

UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	Investigation No.
CERTAIN SMART WEARABLE DEVICES,	)	337-TA-1398
SYSTEMS, AND COMPONENTS THEREOF	)	

Pages: 883 through 1138
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1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 Washington, D.C.
3 BEFORE THE HONORABLE DORIS JOHNSON HINES
4 Administrative Law Judge

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6 In the Matter of:) Investigation No.
7 CERTAIN SMART WEARABLE DEVICES,) 337-TA-1398
8 SYSTEMS, AND COMPONENTS THEREOF)

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12 International Trade Commission
13 500 E Street, S.W.
14 Washington, D.C.

15
16 Monday, December 16, 2024

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18 EVIDENTIARY HEARING - VOLUME IV

19
20 The Hearing commenced in Courtroom A, pursuant to the
21 notice of the Judge, at 9:00 a.m. Eastern.

22
23 Reported by: Karen Brynteson, FAPR, RMR, CRR

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

2 (9:01 a.m.)

3 JUDGE JOHNSON HINES: Good morning, everyone.
4 Please be seated.

5 All right. Before we get started, I have a
6 couple things I wanted to raise.

7 I got an e-mail over the weekend about testing
8 equipment for remote testimony. And we'll do that at the
9 lunch break. One question I had, I received the list of the
10 remaining exhibits and time. I didn't see that the remote
11 witness was listed on that, but I'm assuming that means you
12 still want to go forward with that.

13 MR. MCCRUM: My apologies, Your Honor. If that's
14 the case, that would certainly have been an oversight. We
15 are still planning to have Dr. Min Wang testify remotely --

16 JUDGE JOHNSON HINES: Okay.

17 MR. MCCRUM: -- Tuesday morning.

18 JUDGE JOHNSON HINES: All right.

19 MR. MCCRUM: Oh, that's -- yeah, that's why it
20 wasn't on the list, because it's Tuesday, Your Honor, but
21 yes.

22 JUDGE JOHNSON HINES: Okay. I thought you
23 included everyone for the remainder of the hearing, but
24 maybe I got that wrong.

25 MR. MCCRUM: Yeah.

1 JUDGE JOHNSON HINES: Anyway, so we'll do the --
2 the test will go over lunch today so you all can participate
3 in that. Anyone who wants to participate can participate in
4 that.

5 For the witnesses remaining and time remaining,
6 given how it has been listed out, I'm wondering if we can
7 end early? I would like the parties to consider that
8 because it seems like a real possibility. I understand, you
9 know, time fills the vacuum, but if we can end early, that
10 would be much appreciated.

11 So the parties can consider that. I do not
12 intend by saying that to suggest that the parties shouldn't
13 have the time that they need to put on their case. I'm just
14 looking at the realities of the time you all have estimated
15 for witnesses moving forward, and that seemed like a real
16 possibility. So I just want to acknowledge that.

17 For joint exhibits, I received the list. I
18 understand there are no objections. And so those will be
19 admitted.

20 (Exhibits, as submitted by counsel and reflected
21 in the attached index, were received into evidence.)

22 JUDGE JOHNSON HINES: And if you can provide
23 Karen with a copy of the list, those can get admitted into
24 evidence.

25 That's all I had on my list. Is there anything

1 else we should discuss?

2 MR. MCCRUM: Your Honor, one minor housekeeping
3 issue on the exhibits. I think RX-325 was inadvertently
4 admitted. All parties agree on that. That's the deposition
5 transcript of Dr. Sarrafzadeh that was in the binder, just
6 in case we needed it for impeachment.

7 JUDGE JOHNSON HINES: All right.

8 MR. MCCRUM: And it did get moved in. So I don't
9 know what the proper procedure is to remove that or if we
10 need to. No one will be citing to it --

11 JUDGE JOHNSON HINES: Right.

12 MR. MCCRUM: -- but any guidance that Your Honor
13 can provide.

14 JUDGE JOHNSON HINES: Sure. Well, I guess I can
15 say on the record that RX-325 was inadvertently admitted
16 into evidence and will not be admitted into evidence.

