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Transcript of Dr. Nikolaos Papanikolopoulos

Date: June 12, 2025

Case: Google, LLC -v- 138 East LCD Advancements Limited (PTAB)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Case No: IPR2024-00959

GOOGLE LLC,

Petitioner,

v.

138 EAST LCD ADVANCEMENTS LIMITED,

Patent Owner.

VIDEOCONFERENCED DEPOSITION OF
NIKOLAOS PAPANIKOLOPOULOS

June 12, 2025

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1 PURSUANT TO NOTICE and the Federal
2 Rules of Civil Procedure, the videoconference
3 deposition of NIKOLAOS PAPANIKOLOPOULOS, called for
4 examination by the Petitioner, was taken on Thursday,
5 June 12, 2025, commencing at 9:04 a.m. at Robins
6 Kaplan LLP, 800 LaSalle Avenue, Suite 2800,
7 Minneapolis, Minnesota 55402, before Matthew R. Moss,
8 a Registered Professional Reporter, Federal Certified
9 Realtime Reporter, and Notary Public for the State of
10 Minnesota.

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MR. HIGH

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Reporter's Certificate

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1 P R O C E E D I N G S

2 NIKOLAOS PAPANIKOLOPOULOS,

3 having been first duly sworn/affirmed, was examined
4 and testified as follows:

5 EXAMINATION

6 BY MR. HIGH:

7 Q. All right. Good morning,
8 Dr. Papanikolopoulos. Is it okay if I call you
9 Dr. Nikos?

10 A. Yes, absolutely.

11 Q. So just to introduce myself, my name is
12 Robert High. I'm here on behalf of the petitioner
13 and we're here to talk about case number IPR
14 2024-00959.

15 You submitted a declaration for that
16 case, right?

17 A. I did.

18 Q. And you have a copy of it with you
19 today?

20 A. Yes.

21 Q. Is your CV that you submitted in this
22 case current?

1 A. Yes.

2 Q. Have you been deposed before?

3 A. Yes.

4 Q. Okay. About how many times?

5 A. Around nine times, if my memory serves
6 me well.

7 Q. Well, I'm sure, you know, your
8 counsel's gone over some basic ground rules for
9 depositions, but just for the sake of the record,
10 I'll go over them for today.

11 So do you understand that you're under
12 oath, meaning you must testify truthfully today as if
13 you were in court before a judge?

14 A. I do.

15 Q. Is there any reason that would prevent
16 you from testifying truthfully today?

17 A. None.

18 Q. We have a court reporter who will be
19 recording your answers as if you were giving them in
20 court, so I ask that you answer the questions
21 truthfully and to the best of your knowledge, okay?

22 A. Yes, I do.

1 Q. That brings me to my next question,
2 which is to respond in an audible answer, not a
3 gesture or nod.

4 Is that okay?

5 A. Yes.

6 Q. And if you do not understand any of the
7 questions I ask today, please tell me.

8 If you answer a question, I will assume
9 that you understand my question.

10 Do you agree?

11 A. Yes.

12 Q. And if you need a break, please let me
13 know, but if a question is pending, I'll just ask
14 that you please answer my question before we take a
15 break, okay?

16 A. Yes, I plan to do so.

17 Q. And I'll try and take a break every
18 hour or so.

19 Okay. So I want you to take a look at
20 your declaration that you submitted in this case.

21 And in particular, turn to the section
22 that begins on paragraph 37. This is your section

1 titled '082 Patent Overview.

2 Do you see that?

3 A. Yes.

4 Q. And then on the next page is
5 paragraph 38?

6 A. I'm there.

7 Q. In that first sentence, you refer to
8 "prior image generators."

9 Do you see that?

10 A. Yes.

11 Q. And then, again, in the next sentence,
12 you have another reference to "prior image
13 generators."

14 Do you see that?

15 A. I'm -- 38.

16 Q. Yeah.

17 A. I'm seeing --

18 Q. Just in the very next sentence of the
19 same paragraph.

20 A. Yes.

21 Q. And then in the next sentence you refer
22 to those "prior art systems."

1 Do you see that?

2 A. Yes.

3 Q. Are you referring back to the prior
4 image generators that you mentioned in the previous
5 paragraph there?

6 A. Let me refresh my memory with this.

7 Yes, part of the overview of the '08 --
8 -82, I tried to summarize the...

9 I tried to summarize the content. You
10 can find background of the invention, summary of the
11 invention, so on and so forth.

12 This is column 1. It continues to
13 column 2 from the '02 patent (sic).

14 Q. Okay. So when you refer to those prior
15 art systems, you're referring back to the prior image
16 generators?

17 A. As they're referenced in the '02
18 patent.

19 Q. Okay. So in this paragraph, you're
20 relying on the '082 patent's description of prior
21 image generators; is that correct?

22 A. Yes, that's correct. I'm just trying

1 to provide the '02 patent overview as the heading
2 states.

3 Q. Okay. So you're -- you're not, with
4 this paragraph, providing your own understanding of
5 prior image generators; is that right?

6 MR. LAROQUE: Object to form.

7 A. Can you elaborate on this? Is this --
8 I'm trying to -- so let's go with my work scope.

9 So to give you the background, I was
10 tasked -- so if you look at the paragraph 2, In my
11 capacity as an expert, I have been asked to provide
12 my independent analysis and opinions regarding the
13 '02 patent, the prosecution, the history of the '082
14 patent, and the related applications as applicable,
15 the alleged prior art relied upon by Petitioner, the
16 meaning of various claim terms from the '02 patent
17 from the perspective of a person of ordinary skill in
18 the art, and the opinions offered by Petitioner's
19 expert, Dr. Robert Stevenson, in his declaration.

20 So I was tasked with all these things
21 but the emphasis was actually to offer my opinions
22 with respect to the opinions expressed by the --

1 Dr. Stevenson.

2 Q. (By Mr. High) Okay. So --

3 A. So in order to set the stage -- sorry
4 to interrupt -- I just provide an overview of the
5 '082 patent, and then I try to address
6 Dr. Stevenson's points on the different grounds.

7 Q. Okay. So in paragraph 38, you're
8 relying on the '082 patent's characterization of
9 prior image generators, not your own understanding of
10 prior image generators independent of the '082
11 patent; is that right?

12 MR. LAROQUE: Object to form.

13 A. Can you repeat the question? Because
14 it's just if you can point me -- again, I had the
15 work scope where I tried to formulate my answers
16 based on the '082, the other prior art and then how,
17 for example, I can address some of the points raised
18 by Dr. Stevenson.

19 Q. (By Mr. High) Okay. So I'll just
20 repeat my question, and let me know if -- if anything
21 isn't clear to you.

22 So in paragraph 38, you're relying on

1 the '082 patent's characterization of prior image
2 generators, not your own understanding of prior image
3 generators independent of the '082 patent; is that
4 correct?

5 MR. LAROQUE: Object to form.

6 A. You see the '082 patent sets the stage
7 and it has certain claims, and it has actually a
8 summary of the invention and background, which is
9 used in the formulation of opinions. So I tried to
10 present in this paragraph 38 the summary as it stated
11 in the '082, and then I tried to use this, and then
12 my personal experience as a POSITA at the time, in
13 order to address the points of Dr. Stevenson.

14 Q. (By Mr. High) Okay. So in -- in -- in
15 forming your opinions in paragraph 38, you didn't
16 perform your own independent analysis of what prior
17 image generators included, you're just relying on
18 what the '082 patent says; is that right?

19 MR. LAROQUE: Object to form.

20 A. I use my own experience as a POSITA in
21 connection with the '082, but this particular
22 paragraph is a summary of what is stated in '082.

1 There are other settings that I can
2 tell you where my personal experience as a POSITA, an
3 expert, is, but here is just a summary of what is
4 stated in '082 to set the stage.

5 Q. (By Mr. High) Okay. And in
6 paragraph 40?

7 A. Give me a minute.

8 Q. In the -- let's see -- second to last
9 line, you refer to "prior systems."

10 Do you see that?

11 A. Let me refresh my memory because I'm --
12 reference column 5:64 of the patent.

13 Give me a minute because I -- I have to
14 refresh my memory.

15 Q. What are you refreshing your memory
16 about?

17 A. If you look at the sentence after, I'm
18 using, "Instead the 'image file generator' acts as a
19 relating module relating image data and control
20 data," seven -- column 7, row 29 to 32.

21 So let me just -- I want to make sure
22 that I have the full context.

1 Yeah, this is an inference that I made
2 based on the earlier statements that are made in 38
3 and based on the patent, my interpretation of the
4 patent and my own experience.

5 So it's a blend of -- of all these
6 elements.

7 Q. Okay. Here -- so here, when you're
8 referring to prior systems, are you, again, relying
9 on the '082 patent's description of prior systems to
10 set the stage?

11 A. To set the stage, plus my own
12 evaluation of these statements.

13 Q. And what kind of materials did you
14 evaluate to -- to form your opinions for this
15 sentence?

16 A. The '082, the other prior art, and also
17 my POSITA position at that time.

18 You've seen my resume.

19 Q. In paragraph 41 --

20 A. Uh-huh.

21 Q. -- here you refer to a "conventional
22 image generator."

1 Do you see that?

2 A. Give me...

3 Yes.

4 Q. And then further on down, you refer to,
5 again, "prior image generators"?

6 A. Yes.

7 Q. In those two instances, are you relying
8 on the '082 patent's description or your own
9 understanding?

10 A. Both.

11 Q. You've read the '082 patent for this
12 case, right?

13 A. Yes.

14 Q. And you're familiar with the term
15 "image processing control data"?

16 A. Yes.

17 Q. The '082 patent uses the terms "image
18 processing control data," "PIM parameters," and "PIM"
19 interchangeably, right?

