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 8 UNITED STATES DISTRICT COURT
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 10 CENTRAL DISTRICT OF CALIFORNIA

11 PRIME FOCUS CREATIVE SERVICES)	Case No. 2:15-CV-02340-MWF-PLA
12 CANADA INC.,)	
13 Plaintiff,)	FIRST AMENDED COMPLAINT FOR
14 v.)	PATENT INFRINGEMENT AND JURY
15 LEGEND3D, INC.,)	DEMAND
16 Defendant.)	DEMAND FOR JURY TRIAL
17)	

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FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

AND JURY DEMAND

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3 Plaintiff Prime Focus Creative Services Canada Inc. (“Prime Focus”), by and through its
4 undersigned attorneys, hereby pleads the following claims for patent infringement against
5 Defendant Legend3D, Inc. (“Legend3D”) and alleges as follows.

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7 **PARTIES**

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1. Prime Focus is a wholly owned subsidiary of Prime Focus World N.V. (“Prime Focus World”), which provides creative and technology services including stereo 3D conversion, visual effects, and animation services to major media and entertainment companies and content producers. Prime Focus World has brought its expertise to many wide-release Hollywood films including *Guardians of the Galaxy*, *Transformers: Age of Extinction*, *Sin City: A Dame To Kill For*, *Gravity*, *Maleficent*, *Edge of Tomorrow*, *Noah*, *The Great Gatsby*, *World War Z*, *Men in Black 3*, *Star Wars: Episode I, II & III*, *Harry Potter and the Deathly Hallows: Part 2*, *Transformers: Dark of the Moon*, *Avengers: Age of Ultron*, *Ant-Man*, and *Avatar*. Films currently in production include *Tarzan* and *Alice in Wonderland: Through The Looking Glass*.
 2. Prime Focus World helped pioneer stereo 3D conversion and leads the industry in the state of the art. For example, the International 3D and Advanced Imaging Society awarded Prime Focus World “Best Stereography in a Live Action movie” in 2015 for its work on *Sin City: A Dame to Kill For* and “Best 2D to 3D Conversion” in 2014 for its work on *Gravity*. Prime Focus World also received a Lumiere™ statuette award for its “Hybrid Stereo Pipeline,” the technology behind the stereo conversion work on shows such as *Guardians of the Galaxy*, *Transformers: Age of Extinction*, *Sin City: A Dame To Kill For*, *Teenage Mutant Ninja Turtles*, *Edge of Tomorrow*, *Maleficent*, and *Gravity*.
 3. Prime Focus World works with award-winning affiliates to provide a comprehensive set of best-in-class creative and technology services. For example, Double Negative won an

- 1 Academy Award in 2015 for “Best Visual Effects” for its work on *Interstellar*, including
2 creating the most accurate depiction of a black hole and wormhole ever portrayed.
- 3 4. Prime Focus World has global operations with a presence in key centers of creative content
4 production. Prime Focus is incorporated in Canada with its principal place of business
5 located at 1205 Melville Street, Vancouver, BC V6E 0A6.
- 6 5. Prime Focus VFX Services II Inc. of Canada was the original assignee to U.S. Patent No.
7 8,922,628 (“the ‘628 Patent”). Plaintiff Prime Focus Creative Services Canada Inc. is the
8 successor under Canadian Law to Prime Focus VFX Services II Inc. and owns all right,
9 title, and interest to the ‘628 Patent.
- 10 6. On information and belief, Legend3D is a California Corporation with its principal place
11 of business at 2200 Faraday Avenue, Suite 100, Carlsbad, CA 92008.
- 12 7. On information and belief, Legend3D sells and offers to sell stereographic conversion
13 services for transforming two-dimensional images into three-dimensional images.

14 **JURISDICTION AND VENUE**

- 15 8. This action arises under the patent laws of the United States, Title 35 of the United States
16 Code. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).
- 17 9. This Court has personal jurisdiction over Legend3D. On information and belief,
18 Legend3D conducts substantial business in the state of California and in this district. In
19 particular, on information and belief, Legend3D has regularly and deliberately engaged
20 and continues to engage in infringing activity of transforming two-dimensional images into
21 three-dimensional images in the state of California and in this judicial district.
- 22 10. Venue is proper in this district under 28 U.S.C. §§ 1391(b)-(d) and 1400(b).