17 MR. MCCRUM: Perfect. I think that probably does
18 it, Your Honor, thank you.

19 JUDGE JOHNSON HINES: All right.

20 Yes.

21 MR. ANDERSON: Yes, Your Honor. Tan Anderson for
22 Oura. There is an issue that's not on the agenda that we
23 feel compelled to raise with the Court. It's a little
24 unexpected. We found out an alteration that was made to
25 Ultrahuman's evidence, and we wanted to raise it with the

1 Court.

2 So as part of Mr. Kumar's testimony -- he was the
3 corporate representative for Ultrahuman -- on Wednesday
4 night we received videos, physical exhibits were made
5 available, and a slide deck was made available. And then we
6 received -- we objected to it because it talked about a
7 Texas facility that hadn't been disclosed properly and
8 supplemented in discovery. I believe the Court is aware of
9 this from Motion in Limine Number 3.

10 Then we got a second version of the video that
11 same night and then a third version of the video Thursday
12 night. And we found the video to be strange, and we started
13 digging in deeper. And I'd like to show the Court the video
14 so the Court understands where we're coming from.

15 So, Mr. Huggy, could you please play the video we
16 received.

17 JUDGE JOHNSON HINES: So before you do that, have
18 you discussed this, the parties?

19 MR. ANDERSON: Yes. Yes, Your Honor.

20 JUDGE JOHNSON HINES: This is not coming as a
21 surprise?

22 MR. ANDERSON: This is not a surprise. We --
23 after we investigated the issue, we sent a letter to
24 Ultrahuman's counsel on Saturday. We have met and conferred
25 on Sunday. We received a response on Sunday. We spoke this

1 morning. They know that we're raising this.

2 JUDGE JOHNSON HINES: All right. Okay.

3 MR. ANDERSON: Could you please play, Mr. Huggy,
4 the video that we received Wednesday night, the first video.
5 (Video played.)

6 MR. ANDERSON: So, during the meet and confer
7 process, we objected to this video, even though it was going
8 to be submitted as a demonstrative, and some corresponding
9 slides taken from this video, due to the fact that it
10 presented information about a factory that seemed to
11 supplement evidence that was presented during Mr. Kumar's
12 deposition, but that hadn't been properly supplemented
13 during discovery.

14 The next day, we got a different video, a
15 modified version of it.

16 Could you please, Mr. Huggy, play video number 3
17 that we got Thursday evening.

18 (Video played.)

19 MR. ANDERSON: So in this video, Your Honor, they
20 removed the references to Texas and made some smaller
21 changes as well.

22 We continued to object because we thought this
23 was still presenting new discovery that hadn't been
24 disclosed during the fact discovery period or that hadn't
25 been supplemented after the fact discovery period. But

1 looking at the videos, they just really seem off. Something
2 was really odd about them. We couldn't figure out what it
3 was exactly. I have a short presentation here, Your Honor,
4 that I'd like to show about what we did to figure things
5 out.

6 So this is a slide here from the first video. We
7 noticed that there's this clear reference to Ultrafactory in
8 Plano, Texas and Ultrahuman. During the meet and confer
9 process, we asked, you know, where is this factory? We were
10 told, well, I guess you're going to have to ask Mr. Kumar
11 during his direct testimony. And this is another still from
12 it showing that there's a big prominent sign on the side of
13 the building.

14 With the different versions of the videos that we
15 got, we were able to look at some clues from zooming in, and
16 we found out that the building is actually located in Plano,
17 Texas, and it belongs to a company called SVTronics, which
18 is a contract manufacturer that makes electronic components
19 in Texas. We then went to the Google street view and saw
20 that there's no sign on the side of the building.

21 Now, this made us concerned, but we weren't sure
22 because the street view, as you can see here, Your Honor, is
23 dated from April of 2024. So we thought maybe the sign has
24 gone up between April and now.

25 So we actually hired a private investigator --

1 he's in the courtroom right now, Mr. Wofford -- to go Friday
2 to look at this to find out what the reality is. And here
3 are two pictures that he took on Thursday, Your Honor. He
4 is a licensed private investigator. He went personally to
5 the location of the Ultrafactory and took pictures, went,
6 drove around, and saw no markings for Ultrahuman.

