification program where services are bundled and streamlined to facilitate timely, simultaneous, and effective market access for manufacturers.

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[3] Globally relevant standards: ISO defines global relevance as "the required characteristic of an International Standard that it can be used/implemented as broadly as possible by affected industries and other stakeholders in markets around the world." Globally relevant standards therefore effectively respond to regulatory and market needs (in the global marketplace); respond to scientific and technical developments in various countries; do not distort markets; have no adverse effects on fair competition; do not stifle innovation and technological development; do not give preference to characteristics or requirements of specific countries or regions when different needs or interests exist in other countries or regions; and should be performance based rather than design prescriptive.

From time to time, governments have turned to government-to-government Mutual Recognition Agreements (MRAs) to address the issue of market access for U.S. conformity assessment bodies. With a few exceptions like the APEC telecom MRA, MRAs have created unnecessary bureaucracies, have proven very difficult to implement, and have reduced attention on national treatment as the preferred conformity assessment solution. Negotiations for the U.S.–EU MRA lasted more than six years, with only two of six sectoral annexes operational, and at least one annex suspended. For all of this effort, only a handful of products have utilized the MRA. Implementation of the medical device MRA remains troublesome, as the European Union has yet to approve the U.S. organizations designated by the U.S. Food and Drug Administration (FDA). FDA, in contrast, approved the EU designated counterparts several years ago and they are already competing for business in the United States.

Where National Treatment Has Gone Right. . .

In some countries, like Japan, the government has introduced regulatory reforms that permit non-domestic entities to seek accreditation and provide domestic testing and certification services. We would like to see more countries introduce similar regulatory reforms.

The North American Free Trade Agreement (NAFTA) introduced national treatment for testing and certification bodies. Shortly after its introduction manufacturers began working with a single certifier, having their product tested once and accepted in both Canada and the United States. Required factory audits for certification have been combined into a single system thereby lowering the cost of compliance for products sold in Canada and the United States. Certifiers accredited under both the Canadian and U.S. systems compete for manufacturers' business. This competitive environment has led to increased efficiency and value in testing and certification programs. Because national level systems for accreditation of testing and certification continue in force, the high level of safety and national acceptance for products in both markets has been maintained.

. . .And Where Problems Remain:

Under NAFTAA, the Mexican government committed to market access/national treatment for testing and certification organizations domiciled in the United States and Canada. Even after the four-year transition period ended (in 1998), Mexico has failed to implement directly its commitments. In January 2005, Mexican authorities finally issued the document that permitted organizations to apply for accreditation. The application documentation requirements present a challenge, however, and no entity, including UL, has yet been able to submit an application. UL has been working both with Mexican authorities and through the auspices of the Office of the U.S. Trade Representative (USTR) and the U.S. Department of Commerce (DOC) to resolve matters, and is hopeful that a resolution will soon be found.

UL has been able to facilitate customers' product certification applications for China's CCC mark through its "agent" status. This means making sure that all necessary documentation is in compliance with the CCC mark certification requirements. However, UL's joint venture cannot perform related tests or authorize the use of the CCC mark; the government currently restricts such activities to domestic entities. Ultimately, UL–CCIC would like to be accredited to provide testing and certification services for the CCC mark.

China's WTO accession commitments obligated them to provide National Treatment to non-domestic testing and conformity assessment organizations. Paragraphs 194 and 195 of the Working Party Report (WPR) reference these market access obligations for conformity assessment organizations. However, unlike the services schedule that outlines a timeline for testing services, the WPR does not outline a specific timeline for implementing market access for conformity assessment organizations. Regulations introduced in 2003 and early 2004 appeared to address testing and conformity assessment obligations in the Commodity Inspection and Appraisal Institution Regulations (Order No. 58, effective January 2004) and PRC Regulations on Certification and Accreditation (effective November 2003). However, when pressed for clarification by USTR in January 2004, PRC authorities indicated that the scope of work did not include testing and certification for the CCC mark.

China has made commendable strides in bringing its product certification system into compliance with WTO requirements and participates in international schemes, including the CB scheme for safety testing.[4] In some cases, however, China has

[4] The IECEE CB Scheme is the world's first truly international system for acceptance of test certificates and test reports dealing with the safety of electrical and electronic products. It is a multilateral agreement among over 43 participating countries and their associated member

Continued

opted not to participate in international schemes to which most all other trading partners belong. One such example relates to electromagnetic compatibility (EMC) testing. China opted out of the scheme for EMC, requiring in-country testing instead of accepting reports generated by other participating members. Manufacturers in general perceive this practice as creating unnecessary and duplicative testing requirements.

In Europe, UL continues to face market access issues under the New Approach, which inherently lacks national treatment for conformity assessment organizations.[5] Under the New Approach, Member States are responsible for the notification of Notified Bodies and may only notify bodies within their territory. Therefore, U.S. conformity assessment organizations cannot provide cross-border conformity assessment services in the European system. A soil-based presence is required.

What Can Be Done?

Advancing the standards and conformity assessment interests of U.S. stakeholders will require a stronger public-private partnership. For its part, the private sector—working through the auspices of ANSI and with input from U.S. Government stakeholders—is making a concerted effort to develop a meaningful U.S. Standards Strategy (USSS) that "can be used by all interested parties to further advance trade issues in the global marketplace, enhance consumer health and safety, meet stakeholder needs and, as appropriate, advance U.S. viewpoints in the regional and international arena."[6] As the ANSI testimony notes, a "key aspect of the Strategy is reference to the requirements of the WTO's Technical Barriers to Trade as related to standards practices." The following are some priority considerations that fall within the twelve broad USSS initiatives:

- U.S. stakeholders should take the lead in submitting standards development proposals and requesting recognition of U.S. documents at the international level in such emerging national priority areas as homeland security and nanotechnology. Radio Frequency Identification (RFID) is another such area where the impact of standards on trade is potentially staggering.
- Government and private sector stakeholders alike should work toward enhanced protection of intellectual property rights (IPR) of standards development organizations, especially in countries like China where general enforcement of IPR has been uneven.
- U.S. stakeholders should work to ensure that trade partners comply with WTO principles of openness, transparency, and advance notice.

UL proposes that the U.S. Government consider initiatives that focus on negotiating new commitments in trade agreements, incorporating standards and conformity assessment technical assistance elements into all future U.S.-negotiated bilateral free trade agreements (FTAs), ensuring trade partners' compliance with obligations under existing trade agreements, linking standards and conformity assessment to broader dialogues with trade partners, adequately funding the office of the Standards Liaison within the U.S. Department of Commerce, and increasing funding for existing government standards programs from which the private sector derives important benefits.

Negotiating New Commitments in Trade Agreements:

UL and other U.S.-based testing and certification organizations seek recognition from U.S. trade negotiators as a viable business sector whose services can help enhance market access for U.S. exports. We welcome a partnership with the Office of the U.S. Trade Representative (USTR) and other U.S. Government agencies to define and refine relevant provisions in FTAs and future WTO negotiating rounds. To

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certification organizations. A manufacturer utilizing a CB Test Certificate and CB Test Report issued by one of these organizations can obtain national product certification from other participating member organizations without the need for re-testing. UL is an active member in the CB Scheme with participating certification bodies in Canada, Denmark, Japan and the United States. The CB Scheme applies IEC based standards in 18 categories of electrical and electonic products from office equipment and electronics to household and similar equipment to installation assessories. The CB Scheme includes safety testing, EMC testing and performance testing. It has recently expanded into photovoltaics.

[5] The New Approach consists of more than 25 directives that specify safety, health and environmental "essential requirements." European harmonized standards, developed by the European standards organizations, provide the technical answer to addressing these requirements. Technical, the use of New Approach harmonized standards is voluntary, but companies using other standards must prove how they are equivalent to the EU standards.

[6] United States Standards Strategy Notice of Public Review and Comment, issued March 7, 2005. Copy of the draft is available online at www.ansi.org/usss.

that end, USTR has recently engaged the testing and certification community in negotiating such commitments for the WTO Doha Round.

Within the WTO Doha negotiations and U.S.-negotiated bilateral/regional FTAs, U.S. testing and certification organizations seek commitments from U.S. trade partners—whether through enhancements to the current Technical Barriers to Trade Agreement or the market access for services schedule—to permit non-domestic testing and certification providers to apply for accreditation to offer domestic certification marks. Those applications would be conducted in accordance with domestic accreditation requirements.

Providing Technical Assistance in U.S.–Negotiated FTAs:

UL recommends that technical assistance provisions for standards and conformity assessment systems be incorporated into all FTAs that the United States negotiates moving forward and that Congress appropriates adequate funding for execution of the technical assistance programs. Such technical assistance provisions in the Central American Free Trade Agreement (CAFTA) proved helpful in educating CAFTA countries about the U.S. standards and conformity assessment system. We would expect this education to influence CAFTA countries to establish and refine their own systems in a way that (ideally) aligns with the United States, or at a minimum, refrains from introducing elements that unduly restrict market access for U.S. exporters.

Enforcing Existing Trade Agreement Commitments:

For Mexico, we ask that the United States incorporate a regulatory dialogue into the recently announced Security and Prosperity Partnership agenda (under the Manufactured Goods Working Group) and specifically address increased access for non-domestic testing and certification organizations.

For China, we seek increased dialogue under both the WTO accession Transitional Review Mechanism and the Joint Commission on Commerce and Trade to develop a timeline for implementation of national treatment commitments referenced in Paragraphs 194 and 195 of China's Working Party Report.

For Europe, we seek increased U.S. Government pressure on the Europe Union to implement fully its obligations under the EU–U.S. MRA for medical devices by approving the U.S. FDA-designated entities, including UL.

Incorporating Standards and Conformity Assessment Issues in Dialogues:

One of the key recommendations to emerge from the DOC Standards Initiative focused on enhanced dialogues with foreign governments. A more active standards dialogue between and among countries and regions could help prevent standards from becoming trade barriers. To that end, UL welcomes the inclusion of standards and conformity assessment issues as a mainstay component of such bilateral and regional dialogues as the Security and Prosperity Partnership of North America, EU–U.S. Regulatory Dialogue, the Transatlantic Business Dialogue, and the U.S.–China Joint Commission on Commerce and Trade. Such dialogues provide a meaningful forum to address emerging concerns as well as identify areas of mutual interest where collaboration is ripe.

With respect to the IEC process and related issues, UL believes that the United States should work first to identify solutions, to the maximum extent possible, within the international standards development processes. There are several initiatives underway within the standards community that allow for the exchange of ideas and the introduction of change. Within the IEC these initiatives are carried out through the United States National Committee to the IEC. Only if these mechanisms fail to achieve resolutions should the United States consider raising IEC-related issues in government-to-government dialogues.

Funding the DOC Standards Liaison Office:

The office of the DOC Standards Liaison has done a commendable job of improving coordination across departments within DOC in a very short time. Collaborating with other DOC colleagues has also enabled pilot training programs for U.S. Government officials on standards and conformity assessment issues as they affect trade. Such training is paramount as the intersection between standards and trade is increasing.

But a lot of work remains undone, and UL would like to see more meaningful funding for execution of the Standards Liaison's mandate. The pilot training programs indeed are commendable, but a more comprehensive and regular program is needed to ensure that the ever evolving and rotating cadre of U.S. trade officials become proficient in standards and trade issues.

Careful consideration should also be given to funding of additional Standards Attachés in overseas posts. Such attaches have played pivotal roles in facilitating

resolution of standards and conformity assessment issues faced by manufacturers and conformity assessment providers alike. Their ability to track trends and report on them makes it easier for industry to uncover signs of emerging problems and to address them earlier rather than later.

Increasing Funding for Existing Government Standards Programs:

- *NIST Standards in Trade (SIT) Workshops:* UL has been a longstanding active participant in the NIST SIT workshops. These workshops prove a valuable venue through which interested U.S. private sector organizations can educate foreign government officials on the U.S. standards and certification system and build bridges for future cooperation. These broad and specific programs are especially important when they target countries/regions in which systems/structures currently do not exist or are in their infancy, and in which there is a perceived receptivity to U.S. principles and practices. We believe that the impact of these workshops could be strengthened through increased funding that would enable NIST to continue offering new programs while providing a mechanism to sustain momentum of previous programs.
- *Commercial Law and Development Program (CLDP):* Funding for standards and conformity assessment related programs under the auspices of the CLDP program are also valued. Having participated in a number of these programs over the years, UL believes that these programs also help advance U.S. commercial and public safety interests over the long-term. Sustained funding is warranted.

Preserving Safety and Facilitating Trade

In the end, globalization will place pressure on standards and conformity assessment systems to streamline and harmonize. The merits of such harmonization are real, but doing so needs to be executed in a manner that does not sacrifice the high level of product safety enjoyed in the United States today.

Standards should continue to be driven by market needs and developed through open processes. At the international level, U.S. stakeholders need to find ways to inject greater balance into the IEC process, working through its technical committees and governance bodies.

Encouraging trading partners to provide national treatment to U.S.-domiciled testing and certification organizations helps U.S. manufacturers reduce costs of compliance by minimizing duplicative testing requirements and enables a global approach to conformance. Reduction of manufacturers' costs will help U.S. exporters remain competitive abroad and address some pressure points that drive U.S. companies to shift production overseas.

In all of these areas, the U.S. Government has a real and meaningful role to play. UL and other private sector stakeholders look forward to working with all divisions of the U.S. Government to advance U.S. interests and minimize the adverse impact of standards, technical regulations, and conformity assessment processes on trade.

BIOGRAPHY FOR JOE S. BHATIA

Prior to his recent retirement from UL on May 1, 2005, Joe Bhatia served as the Executive Vice President, International for Underwriters Laboratories Inc. (UL). Mr. Bhatia had held a variety of increasingly complex and demanding executive positions during a 35-year career at UL, one of the world's largest and most visible providers of safety standards and technical certification services. Specific areas of involvement include engineering and technical management; governmental and congressional liaisons; P&L responsibility, customer service; and global business expansion and development. Mr. Bhatia directed all day-to-day activities of 2300 employees in UL's 26 international subsidiary operations in Europe, Middle East, Africa, Asia-Pacific, Canada and Latin America, reporting to the UL chief executive officer. Currently, Mr. Bhatia is serving UL as a Consultant—Strategic Projects.

Mr. Bhatia is the chairman of the U.S. Department of Commerce and U.S. Trade Representative's Industry Technical Advisory Committee 16—Standards and Technical Barriers to Trade. This committee advises the U.S. Government on international trade and market access matters. He is a member of the Board of Directors the National Fire Protection Association (NFPA) and the American National Standards Institute. Mr. Bhatia has also been the Educational Foundation Director of Oakton Community College (Des Plaines, Ill.) since 1999. Mr. Bhatia has a Bachelor's degree in electrical engineering and a Master's degree in business management.

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May 10, 2005

The Honorable Vernon J. Ehlers
Chairman, House Subcommittee on Environment, Technology, and Standards
Committee on Science
U.S. House of Representatives
2319 Rayburn House Office Building
Washington, DC 20515-6301

Dear Mr. Chairman:

This serves as Underwriters Laboratories (UL) Inc.'s financial disclosure for the purpose of meeting testimony requirements for Joe Bhatia, who is slated as a witness for the May 11, 2005 hearing on "China, Europe and the Use of Standards as Trade Barriers: How Should the US Respond?"

UL received in 2004 a total of $318,823.38 from US federal sources, with the following breakdown:

US Congress	
Architect of the Capitol	$1,642.00
Government Printing Office	$4,900.00
US Department of Commerce	
National Institute of Standards & Technology	$177,802.73
US Department of Energy	
National Renewable Energy Laboratories	$15,776.16
Sandia National Laboratory	$104,032.68
US Department of Homeland Security	
United States Coast Guard	$9,519.77
US Department of Agriculture	
Forest Service	$5,150.04

Should you have any questions or concerns regarding the above funding, please do not hesitate to contact me.

Kind regards,

Ann M. Weeks
Director, Government, Industry & International Affairs

A not-for-profit organization
dedicated to public safety and
committed to quality service

Chairman EHLERS. Thank you.

Mr. Karmol.

STATEMENT OF MR. DAVID KARMOL, VICE PRESIDENT, PUBLIC POLICY AND GOVERNMENT AFFAIRS, AMERICAN NATIONAL STANDARDS INSTITUTE

Mr. KARMOL. Thank you, Mr. Chairman, Ranking Member Wu, and Representative Biggert. I am pleased to be here.

I am David Karmol. I am Vice President of Public Policy and Government Affairs for the American National Standards Institute.

As you know, ANSI is the coordinator of the U.S. private sector-led and public sector-supported voluntary consensus standards and conformity assessment system. We share the concerns of industry and this committee about the ramification of standards and regulatory activities on American businesses competing in the global marketplace.

In our testimony, ANSI will suggest actions that can be taken by the Congress to help mitigate concerns related to the standardization policies and practices of China and the European Union.

My first point will address considerations with respect to the People's Republic of China. As the world's largest contract manufacturer and the world's largest single market, it is critical that China be persuaded to participate in international standards forums and to embrace the globally-accepted principles of standardization endorsed by the World Trade Organization.

Events of the past few years indicate that China may have been considering a strategy of using national standards as trade barriers to shelter its growing industries. China must be encouraged to adopt existing and globally-recognized voluntary standards rather than develop unique standards for use only in that country.

To avoid future "WAPI" situations, companies in China should be urged to consider offering the inclusion of intellectual property in globally-recognized standards under reasonable and non-discriminatory terms and conditions in the same manner as they are used in the United States' standards.

Finally, China should be encouraged to adopt the WTO TBT agreement definition of "international standard" that includes documents that have been developed by a consensus-based organization that follows transparent policies that are balanced, reasonable, and non-discriminatory.

The Chinese government recently completed an investigation of its standards system, identifying problems and suggesting solutions. ANSI has praised these efforts and continues to support Chinese leaders to adopt a standards process that is marketplace-driven.

My next point will address considerations with respect to the European Union and the European standards organizations.

European standards are often developed to meet specific regulatory requirements or procurement policies. A standard that is adopted by the European Union must also become the normative document for each EU member nation. With few exceptions, the three European regional standards organizations restrict participation on their standard-setting committees to entities that have a physical presence in an EU member state.

ANSI believes that the European standards organizations should allow U.S. stakeholders to participate in the development of EU standards that will ultimately impact their ability to trade in the European market. We have had bilateral discussions annually with representatives of the European Commission and European standards organizations, and we encourage them, and continue to encourage them, to open their doors to U.S. stakeholders.

Recently, the EU and its member nations have begun expending millions of Euros annually to provide technical assistance to developing and emerging nations, including China. These efforts often include providing free standards and even translations of standards in return for commitments by the recipient nations to adopt or otherwise use the EU standards. To date, the U.S. standardization community has not had the resources to offset this aggressive effort.

The strengthening of U.S. Federal Government support of and cooperation with the private sector is needed for standards education and outreach activities, technical support and assistance, and resources to assure adequate U.S. representation at international standards meetings. To facilitate stronger U.S. coordination, ANSI recently offered its Regional Standing Committee for Europe, the Middle East, and Africa as a focal point to improve coordination between government agencies and the private sector in the areas of representation, technical assistance, and outreach and other related aspects of trade and regulatory policy.

My last point will address coordinating public and private sector strategies.

The policy considerations put forth in this testimony are aligned with high-level strategies developed by the U.S. Department of Commerce, as expressed in former Secretary Evans' "Standards in Competitiveness—Coordinating for Results" document. They are also aligned with the latest edition of the draft "United States Standards Strategy," which is now being developed by members of the U.S. standardization community in a process that ANSI is managing.

Mr. Joe Bhatia to my right chairs the U.S. Standards Strategy Project. The other witnesses here today have also provided valuable input throughout the development of this strategy. We would be pleased to respond to your questions about it.

In summary, the strategy provides a framework to address the cross-border trade of goods and services as well as key national priorities, such as homeland security and emerging technologies. Congressional recognition and endorsement of the strategy would provide valuable support to the private sector as it engages with Europe and China. ANSI asks you, as members of the House Science Committee, to offer a resolution endorsing the U.S. Standards Strategy when it is finalized. Such a resolution would demonstrate to other nations that the U.S. speaks with one voice on standards issues, even though our development of standards takes advantage of a decentralized and sector-based approach.

I thank you for your consideration, welcome your questions, and ask that my full statement be made a part of the record.

[The prepared statement of Mr. Karmol follows:]

PREPARED STATEMENT OF DAVID KARMOL

Introduction

"If you control an industry's standards, you control that industry lock, stock, and ledger." That prophetic statement was made more than ten years ago by Dr. W. Edwards Deming, father of the quality movement that has transformed the ways companies do business both here and abroad.

Today, standardization[1] has become the key to market access. When standards and conformity assessment related policies and practices differ from country to country, or when standards are used as barriers to trade, businesses are unable to compete effectively in the global marketplace. These challenges are being faced around the globe—country by country—on a daily basis.

The United States Department of Commerce reports that many businesses now view standardization and regulatory issues as their major impediment to increasing exports. Of particular concern are the standards-related activities of the People's Republic of China (hereinafter referred to as either "PRC" or "China") and the member nations of the European Union (EU), each of which have significant ramifications for American firms that wish to export to those markets or who wish to source manufacturing there.

As administrator and coordinator of the United States' private sector-led and public sector-supported voluntary consensus standardization system, the American National Standards Institute (ANSI) shares the concerns of industry and this committee vis-á-vis our nation's ability to compete effectively in world economies. A key element of ANSI's mission is focused on enhancing the global competitiveness of U.S. business by facilitating voluntary consensus standards (VCS) and conformity assessment systems, and safeguarding their integrity.

In this testimony, ANSI will explain many of its relevant standardization activities related to China and the EU and will recommend actions that can be taken by Congress to assist in mitigating many of the concerns identified. ANSI will also call for Congressional endorsement of the *United States Standards Strategy*[2] (USSS) as a framework that effectively addresses the cross-border trade of goods and services; key national priorities such as homeland security; emerging technologies—such as nanotechnology—and their significant related commercial and business applications; consumer health and safety, and more.

Mr. Joe Bhatia, who is appearing here today on behalf of Underwriters Laboratories, chairs the USSS project. Robert Noth, Donald Deutsch, and Dr. Hratch Semerjian and his staff at the National Institute of Standards and Technology (NIST) all provided invaluable input and leadership throughout the development process of the *Strategy*. All of us will be pleased to respond to your questions about it.

In addition, ANSI will call for strengthened federal support of, and cooperation with, the private sector for activities such as research, education, and technical support, and resources to assure adequate U.S. representation at international standards meetings. These actions will help to level the playing field for U.S. businesses competing in the international marketplace.

Considerations with Respect to the People's Republic of China (PRC)

Events of the past few years indicate that stakeholders within the PRC may have been considering a strategy of using national standards as trade barriers to shelter the Nation's growing industries. However, the role of the PRC as the world's largest contract manufacturer makes it critical that China be persuaded to continue its participation in international standards forums, rather than develop unique national standards. This is especially important in those instances where the intellectual property rights that are often incorporated into standards are not made available on the basis of reasonable and non-discriminatory terms.

During 2004, the PRC government completed its own investigation of its standards system, identifying problems and suggesting solutions. The issuance of these strategy reports and the seemingly positive content identifying internal changes to be made to the PRC standardization system has been applauded by ANSI.

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[1] "Standardization" encompasses a broad range of considerations such as which (whose) standards will be used, laboratory accreditation, certification of products, services, and personnel, metrology and measurement, testing and sampling.

[2] The *United States Standards Strategy* (draft second edition) is an update of the *National Standards Strategy for the United States* (first edition—August 2000). It is being developed by representatives of various industry sectors, including small, medium and large organizations, consortia, professional societies, trade associations, labor unions, consumer and consumer representative organizations, educational institutions, Federal and State government regulators, and legislators and staff.

ANSI has offered its support in reforming the PRC standards system and will encourage support of a process that is driven by marketplace demand where standards are developed in response to specific concerns and needs expressed by industry, government, and consumers (see Annex B).

To assist in the mitigation of concerns about the Chinese standardization policy, ANSI offers the following policy considerations for review and deliberation by the Science Committee of the United States House of Representatives and for consideration by stakeholders in the PRC:

- The global economy will be best served if the PRC joins with the United States and other nations in embracing the globally accepted principles of standardization endorsed by the WTO (see Annex C). In particular, support should be given to open and inclusive participation in standardization activities; balancing the interests of all stakeholder groups so that the outcomes are representative and broadly supported; and maximizing the participation of, and value to, both intellectual property rights (IPR) holders and implementers.
- Voluntary consensus standards enable industry growth, promote vendor differentiation and allow for adaptation to meet unique consumer and stakeholder needs. To the extent that the PRC adopts existing and globally recognized voluntary standards—rather than developing unique standards for use only in China—the Nation and its growing export market will benefit.
- The inclusion of intellectual property, under reasonable and non-discriminatory (RAND) terms and conditions, in voluntary consensus standards provides benefit to the contributor of that intellectual property via licenses and/or recognition and to implementers of the standard via the reduced need to support multiple specifications. Companies in China are encouraged to consider offering intellectual property for inclusion in globally recognized standards.
- The global landscape is rich with entities, systems and processes that support regional and international standardization activities. These include treaty organizations where governments are members; non-treaty organizations whose membership is comprised of national representatives; professional and technical organizations whose membership is on an individual or organizational basis; and through consortia whose membership is typically company and industry based.
  - The PRC will benefit by broadening its definition of "international standard" to include documents that have been either developed or ratified by any consensus-based organization pursuant to transparent policies that are reasonable and non-discriminatory. China's current definition is limiting in that it applies only to standards that have been approved by the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), and the International Telecommunication Union (ITU).
  - As a means of fostering both competition and innovation, governments in all nations should allow stakeholders, particularly companies, to choose among the different voluntary standards that may be applicable.

Considerations with Respect to the European Union and the European Standards Organizations

Similar to the United States, the European Union and its member nations have increased their reliance on standards developed under a voluntary consensus process. Unfortunately, the similarities often end here.

In the U.S., a standard is generally developed in response to market demand or need. Standards in Europe are often developed to fill a government need for a specific set of regulatory requirements or procurement policies of government agencies. A standard that is adopted by the EU must become the normative document for each of the EU member nations. With few exceptions, the three European Standards Organizations—the European Committee on Standardization (CEN), the European Committee on Electrotechnical Standardization (CENELEC), and the European Telecommunications Standards Institute (ETSI)—restrict participation on their standards-setting committees to entities that have a physical presence in one of the EU member nations.

