United States District Court,
N.D. Illinois, Eastern Division.

BACUS LABORATORIES, INC,
Plaintiff.
v.
APERIO TECHNOLOGIES, INC., and Dakocytomation California, Inc. d/b/a Dako Corporation,
Defendants.

March 1, 2005.

John F. Flannery, Karl Regan Fink, Michael G. Vranicar, Fitch, Even, Tabin & Flannery, Chicago, IL, for Plaintiff.

Robert A. Carson, Shannon Leiola Clark, Chicago, IL, for Defendant.

MEMORANDUM OPINION AND ORDER

KENNELLY**, J.**

In this patent infringement suit, Bacus Laboratories, Inc. alleges that a product called ScanScope infringes U.S. Patents No. 6,272,235, 6,522,774, 6,396,941, and 6,466,690, which are held by Bacus. The case is before the Court for construction of disputed claim language in the patent-in-suit, as well as Bacus' motion for a stay of claims and counterclaims relating to the '690 patent.

Factual Background

Bacus developed, manufactures, and sells Bliss and WebSlide. Bliss is a virtual microscope that converts a traditional glass microscope slide into a format that can be viewed on a computer. WebSlide is an Internet server that provides an organized collection of digitized microscope slides that can be accessed on the Internet or an intranet network. Once on the computer, a slide is easily navigable and can be viewed at a variety of resolutions. In addition, the slide can be shared and viewed across the Internet, which has become an important tool for medical students, doctors, and scientists.

In its complaint, Bacus alleges that ScanScope, a commercial competitor to Bliss manufactured by Aperio, infringes Bacus' patents. Specifically, Bacus argues that ScanScope uses an image scanning and storing system that operates in the same way as the system disclosed in the '235, '774, and "1 patents.

Discussion

The first step in any patent infringement case is to construe the claims of the patent-in-suit. Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1373 (Fed.Cir.2004). The parties submitted extensive briefs in support of their respective positions concerning how the claim language should be construed. The Court held a hearing

on October 21, 2004 to further educate itself about the technology at issue. The purpose of this Memorandum Opinion and Order is to set forth the Court's construction of the disputed claim language.

The object of claim construction is to determine the meaning of terse and sometimes unfamiliar language in patent claims. Gart v. Logitech, Inc., 254 F.3d 1334, 1339 (Fed.Cir.2001). The parties in this case agree on the general principles that govern claim construction. First of all, they agree that "the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.' 35 U.S.C. s. 112, 2." Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed.Cir.2001), *quoted in* Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201-02 (Fed.Cir.2002). *See* Pl. Claim Constr. Mem. 8; Def. Claim Constr. Mem. 3. The parties further agree that "[t]here is a heavy presumption that the terms used in the claims have the ordinary meaning that would be attributed to those words by persons skilled in the relevant technology." Def. Claim Constr. Mem. 3; *see* Pl. Claim Constr. Mem. 8. *See, e.g.,* Texas Digital, 308 F.3d at 1202; CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002); K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1362-63 (Fed.Cir.1999). In addition, "unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Texas Digital, 308 F.3d at 1202 (citing Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001); Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999); and Specialty Composites v. Cabot Corp., 845 F.2d 981, 986 (Fed.Cir.1988)).

The parties agree that in determining the ordinary and customary meaning of a claim term, the court may consult, in addition to the claims themselves, dictionaries and treatises, *see, e.g.,* Texas Digital, 308 F.3d at 1202, as well as the written description and drawings contained within the patent, as well as the prosecution history. *See, e.g.,* DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324 (Fed.Cir.2001). *See* Pl. Claim Constr. Mem. 8-9; Def. Claim Constr. Mem. 3. In particular, both sides in this case have specifically agreed that "a court can and should consult dictionary definitions in construing claim terms." Def. Claim Constr. Mem. 3; *see* Pl. Claim Constr. Mem. 8-9. The parties have also specifically agreed that the presumption of ordinary meaning may be overcome if a term is used in the specification and/or the prosecution history in a way that is inconsistent with its ordinary meaning. *See* Pl. Claim Constr. Mem. 9; Def. Claim Constr. Mem. 3-4. But, as Aperio states in its claim construction memorandum, "[i]t is inappropriate ... to consult the intrinsic record to determine the meaning of claim terms before attempting to discern the ordinary and customary meanings attributed to the words themselves. To do so would violate the rule that limitations from the specification may not be imported into the claims so as to limit their scope." Def. Claim Constr. Mem. 4 (citing Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1373 (Fed.Cir.2004); Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995); SRI Int'l, Inc. v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 n. 14 (Fed.Cir.1985) (*en banc*)). Bacus agrees. *See* Pl. Resp. to Def. Claim Constr. Mem. 2.

With these general principles in mind, the Court turns to the disputed claim terms at issue in this case.

'235 Patent

Patent No. 6,272,235 was issued on August 7, 2001. The parties dispute eight terms in the '235 patent: image tiles; digitally scanning; data structure of images; overall macro view; virtual microscope slide; original optical image; contiguous fields of view; and reconstructing contiguous images. FN1 We discuss each in turn.