7 So this made us concerned because, as you can see
8 here on the left, Your Honor, in all versions of the
9 Ultrahuman video that we got, it has got this Ultrahuman
10 logo with these three lines and then the big prominent
11 Ultrahuman name. But the reality is, based on what our
12 private investigator determined, is that there is no such
13 signage.

14 That wasn't the only alteration. This is a still
15 from the video as well. As you can see, there's a big
16 banner here with the Ultrahuman logo. We discovered, based
17 on our comparisons of the different versions of the videos
18 that they sent, that the Ultrahuman logo actually isn't
19 there. The Ultrahuman logo is a modification of what the
20 reality is. There's a reference to an SMT line and then
21 some illegible text right there.

22 We found other instances of alterations. We
23 found this sign right here (indicating) was also modified to
24 wipe out whatever it said. I can't fully read what it says
25 there.

1 And then on slide 10, as the Court can see here,
2 there was a zoom-in during the video of the manufacturing
3 process, presumably connecting the PCB to the battery. And
4 that also was altered. If we look through the Ultrahuman
5 versions of the videos that they sent us, that one had
6 Ultrahuman zoomed in, written on the battery, but in
7 reality, there is no such Ultrahuman writing on the battery.

8 And here's the slide that we got Wednesday night,
9 Your Honor. This was part of the Mr. Kumar slide deck at
10 RDX-4, slide 18. They picked six pictures to present. And
11 we objected mostly because of the mention of Texas. And as
12 you can see here, four of the six pictures that were
13 selected had modifications as indicated by the red boxes.

14 Thursday night, we got a different version of the
15 video. I'm going to go back and forth here. They changed
16 the Ultrahuman factory in Plano, Texas text to say
17 additional Ultrahuman factory. And then they swapped out a
18 picture that said now in Plano, Texas with just another
19 picture depicting the Ultrahuman factory, supposedly with
20 the logo on the side. Again, this version right here that
21 they intend to use has four pictures with alterations in
22 them.

23 They also intended to use, Your Honor, at the
24 hearing, and we objected to this as well, a physical
25 demonstrative, is what they called it, but it was a box that

1 had an Ultrahuman ring that was supposedly manufactured in
2 the U.S. with a prominent U.S. flag and a made in U.S.A.
3 reference.

4 So we were very concerned about this. We did not
5 want to raise it with the Court until we knew what was
6 happening, why is why we hired the private investigator and
7 did this analysis. Now, this matters, Your Honor, because
8 they talked about the Ultrafactory being in Texas in
9 submissions sent to the Court. It matters also just because
10 the videos were altered. But in their prehearing brief, if
11 you could pull that up, Mr. Huggy, at page 14, they said in
12 a signed representation to the Court that "Ultrahuman also
13 has" -- present tense -- "manufacturing facilities in Texas,
14 which will soon manufacture all of its ring products in the
15 U.S. market."

16 They also submitted to the Court in Motion in
17 Limine Number 3 -- if we could pull that up, please. On
18 page 5, they represented that Oura recognizes that
19 Ultrahuman will stop importing the accused products -- the
20 accused device after the Texas facility becomes operational
21 in 2025. And then there was some other language on page 7
22 and 8 of the Ultrahuman motion in limine that we found
23 troubling, accusations that Oura had baselessly asserted
24 that Ultrahuman had provided false discovery and then, at
25 the bottom, accusing Oura of fudging evidence.

1 We had discussions, Your Honor, about this Friday
2 morning before we had ascertained all these facts.
3 Eventually, Ultrahuman decided to drop using these slides
4 and these videos, but they came and right here were speaking
5 with us, Your Honor, about these videos and the slides, and
6 they -- we -- they sort of were wondering why we're accusing
7 or why we're suspicious of these videos. They said it's not
8 going to be evidence. It's just going to be a
9 demonstrative. It's a commercial.

10 They told us multiple times it's Ultrahuman's,
11 it's Ultrahuman's, it's Ultrahuman's, referring to that
12 factory belonging to them. They said, "It has been
13 operational for months." And we were also told yesterday
14 and this morning that this whole issue is overblown, that
15 we're making a tempest in a tea cup, you know, that this is
16 a nothing burger, it doesn't matter, and that we shouldn't
17 be dealing with this right now.

