1 UNITED STATES PATENT AND TRADEMARK OFFICE

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3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4 _____

5 LUXOTTICA OF AMERICA, INC.,

6 Petitioner,

7 v.

8 E-VISION OPTICS, LLC,

9 Patent Owner.

10 _____

11 IPR2024-01030

12 U.S. Patent No. 8,708,483

13 _____

14

15 REMOTELY CONDUCTED VIDEOTAPED DEPOSITION OF

16 JAMES OLIVER PHD

17 WEDNESDAY, JUNE 11, 2025

18 10:03 A.M. CDT

19

20 JOB NO.: 587934

21 PAGES: 1 - 81

22 REPORTED BY: KARISA EKENSEAIR, CCR RPR RMR RDR

Luxottica v. e-Vision
IPR2024-01070
Luxottica Ex. 1030

1 DEPOSITION OF JAMES OLIVER PHD, CONDUCTED VIA
2 ZOOM VIDEOCONFERENCE.
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10 Pursuant to notice, before Karisa J.
11 Ekenseair, Certified Shorthand Reporter in and for
12 the States of Arkansas, Oklahoma, Missouri,
13 Illinois, Tennessee, Georgia, New Mexico,
14 Washington, and California; National Registered
15 Professional Reporter; National Registered Merit
16 Reporter; National Registered Diplomate Reporter;
17 Notary Public.
18
19
20
21
22

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17 ALSO PRESENT:
18 DANIEL ESPARZA, REMOTE TECHNICIAN
19
20
21
22

1 T A B L E O F C O N T E N T S

2 PAGE

3 STYLE AND NUMBER..... 1

4 APPEARANCES..... 3

5

6 WITNESS: JAMES OLIVER, PHD

7 EXAMINATION BY MR. PETERSON..... 5

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9 CERTIFICATE OF REPORTER..... 81

10

11 EXHIBITS

12 (RETAINED BY COUNSEL)

13 NUMBER DESCRIPTION PAGE

14 EXHIBIT 1001 UNITED STATES PATENT NUMBER

15 8,708,483..... 61

16 EXHIBIT 1003 UNITED STATES PATENT

17 APPLICATION PUBLICATION

18 HOWELL 596..... 51

19 EXHIBIT 2019 DECLARATION OF PROFESSOR

20 JAMES H. OLIVER, PH.D. IN

21 SUPPORT OF PATENT OWNER'S

22 RESPONSE..... 10

1 P R O C E E D I N G S
2 THE REPORTER: We are on the record.
3 Will counsel please stipulate that in lieu
4 of formally swearing in the witness, the reporter
5 will instead ask the witness to acknowledge that
6 their testimony will be true under penalties of
7 perjury, that counsel will not object to the
8 admissibility of the transcript based on
9 proceeding in this way and that the witness has
10 verified that they are, in fact, Dr. James Oliver,
11 beginning with the noticing attorney, please?
12 MR. PETERSON: I so stipulate.
13 MS. STONE: So stipulated.
14 JAMES OLIVER, PHD
15 of lawful age, being first duly sworn, deposes and
16 says in reply to the questions propounded as
17 follows:
18 EXAMINATION
19 BY MR. PETERSON:
20 Q Good morning, Dr. Oliver.
21 A Good morning.
22 Q How are you doing today?

1 A Doing great. Apologize. It's sunny today
2 so my lighting isn't great. I'm here.
3 Q That's perfectly fine. It's sunny here
4 too. It leaves us dreaming about the warm weather
5 outside, what we might do after this.
6 And just for my sake, could you let me
7 know how you prefer that I call you throughout the
8 deposition today? Is Dr. Oliver okay?
9 A That's fine.
10 Q Okay. And just so we're on the same page,
11 we're here to discuss your testimony in
12 IPR2024-01030.
13 Is that your understanding?
14 A Yes.
15 Q Just to make things easy for myself, would
16 it be all right if I referred to it, that
17 particular IPR number, as "the IPR" during our
18 discussion today?
19 A Yes. That's fine.
20 Q The patent at issue in this case is U.S.
21 Patent No. 8,708,483 which I might use the
22 shorthand '483 or the '483 patent to refer to. Is

1 that okay with you?
2 A That's fine.
3 Q I'm here today representing the petitioner
4 Luxottica of America, Inc.
5 Do you understand that?
6 A Yes.
7 Q And even though you're testifying
8 virtually today, do you understand the testimony
9 you're giving is under oath?
10 A Yes.
11 Q And subject to the same penalty of perjury
12 as if you were testifying in a courtroom?
13 A I do.
14 Q And where are you at today?
15 A I'm in Ames, Iowa.
16 Q And is there anyone else in the room with
17 you?
18 A No. My door is closed.
19 Q Do you have any materials in the room with
20 you today?
21 A I have a copy of my declaration and it's
22 not marked up, but I've added some tabs for quick

1 reference.
2 Q Just your declaration? Do you have any
3 copies of exhibits?
4 A No.
5 Q And do you have anything open other than
6 this Zoom window on your computer?
7 A I've got my calendar up but I can
8 certainly shut that down. Chat window, I'll shut
9 that down. Nothing on my desktop except this.
10 Q As we go through questions today, I'm
11 going to assume that you understand the question
12 asked unless you tell me otherwise.
13 Is that okay?
14 A That's great.
15 Q Is there anything that would prevent you
16 from testifying clearly and truthfully today?
17 A No. Nothing.
18 MS. STONE: And Jacob, I apologize for
19 interrupting. I just want to let you know but
20 your video is very zoomed in so you kind of keep
21 blinking in and out.
22 MR. PETERSON: Let me step back a little

1 bit.
2 MS. STONE: Just wanted to make you aware
3 because it's very distracting.
4 MR. PETERSON: Unfortunately, this video
5 is -- I'll step back a little bit. Hopefully that
6 helps a little bit. Thank you for letting me
7 know.
8 Q And in terms of cadence for today, I will
9 try to go for about an hour at a time and then
10 take a break. But if you would like to take a
11 break earlier, please let me know and I'd be happy
12 to accommodate that.
13 A Thank you.
14 Q Then last ground rule piece before we
15 begin, have you been informed you are not to
16 discuss the content of your testimony with your
17 counsel during the breaks during this deposition?
18 A Yes. I've been informed of that.
19 Q How many times have you been deposed
20 previously?
21 A Five or six times.
22 Q How many of those were in patent cases?

1 A All of them.
2 Q All right. And in terms of exhibits,
3 Exhibit 2019 in this proceeding in this IPR, could
4 we mark that, marked for identification
5 Exhibit 2019?
6 (Exhibit 2019 marked for identification.)
7 REMOTE TECHNICIAN: Absolutely, please
8 stand by.
9 Q Is it correct that Exhibit 2019 in this
10 proceeding is your declaration in support of
11 patent owner's response?
12 A I believe so, but I -- I need to see it.
13 Q Okay. And if you have a printout of your
14 declaration, if it's the stamped version in the
15 bottom right corner, I believe it will have the
16 exhibit stamp.
17 A Yeah. It's cut off on my printout. So I
18 just --
19 Q Okay.
20 A IPR.
21 MR. PETERSON: Yeah. For the tech team,
22 could you upload and share that exhibit?

