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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.,

Petitioner,

v.

MASIMO CORPORATION,

Patent Owner.

Case Nos. IPR2024-00294

U.S. Patent 10,736,507

DEPOSITION OF BILAL MUHSIN

January 8, 2025

2:00 p.m. (Eastern Standard Time)

Reported by: Eileen Mulvenna, CSR/RMR/CRR/RDR

DIGITAL EVIDENCE GROUP

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1 REMOTE CROSS-EXAMINATION DEPOSITION of
2 BILAL MUHSIN, Declarant for Patent Owner in the
3 above-titled action, held on Wednesday, January 8,
4 2025, commencing at approximately 2:00 p.m., before
5 Eileen Mulvenna, CSR/RMR/CRR/RDR, Certified
6 Shorthand Reporter, Registered Merit Reporter,
7 Certified Realtime Reporter, Registered Diplomate
8 Reporter, and Notary Public of the State of New
9 York.

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1 APPEARANCES:
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WITNESS

EXAMINATION BY

PAGE

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BILAL MUHSIN

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MR. BISENIUS

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E X H I B I T S

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PAGE

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Exhibit 2038 Previously marked

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Exhibit 2039 Previously marked

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Exhibit 2040 Previously marked

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1 THE REPORTER: Counsel, before I swear
2 in the witness, do all counsel stipulate to
3 the witness being sworn in remotely?

4 MR. BISENIUS: Yes.

5 MR. WENTZEL: Yes.

6 THE REPORTER: Counsel, please state
7 your appearances and whom you represent for
8 the record.

9 MR. BISENIUS: Patrick Bisenius and
10 Grace Kim on behalf of Petitioner, Apple,
11 from the firm Fish & Richardson.

12 MR. WENTZEL: And this is Douglas
13 Wentzel with Knobbe Martens on behalf of the
14 Patent Owner, Masimo Corporation, and the
15 witness. And also with me is Irfan Lateef.

16 (Witness sworn.)
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1 BILAL MUHSIN,

2 having been duly sworn by Eileen Mulvenna,

3 a Notary Public of the State of New York,

4 was examined and testified as follows:

5 EXAMINATION

6 BY MR. BISENIUS:

7 Q. We are here today regarding IPR
8 proceeding IPR 2024-00294 regarding U.S. Patent
9 No. 10,736,507.

10 Is there any reason that you cannot
11 give truthful and accurate testimony today?

12 A. No.

13 Q. To ensure clarity, I will define
14 several terms that will be used throughout the
15 deposition. When I use the terms "Patent Owner" or
16 "Masimo," I am referring to Masimo Corporation, the
17 Patent Owner in this proceeding.

18 Do you understand?

19 A. Yes.

20 Q. When I use the term "Apple" or
21 "Petitioner," I'm referring to Apple, Inc.

22 Do you understand?

1 A. Yes.

2 Q. When I use the term "'507 patent," I'm
3 referring to U.S. Patent No. 10,736,507.

4 Do you understand?

5 A. Yes.

6 Q. When I use the phrase "this IPR" or
7 "this proceeding," I'm referring to IPR proceeding
8 No. IPR 2024-00294, filed against the '507 patent.

9 Do you understand?

10 A. Yes.

11 Q. When I use the acronym "POSITA," I'm
12 referring to a person of ordinary skill in the art
13 at the time of the alleged invention.

14 Do you understand?

15 A. No.

16 Q. Have you been informed by counsel what
17 a person of ordinary skill in the art is?

18 A. No.

19 Q. You submitted a declaration in this
20 proceeding; is that correct?

21 A. Yes.

22 Q. Are you aware that your declaration

1 was assigned Exhibit No. 2037?

2 A. Can you show me the exhibit, please?

3 Q. Have you been provided with a download
4 link for the exhibits?

5 A. I believe so, yes.

6 Q. So it's one of the documents of the
7 download link. Exhibit 2037.

8 A. 38?

9 Q. There should be Exhibit 2038,
10 Exhibit 203 --

11 A. I have 38, 39, and 40 in front of me.

12 Q. Sorry, did I get the wrong number
13 here?

14 A. My declaration, it says "Bilal Muhsin
15 Declaration." That says 2038.

16 Q. 2038, sorry. Yeah, so I had the wrong
17 number here. 2038.

18 A. Got it.

19 (Exhibit 2038, Previously marked.)

20 A. Okay. Sorry, what was your question
21 so I can look it up?

22 Q. Oh, when I use the phrase "your

1 declaration," you understand that I'm referring to
2 Exhibit No. 2038; correct?

