



Preventing abuse of IEEE standards policy

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..... The current IEEE policy on patents (see the “IEEE patent policy” sidebar) is the same as that of the American National Standards Institute. This policy probably represents the current state of the art, and there is little need or likelihood that it will change significantly.

Recently, however, interpretation problems have arisen, and it has become apparent that some companies have sought to game the process as part of their business plans.

What is reasonable?

Consider this very recent problem: One company advised IEEE that it would adhere to IEEE patent policy if a proposed standard used, in part, its patented technology. It is central to the policy that a company owning a patent embodied in a standard must assure IEEE “that a license will be made available to all applicants ... under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.” Once the IEEE adopted the standard (which will remain nameless to protect the guilty) that partly embodied the patented technology, the company embarked on the following licensing program:

- It sent out letters saying it would offer licenses on the patented technology at a reasonable royalty rate for 30 days and after that the price would go up. “Therefore, you better sign up right away or else.” (That is not an actual quote from the letter; it’s

my translation from lawyerspeak into English. What the letter actually offered its recipients was a prospect of “lengthy, complex, and expensive litigation relating to the infringement” if they didn’t sign up within 30 days.)

- Without any prior warning, it sued several vendors (its competitors) and their customers for patent infringement at the time it sent out the letters. It said it would be willing to negotiate licenses but refused to withdraw the suits, in which it asked the court for damages and an injunction against continued infringing use of the technology. Apparently, it considered the patent litigation an appropriate part of the negotiation process for a license on reasonable and nondiscriminatory terms.
- Part of the standard terms and conditions of the license it offered was a confidentiality agreement under which the licensee agreed not to disclose the terms of its license to any other company. This made it difficult or impossible for any licensee to determine whether its license or license offer was on terms demonstrably free of discrimination.
- Another part of the process for negotiating a license on reasonable terms



and conditions was that the license applicant had to admit that it was a patent infringer before any negotiations could begin. If negotiations broke down, the admission remained in place and just about guaranteed a court ruling of patent infringement in subsequent litigation, if any.

Which of these, if any, constitute offering licenses to the patented technology embodied in the standard on reasonable and demonstrably nondiscriminatory terms? How is that to be determined? Maybe it will be determined in the patent infringement litigation. In the meantime, however, it appears that this company sold IEEE a gold plated brick.

One remedy, of course, is for IEEE to withdraw the standard. Then it could spend several years developing a new standard that does not embody this particular patented technology. In the interim, would the whole, painfully developed standard become obsolete? In addition, does withdrawing the standard play into

the hands of someone trying to delay or bollix up acceptance of an IEEE standard to further market acceptance of its own proprietary standard? (Some of the sued companies in the case described earlier leveled this charge against the patentee.)

It seems that what is reasonable is a moving target. But what about the wear and tear on standards users while it remains unclear whether a given practice is reasonable? Often, the courts will eventually settle the matter, but litigation is time-consuming and expensive. Furthermore, courts finding that something is not illegal does not always guarantee that it is reasonable. A more rapid, inexpensive, publicly available determination can be in the interest of standards users in the electronics industry.

Possible solutions

Such problems suggest a need to tweak the policy or perhaps to develop a mechanism to smooth over difficulties in the policy's actual operation. Two particular areas of concern are

- the language used to express, or seem to express, company agreement to adhere to IEEE patent policy; and
- questions about whether a particular company policy has "reasonable" terms and conditions or unreasonable ones.

Often, the two concerns interact. The term "reasonable" as applied to license terms and conditions in patent and antitrust law covers two different things. One is the royalty level or rate, say 2 percent of sales, which IEEE policy addresses in terms of "reasonable rates." The other is qualitative reasonableness, as contrasted, say, with obnoxiousness or oppressiveness. This department column addresses only the latter sense of "reasonable."

Standard formats

One problem may be a lack of standard formats for expressing agreement to abide by IEEE patent policy. In the past ("Licensing IP embodied in standards, part 2," *IEEE*

IEEE patent policy

The following text of the policy is available under IEEE-SA Standards Board Bylaws; <http://standards.ieee.org/guides/bylaws/sect6-7.html>.

