UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

HENRY A. KORSZUN, ET AL.	:	
Plaintiffs	:	
	:	
v.	:	CIVIL ACTION NO.
	:	3:00-cv-327
PUBLIC TECHNOLOGIES	:	
MULTIMEDIA, INC., ET AL.	:	
Defendant	:	JUNE 10, 2003

RULING ON DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT [DKT. NO. 58]

At issue in this case is U.S. Patent No. 5,680,528 (issued Oct. 21, 1997)("Korszun patent"). The plaintiffs, Henry A. Korszun ("Korszun"), the holder of the patent, Wojtek W. Borowski, and Compucloz Corporation (collectively "plaintiffs"), allege that the defendants, Public Technologies Multimedia, Inc., J.C. Penney Company, Inc., Mattel, Inc., Broderbund Software, Inc., and Land's End, Inc. (collectively "defendants"), have infringed the patent. Plaintiffs allege that the defendants' product, "My Virtual Model," infringes the patent both literally and under the doctrine of equivalents.

Defendants move for summary judgment of non-infringement. Specifically, defendants claim that there are no material issues of fact in dispute and that their product, the MVM process, does not literally infringe the patent, nor is it equivalent to the patented invention. For the reasons set forth below, defendants' motion for summary judgment is

granted.

I. FACTS

A. The Korszun Patent

1. The patented process

The patent at issue covers Korszun's "digital dressing room," a computer program that allows a user to input his or her own body measurements and view a computer image of a body of corresponding shape and proportions wearing a particular garment. The patent contains only one independent claim, claim 1, followed by 33 dependent claims, claims 2 through 34.

Claim 1 describes a process that uses several inputs, including a model image layer (representing a human shape and having at least one predetermined body measurement), a garment image layer (representing a garment and having at least one garment measurement), and at least one independent corresponding measurement (likely representing the physical proportions of the user), to generate a destination image representing a human shape wearing a garment. In its Markman Ruling dated August 30, 2002, the court construed several disputed limitations in the claim. [Dkt. No. 55]. Familiarity with that ruling is assumed, and the court will rely on that claim interpretation in its analysis of whether there is infringement by the defendant. See Lockheed Martin Corp. v. Space Systems/Loral, Inc., 324 F.3d 1308,1318 (Fed. Cir. 2003)("The determination of

infringement is a two-step process. First, the court construes the claims to determine the scope of the claims. Second, it compares the properly construed claims to the accused device.").

Claim 1 specifies that source data comprising a model image layer and a garment image layer is stored in a programmable electronic device. The "model image layer" and "garment image layer" in the patent are pixel-based, two-dimensional representations of a human form and a garment. Korszun patent, col. 17, line 67 - col. 18, line 3. There is a "predetermined relationship" between the model image layer and the garment image layer, such that the garment image layer is characterized by its ability to be altered in accordance with an altered shape of its model image layer. Id. at col. 18, lines 7-9. The process also requires an "independent corresponding measurement which corresponds to at least one or more predetermined body measurements" to be input. Id. at col. 18, lines 10-13.

Two different processes on the source data may follow. The first process combines the model image layer and the garment image layer, creating a source image. It then modifies the source image according to the inputted independent corresponding measurements. Id. at col. 18, lines 19-39. The second process is similar, but it separately modifies the garment image layer and model image layer according to inputted independent corresponding measurements, then combines the two layers to form a destination image. Id. at col. 18, lines 40-62.

In each of these variations, the process makes adjustments for ease in the appearance of a garment according to a pre-determined algorithm that corresponds to an inputted garment classification. The extent of these adjustments differ according to the design of the garment and the difference between the shape of that garment and the shape of the underlying body, as represented by input corresponding measurements. The process analyzes the garment image layer to determine to what extent the bust, waist, hip and midriff measurements must be recalculated to reflect the design of the garment. Based on this analysis, the process rearranges the pixels of the garment image layer or source image. The extent to which the process modifies these measurements depends on whether or not "ease" exists, or, in other words, the difference between the client's input measurements and the shape or measurements of the garment. At the end of the process, either the source image (in the first variation) or the destination image (in the second variation) represents a human shape wearing a particular garment.