3 A. Correct.

4 Q. You are one of the named inventors of
5 the '507 patent; correct?

6 A. Yes.

7 Q. What was your role at Masimo when you
8 were developing the system described in the '507
9 patent?

10 A. In 2011, I believe I was VP of
11 engineering at the time.

12 Q. What is your current role at Masimo?

13 A. Chief Operating Officer.

14 Q. Were you compensated in any way beyond
15 your normal salary when you prepared your
16 declaration for this proceeding?

17 A. No.

18 Q. Are you being compensated in any way
19 beyond your normal salary for your testimony today?

20 A. No.

21 Q. Do you own a financial stake in
22 Masimo?

1 A. Just my stock that I get from my
2 normal work, annual grants.

3 Q. When is the last time that you read
4 the entire '507 patent?

5 A. A few months ago.

6 Q. Was this prior to you preparing your
7 declaration in this proceeding?

8 A. Yes.

9 Q. Was Masimo working on any particular
10 project or product that led to the system described
11 in the '507 patent?

12 A. Yes.

13 Q. What product or projects were those?

14 A. ISp02.

15 Q. Can you briefly describe iSp02?

16 A. Sure. ISp02 is a system that
17 comprises of a optical sensor. That sensor connects
18 to a processing board that runs the entire
19 processing unit. And that processing board connects
20 to a mobile phone and obtains power from the mobile
21 phone and communicates data back and forth to the
22 mobile phone.

1 Q. Who came up with the initial idea for
2 the iSp02?

3 A. Myself. We were working on a project
4 called MSLP, or MS low power. And at that time, we
5 got our technology to a point where it drew less
6 power and -- which came up -- we came up with the --
7 I came up with the idea of then allowing it to be
8 powered from a mobile phone and allowing the project
9 of iSp02 to come through.

10 Q. Why did you think iSp02 would be a
11 good idea?

12 A. So at the time pulse oximetry was
13 limited to how it was, you know, working with
14 certain devices. And this allowed it then to work
15 with a mobile platform, which can enable different
16 use models for the device.

17 Q. When did work on the iSp02 project
18 begin?

19 A. I would say late 2010, early 2011 time
20 frame.

21 Q. Do you know who Dr. R. James Duckworth
22 is?

1 A. No.

2 Q. Are you aware that Dr. Duckworth
3 submitted a declaration in this IPR proceeding?

4 A. No.

5 Q. So it is correct that you have not
6 reviewed Dr. Duckworth's declaration in this
7 proceeding; is that correct?

8 A. That is correct.

9 Q. Do you know who Dr. Yitzhak Mendelson
10 is?

11 A. I've heard of Mendelson. I've seen
12 his patents before.

13 Q. Have you ever met Dr. Mendelson?

14 A. No, not that I can recall.

15 Q. Do you know who Dr. Thomas Kenny is?

16 A. No.

17 Q. Can you please describe how you
18 prepared for today's deposition?

19 A. I reviewed my declaration.

20 Q. Approximately how much time did you
21 spend preparing for today's deposition?

22 A. Less than an hour.

1 Q. Did you review any other documents
2 other than your declaration in preparing for the
3 deposition today?

4 A. No.

5 Q. Have you ever been deposed before?

6 A. Many times.

7 Q. Can you give a ballpark estimate on
8 how many times you've been deposed?

9 A. More than five, less than ten.
10 Probably around ten.

11 Q. Have you ever testified in court
12 before?

13 A. I have.

14 Q. Without revealing any privileged
15 communications with attorneys, please describe the
16 process by which you prepared your declaration.

17 For example, did you write every word
18 throughout the entire process or did Masimo's
19 attorneys prepare first drafts that you revised or
20 was there another process?

21 A. I met with the attorneys, and I walked
22 them through what you see written here. And I

1 reviewed it at the end, as well. And I made any
2 edits to it myself at the end.

3 Q. When preparing your declaration in
4 this proceeding, did you ever communicate with any
5 of the other named inventors of the '507 patent?

6 A. I did not.

7 Q. Approximately when did you begin
8 working on your declaration for this proceeding?

9 A. A few months ago.

10 Q. Did you have anyone, such as an
11 assistant, help you with drafting your declaration?

12 MR. WENTZEL: I'm just going to object
13 as relevance here.

14 THE WITNESS: No assistant.

15 BY MR. BISENIUS:

16 Q. Are you currently aware of any errors
17 in your declaration?

18 A. No.

19 Q. All right. I'd like to talk about
20 your declaration, Exhibit 2038. If you could open
21 that up.

22 A. Okay.

1 Q. And I want to start at paragraph 7.

2 A. Got it.

3 Q. So in paragraph 7 and other portions
4 of your declaration, you reference a video that you
5 refer to as the "Prototype Video," which is
6 Exhibit 2039 in this proceeding.