23 **CLAIM FOR RELIEF**

24 **(Infringement of U.S. Patent No. 8,922,628)**

- 25 11. Prime Focus re-alleges and incorporates by reference Paragraphs 1 through 10 as if fully
26 set forth herein.
- 27 12. The ‘628 Patent, entitled “System and Process for Transforming Two-dimensional Images
28 into Three-dimensional Images” was duly and legally issued on December 30, 2014. The

1 '628 Patent names Chris Bond as sold inventor. A true and correct copy of the '628 Patent
2 is attached as **Exhibit A**.

3 13. The '628 Patent has been in full force and effect since its issuance. Prime Focus owns by
4 assignment the entire right, title, and interest in and to the '628 Patent, including the right
5 to seek damages for past, current, and future infringement thereof.

6 14. Legend3D has knowledge of the '628 Patent at least due to the fact that Legend3D was
7 notified of the '628 Patent by Prime Focus before the filing of this action.

8 15. On information and belief, Legend3D is directly infringing and has directly infringed
9 (literally and/or under the doctrine of equivalents) the '628 Patent by engaging in a process
10 for creating a three-dimensional media projection from a two-dimensional image.

11 16. On information and belief, Legend3D begins its process for creating a three-dimensional
12 media projection from a two-dimensional image by creating a working copy of the two-
13 dimensional image. On information and belief, this working copy of the two-dimensional
14 image is subsequently manipulated by the steps described in the following paragraphs
15 (among other potential and additional processes) in order to help create what ultimately
16 comprises the image seen by either the left eye or the right eye of the viewer.

17 17. On information and belief, Legend3D creates a depth selection mask associated with at
18 least one characteristic of and at least a portion of the working copy of the two-
19 dimensional image described in Paragraph 16 above. On information and belief, the depth
20 selection mask is created by first selecting a set of image features found in at least a
21 portion of the working copy of the two-dimensional image. These image features may
22 include, without limitation: luminance, saturation, color (including without limitation
23 either the RGB or HSV color spaces), gradient (edge) information, texture, and/or optical
24 flow. On information and belief, in order to perform this selection process, rather than
25 relying on fully manual techniques such as rotoscoping, Legend3D performs this selection
26 using fully or partially automated technology, including, for example, computer-assisted
27 pattern or image feature recognition.
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- 1 18. On information and belief, Legend3D then creates the depth selection mask by determining
2 a real, normalized value for the selected image features for each pixel location in the
3 selected portion of the working copy of the two-dimensional image. On information and
4 belief, Legend3D optionally visualizes the depth selection mask in the form of a grey-scale
5 mask, wherein the real, normalized values correspond to a darker or brighter pixel on the
6 grey-scale mask. For example, pixels assigned a maximal value of 1.0 may be depicted as
7 pure white while pixels assigned a minimal value of 0.0 may be depicted as pure black,
8 with intermediate values in the range [0.0, 1.0] being assigned a representative grey tone;
9 the normalized values may also be illustrated in the inverse manner, wherein a value of 1.0
10 may be depicted as pure black while a value of 0.0 may be depicted as pure white, again
11 with intermediate values in the range [0.0, 1.0] being assigned a representative grey tone.
- 12 19. On information and belief, Legend3D then determines a vector field of each pixel of the
13 selected portion of the working image. On information and belief, Legend3D assigns each
14 pixel both a horizontal and vertical vector (although any orthogonal basis may be
15 employed), which is stored in the “U” (horizontal) and “V” (vertical) channels associated
16 with each pixel. On information and belief, Legend3D alternatively assigns only a single
17 vector to each pixel, since pixel displacement is typically confined to the horizontal
18 direction, and therefore only a vector with at least a horizontal component is assigned to
19 each pixel of the selected portion of the working image.
- 20 20. On information and belief, Legend3D then applies the depth selection mask to the vector
21 field in the selected portion of the working copy of the two-dimensional image to create a
22 weighted displacement mask having a displacement vector associated with each pixel of
23 the portion of the working image, where the displacement vector has a magnitude and
24 direction. On information and belief, Legend3D scales the vectors described in Paragraph
25 19 in proportion to the real, normalized value determined during the creation of the depth
26 selection mask described in Paragraphs 17 and 18. On information and belief, Legend3D
27 optionally visualizes the resulting weighted displacement mask in the form of a grey-scale
28 mask wherein the magnitude of the vectors correspond to a darker or brighter pixel on the

1 grey-scale mask. For example, vectors with the largest relative magnitude may be depicted
2 as pure white while vectors with the smallest relative magnitude may be depicted as pure
3 black, with intermediate vector magnitudes being assigned a representative grey tone; the
4 vector magnitudes may also be illustrated in the inverse manner, wherein the largest
5 relative magnitude vector may be depicted as pure black while the smallest relative
6 magnitude vector may be depicted as pure white. On information and belief, Legend3D
7 typically confines its displacement to only the horizontal direction for purposes of creating
8 a stereoscopic effect for the ultimate viewer; accordingly, the vertical component of the
9 vectors in Legend3D's weighted displacement masks are typically assigned a magnitude of
10 0.