FN1. Bacus' original proposed claim construction also contained "multiple tiled images" as a disputed term

in claim twenty-three of the '235 patent. Aperio did not respond to Bacus' definition of multiple tiled images, seemingly because it agreed to Bacus' definition. The term is subsequently not mentioned in Aperio's response, Aperio's proposed claim construction; Bacus' response, or Aperio's sur-rebuttal. In its surreply, however, Bacus mentions the term again and states that "Defendants incorrectly state that the parties have agreed on the meaning of 'multiple tiled images." ' Pl. Surreply at 5. The parties should have settled this issue at an earlier date. The Court does not have any argument from Aperio on the meaning of "multiple tiled images" because Aperio believed the issue to be settled. The Court does not have enough information to address this claim and will not do so in this Memorandum.

1. Claim one

Claim one of patent '235 discloses:

A method of constructing and using a *data structure of images* from a specimen on a microscope slide using a microscope having an objective lens comprising:

digitally scanning and storing images from the specimen on a microscope slide to create a plurality of individual contiguous *image tiles* at a resolution finer than the optical resolution of the objective lens of the microscope and with a digital spacing between pixels finer than the optical resolution of the objective lens;

providing a control program for the data structure for viewing, manipulating and reconstructing the image tiles; and

transferring the scanned, digital image tiles over an Internet or intranet communication channel; and

using the control program to allow viewing of a digital reconstructed composite image formed from contiguous image tiles of a substantially larger image area than the area of the individually acquired tiles.

A. Image tiles

The term "image tiles" is used throughout the '235 patent. Bacus urges that this term be construed as referring to subsections or parts of an image, with "image" meaning an optical representation. Aperio's proffered definition is "an optical reproduction of a single field of view from the objective lens of a microscope, separately scanned and separately stored as a standard image file."

The first step is to determine the ordinary and customary meaning understood by those skilled in the relevant technology. It is undisputed that the ordinary meaning of image is an "optically formed duplicate, counterpart, or other representative reproduction of an object, especially an optical reproduction formed by a lens or mirror." American Heritage Dictionary 875 (Houghton Mifflin 4th ed.2000). Aperio contends, however, that the definition of image in the claim must refer to the objective lens of a microscope. As will be discussed below with regard to the rest of Aperio's proffered definition, the addition of "the objective lens of the microscope" to the definition of image departs from the ordinary and customary meaning of image tiles and is not required by the context of the claim.

In support of its proposed definition of "tiles," Bacus cites a technical dictionary, the Dictionary of Photography and Digital Imaging. That source defines tile as a "sub-section or part of a larger bitmapped image," used for file storage purposes or image processing. Dictionary of Photography and Digital Imaging

337 (Amphoto Books 2001). Aperio argues that this definition is irrelevant because the dictionary was first published in 2002, one year after the '235 patent was issued. In Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1299 (Fed.Cir.2003), the court held that the district court improperly relied on two Internet articles that postdated the issuance of the patent by five and eight years. The court stated that the articles were "not contemporaneous with the patent, do not reflect the meanings that would have been attributed to the words in dispute by persons of ordinary skill in the art as of the grant" of the patent. Id. at 1299. The circumstances are different, however, in the present case. The dictionary cited by Bacus was actually copyrighted in the same year the '235 patent was issued and thus provides a contemporaneous definition of the term "tiles" that properly can be relied upon in this case. Even if one relies on the publication date rather than the copyright date, there is nothing to suggest that the definition of tiles changed in that short stretch of time. Among other things, Aperio provides no contrary contemporaneous dictionary definition of the term.

Aperio's primary argument is based on the specification and the prosecution history. In particular, Aperio relies on what it contends is a definition of "image tiles" within the specification, which states that "each of the 80 image segments will be scanned separately and stored as a separate image tile. " '235 patent, col. 11, lines 28-30; *see also* id., line 60 ("[e]ach of the stored data image tiles is a separate image file."). These descriptions are in no way inconsistent with the ordinary meaning of the term tiles as used in the context of a digitized image; rather, they describe a particular way in which image tiles can be created. The claims, however, are not limited to the particular embodiments described in the specification. *E.g.,* Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306-07 (Fed.Cir.2003). The specification may be used to limit the definition of a claim term if the patentee has disavowed or disclaimed the full scope of that term by using "expressions or manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Amer. Corp., 299 F.3d 1313, 1325 (Fed.Cir.2002). Such is not the case here. The claims use the term "image tiles" in a way consistent with its ordinary meaning to those skilled in the relevant technology.

We turn finally to the prosecution history to determine whether Bacus limited the ordinary and customary meaning of image tiles during the prosecution of the '235 patent. Aperio's contention that the scope of this claim term was limited during the prosecution of the patent is an after thought at best. Aperio did not make the argument in its opening claim construction brief or in its response to Bacus' opening brief, but rather did so only in its surrebuttal, a brief to which Bacus had no opportunity to reply. The argument was therefore forfeited.

Even were the Court not to consider Aperio's argument to have been forfeited, we would reject it. Aperio contends that Bacus limited the definition of image tiles during the prosecution when it differentiated its device from a prior art patent. One reference in the prosecution history reads:

Ishibashi, et al. starts from one large stored image of original information ... and simply breaks it down into smaller areas ... *This breaking down of one large stored image teaches nothing about how to create one large image from a series of contiguous smaller images*. It is the opposite problem. Pl.Ex. 13, '235 patent, Amendment B at 18 (emphasis added).

Another reference states:

Ishibashi 4,742,588 is directed to the exact opposite of that being done in that the original information image of Ishibashi is too large to be displayed whereas the original image tiles are displayed in this invention.

