Prepared Testimony
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of the
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"Setting the Standards: Strengthening U.S. Leadership in Technical Standards"

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Introduction

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

My name is Andrew Updegrove, and I am a partner in the Boston law firm of Gesmer Updegrove LLP. I am also on the Board of Directors of the American National Standards Institute (ANSI), but the opinions I will express today are mine alone.

These opinions are primarily informed by my experience over the last 34 years representing more than 150 non-profit membership organizations that develop and/or promote standards. In most cases, I helped them establish their governance and membership structures as well as rules regarding intellectual property rights.

I have previously provided standards-related testimony before bodies of Congress, state legislatures, and the European Commission, and in hearings convened by the Department of Justice and the Federal Trade Commission.

American Industry Leads the Way in Standards Development

Let me start with the good news, which is that American industry and the American people benefit greatly from a highly evolved, consensus-based standards development system, one in which U.S. stakeholders have long wielded a disproportionate influence. Representatives of American companies, universities, and government agencies play major roles in each of the three traditional standards organizations - the International Organization for Standardization (ISO),[1] the International Electrotechnical Commission (IEC),[2] and the International Telecommunications Union (ITU-T).[3]

American representatives also predominate in the vast majority of the newer standards bodies known as consortia, a great number of which they founded and defined. Needless to say, American participants are also prevalent in the great majority of the more than two hundred and forty SSOs accredited by ANSI, many of which have great impact beyond U.S. borders.

The Global Standards Development System is Robust

The value created by these standards setting organizations, both new and old (I'll refer to them collectively as SSOs), is remarkable. Every year, they create thousands of new standards that are then voluntarily adopted throughout the

[1] ISO's website is found at: https://www.iso.org/home.html
[2] The IEC's website is found at: https://www.iec.ch/homepage
[3] The website of the ITU's standards developing organization is found at: https://www.itu.int/en/ITU-T/Pages/default.aspx

world. The global benefit derived from this system is incalculable, underlying everything from telecommunications to the Internet to health and safety to the design of nuclear power plants. And all of this is achieved while expending virtually no public funds. Many of these same standards are ultimately referenced into law, the result being considerable savings on the part of government agencies who are spared the time and effort of drafting regulations to similar effect.

The origins of this system go back to at least 1881, with the formation of the IEC, which remains foundational today, together with ISO and ITU-T. Since 1980 these traditional SSOs have been augmented by many hundreds of consortia, and more recently by open source foundations, which today also develop standards.

While the governance structures of SSOs vary, they all have one thing in common: they are trust based and consensus driven. As they must be, because no company is required to join them, nor is any company compelled to adopt any standard they develop, unless it is later referenced into law. SSOs work because they are structured in such a way that stakeholders believe they have more to gain than to lose by participating.

In short, SSOs are based on the same types of democratic values that make our own governmental system work. Everyone should be alarmed if an authoritarian regime or an economic rival sets out to undermine those values, or to degrade the level of American leadership that has prevailed across SSOs for decades, to the great benefit of U.S. interests.

The Potential for Unexpected Consequences

However, if our goal is to be sure that American interests in SSOs are protected and advanced, we must also ensure that we do nothing unwittingly to undermine the SSO processes that are so essential to their success. Unfortunately, several well-meaning actions in recent years have had just such an opposite effect.

One example arises from the interplay between SSOs and the Entity List maintained by the Bureau of Industry and Security (BIS). Of course, the Entity List plays a vital role in preventing essential U.S. technology from falling into the wrong hands. But the rules guiding compliance with related regulations lack a specific, well-crafted exemption allowing U.S. companies to participate in standards development activities when an Entity Listed company is also present, while at the same time ensuring that American technology remains protected.

You may ask, why would we want to allow a company on the Entity List to participate in a SSO at all? First, it’s important to note that in many cases the U.S. lacks the authority to do so; it can only bar U.S. interests from participating where an Entity Listed company is present. Second, it should be remembered

that standards are usually requirements documents, and not actual technology. It is highly unlikely, for example, that compliance with a standard could result in the inclusion of a disguised “back door” in a telecommunications system, giving covert access to secure communications.

