United States District Court,
D. Minnesota.

3M INNOVATIVE PROPERTIES COMPANY, and 3M Company,
Plaintiffs.
v.
TOMAR ELECTRONICS, INC,
Defendant.

Civil No. 05-756

April 20, 2007.

David J.F. Gross, James W. Poradek, and Timothy E. Grimsrud, Faegre & Benson LLP, and Robert Crawford, Crawford Maunu PLLC for and on behalf of Plaintiffs.

Thomas G. Watkins, III and Mark V. Steffenson, Esq. Henningson & Snoxell, Ltd. for and on behalf of Defendant.

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MEMORANDUM OPINION AND ORDER

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MICHAEL J. DAVIS**, United States District Court.**

This matter came before the Court for a Markman Hearing to construe claim terms in claims 22 and 38 in U.S. Patent No. 5,172,113 ("the '113 patent").

Background

The '113 patent, issued to Steven Hamer and assigned to Plaintiffs 3M Innovative Properties Company and 3M Company (collectively "3M"), describes a traffic signal preemption system and method. The invention described in the ' 113 patent adds to prior systems that allowed traffic signals to be remotely controlled by emergency vehicles. The first, U.S. Patent No. 3,550,078 issued to W.H. Long in 1970 ("Long"), described an invention that provided emergency vehicles the ability to preempt traffic signals using an emitter to transmit a preemption request. 3M Ex. 1, '113 Patent, 1:43-47. The Long system treated all preemption requests with the same level of priority and processed the requests on a first-come, first-serve basis. For example, a preemption request from a city bus could take priority over a preemption request from an ambulance.

A later patent, U.S. Patent No. 4, 162,477 issued to John A. Munkberg in 1979 ("Munkberg"), solved the prioritization problem by allowing preemption systems to send preemption requests at different priority levels. Id. 2:38-40. The priority level was set based on the repetition rate of the light pulses transmitted by the emitter. Id. 2:40-44. A low priority level was defined by a stream of light having a repetition rate of approximately 10 light pulses per second, while a high priority level had a repetition rate of approximately 14 light pulses per second. Id., 2:46-51.

The '113 patent is described in the specification as improving on the Munkberg system by creating a system that can send variable data along with priority signals.

The method allows variable data to be transmitted in a stream of light pulses by interleaving data pulses between priority pulses. By allowing data to be transmitted in a stream of light pulses, an optical emitter constructed in accordance with the present invention transmits an optical signal that can include an identification code that uniquely identifies the emitter, an offset code that causes a phase selector to create a traffic signal offset, an operation code that causes traffic signal lights to assume at least one phase and a range setting code that causes a phase selector to set a threshold to which future optical transmissions will be compared.

'113 patent, Abstract: 3-15.

The '113 patent discloses a number of embodiments, such as one that employs a method wherein a stream of light pulses having priority pulses occurring at a repetition rate and data pulses interleaved with the priority pulses, Id. 3:31-35, and a more general embodiment that refers to a system where an optical emitter transmits a stream of light pulses which represents a transmitted signal that includes a preemption request and an identification code. Id. 3:40-43. 3M asserts that Defendant Tomar Electronics, Inc. ("Tomar") has produced a traffic signal preemption system that infringes the '113 patent.

3M seeks claim construction for the following claim terms: 1) preemption request; and 2) extracting. In addition to these terms, Tomar seeks construction for the following claim terms: 1) includes; and 2) identification code.

Standard

It is well settled that "the court has the power and obligation to construe as a matter of law the meaning of language used in the patent claim." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995) *aff'd,* 517 U.S. 370 (1996) (citation omitted). To ascertain the meaning of claims, the Court must begin its analysis by focusing on the words of the claims themselves. "It is a 'bedrock principle' of patent law that 'the claims of the patent define the invention to which the patentee is entitled the right to exclude.' " Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005)(listing cases). Words in a claim are generally given their ordinary and customary meaning. Id. at 1313. The ordinary and customary meaning of a claim term is that which would be understood by a person of ordinary skill in the art in question at the time of the invention. *Id.*

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention-must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decisionmaking process by reviewing the same resources as would that person, viz. the patent specification and the prosecution history.

Id. (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed.Cir.1998)). The Federal Circuit also instructs that other claims in the patent may shed light on a different claim's meaning. *Id.* at 1314. "Because claims terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." *Id.* (citation omitted).