Moreover, these original image tiles of this invention are combined to display even a larger area than a single original information tile image. This is the exact opposite of Ishibashi.... *That is, Ishibashi is concerned with how to break down a large area rather than how to create one large image from a series of aerial camera information*. There is no edge alignment of contiguous tiles taken at high resolution and assembled edge-to-edge to give the original high resolution for the composite image as in the present invention. Pl.Ex. 13, '235 patent, Amendment B at 17 (emphasis supplied).

Aperio argues that in these selections from the prosecution history, Bacus surrendered any construction of "image" tiles that would include "breaking down a large area," as that was how Bacus differentiated its technology from the Ishibashi patent. The Court disagrees. Bacus' statement that its technology is concerned with creating a large image from a series of images in no way limits the meaning of the term "image tiles." There is nothing in the prosecution history suggesting a clear disavowal of claim scope.

The Court therefore adopts Bacus' proposed definition of the term and construes image tiles as subsections or parts of an optical representation.

B. Digitally scanning

Bacus' proffered definition for "digitally scanning" is successive analyzing, according to a predetermined method, of elements constituting a picture area in the form of digits. Aperio argues that the plain meaning of "digital scanning" means receiving image signals representative of a field of view from the objective lens of a microscope and converting the image signals into digital form. Again, Bacus asserts that Aperio is improperly importing limitations from the specification to the claim. According to Bacus, "of a field of view from the objective lens of a microscope" has nothing to do with the ordinary and customary meaning of digital scanning.

Bacus' proffered definition of scanning is the ordinary definition of the term. The American Heritage Dictionary (p. 1554) defines scan as:

electronics. To move a finely focused beam of light or electrons in a systematic pattern over (a surface) in order to reproduce or sense and subsequently transmit an image; 6. *computer science* to search (stored data) systematically for specific data.

The Modern Dictionary of Electronics, 885 (6th ed.1984), defines scanning as "the successive analyzing or synthesizing, according to a predetermined method, of the light values or equivalent characteristics of elements constituting a picture area."

Aperio argues that Bacus has limited the ordinary definition of digitally scanning in the specification of the '235 patent. Aperio cites the following references:

The focusing system is programmed to step through increments which detect/select only the high resolution center area of the field of view in order to avoid storing the fuzzy areas at the periphery of the field of view. '235 patent, Col. 11, Lines 18-22.

The optical image of the desired image area is then detected by optical array sensor 19 (preferably a CCD sensor array). '235 patent, Col. 11, Lines 42-44.

The optical array sensor sends electrical signals indicative of the detected image to microscope controlled computer 32. '235 patent, Col. 11, Lines 46-48.

According to Aperio, this language shows that Bacus used "digitally scanning" to describe the process of receiving image signals from the camera sensors that look through the field of view of the objective lens of the microscope and digitizing the signals.

Bacus argues that the portion of the specification cited by Aperio relates only to the *resolution* of the digitally scanned and stored images, not to the actual process of scanning and storing the images. Furthermore, Bacus argues that Aperio is attempting to improperly limit the construction of the term to a specific embodiment found in the specification. SRI International, Inc. v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 n. 14 (Fed.Cir.1985). Bacus also points to portions of the specification in which the term digitally scanning is used in a broader sense:

A method and apparatus are disclosed for constructing a virtual microscope slide comprised of digitally scanned images from a microscope specimen. '235 patent, Abstract.

The claim language and intrinsic evidence support Bacus' proffered construction of the term. Nothing in the claim language or the specification references cited by Aperio requires that digitally scanning be limited to "receiving image signals representative of a field of view." The Court is therefore bound to construe digitally scanning consist with its ordinary and customary meaning. Transmatic v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995). We therefore construe "digitally scanning" as successive analyzing, according to a predetermined method, of elements constituting a picture area, in the form of digits.

C. Data structure of images

Bacus asserts that "data structure of images" means a collection of data components of images. Aperio concedes that Bacus has provided the ordinary meaning of the term but argues that the intrinsic record reflects that Bacus has provided a narrower definition for the term. Aperio says that in the context of the claim, the only images capable of being collected in the data structure are the image tiles. Thus, to make sense in context, Aperio argues, the data structure must have mapping coordinates to allow the program to reconstruct the image tiles. Aperio's proffered definition of "data structure of images" is a collection of data components including image tiles and their mapping coordinates. The Court will consult the intrinsic record to determine whether Bacus has limited the meaning of data structure of images as Aperio contends.

The specification states:

The data structure is constructed by digitally scanning and storing the low magnification images with their mapping coordinates and likewise, digitally scanning and storing higher magnification images with the mapping coordinates. '235 patent, Col. 4, Lines 32-36.

Once the user has completed selecting and having the computer controlled microscope system scan and store the digital images in image tiles ... along with their coordinate information and creates slide image data structure 31 in Fig. 1. Slide image data structure includes all of the bitmap image tile files at both magnifications (note that similarly, additional images could be stored at further magnifications, if desired) as well as X-Y coordinate information for the location of various image tiles. '235 patent, Col. 12, Lines 46-55.

