United States District Court,
W.D. Wisconsin.

GENERAL ELECTRIC COMPANY,
Plaintiff.
v.
SONOSITE, INC,
Defendant.

No. 08-cv-298-bbc

Nov. 26, 2008.

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Christopher G. Hanewicz, John S. Skilton, Perkins Coie, LLP, Madison, WI, Jeffrey Cox, Heller Ehrman, LLP, Mark Parris, Orrick, Herrington & Sutcliffe, LLP, Seattle, WA, Patricia Thayer, Heller Ehrman, LLP, San Francisco, CA, for Defendant.

OPINION and ORDER

BARBARA B. CRABB**, District Judge.**

Defendant Sonosite, Inc. owns United States Patent No. 5,722,412 (the '412 patent), which discloses a method for constructing ultrasound technology into a hand held portable unit. Plaintiff General Electric Company has brought an action seeking a declaration that defendant's '412 patent is invalid. In response, defendant has filed a counterclaim against plaintiff for infringement of claims 11-14 and 16-18 of the '412 patent.

The parties have submitted motions requesting construction of three disputed terms in claim 11 and claim 16 of the '412 patent and a claims construction hearing on these disputed terms. (The parties have agreed to the construction of several other terms.)

As an initial matter, defendant has filed a motion for leave to file a targeted reply to the second declaration by plaintiff's expert, Dr. Mark Schafer, on the ground that this declaration contains opinions and exhibits that could and should have been filed with plaintiff's first brief in support of claims construction. Defendant argues that it has been deprived of the ability to respond to this evidence and that this court is deprived of making a full and fair assessment based on all relevant evidence regarding the claims. Because the opinions and exhibits presented in Dr. Schafer's second declaration are unnecessary to a construction of the disputed terms in the '412 patent, defendant's targeted reply is unnecessary. Its motion will be denied.

Upon reviewing the briefs in support of claims construction and from the patent claim, I agree that construction of the disputed terms is appropriate. The jury would benefit from having a judicial construction of the following disputed terms from defendant's patent: "a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer"; "a digital beamformer which delays and combines digital echo signals"; and "wherein said array transducer and said beamformer are located in one or more enclosures weighing less than ten pounds (4.5 kilograms)." However, I conclude that no hearing is necessary to construe these terms.

OPINION

A. *Standard for Construing Claim Terms*

When construing disputed terms in a claim, a court should generally give the terms their ordinary and customary meaning. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). The ordinary and customary meaning of terms "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corporation, 415 F.3d 1303, 1313 (Fed.Cir.2005). The Federal Circuit has held that the person of ordinary skill would read the terms both in the context of the claim in which it appears and "in the context of the entire patent, including the specification." *Id*. (citing Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed.Cir.1998)). Additionally, a patent's prosecution history can be relevant to construing disputed terms of a patent as it "provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1317.

Extrinsic evidence such as the opinion of experts in the field can be useful in illustrating how a term is commonly understood in the field. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308-09 (Fed.Cir.1999). Because expert testimony prepared for use in litigation can be biased in favor of the party offering the expert, however, this type of evidence should be given less weight and must be viewed within the context of the intrinsic evidence. Phillips, 415 F.3d at 1318-19; *see also* Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 595, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) (expert evidence misleading and difficult to evaluate).

B. *Asserted Claims*

The '412 patent discloses a method for fabricating a handheld ultrasonic diagnostic instrument that is reduced in size while maintaining as many of the features of today's sophisticated ultrasound systems as possible, such as speckle reduction, color Doppler and three dimensional imaging capabilities. The disputed terms included in the '412 patent appear in claims 11 and 16, which disclose:

11. A handheld ultrasound system comprising:

an array transducer; and

a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer.

wherein said array transducer and said beamformer are located in one or more enclosures weighing less than ten pounds (4.5 kilograms).

16. The handheld ultrasound system of claim 11, wherein said beamformer is a digital beamformer which delays and combines digital echo signals.

C. *Beamformer (Claims 11 and 16)*

1. " ***a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer*** **"**

Plaintiff's construction: one or more components of an ultrasound system that delay and combine analog and/or digital samples of echo signals received by elements of said array transducer

Defendant's construction: one or more components of an ultrasound system that delay and combine analog and/or digital samples of echo signals received by elements of said array transducer and that output a digital signal

The parties agree that a "sampled data beamformer" receives an input signal that is both analog and digital. Plt.'s Br., dkt. # 53, at 11-3; Dft.'s Br., dkt. # 56, at 11-12. What they dispute is whether a "sampled data beamformer" must output a digital signal or whether it may output an analog signal instead of a digital signal or in addition to it. Defendant contends that in the context of the '412 patent a "sampled data beamformer" must output a digital signal only. However, the language of the claim does not support such a limitation.

Claim 11 describes what a "sampled data beamformer" is intended to do: "delay and combine samples of echo signals received by elements of said array transducer." However, the claim language is silent on the question whether a "sampled data beamformer" outputs a digital signal. Because there is no reference to output in the claim language, one must look to the specification and prosecution history to determine whether any limitation on the output signal should be read into the '412 patent.

