



March 7, 2011

Patrick Gallagher, Director National Institute of Standards and Technology,  
Co-Chair, National Science and Technology Council's Sub-Committee on  
Technology  
SOS-RFI@nist.gov

Earl Nied  
Program Director of  
Standards and IPR  
Intel Corporation

Phone: +1-503-712-3397  
Email: earl.nied@intel.com

**Regards: Intel's response to the RFI on the Effectiveness of Federal Agency Participation in Standardization for the National Science and Technology Council's Sub-Committee on Standards**

Doctor Gallagher,

On behalf of Intel Corporation, thank you for this opportunity to share our views on the U.S. standardization system and on the effectiveness of federal agencies' participation in the development and implementation of standards and conformity assessment activities and programs.

Intel is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. Many of those technologies are embodied in standards that Intel has helped to develop, and the company continues to invest heavily in standards development efforts around the world.

Intel's submission emphasizes the following key points:

- The current U.S. standardization system is diverse, voluntary, and market-driven with a strong orientation toward global standards. This system works well and is not in need of fundamental reform. In particular, the roles of government and the private sector are correctly defined; and the partnership is effective. Intel encourages the participation of U.S. government agencies and especially NIST in standards development where the U.S. government has vested interests.
- NIST can play a helpful role as a facilitator to accelerate the development and availability of some standards. This role should be undertaken only in exceptional circumstances, where a national public policy priority is at stake and there is an urgent need for progress. The work that NIST is undertaking on

Smart Grid is an example. Intel believes that cyber security aspects of product assurance and supply chain assurance is another example, and suggests that NIST take on a role in this area to facilitate the availability of relevant global standards.

- Intellectual property rights are important to encourage innovation and they are essential to consider in the standards setting process. Standards setting organizations are in the best position to establish effective policies for addressing intellectual property rights. This policy area is dynamic and there is no one approach that works for all sectors and situations. There is no need for government intervention into the intellectual property rights policies used by standards setting organizations.

### **The U.S. Standardization System**

Standards are critically important to U.S. and global industry. Standards promote access to markets for industry, they enable interoperability among products and services, and they encourage investment and innovation that fuels economic growth. For consumers, standards often lead to greater competition and lower costs while also providing important benefits.

Especially in the ICT sector, the emphasis on global standards is vital to spur innovation and economic growth and to enable interoperability. The ICT industry develops products and services via global supply chains and delivers them to satisfy global markets. Where interoperability is important, it should span national borders. Unique, country-specific standards present significant obstacles to the ICT industry. We believe the imperative for global standards will grow as ICT technologies are incorporated in other sectors. In specific areas where governments regulate to protect health, safety and the environment, global standards have the potential to help harmonize technical regulations around the world.

Because of the importance of standards, there is naturally great interest in the process used to develop them. The U.S. has long embraced a system that is decentralized, voluntary and market-driven. This system is diverse – a great variety of organization types contribute, from established formal standards development organizations to consortia that focus on a single technology. This diverse system undergoes continuous change as new organizations are formed and new approaches explored. The diversity and innovation of the U.S. system has enabled it to have a very substantial global impact.

Under our system industry and government have an especially important partnership -- standards bodies are industry-led and government is an important participant together with other stakeholders. The fundamental approach as defined in the National Technology Transfer and Advancement Act and as further explained in OMB

Circular A-119 is sound and effective. It is important for government and especially NIST to participate regularly and consistently in standards development where there is government expertise and interest. We encourage government agencies to allocate sufficient resource to support their participation.

While systems in other countries differ from that of the U.S., none works better and in fact we may see some aspects of the U.S. system becoming more widely embraced.

### **The U.S. Government Role**

The U.S. Government and especially NIST can be a very important stakeholder in the standardization process. In addition, NIST is in a position to take on a special role in the process - that of facilitator or convener. The work that NIST has undertaken on Smart Grid is an example of this role.

We believe that NIST's role as a convener should be limited to areas of national public policy priority and where there is an urgent need to accelerate availability of standards which meet such policy objectives. NIST's role can then be to facilitate a process which: is open and transparent to all interested U.S. parties; includes foreign party participation as appropriate; identifies/analyzes the usages and applicability of existing standards; provides inputs to SSOs to consider gaps or unmet needs in their standards development; and expresses a preference for global standards. The process may also provide guidelines and best practices to support the adoption and implementation of voluntary standards towards achieving the policy goals. To ensure alignment with existing industry/market efforts, NIST should first engage in a consultation with private and public sector stakeholders to determine the need for a facilitator role, the scope of work and the best process.

A recent area where additional standards development and implementation efforts could be beneficial is in the cyber security aspects of product and supply chain security assurance. The adequacy and acceptability of global standards in this area has been a focal point in recent discussions. Given the overlap with issues of national security, some governments have a desire to develop technical regulations/mandates and develop domestic standards to address security threats. These nationalistic approaches impact U.S. industry's ability to compete with local industries and develop cost-effective, secure and innovative solutions for global markets.

