United States District Court,
N.D. California, San Jose Division.

PIXART IMAGING INC,
Plaintiff(s).
v.
AGILENT TECHNOLOGIES, INC,
Defendant(s).

No. C 03-04871 JW

March 30, 2005.

Daralyn J. Durie, Joshua H. Lerner, Michael S. Kwun, Robert A. Van Nest, Keker & Van Nest, LLP, San Francisco, CA, for Plaintiff.

ORDER FOLLOWING CLAIMS CONSTRUCTION HEARING; SETTING CASE MANAGEMENT CONFERENCE

JAMES WARE**, District Judge.**

I. INTRODUCTION

Plaintiff PixArt Imaging Inc. ("PixArt") initiated this suit against Defendant Agilent Technologies, Inc. ("Agilent") for declaratory judgment of noninfringement and invalidity of one of Agilent's patents. Agilent answered and asserted counterclaims for infringement of three of its patents. Jurisdiction is proper pursuant to 28 U.S.C. s. 1338(a), and venue is proper pursuant to 28 U.S.C. s. 1391(b)(1). The Court conducted a claims construction hearing on November 12, 2004. This Order sets forth the Court's construction of the terms and phrases at issue.

II. BACKGROUND

PixArt is a Taiwanese corporation with its principal place of business in the Republic of China. PixArt designs, develops and markets CMOS imaging sensors. PixArt's products are used in a wide variety of applications, including optical mice. Agilent is a Delaware corporation with its principal place of business in Palo Alto, California. Among other things, Agilent designs, develops and markets navigation sensors suitable for use in optical mice, and allegedly is a dominant player in the market.

Nonparty CompUSA is a retailer and reseller of personal computer-related products and services in the United States. PixArt alleges that CompUSA, until recently, sold an optical mouse know as the "3D Optical Scroll Mouse," which uses a PixArt-made CMOS-process optical navigation sensor. PixArt alleges on information and belief that Agilent's attorney contended that the 3D Optical Scroll Mouse infringes Agilent's U.S. Patent No. 6,433,780, entitled "Seeing Eye Mouse for a Computer System" (the "'780 patent"). Thereafter, CompUSA allegedly issued a press release on September 18, 2003, indicating that CompUSA

decided to discontinue sales of optical computer mice that use optical sensors supplied by manufacturers that do not have a license to Agilent's optical navigation patents. PixArt plans to continue to design, develop and market navigation sensors suitable for use as motion sensors in optical mice.

PixArt's complaint contains the following claims: (1) declaratory judgment of non-infringement of the '780 patent; and (2) declaratory judgment of invalidity of the '780 patent. Agilent asserts counterclaims for willful infringement of the '780 patent, and two other patents, namely U.S. Patent No. 5,686,720, entitled "Method and Device for Achieving High Contrast Surface Illumination (the "'720 patent"), and U.S. Patent No. 5,786, 804, entitled "Method and System for Tracking Attitude." Both parties seek an award of reasonable attorneys' fees and expenses pursuant to 35 U.S.C. s. 285.

On November 12, 2004, the Court conducted a hearing to construe the disputed terms and phrases contained in the '780 patent.

III. STANDARDS

Claim construction is purely a matter of law, to be decided exclusively by the Court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 387 (1996). Claims are construed from the perspective of a person of ordinary skill in the art at the time of the invention. Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed.Cir.1995). To determine the meaning of the claim terms, the Court initially must look to intrinsic evidence, that is, the claims, the specification, and, if in evidence, the prosecution history. Autogiro v. United States, 384 F.2d 391 (Ct.Cl.1967). The Court must look first to the words of the claims themselves. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). These words are to be given their ordinary and customary meaning unless it is clear from the specification and prosecution history that the inventor used the term with a different meaning. *Id*. The claims should be interpreted consistently with the specification. *See* Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998).

Where intrinsic evidence alone resolves any ambiguity in a disputed claim term, it is improper to rely on evidence which is external to the patent and file history. Vitronics, 90 F.3d at 1583, 1585. However, extrinsic evidence may be considered in the rare instances where the intrinsic evidence is insufficient to enable the court to construe disputed claim terms. Id. at 1585. Common sources of extrinsic evidence include expert testimony, inventor testimony, dictionaries, and technical treatises and articles. Id. at 1584.