7 (Exhibit 2039, Previously marked.)

8 Q. You took this video; is that correct?

9 A. I was the one plugging it in. I think
10 it was taken on my phone, but I was there when we
11 took it, yes.

12 Q. So are those your hands in the video?

13 A. Yes.

14 Q. In paragraph 8, you reference a
15 document that you refer to as the "User Interface
16 Summary," which is Exhibit 2040 in this proceeding.

17 (Exhibit 2040, Previously marked.)

18 Q. Did you create this document?

19 A. I was part of the team that created
20 it.

21 Q. Who else was involved in creating the
22 user interface summary document?

1 A. The industrial design team, or the UX
2 team.

3 Q. Who were the members of that design
4 team?

5 A. Sujin was one of them. I think maybe
6 Keith Indorf at the time. I don't know if Keith was
7 there, but I'm -- I think it may have been Keith.

8 Q. Going back to paragraph 7, you've
9 included a screenshot from the prototype video;
10 correct?

11 A. Yes.

12 Q. Is it your opinion that the system
13 shown in this image and in the prototype video
14 performs all the functions recited in Claims 1 and
15 13 of the '507 patent?

16 A. Yes.

17 MR. WENTZEL: Objection, calls for
18 opinion testimony.

19 BY MR. BISENIUS:

20 Q. You developed the system depicted in
21 this screenshot image and the prototype video with
22 Sujin Huang and Benjamin Triman; is that correct?

1 A. I'm sorry. Can you ask the question
2 again?

3 Q. You developed the system depicted in
4 the screenshot in the prototype video with Sujin
5 Huang and Benjamin Triman; is that correct?

6 A. Correct. They had parts in it, yes.

7 Q. What did Benjamin Triman contribute to
8 the system described in the '507 patent?

9 A. He worked on the mechanical design of
10 that low power board connecting to the Apple device,
11 the mobile -- or the -- this is an iPad, but the
12 30-pin connector transitioning to our MSLP board.

13 Q. What did Sujin Huang contribute to the
14 system described in the '507 patent?

15 A. The user interface design.

16 Q. Did any other Masimo engineers work on
17 developing the prototype shown in this screenshot
18 image and the prototype video?

19 A. Yes.

20 Q. Who were those engineers?

21 A. Chris Majors.

22 Q. Anyone else?

1 A. Herbie Dotson, but mainly Chris
2 Majors.

3 Q. Anyone else?

4 A. No, not that I can recall.

5 Q. Did anyone from outside of Masimo
6 contribute to the development of the system shown in
7 this screenshot and the prototype video?

8 A. Well, let me make a correction. The
9 MSLP board on the inside had a lot of engineers
10 working on it, but that's a -- that's a separate
11 technology board that we build that have many
12 hardware mechanical engineers work on the
13 development of that board.

14 We're using it in this solution here.
15 So I don't know how you want to differentiate
16 between what iSp02 -- engineers that worked on
17 iSp02, those are the engineers I mentioned to you,
18 not including the development of the Masimo low
19 power board, SET board.

20 Does that make sense?

21 Q. How did you come up with the idea for
22 the system described in the '507 patent?

1 A. I told you I was -- when we created
2 the MSLP board, I recognized that the power level
3 was low enough. And we were looking at, you know,
4 how to connect things to mobile platforms, and I
5 recognized that we can draw power from the mobile
6 platform.

7 And, therefore, I came up with the
8 idea of having a consumer solution and a health care
9 solution that can work with the mobile phone -- with
10 the mobile platform, I should say.

11 Q. What are the advantages of the system
12 claimed in the '507 patent over systems that
13 previously existed?

14 MR. WENTZEL: Objection, calls for
15 expert testimony, outside the scope.

16 MR. BISENIUS: Doug, are you going to
17 do speaking objections again? We talked
18 about this two weeks ago. You know what
19 objections are supposed to be like in an IPR.
20 We had this discussion already. So I'd
21 prefer if you don't coach your witness right
22 now.

1 MR. WENTZEL: Again, uncalled for.

2 Objection, calls for expert testimony
3 and outside the scope.

4 THE WITNESS: Yeah, I don't know what
5 I'm comparing to. So I can't answer that.

6 BY MR. BISENIUS:

7 Q. Were you aware of existing pulse
8 oximetry systems prior to developing the system
9 claimed in the '507 patent?

10 MR. WENTZEL: Same objections.

11 THE WITNESS: I don't know what you're
12 referring to. In general, yes, but I don't
13 know what you're referring to.

14 BY MR. BISENIUS:

15 Q. So -- well, you were aware of the
16 existence of other pulse oximetry systems; is that
17 correct?

18 A. Yes.

19 Q. And so my question is: What
20 advantages did the system that you developed that's
21 claimed in the '507 patent have over previously
22 existing systems?

