United States District Court,
N.D. Illinois, Eastern Division.

NEW MEDIUM LLC, Av Technologies, LLC, J. Carl Cooper, Pixel Instruments COrporation, IP Innovation LLC, and Technology Licensing Corporation,
Plaintiffs.
v.
BARCO N.V., and Syntax-Brillian Corporation,
Defendants.

April 15, 2009.

Raymond P. Niro, Arthur Anthony Gasey, David Joseph Mahalek, Douglas M. Hall, Joseph Nevi Hosteny, III, Kara Leta Szpondowski, Paul Christopher Gibbons, Tahiti Arsulowicz, Niro, Scavone, Haller & Niro, Ltd., Chicago, IL, for Plaintiffs.

Daniel J. O'Connor, Daniel Alan Tallitsch, David I. Roche, Edward Keith Runyan, Baker & McKenzie LLP, Chicago, IL, Darin Margules, Silver & Freedman, Los Angeles, CA, Kevin David Erickson, Maxwell J. Petersen, Pauley Petersen Kinne & Erickson, Hoffman Estates, IL, for Defendants.

OPINION AND ORDER

RICHARD A. POSNER**, Circuit Judge, Sitting by designation.**

I conducted a claims construction hearing on April 8, 2009. On the basis of the hearing and the parties' briefs submitted in advance of it I make the following determinations.

The object of claims construction is to define for the jury the key terms in the patent or patents in litigation. Markman v. Westview Instruments, Inc., 52 F.3d 967, 978-79 (Fed.Cir.1995) (en banc), affirmed, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The patentee is responsible for making clear, by his choice of language, what the scope of the patent is. If he fails to do that, he creates a trap for the unwary; a careful patent search might not place the producer of a similar invention on notice that he was infringing, if the patentee has failed to indicate the scope of his patent claims with precision.

The defendants in this case (Barco for short) contend that the plaintiff's (New Medium's) patents must be read narrowly in order that their scope be clear. Barco's object of course is to narrow the patents to the point where it will be clear that its own products do not infringe. I take up the contentions in the order in which they appear in Barco's briefs. I do not discuss them all. Some I need further briefing on, as I indicate at the end of this opinion; some seem so inconsequential that I ask Barco to give careful consideration to abandoning them. To expedite matters, I direct both sides to submit in a single, jointly negotiated document, within 14 days, a list of unresolved claims construction issues together with a brief statement of the parties' contentions regarding them (the competing statements to be arrayed together under each issue), with whatever supporting argument or documentation is necessary. All submissions must be brief and

nontechnical and eschew patent-law jargon. Since I am neither an electrical engineer nor a patent lawyer, and since this case will be tried to a jury, the parties' lawyers must translate technical and legal jargon into ordinary language.

All the patents at issue in this case deal with methods of filtering out "noise," which is to say distortions, in electronic signals displayed on television screens or other electronic visual media, such as computer screens. Patent '070, with which I begin, is captioned "Noise Reduction System for Video Signals," and most of the claims in it relate to the use of "adaptive comb filters" to reduce noise. Composite video signals have two primary components: luminance, which projects the details of a picture in black and white, and chrominance, which projects color. The "comb" metaphor is based on the fact that such a filter "combs apart" the luminance and color frequencies to give the picture a sharper resolution. In contrast, a "recursive time integration system" scans the signal for frequencies above a desired level and if it finds them eliminates them, for example by inversion (creating a mirror-image frequency that combines with the unwanted frequency, so that both disappear, as when 1 is added to -1 to yield 0). Claim 9 and other claims in the patent that Barco wants me to construe narrowly do not mention adaptive comb filters. They speak merely of comparing pixels (the tiny optical images that together create an electronic display) and replacing a "noisy" pixel with a "noiseless" one. This claim is consistent with the use of a recursive time integration system. But Barco argues that nowhere in the patent is any system for reducing noise other than adaptive comb filters described, and so claim 9 and its cognate claims should be construed to be limited to such filters (which Barco claims its allegedly infringing products do not contain). But in fact columns 5 and 6 of the '070 patent describe "an adaptive time delay system" for eliminating a problem ("motion effect") with recursive time integration systems, and although the adaptive time delay system is not recursive, neither is it an adaptive comb filter. Therefore I reject the narrow reading urged by Barco.

Barco urges several other narrowing readings of the '070 patent. For example, it wants it narrowed to video signals, which is to say signals generated by a cathode ray tube, thus excluding signals transmitted to a computer from a disk or over the Internet and displayed on the computer's screen (a liquid crystal display). Barco points out that the patent is a successor to a 1981 patent, which predated the use of computers to display such images. That is a very weak argument. So far as appears, the patented technology would operate identically to remove noise from either a cathode ray tube or a liquid crystal display. An invention doesn't lose patent protection when used in a product that did not exist when the invention was made. An inventor who patented the spark plug before there were motorcycles would be protected by his patent from the unauthorized use of his invention in motorcycles.