2. The prosecution history

The prosecution history of the Korszun patent reveals that the finalized patent was the result of a number of amendments to Korszun's original claim, amendments that were made both to avoid prior art and to resolve the indefiniteness objections of the patent examiner. Following the first office action on October 10, 1995, in which the patent examiner rejected Korszun's pro se application due to indefiniteness and prior art, Korszun

retained counsel, drafted a new independent claim, and submitted it for review. Korszun claimed:

> A process for altering a source image into a destination image, comprising: electronically storing in the memory of a programmable electronic device at least one source object which comprises an image of a model having a human shape having one or more predetermined measurements, said model wearing at least one garment object, said garment being characterized by its ability to withstand being reshaped in accordance with a changed shape of the underlying model, thereby establishing a predetermined relationship between the model and the garment; inputting into the programmable electronic device at least one independent corresponding measurement which corresponds to at least one of the predetermined measurements, whereby the inputted independent corresponding measurement may differ from the corresponding predetermined measurement of the basic model body; and creating a destination image by altering, through at least one of transformation, translations and edge detection, the source image by reshaping the source image according to the inputted independent corresponding measurement.

File History, Ex. B to Decl. of Matthew M. D'Amore [Dkt. Nos. 63-64] ("D'Amore Decl.") at PTM 15729-30.

In the second office action, dated August 30, 1996, the patent examiner rejected Korszun's proposed independent claim, both for indefiniteness and reference to prior art. Id. at PTM 15750-51. The patent examiner specified that each portion of Korszun's claim was anticipated by Beavin, a prior patent issued for a computerized clothing designer which used three-dimensional modeling techniques. See U.S. Patent No. 5,495,568 (issued Feb. 27, 1996), Ex. K to D'Amore Decl. ("Beavin patent"). The Beavin patent disclosed a

process in which data describing fabric characteristics, color and patterns are input, as is data describing an individual's physical characteristics, such as physical dimensions and complexion. Id. The process then creates a three-dimensional image tailored to the input characteristics, over which a garment model reflecting the input fabric characteristics, pattern and color is placed. Id. The garment is tailored to fit the three-dimensional model body and shown graphically on a display device. Id.

Upon rejecting Korszun's proposed claim, the patent examiner suggested alternative wording that would state "a patently distinguishable claim." File History at PTM 15748-51. The suggested claim read:

> A process for altering a source image into a destination image within a programmable electronic device including a memory and a display device, said process comprising the computer-implemented steps of:
>
> storing at least one source image in the memory of the programmable electronic device, said at least one source image comprising a model image having a human shape and comprising at least one predetermined body measurement, said at least one source image also comprising a garment image having at least one garment measurement, said garment image being characterized by its ability to be altered in accordance with an altered shape of its corresponding model image, thereby establishing a predetermined relationship said model image and said garment image, said at least one source image being a combination of said model image and said garment image, such that if said at least one source image is displayed on the display device, said human shape appears to wear said garment;
>
> inputting into the programmable electronic device at least one independent corresponding measurement which corresponds to at least one of the one or more predetermined measurements, whereby the one or more inputted independent corresponding measurements may differ from the one or more predetermined body measurements of said model image;

generating a destination image from said at least one source image by altering, through at least one of transformations, translations and/or edge detections, said model image and said garment image according to the one or more inputted independent corresponding measurements, and, using these differences, spatially rearranging the pixels of the source image into the destination image, wherein said independent corresponding measurements are modified by analyzing predetermined areas of the garment image, and thereby determining the existence of ease in said areas in order to produce modified differences;

storing the destination image in the memory of the programmable electronic device.

Id. at PTM 15748-49.