To assist in the mitigation of concerns about the EU standardization policy, ANSI offers the following policy considerations for review and deliberation by the Science Committee of the United States House of Representatives and for consideration by stakeholders in Europe:

- Some access to the ESOs is available via the role of ANSI and its U.S. National Committee of the International Electrotechnical Commission (USNC/IEC) as the U.S. member of the ISO and IEC, respectively. An ANSI delegation engages regularly with representatives of the European Commission and the ESOs to raise strategic standards issues from the U.S. perspective. ANSI will continue to pursue an expansion of the ESO's participation requirements to provide for the ability of U.S. stakeholders to influence the development of EU standards that will ultimately impact their ability to trade with the European market.
- At the same time that the EU and its member nations have become more aggressive in producing standards that serve EU producers, they have also begun expending millions of Euros annually to provide technical assistance to developing and emerging nations, including China. These efforts often include providing free standards, and even translations of standards, in return for commitments by the recipient nations to adopt or otherwise use the EU standards. While some U.S. standards developers and companies have aggressively promoted their catalogues of standards to emerging nations, to date neither U.S. industry nor government has been willing or able to make contributions that will offset this imbalance.
  - The U.S. standardization community does not have the resources to match the large investment being made by the Europeans. Federal Government support of, and cooperation with, the private sector is needed for activities such as research, education, and technical support, and resources to assure adequate U.S. representation at international standards meetings.
  - These U.S. outreach and promotion efforts must be well coordinated. ANSI offers its Regional Standing Committee for Europe, the Middle East and Africa (RSC–EMEA)[3] as a focal point to improve coordination between private sector interests, and governmental interests in the areas of trade and regulatory policy, which involve different government agencies and participants.

Coordinating Public and Private Sector Strategies

The above policy considerations for China and Europe are aligned with high-level strategies developed by the U.S. Department of Commerce following the issuance in May 2004 of *"Standards and Competitiveness—Coordinating for Results,"* a report acknowledging the growing awareness of standards as a key trade issue. These considerations are also aligned with the latest edition of the draft *United States Standards Strategy* (USSS) (*www.ansi.org/usss*). A key aspect of the *Strategy* is reference to the requirements of the WTO's Technical Barriers to Trade as related to standards practices.

As referenced in the Introduction of this testimony, the USSS is a guidance document that is being developed by members of the U.S. standardization community, including representatives of industry,[4] government, consumers, academia and more. It is a perfect example of the U.S. public-private sector partnership approach to standardization.

- The *U.S. Standards Strategy* is expected to be finalized in late 2005. Implementation of its strategic initiatives and tactics will be strengthened by Congressional recognition and endorsement. This endorsement will also provide valuable support to the private sector as it engages with Europe and the various standards organizations in China.
  - ANSI encourages the Science Committee to offer a resolution or other legislative vehicle to enable the Congress to formally endorse the U.S. Standards Strategy.

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[3] ANSI established the RSC–EMEA to broaden the participation of U.S. stakeholders in the development of policy positions regarding regional standards and conformity assessment activities, and to coordinate U.S. activities, respond to initiatives and advise ANSI on matters relating to the European, Middle Eastern and African regions.

[4] Representatives of the National Association of Manufacturers (NAM) have been actively involved in the process of updating the *U.S. Standards Strategy;* William Primosch, NAM's senior director of international business policy, headed the working group drafting the international section of the Strategy.

Summary

The American National Standards Institute is proceeding with its plans to assist in reforming the PRC standards system, working with Europe in establishing a level playing field for U.S. stakeholders, and finalizing and implementing the *United States Standards Strategy*.

On behalf of its members, constituents, and the U.S. standardization community, the Institute will continue to serve as an advocate for an open, balanced and transparent global standards system that is driven by marketplace demand. ANSI will also encourage China, the EU and its members, and all other nations to pursue the development, endorsement and adoption of globally recognized standards that respond to specific concerns and that meet the needs expressed by all stakeholders.

ANSI welcomes the opportunity to continue to work in partnership with this committee, Congress, and other U.S. public sector representatives to achieve these goals.

Annex A

Background on the U.S. Standardization System and the Role of the American National Standards Institute (ANSI)

The U.S. private sector-led, voluntary standardization system has been in existence for more than 100 years. It is a highly decentralized system and naturally partitioned into industrial sectors that are supported by numerous independent, private sector standards developing organizations (SDOs). It is a system that is demand-driven by the marketplace with standards typically developed in response to specific concerns and needs expressed by industry, government, and consumers.

Since 1918, this system has been administered and coordinated by the American National Standards Institute (ANSI) with the cooperation of the private sector and the Federal, State and local governments. ANSI does not develop standards. Rather, it functions as a central clearinghouse and coordinating body for its member organizations. The Institute is a unique partnership of industry, professional, technical, trade, labor, academic and consumer organizations, as well as government agencies. These members of the ANSI federation actually develop standards or otherwise participate in their development, contributing their time and expertise in order to make the system work.

ANSI ensures the integrity of the U.S. standards system by:

1. establishing a set of due process-based "essential requirements" that SDOs may follow in order to manage the consensus standards development process in a fair and open manner,
2. accrediting SDOs who adhere to these requirements,
3. approving candidate standards from ANSI-accredited SDOs as American National Standards (ANS), and
4. conducting regular audits of the ANS activities of ANSI-accredited SDOs to ensure ongoing compliance with ANSI's essential requirements.

ANSI has accredited hundreds of SDOs across a range of industry sectors. These industries include (but certainly are not limited to) telecommunications, medical devices, heavy equipment, fire protection, information technology, petroleum, banking and household appliances. There are now approximately 10,000 ANSI-approved ANS that address topics as diverse as dimensions, ratings, terminology and symbols, test methods, inter-operability criteria, product specifications, and performance and safety requirements. These standards development efforts serve the public interest and are being applied to new critical areas such as the environment, healthcare, homeland security and nanotechnology.

The Institute's approval of a candidate standard as an ANS verifies that the principles of openness and due process have been followed and that a consensus of all interested parties has been reached. Due process requires that all proposed ANS be circulated to the public at large for comment, that an attempt be made to resolve all comments, and that there is a right of appeal. In addition, ANSI considers any evidence that a proposed ANS is contrary to the public interest, contains unfair provisions or is unsuitable for national use. This basic formula has been the hallmark of the ANS process for decades, and it has garnered worldwide respect and acceptance.

One of the best indicators of confidence in the U.S. voluntary consensus standardization system (as exemplified by the ANS process) is Congress's 1996 passage of the *National Technology Transfer and Advancement Act* (NTTAA). This law (P.L. 104–113) requires federal agencies to use voluntary consensus standards for regulatory purposes wherever feasible and to procure equipment and services in accordance with such standards. It also requires agencies to increase their participation in voluntary consensus standards activities and directs the Commerce Department's National Institute of Standards and Technology (NIST) to coordinate federal, State and local voluntary standards and related conformity assessment activities.

ANSI also promotes the use of U.S. standards internationally. The Institute serves as the U.S. national body representative in two major, non-treaty international standards organizations: the International Organization for Standardization (ISO) and, through the United States National Committee (USNC), the International Electrotechnical Commission (IEC). ANSI and the USNC play a leadership role in ISO and IEC, respectively, on both policy and technical matters.

Part of ANSI's role as the U.S. member of ISO includes accrediting U.S. Technical Advisory Groups (U.S. TAGs) which develop and transmit, via ANSI, U.S. consensus positions on the activities and ballots of technical committees and subcommittees. Similarly, the USNC approves TAGs for IEC activities. In many instances, vol-

untary standards developed by U.S. SDOs are taken forward, through ANSI or the USNC, where they are approved in whole or in part by the ISO and/or IEC as International Standards. ANSI also encourages the adoption of international standards as national standards where they meet the needs of the user community.

In addition, ANSI advocates U.S. positions in various regional standards organizations and regularly meets with representatives from standards bodies in other nations. Thus, ANSI plays an important role in facilitating the development of global standards that support global commerce and which prevent regions from using local standards that favor local industries as trade barriers.

Conformity assessment is the term used to describe steps taken by both manufacturers and independent third-parties to determine fulfillment of standards requirements. ANSI's role in the conformity assessment arena includes accreditation of organizations that certify that products and personnel meet recognized standards. The ANSI–American Society for Quality National Accreditation Board (ANAB) serves as the U.S. accreditation body for management systems certification, primarily in areas such as quality (ISO 9000 family of standards) and/or the environment (ISO 14000 family of standards). ANSI also is involved in several international and regional organizations to promote multilateral recognition of conformity assessments across borders to preclude redundant and costly barriers to trade.

In summary, through its various roles and responsibilities, ANSI advances its mission to "enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and safeguarding their integrity."

Annex B

Background on Standards and Trade with China

As the U.S. member body of ISO, and via the U.S. National Committee of IEC, ANSI serves as the national standards body counterpart to the PRC and can help influence Chinese stakeholders to participate in the fair and open standardization process that has as its goal the development of a single set of globally recognized and accepted standards.

As noted earlier in this testimony, recent events indicate that the PRC may have been considering using standards to establish trade barriers as a strategy to shelter the Nation's growing industries. One well-publicized example is related to the PRC's domestic high-technology industry and the issue of a Wireless Local Area Network (WLAN) Authentication and Privacy Infrastructure (WAPI) and Wireless Fidelity (Wi-Fi) chips, the devices that allow computers to access the Internet through local wireless networks.

On May 12, 2003, the PRC government mandated that a new WLAN WAPI security standard take effect in June 2004. The new standard was developed independently by the PRC Broadband Wireless IP Standard (BWIPS) Group with little or no communication with other standards organizations and no foreign participation. Upon implementation of the PRC government directive, foreign importers to China would have been mandated to comply with a requirement to form joint ventures with one of 24 PRC companies that had been given proprietary technical information required for implementation of the WAPI standard.

The U.S. Government and industry pointed out that there is already an internationally accepted standard for such technology (IEEE 802.11). On March 2, 2004, in a joint letter signed by U.S. Secretary of State Colin Powell, U.S. Commerce Secretary Don Evans and U.S. Trade Representative Robert Zoellick to Zeng Peiyan, Vice Premier of the People's Republic of China, the Bush administration urged PRC to drop WAPI. Following high-level meetings in Washington, D.C., the PRC government announced that it would (a) suspend implementation of the WAPI standard, (b) work to revise the WAPI standard, taking into account comments received from PRC and foreign firms, and (c) participate in international standards bodies on WAPI and wireless encryption for computer networks.

In recent months, ANSI has worked through international forums, its membership, and in concert with the China desk at the Department of Commerce's International Trade Administration to invite representatives of the PRC standards organizations to a meeting to discuss a long-term resolution of the WAPI issue, including fair consideration of the PRC proposal in the appropriate international forum. ANSI believes that respectful and open engagement with the various PRC standards groups is the best way to resolve such issues going forward.

While WAPI is important for many reasons, the PRC is also developing several other important (but locally divergent) standards in areas as diverse as the Internet Protocol, 3G wireless communications (such as TD SCDMA[5] and SCDMA[6]), audio-video capture and playback (AVS), document and data protection, the small intelligent grouping and resource sharing (IGRS) for terminal device collaboration radio devices being developed for inventory management (RFID), and others. It is the pervasive nature of these activities, and the related treatment of intellectual property, that is of significant concern to PRC's trading partners.

Subsequent to the initial WAPI controversy, the PRC government issued a report identifying concerns in the PRC standards system and suggesting solutions. The study was a cooperative effort between the Chinese Ministry of Science and Technology (MoST), the Chinese General Administration for Quality Supervision, Inspection and Quarantine (AQSIQ), and the Standardization Administration of China (SAC). The report itself was drafted by the China National Institute of Standardization (CNIS), an agency within the AQSIQ, which met with an ANSI delegation in Washington, D.C. in December 2003.

The report suggested:

- changing the existing four levels of: National, Vertical, Local, and Enterprise standards to the three levels of: National, Association, and Enterprise standards;

[5] Time Division Synchronous Code Division Multiple Access (TD–SCDMA) is a mobile telephone standard for wireless network operators who want to move from a second generation (2G) wireless network to a third-generation (3G) one.

[6] Synchronous Code Division Multiple Access

- changing the two categories of standards: Mandatory and Recommended standards into only voluntary standards; voluntary standards becoming mandatory only via references or citations in government regulations;
- changing the standards development accreditation scheme: Currently, national, vertical and local standards are subject to government approval. The suggestion is to change this system so that: governmentally accredited bodies will approve national standards and associations will approve association standards;
- that enterprises should be free to determine their own standards usage without the governmental registration required today;
- that standards should be adopted voluntarily by the users of standards.

The issuance of the SAC strategy reports, and the seemingly positive content identifying internal changes to be made to the PRC standardization system, prompted ANSI to send a letter to the Administrator of SAC, Li Zhonghai, in October 2004. This letter congratulated SAC on the undertaking of this study and applauded the recommendations put forward in the report.

To further its outreach efforts, in mid-January 2005 ANSI's President and Chief Executive Officer Dr. Mark. W. Hurwitz, traveled to China to meet with Administrator Li and representatives of CNIS, the Administration of Certification and Accreditation of China (CNCA), the Standards Press of China (SPC) and the U.S. Foreign Commercial Service in Beijing. During these discussions, ANSI agreed to serve as the distributor of Chinese national standards in the U.S. and SAC agreed to become a distributor of American National Standards, as well as certain other standards developed by U.S.-based standards-setting bodies, in China. This arrangement will facilitate access to the national standards of each nation and is seen as crucial to the promotion of cross-border trade.

ANSI has also taken steps to mitigate the difficulty of obtaining entry visas for Chinese technical experts who are attempting to attend meetings of international standards committees in the United States. Among the actions taken was publication of a guidelines document that provides information for Chinese technical experts and for the administrators and officers of the technical committee meetings that are hosting those meetings; ANSI is engaged in ongoing discussions of this topic with the U.S. Department of State and other relevant agencies.

Dr. Hurwitz also explored with SAC the prospect of increasing U.S. and other foreign access to participation on standards-setting committees in the PRC. Current and proposed future options were discussed, with a strong indication being given to ANSI by SAC that China will be moving away from its past practices of favoring government-held seats on its national standardization committees and placing restrictions and/or limits on open participation on these committees.

Finally, during his visit Dr. Hurwitz was introduced to a new initiative within PRC to develop a Chinese Standards Strategy. The Strategy's goals include efforts to develop, within 15 years, "independently self-proprietary technical standards through effective measures, so as to improve international competitiveness of China's technical standards and therefore increase the international market share of Chinese products."

Its Guiding Principles bear in mind the goals of "new-stage industrialization and comfortably-off society," focus on improvement of technical standard adaptability and competitiveness, couple standard independence/innovation with international norms, integrate governmental instruction and market orientation with enterprise as the major player, and meet the strategic requirements of technological innovation as well as industrial and trade development on technical standards.

In the near-term, Chinese strategic goals to be achieved by 2010 include the formation of a rather complete national technical standard system, putting the overall technological level of Chinese standards on a par with that of international standards for key areas. By 2020, the PRC intends to upgrade its international standards involvement to an advanced level, putting China high on the rank of international standardization contributors.

Annex C

Excerpt from the [draft] United States Standards Strategy

PRINCIPLES

It is well established in the community of nations that standards should meet societal and market needs and should not be developed to act as barriers to trade. In approving the World Trade Organization Technical Barriers to Trade Agreement, WTO members recognized that goal and established globally accepted principles as a framework to promote cooperation and discourage the use of standards as trade barriers. The U.S. standards system is based on the following set of globally accepted principles for standards development.

- **Transparency**
  Essential information regarding standardization activities is accessible to all interested parties.
- **Openness**
  Participation is open to all affected interests.
- **Impartiality**
  No one interest dominates the process or is favored over another.
- **Effectiveness and relevance**
  Standards are relevant and effectively respond to regulatory and market needs, as well as scientific and technological developments.
- **Consensus**
  Decisions are reached through consensus among those affected.
- **Performance-based**
  Standards are performance-based, specifying essential characteristics rather than detailed designs where possible.
- **Coherence**
  The process encourages coherence to avoid overlapping and conflicting standards.
- **Due Process**
  Standards development accords with due process so that all views are considered and appeals are possible.
- **Technical Assistance**
  Assistance is offered to developing countries in the formulation and application of standards.

In addition, U.S. interests strongly agree that the process should be:

- **Flexible,** allowing the use of different methodologies to meet the needs of different technology and product sectors;
- **Timely,** so that purely administrative matters do not slow down the work, but meet market expectations; and
- **Balanced** among competing interests.

BIOGRAPHY FOR DAVID KARMOL

David Karmol currently serves as Vice President for Public Policy and Government Affairs at the American National Standards Institute (ANSI). In this position he is responsible for advocacy and outreach programs designed to better educate Federal, State and local government officials on the value of the voluntary consensus standardization system and its importance to advancing the competitiveness of U.S. businesses and enhancing the health and safety of the world's citizens.

Karmol joined ANSI in July 2001 with a thorough knowledge of the issues important to the standards and conformity assessment community and a track record of success working on policies, strategies and programs in close liaison with Federal, State and local governments. Prior to joining ANSI, he spent ten years as general counsel and director of public affairs at the National Spa and Pool Institute (NSPI), an ANSI member and accredited standards developer. Karmol also served as Press

Secretary and Special Assistant to the Director of the United States Mint; general counsel for the Can Manufacturers Institute; associate counsel to the U.S. House of Representatives Judiciary Committee; member of the Ohio House of Representatives, and assistant prosecuting attorney in Franklin County, Ohio.

Mr. Karmol received his B.A. from Miami University of Ohio, and his J.D. from the Ohio State University College of Law and is admitted to practice law in Virginia, the District of Columbia and Ohio.

ANSI's mission is to enhance U.S. global competitiveness and the American quality of life by promoting, facilitating, and safeguarding the integrity of the voluntary standardization system. ANSI is the official U.S. representative to the International Accreditation Forum (IAF), the International Organization for Standardization (ISO) and, via the U.S. National Committee, the International Electrotechnical Commission (IEC). ANSI currently has offices in New York City and Washington, DC.

DISCUSSION

Chairman EHLERS. And it certainly will.

I thank all of you for excellent testimony. You covered the spectrum and outlined very well the nature of the problem, at least as I perceive it, and now to decide where we go from here.

Let me begin the question period, and I recognize myself for five minutes.

Something for all of the witnesses to answer, and I have often heard that we are not, as a nation, playing an active enough role in various ways, and so I would like each of you to respond to that. Is the United States playing a strong enough role in international standards-setting? And by that, I don't mean just the U.S. Government. I mean the whole country. And in your answer, if you could—if you think they are not playing a strong enough role, could you outline for me what you think would be the top three actions the United States should take to assert itself. And are these action items for the Federal Government, for U.S. industry, or some other entity?

Now that may be hard to do for all of you in five minutes—in a total of five minutes, but I would appreciate reactions you give. And usually we go in the same order we ask the question, but I would like to reverse it, just for variety's sake.

And Mr. Karmol, since you were the one to offer some concrete suggestions, we will start with you.

Mr. KARMOL. Thank you, Mr. Chairman.

I guess I will start by saying I think the United States does play an active role, and I appreciate your recognition that it is a joint effort of the private sector and government. And although we are playing an active role, I think better coordination between the private sector and the public sector would benefit our participation. Certainly stronger federal support, in terms of providing more outreach and support for standards infrastructure development in emerging nations would be helpful. And finally, better recognition of the importance of standards, which you can help by raising the awareness of the importance of standards, you and the Congress and the Executive Branch would be helpful by encouraging companies and government agencies to participate actively in international standards-setting activities.

Chairman EHLERS. Thank you.

Mr. Bhatia.

Mr. BHATIA. Thank you, Mr. Chairman.

The development of the U.S. Standards Strategy, which is a process that is coming near completion, will define actionable items. We want to have industry and government step up to the plate and own up to their obligations to take certain initiatives and take certain actions to support the U.S. Standards Strategy. We feel that there is a contribution to be made by both the U.S. Government and the industry, including SDOs, including people in the private sector, including people in the industry.

With regard to the government contributions, we feel that more needs to be done by Federal Government in supporting our initiatives overseas. We need to have a better outreach program, better education program, more funding of initiatives that support our needs, such as standards attachés in the right countries, such as workshops in standardization, which allow us to explain and make others understand the good features and acceptable points and practices of our system, which also allows, ultimately, then the acceptance of our products in those markets. I feel that we need to have SDOs, as well as private industry people, participate and recognize the value and the economic impact that standards and conformity assessment systems have on our business practices here and globally.

So I urge you to stay tuned, because we will be spelling out specific actions and will be looking for endorsement from various parties, both in the private sector and the government agencies, to support those initiatives that would be beneficial for the country.

Chairman EHLERS. Thank you.

Dr. Deutsch.

Dr. DEUTSCH. Thank you, Mr. Chairman.

One thing that I think we have heard from all of the testimony today is that we are in agreement that the U.S. standards process works. It has served our industry and all of the industries represented here and the government well. So you have asked me for three things the government should do. I want to start out by saying one thing the government should not do is become a standard-setter or to emulate some of the behavior we have described that we are seeing outside the United States. We have a very well-functioning, market-driven, diverse mechanism for setting standards in the United States.

So what is it the government can do then? And basically, I will go back to the three items I mentioned in my testimony. One is to strengthen the current standards liaison and attaché programs that are already underway.

The second is to redouble our advocacy efforts. And let me put a little bit of meat on the bones of that. We have a process that serves us well, but it is a complex process. And it is a difficult process to understand. So it is a lot easier, especially for an emerging economy, to understand a top-down, government-driven process than it is to understand a disparate, diverse, and bottoms-up, market-driven process like we have. It would really help if the government, in its relations outside the United States became a strong advocate for that. Okay.

And the third recommendation that I brought forward was something which is not yet underway, to my knowledge, in the United States and which I see is a combination of government and indus-

try working together, and that is we probably would benefit from having some metrics, some research that supported what is obvious to us that the United States standardization process, in fact, benefits society as a whole as well as industries and consumers.

Thank you very much.

Chairman EHLERS. Thank you.

Mr. Noth.

Mr. NOTH. Thank you, Mr. Chairman. It is an excellent question.

I don't think, at this point in time, that, especially in the small and medium-sized enterprises within the United States, there is enough industry participation in standards globally. There are a lot of very intelligent people in those areas, but they are small. They don't have a lot of extra funds. They don't fund travel to international organizations. And they tend to have a mindset that suggests that they should do what the customer wants and will follow that. I don't think they have a realization of what is going on, and somehow or another we need mechanisms to attract them and make it aware that some of their competition in the future is going to come from offshore. And even if they only see their market as local today, their competition is actually coming from other places in the global world.

From the Federal Government's perspective, what I also recommended is exactly there. I think the Federal Government needs to step up with better alignment across the agency with more of a policy of strategic focus to our activities and promote this. I think that has impacts, because one of the areas we are having difficulty getting is state governments to understand where standards play in. And many of their trade missions, and what have you, ignore standards and the impacts of standards that they have, and in our decentralized society, I think we need better alignment in that area. And our leadership, the leadership of the Congress, would have some impact on getting their attention.

Beyond that, it is providing stable funding and resources. And as Mr. Deutsch and others have said, we need a strong advocacy, both onshore and offshore, from our extensions, whether they be State or Commerce or trade missions to make sure that we are advocating for both the technology and the standards that underpin them from the United States.

Thank you, Mr. Chairman.

Chairman EHLERS. Thank you.

Dr. Semerjian.

Dr. SEMERJIAN. We are probably running out of answers, but I will try.

Chairman EHLERS. We can provide more questions if you need them.

Dr. SEMERJIAN. Well, one of the things that wasn't mentioned was certainly in the developing markets, such as China, clearly there is some education to be done. And we are making significant efforts in that regard through our standards and trade workshops, for example, where we invite standards officials and the decision-makers to come to the United States and try to understand and be exposed to our diverse, as described by others, system of standards. And I think that is very important, because in many cases, people don't really understand how things work in the United States. And

if we expect them to endorse and adopt some of our ways, I think we need to do a better job of educating and informing them of how we operate.

Also, we need to make more of an effort to get them involved, go out of our way to get them involved in the standards process. For example, we have some NIST staff who are chairing some of the standards committees who have, on purpose, held their committee meetings in China to facilitate the participation of Chinese officials in these activities, and we hope that if they participate or at least find them interesting, hopefully they will not—they will see that there is not necessarily a need for passing different and additional standards as opposed to using existing ones.

So there are a couple of suggestions. I think there are a lot of ways of improving the situation. Unfortunately, I don't think there is a "silver bullet" that will solve all of our problems. I think we need to work on all fronts.

Thank you.

Chairman EHLERS. Thank you all for the good answers. They stimulated a lot more questions in my mind, but my time has expired.

I am pleased to call on the gentleman from Oregon, Mr. Wu.

Mr. WU. Thank you, Mr. Chairman.

First of all, Dr. Deutsch, when the People's Republic of China first started going down the "WAPI" road instead of standard Wi-fi, my impression was that the Commerce Department and USTR was not exactly prompt in bringing pressure to bear on the Chinese. Is that impression accurate?

Dr. DEUTSCH. I am sorry, Representative; I do not have personal knowledge of the initial stages of that. I do know that when the government became engaged that it was ultimately effective. I do think it took us a while to get not just the government but the private sector focused on the reality of the issue.

Mr. WU. I somehow got the impression that there was a lag time, a significant lag time, on the order of a year or more.

Dr. DEUTSCH. That is possible. I will yield to some of my colleagues here who may have had some immediate——

Mr. WU. No one is talking.

Mr. KARMOL. Mr. Wu, we would be happy to respond back to you. I don't know—have personal knowledge of that myself, but we have people in our organization that would be familiar with that and could give you a more complete answer.

Mr. WU. Sure thing. Thank you, Mr.—very much, Mr. Karmol.

Mr. Karmol and Dr. Deutsch, especially Dr. Deutsch, I hear you loud and clear about what the U.S. Federal Government should not be doing with respect to American standards setting. What I am very curious about is I understand, I think, what you would like to see in the international arena. I am at a loss, at least at this moment, to think of what possible leverage we have to get other countries to adopt, not our standards, but our standards-setting process. Many cultures are different. Their governments are different. They come from a different tradition, and perhaps the automatic thought is instead of having a competition in the marketplace and voluntary standards, by golly, you know, we are going to develop a regulatory approach to this. I—help me out here. I just

don't see how—this is like pushing on a string. I don't quickly see any leverage to get other societies to change the way in which they set their standards. Do you have some in mind?

Dr. DEUTSCH. Well, if by leverage you mean a carrot and a stick, okay——

Mr. WU. I have generally found that without sticks, carrots tend not to be all that effective.

Dr. DEUTSCH. I think—and I don't have the stick. I mean—but I do think the most significant "carrot" is how well our system serves—take my industry, the IT industry. This is an industry that is U.S.-dominated. We have thrived in the absence of government intervention. We have used this standardization process and evolved it, over time, to meet our time-to-market requirements to meet the rapid growth of the IT industry, and as such, not only have our companies, you know, benefited, but society, as a whole, has benefited with the efficiency and the productivity in our economy, and that is why I suggest that I think a really good case could be made that our approach to standardization has a substantial amount to do with the success of the economy in general of the IT sector in particular and that alternative approaches do not have the same positive effect.