Fig. 7A is a file listing such as would be seen under a Windows 95 file manager showing the data files included in a data structure for a breast cancer specimen. Included in the file listing are FinalSacan.ini and SlideScan.ini as well as sixty bitmap data files.... The bitmap files represent the individual image tiles in the scan at, say, 1.25 times magnifications. SlieScan.ini is set forth below in Table 1 and describes the X-Y coordinates for each image tile file. '235 patent, Col. 14, Lines 40-42.

Though these excerpts from the specification support the notion that data structure of images includes mapping coordinates, they do not go so far as to manifest an intent by Bacus exclude other embodiments of the term that would fall within the ordinary meaning. Furthermore, at least one of these references reflects that the data structure can include components other than mapping coordinates, such as various magnifications and views. *See* '235 patent, Col. 12, Lines 46-55 ("Slide image data structure includes all of the bitmap image tile files at both magnifications ... *as well as* X-Y coordinate information") (emphasis added).

Because the definition provided by Bacus is the ordinary meaning of data structure of images, and because the ordinary meaning makes sense in the context of the language of the claim, the Court accepts Bacus' definition of the term. Transmatic, 53 F.3d at 1277 ("In construing a claim, claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise.")

2. Claim three

Claim three of the '235 patent discloses:

displaying a first image comprising a portion of the specimen as an *overall macro view;*

displaying a second image comprising higher resolution view from the specimen on the microscope slide at a higher magnification than the magnification of the overall macro view;

selecting a point on *said overall macro image* with a marker; and

producing a corresponding higher magnification image at the location of the marker.

Bacus states that "overall macro view" means a comprehensive large scale view. Aperio does not provide a competing definition. Rather, it focuses its attack on Bacus' contention that the claim's last reference to "said overall micro image" is meant to refer back to the "overall micro view." Aperio argues that the Court must interpret "overall macro view" and "overall macro image" differently because the claim language differs, and the Court cannot rewrite the claims. To support its argument that the phrases have the same meaning, Bacus directs the Court to the first sentence of claim three, which refers to "displaying a first image comprising a portion of the specimen as an overall macro view." This, Bacus argues, links the terms "image" and "view." In addition, Bacus notes that the patent examiner did not object to the interchangeable use of "overall macro view" and "overall macro image."

The Court agrees with Bacus. The terms "overall macro view" and "overall macro image" have the same meaning-a comprehensive large scale view.

3. Claim thirty-three

Claim thirty-three of the '235 patent discloses:

A method for viewing a portion of or an entire virtual microscope slide having a specimen representation comprised of sets of digitized image tiles, the method comprising:

providing an Internet or intranet communication channel;

providing one or more receivers connected to the Internet or intranet communication channel to receive *virtual microscope slides* for viewing;

storing one or more sets of virtual microscope digital slides at a first station connected to the Internet or intranet communication channel;

transmitting stored digital image tiles at a first resolution and magnification over the Internet or intranet communication channel to a receiver requesting a virtual microscope slide or portion thereof; and

providing a display of a virtual microscope slide formed from the transmitted set of digital image tiles as a composite reconstructed view formed of selected contiguous image tiles at the first resolution and magnification of the *original optical image* and

providing a display of an overall view of an area of interest of the specimen representation at a lower resolution and magnification at the requesting server.

A. Virtual microscope slides

Bacus argues that "virtual microscope slides" should be construed to mean microscope slides simulated or carried on by means of a computer. According to Aperio, the term should be defined as denoting a data structure of images which can be used in place of the actual specimen slides.

According to Bacus, the term "data structure of images" has nothing to do with the ordinary meaning of virtual microscope slides. And, in fact, the dictionary defines virtual, as used in computer science, as "created, simulated, or carried on by means of a computer or computer network." American Heritage Dictionary at 1922. Thus, Bacus' proposed definition is consistent with the ordinary meaning of the term. Moreover, Bacus' proffered definition fits into the context of the claim, which deals with requesting, receiving, and providing a "microscope slide" on a computer via the Internet.

Aperio argues that the ordinary meaning of "virtual microscope slide" is irrelevant to the claim construction, because Bacus acted as its own lexicographer by providing a very specific definition of the term. According to Aperio, Bacus uses the term "virtual microscope slide" almost interchangeably with "data structure" in the specification:

A virtual microscope slide, i.e. interrelated data structures and display procedures depicting at multiple resolutions, images of a specimen on a microscope slide. '235 patent, Col. 10, Lines 57-59.

The fact that a typical microscope specimen slide contains only limited information of interest and the ability of the system embodying the invention to accurately locate such regions enables the system to create

a virtual microscope slide, i.e. a data structure that can be used in place of the actual specimen slides. '235 patent, Col. 6, Lines 42-47.

By compressing the .bmp images to .jpg and adding a dynamic, self-executing program which enables the user to view, reconstruct and manipulate the image tiles, the user can use the data structure as a virtual microscope slide of the original specimen. '235 patent, Col. 19, Lines 10-14.

Bacus responds by asserting that Aperio is using the specification to define the term in place of the ordinary and general meaning of virtual microscope slides. The Court is persuaded by Bacus' argument. Unless the patentee has explicitly disclaimed or clearly disavowed the plain and ordinary meaning of the claim language, the plain and ordinary meaning defines the scope of the claim. Housey Pharmaceuticals, Inc. v. Astrazeneca UK Ltd., 366 F.3d 1348, 1352 (Fed.Cir.2004). Bacus does not make in the specification an expression of manifest "exclusion or restriction, representing a clear disavowal of the claim scope." Teleflex, 299 F.3d at 1325. Therefore, the Court cannot read into the phrase "virtual microscope slide" limitations that are found in the specification.FN2

FN2. Even when only one embodiment of the claim is disclosed in the specification, there is no rule that the claim terms are to be limited to the embodiment disclosed. Teleflex, 299 F.3d at 1326.