Korszun responded to the office action by amending his claim to incorporate many of the suggestions of the patent examiner, with a few alterations. Korszun substituted the terms "source data" and "destination data" for the examiner's proposed "source image" and "destination image," and the terms "model image layer" and "garment image layer" for the examiner's proposed "model image" and "garment image." Korszun also added an alternative process, in which the model image layer and garment image layer could be separately modified based on inputted independent corresponding measurements and then combined to create a destination image. Korszun patent, col. 18, lines 40-62. Korszun claimed:

A process for altering source data into destination data within a programmable electronic device including a memory and a display device, said process comprising the computer-implemented steps of:

storing source data in the memory of the programmable electronic device, said source data comprising a model image layer having a human

shape and comprising at least one predetermined body measurement, said source data also comprising a garment image layer having at least one garment measurement, said garment image layer being characterized by its ability to be altered in accordance with an altered shape of its corresponding model image layer, thereby establishing a predetermined relationship between said model image layer and said garment image layer;

inputting into the programmable electronic device at least one independent corresponding measurement which corresponds to at least one of the one or more predetermined body measurements, whereby the one or more inputted independent corresponding measurements may differ from the one or more predetermined body measurements of said model image layer;

and generating destination data using a process comprising:

generating a destination image from a source image, said source image representing a combination of said model image layer, as derived from said source data, and said garment image layer, also as derived from said source data, by altering, through at least one of transformations, translations and/or edge detections, said source image according to the one or more inputted independent corresponding measurements, wherein said source image is altered into said destination image by calculating whether there exist any differences between said predetermined measurements and independent corresponding measurements, and, using these differences, spatially rearranging the pixels of the source image into the destination image, wherein said independent corresponding measurements are modified by analyzing predetermined areas of the garment image layer, and thereby determining the existence of ease in said areas in order to produce modified differences, such that if said source image is displayed on the display device, it represents a human shape wearing said garment; or

generating a destination image from said model image layer, as derived from said source data, and said garment image layer, also as derived from said source data, by altering, through at least one of transformations, translations and/or edge detections, each of said model image layer and said garment image layer according to the one or more inputted independent corresponding measurements, wherein said model and garment image layers are altered separately, by calculating whether there exist any differences between said predetermined measurements and independent corresponding measurements, and, using these differences, spatially rearranging the pixels of said garment image layer, wherein said independent corresponding

> measurements are modified by analyzing predetermined areas of the garment image layer, and thereby determining the existence of ease in said areas in order to produce modified differences, and spatially rearranging the pixels of said model image layer by using modified differences, and then combining an altered garment image layer and an altered model image layer into said destination image, such that the destination image represents a human shape wearing said garment.

Id. at col. 17, line 62 - col. 18, line 62.

The examiner approved Korszun's amended claim and issued a notice of allowability on March 27, 1997. File History at PTM 15812.

B. The MVM System

The alleged infringing product, the MVM system, allows online garment retailers to demonstrate to their customers an approximation of the way a customer might look in a particular garment. The process begins with the creation of a model body population. MVM artists create the body population based on the preferences of a specific retail client using MVM's Virtual Body Studio. Using the Virtual Body Studio, a three-dimensional modeling software, artists create a population of virtual bodies, manipulating approximately 100 parameters on the three-dimensional model.

At the end of the three-dimensional process, color and texture are applied to the bodies using a two-dimensional texture mapping process. The texture mapping process involves applying a number of two-dimensional maps to the three-dimensional model. These maps are flat, two-dimensional representations of the vertices of a three-dimensional

model. The body is split into several pieces, and separate maps are applied to the hands, arms, torso, et cetera. The two-dimensional texture maps, either singly or in combination, do not have a human form.

After the texture maps are applied to the body, a "snapshot" of each body is taken from a number of different angles. These snapshots are saved as two-dimensional images, and each is assigned a "Body ID" and a "View ID."

The MVM process also generates representations of garments. The garment generation process begins with drawings or patterns of the desired garments that are used as a reference during the modeling process. MVM prepares a set of two-dimensional patterns for the garment. These patterns are two-dimensional, but they are not pixel-based. The two-dimensional garment panels are custom-tailored to the model population through a trial-and-error process.

Once the garment panels are tailored to the model population, they are imported into MVM's Virtual Garment Studio. The Virtual Garment Studio uses a three-dimensional modeling and animation software package to create and model three-dimensional virtual garments. These three-dimensional garments are constructed by connecting together the pattern panels at the appropriate edges and creating a three-dimensional virtual garment around the virtual body. At this stage, the garment appears as a balloon-like shell around the virtual body.

