

1 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

2 _____
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4 _____
5 SONY CORPORATION

6 Petitioner

7 v.

8 YISSUM RESEARCH DEVELOPMENT COMPANY OF THE HEBREW
9 UNIVERSITY OF JERUSALEM

10 Patent Owner

11 No. IPR2013-00218 (SCM)

12 Patent No. 6,665,003

13 Issue Date: Dec. 16, 2003

14 Title: SYSTEM AND METHOD FOR GENERATING AND
15 DISPLAYING PANORAMIC IMAGES AND MOVIES

16 _____
17 IRFAN ESSA, PH.D.

18 March 10, 2014

19 8:59 A.M.

20 400 Interstate North Parkway SE

21 Suite 1500

22 Atlanta, Georgia

23 Lee Ann Barnes, CCR-1852, RPR, CRR

Petition for Inter Partes Review
of U.S. Pat. No. 7,477,284
IPR2013-00219
EXHIBIT
Sony-1043

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 UNIVERSITY OF JERUSALEM
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 Patent Owner
 10
 11 No. IPR2013-00219 (SCM)
 12
 13 Patent No. 7,477,284
 Issue Date: Jan. 13, 2009
 14 Title: SYSTEM AND METHOD FOR CAPTURING AND VIEWING
 STEREOSCOPIIC PANORAMIC IMAGES
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 23
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 25

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1 APPEARANCES OF COUNSEL
 2
 3 On behalf of the Petitioner:
 4 KENYON & KENYON
 WALTER E. HANLEY, JR., ESQ.
 5 MICHAEL E. SANDER, ESQ.
 One Broadway
 6 New York, New York 10004-1007
 212.425.7200
 7 212.425.5288 (facsimile)
 whanley@kenyon.com
 8 msander@kenyon.com
 9
 On behalf of HumanEyes:
 10
 TENSEGRITY LAW GROUP LLP
 11 WILLIAM NELSON, ESQ.
 555 Twin Dolphin Drive
 Suite 360
 12 Redwood Shores, California 94065
 650.802.6075
 13 650.802.6001 (facsimile)
 william.nelson@tensegritylawgroup.com
 14 HAYNES BOONE
 GREGORY P. HUH, ESQ.
 16 2505 N. Plano Road
 Suite 4000
 Richardson, Texas 75082-4101
 972.739.6939
 18 972.692.9225 (facsimile)
 gregory.huh@haynesboone.com
 19
 20 Also Present:
 Professor Trevor Darrell
 21
 22
 23
 24
 25

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 8 Sony 1005 Ishiguro Article 157
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 18 Ph.D.
 19 (Per counsel, original exhibits are not
 20 attached to the Original transcript.)
 21
 22
 23
 24
 25

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1 Deposition of IRFAN ESSA, PH.D.
March 10, 2014

2

3 (Reporter disclosure made pursuant to
4 Article 8.B of the Rules and Regulations of the
5 Board of Court Reporting of the Judicial Council
6 of Georgia.)

7

8 MR. HANLEY: Good morning, everyone. Why
9 don't we just get our preliminaries out of the
10 way and state our appearances.

11 I'm Walter Hanley. I'm with the firm of
12 Kenyon & Kenyon and I represent the Petitioner,
13 Sony.

14 MR. SANDER: I'm Michael Sander. I also
15 represent the Petitioner, Sony.

16 PROFESSOR DARRELL: Professor Trevor
17 Darrell.

18 MR. NELSON: Okay. So I'm Will Nelson from
19 the Tensegrity firm, representing the
20 respondent, HumanEyes. With me is Dr. Essa.
21 And, Gregory, go ahead.

22 MR. HUH: Also for respondent, HumanEyes.

23 MR. HANLEY: So, Mr. Nelson, you and I had
24 a conversation earlier about the fact we have
25 two cases and we don't want to do two

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1 depositions. So if I can just have you confirm
2 that we agree that this deposition will serve as
3 the cross-examination of Professor Essa in both
4 the -218 case and the -219 case.

5 MR. NELSON: Yes, so agreed.

6 MR. HANLEY: Okay. Great.

7 Professor Essa, would you please give us
8 your residence address just for the record.

9 THE WITNESS: 2655 Canna Ridge Circle,
10 Atlanta, Georgia 30345.

11 MR. HANLEY: And have you been deposed
12 before?

13 THE WITNESS: No.

14 MR. HANLEY: So I don't mean to limit that
15 to patent infringement cases. You've never been
16 deposed in any court proceeding of any sort?

17 THE WITNESS: I've not been deposed in the
18 patent infringement issues, but I have done
19 other types of legal proceedings.