Mr. WU. Well, I am not so much disagreeing with you as just thinking back to instances like beta videotapes and Apple software versus DOS and a couple of other instances where, you know, the market did come to a conclusion, but whether the market came to the best technical conclusion or not is—it is still a question open to history, one would think.

Mr. BHATIA. I think your question is very insightful. Clearly, there are governments out there, nations out there that will never be comfortable in the standards-setting process that we deploy in the United States. It has to have a structure of the type which is comparable. And constituency build-up and contributions from different groups that is feasible here may not be feasible in other countries. But clearly, the opportunity to promote and educate others to go out and celebrate, if you will, our successes openly to tell them about the benefits that we accrue from this system, which is open, which is market-relevant, which has participatory options, which has impacts that are analyzed and considered and technical superiority of the documents that are often produced in many industry sectors: medical, aerospace, IT, you name it. There is industry after industry, which is totally dependent on United States and United States standardizations and documents to carry the flag.

I think we need to get that message out there. We need to educate people early on. If we are not available to do this and the Europeans and other parts of the globe are there with their arsenal and capability, I think we will lose out. People will accept what is available in absence of something better.

So I think we have a challenge to get out there and preach, if you will, the benefits and the goodness of the process as well as the documents.

Mr. WU. Well, I think the Chairman is going to tell me that I have run out of time, and I have, but I would very much like to help you out in your enterprise. I would like to help you out as effectively as possible, and the challenge is to find a sufficiently large

carrot or a smaller carrot backed up by a little bit of a stick. So if you all could help us think through what the appropriate carrots and sticks would be, I would love to work with you on this. It is a question of finding proper leverage.

Chairman EHLERS. The gentleman's time has expired. I would just comment that carrots have never done it for me, but a good piece of pecan pie will always work.

But I would also observe, I have no expertise on the beta versus VHS issue, but you are clearly right on the MAC versus DOS system, and the public made the wrong choice there.

I am pleased, next to you, to recognize the gentlewoman from Illinois, Mrs. Biggert.

Ms. BIGGERT. Thank you, Mr. Chairman, and thank you for holding this hearing.

My first question is to Mr. Karmol. ANSI has been designated by the U.S. Government as the organization that represents U.S. interests in international standards organizations, such as the ISO, while the U.S. Government is a party to the WTO agreement on technical barriers to trade, which states that members shall ensure that standards are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. How exactly does ANSI ensure that it has accredited SDOs and the standards they develop comply with the WTO agreement?

Mr. KARMOL. Thank you, Ms. Biggert, for your question.

I guess the first point I want to make is that actually ANSI has not actually been designated by the government as a representative to ISO and IEC. We are the representative—we are a founding member of both organizations. They are private sector, however, so although the government does recognize our role there through various means, we are really not officially designated.

With respect to your question about WTO principles, ANSI's document "The Essential Requirements" is the document that governs the development of American national standards, and that document requires openness, transparency, balance, and due process in the creation of American national standards. And we think that properly followed, those provisions do ensure that American national standards, as reviewed by ANSI, will not be barriers to trade.

Ms. BIGGERT. And Dr. Semerjian, how does the U.S. Government ensure that ANSI-accredited SDOs and the standards that they develop comply with the WTO agreement, in your opinion? Would it be through monitoring or responding to complaints?

Dr. SEMERJIAN. Yeah, I guess I need to state that NIST directly is not involved in the implementation or—so those would fall in the realm of the responsibility for USTR or perhaps ITA, but primarily USTR.

But these certification, accreditation type of processes are done through internationally-recognized organizations, so there is always a mutual recognition aspect built into the system. So what ANSI does is recognized by others, their counterpart organizations in other countries. And I don't think that that is a real point of contention, at least to my knowledge, but I am not very knowledgeable in this area.

Ms. BIGGERT. I guess my problem seems to be that there is a disconnect between the WTO barriers and the organizations, such as ANSI and maybe with NIST.

Mr. Bhatia.

Mr. BHATIA. May I amplify?

I would like to suggest that all signatories to WTO member nations have an obligation to adhere to those principles. ANSI, as a representative of the United States to these organizations, is duty-bound to comply with WTO principles, and we are reflecting that in all of the documents that ANSI uses for accreditation. So the basic criteria of openness, of balance, of consensus, of due process are fundamental principles on which American national standard designation is based. You can not become an American national standard using an accredited SDO process unless you comply with these criteria.

The further balance comes from checks and balances of public review comment period, an obligation to respond to every critique that is presented in resolving that. And we have an additional verification process to USTR and DOC in the form of industry technical advisory committees, one of which I chair along with members like Bob Noth and others. And these individuals make sure that we stay on the track and we report back to USTR, DOC, and Congress, if appropriate, if there are any violations that are noted or recorded or complaints that are made.

Ms. BIGGERT. Well, in 2002, the ANSI Chairman, Oliver Smoot, said that the ANSI accreditation process applies only to those standards submitted to ANSI for adoption as an American national standard, so there is——

Mr. BHATIA. That is correct.

Ms. BIGGERT. And so is there a group out there then that there is no process to ensure that they are not complying if they haven't really——

Mr. BHATIA. You are absolutely right. There is a large body of SDOs who do not follow the accreditation process. I think they suffer in the marketplace because of that. They lack, perhaps, some of the credibility and some of the prestige that goes with a recognized accredited process. And that affects the ability, if you will, in their marketplace of conducting their business. For some industry sectors, it works. For others, it is more important to have that credential, especially if you are going to be operating internationally.

Ms. BIGGERT. Is there something that should be changed then?

Mr. BHATIA. I think, as has been noted by other panel members, the system we have is very market-responsive. It seems to work, and it has a sectoral approach to it, which seems to recognize the needs that are different for each industry sector.

Ms. BIGGERT. But there are no police, then, as far as the development of standards or the standards being carried out?

Mr. KARMOL. If I may respond further, Representative Biggert, ANSI actually does—in addition to the essential requirements that our accredited standards developers are required to use—we audit each of our accredited standards developers at least once every five years to ensure that they are following *The Essential Requirements.* We have actually suspended the accreditation of a number of organizations, whose names I am sure you would know, if I mention

them, which I won't. But we have a very strict audit procedure that goes along with the accreditation process to make sure that our accredited developers are using the process and following it precisely as they have told us they will.

Ms. BIGGERT. Okay. Thank you.

Thank you, Mr. Chairman. I yield back.

Chairman EHLERS. The gentlewoman's time has expired.

We will start a second round of questions.

Let me—I am not sure I can ask a question on this, but let me just share some of my unease here. The world has dramatically changed, as far as I can see, in the area of standards. Mr. Noth, you have been here a long time in this. Maybe you can verify that or contradict it. But as a scientist, I remember being involved indirectly with standards-setting, and there was always a good spirit about it, a good—saying, "This is good for all of us if we can agree on standards and let us all work together." And by "all," I mean different countries. What seems to me has changed is that not all countries are working out of a sense of integrity and good will anymore. And perhaps it is epitomized by what a friend told me in dealing with a certain country. He said, "They always tell the truth, except when it is not convenient." It makes it very hard to work together at that point. And several of you referred to the fact that perhaps a trade representative's office should be more heavily involved in these issues. And I would certainly like to pursue that, if you think that is something good. We do have a brand new trade representative, a former Member of Congress, and I am sure he will be very responsive to us.

You talked about the U.S. standard as having developed in a way that is very beneficial for our country, but is it truly beneficial for the rest of the world or is it even beneficial for us vis-á-vis the rest of the world? That is still not clear to me.

And a specific question, Mr. Karmol, you are working on the new Standards Strategy. When do you expect that to be out?

And then I will ask—I will let the rest of you respond to my ramblings.

When do you expect the new Standards Strategy to be coming out?

Mr. KARMOL. We have a draft at this point, Mr. Chairman, which is available on our website, and it is referred to in the testimony. We do have some thoughts—some comments that came in during the comment period, which ended April 18, which we are reviewing. I think the expectation is that there will be a special meeting of our Board of Directors prior to our scheduled December meeting to approve the Strategy, but Mr. Bhatia may be the better person to answer, since he is chairing the committee.

Would you like to——

Mr. BHATIA. All I can do is give you our best estimate. We hope to have this accomplished by the end of November. If the dialogue and review of the comments submitted and resolution of those comments takes longer, I would propose to the ANSI Board and others that we take our time and come up with a document that has more meaning rather than one that is finished in a speedy fashion.

Chairman EHLERS. Thank you for your response to that specific—now would any of you like to comment on my unease or set me at ease or say, "You are right: we should all be uneasy."?

Mr. Noth.

Mr. NOTH. I think your unease is justified. There have been a lot of changes in the standards world. Starting with the European Common Market's activities in 1992 and their—what they call their new approach as it evolved, that had the effect of taking what was basically a technical process in the past, and your recollections, Mr. Chairman, as a scientist, probably remember more collegial activities between technical experts. The European approach, and now what they are trying to export and, to a certain extent, the ISO and IEC approach, puts a political element into the process. So it is—now requires a two-level activity: one is an agreement between experts, when you can get the experts to the table; and two, an agreement between the politicians as to whether or not the agreement of the technical experts makes sense to them in terms of their developing world. And that creates some unease. It was challenging enough when it was the United States and Europe that were basically arguing over technical specifications and political issues. The size and the forceful entry of the—and aggressive entry, not forceful, but aggressive entry of the Chinese into the global markets has also shifted the balance of power, and they are not the only ones: the South Americans, the Indians, the former Soviet Union countries, the CIS countries are all going to ultimately want to claim a share of this.

And we need to remember that standards are only a form of product specification. What we are really talking about here is trade issues on commerce and goods of services, because standards are simply just the technical underpinnings of many of those, as you said in your opening remarks.

So we need to make sure that ultimately we don't lose that track. One of the advantages of the U.S. system is that we are rapid. We are—our system is much more responsive to innovation. We get our technical specifications, when locally set, are often technically superior to what the rest of the world will adopt.

So our ability—our efficiency with our system is one of the reasons why our economy continues to be the economic engine of the world. And that is our advantage, Mr. Wu, is that we need to taut that. And you are already starting to see some of that, because the Europeans, 15 years later, now are shifting their activities toward what they call their Lisbon Agenda, trying to make their industries more competitive, because their regulatory agenda that they have pursued has moved them in the wrong direction.

So you are—ultimately, market forces themselves are going to help us correct and let other countries see the advantages of the U.S. system.

Thank you, sir.

Chairman EHLERS. Do you ever expect we will ever have one vote for the United States and one for the European Union?

Mr. NOTH. I don't hold my breath on that one, Mr. Chairman, but I also know, from vast experience in this area, that it is a myth to believe that all of Europe is united and it is going to get worse before it gets better now that they have expanded the size. So the

fact that we are disadvantaged politically when ISO has more players at the table does not necessarily mean that we can not make the system work for us, because we can work behind the scenes, based on the quality and effectiveness of our technical input.

Chairman EHLERS. And of course we could always say we have our 50 different states and we need 50 votes.

A last quick one, Dr. Deutsch, and then——

Dr. DEUTSCH. I was going to vote for a vote for Alabama, myself.

Chairman EHLERS. I see.

Dr. DEUTSCH. I would like to follow up on your comment that things have changed. And one aspect of the change from the perspective of the IT industry, which is—we have a sector-based approach in the United States, the IT industry has increasingly taken our standards development activities outside of the formal process where we have the ANSI-accredited SDOs. We still participate there, and we still do work there, but a very, very substantial part of our efforts are going on in consortia and other forums, okay, that—many in which are international in nature from the beginning, such as W3C. Okay. I can put on my Oracle hat and tell you we are spending more money today in fees, in engineers' time, in travel to do standards-related activities than we ever have, okay. An increasing percentage of that money is being—and professional time is being spent in forums other than ANSI-accredited SDOs. Okay. And that—the effectiveness of what we are doing is demonstrated whether you fire up your MAC or fire up your Microsoft operating system and bring up your web browser and say, "Google," and all of a sudden there is something there that you want to see. There is a layer after layer after layer after layer of standards, which make that happen that we absolutely take for granted, okay, and that is what you have gotten out of the standards system that we have been using.

Chairman EHLERS. Okay. I guess—well, my time is running very short, but I just—thank you. I am just troubled. You know. Take for example the U.S. cell phone standard as used in the United States. The European standard is used in 80 percent of the world, the non-U.S. portion. I—it is hard to say we have won on that one.

But Mr. Bhatia.

Mr. BHATIA. Yeah. I think I would like to suggest that the change in standardization is not necessarily bad. I think it is the natural outcome of opening up of the markets. If you talked to somebody 20 or 25 years ago, it was a given that you had to comply with Japanese standards and Japanese codes if you wanted to sell in Japan. You have to comply with the U.S. standards and the U.S. codes if you had to sell here. With the exception of very few industries, you basically had to work with standards and codes of that nation which were regulatory or marketplace requirements. But the opening of markets with the trade agreements which allowed manufacturers to sell and seek opportunities in multiple markets, the standardization process needed to change. There was more of a need to participate in internationally-relevant documents. There was more need to harmonize standards. There was more need to be aware of what the other countries were doing, so you could avoid repetitive mistakes or repetitive efforts.

So I think that is the natural outcome, and we are going to get better as we go forward. But clearly, make no mistake about it, many nations, even today, use standards as a barrier for market protection for supporting their inherent industries or their infrastructures. And at some point, that will have to be taking a subservient position, but for many countries, especially the new ones and developing ones, criteria, which are unique in the name of national security or national interest, are in the transitional period do pose as barriers.

So I think we need to look at standards that need to be more harmonized, we need to be more participatory, and we need to open up our system to allow other countries to participate as willingly.

Chairman EHLERS. Thank you all, and my time is more than expired.

I am pleased to call on Mr. Wu again.

Mr. WU. Thank you very much, Mr. Chairman.

I want to make one comment and get out as many questions as I can. Some—I hardly recommend this institution as a model of efficiency, however, you might consider, just as we set up the Congress with two Senators for every state and then population-weighted on the House side, that you might have each country have one representative in part of your standards-setting operation and then have a GDP-weighted chamber, if you will, for the other part of it.

And then that leads me to my first question. I mean, the way that that system works, as it works here in Congress, is that we have certain efficiency challenges. The speed with which we do things can be somewhat challenging. And especially for you, Dr. Deutsch, who—and perhaps others would want to comment, it seems to me that the standards-setting organizations have had some difficulty in keeping up with technological change and that a lot of private sector operations have gone to a regime where folks form consortia in the absence of a true standard of, you know, "We need something quick, and we need it now, so let us get it done quickly." Is there something that can be done to improve the speed with which standards can be set?

Dr. DEUTSCH. Let me respond. First of all, in the interest of full disclosure, let me just say I am a member of the ANSI Board. I also serve on the Board of an ANSI-accredited SDO, the INCITS, which is an ANSI-accredited SDO that does most of the IT-related standardization in the United States. And my observation, from my personal experience over even more years than Mr. Noth has had in the standards business, is that there is a competitive world of standards-setting organizations and that in response to observations such as yours, which I think was absolutely correct 10 years ago, okay, the standards-setting organizations have, over a period of time, recognized the threat to their turf and have responded. I can tell you this, if there is consensus, which is a big if, among all of the stakeholders, I can create an INCITS ANSI-accredited U.S. standard in a very, very short period of time. If there is contention, which there very well may be, my industry—I am sitting here representing both Apple and Microsoft, by the way, Mr. Chairman, okay, you know, there is frequently disagreement in those forums.

Then it takes a little bit longer. The time is to resolve the differences.

Mr. WU. Is there a special problem in the medical information technology field? I mean, it seems to me that I hear repeatedly that there are problems with inter-operability of platforms in medical information systems.

Mr. NOTH. I can respond, wearing my ANSI International Policy Committee hat, and a little bit of knowledge of manufacturing. Where we get into trouble, and if you look back at the history of standards or where there have been "standards wars," usually you have problems where the industries have innovated and brought products out on the marketplace and had them—and had an installed base of investment for a long time before the standards activity started to actually get together and the public got to—got congealed in their opinion enough to start calling for standards and inter-operability. And then you have people who play the game defensively, because they are trying to protect that installed investment and not have to—and ultimately you end up—that is where the beta versus VHS kind of a scenario tends to play itself out in the marketplace. And in the medical device community, and many of those areas, it is exactly that way.

What many of us are trying to do in the new technology is we all have to recognize that it is slower in—where we have got an installed base. But in the new technologies, we are trying to be much more proactive and work in the standards world ahead of the game, so that you don't get those innovations and that installed investment in the marketplace earlier, and that is the big challenge, because it takes a significant commitment of resources and dollars, you know, human resources in terms of subject matter experts and dollars to get out there ahead of the products. And then you have the concerns about sharing intellectual property or destroying a competitive advantage in that activity.

So it is the challenge—everybody is working on it, but it is not a simple problem to solve.

Mr. WU. Well, we will take this conversation off-line, because I want to ask one quick question before the light goes red.

But I am very, very surprised that there would be this large installed based problem in the medical IS field, given the many complaints I have heard about lack of medical IS. So it seems to me that, you know, this is a wide—it should be a wide-open field instead of one strewn with installed-base problems.

But Mr. Noth, I am very sympathetic to your—to the challenge you raised about conformity and the costs. And I believe, Dr. Deutsch, you referred to that, also. And maybe—that is part of Oracle's challenge, also. What can we do? What can we do to develop better reciprocity between different national or continental testing organizations so that we can decrease the costs of conformity testing and conformity standards?

Mr. NOTH. One of the areas we have worked on collectively is trying to ultimately get mutual recognition agreements in the—so that we can test it once and have that test accepted everywhere.

Mr. WU. What has held that up?

Mr. NOTH. Again, special interests. Ultimately, on a global basis, you are talking about jobs in other markets, and because much of

the innovation and the products are coming from the developed world, whether they be U.S. or Europe, the developing world is much more interested, as I tried to indicate in my testimony, not only in making sure that their consumers are protected, because they are not sure they trust us, but also because they want to ultimately learn from the technology we are delivering and then advance their own industries and their own abilities. Our industry, we are the largest manufacturer of farm equipment, agricultural equipment in the world, full line farm equipment in the world. But in every local market, we face local competition, who makes the same products, and they are all very interested in knowing exactly how we are doing it. And so there is always a concern, whether it be China or other markets, that are—that much of the testing that is being done is really a reverse engineering activity, and very often, they want to come to our facilities to do the testing rather than have us ship the product to them to test so that they can not only test the—see the product but also see how we produce it.

Mr. WU. Thank you very much. As always, the answers raise even more questions.

Thank you very much, Mr. Chairman.

Chairman EHLERS. Thank you, Mr. Wu.

Ms. Biggert.

Ms. BIGGERT. Thank you, Mr. Chairman.

Dr. Semerjian and probably Mr. Karmol again, when we—what recourse do U.S. companies have if there is—they think that there is an SDO who is not adhering to the ANSI-accredited process and they have no intention of—and we just talked a little bit—this is kind of the beta versus VHS, that they have no intention of submitting it as a national—American national standard but really going right to the international standard and bypassing the U.S. Is there any appeal process? What happens if companies—and that would be, you know, to be out in front, but then they go to the international and not to the American?

Mr. KARMOL. I am not exactly sure I understand your question. Are you suggesting that a company has an issue with a standard that was developed by an accredited standards developer or——

Ms. BIGGERT. Yes.

Mr. KARMOL.—not?

Ms. BIGGERT. Yes.

Mr. KARMOL. If the standard was developed by an accredited standards developer and submitted as an American national standard——

Ms. BIGGERT. Well, no, I am saying that they bypass that process and go and submit it as an international standard.

Mr. KARMOL. Well, in order to submit it as an international standard, they would have to, essentially, go through ANSI, which holds the seat in ISO.

Ms. BIGGERT. Yes.

Mr. KARMOL. So——

Ms. BIGGERT. But they don't have to submit it as an American standard, do they?

Mr. KARMOL. Not necessarily, no.

Ms. BIGGERT. So they go directly to an international standard, what—and the U.S. company objects——

Mr. KARMOL. Well, the process——

Ms. BIGGERT.—what recourse would they have?

Mr. KARMOL. The process for submitting at the international level, the technical advisory group, has the same requirements as—operates under the same essential requirements as we require of our accredited standards developers. So you have the same due process requirements imposed on that technical advisory group as you do on all of the accredited groups.

Ms. BIGGERT. Maybe Mr. Noth. You seem to——

Mr. NOTH. Maybe I should comment, Ms. Biggert.

The—that is exactly what our industry is doing, as I tried to put into my testimony. We are working with—we are taking our proposals as well as reacting to proposals from other sources and working our whole standards issues at the ISO level, because that seems to make the most sense for our industry. And all of our players anymore are more and more global in their scope.

There is—most of the standards in the U.S. at this point in time are voluntary, so if an American company suggests that they don't like to use an ISO standard or follow all of its tenets exactly, they have complete freedom to do that, as long as they meet the requirements of product liability or market acceptance or what have you, and they can—if they want to petition SAE or ASAE or any other SDO to put up a competing standard, they certainly can do that, and that occasionally happens. But for the most part, because everybody is interested in being able to produce at the lowest possible cost and distribute their goods on the broadest possible market, working with an international standard and reducing the cost and the number of venues you have to send subject matter experts to makes a lot of sense. So really, it is—that is the way that many industry sectors, like the off-highway industry, is pursuing the—pursuing global standards.

Ms. BIGGERT. Would a company have any recourse? Is there any appeal process?

Mr. NOTH. Yes. Yeah. There is an ANSI appeals process. Anybody who wanted to complain, would file——

Ms. BIGGERT. What about international?

Mr. NOTH. Well, and there is a process in the national environment, but——

Ms. BIGGERT. International.

Mr. NOTH. In the international environment, but there is also an—there is an appeals process there as well.

Ms. BIGGERT. Do you think that this would at all undermine the voluntary consensus standards? I mean, it is voluntary. You don't see any problem with going directly and not having the——

Mr. NOTH. If the voluntary process worked worldwide, we wouldn't really have a big problem, because it would be fine and the processes are great. Where we are getting into problems, and what we have tried to put into our testimony, is that many of the developing world and other countries around the world are blurring the line between what is voluntary and what is regulatory by creating mandatory requirements to comply with voluntary standards before you can sell in their markets, and as a result of that, the process gains more political importance than it did maybe a decade ago or longer.

Ms. BIGGERT. Dr. Semerjian, do you have any—at NIST, are you concerned about how ANSI is being used, then, for going directly to the international? I guess not.

Dr. SEMERJIAN. No, I think they have represented us well. We are not a regulatory agency. This is—as was said again and again, we do have a voluntary system. Companies are not required to adopt any given standard. They can—just like other countries are doing, they can adopt their own standards. They can adopt some other country's standard. The question is, which standards serve their purposes best? But we provide—we certainly contribute to the robustness and the technical strength of the standards that are developed by ANSI-member SDOs, because many of our—we have some—more than 400 NIST staff who serve as technical experts on many, many committees.

Ms. BIGGERT. Would there be any reason to want to have the SDOs certified that they are in compliance with the WTO technical barriers?

Dr. SEMERJIAN. I think the system that Mr. Karmol articulated, you know, is very well defined, and they have very specific measures. If those requirements aren't met, I see no reason why there would be an issue.

Ms. BIGGERT. Thank you.

Thank you, Mr. Chairman.

Chairman EHLERS. The gentlewoman's time has expired.

It is about time to wrap up, but I have a few quick ones, first.

First of all, this is—this may sound tongue in cheek, and it probably is, but it is not offered in jest. Do you think that any country that has refused to adopt the metric standard has any right to expect the respect of other countries when they come to them to make suggestions about standards?

Mr. Noth.

Mr. NOTH. The metric issue has been—is a challenging one, and of course, it has been politicized again. But you—it is—most companies, at least, that are doing—dealing internationally are already adopted metric, where metric is available in the marketplace. The automotive industry, certainly in your state, is clearly a metric industry. The—our industry is metric where we can be metric, metric where the tools go on the nuts and the bolts and the washers. But you still can not buy metric pipe, for example. You can't buy metric steel—or metric barstock around the world because that is the way it has been—the supplier industry has developed, and so even metrics don't apply everywhere. But where we can be metric, we are.

The only industry that I know that is clearly is the aerospace industry, which has—which grew up in the United States, was based on U.S. metrics and therefore has been accepted for most of the metric legislation and that, because they have—as everyone else has said, we are totally satisfied in the redevelopment of all of that technology is—would be a waste of time and resources.

Mr. WU. If the gentleman would yield for just one moment.

Chairman EHLERS. Yes, I would be happy to yield.

Mr. WU. Mr. Chairman, I am just shocked and appalled that you would attack the roots of American culture this way. The day when

a football field is no longer 100 yards long, the White Cliffs of Dover are going to fall into the ocean.

I yield back.

Chairman EHLERS. Thank you for yielding back.

Now I think it is a major problem. I remember the argument when Thomas Jefferson tried to institute the metric system, and the argument was that it would cost far too much. It would be $7 million to convert. And today, of course, it is upwards of $170 billion or something like that.

More serious questions.

One of you mentioned that perhaps we need a "standards czar," and I don't recall who mentioned that, but is that a general feeling? We should have a "standards czar" who sort of ties all of this together? Maybe you feel we have one already, but we have the trade issue, which somehow seems to be separate, even from the Department of Commerce, and we have the standards-setting process, which is different from most of the rest of the world. What do you think?

Mr. NOTH. Mr. Chairman, I was the one who mentioned it, so I will respond and let the others add, as they see fit.

But we think alignment between government agencies and with the private sector, the various sectors, is critical to our long-term competitiveness. And so we think we need some accountability to get the alignment. The efforts that have—that are going on, the Interagency Council, what have you, are a bottoms-up kind of effort. We need a little bit of top-down leadership in this area to make sure that some of that alignment happens and it gets the appropriate priority.

We think the Department of Commerce probably is a good place for that "standards czar." We probably think it ought to be a government individual who is charged with oversight and has some accountability in the area so that the alignment processes take place with a little bit more priority and urgency than we have seen in the past. And that is why we propose it. We think it ought to be a government, because the sectors are so diverse and what have you they are going to put their people forward. What you need is someone in the government who is going to understand what we are talking about in terms of standards and make sure that we are all basically on the same page when it comes to how we deal with standards on the international arena.

Mr. BHATIA. I think——

Chairman EHLERS. Mr. Bhatia.