18 We wanted to raise this to the Court. The
19 relevant rules would be ITC Rule 210.3 and 210.25. The
20 Court also has inherent authority, as recognized by federal
21 courts, to work with this. And we don't have a specific ask
22 right now, Your Honor. We've conferred with Staff, and the
23 recommendation from Staff is that once this issue is
24 presented to the Court, that we meet and confer on a
25 briefing schedule to present this more formally. But we

1 didn't want to skip the opportunity for the Court to see it
2 contemporaneously and to see the videos and to fully
3 understand it, which can't really be conveyed on paper.

4 JUDGE JOHNSON HINES: All right. I have a few
5 questions.

6 MR. ANDERSON: Yes, Your Honor.

7 JUDGE JOHNSON HINES: You say that you don't have
8 any specific ask, and you also say that the parties will
9 contemplate a briefing schedule. If there's no specific
10 ask, what would you be briefing?

11 MR. ANDERSON: We would be briefing the specific
12 ask, I guess, Your Honor. We believe that sanctions are
13 appropriate, but we haven't had time to fully research the
14 -- the proper remedy here. We had discussions with Staff
15 about statutory, regulatory authority versus inherent
16 authority. There are cases and decisions at the ITC that
17 talk about inherent authority in the context of, you know, a
18 fraud upon the Court and spoliation of evidence.

19 We believe that sanctions are appropriate here.
20 We just have not yet had time to fully evaluate what the
21 appropriate sanctions are.

22 JUDGE JOHNSON HINES: Okay. So the word
23 "spoliation" got my attention. What is the -- what are the
24 facts supporting an allegation of spoliation?

25 MR. ANDERSON: Your Honor, I clearly didn't

1 convey my intention correctly.

2 JUDGE JOHNSON HINES: Okay.

3 MR. ANDERSON: In the context of the Court's
4 inherent authority, the ITC's inherent authority, federal
5 courts have talked about inherent authority in the context
6 of fraud upon the Court and in the context of spoliation.

7 JUDGE JOHNSON HINES: Okay. All right.

8 MR. ANDERSON: We don't believe this is
9 spoliation.

10 JUDGE JOHNSON HINES: Okay. All right.

11 MR. ANDERSON: We believe this is alteration of
12 evidence.

13 JUDGE JOHNSON HINES: Okay. Do you have anything
14 else to add? I don't have any more questions for you.

15 MR. ANDERSON: No, Your Honor.

16 JUDGE JOHNSON HINES: All right. Thank you.
17 Good morning, Mr. Moehringer.

18 MR. MOEHRINGER: Good morning, Your Honor.

19 We thought this was resolved when we spoke
20 yesterday. We did explain the entire situation. This was
21 not --

22 JUDGE JOHNSON HINES: Well, maybe --

23 MR. MOEHRINGER: I'm sorry.

24 JUDGE JOHNSON HINES: Maybe you can explain the
25 entire situation to me.

1 MR. MOEHRINGER: Sure.

2 JUDGE JOHNSON HINES: Because it does seem a
3 little troubling, what counsel has raised this morning.
4 And, you know, if you want to get to the end, that's fine,
5 but I want to hear what you have to say about it.

6 MR. MOEHRINGER: Yes. This -- we're not arguing
7 about something that came into evidence. This was a
8 pre-production commercial. And as was just mentioned, we
9 identified it as a commercial. And in pre-production
10 commercials, they're going in and making the product -- it
11 to be available to the public.

12 So every change that you see there was made --
13 it's in the ordinary course of business. The version that
14 we received from the client actually was this pre-production
15 commercial. And we actually cut that commercial down. The
16 original commercial had cowboys in it and rockets in it and
17 all things like that. We cut it down to try to just make it
18 deal with, as close as we could, to the raw footage of the
19 facility itself.

20 But what is changed in that video was changed by
21 the Marketing Department at Ultrahuman as part of
22 pre-production to make a commercial. Nothing to do with
23 changing evidence for here, as has been implied there. That
24 was the commercial that we received and the footage we
25 received. It's blocking out the names of our manufacturing

1 partner, SVT, which is someone else's trademark, and we
2 wouldn't put that out to the public, who our manufacturing
3 partner is. And it's blocking out the serial number of our
4 battery, which is also a part number for the battery.