20 MR. LAROQUE: Object to form.

21 A. Give me a minute, because I think I
22 opine on this, and also there are segments on the

1 '082 patent.

2 Can you repeat the question, just to
3 make sure that I have the --

4 Q. (By Mr. High) Sure. So the '082 patent
5 uses the terms "image processing control data," "PIM
6 parameters," and "PIM" interchangeably, right?

7 MR. LAROQUE: Object to form.

8 A. I tend to disagree, but let me -- let
9 me clarify -- let me clarify -- let me give you --
10 just give me a few minutes to go over the '082
11 patent.

12 Q. (By Mr. High) Okay. And just to speed
13 things up today, I'll direct your attention to column
14 5 and the paragraph that begins, "The DSC, 10,"
15 towards the bottom.

16 A. You mean line 58?

17 Q. Yes. Starting there and then
18 continuing down through line 62.

19 A. Yeah.

20 But also, there is another point. Let
21 me...

22 Q. In -- in this paragraph, it says that,

1 image processing control data is hereinafter referred
2 to as PIM parameters or PIM, right?

3 A. Yes.

4 Q. So it's using those three terms
5 interchangeably?

6 MR. LAROQUE: Object to form.

7 A. Can you give me one example of where --
8 because there are other examples where, for example,
9 it says that the specification data can be part of
10 the PIM -- PIM parameters, or they can use this to --
11 because the specification data is an important
12 component.

13 If you look at Claim 1, the --

14 Q. (By Mr. High) Here, I'm really just
15 getting at this one sentence that says, "Image
16 processing control data (hereinafter referred to as
17 'PIM parameters' or 'PIM')"

18 You agree that, at least in that
19 sentence, it's saying -- it's using those three terms
20 interchangeably, right?

21 MR. LAROQUE: Object to form.

22 A. So this particular paragraph is part

1 of -- follows a paragraph that explains Figure 1. I
2 don't know if you see construction of the system.

3 So it shows the camera, the server, the
4 printer. So in this setting, an embodiment,
5 basically, it has the sentence which says, "Two kinds
6 of data" -- "Two kinds of data are related and stored
7 in the image file: Image data and image processing
8 control data (hereinafter referred to as 'PIM
9 parameters' or 'PIM').

10 "This data is used to control image
11 processing for the image data that the printer, 11,
12 executes."

13 So for this particular instance of
14 Figure 1, but PIM is used as part of the
15 specification data and other claim elements, which I
16 have analyzed in my report.

17 Q. (By Mr. High) Okay. So at least in
18 this embodiment that it's talking about in column 5?

19 A. Yeah.

20 Q. It's using the term "PIM parameters" to
21 mean image processing control data and "PIM" to mean
22 image processing control data, right?

1 A. Yes.

2 Q. And PIM stands for print image
3 matching, right?

4 A. Yes.

5 Q. Let's take a look at the bottom of
6 column 6 now.

7 A. Uh-huh.

8 Q. And it says, "The PIM includes various
9 information..."

10 Do you see that --

11 A. Yes.

12 Q. -- starting at line 63?

13 In that sentence, it's using the term
14 "PIM" to refer to image processing control data,
15 right?

16 A. Just -- it just describes PIM.

17 In this particular case -- is there
18 a -- let me see if I have opined in my declaration...

19 Give me a minute.

20 Yes, I think it explains, generally,
21 the use of PIM in this particular case.

22 Q. And PIM in this particular case refers

1 to image processing control data, right?

2 A. I would say so, in the context of -- of
3 the paragraph -- as part of the paragraph on column
4 5, construction of the system, and the various
5 embodiments.

6 Q. In this --

7 A. Like for example -- excuse me to
8 interrupt.

9 If you see in the paragraph before, it
10 shows "Figure 2 is a schematic that shows the general
11 construction of the digital still camera," and
12 explains the paragraph.

13 The Figure 2.

14 And then it says, "The DSC, 10, is also
15 equipped" -- this is column 6, row 55, where it says
16 "select button," and then it says, "The DSC, 10,
17 generates image files including the image data and
18 the PIM related to the image..."

19 So it follows the analysis of Figure 2.

20 Q. Okay. And so in that sentence that you
21 just read, about the image files including image data
22 and the PIM related to the image data, that, again,

1 the PIM refers to image processing control data,
2 right?

3 MR. LAROQUE: Object to form.

4 A. I think it just analyzes the Figure 2.
5 Let me look at Figure 2, I'll refresh my memory.

6 Yeah, if you see column 7, all this
7 discussion till basically 7, 8 -- row 18 refers to
8 Figure 2.

9 Q. (By Mr. High) Okay. So when -- in that
10 sentence, in column 6, starting at line 58, that
11 mention of PIM refers to image processing control
12 data in this embodiment, right?

13 A. In this practitioner (sic) embodiment,
14 which called construction of the system, and then
15 moves to A2, which is functional blocks of the
16 system, where it analyzes Figure 3 and so on and so
17 forth.

18 Q. Okay. So you agree that PIM in this
19 sentence means image processing control data, right?

20 MR. LAROQUE: Object to form.

21 A. Let's stick to the record. I mean, it
22 just says that -- simply states that generates image

1 files including the image data and the PIM related to
2 the image data.

3 Q. (By Mr. High) And as we discussed, in
4 column 5, it uses the term "PIM" to mean image
5 processing control data, right?

6 A. In the context of Figure 1.

7 Q. And that same --

8 A. And here --

9 Q. And that same context implies --
10 applies here, too, right?

11 MR. LAROQUE: Object to form.

12 A. I think the intention here is not to --
13 it just tries to say what the DSC, 10, generates,
14 generates image files that includes the image data
15 and the PIM.

16 The objective is not to basically
17 finalize the PIM itself, if it is image. I think
18 there are other areas where it explains the image
19 processing control data, starting from the background
20 of the invention, the abstract, and so on and so
21 forth.

22 To me, as a POSITA, this is more

1 informative of the Figure 2 --

2 Q. (By Mr. High) So --

3 A. -- and the content.

4 Q. -- in your opinion, column 5 says that
5 image processing control data is referred to as PIM,
6 but in column 6, image processing control data is no
7 longer referred to as PIM; is that right?

8 MR. LAROQUE: Object to form.

9 A. This is not what I said. I said
10 basically the objective of this particular is
11 actually to define the DSC, 10. It doesn't say
12 anything about what PIM is.

13 Q. (By Mr. High) Well, it says what PIM is
14 in column 5, right?

15 It says it's image processing control
16 data?

17 A. Yes.

18 Q. And so when it's saying in column 6,
19 "The DSC, 10, generates image files including the
20 image data and the PIM related to the image data," it
21 means the DSC, 10, generates image -- image files,
22 including the image data and the image processing

1 control data related to the image data, right?

2 A. I -- I will go back to the record here.
3 It just tries to say that the camera, because the
4 Figure 2 describes this conceptual diagram of the
5 system.

6 Its objective is not, at least as a
7 POSITA, I read this, okay, we have the camera,
8 element 10, generating image files, and the image
9 file contains the image data and the PIM.

10 There are other areas where it defines
11 specifically what it means and the context that
12 provides to image processing control data.

13 I mean, I just -- I want to stick to
14 the record and what the patent claims in this
15 particular element.

16 Q. So you -- in column 6, in the sentence
17 starting line 58, you can't definitely say that PIM
18 means image processing control data there?

19 MR. LAROQUE: Object to form.

20 A. It's not -- not what I'm saying.

21 I'm saying the objective is to analyze
22 the image files here. So it doesn't give me -- there

1 are other elements where just discusses the...

2 Just give me a minute to give you a few
3 other spots where...

4 For example, if you look at the update,
5 the A6 update, if we'll go column 5, description of
6 the preferred embodiment. If you go to line 40, do
7 you see where it says, "Update of Image Processing
8 Control Data"?

9 If we go to A6.

10 Q. (By Mr. High) In A6, the first sentence
11 refers to PIM, right?

12 A. Yeah, let me go to A6.

13 Yeah. So in this case, I think it's
14 very clear that it talks about.

15 Q. So PIM -- PIM means image processing
16 control data?

17 A. In this particular paragraph. Just --

18 Q. But --

19 A. He -- he -- he uses different
20 paragraphs and embodiments in order to highlight the
21 different aspects of the system.

22 Q. Okay. So PIM means image processing

1 control data there.

2 Does it mean something else in the
3 sentence at column 6, line 58?

4 A. This not what I said. I said provides
5 information about --

6 Q. So --

7 A. -- the different -- I mean, as I
8 pointed out, A6, it's -- basically talks about PIM
9 and basically the -- but if you go at paragraph 6 --
10 at column 6, it just -- it says what is the content
11 of the image file.

12 Q. And the image file includes PIM, right?

13 A. Yes.

14 Q. And the PIM, in this instance, refers
15 to image processing control data, right?

16 A. One can make the inference, given the
17 context, but, again, I want to reiterate that the
18 record states what is the content of these image
19 files.

20 So that includes the image data and the
21 PIM.

22 Q. Yes. And the "PIM," in this context,

1 refers to image processing control data, right?

2 A. I don't want to add words to the -- it
3 just -- I'm saying that different elements --

4 Q. I --

5 A. -- and different parts of the patent
6 where they define what is a --

7 Q. So I'm not asking you to add words.
8 I'm asking you to interpret what PIM means here.

9 A. PIM means here there is a path -- the
10 sentence says, "DSC, 10, generates image files
11 including the image data and the PIM related to the
12 image data. The user can set the PIM" and continues
13 and explains basically how the user can interact with
14 the PIM.

15 Q. Well, let's --

16 A. I don't want to --

17 (Simultaneous crosstalk.)