IV. DISCUSSION

The disputed terms and phrases are contained in claims 1 and 4 of the '780 patent, which are set forth immediately below:

1. A hand held pointing device for a computer system, the pointing device comprising:

a housing having a bottom surface that moves against a desktop surface;

the housing also having a top surface shaped to receive the human hand;

the housing also having a skirt connecting a perimeter of the bottom surface with the top surface;

the housing also having a first axis extending generally in the direction from where the heel of the hand rests on the top surface to where the middle finger rests on the top surface, and a second axis perpendicular

to the first, both axes parallel to the bottom surface;

an aperture in the bottom surface;

a source of non-coherent illumination mounted within the interior of the housing, proximate the aperture, that illuminates, from a single location and with an angle of incidence in the range of about five to twenty degrees, a portion of the desktop surface opposite the aperture and having surface height irregularities forming a micro texture with feature sizes in the range of about five to five hundred microns, the illumination producing highlights upon surface height irregularities that extend out of the desktop surface and that intercept the illumination and shadows upon surface height irregularities that extend into the desktop surface and whose illumination is blocked by adjacent surface height irregularities that are illuminated, the highlights and shadows forming a pattern that varies as a function of rotations and translations of the aperture relative to the desktop;

an optical motion detection circuit mounted within the interior of the housing and optically coupled to the highlights and shadows from the surface height irregularities of the illuminated portion of the desktop surface, the optical motion detection circuit producing motion signals indicative of motion in the directions along the first and second axes and relative to the surface height irregularities of the illuminated portion of the desktop surface; and

wherein the optical motion detection circuit comprises an array of photo detectors each having an output, a memory containing a reference frame of digitized photo detector output values that is stored in a reference array of memory locations corresponding to the array of photo detectors and a sample frame of digitized photo detector output values obtained subsequent to the reference frame and that is stored in a sample array of memory locations corresponding to the array of photo detectors, and further wherein a plurality of comparison frames, each being a shifted version of one of the reference frame or the sample frame, is correlated with the other of the reference frame or the sample frame to ascertain motion in the directions along the first and second axes, the correlation being upon the values in all memory array locations that correspond to overlap between the comparison frame and the other of the reference frame or the sample frame.

2. A hand held pointing device as in claim 1 wherein the optical coupling is performed by a lens.

3. A hand held pointing device as in claim 1 wherein the optical coupling is performed by a mirror.

4. A hand held pointing device for a computer system, the pointing device comprising:

a housing having a bottom surface that moves against a work surface;

the housing also having a top surface shaped to receive the human hand;

the housing also having a skirt connecting a perimeter of the bottom surface with the top surface;

the housing also having a first axis extending generally in the direction from where the heel of the hand rests on the top surface to where the middle finger rests on the top surface, and a second axis perpendicular to the first, both axes parallel to the bottom surface;

an aperture in the bottom surface;

a source of illumination mounted within the interior of the housing, proximate the aperture, that illuminates a portion of the work surface opposite the aperture and having surface height irregularities forming a micro texture with feature sizes in the range of about five to five hundred microns, the illumination producing a pattern of highlights upon surface height irregularities that extend out of the desktop surface and that intercept the illumination and of shadows upon surface height irregularities that extend into the desktop surface and whose illumination is blocked by adjacent surface height irregularities that are illuminated;

an optical motion detection circuit mounted within the interior of the housing and optically coupled to the pattern of highlights and shadows from the surface height irregularities of the illuminated portion of the work surface, the optical motion detection circuit producing motion signals indicative of motion in the directions along the first and second axes and relative to the surface height irregularities of the illuminated portion of the work surface;

wherein the optical motion detection circuit comprises a plurality of photo detectors each having an output, a memory containing a reference frame of digitized photo detector output values and a sample frame of digitized photo detector output values obtained subsequent to the reference frame, and further wherein a plurality of comparison frames, each being a shifted version of one of the reference frame or the sample frame, is correlated with the other of the reference frame or the sample frame to produce a corresponding plurality of correlation values and ascertain motion in the directions along the first and second axes; and

an arithmetic comparison mechanism coupled to the plurality of correlation values, and wherein the motion signals are not output to the computer system whenever a correlation surface described by the plurality of correlation values fails to exhibit a selected curvature.