The effects of gravity are then applied to the garment. A computational cloth simulation process models the draping of the garment object over the three-dimensional body. The software simulates how cloth behaves by modeling it as composed of many particles joined together by a mesh of springs. Fabric characteristics are approximated by numerical values that describe how heavy the particles are, how stretchy the springs between them are, and how much the mesh can curve or bend. The MVM system models clothes in different "worn states." For example, a blouse is modeled both on its own and worn under a jacket. When a blouse is modeled under a jacket, the MVM system uses shells, which are invisible barriers that constrain a garment by either forcing it to stay inside a particular shell or not allowing it to come any closer to the body than a particular shell. At the end of this process, the image of the garment appears as it would if draped on a body.

The MVM system then applies color, texture and detail information to the garment. Color and texture files are created for each pattern panel that was used to create the three-dimensional garment. The color and texture from these files is then applied to the appropriate polygons of the three-dimensional garment. The color and texture maps are two-dimensional and match the shape of the patterns used to create the virtual garments. After the color and texture is applied, as with the body models, MVM takes a snapshot from four viewpoints and stores these snapshots as two-dimensional images.

At the end of these "off-line" steps, the MVM process has stored a large collection of

image files. Four views of each model are stored, as well as four views of each garment in each worn state on each model body.

During the "on-line" process, a user fills out a questionnaire about his or her body proportions and measurements. MVM uses these responses to call up a model body which roughly represents a person with the proportions inputted. The user may then select garments to display on the model body.

II. DISCUSSION

A. Summary Judgment Standard

On a motion for summary judgment, the burden is on the moving party to establish that there are no genuine issues of material fact in dispute and that it is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 256 (1986). "The moving party is entitled to summary judgment under Rule 56(c) 'if 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 moving party is entitled to a judgment as a matter of law.'" Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1323 (Fed. Cir. 2001)(quoting Fed. R. Civ. P. 56(c)). "For a dispute over a material fact to be 'genuine' the evidence must be 'such that a reasonable jury could return a verdict for the non-moving party.'" Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 20 (Fed. Cir. 2000)(quoting Anderson, 477 U.S. at 248). A

disputed fact is material if it "might affect the outcome of the suit under the governing law," such that a finding of that fact is necessary and relevant to the proceeding. Anderson, 477 U.S. at 248.

Summary judgment is appropriate if the nonmoving party has failed to make a sufficient showing to establish the existence of an essential element of its case with respect to which it has the burden of proof. Gen. Elec. Co. v. Nintendo Co., Ltd., 179 F.3d 1350, 1359 (Fed. Cir. 1999). "A party may not overcome a grant of summary judgment by merely offering conclusory statements." Moore U.S.A., Inc. v. Standard Register Co., 229 F.3d 1091, 1112 (Fed. Cir. 2000).

In determining whether there is a genuine issue of material fact, the evidence must be viewed in the light most favorable to the party opposing the motion and all doubts must be resolved in favor of the opponent. Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1307 (Fed. Cir. 1998). At the same time, "sufficient evidence must be forthcoming such as to allow a reasonable jury to return a verdict in favor of the nonmoving party." C.R. Bard, Inc. v. Advanced Cardiovascular Sys., Inc., 911 F.2d 670, 673 (Fed. Cir. 1990). The non-moving party "may not rest upon the mere allegations or denials of the [non-moving] party's pleading." Fed. R. Civ. P. 56(e).

B. Infringement

To determine whether a device infringes a patent, the court must compare the

alleged infringing device with the patent's claims, as properly construed in a Markman ruling. Phonometrics, Inc. v. Westin Hotel Co., 319 F.3d 1328, 1331(Fed. Cir. 2003). The device infringes the patent if "every claim limitation or its equivalent can be found in the accused product." Abbott Laboratories v. Novopharm Ltd., 323 F.3d 1324, 1329 (Fed. Cir. 2003). "[A] determination of infringement, both literal and under the doctrine of equivalents, is a question of fact." Lockheed Martin Corp. v. Space Systems/Loral, Inc., 324 F.3d 1308, 1318 (Fed. Cir. 2003).