18 A. Sorry, I don't want to mischaracterize
19 the statement and the objective of this particular
20 paragraph.

21 Q. I don't want you to mischaracterize
22 anything. I want you to interpret.

1 So are you saying that you don't agree
2 that PIM in this paragraph refers to image processing
3 control data?

4 A. No, this not what I'm saying. I'm
5 saying --

6 Q. So you do agree?

7 A. I'm saying it can be. The statement is
8 about the PIM. The PIM, as stated here, is -- is an
9 element of the image file.

10 There are different sections where
11 different embodiments where the PIM is defined as
12 part of the '082.

13 So in my analysis, I wouldn't use this
14 sentence in order to say what is the PIM. It's just
15 I use this sentence in order to see the values or the
16 content of these image files.

17 Q. So can you give a yes or no answer to
18 the question of: Does the term PIM in the sentence
19 at column 6, line 58, refer to image processing
20 control data?

21 MR. LAROQUE: Object to form.

22 A. I think there's a good likelihood this

1 is not the objective.

2 Q. (By Mr. High) So you think it's a good
3 likelihood that it does refer to image processing
4 control data?

5 A. If it refers to PIMs, it is a good
6 likelihood by PIMs the POSITA will have assumed. I'm
7 just stating what the paragraph basically says.

8 Q. Okay. So let's go on to the next
9 paragraph, column 6, line 63, and it gives examples
10 of PIM, right?

11 A. Yes.

12 Q. And one example is "gamma values of the
13 DSC, 10"?

14 A. Let me go there. One minute.

15 Yes.

16 Q. And a gamma value is an example of
17 image processing control data, right?

18 MR. LAROQUE: Object to form.

19 A. Can you please repeat the question?

20 Q. (By Mr. High) A gamma value is an
21 example of image processing control data, right?

22 MR. LAROQUE: Object to form.

1 A. Among many, yes.

2 Q. (By Mr. High) What are gamma values?

3 A. In graphics, in printing, for example,
4 gamma values generate -- if you look at the graphics
5 between 1.6 and 2.2, and they tell you, for example,
6 the brightness level that you have.

7 If you look at computer vision --
8 normally we have a value of 2.2. If you look in
9 computer vision, it says something about the
10 luminance of the pixels.

11 Q. How are they used in image processing?

12 A. They control the brightness, basically,
13 or the luminance.

14 Q. But is it a -- a parameter that gets
15 input into some sort of gamma correction processing?

16 MR. LAROQUE: Object to form.

17 A. Will have to be -- like a gamma value,
18 for example, has a different meaning in applied math;
19 a different meaning in -- a slightly different
20 meaning in -- in printing and a slightly different
21 meaning in image processing and computer graphics.

22 Q. (By Mr. High) Okay.

1 A. So --

2 Q. Let's just stick to image processing
3 then.

4 A. Uh-huh.

5 Q. So, like, for example, let's take a
6 look at Figure 7 of the '082 patent.

7 A. Figure 7.

8 Q. And this figure depicts several
9 different presets, right?

10 A. Yes.

11 Q. And preset number 2 includes a gamma
12 correction value of 1.2, right?

13 A. Yes.

14 Q. So if a printer receives an image file
15 that includes a gamma correction value of 1.2, what
16 does it do with that value?

17 MR. LAROQUE: Object to form.

18 A. Let me go to the description of
19 Figure 7, just to make sure that I...

20 So in column 5, row 3, it says,
21 "Figure 7 shows an example of the parameters of the
22 image processing control data." So let's go to the

1 description of -- further description of Figure 7.

2 So if you go column 9, it starts the
3 description on row 3 of the Figure 7, and it says,
4 "shows an example of the parameters of the PIM."

5 But I want to emphasize the following,
6 that if you see A4, which starts on column 8, row 61,
7 it says "A4. Processing Mode and PIM," figures --
8 Figure 6A and 6B "are schematics that show an example
9 of the interface window to set the image processing
10 mode.

11 "This interface window is displaced on
12 the LCD display of the DSC. The user can set the
13 processing mode by selecting the 'okay' button in the
14 interface shown in Figure 6A. In this embodiment
15 several processing modes are available," standard,
16 portrait, landscape, and sunset, as shown in
17 Figure 6B.

18 "The selection of the processing mode
19 defines the PIM to be used when the image file is
20 generated."

21 So in this particular embodiment
22 continues, "Figure 7 shows an example of the

1 parameters of the PIM. There are four processing
2 modes that are suitable for the four kinds of
3 situations that may occur," in this particular
4 embodiment.

5 The parameters of the PIM are
6 predetermined for each processing mode. "In this
7 embodiment the PIM includes the four kinds of
8 parameters shown in Figure 7, 'gamma correction,'
9 'color space,' 'contrast,' and 'color balance.'"

10 And then continues on how, basically,
11 in A5, the image processing of parameters continues
12 what the printer will do based on these parameters,
13 so...

14 Q. (By Mr. High) Right. So my question is
15 getting into the A5 aspects --

16 A. Sure.

17 Q. -- once the printer gets these
18 parameters.

19 So when the printer gets the gamma
20 correction parameter of 1.2, for example, what does
21 it do with the gamma correction value?

22 MR. LAROQUE: Object to form.

1 A. It just -- so it continues, it says,
2 "Figure 8 is a flowchart of the image processing."
3 Let's go to Figure 8.

4 Is there a part? See, I need to
5 refresh my memory -- is there a part in my
6 declaration where I analyze this or no, or it's just
7 in the patent?

8 Q. (By Mr. High) I'm asking your -- your
9 analysis of the patent since you analyzed the patent
10 for your declaration.

11 A. It's not in my -- I don't think I --

12 Q. I don't think you explained
13 explicitly --

14 A. Okay.

15 Q. -- what gamma correction is, but I'm
16 asking you about it since you're talking about what
17 the '082 patent discloses.

18 A. So let me just look at the Figure 8.
19 I'm on page 9 of 28 on the '082 patent.

20 So it says we have the image data. We
21 convert the color space from YCb to sRGB or NTSC,
22 Step S82; we apply the gamma correction, S83; we

1 converted the color space from RGB to XYZ, Step S84.

2 For sRGB, we use the matrix TM1; for
3 NTS image, we use the matrix TM2. And we move to
4 this Step S85, convert the color space from XYZ to
5 wGRB; we reverse the gamma correction; we have
6 automatic picture quality adjustment, S87.

7 S88 step includes the color correction
8 process corresponding to the device. We use for
9 SRB -- sRGB images, we use the LUTs. For wRGB --
10 these are different formats -- we use the LUTw. We
11 are using the halftoning process, Step S89, in order
12 to complete the job.

13 Q. Okay. So I'm focusing just
14 specifically on the gamma correction. So most of
15 that is -- is not related to my question.

16 So the gamma correction is done using
17 the gamma correction value, right?

18 A. Yeah, but there are two steps. That's
19 why -- there is the gamma correction step, S83, and
20 there is the reverse gamma correction, S86.

21 Q. Okay. So which one uses the gamma
22 correction value?

1 A. Both.

2 Q. Both do?

3 A. Uh-huh.

4 Q. Do they use the same gamma correction
5 value?

6 A. Based on this flowchart, yes.

7 Q. So how does that work?

8 A. So...

9 So it explains, if you go to column 9,
10 row 27, "The printer, 11, then performs gamma
11 correction of the image data, Step S83. The gamma
12 value used for the gamma correction is included in
13 the control data as information representing the
14 characteristics of the digital still camera, 10.

15 After correction -- "After completion
16 of the gamma correction, the printer, 11, converts
17 the color space of the image data into wRGB color
18 space, which is defined to have a wider color
19 reproduction range from the sRGB color space,
20 Step S84."

21 When the image data defined earlier in
22 either the NTSC color space, the extended sRGB color

1 space is processed in the sRGB -- I'm going to skip a
2 few other of the steps.

3 Q. And if it helps shortcut it, I'm really
4 just interested in the Step S83 that starts at
5 line 27 of that column.

6 A. But we have to see this in conjunction
7 with the Step S86, because this impacts the quality
8 of the print -- of the printing process.

9 Q. So I really just want to focus in on
10 S83, since that's the first one that -- that happens
11 in the image processing flow.

12 Do you agree with that?

13 A. There are other things which are
14 happening.

15 Q. The Step S83 occurs before Step S86,
16 right?

17 A. Yeah, but you also have conversion of
18 color space.

19 Q. Right. So once you get to the start of
20 Step S83, that's where I want to pick up.

21 So --

22 A. Sure.

1 Q. The printer is doing gamma correction?

2 A. Uh-huh.

3 Q. And it uses the gamma value, right?

4 A. Yes.

5 Q. How does the printer use the gamma
6 value to do gamma correction?

7 A. The CPU of the printer changes the
8 brightness in this context.

9 So think -- think of having an image of
10 the sunset. You are going to have areas which are
11 going to be darker and areas who -- you may have
12 overexposure from the direct light.

13 So you want to have something which is
14 aesthetically pleasing and normalized. So the gamma
15 value can be used in order, basically, to enhance --
16 to make this brightness.

17 Q. Okay. So the printer has some sort of
18 gamma correction algorithm and it takes that gamma
19 value and plugs it into the algorithm?

20 A. At a very high level, yes.

21 Q. Okay. Let's go back to column 6.

22 And it goes --

1 A. Give -- give me a minute.

2 Q. Okay. Sure.

3 A. Yeah.

4 Q. And I'm going back to the -- that last
5 paragraph that starts at line 63.

6 A. Uh-huh.

7 Q. So parameters for contrast and color
8 balance are also both examples of image processing
9 control data, right?

10 MR. LAROQUE: Object to form.

11 A. It states, "The PIM
12 includes...information..."

13 So, again, we go back to the same
14 discussion. I mean, it analyzes what is included in
15 the PIM.

16 Q. (By Mr. High) And in this instance,
17 parameters for contrast and color balance are both
18 examples of image processing control data, right?