'780 patent, 13 :4-14 :51. Applying the standards for claim construction set forth previously, the Court issues the following construction of the terms and phrases at issue:

A. "frame" (claims 1 and 4)

The term "frame" appears throughout claims 1 and 4, but never standing alone. It is always preceded by a modifier, such as "reference frame," "sample frame," and "comparison frames." Agilent contends that the term "frame" means "a single image in a sequence of images." Agilent's Opening Claim Construction Brief, p. 6. PixArt contends that the term "frame" means "the complete image captured by the array of photo detectors." PixArt's Responsive Claim Construction Brief, p. 5.

Agilent contends that its proposed construction of "frame" is consistent with the ordinary meaning and tracks how those of ordinary skill in the industry understand the term. Further, Agilent contends that PixArt's proposed construction must be rejected because it excludes the preferred embodiment of the '780 patent ('780 patent, 5 :9-38, 11 :40-65).

PixArt contends that the Court should adopt its proposed construction for numerous reasons. First, PixArt asserts that its proposed construction is consistent with the definition for "frame" used in photography or film. PixArt reasons, "[i]f something is outside the frame, it is not captured by the camera; if something is in the frame, it is a part of the captured image." PixArt's Responsive Claim Construction Brief, p. 6. Second, PixArt contends that its proposed construction is supported by the final element of claim 1. Third, PixArt

contends that its proposed construction is confirmed by the prosecution history of the '780 patent. Fourth, PixArt contends that its proposed construction is consistent with the preferred embodiments described in the '780 patent. Fifth and finally, PixArt contends that its proposed construction is confirmed by another Agilent patent, namely U.S. Patent No. 5,786, 804, entitled "Method and System for Tracking Attitude."

The Court adopts Agilent's proposed construction, and accordingly construes the term "frame" to mean "a single image in a sequence of images." This construction is consistent with the plain and ordinary meaning of the term. For example, as Agilent points out, the Dictionary of Photography and Digital Imaging (2001 ed.) defines "frame" as "[a]n image in a sequence of inter-related images such as an animation or in a cinematographic film." The Webopedia Computer Dictionary defines "frame" as "[i]n video or animation, a single image in a sequence of images. *http://www.webopedia.com*.

Furthermore, the Court's construction is consistent with the industry's understanding of the term "frame." The datasheets for optical mouse sensors manufactured by other companies explain that their sensors are "based on optical navigation technology [that] measures changes in position by optically acquiring sequential surface images (frames) and mathematically determining the direction and magnitude of movement." Decl. of Ralph Etienne-Cummings, Exhibits B-G.

PixArt contends, however, that its proposed construction is consistent with virtually every standard and technical dictionary definition of the term. *See e.g*. The Concise Oxford Dictionary (8th ed.1990) (defining frame as "[a] single complete image or picture on a cinema film or transmitted in a series of lines by television"); IEEE Standard Dictionary of Electrical and Electronic Terms (6th ed.1996) (defining frame as "[t]he total area, occupied by the picture, that is scanned while the picture signal is not blanked"); Free On-line Dictionary of Computing (defining frame as "[o]ne complete scan of the active area of a display screen").

PixArt's position is unpersuasive because the definition of "frame" from the optical mouse sensor field controls over the definitions from unrelated fields offered by PixArt. *See* Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1267 (Fed.Cir.2001). Moreover, "[i]f more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all consistent meanings." Brookhill-Wik 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed.Cir.2003).

The Court's construction of "frame" is also consistent with the preferred embodiment, which employs a prediction operation. This prediction operation uses frames that are less than the complete image captured by the array of photo detectors. '780 patent, 5 :9-38, 11 :40-65.

The Court rejects PixArt contention that the final element of claim 1 imposes a limitation on the generalized term "frame." The final element of claim one refers to "reference frames" and "sample frames," not "frame" standing alone. The Court, therefore, recognizes the possibility that the final element of claim 1 could be read to place limitations on the phrases "reference frame ... that is stored in a reference array of memory locations corresponding to the array of photo detectors" and "sample frame ... that is stored in a sample array of memory locations corresponding to the array of photo detectors." To date, neither party has requested construction of these phrases, and therefore, the Court is not inclined to undertake the task at this stage in the proceedings.