11 21. On information and belief, Legend3D modifies the working copy of the two-dimensional
12 image by displacing each pixel of the selected portion of the working image in accordance
13 with the magnitude and direction of the vector or vectors associated with that pixel in the
14 weighted displacement mask.

15 22. On information and belief, Legend3D then creates a stereo pair of images by pairing the
16 original two-dimensional image with the modified working copy of the two-dimensional
17 image. On information and belief, Legend3D often repeats the aforementioned steps to
18 create a second modified working copy of the two-dimensional image that corresponds to
19 the image to be seen by the viewer's other eye.

20 23. The product made by the processes of the '628 Patent may include one or more stereo pairs
21 of images, modified two-dimensional images, three-dimensional images or media
22 projections, or sets of instructions stored on non-transitory computer-readable media for
23 facilitating the transformation of two-dimensional images into three-dimensional images or
24 media projections. On information and belief, Legend3D infringes the '628 Patent by
25 importing, offering to sell, selling, or using within the U.S. these products. As the process
26 employed by Legend3D is a post-production service, its output is by definition not
27 thereafter materially changed by subsequent processes nor does it become a trivial and
28 nonessential component of another product.

1 24. On information and belief, Legend3D undertook its infringing actions despite an
2 objectively high likelihood that such activities infringed the '628 Patent. Since at least the
3 time when Legend3D was notified of the '628 Patent by Prime Focus, Legend3D has been
4 aware of an objectively high likelihood that its actions constituted, and continue to
5 constitute, infringement of the '628 Patent and that the '628 Patent is presumed valid.
6 Despite that knowledge, on information and belief, Legend3D has continued its infringing
7 activities. As such, Legend3D has willfully infringed the '628 Patent.

8 25. As a result of Legend3D's infringement of the '628 Patent, Prime Focus has been damaged
9 and will continue to suffer damages unless Legend3D's infringing activities are enjoined
10 by this Court. Prime Focus is entitled to recover for damages sustained as a result of
11 Legend3D's wrongful acts in an amount subject to proof at trial.

12 26. In addition, Legend3D's infringing acts and practices have caused and are causing
13 immediate and irreparable harm to Prime Focus.

14 **PRAYER FOR RELIEF**

15 WHEREFORE, Prime Focus prays for judgment against Legend3D as follows:

- 16 A. That Legend3D has directly infringed (either literally or under the doctrine of equivalents)
17 and continues to directly infringe one or more claims of the '628 Patent;
- 18 B. That Legend3D has infringed (either literally or under the doctrine of equivalents) one or
19 more claims of the '628 Patent by importing into the U.S. or offering to sell, selling, or
20 using within the U.S. a product that is made by a process patented in the '628 Patent;
- 21 C. That Legend3D has willfully infringed the '628 Patent;
- 22 D. That Legend3D and its officers, directors, agents, servants, employees, divisions,
23 subsidiaries, parents, affiliates, branches, and all others acting in concert with Legend3D
24 be permanently enjoined from infringing the '628 Patent;
- 25 E. That Legend3D pay Prime Focus damages for infringement of the '628 patent, together
26 with costs and both pre-judgment and post-judgment interest;
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- 1 F. That Legend3D pay Prime Focus treble damages pursuant to 35 U.S.C. § 284 for its willful
- 2 infringement of the '628 Patent;
- 3 G. That this is an exceptional case under 35 U.S.C. § 285 and therefore that Legend3D pay
- 4 Prime Focus' reasonable attorney's fees and costs in this action; and
- 5 H. That Prime Focus be awarded such other and further relief, including equitable relief, as
- 6 this Court deems just and proper.

DEMAND FOR JURY TRIAL

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8 Pursuant to Federal Rule of Civil Procedure 38(b), Prime Focus hereby demands a trial by
9 jury on all issues triable to a jury.

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Dated: July 9, 2015

Respectfully submitted by:

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