Defendant argues that the specification clearly discloses that a "sampled data beamformer" must have a digital output. It cites two passages in the specification that discuss the type of echo signal that must be output. The first passage states in relevant part:

Each echo signal output is coupled to the input of an A/D converter 310, where the echo signals are converted to digital data. The digital data from each element (or each pair of elements in a folded aperture) is shifted into a first in, first out (FIFO) register 312 by a clock signal A/D CLK.

'412 Pat. col. 6, lns. 52-57. Although this passage states that echo signals can be converted into digital data for output, it does not expressly limit the output of a "sampled data beamformer." The passage suggests that one embodiment would output digital echo signals; it does not state that this is the only possible embodiment. No language expressly forecloses the possibility that a beamformer outputs an analog signal.

The second cited passage discusses the types of filters or storage devices used for the output signals. It states in relevant part:

Other digital storage devices can be used to provide the beamformer delays, if desired. A dual ported random access memory can be used to store the received digital echo samples, which are then read out from the memory at times or sequences which provide the desired delay for the signals from the transducer elements.

'412 Pat. col. 7, lns. 19-24. As with the previous passage, the specification teaches that a digital signal can be output by a beamformer into a filter or a random access memory unit. However, the specification does not mention whether this is the only type of echo signal the beamformer outputs. A person of ordinary skill in the art would not necessarily know that the beamformer in claim 11 did not output an analog signal. Therefore, the specification alone does not provide a sufficient limitation to the output of a "sampled data beamformer" that supports defendant's construction.

The next step is to consult the prosecution history. A patentee may disclaim certain embodiments during prosecution, but such a disclaimer must be "clear and unmistakable" to have legal effect. *E.g.,* Purdue Pharma L.P. v. Endo Pharmaceuticals, Inc., 438 F.3d 1123, 1136 (Fed.Cir.2006). Defendants' initial application for the '412 patent was rejected because it was anticipated by two prior patents, Chiang et al. and Shinomura et al. In response, defendant amended its patent and filed a traverse to the rejection in which it distinguished the '412 patent from Chiang and Shinomura. Dft.'s Br., dkt. # 56, at 14. The traverse states in relevant part:

The Chiang et al. patent is directed to a scan head which includes a beamformer producing an **analog electrical signal and an interface.** As such, it is **directed to a different invention** than that of the present application, which claims an array transducer with a **sampled data beamformer,** which in a preferred embodiment is a digital beamformer.

The Shinomura et al. device ... appears, like Chiang et al., to be a **conventional analog beamformer** because the **signals produced** by the device **must be A/D converted [i.e.** converted from analog to digital] prior to being recorded or stored in the memory card 4A.... Consequently, there is no suggestion of a sampled data beamformer ...

Id. at 14-15 (emphasis in original). Contrary to defendant's contention, the prosecution history is not clear on the output question. In its disclaimer, plaintiff focuses on the fact that the Chiang and Shinomura patents both output analog signals but no digital signals. Therefore, the disclaimer supports a finding that the '412 patent outputs a digital signal. However, it does not foreclose the possibility that the beamformer in claim 11 could output an analog signal. Because the language in the prosecution history does not make it clear what type of signal is output by the "sampled data beamformer" in claim 11, defendant's proposed limitation cannot be correct. I will adopt plaintiff's proposed construction, which says nothing about the nature of the output. In addition, I will change the proposal to make it clear that it is the components and not the system that delay and combine samples.

Court's construction: in an ultrasound system, one or more components that delay and combine analog or digital samples of echo signals or both such samples received by elements of said array transducer.

2. " ***a digital beamformer which delays and combines digital echo signals*** **" (claim 16)**

Plaintiff's construction: one or more components of an ultrasound system that delay and combine

digital echo signals received by elements of said array transducer

Defendant's construction: one or more components of an ultrasound system that delay and combine digital echo signals received by elements of said array transducer and that output a digital signal

The parties agree that a "digital beamformer" is a beamformer that receives digital signals only. Plf.'s Br., dkt. # 53, at 17; Dft.'s Br., dkt. # 56, at 21-22. However, they dispute whether the beamformer should be construed only by the type of echo signals it inputs or by both input and output signals. Both plaintiff's and defendant's arguments on the proper construction of this term are quite sparse. In its opening brief, defendant argues simply that "[f]or the same reasons that a 'sampled data beamformer' must output a digital signal, supra, a 'digital beamformer' as recited in claim 16 must also output a digital signal." Dft.'s Br., dkt. # 56, at 22. Thus, defendant is suggesting that the construction adopted for claim 11 should apply to claim 16. Plaintiff reiterates its basic argument that the claim language is silent on the issue of output. Because defendant has failed to offer any proof from the claim language, specification or the prosecution history that an output limitation is disclosed by the patent and instead rests on its arguments for claim 11, I agree with plaintiff that no output limitation should be imposed. Also, as in the previous claim, I will alter the proposal to make clear that the components and not the system delay and combine the digital echo signals.

