United States District Court,
D. Arizona.

RESEARCH CORPORATION TECHNOLOGIES, INC,
Plaintiff.
v.
MICROSOFT CORPORATION,
Defendant.

No. CV-01-658-TUC-RCJ

June 5, 2009.

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ORDER

ROBERT C. JONES**, District Judge.**

This lawsuit arises out of Plaintiff Research Corporation Technologies, Inc.'s ("RCT") allegations that Defendant Microsoft Corporation ("Microsoft") infringed six patents owned by RCT that are related to digital halftoning. Now before the Court is Defendant's Motion for Supplemental Claim Construction. (# 800).

IT IS HEREBY ORDERED that Defendant Microsoft's Motion is GRANTED in part and DENIED in part. (# 800).

I. FACTS

RCT is a Tucson-based technology company. RCT was formed in 1987 as a non-profit entity, which invests in the patenting, development, and commercialization of new inventions and technologies. Microsoft is a Washington corporation, which develops, markets, distributes, and licenses computer software throughout the United States and abroad.

RCT is the owner of the following six patents: (1) U.S. Patent No. 5,111,310 ("the '310 patent"); (2) U.S. Patent No. 5,341,228 ("the '228 patent"); U.S. Patent No. 5,477,305 ("the '305 patent"); (4) U.S. Patent No. 5,543,941 ("the "1 patent"); U.S. Patent No. 5,708,518 ("the '518 patent"); and U.S. Patent No. 5,726,772 ("the '772 patent") (collectively, "the patents-in-suit"). Each patent is entitled "Method and Apparatus for Halftone Rendering of a Gray Scale Image Using a Blue Noise Mask" and names the inventors as Kevin Parker, an electrical engineering professor at the University of Rochester, and his then-graduate student Theophano Mitsa.

The patents-in-suit relate to image halftoning technology used in computers and printers. Halftoning involves the process of simulating a continuous tone image, such as a shaded drawing or photograph, with groups or cells of color or black dots (pixels). The dots are placed in such a way that they appear to the human eye to be a single color selected from a continuum of gray scale or color tones. The inventions disclosed by the patents-in-suit here relate to a particular method of halftoning, wherein an input image is compared, pixel by pixel, to a blue noise mask or array to produce visually pleasing dot profiles. By such operations, for example, gray scale images are converted to binary images.

In December 2001, RCT filed a Complaint (# 1) against Microsoft in the United States District Court for the District of Arizona for infringement of the patents-in-suit. RCT alleges that Microsoft became aware of the patents-in-suit as early as 1992 and that Microsoft subsequently incorporated many of the patented methods or devices into certain Microsoft software products (e.g., Windows(R)2000, Windows(R)XP) and that such products have used halftoning masks that infringe the patents-in-suit. As a result, RCT brought its lawsuit against Microsoft, asking the district court to grant RCT injunctive relief to preclude Microsoft from further infringing the patents-in-suit; damages for Microsoft's alleged infringement of the patents-in-suit; treble damages for Microsoft's alleged willful infringement of the patents-in-suit; and attorneys' fees and costs.

II. PROCEDURAL BACKGROUND

A. Judge Browning

Judge William D. Browning of the District of Arizona was the initial judge in this lawsuit. He presided over the proceeding for approximately two years. In September 2002, Judge Browning held the *Markman* hearing. (# 96). Judge Browning's claim construction rulings were based in large part upon rulings from previous patent infringement lawsuits that RCT had filed against Hewlett-Packard and Lexmark International involving some of the same patents In May 2003, RCT filed a motion for partial summary judgment for infringement. (# 136), which Judge Browning granted in January 2004. (# 243). In November 2003, Microsoft filed a motion for partial summary judgment for invalidity. (# 206). In January 2004, RCT filed a motion for partial summary judgment that the patents-in-suit were not anticipated by RCT's '310 patent. (# 225). On March 31, 2004, Judge Browning heard oral argument on the partial summary judgment motions related to invalidity and issued a minute order, stating that the court was taking under advisement RCT's and Microsoft's respective motions for partial summary judgment. (# 281).

B. Judge Real

In July 2004, the case was reassigned to Judge Manuel L. Real. (# 318). In September 2004, RCT and Microsoft filed a group of motions for partial summary judgment. RCT filed a motion for partial summary judgment that the masks used in Microsoft's accused products literally infringed certain limitations of the patents-in-suit (# 339); a motion for partial summary judgment for infringement as to the calls to the accused masks (# 340); and a motion for partial summary judgment for infringement under 35 U.S.C. s.

