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Patent Fights Are a Legacy of MP3’s Tangled Origins

By DOUGLAS HEINGARTNER

AMSTERDAM, March 4 — Microsoft says it was doing the right thing: paying a German rights holder $16 million to license the MP3 audio format, the foundation of the digital music boom. Then an American jury ruled that Microsoft had failed to pay another MP3 patent holder, and slapped it with a $1.52 billion judgment.

But the MP3 toll gates do not end there.

The confusion stems from the number of companies and institutions — including Thomson, Royal Philips Electronics and AT&T (through Bell Labs, now part of Alcatel-Lucent) — that worked to create the MP3 standard almost two decades ago. The patent claims of those and others are increasingly being backed up by aggressive enforcement efforts, including lawsuits and even seizures of music players by customs authorities.

Until now, the most prominent holder of MP3 patents has been the Fraunhofer Society of Germany, which was founded in 1949 and has become Europe’s largest applied research organization.

The division that helped develop MP3, the Fraunhofer Institute for Integrated Circuits, earns millions of dollars a year in licensing fees from software makers like Microsoft, which incorporates the format into its Windows Media Player, and from music player manufacturers like Apple. The payments — typically $2,500 for a video game, or $2 a unit for music players — are administered for Fraunhofer by the French electronics firm Thomson, which also played a role in the early development of MP3.

The Web site of the Fraunhofer IIS is punctuated with references to the institute as “the birthplace of MP3,” “the home of MP3” or “the MP3 inventors.” Its detailed online history of MP3 portrays the format as an outgrowth of German university research in the 1970s, when German engineers began working on audio compression. One of Fraunhofer’s leading audio engineers, Karlheinz Brandenburg, is frequently referred to in the German media as the father of MP3, a title he dismisses.

“If people say ‘the’ father, it sounds like there was one person who had 60 percent of the work, and maybe a few others who had 40 percent,” he said. “And that’s not correct.”

Nonetheless, he thinks Fraunhofer’s self-portrayal, while perhaps a bit boosterish, is essentially accurate. “I don’t think anything on the Fraunhofer Web site is wrong; it just leaves out other parts of the history,” he said. “Certainly without Fraunhofer there would be no MP3 today.”

But Alcatel-Lucent, which won the court judgment against Microsoft last month, has its own version of that history. It says Bell Labs (whose patent rights Alcatel acquired when it bought Lucent Technologies last year) was the main creative engine behind what went on to become the MP3 standard.

“A common misunderstanding is that Fraunhofer invented MP3,” said John M. Desmarais, the lead lawyer in the
Microsoft case for Alcatel-Lucent, which is based in Paris. Though Fraunhofer was involved in the research that led to the MP3 standard issued in 1993, he said, “Bell Labs had already developed the fundamental technology” in the mid-1980s, “before Fraunhofer even came on the scene.”

He added that “I don’t mean to downplay other contributions of other companies.” Many other companies’ ideas were also incorporated into the final MP3 standard, Mr. Desmarais said, but that standard was largely based on work done at Bell Labs before it ever began collaborating with Fraunhofer.

“MP3 has a lot of parts to it,” and “two of the key parts are owned by Bell Laboratories,” he said, but “that doesn’t mean that other people don’t have an ownership interest.”

The group that made the MP3 standard official is the International Organization for Standardization, or ISO, a nongovernmental group based in Geneva that sets specifications for items as diverse as shipping containers and dashboard indicators. One of its many internal bodies is the Moving Picture Experts Group, or MPEG, a team of industry specialists established in 1988 to standardize digital multimedia formats.

Many proposals were submitted for the first standard for audio and video compression, called MPEG-1, which was completed in 1992 and formally published in several parts in 1993. The chosen proposals included Musicam (also known as MPEG-1 Audio Layer 2, a format used in digital broadcasting) and Aspec, which went on to become the basis for MPEG-1 Audio Layer 3, now called MP3.

Several companies — including the Dutch electronics giant Philips — claim patent rights to Musicam, and by extension, to a piece of MP3.

“In the case of MP3, it is very clear that this was not developed only by AT&T, Fraunhofer and Thomson, because it was based upon Musicam,” said Leon van de Kerkhof, a program manager at Philips Applied Technologies who was also a crucial member of the MPEG group at its inception.

Thomson and Fraunhofer, he said, “have always positioned themselves as the inventors of MP3, but it doesn’t mean that they are the only ones who contributed to the standard, and certainly not that they are the only ones who have intellectual property rights on the standard.”

A spokeswoman for Thomson, Martine Esquirol, acknowledged that Fraunhofer and Thomson were not the only holders of MP3-related patents. “We’re not involved in this patent dispute between Microsoft and Alcatel-Lucent,” she said by e-mail. “Thomson has not and does not license the patents in question.”

Thomson’s licensing program, she said, is based on 20 separate patent families that “cover at least part of” the MPEG specifications. Thomson licenses these patents to more than 400 hardware and software companies.

Muddling matters more, many of the companies on Thomson’s list of licensees, including Apple, Microsoft, Motorola, Nokia and Samsung, also pay for additional MP3 licenses from Sisvel, an Italian company whose American subsidiary is called Audio MPEG.

According to Sisvel, the MP3 patents it represents (on behalf of companies including Philips and France Telecom) are “compulsory for complying with the ISO standard.”

Sisvel has aggressively enforced these patents — for example, by having German customs authorities confiscate SanDisk MP3 players from the SanDisk booth at a German trade fair last September. In 2005, Sisvel sued
Thomson over licensing fees for MP3 patents that Sisvel said Thompson had stopped paying; they quickly settled.

In February, a little-known company called Texas MP3 Technologies also entered the fray, suing Apple, Samsung and SanDisk for infringement of what it said were its rightful MP3 patents.

Even the “father of MP3” title has been bestowed on more than Mr. Brandenburg of the Fraunhofer Institute. The chairman of the MPEG group, Leonardo Chiariglione, is frequently given that designation in the international news media, though he rejects the title.

“I am not the father of MP3,” he said. “I am the inventor of the machine” that led to MP3 and other digital media technologies, by which he meant the MPEG group, which he helped establish.

For those confused about where to turn to obtain an MP3 license for a new device or piece of software, he offers little solace. “The rule is that the MPEG working group is not allowed to consider patent issues in our technical work, so there is nothing I can do about it,” he said, “even though I consider the situation in general not positive for the wide adoption of the standard, which is what I have been working on.”