Mr. BHATIA. I think what is needed is empowerment of the people at policy level to interface effectively with the private sector and advance our agenda on the international stage. If we have federal agencies, which are dedicated to their own particular mission, their own empowered area of activity, if we have that coordination at the policy level, we will not be successful. It could be a "czar." It could be a coordination at the standards executive level from each of the federal agencies that works effectively to resolve the horizontal issues but leaves individual sectoral issues to that particular agency.

There are many ways to skin the cat. The reality is we do need more attention, more recognition of the impact that the standards

have and the standards issues have on the economic well being of many, many industry sectors. That is lacking. We do have one standards executive, Heidi Hejukata from ITA. We have executives who are top-level policy people in various federal agencies who need to work together. There is an interagency standards policy coordinating committee. I don't know what the name is, but I believe you chair that. We need more coordination of that. We need more linkages of these organizations with the private sector. And I think we need to have them more focused on international issues and problems.

Chairman EHLERS. Any other comments, Mr. Karmol?

Mr. KARMOL. Yes, Mr. Chairman.

I certainly—I don't want to be at odds with any of my member organizations here, but I think I would want to recognize that a lot of good work is being done by NIST with the SIT programs, ITA. There is now great coordination within the Department of Commerce, headed by Heidi Hejukata. But we could use more coordination among the agencies, and that is the place where, you know, USTR and Commerce and the Department of State, if there could be some coordination. And I think that is where the Congress can step in. And I think if Congress would raise the profile of this whole standards community and the importance of standards, at some point, by appropriate recognition of the U.S. Standards Strategy and other ways, I think that is what really is needed to bring better coordination with the private sector and the government sector.

Chairman EHLERS. Thank you for your comments.

Did you have anything further that you wish to ask, Mr. Wu?

Mr. WU. Thank you very much, Mr. Chairman.

There are a host of questions that I think I would like to ask in writing, but just to—one final question.

The overall theme that I have heard is further support for voluntary private sector standards-setting organizations and perhaps further advocacy and—well, the question is this, that given that there are so many different standards-setting organizations, do we talk about the system in general? Do we get behind particular ones and not others? In essence, how do we set the standard for this standard advocacy?

Dr. DEUTSCH. I don't see how you could select from among the many. And I think one thing about our standards-setting mechanisms in the United States is that it is constantly evolving, so it would be, I think, inappropriate to get behind a particular SDO or a particular consortia. But—so therefore, I think the answer has to be A, your first option, and that is that we really want to recognize the benefits of the system in general and become a strong advocate for that.

Mr. BHATIA. I would like to suggest, once again, that we recognize that we have a sectoral approach to the standardization process. Different sectors would have different needs. Some would work within the consortia type framework and would bypass the accredited process or the very long and prolonged consensus-developing process and it would work fine for them. I think there will be other sectors, which are more heavily dependent on health and safety and environmental issues, which are much more heavily regulated,

and government agencies and others have to participate and play a role. I think there we have to have a different approach. There are other opportunities to look at and enhance the overall quality of the SDO activity.

One fundamental suggestion that I can make is we encourage all of the players to adhere to nationally-recognized, internationally-honored WTO principles of standards development and stick with that, whether it is a credited process or not. If we do the right things, if we bring the right people to the table, if we have an open and balanced process, if we give an opportunity for people to comment and react honestly to those comments and those suggestions, I think we will have a very robust and well-connected process.

Mr. WU. I want to thank all of the witnesses.

Mr. Chairman, thank you and all of the Committee staff for a very, very interesting hearing.

Chairman EHLERS. I would certainly echo that. We couldn't have had a better Committee—or I am sorry, a better panel of witnesses. And we really appreciate your contributions.

Yes, I see two—Dr. Semerjian, you——

Dr. SEMERJIAN. If I may, Mr. Chairman.

I would certainly like to finish this with some positive comments. Things—there are some things that are working well. Mr. Wu asked earlier, you know, how can we accomplish mutual recognition of conformance testing, et cetera. There is room, obviously, for improvement there, but one area where we have made significant progress over the last 6 years, I guess, is we have signed—some 60-some-odd countries have signed an International Bureau of Weights and Measures mutual recognition arrangement where we recognize each other's measurement standards, which are, obviously, the foundation of the conformance testing and the other standards activities.

So at least in those—in that area, we have come full circle, and it is a very open and transparent process where we compare our capabilities with each other, and the results of these are shown on the—you know, included on the websites of all of the laboratories, so you can basically go in and see the capabilities vis-á-vis each other of the laboratory—National Laboratories, such as PTB in Germany versus NIST or versus Japan or in China. So this is one area where mutual recognition of measurement standards have been accomplished in a very quantitative way.

And I think that is a significant step forward in this general area of measurements and normality of standards.

Thank you.

Chairman EHLERS. Thank you.

Mr. Noth, did you want the last word?

Mr. NOTH. I don't know if I want the last word. I just wanted to—and I don't know that I could speak for the whole panel, but I, for one, certainly would be willing to entertain any written questions or anything else that Mr. Wu or any of the other panel members would like to submit before the process is over. I think this is an excellent hearing, and I would—and we—I think I can speak for the panel when we say we all appreciate the fact that you called it and we had the opportunity to highlight these issues. And any-

thing further we can do to help you understand and focus on this activity, I think we are willing to participate.

Chairman EHLERS. I appreciate that, and without objection, the record will remain open for members' statements and members' written questions and your written responses. So without objection, so ordered.

I want to express, again, my appreciation. We wandered a bit away from what we were really after and that is the use of standards as trade barriers, but that is our overwhelming interest here, and we will certainly continue to pursue that on the Committee. And the advice and information you have given us today is extremely valuable.

I will continue to argue for the metric system, even though I am outnumbered, I think, 433 to two, but I would also comment that if football fields were 100 meters long, probably football could become an Olympic sport, and maybe that would be enough of an inducement.

I——

Mr. WU. Mr. Chairman, we have a term for 100-meter long football field, and that is "Canadian football."

Chairman EHLERS. Thank you.

But the other fact that I have mentioned, the aerospace industry, I am not so sure it operated that well. We have lost $150 million satellite because they used the—didn't use the metric system. So I will continue my battle on that, but—without conceding defeat but without anticipating a quick victory.

Thank you, again, very much for your expertise and the help you have given us. It has been wonderful. We appreciate it.

And with that, the hearing is adjourned.

[Whereupon, at 4:05 p.m., the Subcommittee was adjourned.]

Appendix 1:

Answers to Post-Hearing Questions

ANSWERS TO POST-HEARING QUESTIONS

Responses by Hratch G. Semerjian, Acting Director, National Institute of Standards and Technology

Questions submitted by the House Science Committee Majority

Q1. Are foreign governments using standards in a way that is inhibiting innovation, competition, respect for intellectual property, and free trade in products where the U.S. is competitive, and if so, how?

A1. The globalization of commercial activity is increasing the potential scope of the effects of the manner in which governments utilize standards in technical regulations to regulate products for their safety, health and environmental effects, and also the effects of divergent standards systems. The U.S. rule-making process is characterized by transparency in the making of technical assessments, factual findings, and normative policy choices, and transparent and open opportunities for public participation to ensure effective monitoring, critiquing and reviewing of rule-making. Competition and respect for intellectual property are inherent in both the U.S. regulatory and commercial arenas.

This is not always the case in other countries, where government structures and economies are more centralized and the scope of government authority is much broader than in the United States. In countries where the government retains responsibility for directing the standards development process, participation in standards development activities may be restricted to domestic interests. Laws on competition and protection of intellectual property, if enacted, may not be enforced effectively.

Q2. Are foreign governments using standards policy as a mechanism to protect their domestic industries at the expense of external competition, including competition from U.S. companies?

A2. As noted above, some foreign governments restrict participation in standards development activities to domestic interests. And in some cases, government, rather than industry and market needs, drives the standards development process. The result may be at the expense of external competition. The WTO Agreement on Technical Barriers to Trade was created to discipline the development and use of standards, technical regulations and associated conformity assessment procedures so as to prevent their use as trade protectionist tools. Among other things, the Agreement requires such documents to be developed through transparent procedures and prohibits the creation of unnecessary obstacles to trade.

Q3. If the answer to any of these questions is yes, what, if anything, should the U.S. Government be doing to respond?

A3. The U.S. Government should continue to place a high priority on ensuring that our trading partners live up to their WTO commitments, including those under the Technical Barriers to Trade Agreement. The U.S. Government is actively pursuing specific trade complaints through bilateral representations and, as appropriate, seeking third country support by raising at meetings of the WTO TBT Committee. We are also working in partnership with U.S. industry and the U.S. standards community to promote the advantages of market-driven, globally relevant standards, and the merits of openness and transparency in standards development.

Likewise, strong intellectual property laws and effective enforcement of those laws is integral to stimulate and protect the creativity and innovation that is the foundation of many U.S., as well as foreign, industries. The USG will continue to work with our foreign trading partners to ensure they implement and enforce their intellectual property laws and will oppose the development of any standard that undermines the intellectual property rights of U.S. innovators.

Questions submitted by the House Science Committee Minority

Q1. The U.S. Standards Strategy lays out a series of ambitious recommendations. Aside from Congress endorsing the Strategy, will there be a follow-up document laying out how these recommendations should be implemented? What resources will be required to implement the Strategy and what does the Federal Government need to do?

A1. Once the Strategy is finalized, later this year, all interested parties—government agencies, industry, standards developers and others—will be requested to identify appropriate implementation actions that will address the tactical initiatives

in the Strategy. ANSI, who facilitated the development of the draft, will serve as the mechanism to coordinate, integrate and report progress on the Strategy at regular intervals. The Interagency Committee on Standards Policy, composed of federal agency Standards Executives and chaired by NIST, has received periodic briefings on the status of the Strategy and will consider action on the Strategy document once it is approved, as will the Trade Policy Staff Committee (Subcommittee on Standards and Technical Barriers to Trade), chaired by USTR.

Implementation of the Strategy should help the U.S. Government to address many of its high-priority concerns by working in concert with the private sector. The Strategy calls on government agencies to seek early collaboration with industry and standards developers to identify standards needed to meet emerging national needs, to increase participation in the development of voluntary consensus standards, to continue to foster and support the unique character and strengths of the public-private partnership in standards development as it pursues its international agenda, and to work with counterparts in other countries to encourage the consideration of all relevant standards in support of regulations.

Implementation of most elements of the Strategy will not necessarily require additional resources from federal agencies, but may require thoughtful alignment of existing programs with both the strategic goals and tactical objectives outlined in the Strategy. There may be resource implications for federal agencies associated with increasing participation in the development of voluntary consensus standards, however. Federal agencies have noted that maintaining their current levels of participation in standards development activities is becoming increasingly difficult because of competing agency priorities.

Q2. What do you think are the three most important things the Federal Government needs to do in the standards and trade arena? What role do you think NIST should play within the Federal Government and should NIST be doing anything differently?

A2. The Federal Government needs to continue to place a high priority on ensuring that our trading partners live up to their WTO commitments under the Technical Barriers to Trade Agreement. Where relevant, education of foreign governments on these commitments and how to carry them out effectively should be a component of this effort. The government also needs to continue to engage U.S. industry and the U.S. standards community in a partnership to promote the advantages of market-driven, globally relevant standards.

NIST is tasked by Congress with promoting the efficiency of the U.S. standards system, by coordinating federal agency use of non-government standards and participation in the development of relevant standards, and through promoting coordination between the public and private sectors in both the standards and conformity assessment arenas. Under the Trade Agreements Act, NIST is designated as the U.S. Inquiry Point for the WTO Agreement on Technical Barriers to Trade, and as such is responsible both for notifying proposed U.S. technical regulations that may have an impact on trade and for disseminating notifications to U.S. Government agencies and the private sector of proposed foreign technical regulations and conformity assessment requirements. It is also responsible for responding to requests for information on U.S. standards and technical regulations.

NIST technical programs support global awareness of U.S. standards. NIST researchers participate in standards development activities of 90 standards developing organizations; activities that help ensure the transfer of NIST measurements, standards and technology in areas ranging from information technology to telecommunications to health care, and so on. NIST programs take advantage of synergies with related Department of Commerce trade-related programs and with the private sector, and are critical to U.S. manufacturers' access to export markets. These programs include our Standards in Trade Workshop program, maintaining good working relationships with foreign standards officials, leadership in key standards development activities that impact trade, and notifying U.S. exporters of proposed technical regulations and standards in foreign markets.

NIST should expand its outreach to standards developers and industry to enhance our ability to define high priority technology issues where NIST-sponsored workshops, participation in developing documentary standards, and development of measurement technologies can facilitate the development and deployment of innovative technology. In this context, NIST should develop specific metrics to measure the impact of NIST programs in these areas. In the area of knowledge dissemination, NIST should expand web-based access to standards information, both for federal agency use and to support U.S. exporters. NIST should also expand its outreach to promote awareness of U.S. stakeholders' opportunities pursuant to the TBT Agreement to influence the development of other countries' standards and regulations.

Q2a. We are facing an increasingly global marketplace, how do you see U.S.-based standards organizations evolving over the next five to ten years?

A2a. U.S.-based standards organizations take a variety of different forms—trade associations, professional societies, consortia, and so on. Some serve very small market niches, while others serve large economic sectors or reach across sectors in their technical work. Many of the standards produced by U.S.-based organizations are used globally. These organizations are likely to evolve toward increasingly global membership, allocating a larger percentage of funds to translating their documents into other languages, and working in partnership where feasible with national standards bodies in other countries, as well as with associations of national bodies such as ISO and IEC. This may take the form of partnership arrangements, joint adoption of standards, and/or sharing of workloads.

Q3. Clearly, the commitment to technical assistance by the EU is unmatched by the U.S. in its coordination and magnitude. Is it fair to say that the EU and European industries believe that they can create a competitive advantage in world markets by strongly influencing the content of international standards? Will the mass marketing by the EU of selected standards create a preference for European products rather than U.S. products? If so, what should the U.S. be doing and why have we waited so long to take any action?

A3. European Commission policy gives preference to international standards, specifically ISO and IEC standards, and regional European standards, in fulfilling regional regulatory requirements. Some European Union (EU) regional standards are developed specifically to meet European regulatory requirements. It is these standards, and accompanying European regulations, that are not only used in the growing EU market, but are also being promoted for use in emerging economies, which comprise some of the major U.S. (and EU) export markets. In addition, a number of countries are adopting EU standards and regulations in anticipation of joining the EU and/or to ensure their domestic exporting companies comply with the EU requirements.

The U.S. Government, working with our private sector, should continue to promote U.S. interests in our most important markets. Our message needs to emphasize the U.S. principles of effective standardization, which underpin the U.S. system and which lead to standards development driven by the marketplace, with sound technical content, allowing for multiple technologies. The fact that U.S. Government agencies rely to a great extent on private sector standards in their own regulatory and procurement activities, and the transparency and safeguards against trade protectionism or other bureaucratic abuse, should be a part of our message to foreign governments as well. The importance of delivering a positive and persuasive message is especially critical in key emerging markets where infrastructure is lacking.

The Commerce Department launched its Standards Initiative in 2003 to facilitate more effective Federal Government work to effectively promote U.S. standards interests and to eliminate standards-related market barriers that undermine U.S. exports and threaten the international competitiveness of U.S. industry. A Departmental report—*"Standards & Competitiveness: Coordinating for Results,"* May 2004—presents a broad set of recommendations, some of which address outreach and promotion. Priority action has been taken to date on more than two-thirds of the report's recommendations.

We are working now with our partner agencies on the Trade Promotion Coordinating Committee to build on these recommendations and craft a trade promotion strategy for the coming year recognizing the importance of standards to the export competitiveness of American companies. Our strategy endeavors to develop an ambitious partnership with U.S. manufacturers and service providers, and the U.S. standards community, to better promote U.S. standards interests in our most important markets. This includes not only emerging, fast-growing markets such as China, but also the EU itself. The USG is working with the EU through a variety of cooperative mechanisms intended to promote better quality regulation, minimize regulatory divergences and facilitate transatlantic trade.

Q4. Do China's laws and regulations concerning the recognition and use of "international standards" comply with their commitments under the WTO? If not, is this discrepancy a problem for U.S. industry and has the U.S. Government taken any action to respond to industry concerns?

A4. China, as a Member of the WTO, has passed legislation to implement its WTO commitments, including those of the WTO Agreement on Technical Barriers to Trade. The Department of Commerce is unaware of any national or comprehensive Chinese law or regulation limiting its recognition and use of international stand-

ards. The Department of Commerce's International Trade Administration operates a monitoring and agreement compliance program, which actively responds to the concerns of U.S. industry and helps ensure that U.S. exporters receive the full benefits of U.S. trade agreements.

Q5. The National Technology Transfer Act promotes the use of private standards by U.S. Government agencies. How successfully has this Act been implemented and what improvement could be made to the Act?

A5. NIST believes that implementation of the Act has very successful. The data reported by federal agencies from FY 1997 through FY 2004 indicate that federal agencies continue to increase their use of private sector standards. A key measure of agency behavior in this area is the number of government-unique standards used in lieu of available private sector standards. This figure is quite small compared to the high frequency with which agencies use available private sector standards; in FY 2004 the number of government-unique standards reported in this category was about one-half-of-one-percent of the total private sector standards used.

For many federal agencies, the NTTAA serves to reinforce practices for using private sector standards, managing and reporting standards activities as called for by pre-existing legislation and/or policy directives. The Departments of Defense and Energy, Environmental Protection Agency, Consumer Product Safety Commission, Food and Drug Administration and National Aeronautics and Space Administration are examples of agencies that have effectively developed such policies. However, for a number of agencies implementation of their NTTAA responsibilities has been difficult and slow, due to competing budget priorities.

The Interagency Committee on Standards Policy, chaired by NIST, has become an effective vehicle for exchange of important information affecting standards use by federal agencies. The committee also serves as a primary point of contact for addressing private sector concerns about use of government-unique standards. NIST has enhanced its role as coordinator of standards use within the Federal Government in other ways as well. In 2005, NIST launched Standards.gov, which offers background materials, useful links, and search tools for locating information about government use of standards for regulatory and procurement purposes. A key component on the Standards.gov site is a searchable database of standards currently incorporated by reference into federal regulations.

Agency opinions regarding the effectiveness of the Act, and therefore the need to make changes to it, are varied. Some government officials have found the Act to be a strong motivator for encouraging greater use of private sector standards and increased participation in standards development activities. On the other hand, some agencies have questioned whether the problems that made passage of the NTTAA necessary back in 1995 still exist today. The bottom line is that since the passage of the NTTAA, federal use of government-unique standards has dropped, while the number of private sector standards used by the government in both regulation and procurement has increased by more than 2600. These data reinforce the fact that non-government standards, both U.S.-developed and international standards, meet government needs in both regulation and procurement. Now more than ever, federal agencies look to private sector standards before initiating in-house standards, and they are working in concert with the private sector to develop standards appropriate for government use.

Q6. Last year, the Commerce Secretary created a Standards Liaison office and issued a comprehensive report, Standards and Competitiveness: Coordinating for Results *that includes 50 recommendations for federal action. How much funding has been allocated to the Standards Liaison Office and to implementing the recommendations in the Secretary's report? A year later, how many and which of the recommendations have been implemented?*

A6. The Standards Initiative launched by then-Secretary Don Evans in 2003 created a position of Standards Liaison within the International Trade Administration. There is, however, no Standards Liaison Office and therefore, no specific allocation. As part of the Office of the Assistant Secretary for Manufacturing and Services, there are now three FTEs specifically dedicated to addressing standards concerns of the U.S. private sector, and numerous other staff throughout ITA (e.g., industry and country-specific specialists, as well as Commercial Service domestic and overseas staff) who focus in part on standards-related issues and activities.

Priority action has been taken to date on more than two-thirds of the 50 recommendations in the 2004 report. Progress continues to be made on all fronts identified in the report. Based on a comprehensive assessment of Department standards-related programs, substantial work has been done to improve coordination within the Department.

An ITA standards liaison with industry was named more than a year ago to ensure that industry's priorities on standards are promoted through the Department's international policies and programs. Intensive training is being provided for Commercial Service officers and other ITA staff on standards-related issues.

Department training and outreach programs, both those of NIST and ITA, have been enhanced where feasible and are targeted at key markets, such as China, where industry has identified standards-related issues. NIST, ITA and TA are collaborating on the 2005 U.S.–China Standards and Conformity Assessment Workshop scheduled for August 10–11, which will allow U.S. industry with export potential and interest in China to get to know the Chinese Standardization System and learn more about the Chinese system requirements for their market sector. Furthermore, the following NIST workshops have been delivered or are scheduled for FY05: (1) Standards in Trade (SIT) workshop for Israel on Roadway Infrastructure and Safety (April 2005), Enquiry Point Workshop for the Caribbean (June 2005), SIT Workshop on Standards and Conformity Assessment in the Oil and Gas Sector in India (August 2005). In addition, on July 1st, NIST launched a new, improved electronic notification system for U.S. exporters on proposed foreign regulations and standards.

Q7. What are the duties of a Commercial Officer in a Standards position? For example, the Department recently announced posting a Commercial Officer to the new standards position in our Embassy in Beijing. What are the duties of the Officer and what does the Department hope that he will achieve? Also, what special skills and background are required to fill this technically-oriented post?

A7. In general, Foreign Commercial Service Officers (FCSO) assigned to Standards positions—currently three, in Sao Paulo, Mexico City and Brussels—provide technical support to their respective regions on standards-related issues that might affect U.S. Government agencies or U.S. companies. The three current Commercial Officers in Standards positions, and the officer to be posted to the American Embassy in Beijing this fall, provide assistance on standards-related issues to host government and private sector bodies that establish and implement policies, technical regulations or voluntary standards and conformity assessment practices that might affect market access for U.S. exports. These officers arrange and participate in technical assistance projects and workshops targeted at participants from the region in which they are stationed, either in-region or in the United States.

The Commercial Officer to be posted to the Standards position at the U.S. Embassy in Beijing is a career FCSO and was selected through a rigorous recruiting and panel process by the Department's Commercial Service. The Officer meets the language and technical expertise requirements established by the Commercial Service for this position. Prior to posting in Beijing, the Officer will undergo intensive training, both at NIST and through the Commercial Service. As the Ambassador to China and the Secretary of Commerce have both recognized, there is a clear need for a dedicated STANDARDS position in China, to facilitate communication and regular interaction with Chinese officials on standards issues.

Q8. Recognizing that access to global markets increasingly depends on standards being set by other countries and international organizations, what is the policy of the U.S. towards implementation and enforcement of the WTO's Technical Barriers to Trade agreement as it relates to the definition, recognition and use of "international standards"?

- *Is the U.S. Government aware of any country whose laws or policies fail to comply with the Technical Barriers to Trade agreement obligations to recognize and use international standards to meet the requirements of the agreement? If yes, what action does the U.S. Government take to ensure compliance?*
- *China's policy is that "International Standards are the standards issued by the International Standards Organization (ISO), the International Telecommunications Union (ITY) and other international organizations recognized and publicized by the ISO." Is this regulation compliant with the technical Barriers to Trade Agreement and if not what changes will China be obligated to implement to achieve compliance?*

A8. The WTO Agreement on Technical Barriers to Trade recognizes the right of Members to establish standards and technical regulations but establishes a set of rules and procedures aimed at preventing the development and application of such documents as unnecessary obstacles to trade. Among other things, the Agreement encourages Members to base their standards, technical regulations, and conformity assessment procedures on "international standards," if relevant ones exist and they would be effective and appropriate for the particular objective at hand. The Agree-

ment itself does not define "international standards" nor does it specify the use of standards from any specific international standards-developing body. However, the WTO Committee on Technical Barriers to Trade further refined the concept of "international standards" in a Committee decision which emphasizes the need for international standards to be developed with "open, impartial, and transparent procedures that afford an opportunity for consensus among all interested parties." The United States played an instrumental role in the development of, and fully supports, the Committee's Decision. The amplified criteria assist in evaluating whether a particular standard or technical regulation of a trading partner is an unnecessary barrier to trade.

The Department of Commerce is unaware of any individual Member's law or national policy limiting the recognition and use of international standards. Likewise, the Department of Commerce is unaware of any national or comprehensive Chinese law or regulation limiting its recognition and use of international standards.

Q9. Has the Administration endorsed the U.S. Standards Strategy? What level of resources and actions will be required by the Federal Government to implement the U.S. Standards Strategy?

A9. The U.S. Standards Strategy is still under development. We expect that a final document will be approved by the ANSI Board of Directors sometime this fall. The Strategy contains recommendations for action by government, ANSI, standards developers and industry. The Commerce Department will consider the Strategy's recommendations for action by government agencies, identify areas where Department standards-related objectives can be aligned with those of the U.S. Standards Strategy and promote similar actions by other government agencies.

The Interagency Committee on Standards Policy, composed of federal agency Standards Executives and chaired by NIST, has received periodic briefings on the status of the Strategy and will consider action on the Strategy document once it is approved. We anticipate that individual agencies will endorse or otherwise indicate support for the Strategy on a case-by-case basis. It is unclear at this point what level of resources and actions will be required by the Federal Government to implement relevant elements of the Strategy. Since government interests are well represented on the U.S. Standards Strategy Committee, responsible for development of the U.S. Standards Strategy, they were able to provide ideas for strategies that will meet USG needs. Consequently, alignment and implementation should not be difficult.

Q10. You stated that the Department will work to implement relevant elements of the U.S. Standards Strategy. What are the relevant elements of the Strategy and what level of resources will be required to implement these recommendations?

A10. The Department plans to leverage its relationships with other government agencies, with industry and standards developing organizations, and with academia, to implement key elements of the U.S. Standards Strategy. These include as a first principle the Strategy's promotion of broad access and inclusivity in the standards development process. This is a clear evidence of the strength of standardization in the United States. The strategy recognizes that many types of organizations develop standards, and that new modes of operation and new methodologies have changed the standards landscape in recent years. A dynamic standards infrastructure is needed to meet future demands—both government and private sector. The Department supports this standards infrastructure both through Department staff participation in standards activities and through coordination among federal agencies in the use of non-government standards and participation in standards development. Another key element of the strategy is the encouragement of government at all levels to seek early collaboration with industry and standards developers to identify standards needed to meet emerging national priorities. We have had success already with this proactive approach in both the homeland security and nanotechnology standards arenas where NIST staff co-chair private sector standards panels under the sponsorship of the American National Standards Institute. The strategy also recognizes the clear link between standards and government trade policy and the need for both the government and private sector interests to give more attention to the impact of standards on market access. Department technical and policy programs support global recognition of standards that are fair and responsive to market and technology needs. We expect to be able to implement key elements of the Strategy through focused allocation of existing budget resources.

Q11. NIST has proposed a FY06 initiative on standards in support of global trade to address specific needs of U.S. business. What are the specific needs of U.S. business, and what activities will NIST undertake under this initiative?