271(f). (# 341). Microsoft filed a motion for partial summary judgment for invalidity (# 358); a motion for partial summary judgment that distribution of the accused software did not infringe the patents-in-suit (# 362); and a motion for partial summary [judgment for noninfringement by transparencies and multi-bit images. (# 365).

In November 2004, Judge Real heard oral argument on all of the pending partial summary judgment motions, including those that were filed while Judge Browning was presiding. (# 206, # 225). Judge Real, without providing any reasoning for his decisions, issued a minute order granting or denying the parties' motions for partial summary judgment. (# 503).

On January 10, 2005, RCT and Microsoft filed a Joint Proposed Pre-Trial Order (# 545), which order was revised on May 20, 2005. (# 613). Judge Real set the pretrial conference for January 17, 2005. During January 2005, RCT and Microsoft each filed about a dozen motions in limine. ((Microsoft: # 517; # 518; # 519; # 520; # 521; # 522; # 523; # 524; # 525; # 526; # 527; # 528; # 529; # 530) (RCT: # 533; # 534; # 535; # 536; # 537; # 538; # 539; # 540; # 541; # 542; # 543; # 544)). On March 13, 2005, Judge Real, without providing any reasoning for his decisions, issued a minute order granting and denying the parties' respective motions in limine, or reserving them for trial. (# 593).

Trial was set to begin on August 8, 2005. In July 2005, however, Microsoft filed a motion to conduct a half-day bench trial on the issue of inequitable conduct. (# 640). Judge Real granted Microsoft's motion. (# 682). Judge Real ruled from the bench that RCT had engaged in inequitable conduct before the U.S. Patent and Trademark Office (the "PTO"). On January 27, 2006, Judge Real issued a final judgment in the case. Judge Real held that the ' 310, '228, and 305 patents were unenforceable due to RCT's inequitable conduct in withholding material information from the PTO. (# 729). In the same judgment, Judge Real also held that the '305, "1, '518, and '772 patents were invalid under 35 U.S .C. s. 102(b) and that Microsoft's accused products did not infringe the patents-in-suit. (*See* id.). On May 26, 2006, Judge Real issued additional findings as to inequitable conduct. (# 766). Based upon these findings, Judge Real held that the case was "exceptional" pursuant to 35 U.S.C. s. 285 and awarded attorneys' fees to Microsoft in the amount of $8,612,000. (# 770).

C. The Federal Circuit

In February 2006, RCT appealed Judge Real's decision to the Federal Circuit. (# 730). In August 2008, the Federal Circuit reversed Judge Real's ruling on inequitable conduct. *See* Research Corp. Techs. v. Microsoft Corp., 536 F.3d 1247, 1249 (Fed.Cir.2008). The Federal Circuit held that Judge Real had committed a "clear error" by misapplying the two-prong test for finding a patent unenforceable for inequitable conduct. Id. at 1251.

The two-prong test requires that a court find that the patentee "(1) made an affirmative misrepresentation of material fact, failed to disclose material information, or submitted false material information and (2) intended to deceive the PTO." Id. at 1252. During the bench trial, Judge Real limited the evidence to testimony from the inventors on the issue of candor and good faith, which goes to the second prong of the test. *See* id. at 1250. Judge Real found that one of the inventors, Dr. Mitsa, failed to inform the PTO of certain experiments that she conducted after filing the patent applications. *See* id. at 1252-53. As a result, Judge Real held that the inventors violated their duties of candor and good faith to the PTO. *See id*. Dr. Mitsa's experiments related to the "K factor," which is a scaling factor and constitutes the number by which the "Principal Frequency" equation (the desired average spacing between the dots in a dot profile at each

gray level) can be multiplied to change the size of the filter. Id. at 1251.

The Federal Circuit held that Judge Real had erred because Dr. Mitsa's K factor experiments were not material to the inventive activities. *See* id. at 1252-53. The Federal Circuit found that Dr. Mitsa's post-filing experiments were not related to the inventive activities, but were related to her thesis and academic research, which were aimed at testing the degree to which the blue mask power spectrum could or should be manipulated. *See id*. During the bench trial, RCT sought to introduce expert testimony on materiality, but Judge Real excluded such testimony. The Federal Circuit determined that Judge Real had clearly erred by "completely ignoring" the materiality prong. Id. at 1253.