Court's construction: in an ultrasound system, one or more components that delay and combine digital echo signals received by elements of said array transducer.

D. " ***wherein said array transducer and said beamformer are located in one or more enclosures weighing less than ten pounds (4.5 kilograms).***

Plaintiff's construction: This phrase is indefinite

Defendant's construction: wherein the array transducer and the beamformer are located in one or more enclosures, the enclosure(s) with the claimed ultrasound components weighing altogether less than 10 pounds (4.5 kilograms).

The dispute is whether claim 11 adequately describes what component or components of the ultrasound product must weigh less than ten pounds. Plaintiff contends that the language in claim 11 fails to give notice of what exactly must weigh less than ten pounds: one of the enclosures, all of the enclosures, the enclosures with all of their contents or the enclosures with only part of their contents, the beamformer and the transducer. Plt.'s Br., dkt. # 52, at 18-19. Plaintiff contends that the claim is not amenable to construction and "hopelessly ambiguous." Id. at 21-22. I disagree.

The standard for indefiniteness is high. "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree," the claim is sufficiently clear to avoid indefiniteness. Exxon Research and Engineering Co. v. United States, 265 F.3d 1371, 1375 (Fed.Cir.2001). A claim is indefinite only if the "claim is insolubly ambiguous, and no

narrowing construction can properly be adopted." *Id.* I am persuaded that when the claim is read in the context of the entire patent, it is not so hopelessly ambiguous that it cannot be construed.

To construe the claim as describing the weight of the enclosures as one component and the contents as a separate component would go against the very purpose of the invention. In describing the '412 patent, the specification states that "[i]t would be desirable ... to be able to compact the entire ultrasound system into a scan-head sized unit ... [that] retain[s] as many of the features of today's sophisticated ultrasound systems as possible." '412 Pat., col. 1, lns. 24-29. As plaintiff points out, the novelty of the '412 patent is not the ultrasound technology by itself but the packaging of technology into a smaller, hand held unit. Plt.'s Br., dkt. # 52, at 2. The patent never discusses the enclosures and contents as separate entities but discusses the packaging of the contents.

The specification describes two different embodiments of the ultrasound system. In a single-unit embodiment, the "unit contains all of the elements of a fully operational ultrasound system with a curved array transducer probe, in a single package weighing less than five pounds." '412 Pat., col. 4, lns. 12-15. When the ultrasound system is composed of two units, which is the preferred embodiment, the array transducer, digital beamformer, digital filer, and image processor are contained in one unit "that can be manufactured as a hand held unit weighing less than five pounds." '412 Pat., col. 1, lns. 45-61. The two-unit embodiment does not specify the weight of the second unit. However, in keeping with the intent of the invention, it would make sense that both units combined would weigh ten pounds or less. It would be incongruous to specify the weight of one unit and not place a restriction on the weight of the second unit.

Because the '412 patent explains that the components of the ultrasound system together with their housing are meant to be lightweight and portable, reading the terms of claim 11 in a manner that makes the unit heavier would be contrary to the patent's express terms and intent. Therefore, I will adopt defendant's construction.

Court's construction: wherein the array transducer and the beamformer are located in one or more enclosures, the enclosure(s) with the claimed ultrasound components weighing altogether less than 10 pounds (4.5 kilograms).

ORDER

IT IS ORDERED that:

1. Defendant Sonosite Inc.'s motion to file a targeted reply to Dr. Mark Schafer's second declaration is DENIED.

2. The following terms in U.S. Patent No. 5,722,412 are construed as follows:

-> "a sampled data beamformer for delaying and combining samples of echo signals received by elements of said array transducer" in claim 11 means "in an ultrasound system, one or more components that delay and combine analog or digital samples of echo signals or both such samples received by elements of said array transducer";

-> "a digital beamformer which delays and combines digital echo signals" in claim 16 means "in an ultrasound system, one or more components that delay and combine digital echo signals received by elements of said array transducer";

-> "wherein said array transducer and said beamformer are located in one or more enclosures weighing less than ten pounds (4.5 kilograms)" in claim 11 means "wherein the array transducer and the beamformer are located in one or more enclosures, the enclosure(s) with the claimed ultrasound components weighing altogether less than 10 pounds (4.5 kilograms)."

3. The remaining claims have the construction agreed to by the parties:

-> "coupled to the output of" in claims 12, 13 and 14 means "connected in such a way that information may be received from";

-> "digital filter" in claims 12, 13 and 17 means "in an ultrasound system, one or more components that reduce, extract or enhance certain aspects of a digital signal";

-> "image processor" in claims 13, 14, 17 and 18 means "in an ultrasound system, one or more components that manipulate, enhance or otherwise modify image data";

-> "digital scan converter" in claim 18 means "in an ultrasound system, one or more components that convert digital data into an image display format."

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