A11. In an increasingly globalized economy, the capacity to compete successfully depends on the ability of individual manufacturers to satisfy global as well as U.S. measurement and standards requirements. To respond to global challenges, a growing number of companies, both large and small, are organizing their operations on a multinational basis. This has led to reduced attention or dependence on nation-centric measurement and standards infrastructures, and increased demand for a viable global infrastructure. NIST's role as the primary agency responsible for the health of the Nation's measurement system and its mandate to ensure that appropriate non-government standards are available to meet the needs of federal agencies and to coordinate between the public and private sectors, places the Institute in a unique position to address these international measurement and standards challenges.

In order to promote international trade, at every step, U.S. manufacturers need to tie their processes and products to international standards of measurement that are provided by NIST. Standards and calibrations must be aligned with international standards to give U.S. manufacturers seamless access to foreign markets, developing foreign and international standards efforts must be monitored for potential impact on U.S. exports and the resulting information made easily accessible to U.S. manufacturers.

NIST proposes a program for FY06 to coordinate with U.S. industry to meet its needs for leading-edge measurement capabilities for key technologies, and to develop new and more efficient ways to deliver the highly accurate measurements needed by U.S. industry. NIST will provide the technical leadership and coordination for key trade-related documentary standards activities in specific technology sectors such as wireless communications, manufacturing systems inter-operability and nanomanufacturing to ease access to foreign markets, and to ensure that U.S. interests are fairly represented. NIST also will work to align U.S. measuring instrument standards with international standards, to provide standards-related information and analysis to U.S. industry, and in-depth training on standards and measurements for regulatory officials in key foreign markets. These activities are key to enabling U.S. industry to overcome market access barriers and compete effectively in global markets.

Q12. The Department is developing a strategy to do a better job of promoting U.S. standards interests in foreign countries and especially in China. When will this strategy be completed and what are the components?

A12. In May, the Trade Promotion Coordinating Committee launched an interagency standards-related promotion plan as part of its National Export Strategy. NIST and ITA are taking the lead in partnering with the private sector and in consulting with other U.S. Government agencies. The plan grew out of the Department's focus on markets with the most commercial potential. Standards area major market access issue in many of these markets.

Some elements of the plan have already been implemented, (e.g., focusing of NIST's assistance and foreign outreach on target countries). A long-term goal is outreach to markets (a) whose standards systems are still in flux and (b) where EU marketing of selected standards may create a preference for European products. The target markets include Brazil, China, India, South Korea, and Russia. We want to engage these trading partners in a more positive working relationship and improve their understanding of the advantages of market-driven, globally relevant standards, which advances U.S. technology.

In China, we are pursuing a series of cooperative ventures with the Chinese Government and U.S. industry. Through ITA's Market Development Cooperator Program, we have awarded partner-matched financial awards to support the establishment of three U.S. private-sector offices in China to work with the Chinese Government and industry. The Department of Commerce will hold its second comprehensive U.S.–China Standards and Conformity Assessment Workshop this summer with relevant Chinese Government partners. We are working with other agencies and U.S. industry to head off new Chinese mandatory standards that create unnecessary barriers to trade.

In the other spotlight markets, we are at various stages of developing and implementing strategies for engagement. In India, the Commerce Department has proposed standards as an initial subject for re-energizing the U.S.–India Commercial Dialogue. In Korea, Embassy Seoul has found productive ways to engage the Korean Government, and ITA and NIST are exploring options for expanding public and pri-

vate dialogue. In Brazil, we are exploring the possibility of activities focused on emerging technologies and sectors. In Russia, we are reaching out to U.S. industry in Russia to identify partners and target sectors of interest.

Q13. NIST intends to partner with U.S. industry and standards developers to promote the U.S. approach to standards development. What will NIST do to meet this goal and what are you going to do differently from past activities?

A13. NIST, working with ITA and other parts of the Department, and other agencies, will actively engage U.S. industry and the U.S. standards community in a partnership to promote the advantages of market-driven, globally relevant standards that advance U.S. technology. At the heart of this outreach plan is the realization that the United States will not succeed in overcoming standards-related market barriers unless it does a better job than the competition in promoting standards that are fair and responsive to market and technology needs. The importance of developing and delivering a positive and persuasive message is especially critical in key emerging markets where standards regimes are still in the formative stage. It is important for our trading partners around the world to hear loud and clear how recognition of U.S. and other market-driven, globally relevant standards can help them improve their economic efficiency and competitiveness while promoting a higher quality of life.

In collaboration with the American National Standards Institute, the Department is planning a high level summit meeting of standards developers, corporate representatives and key government participants in standards activities to develop a proactive plan of action, based on the principles of the U.S. Standards Strategy and the Department's Standards Initiative and Standards and Competitiveness Report. The goal is to identify and consider the many activities being undertaken by various government, corporate and standards groups, and develop options to better coordinate and leverage these actions; while also considering new actions to provide more and better partnering in this area. With respect to NIST's own outreach and education programs—our Standards in Trade Workshop program, dialogues with foreign standards officials and other outreach—we will expand our partnership with private sector stakeholders to facilitate greater reach and investigate other means of disseminating information on the U.S. approach to standards development. NIST has also begun referencing the National Export Strategy in its *Federal Register* announcements calling for Workshop applications.

Q14. Today you announced that NIST will launch a comprehensive effort to roadmap American industry's measurement needs. How long will this take to complete, and does NIST currently have the funding to undertake this ambitious project? How much funding will be required?

A14. This comprehensive effort will ultimately involve all customers and stakeholders of the U.S. measurement system (USMS), which is the complex of all methods, instruments, entities, institutions, and standards involved in measurements of products and processes of significance to the economy, security, and quality of life of the Nation. In particular, the USMS is an essential component of the national innovation infrastructure, and a critical element of the strategic environment in which we all operate. NIST has established an aggressive timetable for completion of the first iteration of the measurement needs roadmap, which will comprise a comprehensive assessment of the most important current and future measurement needs of the U.S. economy; a plan delineating what USMS solution providers intend to do, both individually and working together, to address those needs; and identification of the most important gaps remaining, and the consequences of not addressing those gaps. We expect to publish the first USMS roadmap in late 2006 or early 2007. NIST and other interested parties will monitor and report periodically on progress in implementing the resultant plan; update the roadmap on an ongoing basis; and repeat the entire process approximately every four years. Given the breadth and complexity of the task at hand, NIST estimates that it will take three iterations—or ten years—to create a robust self-sustaining process that covers the entire economy, including both the private and public sectors. NIST is committing the resources necessary to complete the first iteration and to demonstrate the value of the overall roadmapping approach.

Q15. Under OMB Circular A–119, NIST is responsible for collecting and reporting to Congress on the participation by federal agencies in Standards Development Organizations (SDOs). As a part of this requirement, do agencies report on the level of participation by their employees in standards development activities? What has been the trend in federal employee participation in SDO activities over the past five years?

A15. Yes, federal agencies do report on their employees' participation in private sector standards development activities. Over the past five years, participation of federal agency personnel in the activities of private sector standards developers (SDOs) has increased (from 2001 through 2003) and then declined slightly. Agencies continue to face competing budget priorities as they try to maintain adequate levels of participation in SDO activities. Private sector standards developers continue to request greater government participation in a variety of development activities. U.S. Government participation is an excellent way of ensuring that federal needs are considered during the development of a standard and making sure that the resulting standard can be used by the government.

Q16. The U.S. Government is a party to the WTO Agreement on Technical Barriers to Trade, which states that Members "shall ensure that standards are not prepared, adopted or applied with a view to, or with the effect of, creating un-necessary obstacles to international trade." As a part of NIST's responsibilities under Circular A–119, does NIST ask federal employees that participate in standards development activities to report if the standards produced are in compliance with the WTO Agreement on Technical Barriers to Trade? If not, should NIST monitor these activities to ensure compliance?

A16. The OMB Circular contains no requirement for federal employees to report on the compliance of developed standards with the WTO Agreement on Technical Barriers to Trade (TBT). The *Uruguay Round Agreements Act* (Public Law 103–465) provided the basis for implementing the WTO TBT obligations in the United States. The Office of the U.S. Trade Representative has overall responsibility for domestic implementation and works in partnership with other agencies via the TPSC to monitor implementation and develop appropriate responses to issues identified. Individual agencies regularly consult with the U.S. Trade Representative's office and other relevant agencies through the trade policy coordinating process when they undertake regulatory actions that may have an impact on trade.

ANSWERS TO POST-HEARING QUESTIONS

Responses by Robert W. Noth, Manager, Engineering Standards, Deere and Company

Questions submitted by the House Science Committee Majority

Q1. Are foreign governments using standards in a way that is inhibiting innovation, competition, respect for intellectual property, and free trade in products where the U.S. is competitive, and if so, how?

A1. The answer is yes. Europe has a penchant for design prescriptive standards that tend to inhibit innovation and to the extent they are successful exporting their standards it remains a concern as it affects competitiveness and free trade in other markets. In regard to intellectual property, John Deere has had negative experience with trademark infringement emanating from several countries including China. Overall however, the off-highway equipment sector has not been impacted by standards disrespecting intellectual property ownership as other sectors like ICT but it is a real concern with potential future impacts.

Q2. Are foreign governments using standards policy as a mechanism to protect their domestic industries at the expense of external competition, including competition from U.S. companies?

A2. The answer is clearly yes. In our industry sector, we can observe it in countries all over the world, including Europe, South America, the CIS countries, China, and even Mexico and Canada on occasion. It is most notable through selective enforcement, by which U.S. products are challenged but locally-produced goods are not, even when designs are identical.

Q3. If the answer to any of these questions is yes, what, if anything, should the U.S. Government be doing to respond?

A3. The U.S. Government must be more aggressive in addressing these issues on behalf of U.S. manufacturers. The U.S. should insist that our trading partners who are WTO members live up to their commitments to the WTO principles, but in doing so the U.S. must also be prepared to demonstrate more visibly its commitment to them. This is why, in previous testimony, we commented on the need for better targeting of USAID and Trade Development Agency funding and programs, so that the U.S. can provide more effective technical support. Beyond that, our other recommendations include: new priority and visibility to the challenges, better alignment between government agencies and the private sector to ensure our international message is clear and unambiguous, continued and annually secure funding for the ongoing efforts of NIST, the new standards initiatives in the U.S. Department of Commerce and the endorsement of the U.S. Standards Strategy with ultimate support, including funding for the appropriate government-related initiatives outlined there.

Questions submitted by Representative David Wu

Q1. The U.S. Standards Strategy lays out a series of ambitious recommendations. Aside from Congress endorsing the Strategy, will there be a follow-up document laying out how these recommendations should be implemented? What resources will be required to implement the Strategy and what does the Federal Government need to do?

A1. Actually, the proposed Strategy encourages individual sectors to develop their own follow up documents. The work recently completed by the Aerospace Sector outlining their strategy provides an excellent example. John Deere is involved in the Off-Highway Sector's efforts to utilize a similar approach and in appropriate forums; we encourage other sectors to consider it as well. As was initiated with the current version of the strategy, ANSI will keep track of the sector specific strategies and tactical initiatives as they are reported and issue an annual status report. Most, if not all of the recommendations presented and discussed in the hearing are included in the proposed Strategy document. The effort required to implement will come primarily from the private sector but there are some important public sector elements. Some of the recommended initiatives in the public sector are new but most are extensions and expansions of efforts already underway that need to be made more visible and adequately funded. The Federal Government needs to ensure those outcomes.

Q2. What do you think are the three most important things the Federal Government needs to do in the standards and trade arena? What role do you think NIST should play within the Federal Government and should NIST be doing anything differently?

A2. (1) Improved direct support for and increased government participation in the U.S. standards system. This includes restoring support for ANSI, as our National Standards Body in international forums and include funding for emerging standards initiatives driven by global public interest (such as Social Responsibility) that attract subsidized support internationally but without enough immediate impact to be fully supported by U.S. private sector funding; support for our outreach and promotion of the U.S. Standards System and US based standards; encouragement for more government personnel to participate in private sector standards development and support for education and training of foreign service/foreign commercial service officers in standards and standards issues.

(2) Increased policy level coordination between U.S. Government departments and agencies engaged in standards activities so as to better align with private sector activities. The U.S. can maximize its power and influence by better coordination to avoid sending conflicting messages or signaling conflicting priorities.

(3) Congressional endorsement of the U.S. Standards Strategy. The signal sent by this act would of itself, indicate better coordination between the public and private sector, reinforce the U.S. Standards System and motivate the resources required to effectively implement it.

Regarding NIST, we believe they have a uniquely important place in the U.S. standards system. Dr. Semerjian itemized some of the agency's many roles in his written and oral testimony, from basic metrology as applied to the wide span of U.S. commerce and ranging to advanced Research and Development in important or emerging technologies like cryptography and nanotechnology. They are also the U.S. WTO inquiry point and conduct Standards in Trade (SIT) workshops. Both are important resources to our trade partners and U.S. stakeholders. These important services need to be maintained and allowed to grow to keep pace with demand.

Q3. We are facing an increasingly global marketplace, how do you see U.S.-based standards organizations evolving over the next five to ten years?

A3. Market forces relative to globalization will continue to impact different industry sectors in different ways and on different timelines so even in five to ten years the impacts on U.S.-based standards organizations will be mixed. Most U.S.-based standards organizations evolved in support of a specific industry or technology sector and enjoyed a captive market for their standards as long as the products made to their standard specifications were acceptable in the markets the industry chose to serve; primarily but not exclusively U.S. or North American. As the companies that make up those industries seek to be competitive in new global markets and are faced with new demands from both customers and governments, the previously symbiotic relationship becomes at risk. The future of those standards organizations will be determined primarily by the decisions made by the constituent companies in the sector and in part by how the standards organizations choose to respond to those decisions. In some sectors the market for U.S. produced standards may dry up in favor of more internationally acceptable specifications established in other organizations as the company/industry seeks the best fit solution. Those organizations thus effected will be forced to consider a revised business model. Large organizations serving many sectors may have to support multiple processes to better serve their constituents; much like SAE has done to effectively serve the standards needs of their Aerospace, Automotive and Commercial Vehicle sectors. (See question 8 below). Smaller, more narrowly focused organizations may have to consider merger, acquisition, partnership or loss of the standards line of business. To a large degree "competing standards" are an oxy-moron and over-capacity relative to the demands of the market eventually results in consolidation of suppliers in some form.

Q4. Clearly, the commitment to technical assistance by the EU is unmatched by the U.S. in its coordination and magnitude. Is it fair to say that the EU and European industries believe that they can create a competitive advantage in world markets by strongly influencing the content of international standards? Will the mass marketing by the EU of selected standards create a preference for European products rather than U.S. products? If so, what should the U.S. be doing and why have we waited so long to take any action?

A4. Yes. In fact, Europe has published documents indicating their commitment to that very strategy. Our company already has experience with sales contracts in several countries where a Memorandum of Understanding (MOU) between Europe and

that country resulted in a preference for European manufactured products where it did not exist before. We recently experienced a problem of this nature with Turkey for example. As stated in previous testimony, effective and timely response is dependent on new priority and visibility being given to the U.S. Government departments and agencies already working to meet the challenge. Better alignment between them and the private sector must also be assured so our international message is clear and unambiguous. This has to include secure funding for them and a retargeting of the funds allocated to USAID and the Trade Development Agency to better address these specific challenges.

Q5. Do China's laws and regulations concerning the recognition and use of "international standards" comply with their commitments under the WTO? If not, is this discrepancy a problem for U.S. industry and has the U.S. Government taken any action to respond to industry concerns?

A5. China has made it clear on several occasions in public that they do not share the U.S. interpretation of the WTO language defining "international standards," and have taken positions against products that incorporate U.S.-based standards in their specifications that, under the U.S. interpretation, should be perfectly acceptable. This makes the Chinese position a problem for U.S. industry in many sectors. The U.S. Government has been quick to respond to these concerns and there are several private sector initiatives as well. While, the Chinese attitude, up to this point, remains unchanged, we need to continue to press the point through all appropriate channels of communication.

Q6. The National Technology Transfer Act promotes the use of private standards by U.S. Government agencies. How successfully has this Act been implemented and what improvement could be made to the Act?

A6. The U.S. Government agencies have made a good faith effort in implementing the NTTAA, with a positive impact. In effect, it forges a partnership between the public and the private sector that benefits both sectors. We believe its shortcoming is that it allows exceptions based on the unilateral judgment of the agencies, without recourse. As suggested in previous testimony, establishing a policy level oversight committee to be made up of senior agency officers might provide an appropriate level of accountability and provide needed incentives for enhanced alignment and cooperation. Another alternative might be to elevate interagency standards concerns enough to create an incentive for agency executives to become more actively engaged with the existing Interagency Council on Standards. The objective is to speak more clearly and unambiguously and therefore more effectively in international discussions on standards utilized in trade.

Q7. You mention that many World Trade Organization (WTO) countries and signatories to the Technical Barriers to Trade Agreement have not yet implemented its provisions. Which countries are the worst offenders and how does this hurt U.S. companies? How responsive has the U.S. Government been in addressing this issue and how do you think governmental actions could be improved?

A7. The worst offenders are listed annually in *The National Trade Estimate,* a report to Congress from the office of the U.S. Trade Representative. It lists specific trade issues and problems by country that are compiled from industry input. Impacts on U.S. companies include lost sales and increased costs due to meeting requirements not imposed upon local competitors. The numbers vary by country but add up to a substantial amount of lost trade. The sensitivity and responsiveness of the U.S. Government to these issues has been good and continues to improve. The recommendations in my earlier testimony are aimed at making that responsiveness even better.

Q8. As your industry has become more globally focused, you depend more on the International Standards Organization (ISO) for standards development. How has this affected how your industry funds and interacts with traditional U.S.-based standards organizations such as the Society of Automotive Engineers (SAE) and the American Society of Agricultural Engineers (ASAE)? As industry becomes more globally focused, how do you think U.S.-based standards organization will need to evolve? What should the Federal Government do differently in the face of these changes?

A8. In the past, SAE and ASAE have relied upon a combination of three streams of revenue to fund their activities related to standards development. They primarily depend upon sales revenue from the documents and seek voluntary industry contributions in addition to cover their costs. Membership dues subsidize any shortfall from the other two. Their industry constituents are the primary source of all three

streams. Over the last decade, as market forces have consolidated the Off Highway Equipment Industry reducing voluntary contributions and increased demand for a more internationally acceptable standards portfolio has driven document sales revenues to other organizations, these revenue streams no longer consistently cover costs and have put pressure on dues to provide adequate funding. Concurrently the surviving industry participants have realized that going forward we cannot continue to fund redundant committees as they currently exist; often at the industry, national, regional and international levels, with the potential for each to produce its own unique, proprietary or conflicting standards. (Reference the response to question 3.) However, to participate effectively in ISO, we still need services from SAE and ASAE in the form of US Technical Advisory Group (US TAG) administration, plus meeting and secretariat services. Therefore we've been working with both societies to change their financial model in relation to our industry, from one that was based on producing documents for sale to one of providing these services. Since the service expectations are easily quantifiable and the cost is predictable, the new model becomes more like a service contract where the participants are expected to pay their share of the cost to maintain the service. The model appeals to industry participants and the societies in that it simplifies the funding, makes it more predictable and manageable as an ongoing cost of doing business. The model is not a new one as it has been utilized in other sectors successfully for some time; however it does represent a change to our industry and for the societies involved.

A point worth noting is that SAE also supports aerospace and automotive industry sector standardization needs, in addition to Off Highway equipment. Each of these sectors is pursuing an international standards strategy uniquely tailored to its products and market situation. To respond effectively to multiple constituent requirements, SAE reorganized as their historical approach no longer suited any of their constituent industries well. ASAE is in a similar situation but with some smaller industry sectors serving a business markets. This speaks to the broader question on how U.S.-based standards organizations will need to evolve and my earlier response to question 3.

The Federal Government's best response to this is to focus on maintaining a level playing field for U.S.-based products and services in the international trade arena. Specific actions to address this were included in my earlier testimony and reiterated in response to question 4. Additional specificity is contained in the draft of the U.S. Standards Strategy.

Q9. You believe there needs to be better communication between the government and private sector. You also recommend better alignment between the private sector and federal agencies. Could you give us some examples what needs to be done?

A9. The Department of Commerce Standards Initiative started under Secretary Evans, the more recent Manufacturing initiative as well as the ongoing activities within NIST and the ITA are excellent examples where focused dialogue between private sector stakeholders and government in specific sector oriented workshops has improved understanding and resulted in actionable agendas. We are pleased to see that most of the recommendations have been endorsed and are moving forward. These efforts deserve continued support from Congress in the form of appropriate recognition and continued funding. However, to ensure long-term success two things need to happen:

1. Continued dialogue is necessary to ensure private/public sector alignment on priorities as conditions change and new issues emerge. Such programs need to seen as on-going processes, not a one time activities.
2. The information obtained from agency interaction with the private sector needs to be shared more effectively across the several agencies of government so a more common agenda can be pursued when government to government discussions take place relating to international trade issues. The main challenge seems to be that many agencies do not see such coordination activity as an element of their legal mandate. Congress needs to more clearly provide incentives for such communication and coordination.

This is the rationale for why; in previous testimony we expressed a desire for more engagement from policy level executives either by creating a new policy level mechanism or by creating incentives for greater executive engagement in existing mechanisms.

Q10. You hit on a key point of the U.S. Standards Strategy—implementation. Aside from Congress endorsing the Strategy, what is required for the Strategy to be undertaken and executed efficiently?

A10. The U.S. Standards Strategy addresses the broadest cross-section of the U.S. economy because every sector utilizes standards in one form or another and activity, relative to standards and standardization, is going on every day. The objective of the Strategy is to channel that activity more productively.

Due to the decentralized nature of the U.S. Standards System, implementation responsibility remains largely within the private sector. If the strategic initiatives identified are judged by private sector elements to improve competitiveness by addressing identified problems they will likely be resourced to a level commensurate with the perceived benefit. We anticipate, based on the response to the current version of the U.S. Strategy, the updated version, based on more input from an even larger cross-section of the U.S. standards community, will result in even better response in pursuing implementation.

Government however, plays a unique and important role and what it does or does not do to support and implement the elements of the strategy relevant to their role in the system will have significant impact on the private sector. For example, as indicated in oral testimony, John Deere utilizes its resources to try to resolve problems experienced in commerce by direct interaction as a first step. We only attempt to enlist government support when our efforts prove insufficient. Some of the problems we have related in hearing testimony have reached that point. Likewise, many of the issues addressed in the strategy, especially related to international trade, are not things the private sector can resolve without government understanding of the sector specific issues and direct government to government interaction on their behalf. The caveat is in understanding sector specifics because what may be a solution in one sector may be problematic in another. If this is not well understood and that understanding reflected in the government to government dialogue, the intervention might solve the problem in one sector and wreak havoc in several others.

Whether or not Congress chooses to publicly endorse the strategy, if the specific recommendations it contains, many of which were also proposed in testimony at the hearing, are not funded and implemented there will be negative consequences on the competitiveness of U.S.-based industry and ultimately on the whole U.S. economy.

ANSWERS TO POST-HEARING QUESTIONS

Responses by Donald R. Deutsch, Vice President, Standards Strategy and Architecture, Oracle Corporation

Questions submitted by the House Science Committee Majority

Q1. Are foreign governments using standards in a way that is inhibiting innovation, competition, respect for intellectual property, and free trade in products where the U.S. is competitive, and if so, how?

A1. Yes, industry recognizes from first hand experience that standards are not only the domain of the technical and business communities. Policy-makers in the U.S. and abroad are increasingly interested in and actively influencing a range of standards and technical regulatory issues. Governmental interest and activity plays a critical role in today's global economy and influences the competitiveness of the ICT industry, including innovation, competition, respect for intellectual property, and market access.

Q2. Are foreign governments using standards policy as a mechanism to protect their domestic industries at the expense of external competition, including competition from U.S. companies?

A2. Yes, it is our experience that some governments do use and promote national or regional standards as a mechanism to achieve their industrial policy objectives. Perhaps one of the best illustrations of this dynamic is the recent experience that our industry had when the Chinese Government proposed the mandatory adoption of a Chinese-developed Wireless Local Area Network (WLAN) standard, best known by its acronym, "WAPI." This example illustrates the concerns that many industrial sectors, particularly the U.S. high technology sector, are currently facing in China. The damaging precedent that could have been set with WAPI, in which a government—a signatory to the WTO agreement—mandates a technology and forces domestic production of that technology, would have had significant, negative implications for technological development and global economic growth. We believe this example highlights many challenges the industry is facing, not only in China, but also around the globe.

Q3. If the answer to any of these questions is yes, what, if anything, should the U.S. Government be doing to respond?

A3. When asked what should be the role of the Federal Government in standardization, we are always very careful. We believe there is indeed a role, including in response to the actions of other governments. It is a limited and clearly defined role that is responsive to industry needs and performed in partnership with industry. It is an increasingly important role. Specifically, we look to the U.S. Government to perform two functions related to standardization—to promote the creation and use of voluntary, market-driven standards and to stimulate openness in trade and markets by helping to defend against the use of standards as barriers to innovation and market access.

More specifically, we can point to three specific initiatives that can help the U.S. Government to play that role—two that exist to a degree and one that does not exist as yet.

First, in 2002, ITI recommended that the Commerce Department create a high-level standards and technical regulatory policy function to work with industry to identify and address both immediate and more long-term commercial policy issues in countries and regions around the world. The Commerce Department has taken steps to implement this recommendation. We believe that it can take additional steps to strengthen the function, including with additional staff and resources, in order to ensure the most effective standards, technical regulatory, and market access activity across all its agencies.

Second, in 2002 ITI also recommended that the Commerce Department strengthen the existing Standards Attaché Program. In particular, we sought a program expansion to include attachés for China, the rest of Asia, and Geneva to supplement existing attachés in Brussels (to deal with European standards issues) and in Brazil. Because of the strategic utility of this program, we also recommended that the Commerce Department take necessary steps to ensure that it is both managed and located within the Department to retain an exclusive focus on standards and technical regulatory issues around the world. Moving forward, we would like to position the program for ongoing effectiveness, and we recommend that the Department support a formal assessment of the Attaché Program's results, its training program, location

within the department, and budgetary needs. ITI is committed to working with the Commerce Department to continue making progress on these recommendations.

Finally, we believe there is another potential activity for the USG and the Commerce Department that we believe is critically important moving forward and one that should be given serious consideration. We think that the Commerce Department can work with industry to continue strengthening and examining the pilot U.S.–EUICT Standards Dialogue. Additionally, we see today even more clearly than in 2002 a critical opportunity to support industry's standardization policy and market access objectives around the world by working with industry to develop a standards and market access research and analysis program to better understand the key issues discussed at the hearing. There would be a real policy and commercial use for some analysis of key policy issues (e.g., defining what is the global economic impact of standards, developing a comparison of government support and promotion of standards, forecasting global standards participation trends, etc.). The Commerce Department has existing staff expertise that could be valuable in designing and implementing this research and analysis program.