1 MR. WENTZEL: Same objections.

2 THE WITNESS: Too broad of a question
3 for me to answer.

4 BY MR. BISENIUS:

5 Q. Continuing with paragraph 7, the
6 system shown in the screenshot image includes an
7 Apple iPhone; is that correct?

8 A. It's either an iPhone or a Touch, iPod
9 Touch. But yes, either/or. It's an Apple phone,
10 maybe, yeah.

11 Q. Is it your opinion that in this
12 prototype system the Apple iPhone performs the
13 functions performed by the claimed mobile computing
14 device recited in Claims 1 and 13 of the '507
15 patent?

16 MR. WENTZEL: Objection, calls for
17 expert testimony.

18 THE WITNESS: Yeah, I haven't -- I
19 haven't reviewed it in that detail. I
20 haven't formed an opinion about that.

21 BY MR. BISENIUS:

22 Q. So turning to page -- or sorry,

1 paragraph 2 of your declaration.

2 A. Paragraph 2?

3 Q. Paragraph 2, yes.

4 A. Okay. Let me go back up. Go ahead.

5 Q. Looking at the third sentence here,
6 you state, "I am submitting this declaration to
7 provide details relating to creating a physical
8 working embodiment of the inventions claimed in the
9 '507 patent."

10 Do you see that?

11 A. I do.

12 Q. So you have opined that the system you
13 created was a physical embodiment of the claimed
14 invention of the '507 patent; is that correct?

15 A. Correct.

16 MR. WENTZEL: Objection.

17 BY MR. BISENIUS:

18 Q. So --

19 MR. WENTZEL: Objection, misstates the
20 document.

21 BY MR. BISENIUS:

22 Q. Then looking at paragraphs 4 and 5,

1 you have reproduced Claims 1 and 13 of the '507
2 patent; is that correct?

3 A. Yes.

4 Q. So looking at Claim 13, about halfway
5 through the claim, it recites, "outputting the SpO2
6 measurement values to the mobile computing device."

7 Do you see that?

8 A. I do.

9 Q. And so my question is: Is it your
10 opinion that the Apple iPhone in the prototype video
11 performs the functions of the claimed mobile
12 computing device?

13 MR. WENTZEL: Objection, calls for
14 expert testimony.

15 He's not here to give you opinions,
16 Rick.

17 BY MR. BISENIUS:

18 Q. Are you not answering the question?

19 A. Correct.

20 Q. So just so you're aware, Mr. Wentzel's
21 allowed to object to my questions. He can then file
22 a motion to have your answer stricken from the

1 record. But unless your answer would be privileged
2 because it involves communication between you and an
3 attorney or someone else at Masimo and an attorney,
4 you still have to answer the question, and they can
5 simply get it stricken later.

6 So I'll ask you again, is it your
7 opinion that the Apple iPhone depicted in the
8 prototype video performs the functions of the
9 claimed mobile computing device?

10 MR. WENTZEL: Objection, calls for
11 opinion testimony.

12 THE WITNESS: Yeah, I'm not an expert
13 at claim construction here, but the mobile
14 device that you see there seems to be the
15 mobile device that we're refer- -- referred
16 to as the mobile computing device in the
17 claim.

18 BY MR. BISENIUS:

19 Q. Why did you select an iPhone or
20 iPod Touch to use as the mobile computing device in
21 this system?

22 A. No reason. We have another product

1 that works with Android, as well.

2 Q. And sticking -- or sorry, going back
3 to paragraph 7. I want to talk some more about the
4 image included in paragraph 7.

5 A. Sure.

6 Q. Can you please describe the vital sign
7 information shown in the user interface displayed on
8 the iPhone screen in this image in paragraph 7?

9 A. Sure.

10 What you see there is multiple
11 windows. The first window has parameters associated
12 with it. The first parameter is the SpO2 value
13 that's being generated through the optical sensor
14 and then by the processing board being sent and
15 communicated to the mobile device. And it's
16 displaying that as 100 percent saturation in the
17 video right now.

18 The second parameter that's being
19 displayed is the pulse rate, noted there by 94. For
20 me, I was a little bit nervous, it looks like. And
21 then you can see the BPM next to it, which is beats
22 per minute.

