



**Response of Cisco Systems and
Research In Motion
to National Science and Technology Council
Committee on Technology, Subcommittee on Standards
Request for Information Regarding
“Effectiveness of Federal Agency Participation in Standardization”**

**National Institutes of Science and Technology
Docket Number 0909100442-0563-02**

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Cisco Systems and Research In Motion (“RIM”) submit this response to the Request for Information (the “RFI”) issued by the National Science and Technology Council, Committee on

Technology, Subcommittee on Standards, on December 8, 2010. Our companies' response focuses on the portion of the RFI that seeks information regarding approaches to handling patents that are necessary to implement a standard.¹

I. Introduction

Cisco and RIM regularly participate in a variety of standards development activities. Both companies are active in a wide range of standards development organizations (SDOs), from large, formal SDOs like the Institute for Electrical and Electronics Engineering Standards Association ("IEEE-SA") to numerous informal special interests groups, fora, and consortia, that industry participants form to create a technical specification in a focused area, sometimes with the goal of subsequent standardization by a formal SDO.

The range of Cisco's involvement in standardization spans the range of Cisco's businesses, including: Ethernet, WiFi, Infiniband, and other local area networking standards; Internet Protocol, Multi-Protocol Label Switching, and other wide area networking standards; standards for the provision of video, voice, and broadband over cable television and telephone networks; and wireless air interface standards such as UMTS, LTE, and WiMax. RIM has

¹ RFI at 9:

With respect to intellectual property, the Sub-Committee would like to understand the approaches you have experienced or found most appropriate for handling patents and/or other types of intellectual property rights that are necessary to implement a standard. How does the need for access to intellectual property rights by Federal agencies factor into the use or development of standards? To what extent, if any, has the development, adoption or use of a standard, by Federal agencies in this technology sector been affected by holders of intellectual property? How have such circumstances been addressed? Are there particular obstacles that either prevent intellectual property owners from obtaining reasonable returns or cause intellectual property owners to make IP available on terms resulting in unreasonable returns when their IP is included in the standard? What strategies have been effective in mitigating risks, if any, associated with hold-up or buyers' cartels?

actively participated in the creation of fourth generation wireless air interface standards such as Long Term Evolution, as well as WiFi and security standards used to protect data communications across wireless networks. On any given day dozens of our companies' engineers are actively engaged in standards development, including attending meetings, creating technical contributions, and directing the work of SDOs as board members, working group chairs, or technical editors.

Both of our companies also actively patent innovations we create, including innovations that each company contributes for inclusion in standards. The *IEEE Spectrum's* 2010 Patent Power Scorecard ranked Cisco's patent portfolio as the best in the telecommunications industry.² Cisco innovations in the areas such as routing, multi-protocol label switching, security, and quality of service have been critical to the development of the internet and the ability of data networks to carry voice and video. Cisco has also played a leading role in the development of multiple generations of the DOCSIS standard that is used to transmit data over cable networks, the standard most households in the United States that receive broadband use to access the internet. Like Cisco, RIM is recognized as a leading innovator. The *IEEE Spectrum's* 2010 Patent Power Scorecard ranked RIM's patent portfolio Number 5 in telecommunications services.³ RIM's BlackBerry products, first introduced in 1999, reflect groundbreaking innovation leading to the creation of devices that are technically sophisticated, secure, and easy to use. The BlackBerry Enterprise Server, a software product that enterprises deploy to provide their employees with remote access to e-mail, is a scalable database capable of supporting the

² <http://spectrum.ieee.org/static/patentpower2010>. IEEE Spectrum assigned Cisco's patent portfolio a power score of 724, over ten percent higher than the second place company.

³ <http://spectrum.ieee.org/static/patentpower2010>. .

remote messaging demands of even the largest enterprise customers while integrating with leading e-mail products.

Both of our companies regularly implement standards in our products. Cisco is the industry leader in Ethernet switching products which implement the IEEE-SA's 802.1 and 802.3 family of local area networking standards. Cisco is also the leading developer of home and business wireless local area networking products that implement IEEE-SA's 802.11 family of wireless LAN standards. And it is a leader in the development of routers, which implement a large number of standards created by the Internet Engineering Task Force ("IETF") the International Telecommunications Union Telecommunication Standardization Sector ("ITU-T"), and other SDOs. Cisco also implements IETF and IEEE-SA standards in internet telephony products, ITU-T video compression standards in videoconferencing products, and CableLabs standards in cable set-top boxes, routers, and home networking products, to name just a few examples. Indeed, many Cisco products implement dozens of different standards created by dozens of standards development organizations.