The Court construes "virtual microscope slides" as denoting microscope slides simulated or carried on by means of a computer.

B. Original optical image

Bacus defines "original optical image" as the visual source of the image of the specimens from which a copy, reproduction or translation is made. This is consistent with the ordinary meaning of the term. The dictionary defines "original" as "being the source from which a copy, reproduction, or translation is made," and the term "optical" as "of or relating to sight; visual." American Heritage Dictionary at 1241.

Aperio defines "original optical image" as the first image tile, where "image tile" means an optical reproduction of a single field of view from the objective lens of a microscope, separately scanned and separately stored as a standard image file. Aperio concedes that Bacus has offered a definition encompassing the ordinary meaning of the term. Aperio argues, however, that in the specification, Bacus gave the term a different meaning. Def. Mem. at 19. Aperio contends that Bacus uses "original optical image" to mean an image tile, as Aperio defines it. In support of its proffered definition, Aperio relies on several portions of the specification in which Bacus describes its invention. For example:

Today it is impractical to construct an optical image sensor large enough to cover the entire image area e.g., of a specimen on a microscope slide, at the required resolution. This is because lens size and resolution/magnification issues limit the size of the field of view of magnified objects and their resulting images. '235 patent, Col. 1, Lines 20-25.

Aperio's attempt to provide a definition other than the ordinary definition of "original optical image" fails, because Aperio has not overcome the strong presumption that the ordinary meaning is the correct construction. Middleton, Inc. v. Minnesota Mining & Mfg. Co., 311 F.3d 1384, 1387 (Fed.Cir.2002) (citation omitted). Bacus' proposed definition of "original optical image" fits the context of the claim. If that

definition is plugged in, the claim element refers to "a composite reconstructed view formed of selected contiguous image tiles at the first resolution and magnification of the visual source of the image of the specimens from which a copy, reproduction, or translation is made." Aperio does not provide the Court with any proper basis to disregard the ordinary meaning of the term.

4. Claim fifty-nine

Claim fifty-nine of the '235 patent discloses:

A method of viewing high resolution images from a specimen on a microscope slide comprising:

providing a medium with digitally stored images of contiguous fields of view of an area of interest larger than several *contiguous fields of view;*

providing high resolution images stored at a digital spacing between adjacent pixels in a specimen image plane being greater than the microscope objective lens optical resolution spacing to preserve the optical resolution for a reconstructed high resolution composite image;

providing edge alignment data for spatial reconstruction of contiguous fields of view into a reconstructed composite image larger than several contiguous fields of view; and using a control program for viewing, manipulating and *reconstructing contiguous images* to form the reconstructed composite views with the preserved high resolution.

A. Contiguous fields of view

Bacus defines "contiguous fields of view" as images rendered by a lens system of an optical instrument abutted without any substantial overlap, where "field of view" means area in which the image is rendered by the lens. Aperio argues that "contiguous fields of view" means adjoining regions that can be seen through a lens of an optical instrument.

The dictionary defines contiguous as "sharing an edge or boundary; touching" and field of view as "the usually circular area in which the image is rendered by the lens system of an optical instrument." American Heritage Dictionary at 397, 656. Bacus argues that adjoining does not mean to share an edge or boundary. The dictionary, however, defines adjoining as "neighboring; contiguous." Id. at 21. The dictionary definition of abut is "to touch along a border; to border on." Merriam-Webster's Collegiate Dictionary 5 (10th Ed.1999). Thus, it appears as though there is no material difference between the word abut and the word adjoining.

In short, Bacus does not provide the Court with a reason to disregard the ordinary meaning of contiguous. Bacus has also failed to provide a reason to add "without any substantial overlap" to the ordinary meaning of contiguous. Moreover, as used in the specification, it does not appear that contiguous is meant to stand for abut *and* without any substantial overlap:

Micro image tiles can likewise be defined so they are contiguous but not substantially overlapping as would interfere with the composite image. '235 patent, Col. 27, Lines 60-63.

As for the parties' dispute over whether field of view is "rendered by" the lens or "seen through" the lens,

the Court agrees with Bacus' construction. The claim states that the contiguous fields of view are "digitally stored" on hard drive so that they can be viewed on a computer screen. Therefore, the contiguous fields of view are not actually "seen" through the lens of an optical instrument, but rather are rendered through the instrument and stored on a computer.

In sum, the Court construes the phrase "contiguous fields of view" as denoting adjoining images rendered by a lens system of an optical instrument.

B. Restructuring contiguous images

Bacus' proffered definition of "restructuring contiguous images" is rebuilding images abutted without any substantial overlap. Aperio argues that the appropriate definition of the disputed phrase is aligning adjoining image tiles on the display screen of a computer monitor, where "aligning" means orienting the image tiles according to their predetermined electromechanical points on the microscope stage where each point is assigned an (x, y) coordinate value that uniquely defines its location.