Questions submitted by Representative David Wu

Q1. The U.S. Standards Strategy lays out a series of ambitious recommendations. Aside from Congress endorsing the Strategy, will there be a follow-up document laying out how these recommendations should be implemented? What resources will be required to implement the Strategy and what does the Federal Government need to do?

A1. ITI is a member of ANSI as are several of its member companies. We have not yet had an opportunity to review, discuss and conclude on a position regarding the current public draft of the U.S. Standards Strategy. We will be including the U.S. Standards Strategy on the agenda of all of our relevant committees in the near future so that we can arrive at a consensus position regarding the document as well as on a possible congressional endorsement.

Q2. What do you think are the three most important things the Federal Government needs to do in the standards and trade arena? What role do you think NIST should play within the Federal Government and should NIST be doing anything differently?

A2. When asked what should be the role of the Federal Government in standardization, we are always very careful. We believe there is indeed a role. It is a limited and clearly defined role that is responsive to industry needs and performed in partnership with industry. It is an increasingly important role. Specifically, we look to the U.S. Government to perform two functions related to standardization—to promote the creation and use of voluntary, market-driven standards and to stimulate openness in trade and markets by helping to defend against the use of standards as barriers to innovation and market access.

A critically important way that the Federal Government can promote the creation and use of voluntary standards is to be actively and appropriately engaged in the standards development process. The Federal Government should be engaged as both a consumer of voluntary standards and as an important technical resource. This role is identified in the *National Technology Transfer and Advancement Act* and NIST keeps track of how the Federal Government is participating in the voluntary standards process.

In the standards and trade arena, we can point to three specific initiatives that can help the U.S. Government to play a positive role—two that exist to a degree and one that does not exist as yet.

First, in 2002, ITI recommended that the Commerce Department create a high-level standards and technical regulatory policy function to work with industry to identify and address both immediate and more long-term commercial policy issues in countries and regions around the world. The Commerce Department has taken steps to implement this recommendation. We believe that it can take additional steps to strengthen the function, including with additional staff and resources, in order to ensure the most effective standards, technical regulatory, and market access activity across all its agencies.

Second, in 2002 ITI also recommended that the Commerce Department strengthen the existing Standards Attaché Program. In particular, we sought a program expansion to include attachés for China, the rest of Asia, and Geneva to supplement existing attachés in Brussels (to deal with European standards issues) and in Brazil. Because of the strategic utility of this program, we also recommended that the Commerce Department take necessary steps to ensure that it is both managed and lo-

cated within the Department to retain an exclusive focus on standards and technical regulatory issues around the world. Moving forward, we would like to position the program for ongoing effectiveness, and we recommend that the Department support a formal assessment of the Attaché Program's results, its training program, location within the department, and budgetary needs. ITI is committed to working with the Commerce Department to continue making progress on these recommendations.

Finally, we believe there is another potential activity for the USG and the Commerce Department that we believe is critically important moving forward and one that should be given serious consideration. We think that the Commerce Department can work with industry to continue strengthening and examining the pilot U.S.–EUICT Standards Dialogue. Additionally, we see today even more clearly than in 2002 a critical opportunity to support industry's standardization policy and market access objectives around the world by working with industry to develop a standards and market access research and analysis program to better understand the key issues discussed at the hearing. There would be a real policy and commercial use for some analysis of key policy issues (e.g., defining what is the global economic impact of standards, developing a comparison of government support and promotion of standards, forecasting global standards participation trends, etc.). The Commerce Department has existing staff expertise that could be valuable in designing and implementing this research and analysis program.

Q3. We are facing an increasingly global marketplace, how do you see U.S.-based standards organizations evolving over the next five to ten years?

A3. Our industry is a truly global one. For our industry, the focus is not on how domestic standards are developed "in the U.S.;" but rather on creating global technical standards that support the growth of the worldwide ICT market. Because our industry designs and builds single products for a global market, we actually develop international, globally relevant standards in different venues and organizations around the world—not simply American National standards in a U.S. standardization infrastructure. We need that flexibility, because the ICT sector depends on standards today more than ever. The rapid pace of change in our sector, with product cycles measured in months, not years, requires companies and their suppliers constantly to modify, improve, and re-develop their technologies, products, and services in order to satisfy worldwide consumer demands. Standards and their development process must stay relevant and keep pace with this fast changing, global marketplace. We expect this global focus on standards development to remain a reality for our sector into the future.

Q4. Clearly, the commitment to technical assistance by the EU is unmatched by the U.S. in its coordination and magnitude. Is it fair to say that the EU and European industries believe that they can create a competitive advantage in world markets by strongly influencing the content of international standards? Will the mass marketing by the EU of selected standards create a preference for European products rather than U.S. products? If so, what should the U.S. be doing and why have we waited so long to take any action?

A4. Regardless of the strategies and industrial policies of other governments, our industry strongly believes in the value to the international marketplace of global, market-led, voluntary standards that support innovation and inter-operability. We encourage the U.S. to redouble advocacy efforts to promote this approach to standardization. The U.S. Government should directly engage with other governments about how internationally recognized, market-led technology and standards can grow economies and benefit all parties.

From our various experiences with standards policy issues in markets around the world, we have learned that our industry needs to engage in an ongoing basis at the policy level directly with our government and other governments, particularly in emerging markets, about how technology and standards can help grow their economies and why it is in their interest to adopt and deploy internationally-recognized, voluntary, market-driven standards. We need to redouble our already considerable efforts promoting processes that support such standards since they address user needs and promote innovation and inter-operability. We need to encourage market access so that consumers, industry, and economies around the world can benefit from innovative technological advancements.

Q5. Do China's laws and regulations concerning the recognition and use of "international standards" comply with their commitments under the WTO? If not, is this discrepancy a problem for U.S. industry and has the U.S. Government taken any action to respond to industry concerns?

A5. The Chinese and U.S. ICT sectors are large, important, and growing parts of the global economy. China's approach to and use of standards is a complex set of issues. Our sector has worked very closely with the U.S. Government on a range of China standards and technical regulatory issues that can be integral parts of broader industrial policies and directly impact trade flows and market access.

The WAPI example discussed at length at the hearing illustrates the concerns that many industrial sectors, particularly the U.S. high-technology sector, are currently facing in China. The damaging precedent that could have been set with WAPI, in which a government—a signatory to the WTO agreement—mandates a technology and forces domestic production of that technology, would have had significant, negative implications for technological development and global economic growth.

With this example, ITI worked closely with our government to make sure this issue was on the agenda of both the Administration and the Congress. After considerable dialogue culminating in the April 2004 meeting of the Joint Commission on Commerce and Trade, the Chinese Government agreed to indefinitely suspend implementation of this mandatory standard, revise the standard based on comments from foreign and domestic firms, and participate in international standards bodies.

Q6. The National Technology Transfer Act promotes the use of private standards by U.S. Government agencies. How successfully has this Act been implemented and what improvement could be made to the Act?

A6. We support the promotion and use of voluntary, market driven standards by the U.S. Government as described in the NTTAA. We encourage even greater participation, where appropriate and as a standards consumer and technical resource, in the standardization process by the U.S. Government.

Q7. Dr. Deutsch, when the Chinese "WAPI" standard first became an issue for U.S. industry, how prompt was the U.S. Government in responding to industry's concerns? What could the government have done better?

A7. ITI worked closely with several U.S. Government agencies on this issue—which transpired relatively rapidly and which demanded significant private and public sector attention and action.

The Chinese Government issued the compulsory "WAPI" security standards initially in May of 2003. After considerable dialogue over the course of not even one full year, at the April 2004 meeting of the Joint Commission on Commerce and Trade, the Chinese Government agreed to indefinitely suspend implementation of this mandatory standard, revise the standard based on comments from foreign and domestic firms, and participate in international standards bodies.

We believe that the private and public efforts on this issue were both appropriately collaborative and effective.

Q8. Dr. Deutsch, you recommend that the Commerce Department's Standards Attaché program needs to be strengthened. What should be the duties of a Standards Attaché and what sort of skill set are needed by the Attachés? How many of these Attachés do we need and where should they be located?

A8. ITI believes that the USG should strengthen the current Standards Attaché program at the Department of Commerce by expanding the program to include attachés for China, the rest of Asia, and Geneva to supplement existing attachés in Brussels (to deal with European standards issues) and in Brazil. Because of the strategic utility of this program, we also recommend that the Commerce Department take necessary steps to ensure that it is both managed and located within the Department to retain an exclusive focus on standards and technical regulatory issues around the world. We believe that the Commerce Department should take necessary steps to make certain that the program's personnel selection, performance criteria, incentives, career path definition, and training all reinforce the goal of providing effective standards attachés for industry. Finally, ITI would like the USG to position this program for ongoing effectiveness, and so we also recommend that the Department support a formal assessment of the Attaché program's results, its training program, location within the department, and budgetary needs.

ANSWERS TO POST-HEARING QUESTIONS

Responses by Joe S. Bhatia, Vice President and Chief Operating Officer, Underwriters Laboratory

Questions submitted by the House Science Committee Majority

Q1. Are foreign governments using standards in a way that is inhibiting innovation, competition, respect for intellectual property, and free trade in products where the U.S. is competitive, and if so, how?

A1. Underwriters Laboratories Inc. is a standards development and product testing and certification organization, and as such cannot speak to whether foreign governments' standards inhibit innovation in products where the U.S. is competitive. This information perhaps can be best supplied by industry. However, there are cases in which foreign governments' testing requirements duplicate testing already conducted under internationally recognized schemes. Having to duplicate the tests increases costs for manufacturers and thereby affects their competitiveness. China's in-country testing for electromagnetic compatibility (EMC) is one such example. (See page 8 of written testimony for details.)

Q2. Are foreign governments using standards policy as a mechanism to protect their domestic industries at the expense of external competition, including competition from U.S. companies?

A2. Underwriters Laboratories Inc., due to the nature of its work, cannot corroborate the use of standards policy as a mechanism to protect domestic industries. However, the often top-down approach to standards development in many countries means that processes are sometimes not open and transparent, and not all interested stakeholder groups can participate. Resulting standards can thus sometimes have unintended or unanticipated consequences, which may affect the competitiveness of U.S. products.

Q3. If the answer to any of these questions is yes, what, if anything, should the U.S. Government be doing to respond?

A3. The U.S. Government should aggressively negotiate market access for U.S. testing and certification providers in all free trade agreements (FTAs) and future rounds of the World Trade Organization (WTO). The ability to offer testing and certification services to local requirements means that companies like Underwriters Laboratories Inc. can bundle testing for customers and help reduce manufacturers' global compliance costs.

The U.S. Government should better fund standards and certification education and outreach. For instance, all current and future U.S.-negotiated FTAs should incorporate technical assistance (and corresponding funding) for standards and certification. The National Institute of Standards & Technology (NIST) Standards in Trade (SIT) workshops should be better funded to increase the number of workshops held annually.

Consideration should be given to funding additional standards attaché positions within the U.S. Department of Commerce (DOC) in select countries or regions, including Saudi Arabia and Korea. The standards attachés currently in place in Mexico and Brussels have proven pivotal in helping to identify potentially troublesome trends and in helping U.S. companies work through related regulatory issues.

Questions submitted by Representative David Wu

Q1. The U.S. Standards Strategy lays out a series of ambitious recommendations. Aside from Congress endorsing the Strategy, will there be a follow-up document laying out how these recommendations should be implemented? What resources will be required to implement the Strategy and what does the Federal Government need to do?

A1. The proposed U.S. Standards Strategy (USSS) encourages individual sectors and organizations to develop their own specific implementation plans and tactics as well as their own strategic documents. This approach helps amplify and supplement specific elements of the USSS while at the same time respecting individual organizations' own needs. The work recently completed by the Aerospace Sector, outlining its strategy provides an excellent example. ANSI will help track the specific strategies and tactical initiatives as they are reported and issue an annual status report. Most, if not all of the recommendations presented and discussed in the hearing are included in the proposed strategy document.

The resources required to implement the USSS must come from a combination of private and public constituencies. Some of the recommended initiatives are new but most are extensions and expansions of efforts already underway that need to be more robust and better funded.

Consideration of a Congressional earmark of $2 million for ANSI implementation efforts and international standards outreach would be appropriate. In 2001, a grant of $2 million was requested through NIST. The result was a $500,000 grant for three years (2001–2003). The grant lapsed in 2004 in light of NIST budget constraints.

Q2. What do you think are the three most important things the Federal Government needs to do in the standards and trade arena? What role do you think NIST should play within the Federal Government and should NIST be doing anything differently?

A2. The three most important things the U.S. Government should to in the standards and trade arena include:

1. Aggressively negotiating market access for U.S.-domiciled testing and certification providers in free trade agreements (FTAs) and in current and future rounds of the World Trade Organization (WTO). The corollary to this is ensuring trade partners' compliance with related obligations. (See written testimony for additional details.)
2. Enhanced funding for the U.S. Department of Commerce (DOC) (a) International Trade Administration Standards Liaison Office (b) standards attaches and (c) NIST Standards in Trade (SIT) workshops. (See written testimony for additional details.)
3. Technical assistance/capacity building components (including funding) in FTAs, Trade & Investment Framework Agreements (TIFAs), and other bilateral and regional trade agreements.

With respect to standards in trade, NIST plays an important role as the U.S. WTO enquiry point for Technical Barriers to Trade (TBT). It is a rich resource for U.S. companies seeking timely information regarding standards and regulatory developments.

NIST also plays an important role in the commercialization of new technologies developed in the United States; this is through the development of related measurement standards. Fuel cells, nanotechnology and biometrics are areas in which NIST's measurement standards work needs to be sustained, and perhaps enhanced.

Q3. We are facing an increasingly global marketplace, how do you see U.S.-based standards organizations evolving over the next five to ten years?

A3. Paths will vary for the evolution of U.S.-based standards organizations, in large part because trends and issues vary by sector. But in general, standards development processes increasingly adapt to reflect time-to-market sensitivities of technology-driven sectors; technology itself is being used to improve the standards development process.

One thing that should be enhanced and not changed is acceptance internationally of standards developed by U.S.-domiciled standards development organizations (SDOs) in accordance with internationally accepted principles outlined in the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Annex 4. The key tenants of standards development—openness, balance, consensus, and due process—similarly will not change.

Underwriters Laboratories Inc. (UL)'s own approach to standards development has evolved in recent years. It has adopted a more aggressive policy toward standards harmonization within the IEC and ISO. U.S. manufacturers are realizing that they have an increasingly global marketplace for their innovative and creative products. UL's harmonization priorities rely largely on what industry perceives as priority areas for harmonization.

When developing new standards or harmonizing UL's standards at the regional or international level, however, *it is paramount that essential U.S. safety principles are protected and not compromised,* even if this means developing National Differences, a practice that is not unique to the United States. UL considers the merit(s) of harmonizing existing standards, whether by acceptance of IEC and ISO requirements or by advocating a UL standard or its essential requirements as the basis of the harmonized standard. UL will also develop "globally" relevant standards in areas where standards do not exist.

U.S. standards development organizations (SDOs) should also take the lead in submitting standards development proposals and requesting recognition of U.S. doc-

uments at the international level in such emerging national priority areas as homeland security and nanotechnology. Radio Frequency Identification (RFID) is another such area where the impact of standards on trade is potentially staggering.

Q4. Clearly, the commitment to technical assistance by the EU is unmatched by the U.S. in its coordination and magnitude. Is it fair to say that the EU and European industries believe that they can create a competitive advantage in world markets by strongly influencing the content of international standards? Will the mass marketing by the EU of selected standards create a preference for European products rather than U.S. products? If so, what should the U.S. be doing and why have we waited so long to take any action?

A4. Yes, the European Union aggressively tries to influence the content of international standards, which can provide an advantage for related EU products in the region and globally. The promotion of EU standards, especially if codified in IEC and ISO standards for which U.S. standards are not harmonized, means that U.S. manufacturers must adapt products typically produced according to U.S. standards if they want to compete in markets whose conformance systems are based on EU (and EU-based IEC and ISO) standards.

The U.S. Government should incorporate technical assistance components—that specifically address standards, technical regulations, and conformity assessment systems—in all FTAs, TIFAs, and other bilateral and regional trade agreements with U.S. trade partners.

Q5. Do China's laws and regulations concerning the recognition and use of "international standards" comply with their commitments under the WTO? If not, is this discrepancy a problem for U.S. industry and has the U.S. Government taken any action to respond to industry concerns?

A5. UL has not undertaken an evaluation of China's laws and regulations concerning standards and whether they comply with WTO obligations. UL understands, however, that China has publicly expressed a preference for IEC and ISO standards (in general, but not across all sectors) and that it does not share the U.S. interpretation of WTO language defining "international standards."

With respect to testing and certification, China is obligated under its WTO accession commitments to accredit or recognize testing and certification organizations not domiciled in China for the purpose of administering its CCC mark. To date, no timeline has been outlined to phase in these commitments, and existing PRC certification and accreditation regulations preclude non-Chinese entities from providing CCC mark testing and certification services. UL thus would like to see increased dialogue under both the WTO accession Transitional Review Mechanism and the Joint Commission on Commerce and Trade to develop a timeline for implementation of national treatment commitments referenced in Paragraphs 194 and 195 of China's Working Party Report.

When new PRC regulations took effect in early 2004, the Office of the U.S. Trade Representative (USTR) and DOC both worked with UL to clarify their scope. In working bilateral meetings, it is UL's understanding that the issue has been raised, with no hard and fast commitments from the Chinese.

Q6. The National Technology Transfer Act promotes the use of private standards by U.S. Government agencies. How successfully has this Act been implemented and what improvement could be made to the Act?

A6. The fundamental intent of the Act—to promote the use of voluntary consensus standards, wherever appropriate—is on mark and should not be altered. Implementation varies by agency, but it is clear from the practice of the Department of Defense (DOD) and the Consumer Product Safety Commission (CPSC) that the NTTAA has been effective in increasing U.S. Government reliance on voluntary consensus standards, whenever possible, for both procurement and regulatory purposes.

With respect to improving implementation, NIST already is actively engaged with private sector stakeholders to evaluate options for enhancing implementation. One of the thoughts to emerge from that dialogue is improving the role of the Standards Executive within each federal agency. This includes adequate funding for their participation as subject matter experts in related private sector standards development processes, as well as addressing some of the organizational structure issues that can frustrate their responsibilities.

Q7. We are having conformity assessment problems with the European Union, Mexico and China. Why is this a problem for U.S. industry? How effective has the Federal Government in solving these problems for U.S. industry? What should we be doing differently?

A7. The "conformity assessment problems" from UL's perspective relate to accreditation of testing and certification organizations not domiciled in the country in question. "U.S. industry" consists of the product manufacturers for which organizations like UL conduct testing and certification. If current practices in Europe, Mexico, and China (or other countries with local product certification schemes, for that matter) delay or preclude the participation of testing and certification organizations domiciled in other countries, then the "problem for U.S. industry" is that they must use multiple testing and certification organizations to obtain the multiple certification marks needed to sell their products globally. Allowing local accreditation of U.S.-domiciled testing and certification organizations means that manufacturers can reduce the number of certification organizations used globally and that organizations like UL can bundle testing and help manufacturers reduce their overall global compliance costs.

DOC and USTR have been very helpful to date in resolving issues in Mexico. UL continues to work with DOC and USTR on issues in Europe and China. As noted in responses to questions (2) and (5) above, UL would like to see the U.S. Government take a more aggressive negotiating stance on market access for testing and certification organizations within the services schedule of FTAs and future rounds of the WTO.

Q8. You recommend that U.S. stakeholders should work to ensure that trade partners comply with WTO principles of openness, transparency, and advance notice. I couldn't agree more, we need to ensure that our trading partners meet their obligations. Could you provide us with some specifics of what needs to be done by both industry and government to implement your recommendation?

A8. Industry needs to improve cooperation with foreign counterparts in international forums to support and encourage compliance with WTO principles. Industry should also use such multinational events as OECD-sponsored conferences as a platform for improved compliance. Industry should also promptly bring non-compliance issues to the attention of appropriate authorities in the U.S. Government.

UL recommends that the U.S. Government highlight and emphasize WTO Technical Barriers to Trade Agreement compliance principles in all negotiated agreements. Emphasis should also be placed on education and technical support through such organizations as the U.S. Agency for International Development (USAID) that would concentrate on best practices for meeting elements of trading partners' commitments. Related compliance issues should be elevated to the highest levels of a counterpart's government to facilitate prompt attention and resolution of the issues brought forward by industry and others.

Q9. Mr. Bhatia, you recommend increasing funding for existing government standards programs. Which programs require increased funding and how much more funding do they need? Also, what additional activities need to be undertaken with this additional funding?

A9.

- *NIST Standards in Trade (SIT) Workshops:* Recommend at least doubling the funding (and staff, as appropriate) to accommodate at least 3–4 additional programs per year. UL would like to see sufficient funding that permits 3–4 workshops each year focused on new sectors/regions and an equal number of workshops that build on previous programs. The follow-on programs help sustain momentum built in the initial sessions.
- *DOC International Trade Administration (ITA) Standards Liaison:* UL recommends authorizing funds that would enable the ITA Standards Liaison office to develop and implement a comprehensive training program for all ITA-affiliated staff, including those in the Commercial Service. The pilot programs have proven successful, but they have focused on foundational concepts, which by themselves are insufficient. The funding should facilitate continuation of the core 101-level programs, while enabling the development of programs targeting specific sectors and/or specific regions and countries. Funding should accommodate both classroom-style and web-based training sessions. Adequate funding also means covering travel costs for U.S. Embassy and U.S. Consulate-based staff to participate in U.S.-based or region-based classroom-style sessions.
- Standards Attaches: UL recommends that additional funding be allocated to DOC for additional standards attache positions in strategic U.S. embassies. Re-instating the attaché in Saudi Arabia and adding a new attaché in Korea would be of particular interest to UL.

- ANSI: Funding should be provided as outlined in the response to question (1) above.

ANSWERS TO POST-HEARING QUESTIONS

Responses by David Karmol, Vice President, Public Policy and Government Affairs, American National Standards Institute

Questions submitted by the House Science Committee Majority

Q1. Are foreign governments using standards in a way that is inhibiting innovation, competition, respect for intellectual property, and free trade in products where the U.S. is competitive, and if so, how?

A1. As reflected in my testimony, the actions of some governments could be seen to be anti-competitive. Since most countries are WTO signatories, however, standards actions are almost always cast as necessary for national security or to reflect regional or national needs, which are recognized as permissible under the WTO TBT agreement. It is difficult for ANSI to describe specific instances where U.S. products have been specifically disadvantaged, however, in those few cases that have been notified to us, it was because Europe generally develops design specific standards whereas the United States develops performance based standards. Specific designs can become technical barriers to trade.

Q2. Are foreign governments using standards policy as a mechanism to protect their domestic industries at the expense of external competition, including competition from U.S. companies?

A2. As reflected in my testimony, ANSI does not believe that other countries are specifically using standards policy to shelter domestic industries However, these countries may well be attempting to advantage their domestic producers in foreign markets through the aggressive promotion of their domestic or regional standards, in the same way the U.S. attempts to assist its industry by promoting U.S. developed standards, through outreach to developing and less-developed nations.

Q3. If the answer to any of these questions is yes, what, if anything, should the U.S. Government be doing to respond?

A3. As I indicated in my written and oral testimony, ANSI believes that three government actions would be useful in addressing the standards challenges we currently face:

1. Direct support for the U.S. standards system, including support for ANSI participation in international standards forums, support for outreach and standards distribution efforts, and increased education and training of foreign service and foreign and commercial service officers in standards.
2. Increased coordination between the several U.S. Government agencies engaged in standards activities, and their private sector counterparts and partners.
3. Congressional endorsement of the U.S. Standards Strategy, a document reflecting input from the private and governmental sectors, which lays out responsible and practical strategies to address current standards challenges that can be implements jointly by the private sector and the government, working in close harmony.

Questions submitted by Representative David Wu

Q1. The U.S. Standards Strategy lays out a series of ambitious recommendations. Aside from Congress endorsing the Strategy, will there be a follow-up document laying out how these recommendations should be implemented? What resources will be required to implement the Strategy and what does the Federal Government need to do?

A1. With respect to the initial National Standards Strategy, issued in 2000, ANSI maintained a web-based tracking document to track specific actions taken in furtherance of the strategy, both by ANSI and ANSI staff, and by government and private sector standards participants. We anticipate using a similar system to monitor actions taken pursuant to the U.S. Standards Strategy.

We do not believe significant new resources are needed to implement the U.S. Standards Strategy, as most of the principles of the strategy reflect improved or coordinated efforts where current efforts are ongoing. However, it would be helpful if the Federal Government would take on some additional responsibility to support outreach on standards, in terms of making selected standards available in U.S. Embassies, supporting additional direct outreach programs, and encouraging better co-

operation between agencies currently engaged in promoting use of U.S. standards. We think that for approximately $10 million, a significant desktop-downloadable, U.S. standards collection could be placed in every embassy.

Q2. What do you think are the three most important things the Federal Government needs to do in the standards and trade arena? What role do you think NIST should play within the Federal Government and should NIST be doing anything differently?

A2. As I indicated in my written and oral testimony, ANSI believes that three government actions would be useful in addressing the standards challenges we currently face:

1. Direct support for the U.S. standards system, including support for ANSI participation in international standards forums, support for outreach and standards distribution efforts, and increased education and training of foreign service and foreign and commercial service officers in standards.
2. Increased coordination between the several U.S. Government agencies engaged in standards activities, and their private sector counterparts and partners.
3. Congressional endorsement of the U.S. Standards Strategy, a document reflecting input from the private and governmental sectors, which lays out responsible and practical strategies to address current standards challenges that can be implements jointly by the private sector and the government, working in close harmony.

Q3. We are facing an increasingly global marketplace, how do you see U.S.-based standards organizations evolving over the next five to ten years?

A3. U.S.-based standards developers, following the U.S. Standards Strategy, will continue to develop market relevant and globally relevant standards in future years, in accordance with requirements of the WTO Technical Barriers to Trade Agreement. They will continue to evolve to meet market requirements, as they have in the past.

Q4. Clearly, the commitment to technical assistance by the EU is unmatched by the U.S. in its coordination and magnitude. Is it fair to say that the EU and European industries believe that they can create a competitive advantage in world markets by strongly influencing the content of international standards? Will the mass marketing by the EU of selected standards create a preference for European products rather than U.S. products? If so, what should the U.S. be doing and why have we waited so long to take any action?