The Court also rejects Agilent's assertion that the prosecution history supports its proposed claim

construction. PixArt relies upon Agilent's representation to the patent examiner that a "frame" as claimed in the '780 "represent[s] everything seen by the photo detectors" (Heinrich Decl., Ex. B, at AGPI0011960), and the patent examiner's adoption of Agilent's representation that the frame correlation process in the '780 patent used image data from "all memory array locations," and not "a small subset of the entire viewing area" (id. at AGPI0011981). The prosecution history statements cited by PixArt have been taken out of context. The relevant portion of the prosecution history is set forth below:

In short, the amended claim clarifies that correlation is performed upon as much data from the photo detectors as possible. We have "frames" that represent everything seen by the photo detectors and that overlap more or less according to previous shifting. Correlation is on the entire region of overlap.

Heinrich Decl, Ex. B, at AGPI 001960. The passage indicates that a "frame" may, but does not necessarily, include "the complete image captured." It does not suggest that the '780 patent only has frames that represent everything seen by the photo detectors. Therefore, the Court finds that Agilent did not clearly and unambiguously disclaim or disavow the construction of "frame" it now proposes. The patent examiner's statement cited by PixArt also fails to support its proposed construction of the term "frame." The patent examiner's statement was simply not directed to the term "frame," but rather to the "correlation."

PixArt's proposed construction must also be rejected on the grounds that it would exclude the preferred embodiment of the '780 patent. In general, "a claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.' " Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed.Cir.2004).

B. "the correlation being upon the values in all memory array locations that correspond to overlap between the comparison frame and the other of the reference frame or sample frame" (claim 1)

Agilent's proposed construction for the phrase "the correlation being upon the values in all memory array locations that correspond to overlap between the comparison frame and the other of the reference frame or sample frame" is as follows:

The operation of comparing at least one shifted sample frame or at least one shifted reference frame with the other of a reference frame or a sample frame being upon all of the values stored in memory that correspond to the area shared between the frames. The comparison provides the degree to which the frames are related. The values that are being compared are numerical representations of the digitized photo detector outputs.

Agilent's Opening Claim Construction Brief, pp. 13-14. PixArt proposes the following construction of the same phrase:

The comparison is based upon the data from the entire region of overlap between the comparison frame and either the reference frame or the sample frame, and not from a subset or subsets of what is seen by the array of photo detectors.

PixArt's Responsive Claim Construction Brief, p. 15. According to PixArt, the parties agree that a "comparison frame" is a reference or sample frame that has been shifted. PixArt's Responsive Claim Construction Brief, p. 15. "Where the parties part company is whether the comparison frame must constitute a shifted version of the complete reference or sample frame, or whether it can consist of a shifted version of

only a portion or subset of the frame." *Id*.

Agilent asserts that its proposed construction is consistent with the ordinary meaning of the claim language and the intrinsic record. In particular, Agilent contends that its proposed construction is consistent with the preferred embodiment, which it refers to as performing a prediction operation. '780 patent, 5 :23-24. Further, Agilent contends that PixArt's proposed construction should be rejected because it imports into the claim additional requirements wholly missing from the claim language itself; it excludes the ' 780 patent's preferred embodiment ('780 patent, 5 :23-24); and is unsupported by the prosecution history. In contrast, PixArt contends that its construction tracks the language of the specification and is consistent with Agilent's own statements in the prosecution history.

The Court adopts Agilent's proposed claim construction as being consistent with the claim language and the patent specification, and accordingly construes the phrase "the correlation being upon the values in all memory array locations that correspond to overlap between the comparison frame and the other of the reference frame or sample frame" as follows:

The operation of comparing at least one shifted sample frame or at least one shifted reference frame with the other of a reference frame or a sample frame being upon all of the values stored in memory that correspond to the area shared between the frames. The comparison provides the degree to which the frames are related. The values that are being compared are numerical representations of the digitized photo detector outputs.

There is no basis for PixArt's assertion that the comparison frame cannot consist of a shifted version of only a portion or subset of the frame. The prediction process described in the patent uses shifting and reduction. The reduction results in the use of a portion or subset of the reference or sample frame. '780 patent, 5 :23-24 (explaining that "shifting to accommodate prediction throws away or removes some of the reference frame, reducing the size of the reference frame). Nevertheless, PixArt attempts to support its proposed construction with a citation to the specification that "[o]ne way" the correlation process may be accomplished is "to shift the entire contents of one of the frames by a distance of one pixel ... successively in each of the eight directions allowed by a one pixel offset trial shift." '780 patent, 3 :63-66. The statement actually supports Agilent's position, however: shifting the entire contents of the frames may be one way to accomplish the correlation process, but it is not the only way. Indeed, the specification indicates that "several successive collections of comparison frames can usually be obtained from the (16x 16) reference" ('780 patent, 5 :15-17), including a reduced comparison frame that is only 5x5 ('780 patent, 5 :31). The specification explains that "[t]he benefits of prediction are a speeding up of the tracking process by streamlining internal correlation procedure (avoiding the comparison of two arbitrarily related 16x16 arrays of data) and a reduction of the percentage of time devoted to acquiring reference frames." '780 patent, 5 :34-38.