20 MR. HANLEY: Okay. So have you given
21 depositions in other legal proceedings?

22 THE WITNESS: Not a deposition.

23 MR. HANLEY: Would you please swear the
24 witness.
25

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1 IRFAN ESSA, PH.D., having been first duly sworn,
2 was examined and testified as follows:

3 EXAMINATION

4 BY-MR. HANLEY:

5 Q. So can we agree the questions and
6 answers -- the answers that you've given so far, that
7 those will be treated --

8 A. Yes.

9 Q. -- as though they were under oath?

10 A. Yes.

11 Q. You understand you're now formally sworn
12 and under oath?

13 A. Sure.

14 Q. Very good. Thank you.

15 So just so I understand it, you've not
16 given a deposition --

17 A. No.

18 Q. -- in any -- any proceeding?

19 A. No.

20 Q. And have you ever actually testified live
21 in court before?

22 A. No, I have not.

23 Q. All right. Now, you did attend the
24 deposition of Professor Darrell, who's with us today.

25 A. I did.

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1 Q. So you saw -- you had some idea what
2 happens at these proceedings?

3 A. Yes.

4 Q. The only thing I'll want to have an
5 understanding with you on is that we need to not talk
6 at the same time, so oftentimes I will hesitate when
7 I'm -- as I'm doing now, when I'm putting a question
8 to you, because I'm searching for a word or whatever.
9 If you would just please wait until I'm finished
10 asking the question before you answer, that will give
11 us a much clearer record.

12 Will you agree to do that?

13 A. Sure.

14 Q. Now, what I'd like to do is show you the
15 declarations that are the impetus for our deposition
16 today.

17 (Exhibit-YRD-2010 was marked for
18 identification.)

19 Q. (By Mr. Hanley) And I'm going to hand you,
20 Professor Essa, copies of the Declaration of Irfan
21 Essa, Ph.D. in the -218 case and the -219 case.
22 These are both marked YRD-2010.

23 Professor Essa, are these declarations that
24 you have made?

25 A. Yes, I have.

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1 Q. And did you write these declarations?
2 MR. NELSON: Objection to the form.
3 THE WITNESS: I'm sorry?
4 MR. NELSON: Objection. Form.
5 Go ahead.
6 THE WITNESS: I have -- content is actually
7 written by me with a group of attorneys that are
8 around this table.
9 Q. (By Mr. Hanley) So am I correct in
10 understanding you didn't actually draft --
11 A. I --
12 Q. -- the entireties of these two documents?
13 A. I provided initial thoughts on content,
14 which then was drafted into using the terms that are
15 more appropriate for such documents.
16 And then I actually reviewed them
17 thoroughly, and after that, after some alterations, I
18 signed off on them.
19 Q. Now, how much time did you spend in the
20 preparation of these declarations?
21 A. Several dozens of hours.
22 Q. And are you being compensated for the time
23 that you spent in that conjunction and in connection
24 with your deposition?
25 A. I've been compensated for my analysis of

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1 all of the documents related to this case.
2 Q. And are you being compensated on some
3 hourly rate basis?
4 A. Yes, I'm compensated on hourly rate basis.
5 Q. What is your hourly rate?
6 A. 425 per hour.
7 Q. Now, if you wouldn't mind, please, turn
8 to -- let's take the -218 declaration --
9 A. Okay.
10 Q. -- the -218 case declaration, and if you'll
11 look at paragraph 14, please.
12 Now, in paragraph 14, you state, "Based
13 upon my experience and education, I consider myself
14 to be a person of ordinary skill in the art";
15 correct?
16 A. Yes.
17 Q. And then in the following sentence, you
18 say, "Unless otherwise stated, my testimony below
19 refers to the knowledge of one of ordinary skill in
20 the generation and display of stereoscopic panoramic
21 images technology during the 1998-1999 period," and
22 so forth.
23 A. Yes, I do.
24 Q. Now, is the "art" to which you refer in the
25 first sentence that I read the art relating to the

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1 generation and display of stereoscopic panoramic
2 images technology?
3 MR. NELSON: Objection to form.
4 THE WITNESS: That's what the document
5 says, yes.
6 Q. (By Mr. Hanley) So what I'd like to do
7 with you first this morning is I want to discuss with
8 you stereoscopic images technology. And I don't want
9 to limit the discussion, at least at this point, to
10 panoramic; okay?
11 A. Okay.
12 Q. So -- and what I'd like to talk to you
13 about is the attributes of a pair of images that will
14 affect whether or not a person viewing one image with
15 the left eye and the other image with the right eye
16 will perceive depth; okay?
17 Do you understand me so far?
18 A. Uh-huh (affirmative).
19 Q. And when I say "perceive depth," what I
20 want to do is I want to utilize the definition that I
21 think that you have adopted.
22 And if you'd look, please, at paragraph 19
23 in the YRD-2010, in the second sentence you say, "As
24 discussed below in greater detail, a perception of
25 depth is the visual perception of differential