"Because infringement is itself a fact issue, however, a motion for summary judgment of infringement or non-infringement should be approached with a care proportioned to the likelihood of its being inappropriate." D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1573 (Fed. Cir. 1985). Nevertheless, summary judgment of non-infringement "is proper when, construing the facts in a manner most favorable to the non-movant, no reasonable jury could find that the accused system meets every limitation recited in the properly construed claims." Catalina Marketing International, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 812 (Fed. Cir. 2002).

"Literal infringement of a claim exists when each of the claim limitations 'reads on,' or in other words is found in, the accused device." Allen Eng'g Corp. v. Bartell Industries, Inc., 299 F.3d 1336, 1345 (Fed. Cir. 2002). In contrast, the doctrine of equivalents provides a separate standard for infringement that focuses on the "role played by each

element in the context of the specific patent claim" and determines equivalence using "an objective inquiry on an element-by-element basis." Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 40 (1997). "Equivalents are assessed on a limitation-by-limitation basis; this focus on individual limitations, rather than on the accused device as a whole, aids the court in being specially vigilant against allowing the concept of equivalence to eliminate any claim limitations completely." Allen Eng'g, 299 F.3d at 1345. To be equivalent, the elements of the accused device must perform substantially the same function, in substantially the same way, to obtain substantially the same result or otherwise have only insubstantial differences compared to the claim limitations of the patent. Id.

As with literal infringement, infringement under the doctrine of equivalents is a question of fact. Cooper Cameron Corp. v. Kvaerner Oilfield Products, Inc., 291 F.3d 1317, 1320 (Fed. Cir. 2002). Therefore, summary judgment should only be granted where "no reasonable fact finder could find equivalence." Abbott Laboratories, 323 F.3d at 1329. However, "[p]rosecution history estoppel is a legal limitation on the doctrine of equivalents." Dethmers Mfg. Co., Inc. v. Automatic Equipment Mfg. Co., 272 F.3d 1365, 1377 (Fed. Cir. 2001). The doctrine of prosecution history estoppel "bars a patentee from asserting as an equivalent subject matter surrendered during prosecution of the patent application. An estoppel may arise as a result of amendments that narrow the scope of a claim to satisfy any requirement of the Patent Act." Allen Eng'g, 299 F.3d at 1349-50

(internal citations and quotation marks omitted). A narrowing amendment creates a rebuttable presumption of estoppel, and "the scope of the estoppel depends on the inferences that may reasonably be drawn from the amendment." Id.

1. Literal infringement by texture mapping

Plaintiffs claim that the MVM process literally infringes its patent through the process of texture mapping. As described supra, texture mapping is a process through which two-dimensional color and texture maps are applied to three-dimensional objects representing a model body and a garment. The plaintiffs claim that, because the MVM process mathematically alters the texture bitmaps of the body image and the garment image to produce an output image resembling a human form wearing a garment, the MVM process literally infringes the patent.

Defendants dispute this assertion, arguing that, because texture maps are "unwrapped" structures not representative of a human or garment shape, their use does not infringe the patent. Furthermore, they argue that the creation of the texture maps does not use the same inputs as the creation of the virtual bodies. Rather, the virtual bodies are "measured" after their creation, and those measurements are used to create the two-dimensional patterns and texture maps.

The court agrees that no reasonable juror could find the MVM system literally infringes the Korszun patent. Korszun's patent provides for the input into the process of

source data comprising a "model image layer having a human shape and comprising at least one predetermined body measurement." Korszun patent, col. 17, line 67 - col. 18, line 2. The two-dimensional texture bitmaps in the MVM system do not meet these requirements. Rather, they are a series of two-dimensional images that, when put together, represent the flattened-out surface area of a human form. Reply Decl. of Carlos Saldahna ¶¶ 3-4, Att. to Reply Memo. of Law in Further Supp. of Defs. Mot. for Summ. J. of Non-infringement [Dkt. No. 79]("Saldahna Reply Decl."); see also Exs. A-C to Saldahna Reply Decl. These images do not have a human shape, either alone or together. Saldahna Reply Decl. ¶ 5. Nor do they have a predetermined body measurement. See id. ¶¶ 3-8. The MVM process first constructs a three-dimensional wireframe body, then measures it to determine the shape and size of the texture bitmap. Id. ¶ 3.