The prosecution history also fails to provide support for PixArt's position. In distinguishing a prior art reference, the Adan patent, Agilent stated: "Adan does not correlate shifted versions of entire viewing areas, as would correspond to what is claimed. He correlates among subsets of what is seen by the detectors." Heinrich Decl., Ex. B., at AGI0011960. From this statement PixArt asks the Court to conclude that Agilent's "comparison frames" must be "shifted versions of complete reference or sample frames, and specifically not 'subsets of what is seen by the detectors.' " PixArt's Responsive Brief, p. 16. PixArt's argument is unpersuasive when the statement is seen in full context. The relevant portion of the prosecution history states as follows:

... In short, the amended claim clarifies that correlation is performed upon as much data from the photo detectors as possible. We have "frames" that represent everything seen by the photo detectors and that overlap more or less according to previous shifting. Correlation is on the entire region of overlap. That this is so is sensible and not surprising. It is also supported by the Specification as originally filed (and at the passage quoted above), and thus does not represent any new matter whatsoever.

However, the situation described above and recited in claims 16, 21, and 22 ... is not what is described or suggested in Adan. In describing Fig's 3A-3E Adan @6:5-13 sets out an entire viewing area 123 and a smaller sample area of 124. See also those figures. At 7:6-12 Adan says that detection of movement can be performed by cross correlation, and then goes on to say that "Cross correlation between the pattern in the sample area 124 and the patter for the entire viewing or search area 123 is defined as follows: <there follows Eq. 1>" In other words, Adan says that his correlation involves the viewing area 123 and a **subset** of that (the sample are 124). And lest one think that the material at 7:42-43 undoes this with a statement about Eq. 2 that "the values of x and y are moved throughout the entire viewing region ..." one should also note that the indices for the sigma notation summations in both Eq. 1 and Eq. 2 involve Lp/2, where Lp is the length of the (subset) sample area 124(7:21). Adan does not correlate shifted versions of entire viewing areas, as would correspond to what is claimed. He correlates among subsets of what is seen by the detectors.

Heinrich Decl., Ex. B., at AGI0011960. When the entire passage is considered, it is evident that Agilent intended to explain to the patent examiner that Adan correlates among subsets that are not shifted versions of the entire viewing areas. Instead, Adan correlates among a viewing area and a subset of that same viewing area, as shown in figures 3A-3E of the Adan patent. Werdegar Decl., Ex. D.

C. "a plurality of comparison frames, each being a shifted version of one of the reference frame or the sample frame, is correlated with the other of the reference frame or the sample frame to produce a corresponding plurality of correlation values and ascertain motion in the directions along the first and second axes" (claim 4)

It is the Court's understanding that the dispute over the phrase cited immediately above is resolved by virtue of the Court's construction of the term "frame" set forth in Section "A," and the phrase "the correlation being upon the values in all memory array locations that correspond to overlap between the comparison frame and the other of the reference frame or sample frame" set forth in Section "B." If this is incorrect, the parties shall so advise the Court in a joint case management statement.

D. "an arithmetic comparison mechanism coupled to the plurality of correlation values, and wherein the motion signals are not output to the computer system whenever a correlation surface described by the plurality of correlation values fails to exhibit a selected curvature" (claim 4)

The dispute over the phrase cited immediately above centers on the phrase "correlation surface" and the term "curvature." Agilent proposes the following construction of the entire phrase:

logic that performs arithmetic comparison operations and that receives correlation values [, and] wherein signals indicative of actual motion in the directions along the first and second axes and relative to the work surface height irregularities of the illuminated portion of the work surface are not communicated to the computer system whenever the mathematical surface produced or described by the various correlation values does not meet a particular criteria with respect to its curve or shape. This mathematical surface is imaginary insofar as it is merely a mathematical representation of the distribution of the various correlation values.

Agilent's Opening Claim Construction Brief, p. 18.

PixArt proposes the following construction:

A device that executes an algorithm which determines a surface shape by plotting the multiple correlation values and that blocks the transmission of motion data to the computer system if the result of the algorithm is that the surface shape is not a suitable curve.