In addition to ignoring the materiality prong, the Federal Circuit concluded that Judge Real's application of the second prong of the test was clearly erroneous. *See* id. at 1253. The Federal Circuit determined that Judge Real had improperly relied upon Dr. Parker's statements about the purposes of the patent system, which statements the Federal Circuit found to be irrelevant to a finding of inequitable conduct. *See id*. Also, the Court of Appeals concluded that Judge Real had improperly relied upon an e-mail between Dr. Parker and another scientist, Dr. Ulichney, who had previously coined the term "blue noise power spectrum" and defined its characteristics. *See id*. at 1253-54. Dr. Parker had sent an e-mail to Dr. Ulichney, stating that he wanted to discuss his research with Dr. Ulichney but that Dr. Parker, who wanted to wait until the patent was filed, could not discuss his confidential research at that time. *See id*. Judge Real found this e-mail to be evidence that Dr. Parker was not in possession of the invention at the time of filing, but the Federal Circuit determined that Dr. Parker's unwillingness to share confidential research with another competitive scientist is "hardly dispositive" of the finding that Dr. Parker was not in possession of the patented invention. Id. at 1253.

The Federal Circuit reversed the bench trial ruling related to inequitable conduct, vacated Judge Real's other holdings, and remanded the case for trial. Judge Real's other holdings that the Federal Circuit vacated included his rulings on motions for summary judgment for noninfringement and invalidity, his rulings on the motions in limine, and his ruling on the award of attorneys' fees. On the motions for summary judgment, the Federal Circuit observed that the "motions for summary judgment were granted without a proper analysis regarding inequitable conduct" and that "the record shows many potential issues of fact that would prevent entry of summary judgment." Id. at 1254-55.

III. SUMMARY JUDGMENT STANDARD

The Federal Rules of Civil Procedure provide for summary adjudication when "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the party is entitled to a judgment as a matter of law." Fed.R.Civ.P. 56(c). Material facts are those which may affect the outcome of the case. *See* Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). A dispute as to a material fact is genuine if there is sufficient evidence for a reasonable jury to return a verdict for the nonmoving party. *See id*. A principal purpose of summary judgment is "to isolate and dispose of factually unsupported claims." *Celotex Corp.,* 477 U.S. at 323-24 (1986).

In a summary judgment posture, the Court must consider the parties' respective burdens. "When the party moving for summary judgment would bear the burden of proof at trial, it must come forward with evidence which would entitle it to a directed verdict if the evidence went uncontroverted at trial. In such a case, the moving party has the initial burden of establishing the absence of a genuine issue of fact on each issue

material to its case." C.A.R. Transp. Brokerage Co., Inc. v. Darden Rests., Inc., 213 F.3d 474, 480 (9th Cir.2000) (citations omitted). In contrast, when the nonmoving party bears the burden of proving the claim or defense, the moving party can meet its burden in two ways: (1) by presenting evidence to negate an essential element of the nonmoving party's case; or (2) by demonstrating that the nonmoving party failed to make a showing sufficient to establish an element essential to that party's case on which that party will bear the burden of proof at trial. *See Celotex Corp.,* 477 U.S. at 323-24. If the moving party fails to meet its initial burden, summary judgment must be denied and the court need not consider the nonmoving party's evidence. *See* Adickes v. S.H. Kress & Co., 398 U.S. 144, 159-60 (1970).

If the moving party meets its initial responsibility, the burden then shifts to the opposing party to establish that a genuine issue as to any material fact actually does exist. *See* Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586 (1986). To establish the existence of a factual dispute, the opposing party need not establish a material issue of fact conclusively in its favor. It is sufficient that "the claimed factual dispute be shown to require a jury or judge to resolve the parties' differing versions of the truth at trial." T.W. Elec. Serv., Inc. v. Pacific Elec. Contractors Ass'n, 809 F.2d 626, 631 (9th Cir.1987). In other words, the nonmoving party cannot avoid summary judgment by relying solely on conclusory allegations that are unsupported by factual data. *See* Taylor v. List, 880 F.2d 1040, 1045 (9th Cir.1989). Instead, the opposition must go beyond the assertions and allegations of the pleadings and set forth specific facts by producing competent evidence that shows a genuine issue for trial. *See* Fed.R.Civ.P. 56(e); *see also, Celotex Corp.,* 477 U.S. at 324.