A4. Standards can be used to facilitate trade or to create barriers. European companies and governments, like U.S. companies and our government, would like to see standards adopted that favor their respective businesses and products. The Europeans have become more aggressive in recent years, but it is not correct that the U.S. has "waited too long to respond." It is more accurate to say that the Europeans have succeeded in catching up, and are now playing the standards game aggressively. The U.S. traditionally had been the world leader in standards, influencing most other nations. Now there are several centers of influence, including both Europe and China. However, the European Commission is clearly subsidizing the voluntary standards development system in Europe, and promotion of the European Standards around the world. U.S. Government funding assistance of the U.S. standardization system would help to counterbalance the EC funding program.

Q5. Do China's laws and regulations concerning the recognition and use of "international standards" comply with their commitments under the WTO? If not, is this discrepancy a problem for U.S. industry and has the U.S. Government taken any action to respond to industry concerns?

A5. China appears to be attempting to comply with the WTO/TBT agreement, but at the same time is at times applying a somewhat stretched interpretation of several WTO/TBT provisions, in order to help domestic industry. We believe the way to address this issue is through continuous engagement of the Chinese, and a uniform and consistent approach when dealing with them. There must be, and is, good coordination between the U.S. Government and the private sector participants in the standards community.

Q6. The National Technology Transfer Act promotes the use of private standards by U.S. Government agencies. How successfully has this Act been implemented and what improvement could be made to the Act?

A6. We believe that the NTTAA has been a great success, and has demonstrably and dramatically increased the number of standards adopted by and used by Federal Government agencies. The implementation has been good, and appears to be increasingly more effective as time passes and participants and agencies gain more experience and understanding of voluntary standards. We think that at some point language might be added to require that federal agencies also use Conformity Assessment services (Certification and Accreditation of Certifiers) from the private sector, in the same way that the law now requires the use of voluntary consensus standards from the private sector. Many agencies are already using such services, but the law would encourage further use of this tool. This is a natural extension of the law, and would complement the use of private sector standards.

Q7. You point out that the U.S. standards community does not have the resources to match the investment of the EU. You recommend that the Federal Government provide funding for research, education, and technical support and for representation at international standards meetings. How much funding is required for this agenda and, among the numerous standards development organizations, who should receive federal funding?

A7. As stated above, we believe an initial amount of $10 million would fund the set-up and implementation of an on-line standards resource in the U.S. embassies around the world, and perhaps five million dollars per year beyond that for maintenance costs. This could be paid to ANSI, since a standards collection is available from ANSI, but a large portion of the funding would be passed through to the standards developers, both ANSI accredited and not, who own the various collections of standards hosted on ANSI's website. This way the funding would go to those groups whose standards were most sought after and used, rather than a more arbitrary funding formula.

Q8. Over the past 10 years what has been the trend of participation in U.S. standards setting activities? If decreasing, why do you think there has been less participation and what does this mean for U.S.-based standards organizations in the long-term?

A8. Unfortunately the trend appears to be one of decreasing participation. We believe this is a result of number of factors, including the downsizing and merging of corporations over the last ten to fifteen years, the retirement of experienced standards participants, without such participants being replaced, the lack of understanding of the strategic importance of standards in company executive suites, and the general move to cut cost where the activity cannot be shown to contribute directly to the bottom line. We believe that this trend must be reversed, or U.S.-based standards developers will have increasing difficulty producing the high quality standards that the U.S. is known to produce.

Q9. As we are trying to engage the Chinese in international standards committees, I understand that they have had trouble obtaining entry visas for meetings in the United States. What is the problem?

A9. Yes, we are fully engaging the Chinese in international standards activities and forums. There have been some recent problems with visas, which apparently arise from a number of causes and are being addressed aggressively by ANSI, working cooperatively with our government partners in the Departments of State and Commerce. Some of the problems can be traced to the fact that applications were not made with sufficient lead time by the Chinese delegates involved. Other problems apparently were a result of slow processing of the applications by the Chinese authorities involved in processing the applications internally. Still other problems apparently arose from delays in the processing of applications by the relevant U.S. agencies and offices. All of these problems are being addressed as appropriate. The Department of State has been responsive in assisting ANSI address the problems, where they had the ability to assist.

Appendix 2:

Additional Material for the Record

May 14, 2005

The Honorable Vernon J. Ehlers, Chairman
Subcommittee on Environment, Technology and Standards
Committee on Science
U.S. House of Representatives
2320 Rayburn House Office Building
Washington, D.C. 20515

Re: Comments on May 11, 2005 Hearing concerning "China, Europe, and the Use of Standards as Trade Barriers" - How Should the U.S. Respond?

Dear Mr. Chairman:

The Subcommittee's hearing on May 11, 2005 represents a significant step towards assisting Congress to understand the complex world of global technology standards and the potential implications of these standards for the United States. Any economic activity that directly affects 80 percent of current international trade, estimated to be at least $7 trillion, deserves the attention of Congress. The Subcommittee's Charter for the Hearing and the testimony offered on May 11 contain thought provoking concepts that may have profound implications for the economic future of the United States. In response to the hearing and the Subcommittee's invitation for comments from interested parties, The Center for Global Standards Analysis ("Center") offers the comments set forth below to assist the Committee in understanding the complex environment of global standards.[1]

Standards Control Markets

It is generally accepted that "standards control markets." Consider, for example, the following statements: "If you control an industry's standards, you control that industry lock, stock and ledger." [Dr. W. Edwards Deming, *Out of the Crisis*, published by MIT at 302 (1982)]; and "Standardization is also extremely relevant for the individual participants in the economic process, *since whoever makes the standards controls the market*." (German National Standards Strategy, Opening Statement, Wolfgang Clement, Federal Minister of Economy and Labour, October 2004) [emphasis added]. In short, standards control access to today's global markets and global markets of the future. Whoever controls global standards and the process of developing global standards, controls the future.

On May 19, 2005 the Beijing Commission on Science and Technology is hosting a one day conference on standards for the global information and technology industry. A copy of the

[1] The Center is a nonprofit corporation formed in 1999 and located at the Catholic University of America in Washington, DC. The Center's purposes are to create standards education programs and conduct research on the development of global technology standards. The Center's website is: http://engineering.cua.edu/StandardsCenter/center_for_global_standards_anal.htm

conference program is attached to this letter. In relevant part, the program makes the following statements concerning the significance of global standards:

> *At present, the technology standard has become the source of core competitive edge for the industrial development. To some extent, technology standard is a kind of development order and rule. Whoever controls the power of standard making and has its technology as the leading standard, commands the initiative of the market. Technology standard has become an important means of global economic competition, directly influence the competitiveness of an industry, a region or a country. Therefore, as for the Chinese enterprises, possessing the successful standard is a strategic choice to seize the leadership of the future industrial development.* (Introduction to Conference program at 1-2) [emphasis added].

It is clear that China has a good understanding of global technology standards, and the strategic role standards play in the development of national economies. I have been invited to attend the Conference to discuss the significance of global standards. Enclosed is a copy of my presentation. The Center's presentation confirms the statement "standards control markets" and the fact that "standards influence everything we do."[2]

Given the implications associated with development of global standards, it is of great importance that the Subcommittee continues its efforts to assist Congress in fully understanding the complex world of global standards, and the implications that global standards have for competitiveness of the United States economy.

Center's Recommendations

On May 11, 2005 you posed several questions to those testifying before the Committee. It is requested that the Center's recommendations set forth below be included among those considered by the Subcommittee.

Standards Education

Standards education has significant strategic value for all sectors of the United States economy. This fact is recognized by the Draft United States Standards Strategy currently under development: "Standards education [must be] established as a high priority within the United States private, public and academic sectors." (*See* Section 10, draft revisions to United States Standards Strategy at www.ansi.org/usss).

Unfortunately, the significance of global standards is not well understood among leaders in the private, public and academic sectors of the United States. For example, the Center's study of engineering schools at the top 100 universities in the United States indicates standards education is not a top priority at any university, and only one university in the United States even

[2] *See* United Kingdom National Standards Policy, Introduction Statement (2003).

has a standards education program, the School of Engineering at Catholic University.[3] This study was published by the Center in March 2004 and is available on the Center's website.[4]

Compare the standards education situation in the United States to that of South Korea. In 2004, South Korea launched the most ambitious and comprehensive standards education program in the world today. In 2004, South Korea established a standards education program that involved 40 universities and 1000 engineering students. The goal for 2005 is to involve 2000 engineering students. There are indications that other countries in Europe and Asia may soon follow South Korea's leadership in standards education.

In its deliberations, the Subcommittee should consider the significance of standards education and its relationship to the economic future of the United States. For example, which nation is more likely to succeed in the future, a nation that invests in educating its best and brightest students on the significance of global standards and prepares them to negotiate global technology standards of the future, or a nation that adopts a "wait and see" perspective?

The Center notes with interest the introduction of the Manufacturing Technology Competitiveness Act of 2005 (H.R. 250) in January 2005, and Section 7, which creates financial incentives to significantly enhance standards education programs in institutions of higher education. This legislation is a positive step in the right direction, and could prove to be a needed stimulus for the United States academic sector to achieve the standards education goal set forth in the proposed United States Standards Strategy.

Coordination Between the Private and Public Sectors

On May 11, 2005 the Subcommittee and witnesses briefly discussed an attempt by China in 2004 to establish a telecommunications standard that would directly benefit China, and make it difficult for the rest of the world to compete in this market. Only intervention from the highest levels of government in the United States and other nations prevented this standard from being implemented. Although the extraordinary effort was successful, it is not practical to assume such efforts will be successful in the future. Having to involve top levels of government in the United States to resolve serious technology-related trade disputes is not a practical method to resolve the multitude of trade issues that will most certainly occur in the future. What actions would the United States take, for example, if 1,000 technology-related trade issues were to suddenly appear on its global trade agenda, prompted by initiatives from China and other nations?

The Center therefore recommends the creation of an official high level group which has the responsibility to deal with technology-related trade issues of significance. The primary purpose of this group would be to quickly and efficiently assemble all necessary resources from the private and public sectors that could be brought to bear for the successful resolution of a major technology-related trade issue. When necessary, specific actions could be taken by the

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[3] The telecommunications standards course offered at the University of Colorado (Boulder) was recently discontinued by the State of Colorado because of financial considerations. It is not known whether the University of Maryland standards education program is still available.

[4] *See* Center's web link in footnote 1.

group -- provided a strong consensus exists between the private sector and the public sector on actions to be taken.

Membership in this group would be restricted to government executives at the Under Secretary level; the United States Trade Representative; Chairman, Federal Trade Commission; Chairman, International Trade Commission; Chairman, Securities and Exchange Commission; and the Assistant Attorney General for Antitrust. It is recommended that the Undersecretary for Technology, Department of Commerce, chair the group because the focus would be technology-related issues. This group would consult proactively with leaders in the private sector(s) directly affected by a specific technology-related trade action, making full use of existing advisory structures available to the Department of Commerce and the U.S. Trade Representatives' office. In effect, this group would have the ability to provide a quick, effective global response to serious technology-related trade issues when necessary.

To the best of our knowledge, no official forum in the United States currently exists which can act quickly and efficiently to combine all private and public sector resources necessary to resolve a major technology-related trade issue. Given the enormous diversity and decentralization of the United States private sector standards community, unique in the world of global standardization, as well as the complexity of the Federal Government, isn't it time to create an official forum to address serious technology-related trade issues in a quick and efficient manner?

Understanding the World of Global Standardization

The May 11, 2005 Subcommittee hearing is significant is many respects, and perhaps providing Congress with a new and better understanding of this complex area is among the most significant accomplishments. In a new world that is "flat after all," according to Tom Friedman, a brand new global marketplace is being created at a rate of change that is difficult, at best, to comprehend.[5] If the United States intends to remain the world's economic leader, with approximately $11 trillion in annual income, approximately 30 percent of the world's total income, the challenge the United States must effectively address is to deal efficiently and quickly with the "bruising global competition" which is increasingly common to all industries.[6] The report issued by the Department of Commerce in May 2004 reveals a world in which many United States firms are directly affected by an increased intensity in global competition.[7]

It is necessary for the Congress to continue its efforts to understand this complex world. The Center therefore recommends the Subcommittee request the National Institute for Standards and Technology ("NIST") to review, in a comprehensive manner, the relationship between global standards and competitiveness of the United States economy. It is interesting to note, for example, that no report currently exists in either the public or private sector that defines or describes the "value of standards" to the United States economy. NIST should be requested to

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[5] *See*, "*The World is Flat*," by Thomas L. Friedman (2005).
[6] *See*, World Bank Total GDP Data (2003), World Development Indicators Database (April 2005).
[7] *See* "*Standards and Competitiveness, Coordinating for Results* (Removing Standards-related Trade Barriers Through Effective Collaboration" (May 2004).

provide this information in its report so that Congress can make a more informed decision of specific actions to be taken in regard to development of technology-related global standards.

Among the reports to be considered by NIST should be "*Global Standards: Building Blocks for the Future*" published by the Congressional Office of Technology Assessment (March 1992). This report is one of the finest reports ever presented to Congress on the relationship of global standards and international trade. The discussion of global standards and trade issues in this report is as relevant today as when the report was first published. A copy of the report has been provided to the Subcommittee's staff.

Conclusion

The Center strongly endorses the Subcommittee's efforts to review, analyze and more fully understand the implications of global technology standards, and the relationship of global standards to the economic future of the United States.

In his book, "The World is Flat," Tom Friedman offers an African proverb for consideration:[8]

Every morning in Africa, a gazelle wakes up.
It knows it must run faster than the fastest lion or it will be killed.
Every morning a lion wakes up.
It knows it must outrun the slowest gazelle or it will starve to death.
It doesn't matter whether you are a lion or a gazelle.
When the sun comes up, you better start running.

Is the United States prepared to successfully compete in a world filled with "bruising global competition" that requires running an endurance race each and every day, all day long? Are the competitive commitments of the private and public sectors to successfully compete in this world sufficiently strong for the United States to maintain its present position of economic preeminence? Does the United States have any choice?

For more than 200 years, the United States has excelled at global competition in virtually every field. Given the fact that the United States and world economies are driven by technology, and that global standards control access of technology to the marketplace, the United States cannot afford to come in second when competing for global markets. The development of global technology-related standards must be given top priority by leaders in the business, government and academic sectors of the United States. Congress should take whatever steps are necessary to assure this goal is achieved.

Very respectfully yours,

Donald E. Purcell

Donald E. Purcell, Chairman
The Center for Global Standards Analysis

[8] *See* page 114.

International Forum Schedule

on

China Beijing Information Technology Standard

I. Forum Information

(1) Supporting unit: Ministry of Science and Technology of People's Republic of China

(2) Unit in charge: Beijing Municipal Committee of Science and Technology, Beijing Municipal Bureau of Quality and Technical Supervision

(3) Undertaking unit: Beijing Software Industry Productivity Center, Zhongguancun IT Professionals Association

(4) Time: May 19, 2005

(5) Venue: Beijing Kempinski Hotel

(6) Audience:

• Supervisory governmental departments

• Domestic IT professional associations and relevant organizations

• Senior management staff and technical staff in domestic information technology enterprises

• Domestic well-known experts in the field of IT industry

• Multi-national corporations, research and development institutions and their cooperative partners, as well as Beijing Representative Offices, etc

• Scientific research institutions, higher educational institutions

• Media

(7) Scale: 200 people

(8) Content: keynote speech + dialogue discussion

II. Forum Content

(1) Background and Objective

At present, the technology standard has become the source of core competitive edge for the industrial development. To some extent, technology standard is a kind of development order and rule. Whoever controls the power of

standard making and has its technology as the leading standard, commands the initiative of the market. Technology standard has become an important means of global economic competition, directly influence the competitiveness of an industry, a region or a country. Therefore, as for the Chinese enterprises, possessing the successful standard is a strategic choice to seize the leadership of the future industrial development. (emphasis added – not in original)

Currently, there are some new trends in the field of information technology standard, like the market orientation of standard drive, the internationalization of standard cooperation, the universality of standard content, as well as the acknowledgement of de facto standard. China is increasingly becoming the focus of the global information technical competition, and facing more and more challenges from the information technology standard, which should be dealt with by the government and the industry jointly. On one hand, the domestic enterprises should grip the developing direction of the future market, strengthen the research and developing capacity of themselves, develop independent technology standards, and become the maker, participant and implementer of the information technology standards. On the other hand, the domestic enterprises should try their best to follow the international standards in the field of information technology and carry out international cooperation actively.

Being one of the national pilot cities of technology standard, Beijing should actively explore the innovative mechanism of technology standard making through carrying out technology standard experimental works, bring the technology standard research resources and management resources into play, promote the making, implementation and application of technology standards, form a technology standard system, encourage the enterprises to participate in the research and making of important technology standards, organization, integrate and carry out a set of important technology standards, make a set of technology standards with independent intellectual property right and local characteristics, recommend advanced technology standards to be the national standards or international standards and achieve breakthroughs in several important technology standards.

During the recent years, the industrial alliances with technology standards as the core quickly grow up, which draws a wide attention from the society. The information technology standard alliances, with information technical enterprises as the dominant power, adopt an open working principle and operation mechanism, accommodate to the developing trend of information technology, reflect the overall advantage of the labor division and operation between domestic and international enterprises, and promote the industrialization of information technology standards. The governments also actively support the making, implementation as well as market orientation of the independent technology standards, encourage the domestic enterprises to follow the internationally agreed technology standards and operation rules, and help to improve the core competitiveness of the enterprises.

This information technology standard international forum aims at discussing the key factors for the successful operation of technology standard alliance and the "path to success" for the industrial alliance to promote the technology standard industrialization, putting forward the governmental positioning and measures suggestions in the technology standard system, accelerating the independent innovation and international cooperation in the field of information technology standard, so as to better develop the technology standard experimenting works.

(II) Slogan

Technology standard – creating a new order for the industrial development

(III) The Theme of the Forum

Industrial alliance and technology standard industrialization

(IV) Discussion Topics of the Forum

1. The key factors for the successful operation of technology standard alliance:

Discuss the working principle, cooperative ways, business model and operation mechanism of the technology standard alliance through cases analysis, summarize and extract the key factors for the successful operation of the technology standard

alliance.

2. The "path to success" for the industrial alliance to promote the technology standard industrialization;

Discuss how the industrial alliances build an open international cooperative mechanism during the process of promoting the technology standard industrialization, how to balance the interest of each side, the key issues which should be paid attention to, as well as how to use and follow the internationally agreed technology standards and criteria to improve the international competitive edge of the enterprises.

3. The positioning and measures of the government in the technology standard system;

Discuss how the governments can promote technology standard strategy, build a technology standard supporting service system, develop and implement technology standards combined with local characteristic industry and big projects, guild the enterprises to participate in the technology standard making or adopt advanced standards, and how the government can better promote the technology standard experimenting work.

III. Suggested Agenda for the Forum

Time	Content	Guests
13:00—13:30	Sign in	
MC of the Forum :Director of Beijing Municipal Committee of Science and Technology: Mr. Ma Lin		
13:30—13:40	Address	Leaders from the Ministry of Science and Technology
13:40—13:50		Leaders from the State Bureau of Quality and Technology Supervision

13:50—14:00		Vice Mayor of Beijing Municipal Government: Mr. Fan Boyuan
14:00—14:20	Speeches	Vice director of Beijing Municipal Committee of Science and Technology (Mr. Liu Zhengang)
14:20—14:40		Executive Vice Dean of Lenovo Research Institute (Mr. Sun Yuning)
14:40—15:00		Director of American Global Standard Analysis Center (Donald E. Purcell)
15:00—15:10	Break	
15:10—15:30		Vice CEO of Datang Mobile Communications Equipment Co., Ltd. (Mr. Yang Guiliang)
15:30—15:50		Director of the Wireless Communication Technology Research Institute of the University of Wollongong, Australia. (Eryk Dutkiewicz)
15:50—16:10		Director of Audio Video Coding Standard Workgroup of China (Mr. Gao Wen)

16:10—17:30	Guest dialogue	Topic of the Dialogue: **How the industrial alliances promote the industrialization of technology standard?** Mc of the dialogue: Ms. Yu Xinli Dialogue Guests: Leaders from Beijing Municipal Bureau of Quality and Technology Supervision (Governmental representative) Section Chief of Information and Technology Department of Beijing Municipal Committee of Science and Technology: Mr. Jiang Guangzhi (Governmental representative) Vice CEO of Motorola (Asian-pacific): Mr. Jiang Jiaqi (Representative of multinational corporations, TD-SCDMA cooperator) Qsinghua Biwei Network Technology Co., Ltd.: Mr. Bi Jun (IPV6 Alliance representative) Vice Director of Beijing Software Industry Promotion Center: Mr. Xiao Lan (Changfeng Alliance representative China State Standard Research Institute: Mr. Fang Qing (Scholar representative)

Speech topics of the guests

1. Vice Director of Beijing Municipal Committee of Science and Technology: Mr. Liu Zhengang

Topic: Summary, Effect and Working Plan of the Technology Standard Experimenting Work in Beijing

2. Executive Vice Dean of Lenovo Research Institute: Mr. Sun Yuning

Topic: The Operation Mechanism of IGRS（Information Gateway Resource Sharing）Standard as well as the Experience and Measures for Promoting Industrialization

3. Director of the American Global Standard Analysis Center: Donald E. Purcell

Topic: First: the Successful Experience of the U.S. Technology Standards Making,

Implementation and Application; Second: the Alliance Strategy, International Cooperation and Interest Negotiation of the Technology Standard System

4. Vice CEO of Datang Mobile Communications Equipment Co., Ltd.: Mr. Yang Guiliang

Topic: the International Cooperative Mechanism of TD-SCDMA as well as Its Experience and Measures in Promoting Industrialization

5. Director of the Wireless Communication Technology Research Institute of the University of Wollongong, Australia: Eryk Dutkiewicz

Topic: Elaborate the Problems that should be Paid Attention to in the Market Orientation and Industrialization of the Information Technology Standard through Case Analysis

6. Executive Vice Dean of the Graduate School of Chinese Academy of Science

Topic: Standard Mechanism of AVS as well as the Experience and Measures in Promoting Industrialization

Global Technology Standards – a bridge to the future

Donald E. Purcell, Chairman
The Center for Global Standards Analysis

May 19, 2005

The World is Flat, After All

"The world is flat," and therein lies a tale of technology and geoeconomics that is fundamentally reshaping our lives – much, much more quickly than many people realize. It all happened while we were sleeping, or rather while we were focused on 9/11, the dot-com bust and Enron – which even prompted some to wonder whether globalization was over. Actually, just the opposite is true, which is why it's time to wake up and prepare ourselves for this flat world, because others already are, and there is no time to waste. [Thomas L. Friedman, *It's a Flat World, After All*, New York Times Magazine (April 3, 2005)]

UK National Standards Strategy

- "**Standards influence everything we do**. Standards, in one form or another, have always underpinned trade and business. Standards, including codes of practice and guides as well as formal standards, support compatibility and drive down costs through use of common parts, specifications and methods. They can also help open markets, create new industries and realize the potential of new technologies. Standards are so much a part of our daily routine that we use them without even being aware of doing so, and with giving thought to how they are created or the benefits they provide." (UK National Standardization Framework, April 2003)

U.S. National Standards Policy

- For over 100 years, the National Standards Policy of the United States has been the private sector will lead in the development of standards, and the government will play a supporting role.
- *See* National Technology Transfer and Advancement Act ("NTTAA"), Section 12, (1996); *see also* OMB Circular A-119 (February 1998) (Note A-119 does not express a preference for consensus or non-consensus standardization development procedures).
- See National Institute of Standards and Technology website (www.nist.gov) for additional background.

Diversity - Key to U.S. Standards System

- There are 450 private sector standards groups in the U.S. that rely on consensus standards. There are 150 private sector consortia standards groups that do not rely on consensus standards. [U.S. Department of Commerce Report, *Standards & Competitiveness* (May 2004)]

U.S. Standardization Business Models

- Membership
- Copyrighted standards
- Testing & certification
- Consulting firm
- Market development
- Standards Education
- Knowledge Management
- Competitive intelligence

World Trade Organization

- The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to help producers of goods and services, exporters, and importers conduct their business. [http://www.wto.org/]
- Note: WTO does not have a precise definition of an international standard.

Technical Barriers to Trade

- Technical regulations and product standards vary from country to country. Having many different regulations and standards makes life difficult for producers and exporters. If regulations are set arbitrarily, they could be used as an excuse for protectionism. The Agreement on Technical Barriers to Trade tries to ensure that regulations, standards, testing and certification procedures do not create unnecessary obstacles. [The Agreement on Technical Barriers to Trade can be found at: www.wto.org/english/docs_e/legal_e/17-tbt_e.htm]

WTO Principles for Defining International Standards

- Transparency
- Openness
- Impartiality & consensus
- Effectiveness & relevance
- Coherence
- Development Dimension
- [See WTO Second Triennial Review of the Operation and Implementation of the Agreement on Technical Barriers to Trade (November 2000)]

Value of Standards

- Standards are a critical factor in global economic development.
- International standards and technical regulations directly affect more than 80 % of world product trade. (U.S. Department of Commerce Report, *Standards and Competitiveness*, May 2004)

Standards Control Markets

- "If you control an industry's standards, you control that industry lock, stock, and ledger" [Out of the Crisis, W. Edwards Deming, Published by the Center for Advanced Engineering Study, MIT (1982) at 302]

German Standardization Strategy

- "Standardization is also extremely relevant for the individual participants in the economic process, since whoever makes the standards controls the market." (Opening Statement, Wolfgang Clement, Federal Minister of Economy and Labour, 2004)

Creation of Global Standards

Global Standards Governance

- National Standards Committees (consensus)
- National Consortia Groups (non-consensus)
- Regional standards groups
- Global Standards Committees (consensus)
- Global Consortia Groups (non-consensus)
- United Nations (e.g., ITU, Internet Working Group)
- World Trade Organization

Strategic Value of Standards Education

- Since 2004, South Korea has made standards education a top priority at 40 universities involving more than 900 engineering students in 2004 and 2000 engineering students in 2005.
- Standards education is not a top national priority in the academic sector of any nation in the world except for South Korea.
- Nations that establish standards education as a top national priority in their academic sector will enjoy critical global competitive advantage(s) for decades to come.