19 MR. LAROQUE: Object to form.

20 A. Again, the record states PIM here but
21 just --

22 Q. (By Mr. High) Right. And I'm -- I'm

1 asking whether PIM in this context is referring to
2 image processing control data?

3 A. That is a likelihood, I mean, based on
4 the prior discussion we had.

5 Q. Okay. So --

6 A. In the context of the prior discussion.

7 Q. It's likely that parameters for
8 contrast and color balance refer to image processing
9 control data?

10 MR. LAROQUE: Object to form.

11 A. Yeah, I think informs the POSITA about
12 the PIM.

13 Now, POSITA can take it in many
14 different ways here, I think -- I think there are --
15 I mean, the patent's intention is actually to show
16 that when we have all these different modes, instead
17 of having one-size-fits-all with respect to the
18 printing, let's have this CPU using the PIM
19 parameters in order to improve the quality of the
20 final printout, basically, of how the image is
21 printed out.

22 Q. (By Mr. High) And each of those PIM

1 parameters that the CPU uses to improve the quality
2 of the final printout is an example of image
3 processing control data, right?

4 MR. LAROQUE: Object to form.

5 A. Among other things, I believe.

6 Q. (By Mr. High) So if the printer's CPU
7 is using parameters for contrast and color balance to
8 perform image processing, then those parameters are
9 image processing control data?

10 MR. LAROQUE: Object to form.

11 A. A POSITA will have look -- look, if I
12 give you a value, let's look at the -- at the gamma
13 value that we mentioned. If we go...

14 You need a process. I mean, if you
15 look at the -- if you look at Figure 7, and let's go
16 to the Row 2.

17 The value 1.2, it means if nothing
18 operates on it, it's -- basically, it doesn't say,
19 it's a setting. So the way that I think the '082
20 uses the value plus the process that operates on this
21 value, 1.2, in order, basically, to -- to have this
22 particular change in the printer item.

1 So if I look at the number 1.2, alone,
2 it's a setting. But the way that it's used, this
3 number -- and I -- I have an analysis of this in my
4 report about some other combinations. And if you
5 want, I can go there, where I explain...

6 Q. (By Mr. High) So I'm fine with using
7 Figure 7.

8 So I -- I think you pointed to it
9 earlier, but if you want to go back to column 5,
10 starting at line 3.

11 A. Column 5?

12 Q. Yes. That says, "Figure 7 shows an
13 example of the parameters of the image processing
14 control data."

15 Do you see that?

16 A. Yeah.

17 Q. And so if you look at Figure 7, then,
18 gamma correction, color space, contrast, and color
19 balance are the -- the four parameters in this
20 figure, right?

21 A. Yeah, but these are the parameters.

22 The image processing control data is

1 more than parameters or settings. That's --
2 that's -- that's what I'm trying to say.

3 And that there is an analysis of this
4 in my report.

5 Q. So each of the values underneath the
6 parameters refers to parameters of the image
7 processing control data, right?

8 A. Can you repeat the question?

9 Q. Each of the values under parameters in
10 Figure 7 refers to parameters of the image processing
11 control data, right?

12 MR. LAROQUE: Object to form.

13 A. Particularly instantiations. If I look
14 at 1.2, it gives me a parameter that informs this
15 whole process, which is the image processing control
16 data.

17 Q. (By Mr. High) So it's one example of
18 image processing control data?

19 MR. LAROQUE: Object to form.

20 A. It's one example of a parameter that is
21 used in the image processing control data.

22 Q. (By Mr. High) Well, it's one example of

1 a parameter that's used in image processing, right?

2 A. Image processing control data, I think,
3 just be accurate, based on '082.

4 Because Figure 7 says -- again, gives
5 you an example -- shows you an example of the
6 parameters of the image processing control data.
7 This is column 5, Row 4.

8 Q. Yeah. So gamma correction is one
9 parameter of image processing control data, right?

10 A. Yes.

11 Q. Color space is one example of parameter
12 of image processing control data?

13 A. The color space is not a parameter.
14 The color space is actually -- is a framework that
15 you use, let's say RGB color space or --

16 Q. Well, in Figure 7 color space is listed
17 under parameters, right?

18 A. The color space, yeah, is just -- for a
19 POSITA, this would mean the domain, the color domain
20 that you are operating.

21 Q. Okay.

22 A. What is the convention that you are

1 using, basically.

2 Q. So Figure 7 characterizes color space
3 as a parameter, right?

4 A. Among other things in this particular
5 embodiment.

6 Q. Right. And contrast is -- is another
7 parameter, right?

8 A. Yes.

9 Q. And color balance is another parameter?

10 A. Yeah, in -- in -- in the context of
11 basically highlighting how will these relate to the
12 different settings, like standard, portrait,
13 landscape, and sunset.

14 Q. So in Figure 7, the four parameters of
15 the image processing control data are gamma
16 correction, color space, contrast, and color balance,
17 right?

18 MR. LAROQUE: Object to form.

19 A. Can you please repeat the question?

20 Q. (By Mr. High) In Figure 7, the four
21 parameters of the image processing control data are
22 gamma correction, color space, contrast, and color

1 balance, right?

2 MR. LAROQUE: Object to form.

3 A. So if we go to column 9, according to
4 the '082 patent, Row 5 -- Row 5 -- Row 4, "Figure 7
5 shows an example of the parameters of the PIM." It
6 says a particular embodiment that has four processing
7 modes and the parameters of the PIM are predetermined
8 for each of those processing modes, and gives you,
9 for example, a -- "in this embodiment," it says, "the
10 PIM includes the four kinds of parameters shown in
11 Figure 7: 'Gamma correction'; 'color space';
12 'contrast'; and 'color balance.'"

13 Q. (By Mr. High) Okay. So if you read
14 that in the context with the description of Figure 7
15 in column 5, then gamma correction, color space,
16 contrast, and color balance are the four kinds of
17 parameters of the image processing control data in
18 this embodiment, right?

19 A. In this particular example.

20 MR. HIGH: I think we can take a break.

21 MR. LAROQUE: That'd be great.

22 (Recess from 10:10 a.m. to 10:21 a.m.)

1 Q. (By Mr. High) Welcome back.

2 A. Thank you.

3 Q. So the '082 patent discusses image
4 files, right?

5 A. Among other things. Yes.

6 Q. And it says that for its image files,
7 they can be in the Exif format; is that right?

8 A. Let me look.

9 I had seen this but I don't recall the
10 particular paragraph. Give me a minute.

11 (Discussion off the record.)

12 A. Can you point me -- I can look but I
13 cannot -- I would need some time to find where it
14 references.

15 Q. Sure. So one place where it discusses
16 Exif is in column 8, starting at the sentence that
17 starts on line 21.

18 A. Yes. Thank you.

19 Q. What is the Exif format?

20 A. If my memory serves me well, it's the
21 exchangeable image format.

22 Q. Is it a standard image file format?

1 A. Yes, as stated here, it's one of the
2 standards of image files for digital cameras.

3 Q. Okay. So the image file that the
4 camera creates in the '082 patent can take the form
5 of a -- an Exif image file?

6 A. Yes, as stated here in the embod- -- in
7 the description A3, Data Structure of Image Files.

8 It explains, for example, the next
9 column 8, 24, "The Exif format was established by
10 JEIDA (Japan Electronic Industry Development
11 Association)."

12 And it continues to say, "As shown in
13 Figure 5A, an image file in the Exif format has
14 various recording areas: An image data recording
15 area, 59, to store image data; and an attribute
16 information recording area, 51, to store attribute
17 information of the image data stored therein. The
18 image data is stored in the JPEG format in the image
19 data recording area, 59."

20 Q. The Exif format was developed before
21 the '082 patent, right?

22 A. I believe so, but my memory gets rusty

1 as I'm aging.

2 Q. So this column discusses, I think you
3 mentioned, an attribute information recording area
4 within the Exif file; is that right?

5 A. Just give me a minute.

6 Yes.

7 Q. And that attribute information
8 recording area includes an area called the MakerNote
9 recording area, right?

10 A. Give me one minute to -- are you
11 referring to column 8, Row 40?

12 Q. Around that area, yes.

13 A. Yes.

14 Q. And then starting at -- at line 48,
15 that "MakerNote recording area...of the image file is
16 divided into several areas," one of which is the
17 PrintMatching recording area, right?

18 A. Give me a minute to read the paragraph.

19 Yes.

20 Q. And is PrintMatching referring to the
21 PIM that the '082 patent discusses earlier?

22 MR. LAROQUE: Object to form.

1 A. Let me see where the PrintMatching --
2 let me see my declaration.

3 Can you repeat the question as I'm -- I
4 think the PrintMatching is a tag, which is...

5 It can mean many different things.

6 Q. (By Mr. High) Okay. Well, let's take a
7 look at this disclosure in column 8 in the context of
8 Figures 5A and 5B.

9 A. Uh-huh.

10 Q. So Figure 5A shows an example of the
11 data structure of the image file, right?

12 A. According to A3, yes, data structure of
13 image files.

14 Q. And in 5A, Item 53 refers to the
15 PrintMatching recording area, right?

16 A. Yes.

17 But I think -- I think it's important
18 to look at the MakerNote. The MakerNote tag, at that
19 time, it was used to say the certain conditions of
20 image -- in other words, sunny, cloudy -- so it was
21 the mode of acquisition. So it was the tag that it
22 will indicate.

1 So it was just a standard that some of
2 the companies of this digital equipment were using.

3 So I see more of these -- the
4 PrintMatching associated with this MakerNote because
5 the record states this area is specified with a
6 PrintMatching tag and is divided into two areas, the
7 recording area of the data structure and the
8 recording area of the image processing, 55.