1 REMOTE TECHNICIAN: Yeah. It's coming.
2 MR. PETERSON: Okay.
3 A Yeah. That's the document I have in front
4 of me.
5 Q All right. And would it be all right to
6 refer to this document by the shorthand "your
7 declaration" throughout our discussion?
8 A That would be fine.
9 Q And in terms of preparation for the
10 deposition today, what did you do to prepare?
11 A I spoke with counsel yesterday for about
12 90 minutes. And I re-read my declaration
13 and -- and the patent at issue here.
14 Q Did you re-read any of the prior art
15 mentioned in your declaration?
16 A I -- I did.
17 Q And when you say you reviewed your
18 declaration, what did you mean by that?
19 A Well, I wrote that declaration back in
20 March, so I just wanted to refresh, you
21 know -- get back up to speed.
22 Q During your review, was there anything you

1 came across in your declaration that you no longer
2 agree with or changed your mind on?
3 A No.
4 Q So the '483 patent at issue in this case,
5 there's a collection of inventors, looks like
6 eight different individuals.
7 Do you happen to know any of those
8 individuals?
9 A No.
10 Q All right. Could we then turn to the very
11 last page of Exhibit 2019 or your declaration in
12 this proceeding?
13 I see a signature on this last page. Is
14 that your signature?
15 A Yes, it is.
16 Q And did you sign this document on
17 March 31st, 2025?
18 A Yes, I did.
19 Q All right. Could we next turn to
20 paragraph 16 in Exhibit 2019?
21 So right above paragraph 16 --
22 MR. PETERSON: Let the tech -- yeah. I

1 think you had it earlier. It's the numbered
2 paragraphs. Perfect. Yeah. Okay. Yeah.
3 Q So right before paragraph 16, you discuss
4 your understanding of the relevant legal
5 principles; is that right?
6 A That's right.
7 Q Does your discussion of legal principles
8 in this section reflect your understanding of
9 these legal principles on March 31, 2025, when you
10 signed your declaration?
11 A Yes.
12 Q Has your understanding of the legal
13 principles discussed in this section changed since
14 you signed your declaration on March 31, 2025?
15 A No.
16 Q Could we next turn to paragraph 19?
17 So in the very last sentence of
18 paragraph 19, you say "at the time the invention
19 was made."
20 Do you see that?
21 A Yes.
22 Q Does that phrase refer to a specific date?

1 A I believe it refers to the priority date.
2 Q And what date is that?
3 A My understanding is the priority date
4 claimed by the petitioner and agreed to is 2007,
5 May of 2007.
6 Q All right. Could we next turn to
7 paragraph 21?
8 In this paragraph, you discuss, "in order
9 to prove that a prior art or a combination of
10 prior art renders a patent obvious, it is
11 necessary to show some of these factors."
12 A Right.
13 Q I'd like to discuss some of the bullets
14 under Item 3. In particular, you reference, "I
15 further understand that exemplary rationale that
16 may support a conclusion of obviousness
17 include...".
18 A Okay.
19 Q All right. And if we could turn to the
20 next page, the top of the next page. All right.
21 So on the first bullet, you discuss
22 "combining prior art elements." Could you tell me

1 what you mean by that phrase?
2 A That anyone inventing something new would
3 explore the prior art and look for combinations of
4 prior art that would meet the limitation of -- of
5 the proposed patent.
6 Q And what's meant by the term "elements"?
7 A Those would be claims in previous patents
8 or intrinsic or extrinsic elements in the prior
9 art that would be addressed in considering this.
10 Q Would it also refer to specific features
11 in the prior art? That is, would the term
12 "elements" also refer to specific features in the
13 prior art?
14 A It depends on what you mean by a feature,
15 how you would define "feature."
16 Q So would you say "elements" does not refer
17 to features in the prior art?
18 A Again, it would depend on the -- what you
19 mean by "features."
20 Q How would a POSITA -- actually, let's
21 introduce that therm.
22 You're familiar with the concept of a

1 person of ordinary skill in the art?
2 A Yes.
3 Q Would it be all right if we used the
4 shorthand abbreviation during our discussion and
5 said "POSITA" to shorten our reference to that?
6 A That's fine with me.
7 Q What would a POSITA have understood the
8 term "features" refer to in this context?
9 A Perhaps a description of a functionality
10 or other elements of -- of a -- of a description.
11 Q I see you used the term "element" to refer
12 to the -- the meaning of feature; is that correct?
13 A I guess this is -- again, I'm asking you
14 for what -- what you mean by a feature because I'm
15 a mechanical engineer and "feature" has a very
16 distinctive definition, but I don't know if that's
17 what you're referring to.
18 Q What would that distinctive definition be
19 for a mechanical engineer?
20 A A geometric portion of a mechanical design
21 that is intended to meet some requirement, a
22 chamfer on a hole for instance. That's a feature.

1 Q Turning to the next statement on this
2 bullet, you discuss "known methods."
3 What is meant by known methods?
4 A I'm looking for that bullet. Which bullet
5 are we talking about?
6 Q It should also be on the shared screen for
7 Zoom. It should be the first bullet under Section
8 3 --
9 A Known methods, yeah. That's what you're
10 talking about.
11 Again, in the prior art, again, it could
12 be intrinsic or extrinsic, textbooks -- textbook
13 papers, product descriptions, any -- any
14 previously disclosed information would be a
15 known -- known methods.
16 Q And you mentioned previously disclosed, so
17 that would be disclosed prior to the --
18 A Priority date.
19 Q Yeah, the date of the invention that we
20 discussed earlier.
21 A Yes.
22 Q Continuing on a few terms later, you

1 mention predictable results. What's meant by the
2 phrase "predictable results"?
3 A Again, as documented in prior art, the
4 described elements and methods have been shown to
5 produce the results intended.
6 Q And you say "shown to have been produced."
7 Could you explain more what you mean by
8 that phrase?
9 A Either manufactured, demonstrated via
10 analysis, many other ways to show that the results
11 are expected.
12 Q Turning to the next bullet, you use the
13 phrase "simple substitution."
14 A Yeah.
15 Q Could you please tell me what you mean by
16 the phrase "simple substitution"?
17 A Simple substitution would be I want to
18 replace one element with another element.
19 Q And what's meant by the word "simple" in
20 the phrase "simple substitution"?
21 A Straightforward implementation.
22 Q Turning to the next bullet, you mention

1 the phrase "known techniques."
2 What's meant by the phrase "known
3 techniques"?
4 A Well, techniques are processes. Again, if
5 they've been documented on how to accomplish a
6 certainly functionality or design a certain
7 element, would be a known technique.
8 Q And would the term "known" refer to a
9 technique that was in existence prior to the time
10 the invention was made?
11 A Yes.
12 Q Transitioning a few additional words
13 further in the bullet, you used the phrase
14 "similar devices."
15 What does the phrase "similar devices"
16 mean?
17 A Devices that are intended to solve the
18 same problem or provide the same benefit.
19 Q How similar do devices need to be to
20 qualify as similar?
21 MS. STONE: Objection, form.
22 A Obviously depends on the application.

1 Q Turning to the next bullet, you use the
2 phrase "ready for improvement."
3 What does the phrase "ready for
4 improvement" mean?
5 A Applying -- let me just read it. Applying
6 a known technique to a known device ready for
7 improvement to yield predictable results. Again,
8 it's a combination of a method or product to
9 improve it with predictable results. It's
10 pretty --
11 Q Does ready for improvement mean that a
12 POSITA would have been seeking improvements to
13 that known device?
14 MS. STONE: Objection, form.
15 A It addresses if I'm trying to protect my
16 invention, I would look for what other known
17 techniques could be applied to create my invention
18 that yields predictable results.
19 So it's essentially looking for
20 obviousness obviously. If someone else has come
21 up with a way to improve my idea, then that would
22 have been obvious.

1 Q You used the phrase "trying to protect my
2 invention."
3 What did you mean by that?
4 A If I was writing an invention disclosure,
5 which I've done in the past, I would enumerate the
6 prior art and show that that prior art does not
7 show a way to improve the performance.
8 Q Let's turn to the next bullet, if we
9 could. You include the phrase "a finite number of
10 identified predictable solutions."
11 What does this phrase, "a finite number of
12 identified predictable solutions" mean?
13 A Well, finite is the opposite of infinite,
14 so there could be many. Predictable solutions,
15 first of all, identified. They need to be
16 articulated. Predictable solutions, again, speaks
17 to prior art and that the combination thereof
18 would have a reasonable expectation of success.
19 Q And you also use the phrase "obvious to
20 try" in that bullet.
21 A Yes.
22 Q What does the phrase "obvious to try"

1 mean?
2 A That an inventor potentially coming up
3 with a new invention would scour the prior art and
4 look for other solutions in the prior art that
5 might solve the problem they're trying to solve.
6 Q All right. Turning to the next bullet,
7 you used the phrase "same field."
8 What does this phrase "same field" mean?
9 A Read that. Okay.
10 Same field is focusing on the -- the
11 group -- basically the issue, the problem solution
12 to a product of -- that's addressing a similar
13 problem or need.
14 Q Does same field refer to the same
15 technological area?
16 A Not necessarily. Might be a completely
17 different technology to solve the same problem.
18 Q Does same field refer to the same
19 industry?
20 A Not necessarily.
21 Q Does same field refer to the same general
22 purpose?