When considering a summary judgment motion, the Court examines the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any. Fed.R.Civ.P. 56(c). At summary judgment, the judge's function is not to weigh the evidence and determine the truth but to determine whether there is a genuine issue for trial. *See* Anderson, 477 U.S. at 249. The evidence of the nonmovant is "to be believed, and all justifiable inferences are to be drawn in his favor." Id. at 255. But, if the evidence of the nonmoving party is merely colorable or is not significantly probative, summary judgment may be granted. *See* id. at 249-50.

IV. ANALYSIS

Microsoft presents two arguments in its Motion for Supplemental Claim Construction: (1) the contemporaneous literature is intrinsic evidence and thus critical to the correct claim construction and that five terms and one clause require reconstruction with consideration of the contemporaneous literature and (2) the "wherein" clause of each '305 patent claim recites use of the apparatus, making the claim indefinite. Id. Microsoft asserts that where the meaning of claims is disputed, the court must construe the claim or declare it indefinite and incapable of construction under the Federal Circuit's ruling in Praxair, Inc. v.. ATMI, Inc., 543 F.3d 1306, 1319 (Fed.Cir.2008) (stating that indefiniteness is a matter of claim construction and a question of law). (# 800 at 1).

RCT argues that Microsoft's Motion is actually a motion for reconsideration filed in an untimely manner and that Microsoft has failed to meet its burden to prove that the law in the case regarding current claim construction should be disturbed. (# 889 at 1, 9).

The Court agrees with Microsoft that the current construction of "low frequency" is inadequate and that the contemporaneous literature referenced in the patents must be taken into consideration by the Court. It does not agree that the use of the term "wherein" in the '305 patent indicates a hybrid claim improperly issued a

patent by the Patent Trademark Office.

A. Reconstruing Claims

Microsoft argues that a 2005 Federal Circuit ruling changed the law regarding claim construction in the context of patent specification. (# 889 at 2). It cites to *Phillips v. AWH Corporation* as a ruling that stresses the dominance of the specification in understanding the scope of terms used in the claim. 415 F.3d 1303 (Fed.Cir.2005). Microsoft argues that this ruling necessitates that the Court revisit its prior claim construction and include contemporaneous literature in the new construction as the literature qualifies as "intrinsic evidence." (# 800 at 3). It asks the Court to reconstrue five terms and one clause: (1) low frequency components; (2) high frequency components; (3) small or negligible low frequency components; (4) blue noise dot profile; (5) visually pleasing dot profile; and (6) blue noise power spectrum. *Id*. at 3-14.

Phillips provided further direction as to how the courts should handle intrinsic and extrinsic evidence. In that case, the plaintiff patent holder sued former licensees for misappropriation of trade secrets and patent infringement. Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005). On appeal the Federal Circuit sitting en banc affirmed the district court's ruling on the trade secret misappropriation claims, but reversed its summary judgment of noninfringement. Regarding the infringement claim, the Circuit ruled that because the questionable term "baffles" was not subject to Section 112, paragraph 6, because it was not means-plus-function language, the district court erred in its limitation of the term to corresponding structures disclosed in the specification and their equivalents. Id. at 1311. The court discussed the differences in value between intrinsic evidence and extrinsic evidence, stating that "extrinsic evidence may be useful to the court" but encouraging it to be considered primarily "in the context of intrinsic evidence." Id. at 1319. It specified that "it is permissible for the district court in its sound discretion to admit and use such evidence." *Id*. More broadly, its ruling directed that when a patent recites multiple objectives to be performed by the patent's term at issue, the patent language should not be read restrictively to require it to serve all of the recited functions. *Id*. at 1327.

1. Contemporaneous Literature

Microsoft attempts to include the following items of "contemporaneous literature" as intrinsic evidence: (1) Robert Ulicheny's book, Digital Halftoning (1987); (2) Robert Ulichney's article, *Dithering with Blue Noise,* 76 Proceedings of the IEEE 56 (1988); patent applicant Theophano Mitsa, *Digital Halftoning Using a Blue-Noise Mask,* UMI Dissertation Services (1991); and patent applicant Dr. Parker, Dr. Mitsa, and Dr. Ulicheny's article, *On the Manipulation of Power Spectra of Halftone Patterns,* SPSE's 7th Int'l Congress on Non-Impact Printing (1991). (# 800 at 3). Dr. Ulicheny's book, Digital Halftoning, is expressly invoked by each of the asserted patents as cited below:

As referred to herein, the term "blue noise" is a pattern with negligible low frequency components which possesses certain visually pleasing properties, as described by R. Ulichney in his book, Digital Halftoning.