9 Q. So the recording area of the image
10 processing, 55, is within the PrintMatching recording
11 area, 53, right?

12 MR. LAROQUE: Object to form.

13 Q. (By Mr. High) It might help to look at
14 Figure 5A.

15 A. Yeah, but I think also 5B is
16 informative. Let me...

17 Yes, the 53, according to the Figure 5A
18 has the PrintMatching data related for image
19 processing.

20 Q. Okay. So that recording area of the
21 image processing, 55, is within the PrintMatching
22 recording area, 53?

1 A. According to Figure 5A.

2 Q. And then the -- "Figure 5B
3 schematically shows the data structure of the
4 recording area of the image processing, 55," right?

5 A. Yes, according to -- let me -- just
6 give me one minute.

7 According to row 8 (sic), 57,
8 "Figure 5B schematically shows the data structure of
9 the recording area of the image processing, 55.

10 "Parameters to control the image
11 processing are recorded as combinations of the name
12 of the tag and the parameter value."

13 Q. Okay. So Figure 5B is depicting an
14 example of parameters to control the image
15 processing?

16 A. The data structure of the recording
17 area of the image processing, 55.

18 Q. Okay. So schematically, Figure 5B in
19 this embodiment would be found in the data related
20 for image processing, 55, of Figure 5A, right?

21 A. Can you please repeat?

22 Q. Sure. So schematically, Figure 5B in

1 this embodiment would be found in the data related
2 for image processing, 55, that's depicted in
3 Figure 5A, right?

4 A. Yeah, with a -- in the context that,
5 again, it goes to the parameters. And parameters, by
6 themselves, are not informative for -- for basically
7 what we're trying to accomplish.

8 We have to act upon these parameters.
9 We need to have basically a program that's going to
10 act upon these parameters.

11 Q. Right. And the '082 patent says that
12 the parameters to control the image processing are
13 recorded as combinations of the name of the tag and
14 the parameter value, right?

15 A. That's correct.

16 Q. And Figure 5B depicts four examples of
17 tag names and four examples of parameter values?

18 A. Yes.

19 Q. Okay. Let's take a look at
20 Exhibit 1005 now, which is what I'll refer to as the
21 Kuwata reference.

22 A. Yes.

1 Q. Have you reviewed this reference
2 before?

3 A. Yes.

4 Q. This is one of the references that are
5 being asserted in this IPR, right?

6 A. Correct.

7 Q. Kuwata also discloses image files,
8 right?

9 A. Among other things, yes, disclose an
10 apparatus.

11 Q. Yes. And it says that the image file
12 can have a file structure according to the Exif
13 standard?

14 A. Can you point me -- can you help me
15 refresh my memory?

16 Q. Sure. One example would be
17 paragraph 70.

18 A. Yes.

19 Q. In Figure 2, of Kuwata, schematically
20 shows an image of the Exif file and the image format,
21 right?

22 A. Yes, although I think I have some

1 analysis of this on my declaration. If you don't
2 mind, if I can go to my declaration.

3 Q. If you feel like you need to. I think
4 my question was pretty straightforward.

5 A. Yeah, just -- just for the record, I
6 want to make sure that I'm consistent.

7 So, for example, if you go to my
8 paragraph 47, of the review of Kuwata, I'm saying
9 "Kuwata teaches an image file...that contains both
10 image data, GD, and output control information, CI."

11 In the paragraph 66, "According to
12 Kuwata, the output control information 'specifies the
13 image output conditions and image output status for
14 an output device, so as to be able to obtain the
15 ultimate image output results,'" for example, for a
16 selected camera and printer, paragraph 67.

17 And then towards the end of my
18 analysis, I say that this is a standalone system
19 completely isolated from the outside world. There is
20 no server or there is no other -- it's just a pair,
21 so the manufacturer, in order to ease the life of
22 users, they want to have a completely standalone

1 system, just to put it in context.

2 MR. HIGH: Objection, nonresponsive.

3 Move to strike.

4 Q. (By Mr. High) Dr. Nikos, I ask that you
5 only answer my questions, and I'll ask you was it --
6 Figure 2 depicts an image file in a format of an Exif
7 file format?

8 A. This is what I say: "Kuwata teaches an
9 image file," in paragraph 66, that contains both
10 image data and output control information, CI.

11 Q. So can you look at Figure 2 of Kuwata
12 and answer my question, please.

13 A. Yes.

14 Can you repeat your question?

15 Q. Sure. Figure 2 of Kuwata depicts a --
16 an image file in the format of the Exif file format,
17 right?

18 A. Yes, according to paragraph 47,
19 "Figure 2 is an explanatory diagram that
20 schematically shows the image file, GF, of the first
21 working example stored in an Exif file format."

22 Q. And Figure 2, it shows a MakerNote area

1 of that image file, right?

2 A. Yes.

3 Q. And Figure 3a depicts the MakerNote
4 data storage area of the image file in Figure 2?

5 A. Yes.

6 Q. And Figure 3a shows a PrintMatching
7 area of the MakerNote data storage area, right?

8 A. Yes.

9 Q. Figure 3b depicts the PrintMatching
10 data storage area of the MakerNote data storage area
11 in Figure 3a, right?

12 A. Yes.

13 Q. In Figure 3b, do you see, in offset 8,
14 it refers to PIM version information?

15 A. Yes.

16 Q. Is that PIM there referring to print
17 image matching?

18 A. Let me go -- just one minute.

19 So if I'm -- tell me if I'm at the
20 correct paragraph. I'm reading from paragraph 74,
21 "The information stored in PrintMatching data storage
22 area, 114, is the PrintMatching identifier that shows

1 a PrintMatching parameter is stored, a parameter
2 specification count that shows the number of
3 parameters specified, a parameter number in which is
4 stored the value that specifies, identifies the
5 parameter number allocated in advance for each
6 parameter and the parameter setting value for which
7 is stored apartment setting values of the specified
8 parameter number" -- it continues.

9 Q. Okay. So I was just really looking at
10 Figure 2 and asking you if PIM -- or, sorry, not
11 Figure 2, Figure 3b.

12 And I was just asking if the PIM in
13 Figure 3b referred to print image matching?

14 A. It's not clear, because it says PIM
15 version matching. I think we have to be careful with
16 the PIM matching and the PIM as referenced in
17 general.

18 Q. Well, it uses the letters P-I-M, right?

19 A. Yes, indeed.

20 Q. And in the context of the '082 patent,
21 that refers to print image matching, right?

22 A. Yeah, but what -- it will drive a

1 POSITA away from this is the fact that talks a PIM
2 version, which is since quarter static (phonetic) and
3 printified (sic), it cannot be uploaded. It doesn't
4 have versions, according to a POSITA's perspective.

5 Q. Well, the PrintMatching data storage
6 area includes several parameter numbers, right?

7 MR. LAROQUE: Object to form.

8 A. Yeah, it talks about parameter -- it
9 talks about the parameter specification count that
10 shows the number of parameters specified. A
11 parameter number in which is stored the value that
12 specifies, identifies the parameter number are
13 located in advance for each parameter.

14 And "in advance" is explained in
15 paragraph 77, where it talks: "In this way, the DSC
16 manufacturer goes through the laborious process of
17 identifying the optimum combination of operation
18 characteristics of the DSC printer...and memorizes
19 the characteristics in memory."

20 Again, that's why I think it has these
21 parameters, which are not updated for later retrieval
22 when the photographer identifies the target printer

1 to be used for printing.

2 "By following this approach the DSC
3 vendor does the matching once so thousands of DSC
4 photographers never have to do it; yet the
5 photographers can be guaranteed that the results will
6 be optimal for the DSC-printer pair."

7 So in other words this is done once, so
8 basically there's no need for update or uploading
9 something. As I mentioned, it's a self-contained
10 system.

11 So these parameters are decided by the
12 camera manufacturer.

13 MR. HIGH: Objection, nonresponsive.
14 Move to strike.

15 Q. (By Mr. High) So listen carefully to my
16 question and only answer my question, okay.

17 In Figure 3, the PrintMatching data
18 storage area includes several parameter numbers,
19 right?

20 A. Yes.

21 Q. And paragraph 74, I think, you -- you
22 read a portion of it. You said that the parameter

1 number can be information stored in a 2-byte area,
2 right?

3 A. Yes, in the middle.

4 Q. And each parameter number corresponds
5 to a particular parameter, right?

6 A. It says 2-byte area and the parameter
7 set and values can be information stored in a 4-byte
8 area.

9 Q. But just before that, it says that the
10 parameter number identifies the parameter, right?

11 MR. LAROQUE: Object to form.

12 A. It says the value that specifies
13 identifies the parameter number allocated in advance.

14 In the sentence just before that.

15 Q. (By Mr. High) So each number
16 corresponds to a particular parameter, right?

17 A. Each value.

18 Q. Each parameter number corresponds to a
19 particular number, right?

20 A. Can you repeat the question, just --

21 Q. Sure. And it might help to read, you
22 know, on. It says, As parameter numbers, for

1 example, one can be allocated for the gamma value
2 parameter, seven can be allocated for the shadow
3 point parameter, and nine can be allocated for the
4 contrast point parameter.

5 So this paragraph is saying that each
6 parameter number corresponds to a particular
7 parameter, right?

8 A. Parameter value.

9 Q. So --

10 A. So if -- if we have a location one, I
11 will have a value that corresponds to --

12 Q. Right.

13 A. -- let's say the gamma.

14 Q. Yes.

15 So just -- let's take the gamma, for
16 example, it says, "As parameter numbers, for example,
17 1 can be allocated for the gamma value parameter."

18 So if --

19 A. That's correct.

20 Q. So if you see a parameter number of 1,
21 then the next value in Figure 3b is the value of the
22 gamma parameter, right?