PixArt's Responsive Claim Construction Brief, p. 20.

Agilent contends its proposed construction is supported by the claim language of claim 4 itself, as well as the specification's frequent reference to mathematical relationships in connection with the phrase "correlation surface" ('780 patent, 10 :52-57; 6 :47-52). Agilent contends that PixArt's proposed construction must be rejected because it is unsupported by the patent, which nowhere mentions the word "plotting" and instead states that "[w]e shall term the surface produced or described by the various correlation values the 'correlation surface' ..." Agilent's Opening Claim Construction Brief, p. 19.

PixArt contends that its proposed construction is supported by Figure 7 of the '780 patent, which clearly depicts a correlation surface that has been plotted. PixArt further contends that Agilent's proposed construction impermissibly broadens the scope of claim 4 "to sweep in other algorithmic operations that do not evaluate any correlation surface or consider the curvature of any such surface in making decision regarding whether to report motion data." PixArt's Responsive Claim Construction Brief, p. 21. PixArt also contends that Agilent's proposed construction impermissibly broadens the scope of claim 4 insofar as Agilent would like the term "curvature" to include any and all "shapes." PixArt asserts that the only "shape" referred to in the ' 780 patent is a curved one.

The Court adopts PixArt's proposed construction, and accordingly construes the phrase "an arithmetic comparison mechanism coupled to the plurality of correlation values, and wherein the motion signals are not output to the computer system whenever a correlation surface described by the plurality of correlation values fails to exhibit a selected curvature" to mean:

A device that executes an algorithm which determines a surface shape by plotting the multiple correlation values and that blocks the transmission of motion data to the computer system if the result of the algorithm is that the surface shape is not a suitable curvature.

PixArt's proposed construction of "correlation surface" is supported by the language of the patent. The patent states, "[w]e shall term the surface produced or described by the various correlation values the 'correlation surface' and will, at various times, be most interested in the shape of that surface." '780 patent, 7 :21-25. The patent also discusses the "concavity in the correlation surface." '780 patent, 7 :21-22; 7 :32-34. Figure 7 of the patent depicts a "correlation surface" that has been plotted. In light of these descriptions of the "correlation surface," the Court rejects Agilent's contentions that the "correlation surface" is purely "imaginary," and does not require "plotting."

In adopting PixArt's construction, the Court also rejects Agilent's contention that the term "curvature" includes any and all shapes, but agrees with Agilent that "curvature" includes "straight lines," and therefore potentially pyramids. The ordinary and customary meaning of curvature is limited to curved shapes. *See*

Concise Oxford Dictionary (defining "curvature" as "the act or state of curving," "a curved form," and "geom. a. the deviation of a curve from a straight line, or of a curved surface from a plane. b. the quantity expressing this"). The mathematical definition of "curve" includes "straight lines." *See* Decl. of Samuel K. Lu, Ex. A, David W. Henderson, *Experiencing Geometry* Appendix A (2d ed.2001); Ex. B, *Merriam-Webster's Collegiate Encyclopedia* 424 (2000), Ex. C, Jerrold E. Mardsen & Anthony J. Tromba, *Vector Calculus,* 141 (5th ed.2003), Ex. D, James Stewart, *Calculus,* (5th ed.2003); Ex. E, Richard S. Millman & George D. Parker, *Elements of Differential Geometry* 24 (1977).

The '780 patent does not contain any clear expression of an intent to adopt some different, novel meaning for curvature. Rather, the '780 patent includes numerous references to the "shape" of the "curvature" that are consistent with the ordinary and customary meaning of "curvature." '780 patent, 7 :38-40 (referring to "bowl"), 10:58-63 (referring to "good bowl" and "bad bowl"). Therefore, the ordinary and accustomed meaning applies. *See* Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed.Cir.2002).

E. "desktop surface" (claims 1 and 4)

The parties dispute the meaning of "desktop surface," which appears in asserted claims 1 and 4. Agilent's proposed claim construction defines "desktop surface" as a "work surface." Agilent's Opening Claim Construction Brief, p. 20. PixArt proposes that the phrase be construed as "the top of a desk." PixArt's Responsive Claim Construction Brief, p. 23.