(Am. Comp. Ex. F ('772 patent) 7 :34-37; Ex. A ('310 patent) 4 :34-38; Ex. B ('228 patent) 7 :49-53; Ex. C ('305 patent) 7 :29-33; Ex. D ("1 patent) 7 :34-38; Ex. E ('518 patent) 7 :42-15). The other three items are listed as prior art in the '772 and '518 patents, and at the Court's discretion, they are considered generally relevant to the other patents because all claims of the same or related patents should be construed the same way. *See* NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1293 (Fed.Cir.2005).

The court in *Phillips* discussed intrinsic evidence and extrinsic evidence and their varying roles in the patent

process. Phillips, 415 F.3d at 1312-19. The claims do not stand alone. Rather, as the Circuit points out, they are part of "a fully integrated written instrument," Markman v. Westview Instruments, Inc., 52 F.3d 967, 978 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370 (1996), consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." Id. at 979. Black's Law Dictionary defines "specification" as "the part of a patent application describing how an invention is made and used, the best mode of operation of the claimed invention, and the inventor's claims." Black's Law Dictionary 1434 (8th ed.2004). It goes on to further describe patent specifications by stating "the specification must be clear and complete enough to enable a person of ordinary skill in the art to make and use the invention. It must also disclose the best mode of working the invention." *Id*. Intrinsic evidence consists of the claim specifications and patent history. Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 980 (citing *Seymour v. Osborne,* 78 U.S. (11 Wall.)516, 546 (1870)). However, while extrinsic evidence "can shed useful light on the relevant art," the Circuit has explained that it is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.' " C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed.Cir.2004) (quoting Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1318 (Fed.Cir.2004)); *see also* Astrazeneca AB v. Mutual Pharm. Co., 384 F.3d 1333, 1337 (Fed.Cir.2004).

Regardless of the nature of the four items of proposed evidence, they are considered by the Court to be relevant to the patent claims' construction in this case. Dr. Ulichney's book, Digital Halftoning, is referenced in the patent specification and therefore is accorded intrinsic evidence status. The other three items are, by their nature, treatises, and would be considered under the *Phillips* decision to be extrinsic evidence. Despite being extrinsic, the citation to the three in the later patents as prior art provides influence and direction as to the definition of the claim terms throughout the entire body of patents at issue. It is soundly within the discretion of the Court to consider extrinsic evidence in such circumstances along with intrinsic evidence.

Microsoft has argued its "principal frequency" theory for many years. It has asked for reconsideration of the Special Master's Recommendations on the topic of its "principal frequency" theory. (# 87, # 584, # 610, # 653). The Special Master did not adopt Drs. Parker and Mitsa's interpretation of Dr. Ulichney's definition of blue noise as having negligible energy below the "Principal Frequency." Microsoft contends that the five terms and one clause in issue are based on the definition for "blue noise" as created by Dr. Ulichney and later echoed by the patent applicants, Drs. Parker and Mitsa. (# 300 at 2). It derives its meanings of the terms and clause from the aforementioned four blue noise publications spanning from 1987 to 1991, preceding or contemporaneous with the patent applications in suit filed between 1990 and 1995. *Id*. The contemporaneous literature defined "low frequency" as being all frequencies below a frequency called "Principal Frequency", and then defined the mathematical property called "blue noise" to require no more than negligible low-frequency energy. RCT contends that the blue noise publications are not relevant to the patents as they were published after the '310 patent was issued.

2. Construction of Terms and Clause

Microsoft requests that the Court reconstrue five terms and one clause relevant to the masks or comparative arrays claimed in RCT's patents: (1) low frequency components; (2) high frequency components; (3) small or negligible low frequency components; (4) blue noise dot profile; (5) visually pleasing dot profile; and (6) blue noise power spectrum.