1 And then the third value that's being
2 displayed is the perfusion index, shown as 2.0. And
3 then a separate window, we're showing the
4 plethysmograph, which is the raw -- the pleth or the
5 IR pleth of the signal that's being generated,
6 including those IQ on the bottom with the beat tone
7 that is generated.

8 Q. After this image in paragraph 7, you
9 describe that the iPhone is running, quote -- sorry,
10 the iPhone is "running an application we created."

11 Did you participate in writing the
12 software for this application?

13 A. A bit, yes, I did.

14 Q. Who else contributed to writing the
15 software for this application?

16 A. I don't remember the software
17 engineer's name.

18 Q. When developing this iPhone
19 application, did you use any existing libraries or
20 functions for application design? For example, did
21 you rely on any libraries that included functions
22 for utilizing touchscreen IO, double tap, bar

1 graphs, trend graphs, et cetera?

2 A. I don't believe we used some of those.
3 I think this was -- I can go back and check, but I
4 don't believe we used those. I think we generated
5 this based on our drawing, not using bar graphs or
6 any of the existing graphing tools.

7 Q. In developing the prototype system
8 shown in the prototype video, did your team make any
9 hardware modifications to the iPhone?

10 A. No.

11 Q. So this is an off-the-shelf Apple
12 iPhone; is that correct?

13 A. Yes.

14 Q. So is it true that all the functions
15 performed by the Apple iPhone in the system do not
16 require any hardware modifications to an
17 off-the-shelf Apple iPhone?

18 A. Correct.

19 Q. So you mentioned earlier that you
20 developed a version of the system using an Android
21 device. Was that an Android phone?

22 A. You could do phone or tablet.

1 Q. Do you remember the manufacturer of --
2 or manufacturers of that device?

3 MR. WENTZEL: Objection, relevance.

4 THE WITNESS: Many.

5 BY MR. BISENIUS:

6 Q. Approximately when did you develop the
7 system that utilized an Android device?

8 MR. WENTZEL: Same objection.

9 THE WITNESS: I don't recall.
10 Probably within the same year.

11 BY MR. BISENIUS:

12 Q. Did you make any hardware
13 modifications to any of those mobile computing
14 devices when implementing the system?

15 A. No.

16 Q. Did Masimo ever develop a version of
17 the system that used a mobile computing device that
18 was developed by your team or others at Masimo?

19 MR. WENTZEL: Objection, vague.

20 THE WITNESS: Yeah, what do you mean?
21 Like we built our own phone?

22

1 BY MR. BISENIUS:

2 Q. Correct.

3 A. No.

4 Q. Did you or your team ever develop a
5 version of the system in which the processing board
6 was physically integrated into the iPhone or another
7 mobile computing device?

8 MR. WENTZEL: Objection, relevance,
9 outside the scope.

10 THE WITNESS: No.

11 BY MR. BISENIUS:

12 Q. Did you or your team ever develop a
13 version of the system in which the optical sensor
14 was physically integrated into the iPhone or another
15 mobile computing device?

16 MR. WENTZEL: Same objection,
17 relevance, outside the scope.

18 THE WITNESS: No.

19 BY MR. BISENIUS:

20 Q. Did you or your team ever develop a
21 version of this system in which the mobile computing
22 device is a watch?

1 MR. WENTZEL: Same objections.

2 THE WITNESS: Yes.

3 BY MR. BISENIUS:

4 Q. Approximately when did you develop a
5 version of the system in which the mobile computing
6 device was a watch?

7 MR. WENTZEL: I'll object as vague and
8 outside the scope of his declaration.

9 THE WITNESS: I don't remember the
10 date right now off the top of my head.

11 BY MR. BISENIUS:

12 Q. Do you recall the year that you
13 developed a version of the system?

14 A. No, not particularly.

15 Q. Okay. The system of the prototype
16 video shows a finger clip sensor; is that correct?

17 A. It does.

18 Q. Did you or your team ever develop a
19 version of the system in which the optical sensor
20 was anything other than a finger clip sensor?

21 A. Yes.

22 Q. What other types of sensors did you

1 use in versions of the system?

2 A. We used disposable sensors or adhesive
3 sensors. We used a clip sensor and a YI or a
4 multiple site sensor, as well.

5 Q. So continuing with the prototype
6 system --

7 A. Actually, we were given a reflective
8 bay sensor. We were allowing it to connect to a few
9 of them.

10 Q. Still referring to the system depicted
11 in the image in paragraph 7 and the prototype video,
12 are there any other off-the-shelf components in the
13 system other than the Apple iPhone?