1 A. My understanding is the 1 refers to the
2 location in the memory.

3 Do you see what I mean?

4 Q. So let's look at Figure 3b.

5 You see offset 16?

6 A. Yes.

7 Q. And then first parameter number?

8 A. Uh-huh.

9 Q. If that first parameter number is 1,
10 then the value at offset 18 is the gamma value,
11 right?

12 A. That's correct.

13 Q. Okay. And that would apply to other
14 parameters as well, if it has a different parameter
15 number then the next value down is the -- the value
16 of that parameter?

17 A. That's correct.

18 Q. And within this PrintMatching data
19 storage area is where Kuwata discloses storing the
20 output control information, right?

21 A. Let's make sure that I'm -- I'm
22 representing the record correctly.

1 So according to 48, it says, Figures 3a
2 and 3b are explanatory diagrams that show the
3 detailed hierarchical structure of an image file of
4 the first working example.

5 Q. Are you finished with your answer?

6 A. Yes.

7 Q. Okay. Sorry.

8 In this working example, Kuwata would
9 store the output control information within this
10 PrintMatching data storage area, right?

11 MR. LAROQUE: Object to form.

12 A. Give me one minute.

13 So I think we need to view the 3a and
14 3b as something -- as a description that starts with
15 the 66 paragraph, Figure 1, and goes to 67, which
16 says, Output control information, CI -- which is
17 referenced in 66 and is defined in 66 -- is
18 information that specifies the image output
19 conditions and image output status for an output
20 device so as to be able to obtain the optimal image
21 output results.

22 And then continues in 68 and says,

1 The aforementioned image file, GF, of this work
2 cannot be generated, for example, by a camera.

3 69 paragraph, the paragraph 69 says,
4 The image file GF of this working example includes,
5 at minimum, the aforementioned image data area 101
6 and the control -- information storage area 102.

7 And then continues with a 70 that says
8 the Exif, then 71 gives more information about the
9 Exif. And then the 72 gives a description of the
10 Figures 3a and 3b.

11 Q. (By Mr. High) Okay. So if you look at
12 the bottom of 74, it's talking about Figure 3b in
13 this paragraph, right?

14 A. 74?

15 Q. Yes.

16 A. Just a minute. Let me read it.

17 Yes, I'm there.

18 Q. And then the last sentence says, "As
19 will be described later on the output device side, it
20 is possible to obtain the output control information,
21 CI, (each parameter value) with this PrintMatching
22 tag as an index."

1 Do you see that?

2 A. Yes.

3 Q. So it's saying that the output control
4 information would be stored inside this PrintMatching
5 data storage area, 114, and the output device obtains
6 the output control information using the
7 PrintMatching tag within this area?

8 MR. LAROQUE: Object to form.

9 A. It says that it's a -- it is
10 possible -- the last sentence in paragraph 74, "It is
11 possible to obtain the output control information,
12 CI, (each parameter value) with this PrintMatching
13 tag as an index."

14 So in other words, it uses this index
15 as a way of navigating where to find the information.

16 This is --

17 Q. (By Mr. High) Okay.

18 A. -- the understanding of a POSITA.

19 Q. Okay. So it uses the PrintMatching tag
20 as a way to navigate into the image file and obtain
21 each parameter value for the output control
22 information CI?

1 A. The record states it is possible.

2 Q. So it can --

3 A. If you see.

4 Q. -- do it?

5 A. Yeah, there is a possibility.

6 Q. Okay.

7 The PrintMatching tag allows the
8 printer to -- to do this?

9 A. As a possibility.

10 Q. I'm jumping back to paragraph 67, the
11 second sentence says that, The output control
12 information, CI, "is information for controlling
13 image processing at the output device, and perhaps at
14 an intermediate processing stage, such as in a
15 personal computer, so that the image data, GD, has a
16 correct color reproduction determined based on the
17 combination of the input device image data, GD,
18 generating characteristics, and the output device
19 image data, GD, color generating characteristics."

20 Do you see that?

21 A. Yes.

22 Q. Okay. Let's take a look at your --

1 your declaration and go to paragraph 50.

2 And you're discussing Kuwata in this
3 paragraph, right?

4 A. Yes.

5 Q. And, let's see, a little over halfway
6 down paragraph 50, there's a sentence that starts,
7 "In particular..."?

8 A. Yes.

9 Q. And it says, "In particular, an
10 advantage of providing output device-specific control
11 information in the image file on the DSC is that 'the
12 DSC manufacturer goes through the laborious" --
13 "laborious process of identifying the optimum
14 combination of operational characteristics of a
15 DSC-printer pair, and memorizes the characteristics
16 in memory, for later retrieval when the photographer
17 identifies the target printer to be used for
18 printing.'"

19 Do you see that?

20 A. Yes.

21 Q. So one advantage of Kuwata's camera is
22 that it has output device-specific control

1 information that it can add to an image file when
2 printing to that output device?

3 A. With some of the constraints I
4 mentioned.

5 It would need to look -- in particular,
6 implies that -- I have two statements before that,
7 which says, "Although the user sets the output
8 conditions on the camera, Kuwata explains that 'DSC
9 manufacturers are best suited to identify the optimal
10 processing settings by observing the results of the
11 DSC when used with a particular printer.'"

12 Paragraph 75, "According to Kuwata,
13 'this identification of what combination of DSC
14 parameters and printer parameters is largely found
15 through a trial and error process' performed" -- I
16 want to emphasize this -- "by the DSC manufacturer."

17 And then it goes, "In particular..."
18 I'm trying to -- to explain this sequence of steps.

19 And just to complete the -- my line of
20 thought here, "Kuwata further explains that the 'DSC
21 vendor does the matching once, so thousands of DSC
22 photographers never have to do it, yet the

1 photographers can be guaranteed that the results will
2 be optimal for the DSC-printer pair.'"

3 And this is paragraph 77 from Kuwata.

4 Q. Okay. So having that output
5 device-specific control information stored on the
6 camera helps the photographers avoid, you know,
7 having to go through the laborious process on their
8 own, right?

9 A. Yeah, but nothing in life is cheap. It
10 comes at the cost, which I explain in 51, Unlike the
11 '082 patent, Kuwata discloses a self-contained camera
12 system that does not connect to the internet or
13 download this information...

14 So provides this capability you
15 mentioned but is a self-contained system.

16 Q. So if a printer came out after the user
17 bought Kuwata's camera, the output device-specific
18 control information would not be stored in the
19 camera's memory; is that right?

20 A. As a POSITA at that time, which was
21 23 years ago, I will have heard -- I will be
22 dependent on the manufacturer of the camera.

1 Q. So if a photographer, let's say, buys
2 Kuwata's camera in 2002 and then a printer comes out
3 in 2003, that camera would not have the
4 device-specific output control information for the
5 printer that came out in 2003, right?

6 MR. LAROQUE: Object to form.

7 A. Very likely not, because at that
8 time -- you see, we are living in the open-source
9 world.

10 So hindsight we can say, oh, in 2002,
11 it was similar. But at that time, 2002, May whenever
12 was the date, the business model was more focused,
13 you buy my camera, my printer, or the printer of my
14 associates.

15 So the emphasis will be, let's try to
16 create this ecosystem, then build on that.

17 Q. (By Mr. High) So if they bought a new
18 printer a year after they bought their camera, and
19 that printer didn't exist at the time they bought
20 their camera, the users of that camera would have to
21 perform the laborious process of identifying the
22 connect output control information of that printer on

1 their own?

2 MR. LAROQUE: Object to form.

3 A. In fact, given the closed structure of
4 this ecosystem at that time, it is very likely they
5 wouldn't have been able to do this alone, especially
6 if you consider that you need to fiddle with software
7 which was not -- not open-source.

8 So you get --

9 Q. (By Mr. High) Okay. So --

10 A. Something that I tried to state here is
11 the following, is Kuwata -- Kuwata philosophy is pair
12 printer-camera; what I can do so I don't have the
13 user in the loop to optimize the occupant.

14 There is no update, there is no
15 flexibility. So this comes at a high cost, which is
16 basically that they try to keep you in the ecosystem.
17 If they provide this information, everything is going
18 to be functioning to some degree.

19 But if you had a new printer coming in,
20 it's very unlikely -- it was very likely that you
21 have to wait for quite some time and maybe never be
22 able to get this interface.

1 And my paragraph 51 just elaborates
2 this more.

3 Q. So let's go to paragraph 81 now.

4 A. Of my --

5 Q. Of Kuwata, sorry.

6 A. Of Kuwata.

7 Sure.

8 Q. About halfway down, there's a sentence
9 that says, "The DSC may also include an I/O port such
10 as a USB IEEE 1394 port or wireless port such as IR
11 or RF."

12 Do you see that?

13 A. Yes.

14 Q. In that sentence, what does I/O stand
15 for?

16 A. Input/output.

17 Q. Okay. So the DSC may include an
18 input/output port?

19 A. Yes.

20 Q. And that port would allow the camera to
21 input or output information, right?

22 A. Potentially, assuming that you had the

1 software to do this.

2 You see, at that time, the existence of
3 an I/O port meant very little because if there was no
4 driver, you couldn't do much.

5 MR. HIGH: I think we're at a good
6 breaking point, if we want to take another ten-minute
7 break.

8 MR. LAROQUE: Sounds good to me.

9 (Recess from 11:16 a.m. to 11:27 a.m.)

10 Q. (By Mr. High) Welcome back.

11 A. Thank you.

12 Q. I want to talk about Exhibit 1006 next,
13 which I'll call Fisher.

14 Have you reviewed this reference
15 before?

16 A. Yes.

17 Q. This is one of the references that's
18 being asserted in the IPR, right?

19 A. That's correct.

20 Q. Fisher discloses a type of digital
21 camera, right?

22 A. Among other things; basically it

1 discloses ancillary data files with electronic camera
2 device, the title.