The dictionary defines reconstruct as "to construct again; rebuild," which is consistent with Bacus' proposed construction. Aperio asserts that Bacus has acted as its own lexicographer and defined reconstructing as "aligning with the X-Y coordinate information." As support for its construction, Aperio directs the Court to the specification, which states:

The X-Y coordinate information is used by the viewing and manipulation program to reconstruct the image tiles into a complete image of the specimen. '235 patent, Col. 12, Lines 8-10.

The file index.html is the listing which contains the X-Y coordinate information for these data files. This is the information that is read by the dynamic, self-executing program for viewing, reconstructing and manipulating the image tiles into the macro and micro views. '235 patent, Col. 20, Lines 44-48.

These references from the specification do not require that the word reconstruct have anything other than its ordinary meaning. If reconstruct simply means rebuild, both cited passages from the specification would make sense. Furthermore, in the context of the claim, reconstruction of the contiguous images is done through the use of a control program ("using a control program for viewing, manipulating, and reconstructing contiguous images"). The control program uses the X-Y coordinate information. Thus, defining the term "reconstructing" to include the use of X-Y coordinate information would make the claim's reference to the control program largely superfluous.

For these reasons, "reconstructing contiguous images" is construed to mean rebuilding adjoining images.

'774 Patent

Patent No. 6,522,774 was issued on February 18, 2003. The parties dispute two terms in the '774 patent: original microscope images and mapping coordinates.

1. Claim one

Claim one of the '774 patent discloses:

A data structure of images taken from a specimen on a microscope slide comprising:

a series of contiguous, multiple images at a first magnification stored and useable to create an overall view of several adjacent, *original microscope images* assembled together;

the multiple images taken from at least a portion of a specimen on the slide; and the series of images providing a magnified image of the slide specimen to a viewer.

Bacus proffered meaning of "original microscope images" is images from the microscope from which representations are made. Aperio argues that the disputed phrase denotes the first image tiles. The parties' dispute focuses on the word "original." The parties rely on the same dictionary to provide the ordinary meaning of the word original. Bacus uses one dictionary meaning that defines original as "the source from which a copy, reproduction, or translation is made." American Heritage Dictionary at 1241(4). Aperio uses the meaning "preceding all others in time; first." Id. at 1241(1). When there is more than one potentially applicable dictionary definition of a term, the Court must decide which is consistent with the use of the term in the intrinsic record. Texas Digital, 308 F.3d at 1203.

Aperio argues that Bacus' construction would make the claim circular: several adjacent images from the microscope from which images are made. Furthermore, Aperio argues that Bacus' construction departs from the ordinary and customary meaning. The specification excerpts cited by Aperio to support its definition, however, are from the '235 patent, and they make no reference to "original optical images."

Bacus points out that the phrase "original microscope images" is used only once in the specification:

It will be appreciated that a host of problems need to be solved to allow Internet or intranet users to view on their respective monitors useful, low resolution, macro images and high resolution, micro images of several adjacent, original microscope images. '774 patent, Col. 3, Lines 38-42.

Bacus' definition of the term makes sense in the context of this specification, and in the context of the claim. It is clear from the clam language that the phrase refers to the source images from which the views reproduced on the viewers' monitors are made. The source images are the images from the microscope from which representations are made. Therefore, original microscope images is construed to mean images from the microscope from which representations are made.

2. Claim fourteen

Claim fourteen of the '774 patent discloses:

A storage medium having digitized images of a specimen on a microscope slide comprising:

a storage medium;

a series of contiguous, multiple images at a first magnification stored and useable to create an overall view of several adjacent, original microscope images assembled together;

the first series of multiple images taken from at least a portion of a specimen on the slide;

mapping coordinates for assembling the series of contiguous, multiple images stored on the storage

medium;

and the mapping coordinates and the series of images providing a magnified image of the slide specimen to a viewer.

Bacus argues that mapping coordinates are "numbers used to determine the position of objects relative to one another." In providing this construction of mapping coordinates, Bacus relies on the dictionary definition of map, "the correspondence of elements in one set to elements in the same set or another set," and the dictionary definition of coordinates, "any of a set of two or more numbers used to determine the position of a point, line, curve or plane in a space of given dimension with respect to a system of lines or other fixed references." American Heritage Dictionary at 1067, 404.

Aperio argues that mapping coordinates should be construed to mean "corresponding numbers used to determine the position of an object with respect to a fixed reference," where the fixed reference is the microscope stage. Aperio asserts that the specification supports its construction:

The system includes a microscope and stage in which digital locations on the stage have been predetermined in accordance with an electromechanical addressable coordinate system (X-Y for convenience). Each point on the stage is assigned an "X" and a "Y" coordinate which uniquely defines its location. '774 patent, Col. 5, Lines 13-17.

The signal produced by the optical sensors in the CCD grid are then transmitted to a computer which stores the image signals in a series of tiled images. Since each image frame is defined by predetermined X-Y coordinates, these can be easily converted into a series of contiguous tiled images. '774 patent, Col. 5, Lines 51-56.

Though Aperio's definition including the microscope stage as the fixed reference may make sense in the context of the specification, the definition of mapping coordinates should not be limited to microscope stages. Teleflex, 299 F.3d at 1328 ("We have cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.") (citation omitted).