1 A Potentially, it can. It depends on
2 the -- on the application.
3 Q Can you tell me more about what it depends
4 on?
5 A Same field would be the -- might focus on
6 the problem being addressed and so, you know, if
7 works are related to and identifying the same
8 issue with same potential market forces and other
9 market direction, they would be within the same
10 field.
11 Q Does same field refer to the same function
12 it's designed to serve?
13 MS. STONE: Objection, form.
14 A No, not necessarily.
15 Q Could you please explain more?
16 A Can you repeat the question?
17 Q Yes. Does same field refer to the same
18 function that an item is designed to serve?
19 MS. STONE: Objection, form.
20 A Well, there could be -- there could be
21 multiple problems in -- in a product that are
22 addressed by different technologies. I don't

1 quite know where you're going with this.
2 Q So the -- the term same field, would it
3 also be a designation for same function?
4 MS. STONE: Objection, form.
5 A No.
6 Q How so?
7 A Well, same field is -- it's addressing a
8 need or a problem but technologies and functions
9 can be applied across a wide variety of fields.
10 Q Turning back -- sorry. I didn't mean to
11 cut you off.
12 A No. Just looks like field is spelled
13 wrong on that one. Is it?
14 Q In the bullet?
15 A Yeah. Never mind.
16 Q F-I-E-L-D. Yeah.
17 Further on in the bullet, you use the
18 phrase "different field."
19 What does the phrase "different field"
20 mean?
21 A A different problem or product category.
22 Q So how can a POSITA tell whether an

1 element is from the same field or a different
2 field?
3 A Typically, you would study the prior art
4 and identify the problem or issue being addressed
5 and the ultimate application of that issue. And
6 if it's applied to the same product or process
7 with the same intended issue, then -- then it
8 would be in the same field. A different field
9 could use similar technology but applied to a
10 whole different product or service.
11 Q Could we next turn to paragraph 38?
12 In paragraph 38, you discuss that you've
13 considered the following factors which you've been
14 informed are relevant in determining the relevant
15 level of ordinary skill in the art; is that
16 correct?
17 A Yes.
18 Q I'd like to start by talking about the
19 second bullet. You include the phrase "the types
20 of problems encountered in the art."
21 Could you please explain what you mean by
22 "the types of problems encountered in the art"?

1 A Well, a POSITA in -- in any field is going
2 to be presented with product or service
3 challenges. And depending on the product or
4 service, they would have potentially different --
5 if I'm in a food-processing industry, it would be
6 different than a consumer electronics industry,
7 but those types of problems characterized by the
8 industry or the field that the POSITA is working
9 in.
10 Q So what are the types of problems
11 encountered in the art of the '483 patent prior to
12 the date of invention of the '483 patent?
13 A I'm sorry, the types of problems?
14 Q Yes. I'm just using the language that you
15 used from in the bullet and asking you apply that
16 to the '483 patent.
17 A Sure. Mechatronics types of problems, so
18 electronics issues, aesthetics in designing
19 consumer products, you need some design expertise.
20 You need, you know, miniaturization of electronics
21 in consumer products. So there's a variety that,
22 again, someone with the credentials that I

1 mentioned would be prepared to address those
2 problems.
3 Q I'll try to briefly summarize the list you
4 just gave.
5 You stated the types of problems
6 encountered in the art prior of the '483 patent
7 prior to the invention of the '483 patent included
8 electronics, aesthetics, and miniaturization; is
9 that correct?
10 MS. STONE: Objection, form.
11 A I also mentioned mechatronics, industrial
12 design, usability, UI. There's many others. I'm
13 not limiting it.
14 Q Could you please tell me more about the
15 term mechinatronics?
16 A Mechatronics.
17 Q Mechatronics?
18 A Yes. It's the intersection of electrical
19 and mechanical arts, so it's straddles electrical
20 and mechanical engineering. It's very common in
21 higher education in engineering.
22 Q What types of problems were encountered in

1 the -- I'm probably going to butcher this. You
2 said mechanictronics?
3 A Mechatronics.
4 Q Mechatronics. What types of problems were
5 encountered by a POSITA in mechatronics prior to
6 the '483 patent date of invention?
7 A Power issues, control issues,
8 functionality, many other issues, creating devices
9 that are electronically actuated. It appears in
10 many, many products and fields from robotics to
11 automotive to aerospace to appliances, you name
12 it. Mechatronics is everywhere.
13 Q Was protecting electronics a known type of
14 problem in the art before the date of invention of
15 the '483?
16 A Well, that depends on the application. If
17 protection is necessary, then it would be a
18 problem to address.
19 Q And how would a POSITA decide if
20 protection was necessary?
21 A Would depend on the application and what
22 type of protection we're talking about. Could be

1 electromagnetic fields, could be contamination,
2 could be water, could be wear, could be any number
3 of protections necessary depending on the
4 application.
5 Q What type of protections would a POSITA
6 have considered before the date of invention of
7 the '483 patent to protect against water?
8 MS. STONE: Objection, form.
9 A To protect against water?
10 Q Yes.
11 A There's any -- again, depending on the
12 application, there's any number of ways to protect
13 devices from water.
14 Q Could you please list the ones that come
15 to mind that a POSITA would have considered?
16 MS. STONE: Objection, form.
17 A Yeah. Depends on the application.
18 There's many ways to protect things from water.
19 Q So in the technology of electronic eyewear
20 prior to 2006, what approaches would a POSITA have
21 considered to protect electronic eyewear from
22 water?

1 MS. STONE: Objection, form.
2 A There's, again, many different ways
3 depending on the application, right. You know,
4 it's -- electronic eyewear, the water could come
5 from many different sources. If I'm building
6 eyewear for personal protective -- in an
7 industrial setting, it may be completely different
8 than active wear for somebody running and
9 perspiring.
10 There's just many different -- depending
11 on the application, I can't -- there's a lot of
12 different ways to do it and it depends on what
13 you're trying to do.
14 Q You listed two applications in your last
15 remark. I believe you mentioned industrial
16 electronic eyewear?
17 A Yes.
18 Q In the context -- in the context of
19 industrial electronic eyewear, what types of
20 approaches would a POSITA have considered prior to
21 2006 for protecting the electronics in the eyewear
22 from water?

1 MS. STONE: Objection, form.
2 A Again, it depends on -- it could
3 be -- industrial applications may be concerned
4 with water, but they may be concerned with other
5 hazards or issues, chemical, heat, many other ways
6 to protect.
7 So it -- water may not be an issue for an
8 industrial application or maybe it is for a
9 firefighter. Again, it depends on the
10 application.
11 Q Specifically focusing on an application
12 where water is a concern --
13 A Okay.
14 Q -- what types of approaches would a POSITA
15 have considered prior to 2006 for protecting the
16 electronics in the eyewear from water?
17 MS. STONE: Objection, form.
18 A Yeah. Again, if -- may be a completely
19 different solution for a firefighter versus active
20 wear that the -- depends on the application of how
21 you would choose to protect from water. So
22 there's, again, many ways, but it really depends.