14 MR. WENTZEL: Objection, relevance.

15 THE WITNESS: Not that I recognize.

16 No.

17 BY MR. BISENIUS:

18 Q. Did Masimo develop the finger clip
19 sensor shown in the system?

20 A. Yes.

21 Q. How long did it take to develop this
22 prototype system?

1 A. I don't recall exactly.

2 Q. So referring specifically to the image
3 in paragraph 7, which of these components is the
4 processing board?

5 A. If you look back behind the -- there's
6 a cable and there's a gray input to the cable and a
7 red output to the cable and there's a board in
8 between. That white block that's there is the
9 processing board.

10 Q. I want to move ahead to paragraph 13
11 of your declaration.

12 A. Okay.

13 Q. In paragraph 13, you state, "The
14 finger sensor of the prototype system also contained
15 a detector..."

16 What kind of sensor was that detector?

17 A. I don't understand --

18 MR. WENTZEL: Objection, vague.

19 THE WITNESS: I don't understand the
20 question.

21 BY MR. BISENIUS:

22 Q. Well, you described the finger sensor

1 as including a detector. I'm wondering what type of
2 sensor was used as the detector. Was it a
3 photodiode? Was it something else?

4 A. Are you saying what kind of detector
5 is used in the sensor? Is that your question?

6 Q. Correct.

7 A. Yeah, so you have -- you have the
8 optics on one side of the sensor, which is the LEDs.
9 And then you have the detector on the bottom side of
10 the sensor, which reads the light that transmits
11 through the finger. And then the signal from that
12 detector goes all the way to the board.

13 Q. Okay. So I'm asking you what type of
14 sensor was used for the detector. Is that a
15 photodiode, or is that a different type of detector?

16 A. Yes.

17 Q. You go on in paragraph 13 to state,
18 "The detector of the sensor generated one or more
19 signals based on the light it detected, and output
20 those one or more signals to the processing
21 module..."

22 Do you see that?

1 A. I do.

2 Q. How did the detector of the sensor
3 generate those one or more signals?

4 A. It explains it right there.
5 What's your question?

6 Q. I'm asking you how the detector
7 generates the one or more signals?

8 A. That's what a detector does.

9 Q. In the next paragraph, paragraph 14,
10 you state, "The one or more signals from the
11 detector of the prototype system's finger sensor are
12 output through the cable..."

13 Do you see that?

14 A. Yes.

15 Q. What form do those one or more signals
16 take?

17 A. I don't understand the question.

18 Q. Is it a specific communication
19 protocol communicated from the cable? Is it a
20 change in current, a change in voltage? What form
21 do the signals take?

22 A. It's the raw signal coming from the

1 detector that connects to the board. No processing
2 is done on that signal until it hits the board. So
3 it's the raw detector signal.

4 Q. So continuing in paragraph 14, you
5 state that the output of the processing board is
6 quote "output through another cable to the mobile
7 computing device (iPhone)."

8 Do you see that?

9 A. I do.

10 Q. Why did you use a separate processing
11 board in the system instead of just having the
12 iPhone perform the calculations?

13 A. I believe if you go through the
14 patent, if you open it, it describes that at the
15 end.

16 Q. All right. Could you please open the
17 prototype video, Exhibit 2039.

18 A. Sure. Got it.

19 Q. So I'm going to ask you to watch the
20 first 10 seconds of the video, but I'll -- I'll ask
21 my question, you can watch it, and then I can ask it
22 again if you need me to.

1 A. Okay.

2 Q. At about second 7, it shows a
3 person -- I guess it's you. At second 7, it shows
4 you connecting an adaptor to a cable.

5 A. Yeah.

6 Q. Can you please what that adaptor is
7 and what type of cable is being used?

8 A. So the cable is our cable, our normal
9 cable, and we just wanted to connect it to a 30-pin
10 connector. So we just translated [sic] the wires,
11 and that's a normal coax connector, I believe -- I
12 don't know what type of connector exactly -- that
13 just attaches the wire set together, the 30-pin
14 connector.

15 Q. What is the communication protocol
16 used between the processing board and the iPhone in
17 this prototype system?

18 MR. WENTZEL: Objection, relevance.

19 THE WITNESS: The name of it -- I
20 don't remember the name.

21 BY MR. BISENIUS:

22 Q. I want to go back to --

1 A. It's our proprietary communication
2 protocol that's there.

3 Q. So you developed the communication
4 protocol between the processing board and the
5 iPhone; correct?

6 A. It's layered within it, yes.

7 Q. I want to go back to paragraphs 4 and
8 5, where you've reproduced the claim language for
9 Claims 1 and 13 on the '507 patent.