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1 distances among objects in a person's line of sight."
2 Do you see that?
3 A. Yes.
4 Q. And do I understand correctly that's your
5 definition of perception of depth?
6 A. As stated in this document, yes.
7 Q. And you refer there to YRD-2003?
8 A. Uh-huh (affirmative).
9 Q. And that's a document that you rely on or
10 that you agree puts forth an accurate definition of
11 depth perception?
12 A. I should look up and make sure that this is
13 the one that I'm looking at to remind myself which
14 document it is.
15 Q. I'll just show it to you.
16 A. Okay.
17 (Exhibit-YRD-2003 was marked for
18 identification.)
19 Q. (By Mr. Hanley) So I've handed you what
20 has been marked in these proceedings as YRD-2003.
21 And if you'd please just look at the
22 document and confirm for me that this is the document
23 that you rely on -- that you cite, rather, in your
24 declaration as support for the definition of
25 perception of depth.

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1 A. It is indeed cited in the document.
2 Q. Okay. So now let's go back to the
3 conversation I wanted to have with you.
4 So am I correct that for a pair of images
5 that -- when viewed by the left eye and right eye,
6 for that pair of images to provide a perception of
7 depth, among the things that must be true about them
8 is that they were taken or recorded from two
9 different viewpoints?
10 A. Just repeat the question. There were lots
11 of terms in there.
12 Q. Okay. So, again, the subject is I want to
13 ask you about the attributes of a pair of images that
14 are presented to the left eye -- one presented to the
15 left eye and one presented to the right eye
16 simultaneously will provide a perception of depth to
17 the person viewing the images.
18 You understand that? So in that context,
19 I'm asking you: Is one attribute of the pair of
20 images that is necessary to provide perception of
21 depth that they have been recorded from two different
22 viewpoints?
23 A. In this case, left and right eyes.
24 Q. Okay. So you agree there has to be two
25 different viewpoints?

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1 A. Uh-huh (affirmative), left and right eyes
2 for human perception.
3 Q. Okay. I -- I'm not sure we understand each
4 other.
5 A. Okay.
6 Q. They have to be presented each -- each has
7 to be presented respectively to the left and right
8 eye; correct?
9 A. Yes.
10 Q. And my question is: In the recording
11 process that generated the images, must they have
12 been -- must the images have been captured or
13 recorded from two different viewpoints?
14 A. Is the question just for clarification or
15 are you talking about human perception or in general?
16 Q. I'm talking about a human viewing the
17 resultant images and the attributes of them that will
18 result in the person viewing the images having a
19 perception of depth.
20 So my question is: Is one of those
21 attributes of the two images that they must have been
22 recorded from two different viewpoints?
23 A. Yes, but there is a little bit more detail
24 that needs to come in that we will get to later.
25 Q. Okay. All right. We'll take it one step

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1 at a time and we'll get there, I'm sure.
2 And the viewpoints must be separated by
3 some distance?
4 A. Yes.
5 Q. And is the separation -- is the term
6 "baseline" a term that is used to refer to the
7 separation of the viewpoints?
8 A. Yes.
9 Q. Okay. And are you familiar with what a
10 stereo camera is?
11 A. Yes.
12 Q. And what is a stereo camera?
13 A. I don't believe I have actually covered any
14 of this in my report, defining a stereo camera, so it
15 will be outside of what we're talking about here.
16 Q. But I think I'm -- and counsel --
17 Mr. Nelson can agree or not, but you have professed
18 to be a person of ordinary skill, so I'm trying to
19 flesh out sort of, you know, your background as it
20 relates to stereoscopic panoramic images technology.
21 So you know what a stereo camera is?
22 A. Yes, I do.
23 Q. And what is a stereo camera?
24 A. A stereo camera captures two images at a
25 distance, as you said, baseline, to be able to use.

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1 And many different things could be done
2 with that extracted image that comes out of that
3 camera, and one of the traditional methods of doing
4 that is to be able to use it to create a depth image.
5 Q. Okay. And is a stereo camera, in your
6 experience, is it a camera that has two lens systems
7 side by side?
8 A. There are many embodiments of it, and one
9 of the traditional ones is with two cameras.
10 Q. Can one also -- instead of using a single
11 camera with two lens systems, can one use a -- two
12 cameras respectively to capture a left eye and right
13 eye viewpoint of the scene?
14 A. Again, many embodiments, but that could be
15 one of them.
16 Q. Okay. And the two cameras -- if you use
17 two cameras, the two cameras have to be separated by
18 some baseline?
19 A. Yes.
20 Q. Have you ever created images for
21 stereoscopic viewing?
22 A. I would wander a guess, yes --
23 Q. Okay.
24 A. -- in a long career.
25 Q. And can you give me any specific example of

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