6. Patents

IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard. This assurance shall be provided without coercion and prior to approval of the standard (or reaffirmation when a patent becomes known after initial approval of the standard). This assurance shall be a letter that is in the form of either

- a) A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement the proposed IEEE standard against any person or entity using the patent(s) to comply with the standard or
- b) A statement that a license will be made available to all applicants without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.

Micro, vol. 19, no. 5, Sept.-Oct., 1999) observers have complained about some companies dazzling and confusing IEEE task force working groups by submitting artfully worded statements that deliver less than they seem to promise. These statements (carefully crafted by companies' patent lawyers) hide the pea under a different shell than the one expected.

One proposed solution is to require use of standard language of adherence to IEEE patent policy, subject perhaps to exceptions where very good cause is shown for deviation. At one time, I thought that this was definitely the way to go ("Licensing IP embodied in standards, part 2," *IEEE Micro*, vol. 19, no. 5, Sept.-Oct., 1999). After watching the process longer, I am not so sure any more. New fact situations keep popping up. Perhaps industry constantly needs a larger repertory of formats to express adherence to IEEE patent policy. Moreover, new company policies that seemed unreasonable at their introduction have now become accepted in industry and no longer arouse opposition.

For example, companies offering licenses wanted to restrict how extensively they would adhere to IEEE patent policy. They wanted to limit the agreement on offering

licenses to only those companies that offered reciprocal treatment or promised not to threaten patent litigation against the offering company. Once this was controversial, but now such restrictions are common, and nobody seems to mind any more. Acceptance of this has been helped along by the Federal Circuit (the federal appeals court that decides all patent cases) finding that this practice is legal and does not "unreasonably restrain trade" in the Intergraph case.

To be sure, you can draw a valid distinction between what is not illegal and what is reasonable for purposes of IEEE standard-setting activities. Nonetheless, in this case the distinction does not seem to make any difference in the end, because people seem to have accepted the principle that a company should not have to do business with somebody "out to get it."

There is another view. This is that to require newcomers or startups to share their technology under cross-licenses with dominant or established firms will discourage commercialization of alternative, innovative technology by taking away the newcomers' comparative advantage. Such sharing would be the price for access to an IEEE standard that domi-

ASME antitrust case

In *American Society of Mechanical Engineers, Inc. v. Hydrolevel Corp.*, 456 US 556 (1982), the US Supreme Court held ASME liable for antitrust damages because its agents became involved in a scheme to exclude a new technology by manipulation of a part of the ASME Boiler and Pressure Vessel Code. The code had a standard for fuel cut-off valves, which cut fuel off when the water level in a boiler gets too low; the purpose is to prevent boiler explosions. This standard was widely incorporated into government-adopted safety codes, so that compliance with the “voluntary” ASME code was commercially necessary.

One manufacturer of these valves, M&M, dominated the industry. M&M’s valves used the existing technology, which the ASME standard recognized. This technology was a float-valve device; the float actuated a cut-off switch at a predetermined set point in the float’s vertical travel. Hydrolevel sought to introduce an innovative device using a stationary probe inserted into the boiler’s side to sense when water level fell below a predetermined set point. Boiler water is turbulent, so that sensed level is subject to transients or noise. Apparently, M&M’s device used the float’s inertia to decrease the effect of transients or noise (the float’s mass acts as a capacitor in an RC low-pass filter), while Hydrolevel’s device used a time-delay element requiring water level to remain below the set point for a predetermined time before fuel cut-off occurred.

M&M influenced the ASME committee to challenge the sufficiency of Hydrolevel’s design. The grounds were that the time-delay expedient was not adequate to assure that water level would not fall dangerously low during the time delay period. M&M then used this response to discourage purchase of Hydrolevel’s device.

The Supreme Court said that ASME was liable under an agency theory for the actions of its committee, which ASME had failed to supervise by requiring it to adhere to “meaningful standards” in interpreting the code that would prevent anticompetitive manipulation. Seemingly, this is a “due process” type of standards manipulation case. The standard-setting body must ensure that it operates under some sort of due process when it takes actions that can adversely affect market entry. It must also have meaningful standards, not indefinite ones that permit arbitrary action in interpreting the standard.