RIM's mobile communication devices, including the BlackBerry family of smartphones, implement numerous wireless air interface standards developed by standards development organizations such as the European Telecommunications Standards Institute, the Third Generation Platform Project, the Telecommunications Industry Association, IEEE-SA, and the Bluetooth Special Interest Group. RIM's customers increasingly use their BlackBerrys to take and send still and video images, requiring the devices to support compression standards such as the MPEG and JPEG standards. BlackBerrys also implement a variety of voice compression and security standards. The BlackBerry Enterprise Server implements a range of e-mail standards as well as database standards.

II. OMB A-119 and the Changing Patent Landscape

In the 1990s, the US Government announced a policy favoring federal agency adoption of voluntary consensus standards rather than government-specific standards. The new policy was the result of the enactment in March 1996 of the National Technology Transfer Act, (“NTTAA”) which directed federal agencies to use “technical standards that are developed or adopted by voluntary consensus standards bodies”.⁴ The term “voluntary consensus standards bodies” in the NTTAA contrasted with standards developed specifically for government use, which had predominated prior to the NTTAA.⁵ In passing the NTTAA, “[t]he objective [was] for Federal agencies to adopt private sector standards, wherever possible, in lieu of creating proprietary, non-consensus standards.”⁶ The intent to substitute “voluntary consensus standards” for government-developed standards whenever possible was described further in an implementing regulation issued by the Office of Management and Budget, OMB Circular A-119, last revised in March 1998.

⁴ Pub. L. No. 104-113, § 12(d)(1).

⁵ In describing the purposes of the NTTAA, the National Institute of Standards and Technology notes that:

“Among other things, the NTTAA directs NIST to bring together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased dependence on in-house standards. To illustrate, when government agencies discovered a need for a standard, they had, in the past, created and adopted unique, proprietary standards when voluntary consensus standards already existed that effectively addressed those needs. The result was an unnecessary government standard that created confusion and added expense for those who had to comply with it.”

<http://gsi.nist.gov/global/index.cfm/L1-3/L2-6/A-166>

⁶ “National Technology Transfer and Advancement Act”, <http://gsi.nist.gov/global/index.cfm/L1-3/L2-6/A-166>

A. The Meaning of “Voluntary Consensus Standard”

In implementing the NTTAA, OMB Circular A-119 provided additional meaning to the term “voluntary consensus standard” by identifying a number of procedural attributes that must characterize the creation of a standard to merit federal adoption.⁷ The procedural attributes identified vary in specificity. With respect to intellectual property rights, the Circular requires that a standard be created under rules “requiring that owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties.” However, the other attributes that must characterize the standards development process for federal adoption to occur are defined less precisely, for example the requirements of openness and balance of interest.

In the thirteen years since the OMB Circular A-119 was last revised, two significant changes have emerged in standards development. We believe that these changes substantiate the pressing need to revise the Circular to adapt it to today’s realities in both standards development and the patent system.

⁷ OMB Circular A-119 at § 4(a)(1):

A voluntary consensus standards body is defined by the following attributes:

(i) Openness.

(ii) Balance of interest.

(iii) Due process.

(vi) An appeals process.

(v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

The first change is the increasing importance of informal standards development organizations, which have created standards which enjoy widespread adoption, including by federal agencies. However, informal SDOs do not necessarily provide each of the attributes mandated by the Circular. The second change is the new patent landscape, which calls into question the value of OMB Circular A-119's reliance on the availability of licenses on reasonable and non-discriminatory terms ("RAND") to protect federal agencies that adopt voluntary consensus standards.

The impact of the first change can be seen through examples of widely-used standards created by informal standards development organizations ("SDOs"). It is safe to say that every personal computer purchased by the US Government in the past five years has contained USB ports. The USB standard is created by the USB Implementers Forum, an SDO which does not provide the appeals process mandated by the Circular. Neither does the World Wide Web Consortium ("W3C"), which creates the XML and Cascading Style Sheet standards that are implemented in numerous websites, including websites maintained by US government agencies. And neither does the Bluetooth SIG, responsible for the familiar Bluetooth personal area networking standard.