Second, Huawei, the Chinese company that has received the most attention in connection with the Entity List, is reported to own more than 14,000 5G patents, many of which will almost certainly be infringed by 5G standards. If excluded from 5G SSOs, Huawei would be free to sue every vendor and user of 5G compliant equipment where such infringement does in fact occur.

But where Huawei participates in a typical 5G SSO, it has two choices if it owns a patent that would be “necessarily infringed” by a standard - making it a so-called “standards essential patent.” The first is to disclose that patent so a working group can “design around” the patent to avoid infringement. The second is to agree to make the patent available on reasonable and non-discriminatory terms to all vendors - including those in the U.S.

In other words, American companies benefit when Huawei companies participate in an SSO and makes its standards essential patents available, and incur risk when it doesn’t. The same applies with respect to the many other Chinese companies currently included on the Entity List that have not been given the same special treatment given Huawei.

Worse, if relations with China worsen, China may decide to create its own telecom 5G standards, as it did with its TF-SDMA 3G and WAPI wireless standards two decades ago. Standards essential patents owned by Chinese Entity List companies could be weaponized, leading to waves of Chinese company infringement suits against vendors selling products conforming to non-Chinese 5G standards, and even against customers using those products.

Another impact of the addition of Huawei to the Entity List without a clear standards development exemption was the disruption of the operations of the hundreds of SSOs Huawei then participated in.[4] Some SSOs quickly determined that their processes fell within existing, analogous exemptions, but others just as quickly concluded that theirs did not, forcing them to overhaul their standards development processes, in some cases radically. Others were unable to determine with certainty whether they complied or not, or how much they might need to change to feel safe.

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[4] According to Huawei, at the end of 2020, it was “an active member of more than 600 industry organizations, including standards organizations, industry alliances, open source communities, and academic associations,” holding key positions in more than 400 of those organizations and having made over 65,000 technical contributions to SSOs. See, “Openness, Collaboration, and Shared Success,” Huawei website, at: https://www.huawei.com/en/corporate-information/openness-collaboration-and-shared-success (accessed March 15, 2022)

Some legacy and European influenced SSOs stated they were compliant, but participating American companies disagreed, forcing these American companies to opt out of important working groups where Huawei was a participant. The result was a policy paradox: as a result of a U.S. decision, Huawei was free to participate in the development of some vital 5G standards, while U.S. companies felt compelled to stand aside.

Industry pleas for further guidance were eventually answered with new government statements, but most SSOs and companies still find these new directives too be vague to be helpful. U.S companies continue to look for further guidance.

International Backlash

Perhaps most worrisome, some SSOs have chosen to leave the U.S. entirely, due to the negative reaction of non-U.S. members who chafe under the new restrictions and resent a unilateral effort to remake the rules of international organizations. This has occurred even where the organizations in question were exempt from Entity List concerns.

For example, in November of 2019, five months after Huawei was added to the entity list, RISC-V Foundation, the leading open hardware SSO, announced that it would move to and reincorporate in Switzerland. Its Executive Director was quoted by Reuters saying: "From around the world, we've heard that 'If the incorporation was not in the U.S., we would be a lot more comfortable."[5]

Six months' later, the Eclipse Foundation, one of the three most influential open source foundations in the world, made a similar decision, announcing it would move to, and reincorporate in, Belgium.[6] While it publicly stated that it was relocating to follow its growth in Europe, it seems unlikely it would have made so radical a step absent the undercurrent of unhappiness over unilateral U.S. actions. Existing SSOs and open source foundations, as well as new organizations in formation, continue to ask themselves today whether they would be better off abroad, and some advocates in Europe are now calling for "European open source projects" instead of projects open to all.

In short, if we wish to ensure that American leadership in technical standards continues, we need to make sure that American leadership is respected and in the room. Right now, that leadership is at risk of being excluded - or worse, choosing to exclude itself.