5 So, again, when it's covering that up, no intent
6 to falsify anything or do anything like that. It's just
7 part of the effort to make a commercial that can be played
8 publicly over social media.

9 JUDGE JOHNSON HINES: But it's also putting the
10 name of Ultrahuman on a building.

11 MR. MOEHRINGER: That one, absolutely, putting
12 the name on the building, was an effort -- that's a
13 nondescript building. That is the building where our
14 manufacturing facility is. It's SVTronics, is the name of
15 our manufacturing partner, and that is where our production
16 line is. And so when we're putting a commercial together to
17 show where our building is, that was -- that was the -- that
18 item was graphically put on top of there.

19 We were not actually aware of that when we
20 originally offered it. After it was brought to our
21 attention, we did investigate that. And that is the one
22 change that was made by -- again, to make the commercial
23 more clear that that was where our production line is. And
24 that is where our production line is. And our production
25 line -- I'm sorry -- our production line has been there for

1 months. It has been making prototypes for months. And it's
2 now making tens of rings now that are basically in the QC
3 phase.

4 JUDGE JOHNSON HINES: Does SVD --

5 MR. MOEHRINGER: SVTronics. SVTronics.

6 JUDGE JOHNSON HINES: All right. Does SVTronics
7 have a corporate relationship to Ultrahuman?

8 MR. MOEHRINGER: No. They're our manufacturing
9 partner.

10 JUDGE JOHNSON HINES: All right.

11 MR. MOEHRINGER: We do have a contract with them.

12 JUDGE JOHNSON HINES: Okay.

13 MR. MOEHRINGER: But, again, there were no
14 alterations made by anyone in the videos in order to --
15 other than what's done in the ordinary course of business by
16 the Marketing Department to make a commercial. We did not
17 alter them. The only alterations we made were to try to, as
18 part of the meet and confer process, take references to
19 Texas out.

20 And when that didn't work, when they still
21 objected, we agreed to not put it into evidence. We agreed
22 -- we didn't ask a single question about Texas, the Texas
23 facility, because much like Your Honor decided in MIL 3
24 order, we believe that's an issue for a later date.

25 Even when it came up in the cross, we

1 specifically did not redirect Mr. Kumar on the issue of
2 Texas. We let it be.

3 JUDGE JOHNSON HINES: I mean, what's the
4 significance of taking Texas out?

5 MR. MOEHRINGER: I -- I can't answer why they
6 objected to us taking -- having Texas in there.

7 JUDGE JOHNSON HINES: No, no, no. I'm asking
8 you, why it's important for you to mention, well, we took
9 Texas out. Like, why is taking that reference to Texas
10 important?

11 MR. MOEHRINGER: Oh, that was the only actual
12 alterations we made to the video. Any accusation that we
13 altered the video, we did not --

14 JUDGE JOHNSON HINES: By "we," you mean the
15 lawyers?

16 MR. MOEHRINGER: Yes.

17 JUDGE JOHNSON HINES: Um-hum.

18 MR. MOEHRINGER: The videos that were offered to
19 be shown -- the videos that were offered to be shown are the
20 videos, the commercials, the pre-production commercials we
21 received from the client. In the end, the only alterations
22 that were made by us were efforts to take any reference to
23 Texas out of the videos at the request of Oura's counsel.

24 JUDGE JOHNSON HINES: Counsel, Mr. Anderson made
25 reference to page 14 of the prehearing brief and MIL 3. Do

1 you have a response to the issues that he raised there?

2 MR. MOEHRINGER: I believe they're saying that
3 we're arguing that in there that we're misrepresenting that
4 we have a Texas facility and that the Texas facility has
5 been producing and will produce, and eventually we expect
6 that it will meet production.

7 JUDGE JOHNSON HINES: Okay.

8 MR. MOEHRINGER: Those are all true facts, Your
9 Honor. We offered a tour to Oura's counsel. They can come
10 down and see the facility. They can take the deposition of
11 Mr. Kumar prior to the remedy phase.

12 These are all -- you know, again, as Your Honor
13 stated in the order for MIL 3, we think these are an issue
14 for a later date. Right now, we're only in prototype phase.
15 We're only making approximately 50 rings a day or so in the
16 facility.