Because a patent consists of the specification and the claims, *see* 35 U.S.C. s. 112, the claims must be read in view of the specification. *Phillips,* at 1315. The specification is a written description of the invention, which description is to be "clear and complete enough to enable those of ordinary skill in the art to make and use it." Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). "The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* The Court must keep in mind, however, that the "specification itself

does not delimit the right to exclude. That is the function and purpose of the claims." Markman, 52 F.3d at 980.

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed.Cir.1998)).

Analysis

I. Claim Terms Identified by 3M

Claims 22 and 38 of the '113 patent are directed toward using a vehicle identification code to identify the vehicle requesting preemption of a traffic light. Claim 22 is a system claim, and Claim 38 is a method claim. Claim 22 reads:

An optical data communication system for use in a traffic signal control system having a traffic signal controller for controlling traffic signal lights that control traffic flow at a traffic intersection, the traffic signal controller being responsive to phase requests, the optical data communication system comprising:

an emitter for transmitting a stream of light pulses which represent a transmitted signal that includes a preemption request and an identification code that uniquely identifies the emitter;

a detector for receiving the stream of light pulses and producing a received signal representing the stream of light pulses; and

a phase selector for receiving the received signal from the detector and extracting the preemption request and the identification code from the received signal and issuing a phase request to the traffic signal controller.

Claim 38 reads:

A method for uniquely identifying an emitter in a traffic signal control system comprising:

a transmitted signal that includes a preemption request and an identification code that uniquely identifies the emitter;

receiving the stream of light pulses and producing a received signal representing the stream of light pulses;

extracting the preemption request and the identification code from the received signal; and

controlling traffic flow at a traffic intersection by issuing a phase request based upon the received signal and evaluating phase requests to determine whether the phase requests should be granted.

A. Preemption Request

3M proposes that "preemption request" be construed as "light pulses occurring at a repetition rate, where the repetition rate itself is a request for traffic signal preemption." To support this construction, 3M points to the '113 patent specification, which includes a description of the Long and Munkberg prior art which lead to the current patent.

With respect to Long, the specification provides that "preemption request" was described as follows: "a preemption request comprised of a stream of light pulses occurring at a predetermined repetition rate, such as 10 pulses per second." '113 patent, 1:44-47. The specification goes on to describe Munkberg as disclosing "an optical traffic preemption system wherein vehicles can transmit preemption requests at different priority levels." Id. 2:38-40. Munkberg further claimed that the priority of a preemption request is determined by the repetition rate of the light pulses. Id. 2:41-44. Based on these descriptions, 3M asserts that preemption request must be construed as "light pulses occurring at a repetition rate, where the repetition rate itself is a request for traffic signal preemption."

Tomar presently FN1 construes this claim as representing "a stream of light pulses having equal time intervals between each consecutive pair of light pulses." Tomar's Proposed Claim Interpretations, p. 26. In support of this construction, Tomar refers to the '113 specification which refers to a "predetermined repetition rate, such as 10 pulses per second" Id. 1:42-48, and to "[t]he optical emitter disclosed by Munkberg [that] can transmit light pulses at a variety of selectable predetermined repetition rates, with the selected repetition rate indicative of a priority level." Id. 2:38-44. Tomar argues that reference to a particular repetition rate, such as 10 pulses per second, represents a repetition rate with a fixed or equal time interval between pulses.

FN1. Tomar construed "preemption request" differently in the Joint Claim Construction Statement: "[a] request for preemption transmitted by the emitter and defined by the frequency of the emitted optical signal." The Court notes no reference to an "equal time interval" in this proposed construction.

The Court finds that references to certain repetition rates was provided for illustrative purposes only. *See* Id., 7:54-57. ("For illustrative purposes only, the data transmission scheme will be described with reference to a low priority signal having a repetition rate of 10 pulses per second.") A full reading of the specification discloses discussion of a number of other embodiments of the invention, and none of these descriptions define a preemption request as having equal time intervals between pulses. Because the claim only requires a "predetermined" repetition rate, and because the specification does not discuss preemption request in terms of having to include equal time intervals between pulses, the Court rejects Tomar's proposed construction. Instead, the Court finds that preemption request will be construed as "light pulses occurring at a repetition rate, where the repetition rate itself is a request for traffic signal preemption."

B. Extracting

3M asserts the term "extracting" should be construed as "obtaining"-as the term is used to refer to the act of obtaining the preemption request and the identification code from the signal that is sent to the phase selector. 3M further asserts this construction is supported by the specification's discussion of Figure 9, "a step 106 extracts a data packet from the data field 82 and sends the data packet.. to the main phase selector microprocessor." Id. 14:4-6. This construction is also consistent with the dictionary definition of "extract"-"to derive or obtain (information, for example) from a source." Ex. 18 at 485.