Bacus asserts that the definition cannot include the microscope stage because claim fourteen (as well as the entire '774 patent) contains no reference to the use of a microscope stage as a fixed reference. Elsewhere in the specification, coordinate systems are referred to in reference to bitmap coordinates, viewing screen coordinates, and coordinates on the scanning screen, and therefore, the coordinate systems should not be limited to the microscope stage. *See* Pl. Resp. at 18.

Aperio has not persuaded the Court that the term mapping coordinates should be limited to coordinates in reference to a microscope stage. The Court construes mapping coordinates as "numbers used to determine the position of objects relative to one another."

"1 Patent

Patent No. 6,396,941 was issued on May 28, 2002. Bacus and Aperio dispute three terms in the "1 patent: control information; zooming; and slide tray information.

1. Claim one

Claim one of the "1 patent discloses:

A method for viewing virtual microscope slides comprised of sets of digitized tiled images over a common communication channel, the method comprising:

providing a transmitting station connected to the common communication channel and accessible by a number of remote receiving stations connected to the common communication channel;

storing a plurality of sets of virtual microscope, digitized slide images at the transmitting station;

transmitting *control information* to the requesting computer for use in aligning the transmitted sets of digitized tiled images to form a composite, coherent, seamless digitized, virtual microscope, slide image from a set of digitized tiled images;

displaying on a viewer at a remote receiving station a thumbnail view of a specimen or portion thereof on the virtual microscope slide;

displaying on the viewer at the remote receiving station an aligned set of digitized tiled images at a higher resolution than the resolution of the thumbnail view; and zooming by the viewer back and forth between the thumbnail view and the higher resolution set of digitized tiled images.

Bacus defines "control information" as processed, stored, or transmitted data with the ability to manage or direct. The parties do not dispute the meaning of information. Aperio rejects Bacus' definition of "control information" because it claims that data cannot manage or direct. Bacus responds by accusing Aperio of playing "word games" and states that a person skilled in the art would understand that though data cannot directly manage or direct, it may be used to manage or direct. According to Bacus, this meaning is clear from the claim language, which states "transmitting control information to the requesting computer *for use in* aligning" (emphasis added).

Aperio says that "control information" should be construed to mean transmitted data for use in measuring the alignment of image tiles, with "data" defined as the top left X-Y stage coordinates for a separately scanned and separately stored image tile. In support of its argument, Aperio cites the specification, which states:

The computer 32 stores the scanned images, including the top left X-Y stage coordinates for each of the 80 individual areas of the microscope slide. "1 patent, Col. 6, Lines 4-7.

The X-Y coordinate information is used by the viewing and manipulation program to reconstruct the image tiles into a complete image of the specimen. "1 patent, Col. 6, Lines 33-35.

The specification does not suggest that control information must be limited to the "top left X-Y stage coordinates for a separately scanned and separately stored image tile." Claim one of the "1 patent makes sense when control information is defined simply "as processed, stored, or transmitted data with the ability to manage or direct." *See* SRI, 775 F.2d at 1121 (absent clear statements of scope in the specification, a court must follow the language of the claims, rather than that of the written description). The Court accepts Bacus' proposed construction, which is consistent with the ordinary meaning of the terms. *See* American Heritage Dictionary at 400, 899.

2. Claim two

Claim two of the "1 patent discloses:

A method in accordance with claim 1 further comprising:

providing a plurality of digitized tiled images each at a different resolution and each a higher resolution than the thumbnail view; and *zooming* back and forth between the plurality of higher resolution images as well as with the thumbnail image.

Bacus states that "zooming" means enlarging or reducing the size of an image. Aperio contends that the term means to cause graphics in a window or frame to appear larger on the screen. The primary difference in the parties' definitions concerns whether "zooming" can be used to mean reducing in size as well as enlarging in size.

Aperio relies on the computer science definition of zoom: "to cause text or other graphics in a window or frame to appear larger on the screen." American Heritage Dictionary (Aperio does not provide the Court with a page cite, but the Court has confirmed the accuracy of the reference on-line). Aperio argues that the claim language demonstrates that this is the proper definition because the claim refers only to a "plurality of *higher* resolution images," which suggests that it is referring to the ability to move back in forth between images, all of which are enlarged, but are enlarged to different degrees of magnification.

"Zoom" is defined as "to enlarge or reduce the size of an image in an optical system or electronic display" in the Dictionary of Scientific and Technical Terms at 2193 (McGraw-Hill 5th ed.1994). The Webster's Dictionary definition of zoom, not cited by either party, is "to focus a camera or microscope on an object using a zoom lens so that the object's apparent distance from the observer changes-often used with in or out," which supports Bacus' proffered definition. Merriam-Webster's Collegiate Dictionary at 1377. Because dictionaries support both parties' definitions of zooming, the Court must turn to the intrinsic record to determine whether Bacus gave the term a specific meaning in context.

Bacus argues that the portions of the specification cited by Aperio actually supports Bacus' construction:

This same, or an analogous method of filling in tiles for display images is used in scrolling, zooming in and out, and in retrieving tiles for the Field View window (coming from the Slide View window), and in retrieving image tiles from the server for the fixed size Java applet viewer. "1 patent, Col. 36, Lines 20-26.

So the virtual slide advantage of scrolling and zooming in and out are available on the screen. "1 patent, Col. 36, Lines 45-47.