17 If we, at the time of any possible limited
18 exclusion order, are actually meeting production, then that
19 would be when -- I think it would be the time to actually
20 have the facts explored at that time. But, again, we did
21 offer that they could come down and see the facility at this
22 time.

23 JUDGE JOHNSON HINES: So do I understand
24 correctly that, but for the objection by Oura to the various
25 versions of what you call the pre-production commercial,

1 that that would have been submitted -- that would have been
2 part of Mr. Kumar's testimony?

3 MR. MOEHRINGER: The video was actually only
4 being offered to introduce our production line. He was not
5 going to testify about Texas. We were not in any way
6 attempting to put in and go against MIL -- the Order 3. We
7 absolutely, again, avoided any questions about the Texas
8 facility at this time.

9 We did not do it on redirect and did not intend
10 to ask any questions about the Texas facility with
11 Mr. Kumar. It was actually just -- there had been a
12 commercial shown, I believe, in the Oura opening, and we
13 were going to do a similar thing to introduce, and as a
14 demonstrative, support for his testimony. It was only
15 coming in as a demonstrative, Your Honor.

16 JUDGE JOHNSON HINES: All right. Thank you.
17 Can I hear from the Staff?

18 MR. WINSTON: Good morning, Your Honor.

19 JUDGE JOHNSON HINES: Good morning.

20 MR. WINSTON: The Staff is of the view that the
21 video did not come into evidence --

22 JUDGE JOHNSON HINES: Yeah.

23 MR. WINSTON: -- and so this is not an issue that
24 needs to be resolved before the evidentiary record is closed
25 and can be resolved through normal motions practice.

1 And the Staff would like to meet and confer with
2 the private parties in order to propose a briefing schedule
3 for Your Honor tomorrow. And if that's agreeable, then we
4 could brief the issue in that manner.

5 JUDGE JOHNSON HINES: All right. So I'll ask you
6 the same question. Briefing on what?

7 MR. WINSTON: Briefing on a motion for sanctions.

8 JUDGE JOHNSON HINES: At this point, does the
9 Staff support a motion for sanctions?

10 MR. WINSTON: Not at this point. The Staff will
11 take a position after reviewing the papers as filed.

12 JUDGE JOHNSON HINES: Okay. All right.

13 Okay. Does any -- Mr. Anderson, do you have
14 anything else to add based on what you've heard?

15 MR. ANDERSON: Just briefly, Your Honor.

16 I'm a little confused still. This is not
17 Ultrahuman's building. Our investigator called the 1-800
18 number listed on the website -- I believe it's a 1-800
19 number -- spoke to someone at SVTronics and asked, you know,
20 who owns the building, who's in there? And the information
21 that the investigator received -- and he's here to testify,
22 Your Honor -- is that this is SVTronics building, it has
23 always been SVTronics building, and it has been so for
24 years.

25 We were not told that this was a commercial, that

1 any changes had been made to this. This is stuff that we
2 discovered on our own.

3 JUDGE JOHNSON HINES: All right. So I will take
4 up the Staff's suggestion, which is for a further meet and
5 confer by the parties to address briefing.

6 Mr. Anderson, if you believe there's additional
7 evidence that needs to be put in on this issue, I will
8 consider it. I appreciate that you have the investigator
9 here now. I don't intend to put him on the stand now for
10 this issue. I have taken what you've said as
11 representations of Oura's view of the facts here. So I
12 don't think I need that.

13 So I will ask the parties to meet and confer on a
14 schedule for briefing and what, in particular, will be
15 briefed and also, Mr. Anderson, for what your specific ask
16 would be by motion. So I'd like you to consider that.

17 I'd like to know what you would be asking for and
18 considering what -- a briefing schedule on that ask. Does
19 that make sense?

20 MR. ANDERSON: Yes, Your Honor.

21 JUDGE JOHNSON HINES: All right. Does anyone
22 else have anything to add on this before we move forward?

23 MR. MOEHRINGER: Your Honor, I only want to add
24 two things. One, we did meet and confer. We were not
25 informed or -- about the private investigator. So that we

1 did not know. Two, the building, we do have a contractual
2 relationship with SVTronics. We have a contract with them.
3 I have that contract here, if you'd like to see that.