1 Q Could you please list a few of the ways?
2 MS. STONE: Objection, form.
3 A Yeah. Well, again, so you -- you probably
4 heard about the submarine that imploded. You
5 know, that was an issue of pressure. But it
6 imploded. It did not keep the water out. You
7 know, there's just, there are ways to do it
8 structurally with any number of methods to protect
9 electronics from -- from water.
10 And again, I can't, you know, articulate
11 any specifics without an application.
12 Q Would a POSITA have considered prior to
13 2006 using a conformal layer to protect
14 electronics in eyewear from water?
15 A A conformal later -- sorry.
16 MS. STONE: Objection, form.
17 A Conformal layers can protect from many
18 different things: Chemical, abrasion, wear,
19 vapor, but a conformal layer is a very standard
20 application to printed circuit boards for many
21 different protection needs.
22 Q Would a POSITA have considered prior to

1 2006 using a conformal layer to protect
2 electronics in eyewear from water?
3 MS. STONE: Objection, form.
4 A It may be an element. It may not be
5 sufficient. It could be -- it could be used but
6 it may not serve the waterproof -- fully
7 waterproof necessity.
8 Q To confirm, a POSITA would have considered
9 prior to 2006 using a conformal layer to protect
10 electronics in eyewear from water, correct?
11 MS. STONE: Objection, form.
12 A What I said was conformal layers are a
13 very common way to protect electronics from many
14 different things, and vapor and water is one of
15 those things it can protect but it may not be
16 sufficient to completely protect.
17 Q You referred to conformal layers as a very
18 common way to protect electronics.
19 Could you please explain what you mean by
20 "a very common way"?
21 A It's been a technique for many years to
22 protect primarily printed circuit boards.

1 Q Let's next turn to a different bullet in
2 paragraph 38. It's actually the last bullet.
3 Here, you discuss the sophistication of
4 the technology. Could you please explain what you
5 mean by the phrase, "the sophistication of the
6 technology"?
7 A Yes. Some technologies are quite mature
8 and well understood, hydraulics, that type of
9 things. Some are more leading edge.
10 For instance, Apple is a very
11 sophisticated company in how they design and
12 package their electronics. So a POSITA working
13 for Apple has a different -- different level of
14 sophistication than someone working in a
15 hydraulics company. But again, all industries
16 have challenges.
17 Q Would you describe the sophistication of
18 the technology on a spectrum?
19 A Not --
20 MS. STONE: Objection, form.
21 A Yeah. Not necessarily. Excuse me.
22 Again, it's -- it's dependent on the

1 industry and the -- the market and, you know, what
2 you're trying to do. So I'm sure there's
3 sophisticated problems in hydraulics, you know, at
4 the nuclear level versus the, you know, municipal
5 plumbing. It's a different level of
6 sophistication. But every application has
7 different -- different needs.
8 Q How would you characterize the
9 sophistication of the technology in the '483
10 patent?
11 A I'd say it's -- the '483 patent has
12 addressed some unique problems with very clever
13 solutions. The sophistication is not beyond a
14 POSITA, as I defined it in terms of the education
15 and experience. As I mention, we teach
16 mechatronics and industrial design and those kinds
17 of things, so it is a unique technology developed
18 to meet this need.
19 Q When you discussed sophistication, you
20 referenced the education and experience of a
21 POSITA. So is sophistication related to the
22 education and experience of POSITA in your

1 understanding?
2 A Can you repeat that? Is it related -- go
3 ahead.
4 Q You referenced the education and
5 experience of a POSITA when discussing
6 sophistication. Is the term "sophistication" and
7 its meaning related to the education and
8 experience of a POSITA?
9 A It's -- in general, I'd say that the
10 sophistication of the technology, if I'm hiring
11 someone to work in a company that's making
12 consumer electronics, I would expect them to have
13 a certain level of understanding of the
14 technology. And again, it depends on the -- on
15 the industry that they have a level of knowledge
16 and experience in the technologies that are
17 appropriate for my product.
18 Q If a POSITA has a bachelor's degree in
19 mechanical engineering, electrical engineering, or
20 computer engineering or an equivalent degree and
21 approximately two years of work experience in
22 mechanical, electrical, and industrial design,

1 would you describe that POSITA as one that would
2 be equipped to work on a highly sophisticated
3 technology?
4 MS. STONE: Objection, form.
5 A No. I don't know what you mean by "highly
6 sophisticated." I'd say they'd be appropriate to
7 work on the technology that's articulated in the
8 '483 patent.
9 Q Would you say that there are different
10 degrees of sophistication?
11 A In the most general sense, yes.
12 Q You referred to Apple earlier. I believe
13 you referred to Apple as having a higher degree of
14 sophistication.
15 Would that be a fair articulation of what
16 you said?
17 A No.
18 Q How would you contrast Apple with some of
19 the, I guess, less sophisticated I'm trying to
20 understand what might be a good terminology
21 for --
22 MS. STONE: Objection, form.

1 A Yeah. I don't know who you want me to
2 compare Apple to.
3 Q I believe you before discussed hydraulics
4 and Apple and referred to Apple as having
5 sophisticated technology. And then in some
6 instances or applications of hydraulics
7 technology, it would be characterized as less
8 sophisticated?
9 A What I said was there are probably very
10 sophisticated problems in hydraulics if I'm
11 working on a nuclear reactor versus a municipal
12 water system. Those are different levels of
13 sophistication. I just read the book Apple in
14 China, very impressive how they develop their
15 processes and design. Very, very sophisticated
16 and very impressive and that's why I brought it
17 up.
18 Q You just characterized a municipal water
19 system as less sophisticated; is that correct?
20 A When compared to a nuclear power plant.
21 MR. PETERSON: Looks like we're coming up
22 on the hour mark. Would you like to take a break

1 now or I can continue with asking questions. I
2 think we'll shift somewhat on the topic with the
3 next questions.
4 THE WITNESS: I'm fine with that.
5 MR. PETERSON: Fine to take a break.
6 THE REPORTER: Off the record.
7 (Whereupon a break was had.)
8 BY MR. PETERSON:
9 Q Could we next turn to paragraph 23 of
10 Exhibit 2019 which is your declaration.
11 In this paragraph you say, "At the time of
12 the '483 patent, the trend of utilizing
13 electronics in eyewear appeared to be
14 accelerating."
15 Could you please tell me more about what
16 you mean by the phrase "the trend of utilizing
17 electronics in eyewear appeared to be
18 accelerating"?
19 A Yeah. Like a lot of consumer products, as
20 electronics miniaturized and enabled new
21 functionality, there are market opportunities to
22 integrate electronics into more and more consumer

1 products like those Oakley shown below. So pretty
2 typical of an example of consumer electronics
3 getting into, you know, more and more
4 applications.
5 Q You used the phrase "consumer products."
6 What's your understanding of what the
7 phrase "consumer products" means?
8 A Mass market. You're aiming at, you know,
9 consumers to entice them to, you know, buy your
10 product. So smartphones, anything basically aimed
11 at a mass market.
12 Q So would consumer products include
13 products sold at Walmart or Target?
14 A Potentially.
15 Q And would consumer products include
16 products sold at Home Depot or Lowe's?
17 A Well, that -- yeah. Potentially, sure.
18 Q Does the phrase "consumer products" refer
19 to the volume of products sold by the seller of
20 the consumer products?
21 A Generally. If you think about going into
22 Lowe's or Home Depot, I just bought a weed whacker

1 that's battery powered and ten years ago that was
2 not possible. So as electronics get better, the
3 electronic vehicles -- but yes, to answer your
4 question, you're generally aiming at a relatively
5 large market for a consumer product.
6 Q Would appliances fall within the scope of
7 consumer products?
8 A Yes, generally.
9 Q Turning to your next statement in
10 paragraph 23, you say, "The applications being
11 developed by others are expanding."
12 Could you please tell me more about what
13 you mean by "the applications being developed by
14 others are expanding"?
15 A Well, when there's market opportunities
16 you have a lot of participants. And again,
17 afforded by miniaturization and different display
18 techniques, I mean, a lot going on in the 2000s
19 that were enabling new applications so many people
20 were trying to take advantage of that.
21 Q You said a lot of things were going on in
22 the 2000s that were enabling new applications.