Developing globally supported product assurance and supply chain standards for ICT products presents a challenging issue. The Common Criteria for Information Technology Security Evaluation (CC), ISO/IEC 15408, is an important, recognized international standard in this area. The CC, along with the companion Common Methodology for Information Technology Security Evaluation (CEM), serve as the technical basis for the

international Common Criteria Recognition Agreement (CCRA). However, legitimate concerns with the current specifications have limited the adoption of the CC. Intel has been cooperating with industry and government leaders to enhance the scope, effectiveness and suitability of the CC and we believe NIST can play an important convener role in this effort. The various separate discussions on how to improve the CC have not moved fast enough to realize needed improvements. Intel would support NIST's active engagement in a facilitation of a process, in cooperation with the National Information Assurance Partnership (NIAP) which brings together interested US and international experts from the private sector and government to further the ongoing improvements to the CC. The end goal is to have a Common Criteria process whereby protection profiles (PP) are mutually recognized by all signatory countries and certification can be achieved through any accredited lab, regardless of geography. Additionally, NIST could help influence US policy to appropriately leverage the CC and certification as well as assist in international outreach efforts to ensure that other countries' policies align with the proposed U.S. advancements of the CC. Such international outreach is critical to having the CC process remain the primary global certification scheme for product assurance.

### **Perspective on Intellectual Property Rights and Standards**

Intellectual property rights help support innovation which may lead to greater productivity, increases in product sales, and increases in the growth and longevity of markets. Intel supports the rights of valid IPR holders and believes that SSOs are in the best position to establish and evolve effective and efficient IPR policies that meet the needs of their market and their constituencies. Any further exploration of perceived IPR issues or proposed solutions requires a careful examination of the facts, the potential effects on the interests of particular stakeholders and whether the proposed solution could have unintended consequences.

Products and services typically include innovative technologies to better compete in the market (often the global market). Such innovative technologies may infringe on patents and other intellectual property rights as a result of: a) design decisions that have nothing to do with standards, or b) design requirements necessary for compliance with multiple standards or industry specifications<sup>1</sup>. Therefore, SSOs carefully consider IPR policy matters so that their policies and procedures support implementation of their standards and specifications in a wide variety of business conditions for different products and services.

---

<sup>1</sup> See the research paper from Arizona State University: ASU "How many standards in a Laptop?" This research paper estimates that a theoretical laptop computer built in 2009 may be based on upwards of 500 interoperability standards, industry specifications, and proprietary specifications. [http://standardslaw.org/How\\_Many\\_Standards.pdf](http://standardslaw.org/How_Many_Standards.pdf)

Standards developers must deal with practical limits on the availability of information and the consequences of generating and dealing with potentially extraneous information that could add costs to participating in development and delay the standard's adoption. Through experience, SSOs have learned how to adjust their rules and procedures to gather appropriate relevant information in support of an efficient development process that results in viable standards. There is no one-size-fits all solution. However, SSOs have learned to create their own optimal solutions from their own experience and the experiences of other organizations, and are constantly evolving their rules and procedures. One example of purposefully optimized solutions can be found in the patent disclosure rules that vary between organizations. For many SSOs, obtaining an assurance from participants and other potential patent holders of a willingness to license on RAND terms provides sufficient information to form a viable standard. Other SSOs seek further notice of potential patented technology when a participant contributes technology to a standard under development. Still others may seek the identification of individual patents and patent applications. There are other approaches and innovative solutions continue to be created to deal with specific situations. Each of these approaches may be ideal for a particular standard's development environment and particular solutions may be unwarranted and impractical for other environments.

Because of the difficulties involved in predicting whether a patent or patent application may one day prove to be essential for compliance with a standard, SSOs are typically careful to make clear yet reasonable requests of their participants. Unreasonable and impractical SSO requirements will typically drive away innovative developers and other holders of patents who may wish to support the standard. This weakens the viability of the standard and could easily result in an outside party holding a blocking patent without making any commitment to be reasonable or non-discriminatory.

One example of a potentially well meaning but overly detailed and problematic process proposal involves requiring all participants of an SSO to disclose an anticipated maximum royalty rate for the licensing of essential patents. This is also known as a "mandatory ex-ante disclosure of licensing terms." The idea is to give the standards developers insight into the expected royalty rates so that they could potentially work around expensive technology before it gets locked into a standard. Such a disclosure may provide some useful information from aggressive royalty seeking patent holders, when they contribute a major piece of technology. However, the determination of whether a patent or patent application may become essential is a difficult and error prone process (especially in the early stages of development). Also, as noted above, licenses are typically negotiated on whole products or product families and rarely on essential claims for a single standard (except in

patent pools). Mandating all participants to submit such data (even when they may be unaware they hold patents that may apply to someone else's contribution, when royalties are not a particular concern, or when developers are discussing minor points or correcting errata) is expensive, has a considerable margin for error, is time consuming for all developers, and is not generally useful to the standards developers or implementers. SSOs have devised various techniques to seek appropriate relevant information with minimal disruption to their development process (e.g., requesting voluntary disclosures of certain information when necessary). Decisions regarding process and procedures are best left to the discretion of the standards developing body.

SSOs have demonstrated responsibility and have satisfactorily evolved their processes and procedures as new challenges emerged. This is evidenced by the tens of thousands of successful standards produced each year. Actual IPR problems are rare but do occur and require careful consideration in light of the environment for the particular standard involved. It is important to note that not all standards need to be successful and that not all IPR problems can or should be addressed by the SSO. Where necessary and appropriate, parties have litigated in courts and regulatory bodies have stepped in to address particular issues. SSO should continue to be the focal point for the content of their standards and specifications and in dealing with the related intellectual property issues in their policies and procedures as appropriate for their environment.

Thank you again for the opportunity to share our views on the U.S. standardization system. Intel would welcome an opportunity to respond to any questions about our comments.