Plaintiffs assert that there is a genuine issue of fact regarding defendants' claim because "the MVM process does use two dimensional texture bitmaps of the body and the garment which meet the requirement of a 'model image layer' and the 'garment image layer.'" Pls.'s Opp. to Mot. for Summ. J. of Non-infringement [Dkt. No. 71] ("Pls. Br.") at 22. There is no evidence in the record to support this assertion, however. Plaintiffs' expert, Frederick Sayward, stated in his declaration that "[t]he three dimensional process of texture mapping used in the MVM process is an image processing technique used for altering a two dimensional source image . . . to derive a two dimensional destination image . . ., which are

stored and used in the online compositing process." Rebuttal Decl. of Frederick Sayward [Dkt. No. 89] ("Sayward Rebuttal Decl.") ¶ 4. However, he does not claim that the MVM process' two-dimensional texture maps either have a human shape or a predetermined measurement, as required by the claim limitation. Therefore, plaintiffs have not created a genuine issue of material fact that the MVM process' use of texture bitmaps literally infringes this limitation of the Korszun patent.

The Korszun patent also contains a limitation, disputed in the Markman proceedings, which provides that the process analyze "predetermined areas of the garment image layer, and thereby determining the existence of ease in said areas in order to produce modified differences." Korszun patent, col. 18, lines 35-36. In its Markman Ruling, this court construed that phrase in the Korszun patent to correspond to the process performed in the preferred embodiment, a process

> which recalculates the bust, waist, hip and midriff measurements to reflect the design of the garment, and alters the appearance of the garment image layer or source image accordingly. The extent to which the process modifies these measurements depends on whether or not ease exists, or, in other words, the difference between the client's input measurements and the shape or measurements of the garment.
>
> The processes covered by the patent therefore include those that make adjustments in the appearance of a garment according to a pre-determined algorithm that corresponds to an inputted garment classification. The extent of these adjustments differ according to the design of the garment and the difference between the shape of that garment and the shape of the underlying body, as represented by input corresponding measurements. The process analyzes the garment image layer to determine to what extent it should

> modify the contours of the image layer. The process either adjusts the garment image layer or the source image.

Markman Ruling at 12-13.

The MVM process does not contain the step described above. Even if the manner in which a garment appears on a model in the MVM process depends on whether or not ease exists and is related to the "difference between the client's input measurements and the shape or measurements of the garment," the existence of ease and the shape of the garment in that process are not determined by an inputted garment classification, nor are they based on a predetermined algorithm. Instead, the MVM process creates an image of a garment on a model by simulating the three-dimensional draping of that garment over a model body during the off-line portion of the process.

Although the plaintiffs claim that there is a material issue of fact regarding the contention "that the MVM process does not account for ease in its modification of the garment," Pls.' Br. at 27, they do not cite to any evidence in support of that assertion. The initial report of plaintiffs' expert, Frederick Sayward, states that MVM's process, wherein it accounts for gravity, fabric characteristics, and garment size and fits a three-dimensional garment to the model body, infringes this limitation. Ex. E to D'Amore Decl., at 7. However, Sayward's analysis pre-dates the court's Markman Ruling and is inconsistent with the claim interpretation found therein. Plaintiffs have presented no evidence supporting

their assertion that the MVM process literally infringes this limitation, as it has been interpreted by this court. Sayward's statement that "the MVM process is in many ways identical to the processes" claimed in the plaintiffs' patent is insufficient. Sayward Rebuttal Decl. ¶ 2. "[I]t is well settled that an expert's unsupported conclusion on the ultimate issue of infringement is insufficient to raise a genuine issue of material fact," and "[a] party may not avoid that rule by simply framing the expert's conclusion as an assertion that a particular critical claim limitation is found in the accused device." Arthur A. Collins, Inc. v. N. Telecom Ltd., 216 F.3d 1042, 1046 (Fed. Cir. 2000). Therefore, the plaintiffs have not created a material issue of fact that this limitation of the Korszun patent is literally infringed.