This discussion disposes of Barco's further argument that the term "raster" which appears in the patent is necessarily limited to a video signal. The term refers to the pattern that an electronic signal makes on the display screen, for example, a television picture; the pattern equally appears on a computer screen. Compare a movie watched on television with a movie watched on a computer screen; in both cases there is a raster, that is, a patterned display generated by the electronic signal. Rasters are also used in printing, as when a computer translates an electronic signal into a patterned display (called a bitmap), which is then sent to a printer.

Barco wants the term "noise" in the patent to be confined to what it calls "random noise." It never explains what "nonrandom noise" is or why the patented invention would have any different effect on such noise. It also wants "noise" confined to distortions in the brightness of the displayed image, as distinct from distortions in its color. It notes that the patent equates noise to excessive "magnitude" of the signal, and says that magnitude is a synonym for brightness. The word "noise" in the context of electronic signals does not

have its ordinary-language meaning of loud or meaningless sound, but refers to any distortion in the signal, and the signal includes frequencies that convey brightness and frequencies that convey color, and both types of frequency, when "noisy," are filtered by the patented invention, as is evident from the description of the invention in the patent.

Barco also argues that "adjacency" in the patent should be confined to spatial adjacency, and exclude temporal. Remember that one aspect of the patented invention is comparing pixels and eliminating any pixel that distorts the signal, usually because its frequency is too high. The pixels can be adjacent, that is, side by side, or they can come one after another, since the visual image will be changing every fraction of a second if it is a moving rather than a still picture. But that leaves the question: how close do the pixels need to be to each other, whether in time or in space, to be "adjacent"? Barco argues that an "adjacent" pixel is one that is "closest to it, without intervening pixels." New Medium argues that "adjacent" means "sufficiently nearby ... for purposes of noise reducing a central pixel." Barco's definition is closer to the common-sense meaning of the word. But a patent owner can supply his own definition of a word, even if it doesn't match its ordinary meaning. Vitronics Corp. v. Conceptronic, 90 F.3d 1576, 1582 (Fed.Cir.1996).

New Medium points out that the patent states that "surrounding elements do not have to be truly adjacent or symmetrically patterned, however experimental results indicate that the adjacent symmetrically patterned elements are best." But this language defines "surrounding," not "adjacent"-and in fact appears to adopt the ordinary meaning of the word "adjacent" in explaining that elements do not have to be adjacent to be surrounding.

This impression is reinforced by claims 18 and 19:

18. A method for reducing noise on a signal derived by scanning an image comprising the steps of establishing a reference threshold level, comparing a central pixel to adjacent pixels to determine whether the absolute value of the difference between each of such adjacent pixels and the central pixel is less than said reference threshold level, and computing an average of said central pixel and those adjacent pixels that are within said reference threshold level of said central pixel, the total number of pixel signals used in computing this average varying and outputing this average as the value of said central pixel, this averaging increasing the apparent signal to noise ratio of the video signal.

19. A method for reducing noise on a signal derived by scanning an image comprising the steps of establishing a reference threshold level, comparing the level of a central pixel to the levels of a plurality of the surrounding pixels to determine whether the absolute value of the difference between each of such surrounding pixels and the central pixel is less than said reference threshold level, computing the sum of the levels of said surrounding pixels that are within said threshold reference level of said level of said central pixel plus the level of said central pixel, computing the number of pixels summed, dividing said sum by said number to determine an average value for the levels of similar pixels, and outputing said value for said central pixel, this process increasing the apparent signal to noise ratio of the video signal.

Claim 18 uses the word "adjacent," while claim 19 uses "surrounding." I can't think of any reason why the patentee would have used a different word unless he believed it meant something different. And since we know he believed that "surrounding" doesn't require pixels to be "truly adjacent," it can be inferred that "adjacent" does require the pixels to be next to each other. So I accept Barco's effort at narrowing the patent in this respect.

Barco argues for several other narrowing constructions in the '070 patent; they seem at once trivial and repetitive, and are mentioned rather than argued in its brief. If Barco wishes to press its arguments it can do so in the submission that I have ordered. But I warn Barco against making frivolous, perfunctory, scattershot contentions, which can invite sanctions.

The '547 patent, to which I turn next, is similar to the '070, but is limited to adaptive comb filtering. Claim 1, the only claim in the patent that Barco challenges, claims several "means" of performing various functions that make up the operation of an adaptive comb filtering system. Claim 1 is what patent law calls a "means and function" claim. Instead of claiming an object or structure-a thing-Claim 1 of the '547 patent claims a means of performing a function (actually several means and several functions). 35 U.S.C. s. 112. Because the means might be implemented in a variety of structures, providing proper notice of the scope of the patent requires that the patent describe a structure or structures that would implement each means claimed, lest other inventors or users be left to speculate, concerning their potential liability for infringement, across the whole range of conceivable embodiments.