1 Could you name some of those things that
2 were going on that were enabling the new
3 applications?
4 A Miniaturization of electronics power
5 innovation in batteries and/or electronics, the
6 different display technologies. You remember
7 Google Glass, had to put it up in our lens in what
8 2005 I think was it, you know, big splash.
9 So there were many, many opportunities to
10 take advantage of technologies as they advanced.
11 Q And the next sentence you discuss examples
12 of electronics that were being incorporated into
13 eyewear.
14 Are there other examples that come to mind
15 of electronics that were being incorporated into
16 eyewear prior to 2006?
17 A I'm sure there were. Those are some of
18 the most common, the three that I mentioned.
19 Q Are you able to name any additional
20 examples?
21 A I'd have to think about it, but I'm sure I
22 could. Applications related to events, realtime

1 information display. Again, you've got network
2 advances, you've got Bluetooth, you've got all
3 kinds of electronics advancing very quickly that
4 enable very different potential applications.
5 Q You mention Bluetooth. Would Bluetooth
6 have enabled creation of a network?
7 A Bluetooth is a near-field communication
8 technology to connect devices. So you asked if it
9 would enable a network, not necessarily.
10 Q Bluetooth wouldn't create a network over
11 which it communicated?
12 A If you define a network with two or three
13 nodes, it's essentially a way to connect devices
14 together to transmit information. I wouldn't say
15 it enables a network.
16 Q Let's next turn to paragraph 26. The last
17 sentence of paragraph 26 reads, "It was desirable
18 to believe incorporate electronics into eyewear."
19 Could you please tell me more about what
20 you mean by "it was desirable to incorporate
21 electronics into eyewear"?
22 A Again, for those applications described

1 above, electroactive lenses, multimedia
2 integration, displaying information, all of those
3 potential applications could have relatively
4 sizable markets and market opportunities.
5 Q And you used the word "desirable."
6 What -- what is meant by "desirable" or
7 why is it desirable?
8 A Would be desirable if you're solving a
9 problem for a consumer. Electroactive lenses, I
10 wish I had that product because I still have to
11 pick these up every now and then. So again, it's
12 desirable if it meets a need potentially.
13 Q In that same sentence of paragraph 26, you
14 also say "maintain the flexibility to use
15 different materials for the frame."
16 A Yeah.
17 Q What does it mean to maintain the
18 flexibility to use different materials for the
19 frame?
20 A Provide design flexibility, things --
21 different materials may have different structural
22 properties, different weight properties, different

1 electrical properties. So maintaining flexibility
2 gives you more options to be creative in solving
3 the problem you're solving.
4 Q Prior to 2006, what different materials
5 for the frame would a POSITA have considered?
6 A Plastic, metal, various flavors of
7 plastic. Could even be fiberglass if it was
8 needing to be a composite material. There's many
9 many different material options that could be
10 implemented.
11 Q Let's next turn to paragraph 27. Here you
12 discuss allowing for robust placement of the
13 electronics. Could you please tell me more about
14 what you mean by allowing for the robust placement
15 of the electronics?
16 A The -- part of the reason that Google
17 Glass was a failure was that it was -- it looked
18 pretty stupid. You were, you know, embarrassed to
19 wear them. Electronics can -- like the Oakley on
20 the previous page can look really cumbersome and
21 not fashionable.
22 And if you can obstruct -- not obstruct

1 but hide the electronic components so that it
2 looks like normal eyewear, it would be more --
3 more desirable for consumers.
4 Q And you specifically used the phrase
5 "robust placement."
6 What's meant by "robust placement"?
7 A Placement that is functional yet
8 aesthetically pleasing. So it might involve
9 distributing the electronics through the eyewear
10 in a way that is, again, aesthetically pleasing
11 but functionality and relatively reasonable to
12 manufacture at a competitive price.
13 Q Let's turn to paragraph 28. Here you use
14 the phrase "a long-felt need."
15 Could you please tell me what you mean by
16 the phrase "a long-felt need"?
17 A Yeah. In any consumer product, you want
18 to be able to create it in a scaleable way that is
19 not -- does not induce excessive assembly and
20 complex manufacturing. So that the long-felt need
21 is you want to be aesthetically pleasing,
22 functionable and manufacture it at an affordable

1 price. That's the long-felt need. It's a
2 combination of constraints.
3 Q Let's next turn to paragraph 29. You
4 discuss here that the '483 patent generally
5 relates to integrating electronic components into
6 an electronic eyeglass frame.
7 A Yes.
8 Q What does the term "integrating" mean in
9 this sentence?
10 A Integrating means incorporating the
11 electronics into an eyeglass frame.
12 Q And what are the different ways a POSITA
13 would understand that electronic components can be
14 integrated into an eyeglass frame?
15 MS. STONE: Objection, form.
16 A Many different ways. You could look at
17 that Oakley and it's a big contraption on one of
18 the temples. That would be -- you know, if that
19 was prior art, then people would say, well, that's
20 functional but it's not very aesthetic.
21 Q Would integrating electronic components
22 involve placing components on printed circuit

1 boards?
2 MS. STONE: Objection, form.
3 A Yeah. Can you repeat the question? I
4 didn't quite follow.
5 Q In paragraph 29, you talk about
6 integrating electronic components into an eyeglass
7 frame.
8 A Right.
9 Q My question was: Would integrating
10 electronic components involve placing components
11 on a printed circuit board?
12 MS. STONE: Objection, form.
13 A I would -- a printed circuit board might
14 be a component, an electrical component that you
15 would consider trying to integrate in an
16 electronic -- in an eyeglass frame, but it's not
17 entirely necessary.
18 Q You say not entirely necessary. Why would
19 it not be entirely necessarily?
20 A You don't necessarily need a printed
21 circuit board. You can distribute the electronics
22 throughout the eyeglass frame.

1 Q Let's next turn to paragraph 31.
2 A Okay.
3 Q Here you discuss that the inventors of the
4 '483 patent developed various embodiments of
5 inventive electronic eyewear frames to address the
6 above challenges.
7 What do you consider to be the inventions
8 disclosed in the '483 patent?
9 A The ability to -- to address the challenge
10 of integrating the electronic components in an
11 aesthetic and yet functional way. The -- let me
12 see, hold on a second. Reading this paragraph.
13 So many embodiments that show how that is
14 done in -- in '483 with the -- in that
15 application, it's electroactive lenses. So the
16 lenses that modify their prescription essentially
17 based on the user's head position and the sensors
18 involved are cleverly designed and implemented
19 into the frame such that it doesn't look like
20 there are any electronics in the glasses at all,
21 and yet they provide this additional benefit of
22 adjusting the prescription based on the user's

1 head motion.
2 It's a -- it's a very compelling
3 contribution.
4 Q The very last sentence of paragraph 31,
5 you say, "An electronics module is 899 disposed
6 within a temple 810 and behind the ear of the
7 wearer."
8 What does "behind the ear of the wearer"
9 mean?
10 A The end piece of the temple frame, so the
11 piece that rests on your ear of the -- of the side
12 piece of the eyeglass. The piece that hangs
13 behind your ear is the end piece and that's --
14 that's one of the embodiments. There are several
15 others.
16 Q Let's turn to paragraph 48.
17 In paragraph 48, you're discussing Howell
18 833. And you discuss electrical components 112.
19 A Yeah.
20 Q In paragraph 48, you describe electrical
21 components 112 as being located at the tip of both
22 temples; is that correct?

1 A Yes.
2 Q Would a POSITA have considered the tips of
3 the temples to be configured to be behind the ear
4 of the wearer?
5 A Yes.
6 Q All right. Let's next mark Exhibit 1003
7 for identification.
8 (Exhibit 1003 marked for identification.)
9 REMOTE TECHNICIAN: Please stand by.
10 Q Do you recognize this exhibit, Dr. Oliver?
11 A Yes. Howell 596.
12 Q Could we please turn to paragraph 205?
13 Should be on page 20, or says 20 on the top of the
14 document. It's 60 on the bottom. Perfect.
15 Okay. It's about a third of the way into
16 paragraph 205. There's a sentence that reads, "A
17 window or opening 2104 is provided at a rearward
18 portion of the temple 2100."
19 Do you see that sentence?
20 A A window is provided at the rearward
21 portion of the temple. Yes.
22 Q So the sentence, again, says -- it's at

1 paragraph 205 of Howell 596, Exhibit 1003.
2 A Yeah.
3 Q The sentence reads, a window or opening
4 2104 --
5 A Hold on.
6 Q All right. I'll start over again. "A
7 window or opening 2104 is provided at a rearward
8 portion of the temple 2100."
9 Would a POSITA have considered a rearward
10 portion of the temple to be configured to behind
11 the ear of the wearer?
12 A I wouldn't -- I would not think a POSITA
13 would agree with that.
14 Q Why is that?
15 A The rearward portion doesn't say the end
16 piece, for one, or the end of the temple. The
17 rearward portion could be anywhere toward the --
18 toward the back. If you place the opening for the
19 sensor at the end piece, you have obstructions
20 from -- from light, from hair, from head covering.
21 It would obviate the functionality of the sensor,
22 in this case a UV sensor.

