

**UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

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| NEW MEDIUM LLC, AV TECHNOLOGIES, LLC, |) | |
| J. CARL COOPER, PIXEL INSTRUMENTS |) | |
| CORPORATION, IP INNOVATION LLC, and |) | |
| TECHNOLOGY LICENSING CORPORATION, |) | No. 05 C 5620 |
| |) | |
| <i>Plaintiffs,</i> |) | Judge Richard A. |
| |) | Posner |
| |) | |
| v. |) | Sitting by desig- |
| |) | nation |
| |) | |
| BARCO N.V., and SYNTAX-BRILLIAN CORPORATION, |) | |
| |) | |
| |) | |
| <i>Defendants.</i> |) | |

OPINION AND ORDER

This is the second of two rounds of claims construction in this case. On April 8, 2009, I conducted an initial claims construction hearing, and on the basis of that hearing and the parties' briefs submitted in advance of it I issued an order construing a number of disputed claims. I asked the parties to consider which of the remaining claims still required clarification, and they have returned a list of seven terms. These terms appear in U.S. Patent Nos. 5,550,594, 5,946,049, 6,141,057, 6,392,707, 6,469,741 or 6,989,869 (the '594 family), which deal with processing video signals, including improving their quality and processing more than one signal simultaneously.

I begin with the word "sampling." In the world of video signal processors, sampling means measuring a video signal at various points in time. The measurement takes the form of a sequence of numbers that can then be used to construct a digital reproduction of the original signal. The parties disagree over how frequently the patents in the '594 family require that the sampling be conducted. The industry standard, referred to as the "Nyquist rate," involves sampling at

twice the highest frequency contained in the signal. Sampling at lower multiples is called “oversampling.” The defendants (Barco for short) construe “sampling” to mean oversampling at a rate more than four times the highest frequency of the input signal, on the ground that language elsewhere in the patent makes clear that the invention is limited to oversampling. It’s true that the ‘594 patent family refers to oversampling as a key part of the invention. But the ‘594 patent also states that signals may be “sampled at any precision at Nyquist rates or above.” The patent applicant (Cooper, New Medium’s principal) understood the difference between sampling and oversampling, and used the terms independently. Barco has not established that the word “sampling” should be replaced with an entirely different word—oversampling—rather than given its ordinary meaning. *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003) (“we indulge a ‘heavy presumption’ that claim terms carry their full and ordinary meaning...unless the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution.”); *Johnson Worldwide Associates v. Zebco Corp.*, 175 F.3d 985, 989 (Fed. Cir. 1999) (“a court must presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms”). I therefore accept New Medium’s definition, which is based on the dictionary of the Institute of Electrical and Electronics.

Using one set of signal samples to create a second, higher-quality set is called “interpolating,” and the parties dispute whether when interpolating occurs as described in the ‘594 patent family the second set must contain fewer samples than the first, on the theory that the better second set is produced by discarding samples from the first set that contain errors or other distortions. New Medium opposes such a restriction, pointing out that the ‘594 patent states that it may be desirable “to interpolate a relatively low number of samples taken at one standard, and converting to a *higher number of samples*” (emphasis added). Barco ignores this statement and contends that Cooper adopted the narrower definition when in 1994 he told the patent office that “interpolation is a *decimation* from oversampling or other processing to provide samples of improved sampling resolution compared to the initial samples” (emphasis added). But in the same paragraph Cooper said that he “wish[ed] to make it clear that the [revised] claim language is not intended to imply any limitation on the source of or numbers of samples other than as specifically claimed.”

Barco is correct that a patent applicant can’t tell the patent office that his claim means one thing and then “later argue to a court that [it] means something else.” And if Cooper’s statement clarifying that he did not intend to limit the number of samples had been made later, Barco would have a powerful argument. But it wasn’t; it was before the patent examiner when the examiner re-

viewed Cooper's statement regarding decimation. I therefore accept the ordinary meaning of the word, proposed by New Medium.