10 A. So I'm going to open Exhibit 2038
11 again?

12 Q. Yes.

13 A. Sorry, I have to go back.

14 Okay. What paragraph?

15 Q. 4 and 5.

16 And you've reproduced Claims 1 and 13
17 here; correct?

18 A. Yes.

19 Q. And it is your opinion that the system
20 shown in the prototype video performed all the
21 functions recited in Claims 1 and 13; correct?

22 MR. WENTZEL: Objection, calls for

1 opinion testimony, misstates his declaration.

2 BY MR. BISENIUS:

3 Q. So looking at Claim 1, what is the
4 concept that's being described in Claim 1?

5 MR. WENTZEL: Objection, vague.

6 THE WITNESS: I haven't -- I'm not an
7 expert at that.

8 BY MR. BISENIUS:

9 Q. Looking at Claim 13, which is in
10 paragraph 5 --

11 A. Yep.

12 Q. -- after the preamble in the first
13 element that starts, "outputting, from an optical
14 sensor of an SpO2 measurement system, one or more
15 signals responsive to light," do you see that
16 element?

17 A. No. Where are you?

18 Q. I'm in paragraph 5, looking at
19 Claim 13.

20 A. Yeah, where?

21 Q. So there's a preamble, and the next
22 element starts out with the words "outputting,"

1 comma --

2 A. Yes, I see it.

3 Q. Yeah, that's what I'm -- I'm talking
4 about that element there.

5 A. Okay.

6 Q. So on the first line here, it recites,
7 "outputting, from an optical sensor of an SpO2
8 measurement system."

9 A. I see that.

10 Q. What are some examples of sensors that
11 would fall into the scope of the claimed optical
12 sensor?

13 MR. WENTZEL: Objection, calls for
14 opinion testimony, outside the scope of his
15 declaration.

16 BY MR. BISENIUS:

17 Q. Did you ever implement the prototype
18 system to use a sensor other than a photodiode?

19 A. I don't know.

20 Q. Would it be possible to implement the
21 system using a detector other than a photodiode?

22 A. I don't know.

1 Q. Going back to paragraph 7 again,
2 talking about the system in the image here.

3 What information is conveyed over the
4 cable connecting the finger clip sensor to the
5 processing board?

6 MR. WENTZEL: Objection, asked and
7 answered.

8 THE WITNESS: The raw signal from the
9 photo detector.

10 BY MR. BISENIUS:

11 Q. When did you first start selling a
12 commercial version of this system?

13 A. My guess is 2012, but I don't
14 remember. Maybe 2013. I don't -- I'm not -- I
15 don't remember the dates. So I don't want to guess,
16 but soon after.

17 Q. What parts of the system were included
18 in the commercial version of the system that you
19 sold?

20 MR. WENTZEL: Objection, vague.

21 BY MR. BISENIUS:

22 Q. So, for example, was the finger clip

1 sensor included in the commercial version that you
2 sold?

3 A. Yes.

4 Q. Were both of the cables included in
5 the commercial version that you sold?

6 A. I think the processing module
7 encapsulated in the version that we sold. So it
8 didn't have two separate connectors connecting. The
9 connectors were embedded inside of it. But it had
10 the processing module, it had the connector to the
11 mobile platform, and it had the sensor on one end.

12 Q. Did it include the adaptor between the
13 processing board and the mobile phone?

14 MR. WENTZEL: Objection, vague.

15 THE WITNESS: In some instances, we
16 did. But others, no. It was fully
17 connected.

18 BY MR. BISENIUS:

19 Q. But you sold the system separate from
20 a mobile phone or other mobile device; is that
21 correct?

22 A. Yeah, we didn't sell the mobile

1 platform. In the iSpO2 version, I should say.

2 Q. I want to go back to paragraph 5 and
3 talk about Claim 13 again.

4 A. Okay.

5 Q. So after the preamble, we talked about
6 the first element that starts with "outputting."
7 The second element starts with "via a processing
8 board." I want to talk about those two elements.
9 So in the first element, it says,
10 "outputting from an optical sensor of an SpO2
11 measurement system."

12 Do you see that?

13 A. I do.

14 Q. And in the second element, it says,
15 "via a processing board of the SpO2 measurement
16 system."

17 Do you see that?

18 A. Yes.

19 Q. Then a few elements later, it
20 discusses "outputting the SpO2 measurement values to
21 the mobile computing device."

22 Do you see that?

1 A. Yes.

2 Q. What component is outputting the SpO2
3 measurement values to the mobile computing device?

4 MR. WENTZEL: Objection, calls for
5 opinion testimony, outside the scope of his
6 declaration again.

7 THE WITNESS: The processing board.

8 BY MR. BISENIUS:

9 Q. Is the mobile computing device part of
10 the SpO2 measurement system that includes the
11 optical sensor and the processing board?