4 So it is -- we've never represented it as being
5 our building. It's our production facility. And that is
6 through a relationship with our manufacturing partner, who
7 is SVTronics, and we have the contract showing that.

8 JUDGE JOHNSON HINES: All right. Well, if that
9 particular issue happens to be relevant to whatever ends up
10 getting briefed, so be it.

11 I do want to push back a little bit on your
12 statement that you weren't advised about a private
13 investigator because I'm not sure why you would have to be.
14 Here it appears that Oura did some investigating on its own
15 to determine what its view of the facts are now. And so any
16 suggestion that what Oura said or did with respect to a
17 private investigator, I think, is inappropriate.

18 MR. MOEHRINGER: No, I didn't mean to suggest
19 anything that they had to. I just meant we did meet and
20 confer yesterday. That was just not brought up. I just
21 didn't want it to appear that we had been informed of all of
22 that or that we had that conversation.

23 JUDGE JOHNSON HINES: Well, would something that
24 you said or did have changed had you known that during the
25 meet and confer?

1 MR. MOEHRINGER: No, Your Honor. I was just
2 making sure that the record is clear. That's all.

3 JUDGE JOHNSON HINES: All right. Okay. Is there
4 anything else we should discuss on this point or anything
5 else before we go back to the witness testimony?

6 I see nodding, shakings of heads, so --

7 MS. CAPOLINO: Just one small housekeeping, yeah.

8 JUDGE JOHNSON HINES: Yes, thank you.

9 MS. CAPOLINO: Yes.

10 JUDGE JOHNSON HINES: Yeah.

11 MS. CAPOLINO: We did submit the list of proposed
12 admitted exhibits from Friday's session, and there being no
13 objections to any of those, we would respectfully ask that
14 those be moved into evidence.

15 JUDGE JOHNSON HINES: I thought I had already
16 done that, but if that's not perfectly clear, then yes, they
17 are admitted and provide the court reporter with that list,
18 and those will be admitted exhibits. Thank you.

19 MS. CAPOLINO: Thank you.

20 (Exhibits, as submitted by counsel and reflected
21 in the attached index, were received into evidence.)

22 JUDGE JOHNSON HINES: All right. So, Mr. Breetz.

23 MR. BREETZ: Your Honor, Respondents call Ramon
24 Alarcon back to the stand.

25 JUDGE JOHNSON HINES: All right. Thank you.

1 Whereupon--

2 RAMON ALARCON,

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

5 JUDGE JOHNSON HINES: Good morning, Mr. Alarcon.

6 THE WITNESS: Good morning.

7 MR. BREETZ: And, Your Honor, I have maybe ten
8 minutes of questions and then I'm going to pass the witness
9 to Ultrahuman.

10 JUDGE JOHNSON HINES: All right.

11 DIRECT EXAMINATION

12 BY MR. BREETZ:

13 Q. Good morning, Mr. Alarcon. Welcome back.

14 A. Good morning.

15 Q. Mr. Merisier, can you please go to RDX-1.30,
16 please.

17 Mr. Alarcon, do you recognize Figure 13 on
18 RDX-1.30 to be Figure 13 from the '178 patent?

19 A. Yes, I do.

20 Q. And when the specification is describing Figure
21 13 of the '178 patent, what is the material that's labeled
22 1314?

23 A. That's labeled 1314?

24 Q. Yes.

25 A. It says that -- excuse me. It says that the --

1 it's internal potting 1314.

2 Q. And 1312 is the external housing component?

3 A. Yes. 1312 is the external housing component.

4 Q. And do you see that the internal space 1320 is
5 also in this figure?

6 A. Yes, I do. It's -- and it's highlighted here to
7 define a partially enclosed internal space 1320.

8 Q. And that partially enclosed internal space, 1320,
9 is defined only by the external housing component; is that
10 right?

11 A. What it says -- more specifically, it says the
12 external housing includes flanges 1312b and c that extend
13 toward each other, beyond portions of the internal surface
14 1312a, to define a partially enclosed internal space. So
15 it's these things, the 1312b and c and the internal surface
16 1312a, and the patent says that those elements define a
17 partially enclosed internal space, 1320.