Recall that "inversion" is the creation of a mirror-image frequency to a frequency that causes distortion, resulting in the elimination of both frequencies by analogy to adding 1 and -1 and getting zero. Barco argues that "Inverter 43," although not mentioned in Claim 1, is an essential element of the structure described there and so the "means" claims in Claim 1 are limited to structures containing that inverter. But so far as appears from the patent, Inverter 43, while it may be part of the structure described in the patent, does not perform or assist in performing the function described in the "means" claim at issue. It has an unrelated function. New Medium further argues that "bandpass filter 30" is an element of the structure because Claim 1 describes a "means for receiving ... and separating said video signal" and bandpass filter 30 performs the receiving function. But the patent describes bandpass filter 30 as performing filtering (as the name implies), not receiving.

Barco wishes to narrow the meaning of "combed chroma signal," a term used in the patent. The term means a signal that has been "combed" by a filter to eliminate a frequency that distorts the color that the signal displays. The combed chroma signal discussed in the patent has additional specifications, which Barco wants to make part of its meaning. But I agree with New Medium that the specific signal is merely an example of a combed chroma signal, rather than a definition of it. Barco's additional proposals for narrowing terms in the ' 547 patent suffer from the same infirmity, so I will not discuss them separately.

This leaves for consideration the closely related set of patents that the parties call the "'594 family" of patents. The "family" differs mainly from the '070 and '547 patents in being "head end" rather than terminal filtering devices: they filter out noise at the point at which the signal is sent rather than received. The principal issue with respect to the "family," and the only one I shall discuss in this opinion, is whether the '594 patent contains "means and function" claims, for if it does, then as I explained earlier this means that only an implementing structure described in the patent can infringe.

If a patent claim uses the word "means," this creates a rebuttable presumption that it is a means and function claim. York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed.Cir.1996). If it uses a different word, even an ambiguous one like "section" or "circuit" or "unit," which could denote either a part of a process or action, or a thing (for example, a "circuit" can be an orbit or other intangible path traced by electrons or other objects, but it can also be a physical object), the presumption is reversed. Linear Technology Corp. v. Impala Linear Corp., 379 F.3d 1311, 1319-21 (Fed.Cir.2004). Claim 1 in the '594 patent claims "an electronic apparatus for processing an input signal having synchronizing components

including in combination a) an input processing section responsive to said input signal to separate said synchronizing components therefrom and to provide a processed signal; b) a clock section for generating a sampling clock; c) a sampling section operative to sample said processed signal and provide samples thereof in response to said clock section," etc. "Sampling" usually refers to a methodology (drawing a sample from a population) rather than to an object. But as in Linear Technology Corp. v. Impala Linear Corp., supra, 379 F.3d at 1320-21, the "contextual language," id. at 1320, of the patent-"clock section for generating a sampling clock" and "sampling section" that provides samples in response to the "ticking" of the clock-adequately indicates a "structural arrangement of ... components." *Id.; see also* Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1374 (Fed.Cir.2003). (The "clock section" is a kind of metronome that counts the frequencies as they are emitted and "tells" the filtering device how often to measure and if necessary eliminate (whether by combing out or by inversion) a frequency.) The same is true of the other ambiguous terms in Claim 1: they too denote structures rather than processes (means). We are mindful that in a related litigation over this patent another district court ruled that the word "section" does not sufficiently describe a structure. Technology Licensing Corp. v. Videotex, Inc., 2002 WL 32166568, at *3-5 (N.D.Cal. Nov.14, 2002). The court analyzed the words "section" and "circuit" in isolation, however. It did not appreciate the significance of the fact that each reference to "section" is paired with an additional descriptive term or phrase, such as "clock" or "sampling." It relied on Apex, Inc. v. Raritan Computer, Inc., 187 F.Supp.2d 141 (S.D.N.Y.2002), which was later vacated by the Federal Circuit on the ground that the word "circuit" does describe a structure and that "adjectival qualifications," like the descriptive phrases that we mentioned, further define that structure. Apex Inc. v. Raritan Computer, Inc., supra, 325 F.3d at 1373-74.

As in the case of the '070 and '547 patents, Barco makes a number of defi-nitional arguments with regard to the '594 patent family in an effort to narrow the scope of those patents. Because time did not permit discussion of these arguments at the hearing, I will not address them here beyond recording my tentative impression, based on the briefs, that Barco is proposing definitions that arbitrarily curtail the scope of the '594 group of patents. I direct the parties to address these definitional issues as part of the further claims-construction submission that I have ordered, and in the format that I have directed, so that I don't have to flip back and forth between briefs.

That submission will be due by close of business on April 29, 2009.

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