Tomar does not provide a specific construction for "extracting" in its Markman briefs. In its discussion of the specific limitation that includes "extracting", Tomar does not appear to dispute the argument that "extracting" should be construed as "obtaining". See Tomar Proposed Claim Interpretations Brief, p. 30-31; Reply Brief, p. 18. Accordingly, the term "extracting" will be construed to mean "obtaining."

II. Claim Terms Identified by Tomar

For the most part, in the Joint Claim Construction Statement and in its Markman briefs, Tomar did not identify concise words or phrases for claim interpretation. Instead, it identified whole phrases of the claims

and then failed to provide proposed constructions of such phrases that are helpful to the Court. At oral argument, Tomar finally narrowed in on two terms for construction, and the Court will only construe those two additional terms.

A. Includes and Identification Code

Tomar argues that "includes" and "identification code" as used in Claim 22, dictates that the claimed system has a "transmitted signal" that is made up of two separate elements, a preemption request and an identification code. In support, Tomar refers to language in the Abstract and in the specification which discuss data pulses interleaved between priority pulses. Tomar notes that in the specification, Hamer described Munkberg as providing a second tier of signal discrimination in order to encode multiple priority levels, and that the Hamer invention adds a third tier of signal discrimination, which provides the ability to encode and discriminate variable data in the stream of light pulses. Id. 5:32-39. The identification code is implemented by interleaving data pulses between priority pulses. Id. Abstract: 3-6. Thus, Tomar argues, data pulses must be interleaved in order to maintain compatibility with previous generation 3M Opticom products. Id. Abstract: 23-26.

3M responds that while claim 1 clearly provides that data pulses are interleaved with priority pulses, the same is not true in claim 22. The words "interleaved data pulses" do not appear in claim 22, nor should they be read into the claim. References to "interleaved data pulses" in the patent abstract and specification refer to claim 1 and to a preferred embodiment. Claim 22 is a system claim that requires "an emitter for transmitting a stream of light pulses which represent a transmitted signal that includes a preemption request and an identification code, and that one can send both a preemption request and an identification code that uniquely identifies the emitter." A transmitted signal, under claim 22, can include a preemption request and an identification code by simply changing the sequence of time intervals. Thus the '113 patent does not require that data pulses must be interleaved with priority pulses. "The present invention provides an optical signal format that *allows* variable data to be transmitted, while maintaining compatibility with prior optical traffic preemption systems." Id ., Abstract 23-26 (emphasis added).

Although Tomar did not provide the Court proposed constructions for "includes" or "identification code", its arguments with respect to these terms appears to be an attempt to limit the '113 patent to a preferred embodiment. The Court finds, however, that Tomar has failed to demonstrate that the '113 patent should be construed so narrowly.

First, the Court notes that the Federal Circuit has provided a specific construction to the word "includes", and that such construction will be applied in this case.

As a patent law term of art, "includes" means "comprising. *See,* Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed.Cir.2003); Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., Inc., 123 F.3d 1445, 1451 (Fed.Cir.1997). Neither includes, nor comprising, forecloses additional elements that need not satisfy the stated claim limitations.

SanDisk Corp. v. Memorex Products, Inc. 415 F.3d 1278, 1284 (Fed.Cir.2005). Thus, use of the word "includes" in the claim language does not support Tomar's narrow construction.

The Court also rejects Tomar's argument that "identification code" is defined as interleaving data pulses between priority pulses. Claim 1 includes the limitations involving interleaved data pulses, but such limitations are not included in claim 22. The doctrine of claim differentiation

is based on "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed.Cir.1999). "To the extent that the absence of such difference in meaning and

scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987).

Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1364, 1369-70 (Fed.Cir.2007).

Applying this doctrine here, the Court finds that reading the limitation of interleaved data pulses into claim 22 would render the claim superfluous. This construction is supported in the section of the specification that entitled "Summary of the Invention" which distinguishes the method claim and the system claim. '113 Patent, 3:29-44. Further, nowhere in the specification is "identification code" defined as Tomar's suggests. Rather, identification code is referred to as a means to uniquely identify an optical emitter. *Id*. 3:43-44; 5:44-45.

"[C]laims of [a] patent must not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.' " Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed.Cir.2004) (citation omitted). In this case, numerous embodiments are described, and the claims and specification do not include such "words or expressions of manifest exclusion or restriction."

For these reasons, the Court rejects Tomar's proposed narrow construction.

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