3 Q. The camera can access and download
4 files from the internet, right?

5 A. Just make sure...

6 Yes, based on paragraph 53 of my
7 declaration, I say, "To address these problems with
8 memory and scalability, Fisher teaches downloading
9 ancillary...files from the internet or other data
10 source, which are stored in a memory area on the
11 camera following download," paragraph 51.

12 Q. All right. And it -- the camera has a
13 download manager that can select and download the
14 selected files, right?

15 A. Give me one minute.

16 Yes, and it's shown in Figure 5 as
17 Element 5- -- 512.

18 Q. And Fisher discloses that a
19 manufacturer can make files available on the internet
20 for subsequent downloading and utilization by the
21 camera, right?

22 A. Do you want me to point where in

1 Fisher -- you want me to find or see in my
2 declaration or can you point me?

3 Q. Yeah, I can point you to at least
4 paragraph 8 of Fisher, if you want to review that.

5 A. Sure.

6 Q. Or I can just repeat my question
7 whenever you're done reading.

8 A. I'm done, yeah.

9 Q. So Fisher discloses that a manufacturer
10 can create files and make the files available for
11 download on the internet -- let me -- let me ask it
12 again.

13 So Fisher discloses that a manufacturer
14 can create files and make the files available on the
15 internet for subsequent downloading and utilization
16 by the camera, right?

17 A. Exact sentence, yeah.

18 But I would like to add we'll have to
19 move 2000 -- you see, we have to put ourselves
20 downloading files at that time. It's not the same
21 like downloading files these days.

22 Q. Let's take a look at Figure 8 of Fisher

1 and then --

2 A. Yes.

3 Q. -- if you want to also reference the
4 corresponding description, I believe that starts at
5 paragraph 54.

6 A. 54.

7 Q. So Figure 8 is a flowchart for
8 accessing and utilizing ancillary data files, 418,
9 right?

10 A. It's true, but 54, you see, exemplifies
11 a problem with Fisher at a very high level.

12 It says, "The Figure 8 embodiment is
13 presented for purposes of illustration and"
14 alternate -- "and in alternate embodiments, the
15 present invention may readily utilize various other
16 steps and sequences than those discussed in
17 conjunction with the Figure 8 embodiment."

18 So, again, we have --

19 Q. So as one example?

20 A. It's one example from 30,000-feet view.

21 Q. Okay. So Step 810 is a first step and
22 that's create ancillary data files, right?

1 A. Yes.

2 Q. And paragraph 55 says that -- in that
3 step, One or more ancillary data files may be created
4 by any appropriate entity and stored in a particular
5 data source.

6 Do you see that?

7 A. Yes.

8 Q. And so that "in a particular data
9 source" in this paragraph is referring to a data
10 source that's outside of the camera, right?

11 A. That's correct.

12 Q. So, for example, a manufacturer might
13 create various ancillary data files, 418, and in that
14 example, you know, if -- if they're available on the
15 internet for subsequent downloading and utilization,
16 the various files that the manufacturer creates are
17 stored on a data source external to the camera,
18 right?

19 MR. LAROQUE: Object to form.

20 Q. (By Mr. High) Let me ask the question a
21 little bit clearer.

22 So paragraph 55 says that,

1 "Alternately, a manufacturer may create various
2 ancillary data files, 418, and make the ancillary
3 data files, 418 available on a distributed computer
4 network like the internet for subsequent downloading
5 and utilization by camera device, 110."

6 Do you see that?

7 A. Yes. But it doesn't say how. Like,
8 for example, in 2000 -- let me see what is the date.

9 In 2001, this is -- the how, it was --
10 it was -- I mean, I will give you one example.

11 Q. Well, sorry, just to -- my question is
12 does paragraph 55 say that? So your answer is yes,
13 right?

14 A. Yeah.

15 Q. Okay.

16 A. But I want to put an asterisk next to
17 it. I mean, I can say that is stated.

18 Q. You agree that's what Fisher says,
19 right?

20 A. Yeah.

21 MR. LAROQUE: Would Counsel please let
22 him finish his answer.

1 A. What I'm stating, this what Fisher
2 says, but a POSITA wouldn't find -- and I explain in
3 my declaration this -- how, when, how about security,
4 how the links are going to be functional, accessible,
5 so on and so forth.

6 Q. (By Mr. High) Step 812, the camera
7 device, 110, establishes an electric communication
8 path with the particular data source where the
9 ancillary data file is stored, right?

10 A. Are you referring to paragraph 56?

11 Q. Yes.

12 A. Just give me a minute.

13 Can you please repeat the question? I
14 read the --

15 Q. Sure.

16 In Step 812, the camera device, 110,
17 establishes an electric communication path with the
18 particular data source where the ancillary data file
19 is stored," right?

20 A. It should -- described in the sentence,
21 yes.

22 Q. Then paragraph 57 says that, In

1 Step 816, camera device, 110, may perform various
2 online management performance procedures with
3 ancillary data files, 418, by means of that
4 communication path," right?

5 A. Let me read it.

6 Again, from a 30,000 -- 30,000-feet
7 perspective, that's what is disclosed.

8 Q. So before the -- the file is actually
9 downloaded, this paragraph 57 says that the user may
10 interactively view, manipulate, and select ancillary
11 data files, 418, from the data source using
12 appropriate respective data source content review
13 procedures and -- is that right?

14 MR. LAROQUE: Object to form.

15 A. Let me read it...

16 So you are referring to the -- the last
17 sentence in 57. Am I right?

18 Q. (By Mr. High) Yes. That's what I was
19 referring to.

20 A. So, "In certain embodiments, a system
21 user may interactively view, manipulate, select and
22 download ancillary data files."

1 But -- this what is disclosed, but,
2 again, as I stated in my declaration, Kuwata teaches
3 the opposite, doesn't want the user to do this stuff.
4 It doesn't want to fiddle with this stuff.

5 MR. HIGH: Objection, nonresponsive.
6 Move to strike.

7 I didn't ask about Kuwata.

8 Q. (By Mr. High) So after the user selects
9 the ancillary data file, 418, the selected file is
10 then downloaded onto the camera, right?

11 A. Are you referring to paragraph 58?

12 Q. 57 and 58.

13 A. Are you referring to the last sentence
14 in 58 or to the whole of 58?

15 Q. Well, it -- at the end of paragraph 57,
16 it says, "The user may interactively view,
17 manipulate, select, and download ancillary data
18 files, 418."

19 So my question was after the user
20 selects the file, the selected file is then
21 downloaded from the data source onto the camera,
22 right?

1 A. Yes, under the same comments I made
2 earlier.

3 Q. Okay. Let's...

4 And then after downloading those
5 ancillary data files, 418, are then locally stored on
6 the camera, right?

7 A. Just give me a minute, I want to...

8 So can you go -- so I want to give my
9 answer based on my -- can you see it contains an
10 analysis of...

11 So --

12 Q. So this is for my question about after
13 downloading, the files are stored locally?

14 A. Yeah.

15 Q. Okay. It relates to that?

16 A. Yeah, I want to answer this with
17 just --

18 Q. So you're just answering my question,
19 though, right?

20 A. I will try.

21 Q. Okay.

22 A. So if we go to -- after paragraph 58 in

1 my declaration, I have Figure 4.

2 Q. Okay.

3 A. So the element 418, in yellow. And it
4 has the memory in blue.

5 Q. Yes. So that -- that yellow area is
6 where the ancillary data files, 418, are stored after
7 they're downloaded, right?

8 A. Yeah. So if you see, what I'm saying
9 is actually -- I'm saying that if you look at the
10 figures, the Figure 4, Figure 5, and Figure 7 may --
11 do not support the text or the generality of the
12 text.

13 Like, for example, if you see, it's not
14 clear how this saving in memory happens; because it
15 says, for example, that Dr. Stevenson said that
16 they're using descriptors in order to upload and
17 save.

18 But if you look at Figures 4 and
19 Figure 7, they don't support -- like, for example, if
20 you look, the ancillary data files in Figure 7,
21 element 712 and 712(b), they have descriptors, which
22 are basically like metadata.

1 So to answer your question, it says
2 from 30,000 feet that we can save the data, but when
3 he shows -- or when he tries to delve into details,
4 his details are not consistent with what a POSITA
5 would understand at the time.

6 So it may state --

7 Q. So --

8 A. -- certain things.

9 Q. So you don't think that software stored
10 in one area can access files stored in another area
11 of memory?

12 A. Not if you --

13 MR. LAROQUE: Object to form.

14 A. Sorry.

15 What I'm saying is actually -- is
16 high-level description, one tries to go into more --
17 for example, if you look...

18 If you look at paragraph 56 in my
19 declaration, I say, "First, I disagree with" --

20 (The Stenographer interjected to
21 protect the integrity of the record.)

22 A. Sorry.

1 "First, I disagree with Dr. Stevenson
2 that a POSITA would have understood Fisher to teach
3 updating image processing control data 'based on
4 specification data, which specifies the image
5 processing control data to be updated.'

6 "Dr. Stevenson opines that Fisher's
7 ancillary data module 416 'downloads an ancillary
8 data file from the internet server based on
9 specification data, such as a 'descriptor' that is
10 associated with a 'respective set of data,' that
11 corresponds to the user's selection,'" citing Fisher
12 10, 23, 49, and 53 for support.

13 "I disagree with Dr. Stevenson. Fisher
14 nowhere teaches an ancillary data module that
15 downloads ancillary data files from the internet
16 based on descriptors, and Dr. Stevenson's cited
17 paragraphs of Fisher provide no support for his
18 opinion.