As in most patent cases, defendant Microsoft is motivated by a desire to construe the claims as narrowly as

possible such that the accused masks or arrays contained in Microsoft's software may be found by the fact finder to be outside the limitations of RCT's patent claims. For example, Microsoft intends to adduce evidence at trial that their accused masks were developed independent of any algorithm or method for constructing such masks as set forth in RCT's patents; and that the resulting accused masks do not have the more narrow characteristics claimed in RCT's patents. On the other hand, RCT wants the claims construed as broadly as possible, even to include any mask, matrix, or array which may be used in a pixel by pixel comparison with any digitized image in the publishing, display, photographic, or graphics arena; and even if that construction is far beyond the represented claims before the PTO. The Court's present construction allows RCT to argue that any mask which produces visually pleasing results, whether now used or known in the art or yet to be invented in the distant future, falls within the construed claims. Thereby, RCT hopes to avoid any argument as to the method for constructing the accused masks by simply demonstrating their literal inclusion in a broadly construed claim for such masks. As this Court warned RCT at oral argument on this motion, the Markman construction cannot be so broad as to allow RCT to claim all matrices or arrays used in a computer comparative process. RCT did not and cannot claim that they invented matrices or arrays used for comparative processes in computer software. Nor can they possibly claim that they invented the use of such arrays in relation to images or graphics software. Accordingly, the Court must revisit this issue.

The claims appear to encompass any blue noise mask, whether now known or yet to be invented, which have the characteristics of a blue noise dot profile or a visually pleasing dot profile. For example, claim 1 of the '310 patent provides for a single step method:

1. A method for the halftoning of gray scale images by utilizing a pixel-by-pixel comparison of the image against a blue noise mask in which the blue noise mask is comprised of a random non-deterministic, non-white noise single valued function which is designed to produce visually pleasing dot profiles when thresholded at any level of said gray scale images.

To the extent the term "blue noise mask" includes all "visually pleasing dot profiles" without limitation on those terms, the PTO appears to have issued a patent covering any pixel by pixel comparison between any original image and any matrix or array which produces a visually pleasing result, whether the mask or array or definition of "visually pleasing" is determined long after patent issue. That construction is untenable.

As currently construed, the definitions pertaining to masks used in a pixel by pixel comparative process to the original image are as follows:

low frequency components: The frequencies that are among the smaller in the frequency index, as constructed from the power spectrum of a dot profile.

high frequency components: The frequencies that are among the greater in the frequency index, as constructed from the power spectrum of a dot profile.

small or negligible low frequency components: Values near the ordinate of the power spectrum graph that may be neglected (so close to zero) or are substantially less in magnitude compared to high frequency components.

blue noise dot profile: A dot profile that (1) has small or negligible low frequency components; (2) is locally aperiodic; and (3) is isotropic (low anisotropy).

visually pleasing dot profile: A dot profile is visually pleasing if it possesses the collection of properties that must include: (1) aperiodicity; (2) isotropy (low anisotropy); and (3) lack of low-frequency graininess.

blue noise power spectrum: A power spectrum which has small or negligible low frequency in the low frequency region adjacent to the ordinate of the frequency plot; a transition region from the low frequency region; and a high frequency region which has an absence of strong or dominant spikes sensed as artifacts in the spatial domain.

Microsoft proposes that the Court reconstrue the terms. RCT urges the Court to retain the current claim construction. The proposed new construction is as follows:

low frequency components: The components of a power spectrum at all frequencies below the Principal Frequency.

high frequency components: The components of a power spectrum at all frequencies above the Principal Frequency.

small or negligible low frequency components: Microsoft contends this entire construction should be removed as it is unnecessary.

blue noise dot profile: A dot profile that has a blue noise power spectrum; is locally aperiodic; has low anisotropy; and has a lack of low-frequency graininess.

visually pleasing dot profile: A blue noise dot profile.

blue noise power spectrum: Fig. 1 of the asserted patents depicts the characteristics of a blue noise power spectrum. A blue noise power spectrum at a gray level, *g,* has three important features. First, its peak is at the Principal Frequency for that gray level, *f, sub g*. Second, there is a sharp drop off from the peak at the Principal Frequency such that the spectrum's lowest frequency is essentially the Principal Frequency and the spectrum has insignificant (negligible) energy below the Principal Frequency. Third, the spectrum's high-frequency energy, i.e., energy above the Principal Frequency, is uncorrelated white noise, or "blue noise." (# 800). Microsoft has repeatedly requested that the claims be construed in light of its Principal Frequency argument. (# 87, # 584, # 610, # 653). In doing so, it contradicts the Special Master's recommendations, and the Court's repeated holdings against this theory.