The Bluetooth SIG also requires all participants to license patents they own that are necessary to implement the Bluetooth standard on royalty-free ("RF") terms.⁸ W3C's intellectual property rights policy promotes royalty-free licensing as the organization's default licensing mode and permits licensing on royalty-bearing, but reasonable and non-discriminatory

⁸ See Bluetooth SIG Patent and Copyright License Agreement, available at <https://www.bluetooth.org/Membership/agreements.htm> .

terms only in exceptional circumstances.⁹ To the extent that OMB Circular A-119's reference to the availability of intellectual property "on a non-discriminatory, royalty-free or reasonable royalty basis" is read to require that a voluntary consensus standard body must permit *both* royalty free ("RF") and royalty-bearing but reasonable *and* non-discriminatory ("RAND") licensing of essential patents, Bluetooth would not qualify under OMB Circular A-119 as a voluntary consensus standard, and the W3C's preference for royalty-free licensing might call into question the status of XML and CSS as well. The ambiguity in the Circular regarding whether participants in the development of a voluntary consensus standard must be able to choose between offering RF and RAND licenses may discourage federal implementation of standards created by open source development efforts.

More generally, terms like "openness" and "balance" used in OMB Circular A-119 are susceptible to different interpretations, raising questions about what rules an SDO must put in place to satisfy the Circular's requirements. We believe that the terms "openness" and "balance" must be understood to allow interested stakeholders in the market affected by the standard to take part in choosing and elaborating the standard. Nevertheless, what that means becomes less clear when applied to specific situations SDOs sometimes face. For example, while an SDO may be open to participation by the general public, it may support itself by charging participants fees to join, and those fees may effectively limit participation to industry participants rather than consumers. Does this mean that the standards created by such an SDO fails the Circular's requirement of openness? Likewise, an SDO may have both members that are primarily technology licensors and companies that are primarily implementers of a standard. The SDO may include companies that develop products at different levels of a supply chain, for

⁹ The relevant provisions of the W3C IPR policy are available at <http://www.w3.org/Consortium/Patent-Policy-20040205/Overview.html#sec-Exclusion>.

example semiconductor vendors, device vendors, and customers. However, the companies that choose to participate in the creation of a particular standard may be drawn predominantly from one group of companies or another. Does this mean that the standard in question suffers from a lack of balance?

Given both the potential for non-compliance by informal SDOs with all of the attributes identified in the Circular, and the ambiguity of some of those attributes, the time has come for a reexamination of the definition of “voluntary consensus standard”. In undertaking that reexamination, the US Government should recognize that the market has spoken: standards created under attributes that may not comply with every one of the OMB Circular A-119 attributes have enjoyed widespread adoption, including by US Government agencies. That suggests that a list of attributes that excludes an appeals process, that explicitly permits mandatory or default RF standards to qualify as “voluntary consensus standards,” and that provides SDOs with additional guidance as to how they can satisfy the requirements of openness and balance would conform the Circular to the reality of standards development in 2011.

B. The Circular’s Reliance on RAND as a Safeguard for Federal Adoption

The second way in which the world of standards development as it existed in 1998 has changed dramatically relates to the interface between standards development and intellectual property rights. In the thirteen years since the last revision to OMB Circular A-119:

- what has been described as the “patent thicket”, the proliferation of intellectual property rights in industries like telecommunications, computing, and

semiconductors operate, has grown ever more dense as more and more patent applications are filed;

- the products that technology companies make have become more complex and multi-functional, as what were once separate products converge; and
- the patent marketplace has become more liquid, with the emergence of non-practicing entities (NPEs) as significant owners and asserters of patents, including patents claimed to be essential to implement standards;

The implications of these developments for the standards development system are profound and inter-related: the patent thicket in information technology means that the implementation of even a single standard may require licenses to dozens or hundreds of patents owned by numerous licensors. For example, the IEEE-SA website identifies over 100 issued US patents that are claimed to be essential to implement the 802.11 WiFi standard, owned by dozens of different entities.¹⁰ According to research by Professor Timothy Simcoe, in 1998, when OMB Circular A-119 was last revised, there were 87 patent disclosures made to a set of nine prominent standards development organizations active in the telecommunications industry.¹¹ By 2003 that number had more than tripled, to 194 disclosures, before falling back

¹⁰ http://standards.ieee.org/about/sasb/patcom/pat802_11.html. The total number of patents claimed to be essential to the 802.11 family of standards is likely to be significantly higher, as many of the letters of assurance filed with the IEEE-SA do not identify specific standards, but instead offer a blanket commitment to license all patents that may be essential to implement an 802.11 standard. Nor is WiFi an isolated example. A study of UMTS, one of the two 3G wireless air interface standards implemented in the United States (by AT&T and T-Mobile), estimates that there are over 700 patents, owned by 33 different companies, that are required to implement UMTS. PA Consulting, *Essential Intellectual Property in 3GPP-FDD* (2006) at 17.