The specification indicates that Bacus intended to use a broad definition of zooming in the "1 patent. This is likewise implied in the claim itself, which refers to zooming "back and forth" between the thumbnail and higher resolution images.

For these reasons, the Court construes "zooming" to mean enlarging or reducing the size of an image. *See* Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1334 (Fed.Cir.2001) (holding that the term "portion" must be construed according to the broadest dictionary definition because the specification does not require a

narrower interpretation); *see also,* Texas Digital, 308 F.3d at 1203 ("If 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.").

3. Claim sixty-four

Claim sixty-four of the "1 patent states:

A method of using a filing structure for organizing virtual microscope slide images to be requested by and transmitted to a requester from a server at a server station over a common carrier, comprising:

transmitting a request from a requester at a requesting station to the server station; transmitting a slide tray request to the server station; transmitting *slide tray information* from the server station to the requesting station;

displaying to the requester slide tray information comprising a list of virtual microscope slide names on a display device at the requesting station;

selecting from the slide tray information a microscope slide name to cause an image request for the selected slide to be sent to the server station; and transmitting from the server station a set of tiled digitized images comprising the slide specimen or a portion thereof for viewing on the display device at the requesting station.

Bacus' proffered meaning of the phrase "slide tray information" is data relating to a slide tray, where "information" is a collection of facts or data. Aperio's proffered definition of the term is folder names and file names of images with a corresponding URL path extension.

In this instance, neither party has provided the ordinary, dictionary meaning for the term slide tray. The dictionary defines slide as "a flat piece of glass on which an object is mounted for microscopic examination" and tray as "an open receptacle with a flat bottom and low rim for holding, carrying, or exhibiting articles." Merriam-Webster's Collegiate Dictionary at 1104, 1257. Bacus argues that in the context of the claim, "slide tray" means a virtual or computer based receptacle that stores and displays slide information. Bacus cites Figures 25 and 26 in support of this definition. These figures show a computer screen displaying a link for "slide tray" which can be clicked on to display slides.

Aperio claims that in the specification, Bacus has given a more specific meaning to "slide tray information" which includes URL path extensions. For example:

After the Login Request has been acknowledged, the browser then sends a Slide Tray Request. The server response to this is to send the list of image names and header text, their associated file folders, and the URL path extensions depending upon various image data structure storage locations on the server. "1 patent, Col. 31, Lines 29-34.

Slide Tray Request-Sends Slide Tray Information

List of image names and URL path locations on the server, extracted folder names and header text. "1 patent, Col. 22, Table 4.

Aperio also cites a portion of the specification in which it claims Bacus disavowed any construction of slide tray information that would include a standard file structure:

One of the advantages of this virtual slide tray organizational design is that the folder names are carried as part of the image data set structure. This is different from a standard file structure where the file name is created and files are moved into the created folder. In a virtual microscope slide environment, collections of slides may come from different sources, e.g., on CD-ROMs or other storage media. This method carries the file folder information with the slide. "1 patent, Col. 32, Lines 11-18.

This passage does in fact represent an expression "of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1325. Read together with the other citations from the specification, the Court is persuaded that Aperio's construction of the term "slide tray information," folder names and file names of images with a corresponding URL path extension, is the correct construction.

Motion to stay claims regarding '690 patent

In July 2003, the Patent Office granted Aperio's request for *inter partes* reexamination of U.S. Patent No. 6,466,690, one of the patents at issue in this case. The request was based on Aperio's contention that there was a significant new question of patentability. As a result, Bacus has moved to stay all of the claims and counterclaims in this case that concern the '690 patent.

Bacus' claims in this case include a claim for infringement of the '690 patent. The defendants have counterclaimed for a declaratory judgment of non-infringement, invalidity, and unenforceability of the '690 patent. Aperio has also asserted counterclaims under federal antitrust and state unfair competition statutes based on Bacus' allegedly wrongful attempts to enforce the '690 patent.

Under 35 U.S.C. s. 318, once an order for *inter partes* reexamination of a patent has been issued, the patent owner may obtain a stay of any pending litigation involving an issue of patentability regarding the patent, unless the court determines that a stay would not serve the interests of justice. In determining whether to grant a stay, the court considers the possible damage, hardship and inequities to the parties, and the relationship of the requested stay to the objective of simplifying the issues and the trial. *See, e.g.,* Wireless Spectrum Techs., Inc. v. Motorola Corp., No. 00 C 905, 2001 WL 32852, (N.D.Ill. Jan.12, 2001).

The Court denies the request for a stay. First of all, though the Patent Office's decision might impact in some way the issues regarding to infringement and validity of the '690 patent, it is less than clear that it would impact Aperio's antitrust and unfair competition counterclaims. Second, the Patent Office proceeding has been pending for over eighteen months, and there is no indication that it is anywhere near conclusion. Thus the requested stay could stall for an extended period a case that is already over two years old. Third, from the Court's perspective the better course is to proceed to conclude discovery in the case, leaving open the option of revisiting the issue of a stay if and when the case approaches trial.

Conclusion

The disputed claim terms are construed in accordance with the conclusions set forth in this Memorandum Opinion and Order. Bacus' motion for a stay [docket # 63-1] is denied. This case is set for a status hearing on March 9, 2005 at 8:30 a.m., in chambers.

N.D.Ill.,2005.
Bacus Laboratories, Inc. v. Aperio Technologies, Inc.

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