On the other hand, the Supreme Court [*Allied Tube & Conduit Co. v. Indian Head, Inc.*, 486 US 492, 510 (1988)] has said that there is no reason why company representatives are precluded from “presenting and vigorously arguing accurate scientific evidence before a nonpartisan ... standard-setting body.”

nates a particular market. So far, however, this risk has turned out to be more theoretical than pragmatic.

Here is a case, then, of something that a standard format might not have allowed a few years ago. But now the practice of demanding reciprocal treatment is accepted, because its proponents have convinced others that it really is reasonable. Yet, you could not tell from the wording of the IEEE patent policy bylaw that this qualification by a patentee in the terms that it offers is considered a reasonable limitation. You have to know the electronics industry practice, which probably is not written down in any publicly available place.

Another example of a practice that has

become accepted is adhering to IEEE patent policy only for patented technology that is necessary for use of the standard. This practice covers patent rights necessarily infringed by any device that complies with the standard, no alternative technology for compliance being in existence as yet. At the same time, merely advantageous technology (a so-called implementation) is excluded from the free or reasonable royalty-licensing offer. It is generally considered reasonable to withhold patent rights on specific implementations to keep them proprietary where other possible implementations exist, even if the other implementations are less advantageous. Again, you wouldn’t know this from reading the bylaw on

the IEEE Web site; you would need to know the unwritten industry practice.

Need for guidelines

One thing that IEEE patent policy needs is a set of interpretive guidelines, explaining the meaning of the official patent policy in greater detail. For example, the guidelines could include examples based on past problem situations. Also, there should be a mechanism for IEEE to issue opinion letters on particular problems as they arise, supplementing the guidelines.

IEEE could amend the patent policy to state that those promising to adhere to its patent policy must know what the promise entails: An agreement to follow IEEE policy incorporates by reference the IEEE’s then existing guidelines and opinion letters on what the policy means. The guidelines and opinion letters are posted on IEEE’s Web site. The adherents must understand that

- they are making a contract with IEEE for the benefit of users of a standard that embodies their technology;
- the standard’s users will rely on assurance letters given IEEE; and
- users will interpret assurance letters on the basis of Web-posted IEEE guidelines and opinions.

A more controversial addition might be for the policy to provide that disputes must be submitted for mediation or some other mechanism before an industry board.

IEEE concerns

IEEE has been reluctant to involve itself in this sort of activity. It prefers to put the patent policy up on the Web, stand back, and let each person figure out for himself (or by procuring a legal opinion letter) what it means. IEEE has also expressed concern that it would risk suit for antitrust violation if it got any deeper into defining reasonable and nondiscriminatory licensing terms. In this regard, it points to a 1982 US Supreme Court decision that held the American Society of Mechanical Engineers liable for damages to a boiler equipment manufacturer. One of the manufacturer’s competitors manipulated ASME officials (apparently, a

standard-setting committee) to provide a farfetched, bad-faith interpretation of an ASME safety standard. The spurious interpretation effectively excluded the suing manufacturer's equipment from the market as noncompliant (see the "ASME Antitrust Case" sidebar).

This situation is a real problem if you have potentially dumb, corrupt, or perhaps even naive officials. The answer, however, is to put safeguards in place to prevent rampant stupidity and ensure good faith. The problem exists only where IEEE acts in other than a future-looking manner, as with guidelines. That is, the problem exists only if IEEE becomes involved with a determination of whether its policy was in fact obeyed in a given instance.

The existence of the problem also requires a vague standard in the first place. Of course, requiring licenses to contain "reasonable" terms probably makes the standard vague. Making the standard more detailed and specific would help prevent the problem.