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[5] See, Nellis, Stephen, and Alber, Alexandra: "U.S.-based chip-tech group moving to Switzerland over trade curb fears," November 25, 2019, Reuters, at: https://www.reuters.com/article/us-usa-china-semiconductors-insight/u-s-based-chip-tech-group-moving-to-switzerland-over-trade-curb-fears-idUSKBN1XZ16L

[6] See, Eclipse Foundation blog entry, "The Eclipse Foundation Is Moving to Europe," undated, at: https://eclipse-foundation.blog/2020/05/12/moving-to-europe/

So, what is the moral of this cautionary tale? I would argue it is this: we must commit to better understanding and more regular communication between legislators, regulators and the private sector to be sure that new government action has only anticipated, favorable effects. Of course, this makes the convening of today's hearing particularly welcome. But we need to do more.

The Independence of Global SSOs Must be Respected for our Own Benefit

A second lesson is that we need to respect the independence of the global standards development system, which has for so long upheld the democratic values we espouse. Its remarkable success is firmly based on its trusted reputation for neutrality, a principle enshrined in the Agreement on Technical Barriers to Trade[7] under the World Trade Organization, which precludes signatories from adopting unjustifiable local standards and compliance requirements, ensuring open international participation in standards development among signatory nations.

Recently, several amendments to proposed legislation have been put forward that would seek to require SSOs to demonstrate "democratic values" in their governance structures. However well intentioned, such requirements, if enacted, would represent an existential threat to the global standards development infrastructure. If the U.S. imposes mandates on the governance of SSOs, what is to prevent the European Union from doing the same? Or China? Or the Russian Federation?

The best defense for American interests, already well established in SSOs, is therefore to defend the independence of those organizations and the existing rules they operate under rather than mandate changes that may do far more harm than good, or even bring the global standards development system down entirely.

Regulatory Requirements Should Better Map to Real Concerns

Another example of unintended consequences arises when legislation uses the definition of "voluntary consensus bodies" in Office of Management and Budget Circular A-119 as a fixed requirement for compliance with new rules. In fact, that definition was created as a reference point rather than a fixed requirement, and for a single and specific purpose: government procurement.

While the standards development criteria in that Circular are highly relevant for standards that are referenced into law, some of the requirements to meet the voluntary consensus body definition are very time-consuming and resource intensive, and have long been deemed by the technology sector to be surplus,

[7] The Agreement on Technical Barriers to Trade may be found at https://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm

introducing delay with little off-setting benefit. When government repurposes these criteria, as in the most recent Entity List guidance, it imposes burdens without benefit for consortia and open source foundations, and further alienates non-U.S. SSO members.

Recommendations

What, then, can Congress do to enhance the influence of America influence in SSOs? Here are some suggestions:

1. *Advocate rather than mandate.* If we perceive that an SSO vital to the national interest is being manipulated by a foreign nation, we *should* rally American and allied members of that SSO to seek reform. We should *not* mandate changes that may leave U.S. companies caught in the middle and SSOs moving abroad.

2. *Better understand how SSOs operate and regulate accordingly.* Relevant agencies need to reach out to SSOs and major SSO participants in order to avoid actions that have unnecessarily adverse impacts on SSOs, and act more quickly to ameliorate those impacts if they occur.

3. *Recognize the vital role of consortia and open source software foundations.* To date, government has focused primarily on traditional SSOs, even as consortia have become ever more vital to the national interest.

4. *Take greater advantage of NIST and ANSI.* While ANSI and NIST have worked closely together for decades, the ability of these organizations to act as a bridge between government and the private sector has been underutilized.

5. *Convene a private sector standards advisory council.* Hearings such as todays are essential but establishing a standing resource on call would provide faster and more authoritative guidance to lawmakers and regulators.[8]

With that, I'd like to thank you once again for the privilege of speaking to you today. I look forward to answering your questions.

[8] More detailed explanations of these recommendations appear in my blog entry, "Six Standards Recommendations for the Biden Administration," available at https://www.consortiuminfo.org/laws-regulations-and-litigation/six-standards-recommendations-for-the-biden-administration/