1 Can we look at Figure 21 where it
2 shows --
3 Q Sure. Let's do that. Try to get the page
4 for you where it -- number page 39 on the bottom
5 of the page. Okay, maybe it's not.
6 REMOTE TECHNICIAN: What figure was it
7 again?
8 MR. PETERSON: Figure 21.
9 Q And we were discussing -- we were
10 discussing the window or opening 2104. I'll
11 repeat my question from before. Maybe I'll
12 rephrase it.
13 Would a POSITA have considered the window
14 or opening 2104 to be configured to be behind the
15 ear of the wearer?
16 A In that -- in the way it's depicted, the
17 ear would obstruct the sensor. So I don't know
18 why a POSITA would take that option, but the
19 inventor included it.
20 Q Can you explain what you mean by "the
21 inventor included it"?
22 A Well, it's an embodiment he's suggesting.

1 There are other embodiments where it's towards the
2 front of the frame where it would be better
3 exposed to light.
4 Q You agree that in Figure 21 --
5 A There's one more issue. The way it's
6 depicted, the sensor is aiming outward which would
7 meet right at the -- you know, right at your
8 earlobe or, you know, the earpiece right here
9 would significantly obstruct the -- the light that
10 the user is experiencing. If that's that purpose
11 of the invention, this wouldn't be a very
12 effective solution.
13 Q Do you agree that a POSITA would have
14 considered the window or opening 2104 shown in
15 Figure 21 to be configured to be behind the ear of
16 the wearer?
17 MS. STONE: Objection, form.
18 A It's not at the end piece which is the
19 very end of the temple frame. It is at the
20 curvature of the ear that is -- that is supporting
21 the eyeglasses on the ears. So depending on, you
22 know -- it would be behind the ear, I would say.

1 Q Would a POSITA have considered the window
2 or opening 2104 shown in Figure 21 to be
3 configured to be behind the ear of the wearer?
4 MS. STONE: Objection, form.
5 A The specification is it's the rearward
6 portion of the frame so it could be anywhere from
7 2106 to 2104, that location, the rearward portion.
8 If it were around 2106, it would not be obstructed
9 by the ear. 2104, potentially obstructed by the
10 ear.
11 Q My question was more specific.
12 Would a POSITA have considered the window
13 or opening 2104 at its location shown in Figure 21
14 to be configured to be behind the ear of the
15 wearer?
16 MS. STONE: Objection, form.
17 A Again, rearward portion of the frame,
18 temple frame, could be anywhere along that section
19 so the -- the figure is -- is not -- if 2104 is
20 the location of the sensor, I think a POSITA would
21 recognize that it is not an ideal place and would
22 move it forward.

1 So even though it's indicated in that
2 location, a POSITA would have said that doesn't
3 make any sense.
4 Q Is the location of the window or opening
5 2104 as it's shown in Figure 21 configured to be
6 behind the ear of the wearer?
7 MS. STONE: Objection, form.
8 A Again, as a POSITA, I would recognize
9 that's nonfunctional, so I consider that a mistake
10 in the graphic of the -- of the patent.
11 Q I'm hoping you can answer my question
12 though. I understand your position on a possible
13 mistake here.
14 But is the location of the window or
15 opening 2104 as it's shown in Figure 21 configured
16 to be behind the ear of the wearer?
17 MS. STONE: Objection, form.
18 A 2104 is -- is a nonfunctional location for
19 the sensor so it's a mistake as -- as indicated in
20 the drawing.
21 Q I appreciate your position that it's a
22 mistake, but I'm hoping to have an answer to my

1 question.
2 Is the location of the opening 2104 as
3 it's shown in Figure 21 configured to be behind
4 the ear of the wearer?
5 MS. STONE: Objection, form.
6 A It's my opinion that a POSITA would look
7 at that graphic and understand that it is a
8 nonfunctional location and, therefore, a mistake
9 in the graphic Figure 21.
10 Q Are you refusing to answer my question?
11 A No. I'm answering your question that as a
12 POSITA would interpret the claim language of the
13 specification language and the graphic, a POSITA
14 would understand that is not an option for a
15 functional UV sensor.
16 Q I understand your position that this is
17 potentially a mistake or a nonfunctional position
18 in your opinion, but I'm hoping you can answer my
19 question.
20 Is the location of the opening 2104 as
21 it's shown in Figure 21 configured to be behind
22 the ear of the wearer?

1 MS. STONE: Objection, form.
2 A It's difficult to say without a depiction
3 of the ear. And I -- I couldn't determine from
4 this graphic if it is behind the ear or
5 potentially in front of the ear, so I can't say
6 for sure that it's obstructed by the ear.
7 Q You said "obstructed by the ear." My
8 question was: Is it configured to be behind the
9 ear of the wearer?
10 MS. STONE: Objection, form.
11 A Again, without a depiction of it with the
12 ear in context, I can't say. Could be well behind
13 the ear, depending on the length of the temple
14 frame. Behind, I mean exposed at the back of the
15 head.
16 Q Let's next turn to Exhibit 1001.
17 MR. PETERSON: Could we please mark
18 Exhibit 1001 for identification?
19 REMOTE TECHNICIAN: Sure. Please stand
20 by.
21 Q Do you recognize this exhibit, Dr. Oliver?
22 A Can you scroll up a little bit, up to the

1 top? Yes. Yeah, Blum.
2 Q So what -- what is this exhibit?
3 MS. STONE: Counsel, just want to make
4 sure. This is Exhibit 1001 from a different
5 proceeding.
6 THE WITNESS: Yeah. This is not --
7 MR. PETERSON: Oh, is it? I'm so sorry.
8 Maybe actually, the tech -- we want the -- the
9 Exhibit 1001 from the 01030 IPR.
10 THE WITNESS: Blum '741, is that what
11 you're after?
12 MR. PETERSON: We want the '483 patent.
13 THE WITNESS: Okay.
14 MR. PETERSON: That was our afternoon
15 exhibits. I think they might have pulled from
16 that deck.
17 THE WITNESS: Okay.
18 REMOTE TECHNICIAN: Let me check.
19 MR. PETERSON: Unless I sent them the
20 wrong exhibits in which case I need to correct
21 that.
22 REMOTE TECHNICIAN: Yeah. Because the

1 only exhibit I have with that number is the one I
2 uploaded. What was the number of the -- the Bates
3 number?
4 MR. PETERSON: I don't know that it has a
5 Bates number, but it would be Exhibit 1001 for the
6 IPR2024-01030.
7 REMOTE TECHNICIAN: 01030. That's what
8 it's labeled, the document I opened. Let me see
9 if I have --
10 MR. PETERSON: Yeah. Let me double-check.
11 REMOTE TECHNICIAN: No. I have it. Let
12 me correct that.
13 MR. PETERSON: That still doesn't look
14 like Exhibit 1001.
15 REMOTE TECHNICIAN: Let me look at the
16 repository once again.
17 MR. PETERSON: Yeah. I'll -- I can pull
18 it up myself, too, and see if I --
19 REMOTE TECHNICIAN: If you would like to
20 drop it in the chat for me.
21 MR. PETERSON: Yeah. I'll start working
22 on that while you're double-checking also.