Because the court has determined that the two limitations discussed above are not literally infringed by the MVM process, it need not address defendants' additional arguments for summary judgment of literal non-infringement. See Abbott Laboratories, 323 F.3d at 1329 (the "all-elements rule" provides that a finding of infringement "requires a determination that every claim limitation or its equivalent can be found in the accused product").

2. Infringement under the doctrine of equivalents

Plaintiffs also argue that, even if the MVM system does not literally infringe the patent, it does infringe under the doctrine of equivalents. Defendants argue that plaintiffs' infringement theory is barred by prosecution history estoppel and, even if it were not, the

MVM process and the patented process are not equivalent. Because the court finds that the patent's prosecution history bars infringement under the doctrine of equivalents in this case, the court need not evaluate whether there are factual issues present with regard to this theory of infringement.

Plaintiffs argue that MVM's use of a two-dimensional texture bitmap and a three-dimensional wireframe representation of a body in its process are equivalent to the "source data" comprising the model image layer in Korszun's patented process. This limitation of Korszun's claim, however, was narrowed during prosecution to exclude plaintiffs' suggested interpretation.

In the second office action, the patent examiner rejected Korszun's proposed language claiming a process comprising "electronically storing in the memory of a programmable electronic device at least one source object which comprises an image of a model having a human shape having one or more predetermined measurements. . ." as disclosed by Beavin, wherein the inventor claimed a process in which "digitized photographs of an individual may be mapped over a three-dimensional image tailored to that individual's dimensions." File History at PTM 15750. To overcome prior art, the examiner suggested Korszun alter the element to read: "storing at least one source image in the memory of the programmable electronic device, said at least one source image comprising a model image having a human shape and comprising at least one

predetermined body measurement." File History at PTM 15748.

The primary difference between Korszun's proposed claim and that of the patent examiner's suggestion is the substitution of "source image" in the examiner's claim for "source object" in Korszun's. The narrowing amendment distinguished the Korszun patent from prior art by limiting its application to two-dimensional rather than three-dimensional source data. This reading is consistent with both the substituted language and the patent examiner's stated reasons for rejecting Korszun's claim. An "image" is two-dimensional, see Markman Ruling at 4-5, while the term "object" can have a broader meaning. The Beavin patent represented a human form using a process which mapped two-dimensional data over a three-dimensional form. Therefore, the term "object" was broad enough to encompass the Beavin claimed process. The term "image," on the other hand, was not.[1]

Korszun's response to the second office action altered the patent examiner's proposed claim by substituting the term "source data" for "source image." Korszun also provided that the "source data" in the patent is comprised of a "model image layer" and a "garment image layer," rather than a "model image" and "garment image." These substitutions, however, do not affect the limitation's exclusive application to two-dimensional representations of a model and garment. See Markman Ruling at 6. The

[1]While the examiner also objected to Korszun's use of the terms "said model," "said garment," and "image layers" as either indefinite or lacking antecedent basis, the examiner did not list the term "source object" among those to which it objected under Section 112. File History at PTM 15747.

patent examiner clearly agreed, for he did not object to Korszun's use of "source data" as he did to the use of "source object," presumably because Korszun's claim specified that the "source data" was comprised of two-dimensional model and garment image layers.

Plaintiffs cite to an examiner interview summary report, prepared by the patent examiner following the first office action, to refute the conclusion that the use of the terms "data" and "image layer" instead of "object" limits the patent to two-dimensional data. File History at PTM 15718. In that summary report, the examiner recounted informing Korszun that he needed to draft "an independent claim stressing the source/body object relationship to the garment object relationship" in order to overcome an obviousness rejection. Id. at PTM 15718. Plaintiffs argue that, because the examiner first proposed the word "object," no significance may be imputed to its future rejection by that same examiner. Pls. Br. at 28. Plaintiffs' argument is unavailing. Even if the court can conclude that the patent examiner's use of the word "object" in his handwritten notes was fully deliberate and reasoned, the Beavin patent was not identified as relevant prior art at the time of the first office action or the interview summarized in the note. Therefore, the use of the term "object" in connection with the April 2, 1996 interview does not have any effect on the court's conclusions regarding the scope of the Korszun patent or the import of the substitution of "image" for "object" in the examiner's proposed claim.