¹¹ The SDOs Professor Simcoe examined were American National Standards Institute (ANSI), ATM Forum, Alliance for Telecommunications Industry Solutions (ATIS), European Telecommunications Standards Institute (ETSI), IEEE-SA, Internet Engineering Task Force (IETF), International Telecommunications Union (ITU), Open Mobile Alliance (OMA), and the Telecommunications Industry Association (TIA).

to 125 in 2004.¹² Professor Stuart Graham, now the Chief Economist at the US Patent and Trademark Office, has noted that patents disclosed to SDOs are much more likely to be asserted in litigation than other patents.¹³

The emergence of multi-functional products means that common consumer information technology products, for example smartphones or notebook computers, may implement dozens or hundreds of standards. A recent article estimates that a notebook computer implements no fewer than 251 interoperability standards.¹⁴ A smartphone may implement several wireless air interface standards such as UMTS and GSM, WiFi for communication with short-range wireless hotspots, and audio, image, and video compression standards such as G.711 or AAC, JPEG, and MPEG-4.

And the rise of non-practicing entities (“NPEs”), companies that typically acquire patents solely to assert them and obtain royalties, as active purchasers and asserters of patents means that the ownership of patents essential to implement particular standards may become even more dispersed, and that a significant number of patents essential to implement standards will be owned by entities that are motivated solely by the desire to monetize patents they have

¹² Timothy Simcoe, *Explaining the Increase in Intellectual Property Disclosure*, at 2. Article available at <http://ssrn.com/abstract=1396332>.

¹³ Stuart Graham, *Patents and Technology Markets: How is the market operating, and can it be improved?*, presented at Federal Trade Commission Hearings on The Evolving IP Marketplace, slide 7 (presented April 17, 2010), available at <http://www.ftc.gov/bc/workshops/ipmarketplace/apr17/docs/sgraham.pdf>.

Professor Simcoe cites research by Stuart Graham showing that patents declared to standards development organizations are ten times more likely to be asserted in litigation than patents generally. Simcoe, *Explaining the Increase*, supra n. 12, at 4. Professor Simcoe notes that “[i]t is important to be careful with this statistic, since the causality could easily run in both directions. That is, disclosure may increase the probability of litigation, and patents that are likely to be litigated may also be more likely to get disclosed. In either case, these litigation rates ... show that ‘SSO patents’ have a great deal of economic and/or technological significance.”

¹⁴ See Brad Biddle, Andrew White, and Sean Woods, *How Many Standards in a Laptop? (And Other Empirical Questions)* (September 10, 2010) (identifying 251 interoperability standards implemented in a laptop computer). Available at <http://ssrn.com/abstract=1619440>.

acquired. Companies that implement standards in the products they sell are likely to be both licensors and licensees of patents that are essential to implement standards and are subject to RAND licensing commitments. Being both a licensor and a licensee tends to moderate the positions practicing entities take as to what royalties they can seek from potential licensees, because the positions practicing entities take as to what a “reasonable” royalty is when they are licensors can be used against them when they are themselves prospective licensees. NPEs, by contrast, are never licensees, and therefore have no incentive to moderate their views as to what royalties are reasonable. And patent assertions by NPEs are increasing. In 1998, the year the Circular was last revised, there were approximately 60 patent assertions by NPEs. In 2010 there were over 400.¹⁵

In requiring that federal agencies adopt only standards for which licenses to required patents were available on RAND terms, the drafters of OMB Circular A-119 assumed that the availability of RAND licenses would protect federal adopters from the risk of opportunistic behavior by owners of essential patents. This is, indeed, the function that RAND licensing is intended to serve. However, in the patent system as it exists today, RAND has not consistently proven to be a meaningful constraint on the hold-up value that patents that are essential to implement widely-adopted standards can attain. Instead, ubiquitous standards such as 802.11 and the UMTS standard for third-generation wireless have been plagued by disputes and lawsuits between implementers and companies claiming to own essential patents regarding whether particular licensing terms do or do not comply with RAND.¹⁶ Given the lack of

¹⁵ See <https://www.patentfreedom.com/research-lot.html>.