At this time, based on the Court's consideration of the four published items under the *Phillips* ruling, the Court believes it is authorized to reconstrue the claims. Based on Dr. Ulichney's book and papers, as well as those of Drs. Parker and Mitsa, and Dr. Mitsa's testimony at the inequitable conduct trial (# 689), the Court sets forth the following construction of the terms and clause in question:

low frequency components: The components of a power spectrum at frequencies below the Principal Frequency.

high frequency components: The components of a power spectrum at frequencies above the Principal Frequency.

small or negligible low frequency components: unnecessary-omitted

blue noise dot profile: A dot profile that has **substantial characteristics of a** blue noise power spectrum; is locally aperiodic; has low anisotropy; and has a lack of low-frequency graininess.

visually pleasing dot profile: A blue noise dot profile.

blue noise power spectrum: Fig. 1 of the asserted patents depicts the characteristics of an **ideal** blue noise power spectrum. A blue noise power spectrum at a gray level, *g*, has three important features. First, its peak is at **or near** the Principal Frequency for that gray level, *f, sub g*. Second, there is a sharp drop off from the peak at the Principal Frequency such that the spectrum's lowest frequency is essentially the Principal Frequency **or near the Principal Frequency** and the spectrum has insignificant (negligible) energy below the Principal Frequency. Third, the spectrum's high-frequency energy, i.e., energy above the Principal Frequency, is uncorrelated white noise, or "blue noise" demonstrated by an absence of strong or dominant spikes sensed as artifacts in the spatial domain.

The above reconstruction has several advantages. It follows RCT's theory of the case and the patents by confirming that any accused mask falls within the claim limitations so long as it matches the characteristics of a blue noise dot profile described in the claims, irrespective of the method or theory for constructing such masks whether presently known or yet to be invented. However, the reconstruction also realistically limits such claimed characteristics to those known by the inventors or in the art at the time of application, as opposed to any "visually pleasing" dot profile invented in the distant future. Afterall, "visually pleasing" can be very broadly construed to be "in the eye of the beholder." Even the human eye and its perception ability changes with time; perhaps the human eye will perceive higher and lower frequencies of light than are presently possible. The PTO examiner could not have contemplated the inclusion of visually pleasing dot profiles as seen and perceived by the human eye for the first time in future centuries.

The Court has determined that reconstruction of these terms and clause are permissible under the *Phillips* standard, and necessary due to the former construction's vagueness. Specifically, and by way of example, the original construction of the low and high frequency components is ambiguous. The use of the comparative terms "smaller" and "greater" are subjective to the eye of the viewer as they are not linked to anything objective or concrete. Likewise, the former construction of "blue noise power spectrum" is indefinite in its discussion of low frequency region, high frequency region, or relation to a principal frequency. These constructions do not enable a finder of fact to aptly discern whether or not infringement has taken place because they fundamentally fail to describe what a blue noise power spectrum *should* look like.

The Court does not fully adopt Microsoft's proposed reconstructions of the claims because such constructions would effectively limit RCT to the narrow confines of only an ideally achieved blue noise power spectra. A patent must be enabled, and it must be an improvement, but it does not have to be perfect. By analogy when you patent a new mousetrap to catch a mouse in a different way, it must be new, and must be enabled in the patent. But it does not have to be perfect; it does not have to catch all mice. Similarly here, the better construction is more consistent with Dr. Ulichney's definitions. It is necessary to note the caveat that simply because an accused product does not produce a graph in perfect alignment with Dr. Ulichney's figure 8.3, which is Figure 1 in the patent, does not mean that it is outside of the patent. The patent claims more than those blue masks with wrap around qualities that comply with Figure 1. That figure represents the ideal, but deviations within reasonable bounds from that ideal are covered by the patent.

The Court bases its ruling on *Phillips* as guidance to examine Dr. Ulichney's book as intrinsic evidence and to weigh the other three blue noise publications as highly relevant extrinsic evidence. Based on these items of contemporaneous literature, the Court has reconstrued the five terms and one clause to provide more clarity for the finders of fact and in doing so, strives to meet the Federal Circuit's remand instructions.

B. Indefinite Claim Construction

The second paragraph of 35 U.S.C. s. 112 requires that the specification of every patent must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." This requirement serves a public notice function, ensuring that the patent specification adequately notifies the public of the scope of the patentee's right to exclude. *See* Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1338 (Fed.Cir.2003). A claim satisfies the definiteness requirement of s. 112 "[i]f one skilled in the art would understand the bounds of the claim when read in light of the specification." Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed.Cir.2001). A claim will be found indefinite only if it "is insolubly ambiguous, and no narrowing construction can properly be adopted ...." *Id*. On the other hand, "[i]f 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, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." *Id*. Indefiniteness is a question of law and a matter of claim construction. Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306, 1319 (Fed.Cir.2008).