19 "I analyze each of Dr. Stevenson's
20 cited paragraphs of Fisher below, explaining why they
21 fail to provide the teachings that Dr. Stevenson
22 alleges."

1 Going back to your question, if you
2 look at paragraph of the example --

3 (Zoom audio interruption.)

4 So I'm going at the end of
5 paragraph 56, I'm saying "To the contrary, Fisher
6 makes clear that the ancillary data files are already
7 downloaded when this analysis occurs.

8 "As I describe and illustrate above,
9 therefore, Fisher nowhere teaches descriptors in the
10 context of downloading ancillary data files." And I
11 want to add here in storing data files.

12 "Those teachings are completely
13 separate. Fisher teaches 'descriptors' as each
14 "'preferably associated with a different respective
15 set of data,' independent of downloading ancillary
16 files, 49;

17 "And Fisher teaches managing downloads
18 with the download manager, independent of
19 descriptors..." and then I continue the analysis.

20 So, in other words, Fisher is about
21 scalability but it misses when it tries to go and
22 inform a POSITA on how this will be executed,

1 especially, I believe it's hindsight to do this
2 analysis in 2025 or 2024, when at -- at that time, in
3 2002, 2001, this was -- all these issues, I mean, I
4 recall as a POSITA trying to establish an NSH
5 connection to upload data.

6 So I don't know if I answered your
7 question.

8 MR. HIGH: You did not, objection,
9 nonresponsive, move to strike.

10 Q. (By Mr. High) All I asked was that --
11 does Fisher disclose that after the files are
12 downloaded, they're stored locally on the camera?

13 A. As a description, which is -- I believe
14 it's unrealistic, it's something that a POSITA would
15 not have -- look at on how to do this because they're
16 aware of these constraints that I mention.

17 Q. You agree --

18 A. Here --

19 Q. You agree that that's what Fisher
20 discloses, right?

21 A. It uses the words.

22 Q. Yes.

1 A. I agree with this. But --

2 Q. And you agree that, generally, it was
3 possible to download files from the internet in 2004,
4 right?

5 A. Yes.

6 Q. All right. We can put Fisher away, at
7 least for now.

8 I wanted to ask you a little bit about
9 ICC profiles next.

10 A. Do you want me to bring my report?

11 Q. So what are ICC profiles?

12 MR. LAROQUE: Object to form.

13 A. I think I have a paragraph that
14 explains this, so just to be...

15 We're moving to the color world.

16 So ICC stands for the
17 international color -- I'm on paragraph 74 of my
18 declaration.

19 So these are files that contain
20 settings that comply with International Color
21 Consortium formats. And these are associated with a
22 color matching module, the CMM program, "which

1 contains code for matching colors between the image
2 data and a desired output source such as a particular
3 monitor connected to the computer."

4 And this is in the context of Ohga.

5 Q. (By Mr. High) Within the world of ICC
6 profiles there are input profiles and output
7 profiles, right?

8 A. That's correct.

9 Q. And the input profile refers to the
10 device that generates the image data?

11 MR. LAROQUE: Object to form.

12 MR. HIGH: Well, let me -- let me
13 rephrase.

14 Q. (By Mr. High) The input profile is a
15 profile that corresponds to the device that generates
16 the image data?

17 A. Can you repeat the question?

18 Q. Sure. The input profile is a profile
19 that corresponds to the device that generates the
20 image data?

21 MR. LAROQUE: Object to form.

22 A. One -- is one of the many

1 possibilities.

2 Q. (By Mr. High) And an output profile
3 refers to a profile that corresponds to the device
4 that is outputting the image data, right?

5 MR. LAROQUE: Object to form.

6 A. Among -- again, the same, among the
7 many; the displays, printers, scanners.

8 Q. (By Mr. High) Okay. So an output
9 profile would refer to a profile for a monitor or
10 could refer to a profile for a printer?

11 A. Yes.

12 Q. And these profiles describe how to
13 transform the color data of an image in certain ways,
14 right?

15 MR. LAROQUE: Object to form.

16 A. We need to narrow it down. The
17 profiles are the settings that inform a program,
18 which in the case of Ohga is the CMM, the color
19 matching module, on how to do this transformation
20 from one -- from the camera to a display, for
21 example.

22 Q. (By Mr. High) Okay. So the input and

1 output profiles tell the CMM program how to transform
2 the image data from one form to another?

3 MR. LAROQUE: Object to form.

4 A. These are settings that inform the
5 execution of the instructions of the program.

6 So the program is a set of
7 instructions, the input and output profile. They
8 tell you, okay, how this commands the sequence, where
9 basically we're going to have a loop or no loop for
10 the execution of these commands.

11 Q. (By Mr. High) And the actual CMM
12 program, it's performing something called color
13 matching, right?

14 A. For the -- in the context of Ohga, yes.
15 But broader speaking, the color
16 matching module may do more things.

17 Q. The idea is to transform the image data
18 so that it looks correct from a color perspective
19 when it's output, right?

20 MR. LAROQUE: Object to form.

21 A. How -- how do we define correct, you
22 see, it's in the eye of the beholder. I mean, you

1 don't want a whiteout screen, for example, in a
2 display. You don't want something that has dark
3 bands.

4 You don't want to have overexposure to
5 certain colors.

6 Q. (By Mr. High) Let's -- let's see,
7 you've got your declaration in front of you?

8 A. Yes.

9 Q. Let's turn to paragraph 46.

10 A. Which one?

11 Q. Paragraph 46 of your declaration.

12 A. Yes.

13 Q. Okay. And in this paragraph, you say
14 that you are "aware of a related district court case
15 involving the same parties, and where the '082 patent
16 was asserted but the infringement claims were
17 voluntarily dismissed without prejudice."

18 Do you see that?

19 A. Yes.

20 Q. When did you become aware of the
21 related district court case?

22 MR. LAROQUE: I'm going to object to

1 the extent it calls for privileged information. You
2 can say when but please don't characterize any
3 conversations with counsel.

4 A. When I drafted this particular report.

5 Q. (By Mr. High) So you learned about the
6 district court litigation within the last several
7 months?

8 MR. LAROQUE: Same objection.

9 You can -- you can respond as to time,
10 but, again, please don't disclose the substance of
11 any conversations you may have had with counsel.

12 A. Since I had the several patents, I
13 don't recall the exact date, but it was in the
14 context of when I drafted this particular report, I
15 had -- when I -- when, basically, I submitted this, I
16 was informed, but I don't recall the exact date of
17 submission.

18 Q. (By Mr. High) Was it after the district
19 court -- or after the infringement claims were
20 voluntarily dismissed for the '082 patent?

21 A. I don't know. I mean, I -- I don't
22 want to say something that is...

1 Q. When were you retained for this case?

2 A. I was retained summer 2024, but I
3 didn't submit -- I didn't submit a declaration for
4 this. My submission here was after the board
5 decision.

6 Q. And this paragraph says that the
7 related district court case involved the same
8 parties.

9 What role did 138 East have in the
10 litigation?

11 MR. LAROQUE: Objection, calls for
12 privileged information.

13 You can answer from your personal
14 knowledge, but please don't disclose the substance of
15 anything that you -- you may have learned from
16 counsel.

17 A. It was part of my -- the only
18 interaction I had with them is actually through my
19 recruitment agreement.

20 Q. (By Mr. High) Through your what? I'm
21 sorry.

22 A. My recruitment agreement.

1 Q. Your recruitment agreement?

2 A. My engagement document.

3 Q. Okay. So you don't know personally
4 what role, if any, 138 East had in the litigation?

5 A. No.

6 MR. LAROQUE: Objection.

7 Again, you can answer from your
8 personal knowledge, if you know.

9 A. You see, I was not involved in the
10 infringement or anything.

11 MR. HIGH: I will pass the witness.

12 MR. LAROQUE: Can we take ten or 15?

13 MR. HIGH: That's fine.

14 MR. LAROQUE: Let's take 15, if that's
15 all right.

16 (Recess from 12:05 p.m. to 12:22 p.m.)

17 MR. LAROQUE: I have no questions for
18 the witness, but we reserve the right to read and
19 sign.

20 MR. HIGH: Sounds good.

21 THE REPORTER: And I have a same-day
22 rough coming to you and standard on the final.

1 Would you like the same?

2 MR. LAROQUE: That sounds fine.

3 (Proceedings concluded at 12:22 p.m.)

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1 I, NIKOLAOS PAPANIKOLOPOULOS, the
2 deponent in the above deposition, do hereby
3 acknowledge that I have read the foregoing transcript
4 of my testimony, and state under oath that it,
5 together with any attached Amendment to Deposition
6 pages, constitutes my sworn testimony.

7

8 _____ I have made changes to my deposition

9 _____ I have NOT made any changes to my deposition

10

11

12 _____ NIKOLAOS
13 PAPANIKOLOPOULOS

14

15 Subscribed and sworn to before me this _____
16 day of _____, 20____.

17

18 My Commission expires: _____

19

20

21

Notary Public

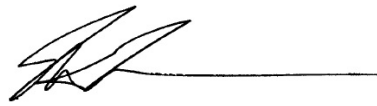
22

Address

REPORTER'S CERTIFICATE

I, Matthew R. Moss, a Registered Professional Reporter and Federal Certified Realtime Reporter commissioned to administer oaths, do hereby certify that previous to the commencement of the examination, the witness was duly sworn by me to testify the truth in relation to matters in controversy between the said parties; that the said deposition was taken in stenotype by me at the time and place aforesaid and was thereafter reduced to typewritten form by me; and that the foregoing is a true and correct transcript of my stenotype notes thereof.

That I am not an attorney nor counsel nor in any way connected with any attorney or counsel for any of the parties to said action nor otherwise interested in the outcome of this action.



MATTHEW R. MOSS
Registered Professional Reporter
Federal Certified Realtime Reporter

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