¹⁶ *E.g.*, *Broadcom Corp. v. Qualcomm, Inc.*, 501 F.3d 297 (3d Cir. 2007); *Research in Motion Ltd. v. Motorola Inc.*, 644 F.Supp. 2d 788 (N.D. Tex. 2008); *Ericsson, Inc. v. Samsung Electronics Co., Ltd.*, Civ. A. No. 06-63 (E.D. Tex. Apr. 20, 2007); *Apple Inc. v. Nokia Corp.*, C.A. No. 09-1002 (D. Del., filed February 24, 2010);

consensus in industry on what limits RAND imposes on the ability of a party claiming to own essential patents, the fact that patents needed to implement a standard are available on RAND terms provides federal agencies with little visibility into future licensing costs that they will face, either directly or included in the prices they pay when they purchase products that implement standards.

This lack of visibility impacts the federal role in standards development in three ways. First, as a purchaser of products that implement standards, the US Government, in common with other purchasers of products that implement the same standards, is exposed to paying more for those products because the prices vendors charge reflect royalty payments they make to numerous owners of essential patents, payments that RAND licensing commitments do little to constrain. Certainly some royalties paid to owners of essential patents fairly reflect the value of the licensed technology, but others reflect nothing more than the negotiating power that comes to the owner of a patent essential to implement a widely-adopted standard, regardless of whether the technology described in the patent is superior to other alternatives that existed at the time of standardization.

Second, the US Government sometimes views the creation of standards as necessary to attain a federal policy goal. Current examples are SmartGrid and eHealth. The lack of predictability that industry participants face regarding licensing costs discourages them from implementing standards because they have no way of knowing whether, if they implement the standards being created with government encouragement in the products they sell, they will then be able to sell those products at a price that will cover their costs, including licensing expenses.

Microsoft Corp. v. Motorola Inc., No. 2:10-cv-01823 (W.D. Wash., filed Nov. 9, 2010); *Intersil Corp. v. Proxim, Inc.*, Civ. No. 01-266 (D. Del. filed April 24, 2001).

This is why efforts to understand the intellectual property regimes underlying complex families of standards, such as the catalog of standards NIST has identified as relevant to SmartGrid,¹⁷ are so important: more information about future licensing terms will increase the interest of equipment suppliers and utilities in implementing the standards that the creation of a smart grid will require.

Third, opportunistic behavior involving patents that are essential to implement widely-adopted standards may harm consumer welfare by exposing US consumers to paying higher prices for widely-used products such as cell phones, smartphones, wireless access points, computers, and software. Carl Shapiro, now Chief Economist of the Antitrust Division, and Joseph Farrell, now Chief Economist of the Federal Trade Commission, highlighted this concern in an article they co-authored several years ago, writing that “standards hold-up is a public policy concern because downstream consumers are harmed when excessive royalties are passed on to them.”¹⁸ The federal government has a critical role to play in policing the standards development system to sanction opportunistic behavior in standards development, and in encouraging SDOs to adopt IPR policies that mitigate the risk of opportunistic behavior.

¹⁷ See NIST Special Publication 1108, “NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0”, available at http://www.nist.gov/public_affairs/releases/upload/smartgrid_interoperability_final.pdf.

¹⁸ Joseph Farrell, John Hayes, Carl Shapiro, and Theresa Sullivan, *Standard-Setting, Patents, and Hold-Up*, 74 ANTITRUST LAW JOURNAL 600, 608 (2007). As the Federal Trade Commission noted when announcing its settlement with Negotiated Data Solutions in January 2008, the Commission acted “to protect consumers from higher prices and ensure competition by preventing [N-Data] from charging higher royalties for the technologies used in the standard.” *In the Matter of Negotiated Data Solutions*, FTC Press Release (January 23, 2008) (available at <http://www.ftc.gov/opa/2008/01/ethernet.shtml>).

III. The New Patent Landscape and the Federal Role in Standards Development

Given the changes in the patent landscape since OMB Circular A-119 was last revised in 1998, we submit that it is time for the federal government to revise the Circular to protect federal interests both as an adopter of standards and as a promoter of the development of standards in support of initiatives like eHealth and SmartGrid. Specifically, the federal government should make clear, first, that the reference to RAND in the Circular should be the minimum that federal agencies should require before they choose to adopt a standard, and, second, that federal agencies are encouraged to include intellectual property-based considerations in their selection of particular standards for federal adoption, including whether the standards were created using IPR policies that provide the agencies, and the vendors from which they purchase products that implement standards, with predictable IPR licensing terms.