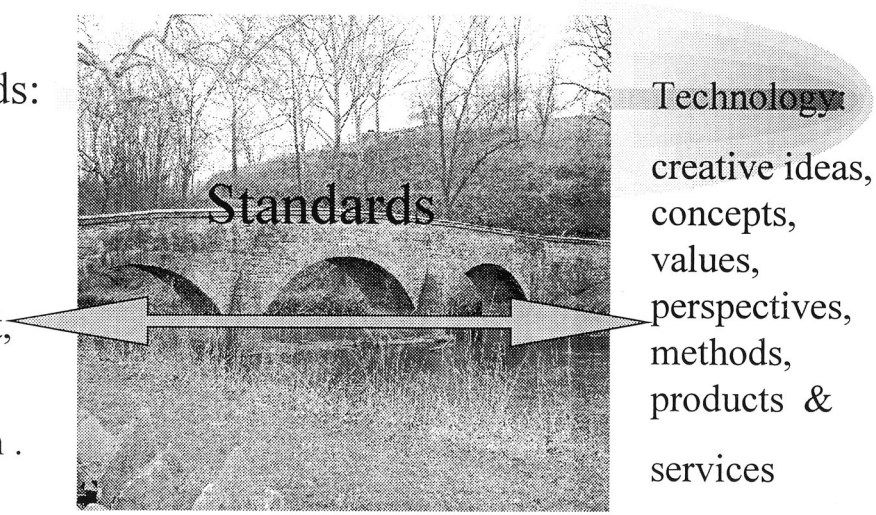
Standards are a Bridge to the Future

User Needs:

consumers,
companies,
industries,

government,

testing &
certification .



Technology:

creative ideas,
concepts,
values,
perspectives,
methods,
products &

services

Standards form a bridge between technology and users. Whoever controls the bridge controls the future.

Contact Information

- For questions concerning this presentation contact Donald E. Purcell, Chairman, The Center for Global Standards Analysis – 202/314-5232 or purcelld@cua.edu

DEERE RESPONSES TO THE DEPARTMENT OF COMMERCE WORKSHOP QUESTIONS

Deere provides a broad variety of equipment for off-highway applications in markets around the world. The responses to the questions posed by the Department of Commerce are often different based upon the particular type of equipment. We differentiate between Agricultural Tractors, Agricultural Harvesting Equipment, Construction and Earthmoving Equipment and Grounds Care machines. Even on a global basis, the markets for this type of equipment is relatively low volume and capital intensive so the ideal situation for us is a portfolio of globally accepted standards and harmonized regulations by product type where compliance would allow us to market our equipment anywhere in the world without modification and we could self-declare our compliance. Any unique requirement, whether a standard, regulation or test adds to our and therefore our customers cost and is something we strive to avoid. As a result, we have been active in trying to create standards portfolios in ISO to best meet both technical and political requirements and minimize trade related issues. Based on equipment types, not all ISO portfolios provide complete machine family coverage or are current with the latest technology. In responding to the questions below, we will highlight those differences in more detail.

One other point is worth mentioning up front. The Off-highway Heavy Equipment industry, in comparison with other industries such as Aerospace or Automotive is lightly regulated and as an industry, we prefer it that way. We have a long history of involvement in voluntary standards activities as a means of self-regulation to meet societal concerns including safety health and the environment. We have been actively involved in standards development at both the national and international level for more than 50 years. For that reason, many of our responses are based upon real experience within the standards system.

1. What are the highest priority standards issues facing your industry?

There are two areas of concern: First are the horizontal type standards proposals using a common approach or setting requirements on broad, dissimilar types of off highway equipment. Examples include Environmental type standards (and Regulations) on Engine Emissions, Fuels, Environmental Noise, and "End of Life" standards that place additional burdens on manufacturers. While we are not opposed to goals and objectives of some of these initiatives, we have concerns that some proposals will not yield the desired results and some timetables put our industry at risk of survival in terms of our abilities to recover the cost of the R&D investment while remaining competitive in the marketplace. The impacts will be substantially higher product cost to the consumer and with little direct value perceived by the customer, even though society in general may benefit. We would prefer a more vertical product oriented approach to standards and regulation so the solutions can be more effectively tailored to product use.

The second concern is the pace of standards development covering use of emerging technologies. For example, the development of intelligent agricultural systems is far out-pacing the development of standards for such applications. The concern is not about the technology, it is about the availability of expert resources and the pace of standards development to fill gaps in the portfolio. Our inability to keep pace with voluntary standards may give rise to regulatory proposals.

2. Are there adequate national and/or international standards to satisfy your industry's trade/export-related needs?

For Agricultural Tractors: No. International standards are either lacking, unacceptable due to being design specific as opposed to performance based, or are biased to the European approach based on the European regulations for Agricultural Tractors. Tractors made to existing U.S. National Standards are at risk in trade due to politically motivated preferences for European or ISO references.

For Ag Harvesting equipment, the International portfolio is improving but not yet complete, with most of the work being done between CEN and ISO utilizing the Vienna Agreement.

In the Earthmoving equipment sector, the portfolio of ISO standards is meeting most of the needs and doing a good job of keeping up with changing and emerging requirements.

3. Does your industry experience standards-related problems in specific countries or regions, or do these problems affect multiple regions? What is the definition of problem?

Yes and Yes. We have standards related problems regarding road regulations across Europe for all types of equipment. Likewise we are having country specific problems forcing machine modifications in countries such as Japan and Australia

to satisfy specific road regulations. A harmonized approach to on-road use of off-highway equipment would save millions. From a regional perspective, the European Union creates the biggest challenge due to the design specific regulations that are imposed, or with requirements that make sense in densely populated Europe but are not relevant in other market areas around the world.

Another problem is that some regions of the world have been reluctant to adopt ISO standards, preferring instead to adopt unique country or regional requirements. This is complicated by the fact that the EU and its member states fund an active campaign to promote their Directives and standards, seeking preference for European made products and the U.S. has no equivalent effort.

4. Do your industry's problems result primarily from the technical requirements contained in standards or technical regulations that adopt such standards? Please describe specific examples where the technical requirements resulted in market entry problems in your industry.

Both. Technical differences cause problems and expense regardless. For example, in the European Union the regulations limit the width of a machine to 2.5 meters. This is an old approach Directive. The John Deere 8000T (Track) machine width exceeded the restriction by 50 mm. Even though the width was of no consequence in other markets around the world, the machine had to be redesigned to satisfy the EU requirement or individually homologated with each EU member body. Additional examples include the height from the ground restrictions on headlight installations for European tractors, ladder step height on self-propelled harvesting equipment such as combines that are also different than the same requirement for tractors. The European requirement for non-rotating guards and guards that must be fixed or require a tool to open continue to contentious issues as far as global relevancy of the requirement is concerned.

Another very current example involves CEN 474–3 Loaders, currently under revision. In the revision the secondary exit opening is being reduced from the dimensional criteria of ISO 2867. This change will result in the secondary exit opening of compact machines (such as skid steer loaders) currently in production and use without reported or known problems being considered inappropriate for the EU market. This trade barrier will permit one major manufacturer (JCB in UK) to be in compliance because their design configuration currently meets the new requirement. There are many other specific examples that can be cited.

5. Do your industry's problems result from how compliance with technical requirements is assessed? Do you have examples of cases where either the technical requirements or the assessment process resulted in market entry problems for your industry?

Conformity Assessment requirements are an issue. The European Union "Old Approach," which still covers Agricultural Tractors mandates third-party certification and "Type approval" for products to enter their market. Australia has recently started to require "risk assessment" decisions to be documented and approved before products can be offered for sale. Taiwan has proposed mandatory ISO 9000 certification for Companies who want to sell in their market. Several South American countries are considering similar requirements.

We believe strongly in the principle of Supplier's Declaration of Conformity or SDOC. This applies to all of our products as well as our internal processes. We've spent nearly 167 years building our brand reputation internationally and see little added value in third party assessment that is not as robust as our own testing. Any requirement for mandatory third-party assessment by any government around the world gets our attention. We further support the principle of one test accepted everywhere and offer the acceptance of OECD tractor tests (even though it is a third-party certification methodology) by 30 countries around the world as an example of a success story in this regard.

6. Has your industry been able to take an effective approach to address international standards issues? What steps have produced the most benefit? Could other industrial sectors benefit from using these approaches?

The Construction and Earthmoving Equipment industry sector has for years been actively participating and leading the creation and adoption of ISO standards for Construction and Forestry equipment. As a result, that industry sector has a portfolio of ISO standards in place. This approach has been very effective and has included the EU member states in the process. The key to effectiveness has been the commitment of subject matter experts to key committees (TC 127 and its subcommittees and working groups), staying involved on a continuous basis and taking leadership roles occasionally to keep the agenda moving. The only problems we've

experienced with this approach has been since the development of EU New Approach. The EU members often take a position that the ISO standard should mirror the regional requirements of the EU. If they are unsuccessful, they adopt "amended" ISO standards with regional differences or they create CEN standards because the ISO standards will not meet their regional requirements. This is done after the global community has rejected the EU proposals as not performance based but design based or purely regional opinions. The EU process for creating "amended" ISO standards or CEN standards is limited to EU member bodies and prohibits review or comments from other industry experts outside the EU member bodies during development. In spite of this concern, which we have been attempting to address with both CEN and ISO through ANSI, this is an excellent model for other sectors to emulate.

On the other hand, the agricultural machinery sector has not been very serious in the development of globally acceptable international standards. Differences in regional farming practice led to the development of regional or national standards. Within the last few years however, globalization of markets, economic pressures and industry consolidations have made a portfolio of globally accepted standards for Agricultural Equipment an important priority. Just recently changes have been initiated in the industry SDO (ASAE) to adopt procedures for the national adoption of ISO standards. In addition, the SDO standards committee structure has been reorganized in order to allow for the integration of the U.S. TAG with the associated ASAE committees. While it is premature to evaluate the benefits, it is expected to improve focus on the development of an international portfolio. The approach is now similar to the Earthmoving equipment model and certainly could be applied to other sectors. Again, the key is committing subject matter experts from industry to participate but this has become somewhat problematic as the economic conditions within the industry and consolidation of equipment producing companies has reduced the pool of resources as well as the economic support for the standards development organizations.

7. Has your industry been able to take an effective approach to address national standards issues? What steps have produced the most benefit? Could other industrial sectors benefit from using these approaches?

Over the years our industry has gotten good service from the SDOs we've chosen to use in the U.S. national arena. The Society of Automotive Engineers (SAE) and the American Society of Agricultural Engineers (ASAE) have been our primary SDOs, with ASTM, ASME, NFPa, IEEE and others playing lesser more focused but none-the-less important roles. The American National Standards Institute (ANSI) also plays a key role. Populating key committees with subject matter experts and taking leadership roles has been most productive in producing the standards that meet our business needs as well as those of society in general. Needs change however, and now, with few product offerings being produced exclusively for national markets only, national standards are becoming less relevant for the reasons implied in the opening paragraph. Building products to standards acceptable in more markets just makes good economic sense. That said, the ability of International standards bodies (ISO and IEC primarily) to develop or maintain standards fast enough to keep up with technology and technology application development is not good enough to eliminate a role for other standards developers. Therefore we will continue to support some key nationally based standards developers and, where their documents are globally accepted and utilized, support them as internationally acceptable.

We also believe strongly that the American National Standards Institute (ANSI) plays a strategic and indispensable role in addressing both national and international standards issues. As a private sector federation of standards producers (SDOs), users (Industry and Government) as well as consumer interests, ANSI represents a consistently available forum for discussion and debate on standards issues by a broad cross section of stakeholders, and the one best place to develop a single U.S. position on international issues. As our national member body to ISO and IEC, they are both a source of intelligence for global standards issues and represent the only channel for direct representation of U.S. positions on key international standards committees. Because of our interest in globally acceptable technical standards for the Earth-moving industry, we found value in ANSI membership relatively early in our involvement with standards. Now, with an even greater array of our industry's products impacted by a globally relevant and acceptable technical standards portfolio, we see even greater value in ANSI participation.

8. Do you have examples of a problem experienced by your industry where the Federal Government has been effective in resolving the issues? What

steps taken by Federal Government officials were effective in resolving the issue, and why were they effective? Would such steps or approaches be applicable in other cases or were their success unique to a specific problem? What steps were ineffective or less effective, and why do you think that this was so? Was it the unique nature of the problem, or would such steps have been equally ineffective in most cases?

Deere (and the off highway heavy equipment industry) has been and continues to be supportive of the TABD process. TABD brings industry leaders from the U.S. and Europe together with government officials from both continents to identify priority issues around standards and regulatory harmonization, then set timetables and provide project management oversight for quick resolution to improve trade and commerce. Our experience has shown that government to government discussions, when focused on the right issues and aligned with standard and regulatory discussions at the working level, can clear away the often bureaucratic obstacles that slow down or stall problem resolution at the industry level.

TABD discussions initiated efforts to harmonize requirements and timetables for Diesel Engine Emission requirements between the U.S. and the EU with some success so far. Another example of success from government involvement was the postponement of Metric labeling requirements that were to be imposed by the European Union until 2009. There have been many others.

We believe that to overcome systemic differences in approaches to standards and regulation between the U.S. and our overseas trading partners requires more government understanding of Industry issues and better coordination of strategies to protect U.S. based company competitiveness abroad. However, success will only come from understanding and respecting the differences between the sectors. As indicated above, even within one definition of industry sector (like Off-highway Heavy Equipment) one size does not fit all when it comes to standards and regulations. Requirements vary by product, their intended uses by customers and the environment where they are used. The differences are even more pronounced between industry sectors like Automotive, Aerospace, Information Technology or Telecommunications. Too often we seem to want a "one size fits all" approach with a result that satisfies no one.

9. What actions would you recommend the Department undertake? Would your industry be willing to help to improve the situation encountered with respect to problems associated with standards and conformity assessment?

Our experiences to date with the responsiveness of the DOC, the ITA and the USTR have been positive. Our frustrations stem from the lack of similar responsiveness from other regulatory agencies such as EPA, MSHA and OSHA to trade related issues. Interagency coordination must improve if we are to have any hope of success in keeping U.S. manufacturing competitive and the global playing field level in terms of standards and regulations. We believe it will take a commitment to coordination at the Cabinet level to substantially improve cooperation.

Another issue is the depth of understanding of industry sector differences within the Agencies. As indicated above, different sectors and even different product oriented sub-sectors have different needs in terms of problem resolution relating to standards, regulations and conformity assessment. The Department may need to consider more specific focus and/or training of its resources to more effectively provide response to issues.

A third issue is a reactive mindset as opposed to a proactive one. Industry, driven by performance requirements to keep investors happy, tends to avoid problems through pre-emptive action. Government seems to be set up to respond only when problems occur, not to prevent them from occurring. We would recommend working more closely with industry, relative to standards, regulations and conformity assessment to head off problems more effectively.

We believe our industry has a very positive track record, providing resources and working both nationally and internationally to resolve our own problems when it comes to standards, regulations and conformity assessment. We are only calling on government to assist us in knocking down barriers or resistance we have been unsuccessful in resolving by ourselves. Consistent with our track record, we are certainly willing to cooperate with the DOC and other key agencies to improve the effectiveness of U.S. influence in standards and conformity assessment in both the national and international arena.

STATEMENT OF WILLIAM PRIMOSCH, SENIOR DIRECTOR
INTERNATIONAL BUSINESS POLICY
NATIONAL ASSOCIATION OF MANUFACTURERS

On behalf of the National Association of Manufacturers, I thank the Subcommittee for providing the opportunity of submitting a written statement for the record on how the United States should respond to trade barriers arising from technical standards in Europe and China.

The NAM is the Nation's largest multi-industry trade association, representing small and large manufacturers in every industrial sector and in all 50 states. In recent years, our members have expressed increasing concern about the impact that international standards and government-mandated technical requirements, and their application, have on companies' ability to market their products and services abroad and access foreign products here at home.

As the Senior Director for International Business Policy, I have responsibility for helping members address these concerns and coordinating a special NAM Working Group on International Standards and Regulatory Policies. I also serve on the Board of Directors of the American National Standards Institute (ANSI) and the U.S. Government's Industry Trade Advisory Committee for Standards (ITAC 16).

Importance of Standards and Technical Regulations in Trade

Technical standards play an essential role in the manufacturing sector, ensuring inter-operability, consumer acceptance and fulfillment of health, safety and environmental requirements. Standards facilitate the sale of manufactured products within the national economy and in foreign markets around the world and enable our companies to achieve enormous production efficiencies through the operation of global supply chains.

About two-thirds of all U.S. exports and imports are manufactured goods so standards play a vital role in our nation's international trade. When standards and technical regulations become impediments to trade, this is a concern for not only the manufacturing sector but also the broader U.S. economy.

The WTO Agreement on Technical Barriers to Trade (TBT Agreement) established disciplines aimed at ensuring that countries do not use standards, technical regulations and their application through conformity assessment procedures to create unnecessary obstacles to international trade. The TBT Agreement includes a number of provisions important for U.S. manufacturers, notably in Article 2 relating to the preparation, adoption and application of technical regulations by central government bodies. For example, the agreement specifies that technical regulations "shall not be more trade-restrictive than necessary to fulfill a legitimate objective." Also, where international standards exist or are imminent, the agreement requires that these standards be used instead of unique national standards, unless justified by specific reasons. Another useful guideline in the agreement is that WTO members are expected to specify technical regulations based on product requirements in terms of performance rather than design.

The TBT Agreement has helped to prevent egregious attempts by governments to use standards and technical regulations as tools to limit market access and protect local industry. But problems, often of a serious nature, persist. Our members encounter trade barriers related to standards, technical regulations and conformity assessment procedures in markets around the world, including with our NAFTA partners. However, problems in China and the European Union are of special concern because of the volume of trade affected and the prospect that these problems will worsen in the years ahead.

China

In little over a decade, China has emerged as one of the largest global producers of manufactured goods and one of the largest global traders. In 2004 China ranked third in world trade, with exports and imports totaling $1.2 trillion. China benefits enormously from the international standards system. By manufacturing to international standards, Chinese products are accepted around the world and are now integrated into the global supply chain of many U.S. retailers and multinational manufacturing businesses.

Chinese exports to the United States amounted to $197 billion in 2004 and, if current trends continue, will increase to around $250–$270 billion in 2005. U.S. exports to China, on the other hand, amounted to only $35 billion in 2004. Even if U.S. exports grow at the high end of projections to $45 billion in 2005, this would still leave a trade deficit of $205–$225 billion. In 2004, U.S. products accounted for only eight percent of China's total imports. In comparison, Japanese products accounted for 17 percent of China's total imports and European products, 13 percent.

It is in this context of a large trade imbalance and modest market penetration that U.S. manufacturers view growing problems relating to standards, technical regulations and conformity assessment procedures in China. Our members are concerned about the impact that these problems are having on market access now and how they will affect market access to the world's fast-growing large economy in the future.

Several kinds of problems have come to our attention.

- **China is creating unique national standards.** One prominent example was China's attempt to set a unique national standard for so-called WIFI or WAPI technology (WLAN Authentication and Privacy Infrastructure) different from international standards. As part of the requirement, U.S. firms would have had to partner with selected Chinese companies and share proprietary technical product specifications. China postponed implementing the standard after strong protests from the U.S. Government.
- **Obtaining the China CCC quality mark is difficult.** China has established a cumbersome and expensive system for obtaining the China Compulsory Certification mark (similar to the EU's CE mark) as an indication that regulatory requirements have been met. Only Chinese testing firms can certify for the CCC mark, and Chinese inspectors must inspect overseas factories.
- **Chinese standards bodies lack transparency.** Unlike U.S. standards development organizations, Chinese SDOs do not allow participation by foreign stakeholders and publish little information on the standards development process until it is nearly complete.
- **Market Access for U.S. testing firms is restricted.** U.S. testing and certification companies cannot operate in China. Products must be tested by Chinese companies, often at higher charges and with extended delays that raise costs for manufacturers.

A broader and more fundamental concern is that China seems to be pursuing a deliberate strategy to establish standards that gives competitive advantage to Chinese technology and domestically produced manufactured goods over technology and products from the United States and other industrial countries. Efforts to establish a unique WAPI standard is seen as one example. Others include Chinese promotion of third-generation mobile telephone standards, use of Linux systems over Windows operating system and work on radio frequency identification tagging and other information technology standards.

Since China is becoming both the largest producing and consuming market for many types of products (e.g., mobile phones, computers, telecommunications equipment, cars and power generation equipment), it has the potential to exert strong market power. If the Chinese were to succeed in establishing unique Chinese national standards and promote these standards internationally, this could have a major impact on market access for U.S. technology and products, particularly in high-technology sectors.

European Union

U.S. manufacturers confront a different set challenges with the 25-member European Union (EU) trade community. Concerns about the EU generally relate to four issues:

- The EU's top-down approach to setting standards, which differs from our more open bottom-up, market-driven system, and its restrictions on access to standards-setting bodies.
- Approaches to health, safety and environmental regulation that diverge from those in the United States, and the expansion of products subject to regulation.
- Its influence in international standards bodies, such as the Organization for International Standardization (ISO) and International Electro-Technical Commission (IEC), in promoting standards more closely aligned to its own.
- The generous financial support for outreach programs on standards and regulation to important emerging markets (e.g., South America, China and other newly industrializing Asian countries) and its growing influence on standards and regulatory policies of these countries.

Top-Down Approach to Standards-Setting

As part of its effort to create a single European market in which products can move freely among member states, the EU has favored a more centralized, top-down approach to standards-setting that differs fundamentally from the U.S. system. The EU encourages European industry to work through a small number of standards development organizations, of which CEN and CENELEC are the two most prominent. In this way the EU is able to develop community-wide standards that are used throughout the EU and avoid the proliferation of national standards that may be incompatible. The United States, on the other hand, has over 400 recognized standards development organizations based on sectoral interests.

Some U.S. manufacturers, particularly large multi-nationals with well established operations in Europe, find that they can participate effectively in the EU system and protect their interests. Other companies, notably small firms without a manufacturing presence in Europe, complain that their access to the standards-development process is severely limited and that the process lacks transparency. U.S. standards development organizations tend to be sector-based and more open to participation of all stakeholders, whether foreign or domestic. Many manufacturers, both large and small, see the EU standards systems as biased to the standards preferences of European industry.

Divergent Approaches to Product Regulation

Overall European industry is more highly regulated than industry in the United States. A particularly difficult challenge for U.S. manufacturers, however, is the growing divergence in regulatory approaches. Divergent approaches increase manufacturing costs because manufacturers must comply with different national regulations for producing and selling their products. Divergent regulations can also create trade barriers that restrict market access or block it altogether. Here are four examples.

- The EU's Restriction on Hazardous Substances in electrical and electronic equipment (RoHS) will ban the use of lead in 2006 in most electrical equipment and electronic components regardless of risk. The United States effectively employs risk assessment tools to protect consumers and the environment and allow continued lead use. A number of U.S. manufacturers have told us that they will have to stop exporting to Europe because they are unable to manufacture their products without lead or cannot obtain inputs that are lead-free.
- The EU is considering a much different approach to testing and registering potentially hazardous chemicals than we have in the United States. A new proposal now before the European Parliament and EU Council of Ministers called REACH (Registration, Evaluation and Authorization of Chemicals Directive) would establish an expensive, complicated process of registering and testing chemicals that experts say will not result in greater protection of health and the environment but will limit trade and industry competitiveness. Some small U.S. chemical manufacturers have told us that they would have to stop exporting to Europe because the regulatory costs would be so great.
- Despite years of discussion in the Transatlantic Business Dialogue and official channels, the United States and Europe have made little progress in harmonizing auto safety standards although safety goals of regulators are quite similar. As a result, U.S. and European auto makers must design and build vehicles that have significantly different technical requirements, raising production costs and making the companies less globally competitive.
- The EU continues to espouse a non-science-based "precautionary principle" in restricting certain kinds of products, such as products containing genetically modified organisms (GMOs) and hormone-treated beef, even though no adverse health or environmental effects can be proven.

EU Influence in International Standards Bodies

Another concern of U.S. manufacturers is that European countries appear to be more successful in promoting European standards in international standards bodies, particularly the ISO and IEC. Too often, some companies allege, ISO standards are more closely aligned to European standards than to those used in the United States. The fact that the ISO operates by a "one-country, one-vote" rule is cited as giving EU members unfair advantage. The voting record in these organizations does not reflect a pattern of "bloc" voting but the perception nonetheless exists that EU members are working together to promote European standards in these organizations. Another practical advantage that European countries have in the ISO and IEC is

that the two organizations are located in the heart of Europe and European governments support the budgets of European standards development organizations, thus facilitating more active European participation. The burden of financing U.S. participation in the ISO and IEC falls on the private sector.

EU Support for International Outreach on Standards

Finally, U.S. manufacturers note that European governments and the EU's European Commission provide generous funding for international outreach to promote European standards and regulatory approaches in emerging markets, such as China, South America, North Africa and the Middle East. EU and national government funding pays for technical assistance, travel of foreign standards experts to Europe and the placement of European standards abroad. The prospect that emerging markets may be considering adoption of EU regulatory approaches, such as REACH and RoHS, is a matter of particular concern because they could significantly restrict market access for U.S. manufactured products. The NAM does not have a detailed breakdown of European funding for outreach but knows that it runs into the tens of millions of dollars and vastly exceeds the funding available to U.S. agencies (e.g., NIST and USAID) for such programs.

Recommended Responses—the New "United States Standards Strategy"

Standards and regulatory developments in China and the EU call for a strong U.S. private sector and government response to ensure that U.S. economic interests are protected. Under the leadership of the American National Standards Institute (ANSI), some 50 U.S. business, government and non-governmental organization representatives participated in a review of the 2000 National Standards Strategy. I was a member of the review committee and chaired the subgroup on international issues. Reflecting on standards developments over the past four years in the United States and abroad, including those in China and the EU, the group substantially revised the strategy and renamed it the "United States Standards Strategy" (USSS) with a view to emphasizing the U.S. approach to developing standards for the global marketplace, and not solely for the national market.

The USSS, which is still in the final review process, calls for action in four areas that are relevant to China and EU standards issues identified in this statement.

- Actively promote the consistent application of international recognized principles in the development of standards, notably those contained in the WTO TBT Agreement.
- Encourage common governmental approaches to the use of voluntary consensus standards as tools for meeting regulatory needs, thus reducing the possibility of regulatory differences creating trade barriers.
- Work to prevent standards and their application from becoming technical trade barriers to U.S. products and services, taking a vigorous pro-active approach that recognizes the growing importance of standards for market access.
- Strengthen international outreach programs to promote understanding of how voluntary, consensus-based, market-driven sectoral standards processes can benefit businesses, consumers and society as whole, in recognition that more needs to be done by both the government and private sector to communicate the U.S. perspective on standards.

We believe that, when finally adopted, the USSS will provide a highly useful guide for developing responses to market access concerns relating to standards not only in China and the EU but also in other key foreign markets.

The Subcommittee's hearing provides a timely opportunity to educate Members of Congress, government agencies, the business community and general public on the importance of international standards and regulation for trade and the need to ensure effective public and private sector support for the U.S. standards system and its role in the global marketplace. We applaud the Subcommittee for taking the initiative on this matter.