Let's assume, for example, that IEEE had to determine whether the licensing program described earlier satisfied its patent policy requirements for reasonable and nondiscriminatory terms. Suppose that an IEEE board, say three electronics industry management officials, heard presentations from the patentee and the aggrieved users of the standard. The board might conclude that requiring licensees to agree to confidentiality as to terms and conditions was inconsistent with an assurance to IEEE that the terms would be nondiscriminatory. Or it might hold that each license should be submitted in secrecy to a referee. The referee would determine whether discrimination was occurring and issue a yes/no report. The board might also conclude that changing royalty rates after 30 days, or threatening to do so, was inconsistent with an assurance to IEEE that the terms would be nondiscriminatory. It might conclude that suing first and negotiating later was not offering licenses on reasonable terms, or it might find that this practice was nasty but still outside the patent policy's scope and therefore none of IEEE's business.

Anyway, one side or the other would be

Secret Squirrel and more alleged standards skullduggery

A lawsuit in federal district court in Richmond, Virginia, raises further charges of abuse in the standard-setting process. This cast went to jury trial just before this issue of *IEEE Micro* went to press. Rambus Inc., a designer of high-speed SDRAMs, sued German chipmaker Infineon AG (a Siemens spin-off) for patent infringement. Infineon counter-charged Rambus with defrauding JEDEC (formerly the Joint Electron Device Engineering Council, now the JEDEC Solid State Technology Association, http://www.jedec.org/Home/about_jedec.htm). The fraud occurred when JEDEC was trying to set an open standard for SDRAMs. Infineon also claimed that Rambus

- breached a no-patents contract made with JEDEC for the benefit of standards users,
- violated the antitrust laws by trying to monopolize the SDRAM industry, and
- engaged in racketeering.

Infineon claimed that Rambus had patent applications on file in the early 1990s when it was participating in drafting the JEDEC standard. At the time, Rambus failed to disclose that it had any patents pending. (JEDEC's patent policy is essentially the same as IEEE's.) Rambus resigned from JEDEC in 1996, but it maintained communications with a JEDEC panel member whom Infineon identified as "Secret Squirrel." Secret Squirrel allegedly sent e-mails tipping Rambus off about the content of the emerging SDRAM standard. Rambus used this information to alter its patent applications to cover the specific technology being embodied in the JEDEC standard.

Eventually the patents issued at the end of the 1990s, and Rambus threatened the SDRAM industry with suits. Samsung, Hitachi, Mitsubishi, Matsushita, and several other DRAM manufacturers folded under the threats, taking rather pricey (3.5 percent) licenses. But Infineon, Hyundai (now Hynix), and Micron refused to take any licenses, which caused Rambus to sue them, leading to the present counter-charges based on the JEDEC episode.

On 9 May 2001, a jury returned a \$3.5 million punitive damages verdict against Rambus for committing fraud in the JEDEC standard-setting process. The judge threw out Rambus' patent infringement claim and Infineon's antitrust claim. Since annual memory chip sales are about \$30 billion (about 80 percent of which are SDRAM sales) something like \$800 million in royalties may be at stake in this lawsuit. Such a huge sum will doubtless ensure long, expensive litigation with all possible appeals. Rambus' CEO promised an immediate appeal of the fraud verdict.

mad about the outcome. Would that lead to an antitrust suit against IEEE for being a pawn of one side or the other in an anti-competitive scheme? Not if IEEE acts in good faith in a public and transparent manner, allows all interested parties to be heard, and rationally explains what it does. ASME's problem was that it failed to impose such requirements on its boiler equipment committee. ASME failed to require that the committee adhere to "meaningful standards" that would prevent anticompetitive manipulation of the technical standard. IEEE can avoid the pitfall into which ASME stumbled simply by doing what the Supreme Court said ASME should have done. If IEEE does that, the antitrust bugaboo is just a sham.

At least, no legitimate grounds for the antitrust suit would exist. I suppose a bad-faith suit is always a possibility, but sanctions exist to prevent such suits.

It has become apparent that some participants in IEEE standard setting are using the process covertly to further a business agenda to gain a competitive advantage. IEEE's agenda, however, is to promote technological progress (advance the state of the art) and innovation by minimizing difficulty in interoperability of electronic devices. The two agendas conflict at times. The problem is to find a way to make the IEEE agenda prevail over the other one. Further discussion of how to do this is needed, and I encourage comments from interested readers.