A. SDO Rules That Encourage or Require Participants to State Licensing Terms

To pick one example, the federal government should revise the Circular to announce a federal preference for standards created under rules that permit, encourage or require participants in standards development to state their maximum licensing terms during the standards development process, as is true at both the IEEE-SA and the VME Bus International Trade Association (“VITA”).¹⁹ The two federal agencies charged with enforcing federal antitrust laws, the Antitrust Division of the Justice Department and the Federal Trade Commission, have taken the clear position that disclosure of licensing terms during the standards development process

¹⁹ The IEEE-SA and VITA policies permitting or mandating disclosure of “not-to-exceed” licensing terms were the subject of Business Review Letters issued by the Antitrust Division of the Justice Department. See Letter, Thomas O. Barnett to Robert A. Skitol (October 30, 2006) (VITA) (available at <http://www.justice.gov/atr/public/busreview/219380.htm>) and Letter, Thomas O. Barnett to Michael A. Lindsay (April 30, 2007) (IEEE-SA) (available at <http://www.justice.gov/atr/public/busreview/222978.htm>).

“could help mitigate hold up that is not resolved in the first instance by the existence of SSO rules requiring disclosure of IP or by requirements that SSO members license on RAND terms”.²⁰

The advantages of a federal policy favoring adoption of standards developed with the benefit of specific information regarding licensing terms extend beyond the interest that the government has – particularly at a time when agency budgets are stretched thin – in being able to predict licensing expenses associated with the implementation of a particular standard. As noted previously, the lack of consensus regarding what RAND means leaves prospective implementers of standards uncertain regarding licensing costs and terms. Standardization in “patent thicket” industries like computing and telecommunications often comes down to selecting one technology that is protected by patents from among a number of close substitutes that are also patented. Without knowing what licensing terms are associated with the various choices, participants and implementers cannot predict the cost of implementation, and this uncertainty discourages adoption of standards. SDO rules that encourage or require participants to state maximum licensing terms:

may place an upper bound on a patent holder’s RAND commitment, and [] lower[] the risk that users of a standard will face demands for more restrictive licensing terms after the standard is set than SSO members expected when they chose to include the patented technology in the standard. Reducing this risk may speed adoption of the standard in the marketplace.²¹

A federal preference for agency adoption of standards created under rules that provide participants and implementers with more information about licensing terms than they typically

²⁰ US Department of Justice and Federal Trade Commission, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* (2007) at 53 (available at <http://www.justice.gov/atr/public/hearings/ip/222655.pdf>).

²¹ *Ibid.*

receive under current, RAND-based, rules could thus encourage implementation of standards that are critical to the realization of federal policy initiatives like electronic health records and SmartGrid.

B. SDO Rules That Measure the “Reasonable” Element of RAND by the Inventive Contribution a Patent Makes to a Standard

In addition to encouraging federal adoption of standards created under rules that provide implementers with meaningful information regarding licensing terms, OMB Circular A-119 should be revised to encourage adoption of standards created under intellectual property rights policies that may retain the use of RAND, but that define the “reasonable” element to focus on the contribution made by the particular patents to the value of the device in which it is implemented, rather than on the value of the entire device. This approach to defining the “R” element of RAND is consistent with recent cases on the calculation of a reasonable royalty by courts deciding patent infringement cases outside the context of essential patents.²² Those cases teach that the calculation of a reasonable royalty should not be based on the value of the entire device that implements an essential patent, but rather on the incremental demand for the product created by the inclusion of the invention claimed in the patent.

With respect to patents essential to implement standards, the determination of what royalties are “reasonable” should also include a consideration of the alternatives that were available to the participants in the standards development process at the time they decided to include the patented technology in a proposed standard. Some patents describe technology that

²² See, e.g., *Uniloc USA, Inc. v. Microsoft Corp.*, Fed. Cir. (Jan. 4, 2011); *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1337 (reducing damage award where patentee failed to show that claimed invention was “the basis – or even a substantial basis – of consumer demand for [the infringing product]”); *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 289 (N.D.N.Y. 2009) (reducing amount of damages awarded by jury where patentee “fail[ed] to connect consumer demand” for the infringing product to the claimed invention).