12 MR. WENTZEL: Objection, vague, calls
13 for opinion testimony, outside the scope of
14 his declaration.

15 THE WITNESS: Yeah, I'm not an expert
16 in claim construction. So I'm not going to
17 answer that.

18 BY MR. BISENIUS:

19 Q. Is the processing board an internal
20 component of the mobile computing device, or is it
21 an external component of the mobile computing
22 device?

1 MR. WENTZEL: Objection, vague,
2 relevance, calls for opinion testimony,
3 outside the scope of his declaration.

4 THE WITNESS: Again, I'm not an expert
5 in claim construction. So I'm not going to
6 answer that.

7 BY MR. BISENIUS:

8 Q. Are you aware that Masimo submitted a
9 contingent motion to amend in this proceeding?

10 A. I don't know what that means.

11 Q. So is it fair to say that you've not
12 read the contingent motion to amend in this case?

13 A. Yeah, I don't know what that means.

14 Q. Have you reviewed any of the briefs
15 that have been submitted in this case, other than
16 your declaration?

17 A. Which case is this relate -- this is
18 the IPR case or one of the other --

19 Q. Yeah, in the IPR case, specifically.

20 A. No.

21 Q. I want to move ahead to paragraph 12.

22 A. Okay.

1 Q. So as you discussed earlier and as you
2 state here in paragraph 12, you said, "The finger
3 sensor of the prototype system contained red and
4 infrared LEDs."

5 And then in the next paragraph,
6 paragraph 13, you state, "The finger sensor of the
7 prototype system also contained a detector."

8 So other than the red and infrared
9 LEDs and the detector, were there any other
10 components included within the finger clip sensor?

11 MR. WENTZEL: Objection, relevance.

12 THE WITNESS: Yeah, there's a lot.

13 There's pads. There's plastics that wrap
14 that. There's wires that go through. So the
15 answer is yes.

16 BY MR. BISENIUS:

17 Q. Were there any resisters in the finger
18 clip sensor?

19 MR. WENTZEL: Same objection.

20 THE WITNESS: I don't think so.

21 BY MR. BISENIUS:

22 Q. Were there any capacitors or inductors

1 in the finger clip sensor?

2 A. I don't think so.

3 MR. WENTZEL: Same objection.

4 BY MR. BISENIUS:

5 Q. Has a court ever precluded you from
6 offering an opinion?

7 MR. WENTZEL: Objection, relevance.

8 THE WITNESS: I don't know. No, I
9 don't think so.

10 BY MR. BISENIUS:

11 Q. As far as you're aware, has a court
12 ever criticized one of your opinions?

13 MR. WENTZEL: Objection, relevance.

14 THE WITNESS: Not that I know of.

15 MR. BISENIUS: No further questions.

16 THE WITNESS: Thank you.

17 THE REPORTER: Any questions,

18 Mr. Wentzel?

19 MR. WENTZEL: Let's take a two-,
20 three-minute break and come right back?

21 THE REPORTER: We're off the record.

22 (Recess from the record.)

1 THE REPORTER: We're back on the
2 record.

3 MR. WENTZEL: We have no further
4 questions.

5 THE REPORTER: Okay. We're off the
6 record.

7 (Deposition concluded. The time is
8 2:47 p.m.)

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1 STATE OF NEW YORK)

2 ss:

3 COUNTY OF WESTCHESTER)

4 I, EILEEN MULVENNA, CSR/RMR/CRR/RDR, a
5 Certified Court Reporter, Registered Merit Reporter,
6 Certified Realtime Reporter, Registered Diplomate
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7 That I reported the taking of the
8 deposition of the witness, BILAL MUHSIN,
commencing on the 8th day of January, 2025, at the
hour of 2 p.m.

9 That prior to being examined, the witness
was duly sworn by me to testify to the truth, the
whole truth, and nothing but the truth.

10 That I thereafter transcribed my said
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16 IN WITNESS WHEREOF, I have hereunto
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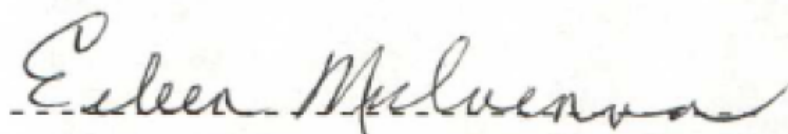
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EILEEN MULVENNA, CSR/RMR/CRR/RDR

1 Bilal Muhsin, c/o

KNOBBE MARTENS OLSON & BEAR, LLP

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