1 REMOTE TECHNICIAN: What was the patent
2 number? Was it '355?
3 MR. PETERSON: I just added it to our
4 chat. Hopefully that works.
5 REMOTE TECHNICIAN: Okay. Fantastic. I'm
6 downloading now.
7 MR. PETERSON: There we go.
8 (Exhibit 1001 marked for identification.)
9 BY MR. PETERSON:
10 Q Do you recognize this exhibit, Dr. Oliver?
11 A Yes.
12 Q All right. What is it?
13 A It's Kokonaski '483.
14 Q Is this the '483 patent at issue in this
15 IPR proceeding?
16 A Yes.
17 Q All right. And the '483 patent that you
18 addressed extensively in your declaration?
19 A Correct.
20 Q All right. Can we please turn to the last
21 page of Exhibit 1001?
22 Now, that's a great spot. So claim 19,

1 it's under column 12, I'd like to discuss the last
2 clause of this claim.
3 A Okay.
4 Q The clause reads, "Wherein the module is
5 disposed at least partially on a portion of the
6 frame configured to be behind the ear of a wearer
7 of the eyewear."
8 Is that correct?
9 A Right. That's what it says. Yeah.
10 Q And I know there's a typographical error
11 that we've all flagged and we're treating the "he"
12 misstatement as "be."
13 So this limitation requires that the
14 module be disposed at least partially on a portion
15 of the frame configured to be behind the ear of
16 the wearer of an eyewear.
17 Given this requirement, how much of the
18 module must be on the portion of the frame that's
19 configured to be behind the ear of the wearer?
20 A Let me look at my declaration here.
21 It's an independent claim that the module
22 has any two switch, detector, processor, power

1 source, drive. So at least two of those elements
2 need to be in the module. The others can be
3 elsewhere apparently. So that was your question,
4 is what -- how much of it has to be behind the
5 ear.
6 Q You just said the -- the others can be
7 elsewhere. What did you mean by that?
8 A It only requires two to be in the module,
9 the moisture-resistant module, according to the
10 clause above. And the moisture-resistant -- the
11 module is placed behind the ear. So clearly, you
12 could put all of them in or just two.
13 Q So would the two components that comprise
14 the module be required to be disposed on a portion
15 of the frame configured to be behind the ear of
16 the wearer?
17 A That's how I read it.
18 Q So claim 19 does not encompass a situation
19 where one of the components is disposed on a
20 portion of the frame configured to be behind the
21 ear of the wearer when another one of them isn't,
22 one of -- another one of the components of the

1 module isn't?
2 A It requires that any two of those listed
3 above are in the module and the module -- so it
4 could be two to all or any of those would be
5 mounted behind the ear. It's pretty clear.
6 Q Can we next turn back to your declaration?
7 That's Exhibit 2019.
8 A Okay.
9 Q If we can turn to paragraph 33, please.
10 In this paragraph you discuss a flex circuit 1010.
11 Do you see that?
12 A Let me read the paragraph.
13 Q It's near the end of the page.
14 A Okay. Yes, I see.
15 Q What is a flex circuit?
16 A It's a device to connect electrical
17 components that enables flexure.
18 Q Would a POSITA have been familiar with
19 flex circuits prior to 2006?
20 A Generally, yes.
21 Q Were flex circuits commonly used in the
22 electronic arts prior to 2006?

1 A I don't know about commonly, but they were
2 understood as a viable option.
3 Q Were you a professor prior to 2006?
4 A Yes.
5 Q What were some of the courses you taught
6 prior to 2006?
7 A Prior to 2006? I taught system modeling
8 and basically dynamics. I taught mechanical
9 design. I taught a computer graphics course.
10 What else did I teach? It's all in my CV so you
11 can look at that.
12 Q Did you ever teach your students about
13 flex circuits prior to 2006?
14 A I can't remember. Potentially.
15 Q What would the context have been if you
16 had taught them about flex circuits prior to 2006?
17 A The context would be a mechanical
18 design-type course that is integrating
19 electronics.
20 Q What would you have taught them about flex
21 circuits in that course?
22 A Again, I don't remember doing it, but had

1 I done it, it would have been as an option to
2 provide electrical connection with -- that enables
3 flexure.
4 Q Could we next turn back to Exhibit 1001?
5 Exhibit 1001 is the '483 patent which is
6 the patent at issue in this IPR; is that correct?
7 A That's correct.
8 Q Could we turn to the first page of
9 Exhibit 1001, please?
10 If a POSITA were shown just the figures of
11 the '483 patent, would the POSITA have known how
12 to manufacture the structure shown in the figures?
13 A I need to look at the figures.
14 Q Could we do that and scroll through the
15 figures then?
16 A You can probably stop. I'd say the answer
17 to that question is depending on the role that
18 the -- someone has in an organization. So
19 generally, design engineers and manufacturing and
20 process engineers. They obviously work together,
21 but a design engineer wouldn't necessarily know
22 the exact processes to create what's depicted in

1 these figures.
2 Q If a POSITA were shown just the figures of
3 the '483 patent, would the POSITA have known how
4 to manufacture the structure shown in the figures?
5 MS. STONE: Objection, form.
6 A Again, it depends on that person's role.
7 If it's a new hire in design, probably not. If
8 it's an experienced designer, they would have had
9 some intersection with the manufacturing and
10 process engineers and would gain some knowledge,
11 but it's a -- generally not obvious to a design
12 engineer.
13 Q I'm specifically curious about the opinion
14 of a POSITA.
15 So if a POSITA were shown just the figures
16 of the '483 patent, would the POSITA have known
17 how to manufacture the structures shown in the
18 figures?
19 MS. STONE: Objection, form.
20 A Again, it depends on the POSITA's
21 background. So a manufacturing engineer might
22 have a concept. You wouldn't know -- looking at

1 the photos you wouldn't know the materials -- just
2 looking at the photos, you wouldn't know what
3 their materials are, what's required in putting
4 them together. So the photos are not enough to
5 know how to manufacture. So in general, a POSITA
6 would not know how to manufacture this with just
7 the photos, the graphics.
8 Q Is it your opinion that some POSITAs would
9 know how to manufacture the structures from
10 looking at the figures while other POSITAs would
11 not have known how to manufacture the structures
12 from looking at these figures?
13 MS. STONE: Objection, form.
14 A I'd say no one could know how to
15 manufacture from just a graphic. You need to know
16 the materials. You need to know each of those
17 material decisions require a specific fabrication
18 and manufacturing process. Then you have assembly
19 issues. So you know, photographs of components or
20 even assemblies is not enough to know how to
21 manufacture something.
22 Q I believe you said earlier that a POSITA

1 would have a degree in engineering and two years
2 of work experience.
3 Is that education and work experience
4 sufficient to enable a POSITA to have the
5 knowledge that would be needed to fill in those
6 gaps you referred to in these figures?
7 MS. STONE: Objection, form.
8 A There's not enough information in the
9 figures. If I'm just shown the figures, I don't
10 know what 306 is or 309 or 313. You know, is it a
11 through-hole or is it a blind hole, is it -- you
12 know, there's just not enough information there to
13 know how to manufacture that device. So no, no
14 one would just looking at the photos, the
15 graphics.
16 Q Let's next turn to column 4 line 48. It
17 says the word "definitions" there.
18 If you could scroll down just a bit, a
19 little bit further.
20 A Yeah.
21 Q There we go.
22 A Yeah.

1 Q Here in column 4 line 48 of the '483
2 patent, it says "definitions."
3 A Yes.
4 Q Is it your understanding that under this
5 term "definitions," the '483 patent lists a
6 handful of different definitions?
7 A It's my -- what's the question?
8 Q Is it your understanding that this section
9 of the '483 patent lists a handful of different
10 definitions of terms used in the '483 patent?
11 A Yes. That's my understanding.
12 Q Did you apply these definitions in your
13 analysis of the '483 patent specifications and
14 claims?
15 A I attempted to.
16 Q Let's next turn to column 11 line 18.
17 This very last paragraph about halfway through
18 paragraph it says, "Further modifications of the
19 present invention will occur to persons skilled in
20 the art. All such modifications are deemed to be
21 within the scope and spirit of the present
22 invention as defined by the appended claims."