is so fundamental that the functionality the standard provides could not, as a practical matter, have been provided without infringing the patent. Other patents, however, may describe one of several equally attractive technologies that were available at the time a standard was being developed. But after a standard is finalized and widely adopted, both groups of patents are equally essential to an implementer of the standard. Measuring valuation by the inventive contribution a patent made to a standard at the time the patented technology was selected for inclusion will help isolate truly innovative contributions from those that derive their value mainly from the fact that they were selected for inclusion over equally worthy alternatives. Thus, far from discouraging innovation, IPR policies that define what “reasonable” means will help isolate those innovations that truly advance the state of the art and secure for their inventors a fair reward.

C. SDO Rules that Require Participants to Identify Patents They Refuse to License

Federal adoption of standards will also benefit from other safeguards intended to protect implementers of standards from the risk of opportunistic behavior in standards development. One safeguard involves patent disclosure. It is common for standards development organizations to have intellectual property rights policies that require participants to disclose patents (often including published patent applications) they own that may be essential to implement a standard under development. However, particularly for larger companies, compliance with disclosure obligations can be difficult because their patent portfolios may, as a practical matter, be too large for any person who attends standards development meetings or otherwise engages in standards development to be aware of all patents that might be related to a standard under development.

For this reason, many SDOs disclaim any obligation on participants to search their portfolios to identify potentially essential patents.

One way many SDOs, particularly informal SDOs, have responded to the potential uncertainty regarding the patent positions owned by participants in standards development is to adopt negative declaration systems, in which each participant is obligated to identify patents that individuals participating on its behalf are aware of that it believes will be essential to implement a standard, and to identify all patents that it refuses to license. The default rule is that the participant is willing to license all patents in its portfolio that it does not exclude. This type of intellectual property rights policy has the advantages of bringing potentially essential patents that individuals engaged in a standards development effort are aware of to the attention of the other participants while applying licensing obligations to all patents owned by a participant except those it specifically excludes from the scope of its licensing commitment. Such policies provide additional certainty to participants that patents that are essential to implement a standard will be available for license, whether or not the participant was unaware at the time of its participation that its patent could be essential. Consistent with revising OMB Circular A-119 to give federal adopters greater assurance that essential patents will be available for license, changes to the Circular that encouraged federal adopters to select standards created using negative declarations would be a positive step.

D. SDO Rules That Apply Licensing Commitments to Purchasers of Essential Patents

As noted previously, a significant new development that has occurred since OMB Circular A-119 was last revised in 1998 is the emergence of a liquid market for patents, including patents essential to implement standards. This has led to disputes regarding whether

purchasers of essential patents are required to honor licensing commitments made by previous owners of those patents to standards development organizations.²³ While judicial resolutions of these disputes have supported the view that a purchaser of patents that has notice of a licensing commitment given by the seller to a standards development organization is bound by that commitment, it would benefit the goal of certainty with respect to the availability of licensing commitments if OMB Circular A-119 were revised to announce a federal policy favoring adoption of standards created under IPR policies that require transferees of essential patents to be bound by licensing commitments given by their predecessors in interest.²⁴

E. SDO Rules That Prohibit Participants in Standards Development That Have Made Licensing Commitments From Seeking to Enjoin Implementation of Standards

Participants in standards development commit to license patents that are essential to implement a standard to implementers of that standard. In doing so, the participating patent owners surrender the right to exclude that is the core of the patent right.²⁵ They commit to grant

²³ E.g., *Rembrandt Technologies L.P. v. Harris Corp.*, Delaware Superior Court (Oct. 31, 2008) (available at <http://courts.delaware.gov/opinions/download.aspx?ID=113670>). See generally the Analysis of Proposed Consent Order to Aid Public Comment filed by the Federal Trade Commission in *In the Matter of Negotiated Data Solutions* (Jan. 23, 2008) (available at <http://www.ftc.gov/os/caselist/0510094/080122analysis.pdf>).

²⁴ We note in this regard that in announcing a set of suggested IPR policy provisions that standards development organizations wishing to avail themselves of a safe harbor with respect to the application of European Commission competition law, the Directorate General of Competition, the European Commission's antitrust enforcement agency, included a rule requiring that licensing commitments transfer with essential patents. *Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements* at ¶ 285 (January 14, 2011) ("To ensure the effectiveness of the FRAND commitment, there would also need to be a requirement on all participating IPR holders who provide such a commitment to ensure that any company to which the IPR owner transfers its IPR (including the right to license that IPR) is bound by that commitment, for example through a contractual clause between buyer and seller.") (available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:011:0001:0072:EN:PDF>).