Agilent contends its proposed construction is supported by the patent prosecution history, which explicitly defines a "desktop surface" as "essentially a work surface." Further, Agilent relies upon the patent specification and the patent claims' use of the term "desktop surface" interchangeably with "work surface." Agilent contends that PixArt's proposed construction must be rejected because is unduly narrow, and ignores the patent prosecution, specification, claim language, and the very purpose of the patent.

PixArt, however, contends that its proposed construction is consistent with the ordinary and customary definitions found in The American Heritage Dictionary of the English Language and the WordNet 2.0 online dictionary. PixArt also contends that its proposed construction is consistent with the patent prosecution history wherein Agilent attempted to distinguish the prior art Allen hand held scanner patents.

The Court construes the term "desktop surface" to mean "work surface." The Court's construction is supported by the purpose of the invention of the ' 780 patent. In the background, the patent states in pertinent part, "[i]t would be even better if the operation of this new optical mouse did not rely upon cooperation with a mouse pad, whether special or otherwise, but was instead able to navigate upon almost any arbitrary surface." '780 patent, 2 :60-64. In the specification, the inventors against state that they were attempting to create a mouse that would work on the surface of nearly anything. '780 patent, 8 :17-20. The Federal Circuit has held that "[i]n construing claims, the problem the inventor was attempting to solve, as discerned from the specification and the prosecution history, is a relevant consideration." CVI/Beta VEntures, Inc. v. Tura LP, 112 F.3d 1146, 1160 (Fed.Cir.1997); see also Applied Materials v. Advanced Semiconductor Materials Am., 98 F.3d 1563, 1573 (Fed.Cir.1996) (considering "purpose of the invention" in construing claims). Furthermore, the language of the patent claims supports the conclusion that the term "desktop surface" is interchangeable with the term "work surface" ('780 patent, 14:15-20; 15:1-8, 55-62; 16:49-56).

Lastly, the Court rejects PixArt's contention that Agilent's proposed construction is inconsistent with the

prosecution history. PixArt cites to a few lines in the prosecution history to argue that Agilent "altered the scope of Claim 1 to make clear that it was not seeking to claim a means for optical navigation on all surfaces, but only on a 'desktop surface.' " PixArt's Responsive Claim Construction Brief, p. 25. Once again, however, when PixArt's few chosen lines are placed in full context, it is evidence that Agilent did not limit its invention to the "top of desks." Instead, the relevant portion of the prosecution history focuses more generally on the differences between handheld scanners for paper and optical mice scanners that can navigate on surfaces other than paper:

Allen navigates on paper, although he also mentions cardboard, fabric and skin. [citation omitted.] He never mentions navigating on the surface of a desktop. Allen et al. were intent on making a portable handheld scanner of documents; who wants to scan the top of a desk? His scanner was not contemplated as also functioning as a mouse (that patent was filed after this case was), so whether or not the navigation would work on a desktop was not of interest. Paper, especially if it is not glossy, was pretty well understood....

* * *

.... Desktops were not only uninteresting as not being a suitable target for scanning, it is not clear that the wide variety of surfaces (real wood, fake wood, formica, paint, etc.) would lend themselves to the navigation technique that had been developed at that time. Somebody had to try it to find out if it would even work. The present inventors did that, and were pleasantly surprised. It is true that Nestler wants his mouse to navigate on an arbitrary surface, including a wood grained one, but his technique involves diffuse lighting and is responsive to the fixed patterns that are inherently part of the surface ... This is not the same thing as navigating with grazing illumination on a desktop having a micro-texture that produces "highlights and shadows forming a pattern that varies as a function of rotations and translations of the aperture relative to the desktop" as is claimed. It wasn't obvious that the navigation technique developed for wavy grasslike texture would work on surfaces (plastic "fake wood") not having an abundant fiber content.
PixArt's Responsive Claim Construction Brief, p. 13. The import of the entire passage above is to distinguish between paper and "desktops," not to limit the meaning of "desktops." Furthermore, the passage describes "desktops" as having "a wide variety of surfaces," including real wood, fake wood, formica, paint, and other surfaces not having an abundant fiber content. These descriptions of "desktop" are fully consistent with the Court's construction of "desktop" as "work surface."

V. CONCLUSION

The parties shall meet and confer to develop a joint case management statement, which shall be filed no later than April 20, 2005. The Court will conduct a case management conference on May 2, 2005 at 10:00 a.m.

N.D.Cal.,2005.
PixArt Imaging, Inc. v. Agilent Technologies, Inc.