The aim of sampling and interpolating is to produce a better digital signal. Cooper's patents refer to this result as "improved resolution." Barco proposes that "improved resolution" means that the samples that have been created contain more bits than the original samples. It points to the statement in patent '594 that "the use of oversampling and interpolation to an increased number of bits of resolution is believed to be a novel feature in view of the unexpected result of reducing distortions." Barco also points to several examples given in the patent in which sampling and interpolating increase the number of bits. New Medium argues that when the specification says "an increased number of bits of resolution," it is not referring to the overall number of bits but rather to the number of "effective" (which I assume means non-distorted) bits. Therefore, "improved resolution" means only that the distortion in the signal has been decreased and not whether the process has created a greater number of bits. Although the words "improved resolution" do not negate this possibility, Barco's interpretation is more consistent with the rest of the patent. Cooper used the same "bits of resolution" language when referring to an increase in the overall number of bits: "interpolation filter 4 operates to increase the number of bits of resolution of the digitized video signal, for example from 10 to 12." Barco is right that improved resolution refers to increasing the overall number of bits. Cf. *Technology Licensing Corp. v. Videotek, Inc.*, 2002 WL 32166568, at *5 (N.D. Cal. Nov. 14, 2002). Barco also argues that the increase must be of at least two bits, but there is insufficient evidence to justify imposing such an exact requirement.

Still another term that I've been asked to construe is "synchronize." New Medium proposes that synchronizing means "a signal which is output to have a phase relationship with a reference signal." (We aren't told what "a phase relationship" is.) Barco contends that synchronizing means "to adjust the phase or phase and frequency of the incoming signal to match an asynchronous reference. Synchronization does not include an operation with a fixed delay with no provision for any phase or frequency change." Cooper told the patent office that "synchronizing, as used in the art and in the application means to adjust the phase or phase and frequency of the incoming signal to match an asynchronous reference." New Medium is correct that this definition does not appear in the patents. But there is nothing to contradict it, and when a patent applicant tells the patent office exactly what he meant, we take him at his word. *Omega Engineering, Inc. v. Raytek Corp.*, *supra*, 334 F.3d at 1324 ("where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender"). "Synchronizing" means what Cooper says it did:

adjusting the phase or phase and frequency of the incoming signal to match an asynchronous reference. The definition is consistent with the caption of the '594 patent: "Apparatus and method for synchronizing asynchronous signals."

The phrase "a timing circuit to select a reference signal" appears in the '049 patent, and New Medium wishes to define it as "an electronic switch having a plurality of inputs and an output and operable to couple a selected input to the output." Barco argues that the words "operable to couple" impermissibly change the meaning of the claim. According to Barco, under New Medium's definition the timing circuit must be capable of selecting only a reference signal, whereas under Barco's version (omitting "operable") the timing circuit must be able automatically to select a reference signal. New Medium doesn't respond to this argument, and "to select" could refer either to a process that operates automatically or to one that merely could be operated automatically. What tips the balance in Barco's favor is that although Cooper omitted the word "operable" in the quoted phrase, he included a variation of it elsewhere in the same claim. Claim 1 on patent '049 states that "a timing circuit to select a reference signal... and *operative to provide a timing signal.*" I agree with Barco that there is no reason to include the word "operable" in the construction of the claim.

Another term I am asked to construe is "secondary signal." New Medium proposes that a secondary signal "may be a related or unrelated but associated signal," while Barco wants to limit it to "analog and digital audio, time code, and machine control signals that are related to the input video signal;" by "related" Barco means that the signal "must be associated with the input signal and must have a timing relationship with the input signal." Barco is correct that the patent implies a connection between a primary signal and a secondary signal; it refers to "a secondary signal *associated with said input signal*" (emphasis added). But the patent refers to "related or unrelated secondary signals," and although this language makes use of the word "associated" somewhat confusing, it is apparent that two unrelated signals could be associated with each other, as when they're being processed simultaneously. What makes one signal secondary is not necessarily that it supports a primary signal which is based on the same source material, as might be the case with an audio signal accompanying the video signal, but that the signal is not the primary focus of the image that is being projected. So I accept New Medium's definition.

Last, the parties believe that the term "temporarily store said pixels" (or "samples") needs clarification. New Medium proposes that the word "store" means "delay or store," on the ground that "people in the broadcast industry understand that delay and store may be used interchangeably." New Medium points to no evidence, however, and nowhere in the patent or in the history of its prosecution in the patent office did Cooper use "store" and "delay" synony-

mously. And if they were synonyms New Medium's definition would be redundant, while, if they are not synonyms, reading both into the patent would expand the scope of the invention unjustifiably.

It is hereby ordered.

A handwritten signature in black ink, appearing to read "Richard A. Posner". The signature is fluid and cursive, with a long horizontal stroke at the end.

United States Circuit Judge,
Sitting by designation

May 4, 2009