As discussed supra, a narrowing amendment to a limitation presumptively estops a

claim of equivalents as to that limitation. The plaintiff has not demonstrated that estoppel should not apply here. The examiner rejected Korszun's claim, which contained language sufficiently broad to encompass three-dimensional data, as disclosed by Beavin, which claimed a process in which a two-dimensional image ("digitized photographs") is mapped over a three-dimensional representation of a human form ("a three-dimensional image tailored to that individual's dimensions").[2] See Beavin patent. Therefore, the plaintiffs are barred from asserting that MVM's two-dimensional texture bitmap, when paired with a three-dimensional wireframe body, is equivalent to the "source data" or the "model image layer" claimed in the Korszun patent.

Further supporting the court's conclusion that MVM's three-dimensional representation of a human body is not equivalent to Korszun's "model image layer" is the prosecution history surrounding the limitation addressing the input of independent corresponding measurements. Plaintiffs claim that the element of the MVM process in which body measurements that may or may not correspond to those of its three-dimensional model body are input is equivalent to this limitation in the Korszun patent.

[2]The Beavin patent alternately uses the terms "three-dimensional image" and "three-dimensional model" to describe the data representative of a human form. Although the pairing of the term "image" with "three-dimensional" is admittedly confusing, the Beavin patent reveals that the claimed process and the preferred embodiment utilize three-dimensional data to simulate a human form.

MVM argues that, because this limitation was narrowed during prosecution, prosecution history estoppel applies. As with the limitation discussed above, the court agrees.

In the second office action, Korszun filed a proposed claim that provided the following limitation:

> inputting into the programmable electronic device at least one independent corresponding measurement which corresponds to at least one of the predetermined measurements, whereby the inputted independent corresponding measurement may differ from the corresponding predetermined measurement of the basic model body;

File History at PTM 15729-30. The patent examiner rejected this limitation as disclosed by Beavin, a process in which user inputs are employed to adjust a three-dimensional representation of a body "to produce the resultant image of the garment as worn by the [user] on the display device." Id. at PTM 15750-51. As with the rest of the independent claim, the examiner suggested an alternative limitation:

> inputting into the programmable electronic device at least one independent corresponding measurement which corresponds to at least one of the one or more predetermined measurements, whereby the one or more inputted independent corresponding measurements may differ from the one or more predetermined body measurements of said model image;

Id. at PTM 15748. The only notable difference between the examiner's proposed claim and Korszun's submitted claim is the substitution of the phrase "said model image" for Korszun's "basic model body." In his response to the second office action, Korszun adopted the examiner's proposed claim in its entirety, but, as with the first limitation,

substituted the phrase "model image layer" for "model image."

As with the first limitation discussed, the changes proposed by the patent examiner, in which "model image" was substituted for "basic model body" were designed to overcome prior art. Because the prior art, the Beavin patent, disclosed a process in which inputted measurements were used to alter the shape and size of a three-dimensional representation of a human form, plaintiffs are estopped from claiming that inputted measurements used to alter the appearance of a three-dimensional human form are equivalent to the inputted measurements in Korszun's patented process. See Allen Eng'g, 299 F.3d at 1349-50.

Because the court finds that plaintiffs are estopped from claiming the MVM process is an equivalent for the limitations discussed supra, it need not address defendants' other arguments regarding prosecution history estoppel or the lack of equivalents between the elements of the MVM process and the limitations in the Korszun patent.

III. CONCLUSION

Because plaintiffs have failed to raise a genuine issue of material fact that the MVM system infringes the Korszun patent either literally or under the doctrine of equivalents, defendants' motion for summary judgment of non-infringement [Dkt. No. 58] is GRANTED. The clerk is ordered to close this case.

SO ORDERED

Dated at Bridgeport, Connecticut this 10th day of June, 2003.

_____/s/_____
Janet C. Hall
United States District Judge