²⁵ See Mark Lemley, *Intellectual Property Rights and Standard Setting Organizations* (2002) at 57 ("If a patent owner agrees to license its patents that cover a standard on reasonable and nondiscriminatory terms, others will assume that they are free to use that standard so long as they pay a reasonable royalty. There may be no express license between the patent owner and any of the users of the standard, but it seems perfectly reasonable to imply

licenses, subject to agreement on specific licensing terms. Nevertheless, US courts have permitted owners of essential patents to seek to enjoin implementers of standards from continuing to infringe.²⁶

Put simply, a patentee that has participated in the development of a standard and committed to license essential patents, but then seeks to enjoin use of its patent to implement that standard, acts contrary to the *raison d'etre* of requiring licensing commitments in SDO IPR policies. Permitting owners of essential patents to seek to enjoin the use of those patents provides them with significant bargaining power in pre-litigation negotiations over licensing terms.²⁷ It is often impossible to design around patents that are truly essential to implement a standard without losing interoperability with other devices. For example, while there may be dozens or hundreds of patents that are required to implement a wireless air interface standard, the inability to implement any one of them may prevent a cell phone from communicating with a base station, destroying the value of the phone. Faced with the prospect of shutting down their businesses, implementers of standards are powerfully motivated to avoid the risk of injunctions in disputes with those claiming to own essential patents. And, as previously discussed, the lack of consensus regarding what RAND means permits those patentees to exploit fully the bargaining power that the injunction threat provides.

We propose revising OMB A-119 to favor federal adoption of standards created by SDOs clarifying that a RAND or RF licensing commitment prohibits participants from seeking to

one from the conduct of the patent owner.”) (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=310122).

²⁶ *E.g., Commonwealth Scientific and Industrial Research Organisation v. Buffalo Technology, Inc.*, 492 F. Supp. 2d 600 (E.D. Tex. 2007), *reversed on other grounds*, 542 F.3d 1363 (Fed. Cir. 2008).

²⁷ See Farrell, Hayes, *et al.*, *Standard Setting, Patents, and Hold-Up*, *supra* n. 18, at 616-618. On the more general effect of the injunction threat on the negotiation of patent licensing royalties, see Carl Shapiro, *Injunctions, Hold-Up, and Patent Royalties* (available at <http://faculty.haas.berkeley.edu/shapiro/royalties.pdf>).

enjoin implementers of standards, at least until an objective third party such as a court or arbitrator has determined that the patentee has offered to license on reasonable terms.²⁸ Taking this step would help protect federal agencies from the hold-up risks created by the injunction threat, and would assure continuity of supply of products federal agencies purchase. Favoring standards created by SDOs that discourage or prohibit the use of injunctions would also remove a concern that industry participants may have as they consider whether to implement standards that are important to the realization of federal policy goals.

IV. Conclusion

The RFI asks whether issues regarding intellectual property rights necessary for implementation of a standard have affected federal development, adoption or use of standards. We believe the answer to that question is “yes”. First, the lack of consensus among industry participants as to what RAND means exposes federal implementers of standards to over-paying for products that implement standards because companies that develop those products are themselves exposed to opportunistic behavior by owners of patents claimed to be essential to implement standards. Second, the reliance on RAND in OMB Circular A-119 and SDO intellectual property rights policies, without the additional safeguards discussed in this Comment, may discourage industry participation in the creation of standards in areas where the creation of standards is necessary to the achievement of federal policy goals.

Fortunately, the federal government has the tools to support improvements in standards development that can address both challenges. By updating OMB Circular A-119 to reflect the

²⁸ Cisco and RIM take no position as to the availability of injunctive relief in the context of the defensive assertion of an essential patent in response to the actual or threatened assertion of a patent that is not claimed to be essential to the same standard. Cisco and RIM also take no position as to whether an SDO’s IPR policy may include broader defensive suspension or termination provisions.

current patent and standards development environments, the federal government will facilitate federal adoption of standards developed under rules that provide agencies with greater visibility into licensing terms and costs. Revising the Circular to favor transparency in standards development will both limit the future diversion of scarce federal resources to those who engage in opportunistic behavior in standards development and encourage industry to support the adoption of standards in support of critical government priorities.