1 Do you see that?
2 A I do.
3 Q When the '483 patent says those
4 statements, what does it mean that all such
5 modifications are deemed to be within the scope
6 and spirit of the present invention as defined by
7 the appended claims?
8 MS. STONE: Objection, form.
9 A My understanding is the claims are -- the
10 very specific enumeration of the -- the unique
11 contributions, so modifications to the
12 embodiments, and there's, whatever, eight or so
13 embodiments described, they are basically limited
14 by the -- by the claims. So any modification that
15 intersects with a specific claim would be in
16 violation of the patent.
17 Q When this statement refers to further
18 modifications of the present invention, does
19 further modifications of the present invention
20 encompass modifications that are not disclosed in
21 the '483 patent?
22 MS. STONE: Objection, form.

1 A Yeah. Can you repeat that? That's
2 confusing.
3 Q Column 11, the last paragraph in the
4 specification talks about "further modifications
5 of the present invention will occur to persons
6 skilled in the art."
7 A Yeah.
8 Q When this statement refers to further
9 modifications of the present invention, does this
10 phrase "further modifications of the present
11 invention" encompass modifications that are not
12 disclosed in the '483 patent?
13 MS. STONE: Objection, form.
14 A I would think further modifications are
15 alternative embodiments that are covered by the
16 claims. So they give eight embodiments in the
17 patent description, and basically this says that
18 the -- there could be other embodiments that are
19 possible by someone skilled in the art that would
20 fit within the claims as enumerated below.
21 Q Does the phrase "further modifications of
22 the present invention" encompass only

1 modifications that are disclosed in the '483
2 patent?
3 MS. STONE: Objection, form.
4 A There are -- it's essentially saying
5 there's potential to enumerate any number of
6 embodiments. They suggest eight. Anyone skilled
7 in the art could rearrange things in different
8 ways. They have different -- they enumerated
9 eight of them. So they're anticipating that
10 others could enumerate other embodiments. And
11 they could and most likely would be limited by the
12 claims in '483.
13 Q I'm specifically curious if this phrase
14 "further modifications to the present invention"
15 refers to modifications that are disclosed in the
16 '483 patent or if it also encompasses
17 modifications that are not disclosed in the '483
18 patent.
19 Could you please clarify that?
20 MS. STONE: Objection, form.
21 A Yeah. I mean, I'm not a patent attorney
22 so I don't quite know where you're going with

1 this.
2 Seems very clear to me that the claims are
3 the bounds of what has been invented. They're
4 anticipating that a person skilled in the art
5 could generate embodiments that would be contained
6 within the claim language.
7 So it's -- I mean, I don't -- I guess I'm
8 not answering -- understanding your question, so
9 I'm trying. Seems very clear to me.
10 Q Would one example of a further
11 modification of the present invention include
12 incorporating only one of the components within
13 the sealed module of claim 1?
14 MS. STONE: Objection, form.
15 A Are you referring to claim 19 again?
16 Q Sorry, claim 1. We could refer to claim
17 19 if you'd prefer instead.
18 A No, no. I'm -- can we scroll down to
19 claim 1.
20 Q Just a little bit so we can leave this
21 last paragraph on the screen as well. Perfect.
22 A Okay.

1 Q I can repeat my question if that would be
2 helpful.
3 A That would be.
4 Q Would one example of a further
5 modification of the present invention include
6 incorporating only one of the listed components in
7 claim 1 within the sealed module, rather than two?
8 MS. STONE: Objection, form.
9 A I don't know. I'm not -- you know, I'm
10 not a patent attorney. I'm not the technical
11 source so I don't know what that would mean if
12 they put a detector in a module and then the frame
13 is, you know, sealed in the frame. Let's see,
14 more sealed -- so you put a sealed
15 moisture-resistant module where it comprises
16 within the seal any two -- so I guess I just don't
17 know the answer, if that's -- if that's covered by
18 Claim 1.
19 Q I think the question I'm getting to
20 regarding the very last sentence is: Does this
21 last sentence suggest to a POSITA that the claim 1
22 language could be modified, for example, to

1 include only one of the items rather than two --
2 MS. STONE: Objection, form.
3 Q -- within the sealed moisture-resistant
4 module?
5 A I'd say a POSITA --
6 MS. STONE: Sorry, apologies. I cut off
7 counsel there at first, but objection, form.
8 MR. PETERSON: I left a pause there. It
9 was mine. I can restate the sentence or the
10 question and then give you a chance to object and
11 we can start over.
12 MS. STONE: There we go.
13 A Go ahead and repeat it.
14 Q Does the last sentence of the
15 specification of the '483 patent suggest to a
16 POSITA that the language of claim 1 requiring any
17 of two components be included in the module, does
18 the last sentence of the specification suggest
19 that only one of the items need be included in the
20 module rather than two?
21 MS. STONE: Objection, form.
22 A A POSITA like me would not understand

1 the -- the patent law regarding that distinction.
2 Q So does claim 1 cover a sealed
3 moisture-resistant module that comprises any two
4 of the listed items after the colon in claim 1?
5 A That's what it says.
6 Q So does claim 1 cover a sealed
7 moisture-resistant module that comprises only one
8 of the listed components after the colon?
9 A No. It says two.
10 Q So the last sentence of the specification
11 wouldn't change your understanding of this claim
12 language of the claim 1?
13 A Again, I don't know patent law so I don't
14 know if it's sufficient or not, if it's covered or
15 not.
16 MR. PETERSON: That's all the questions we
17 have for this deposition.
18 MS. STONE: All right. Is it okay if we
19 take, let's say, a ten-minute break real quick and
20 I'll let you know if we have any redirect?
21 MR. PETERSON: Sure. And I don't mean to
22 suggest we don't reserve our right to respond to

1 the redirect, but we're just --
2 MS. STONE: Of course.
3 MR. PETERSON: -- finished with this
4 portion. You said ten-minute break?
5 MS. STONE: Just because of the confusing
6 layout we have, just to confirm I understand
7 correctly, so you're done with the '483 deposition
8 unless you have follow-up on redirect?
9 MR. PETERSON: Correct.
10 MS. STONE: Okay.
11 MR. PETERSON: So we'll pass to your team
12 for questions --
13 MS. STONE: Yeah. Let's reconvene --
14 MR. PETERSON: -- if you would like to ask
15 any.
16 MS. STONE: Got it. Let's reconvene at --
17 sorry, I'm on Mountain Time, at 10:15 Pacific
18 Time.
19 MR. PETERSON: So nine minutes from now.
20 (Whereupon a break was had.)
21 MS. STONE: And I have no further
22 questions for Dr. Oliver.

1 THE REPORTER: I have standing orders,
2 Mr. Peterson, but I don't believe I have orders
3 for you, Ms. Stone.
4 MS. STONE: Got it. Let's just do
5 standard transcript time frame.
6 THE REPORTER: Would you like a rough?
7 MS. STONE: Yes, please.
8 (Whereupon the proceedings were concluded at
9 12:16 p.m. CDT)
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1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC
2 I, Karisa Ekenseair, Certified Reporter and
3 Notary Public within and for the State of Arkansas
4 do hereby certify: That JAMES OLIVER, PHD,
5 the witness whose deposition is hereinbefore set
6 forth, was duly sworn by me before the
7 commencement of such deposition and that such
8 deposition was taken before me and is a true
9 record of the testimony given by such witness.
10 I further certify that the adverse party,
11 Patent Owner was represented by counsel at
12 the deposition.
13 I further certify that the deposition of
14 JAMES OLIVER, PHD, occurred virtually on
15 June 11, 2025, commencing at 10:03 A.M. CDT to
16 12:16 p.m. CDT.
17 I further certify the inspection, reading and
18 signing of said deposition was waived.
19 I further certify that I am not related to any
20 of the parties to this action by blood
21 or marriage, I am not employed by or an attorney
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1 am in no way interested, financially or otherwise,
2 in the outcome of this matter.
3
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5 and affixed my seal this 16th day of June, 2025.
6 My commission expires: 6-18-2028
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10 Notary Public in and for
11 Pulaski County, Arkansas
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