Microsoft argues that the "wherein" clause of each '305 claim renders the claim indefinite. (# 800 at 15). It alleges that the PTO mistakenly issued a patent for a hybrid claim because the asserted claims recite both a machine and its use. *Id*. at 16. It cites to the Federal Circuit case *IPXL Holdings v. Amazon.com* in 2005 as the guiding "new" law on the topic of hybrid claims. 430 F.3d 1377 (Fed.Cir.2005). RCT refutes this alleged "hybrid claim" as a disguised partial motion for summary judgement. (# 881 at 15).

In *IPXL Holdings v. Amazon.com* the Circuit held that because it was unclear whether infringement of a claim took place when one created a system for a user to change transaction information or when the user actually uses the input means to change the transaction information, the claim was invalid under section 112. 430 F.3d at 1384. It also concluded that the claim was invalid for indefiniteness because it recited both a system and a method for use of the system, and therefore it failed to apprise a person of ordinary skill in the art of the claim's scope. *Id*.

An apparatus claim that includes a description of functionality is not necessarily indefinite. *See* Halliburton Energy Servs. v. M-I LLC, 514 F.3d 1244, 1255 (Fed.Cir.2008). The Federal Circuit has ruled in 2008 distinguishing *IPXL* in Microprocessor Enhancement Corporation v. Texas Instruments Incorporated, 520 F.3d 1367, 1374-75 (Fed.Cir.2008). In *Microprocessor,* the Circuit cited to *IPXL's* ruling that "a claim is considered indefinite it if does not reasonably apprise those skilled in the art of its scope." Id. at 1374 (*citing* IPXL, 430 F.3d at 1383-84). Under its discussion, it declares *IPXL's* holding to be that a claim was indefinite that covered both an apparatus and a method of using that apparatus. *Id*. The conclusion in that case was based on "the lack of clarity as to when the mixed subject matter claim would be infringed." *Id*. In *Microprocessor,* the Circuit held that the method patent claim in question recited the physical structure of a system in which its method would be practiced, and that there was no ambiguity as in *IPXL*. *Id*.

Similarly in this case, the term "used" in the '305 patent claims describes the function of the comparator

element. The term "wherein" does not create an ambiguity in the claim language to warrant the "hybrid" treatment of *IPXL*. Instead, the claim language in claims 29, 42, and 72 do not cover both an apparatus and the method of use of the apparatus. Relevant shared claim language is: "[A]n output of said comparator is used to produce a halftone image." It is limited to a comparator possessing the recited ability and structures capable of performing the recited function of halftoning. The claims are not indefinite as a matter of law.

C. Motion for Reconsideration

Federal Rule of Civil Procedure 60 governs relief from judgment or order and provides for the court to relieve a party from a final order (such as the *Markman* Order) for the following reasons:

(1) mistake, inadvertence, surprise, or excusable neglect;

(2) newly discovered evidence that, with reasonable diligence, could not have been discovered in time to move for a new trial under Rule 59(b);

(3) fraud (whether previously called intrinsic or extrinsic), misrepresentation, or misconduct by an opposing party;

(4) the judgment is void;

(5) the judgment has been satisfied, released, or discharged; it is based on an earlier judgment that has been reversed or vacated; or applying it prospectively is no longer equitable; or

(6) any other reason that justifies relief.

Fed.R.Civ.P. 60(b). The timing of the motion must be reasonable, and for reasons (1), (2), and (3), no more than one year after the entry of order. Fed.R.Civ.P. 60(c).

Although the deadline has passed, the Court will permit reconsideration of the construction of the claims in the interests of clarity and justice. The Court has been newly appointed to the instant case and finds certain of the constructions to be difficult for comprehension by a jury. In order to fulfill the duty imparted to it by the Federal Circuit, the Court will permit Plaintiff to bring the present motion for reconsideration, despite the untimeliness of the request.

V. CONCLUSION

IT IS HEREBY ORDERED that Microsoft's Motion for Supplemental Claim Construction is GRANTED in part and DENIED in part. It is granted to the extent the Court has chosen to reconstrue the terms and clause requested of it. It is denied on the question of indefiniteness on the '305 patent.

D.Ariz.,2009.
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