18 Q. Does the patent say that the potting material
19 defines the internal space or does the potting material fill
20 that space?

21 A. The potting material does not -- I mean, let me
22 backtrack. It does not say that the potting material
23 defines that space. And, indeed, we can see that in Figure
24 13, the potting material fully occupies that space.

25 Q. And so is there any hollow space, or do you

1 consider space 1320 to be hollow?

2 A. No, it is not. There is internal potting, and as
3 I just testified, it fully occupies the partially enclosed
4 internal space, 1320, that's described here. So, therefore,
5 there is no hollow space.

6 Q. Okay. For a moment, let's assume -- let's assume
7 that space 1320 is considered a cavity or hollow space,
8 which I understand you do not agree with, and also that
9 potting material 1314 is considered an internal housing
10 component, which I understand you also do not agree with.

11 Are you with me so far?

12 A. I think so.

13 Q. Would the space 1320 be located between the
14 potting material, 1314, and the external housing, 1312?

15 A. If -- just for clarification, and you're -- in
16 your hypothetical, you're referring to the entirety of the
17 internal potting?

18 Q. Correct.

19 A. Is that correct?

20 Q. Yes.

21 A. So the answer to that is no, it would be entirely
22 within the internal potting, which, if I followed your
23 hypothetical, would be the internal housing component.

24 Q. So is there any cavity or hollow space between
25 1314 and 1312?

1 A. No. Once again, between 1314 and 1312, there is
2 no hollow space.

3 Q. And you understand that the claims require that
4 there's a cavity or hollow space between the internal and
5 external housing components?

6 A. Yes. Yes, it's in multiple elements of claim 1.

7 JUDGE JOHNSON HINES: Can I ask you a question?
8 It's your understanding of "between" means that there are no
9 intermediate components or elements?

10 THE WITNESS: In this particular testimony -- so
11 I think there are two answers to that, Your Honor.

12 JUDGE JOHNSON HINES: Okay.

13 THE WITNESS: In the one immediately in front of
14 me, the potting material is -- that's why I asked the
15 clarifying question, am I to consider the entirety of the
16 potting material? Because in Figure 13, I see a printed
17 circuit board, I see a battery, but then I see additional
18 potting material. So it's occupying the entirety.

19 So the fact that there are components there,
20 there's still another layer, if you will, of potting
21 material immediately abutting the outer -- the external
22 housing in that case.

23 JUDGE JOHNSON HINES: Okay. All right. Thank
24 you.

25 BY MR. BREETZ:

1 Q. Mr. Merisier, can you please take us to slide 45.

2 All right. Let's -- to reorient ourselves, we
3 were talking about the printed circuit board disposed
4 between the internal housing component and the external
5 housing component limitations.

6 Do you see that there on slide 45?

7 A. I see that, yes.

8 Q. And do you see that this was Dr. Sarrafzadeh's
9 teardown of the RingConn ring?

10 A. Yes, it is.

11 Q. And he used the word "epoxy ring assembly." What
12 was he referring to there?

13 A. I understand what he was referring to is, once
14 the metal band is removed, that's everything else remaining,
15 which is encapsulated by epoxy. I understand that's what he
16 is referring to.

17 Q. And how does RingConn's ring being encapsulated
18 by epoxy affect your opinion -- sorry, strike that.

19 How does Dr. Sarrafzadeh's teardown affect your
20 opinion as to whether there's a printed circuit board
21 disposed between the internal housing component and the
22 external housing component?

23 A. It confirms the opinion that I've mentioned
24 before. As you can see in this image here, you can see
25 elements that have been scratched off. I can see there is

1 epoxy below there, and I know that there is -- if I would
2 keep going into the page, the PCB is in there as well.

3 So I know that there is epoxy in front, behind,
4 and around, again, surrounding the PCB.

5 Q. Let's turn to slide 46, please.

6 And in this slide, you're discussing the
7 limitation of the cavity formed between the internal housing
8 component and the external housing component. What is your
9 opinion to this limitation as for the RingConn product?

10 A. That it is not present in the RingConn product.

11 Q. And why is that?

12 A. Again, on the image on the left, which is CX-65,
13 these are -- just as a reminder, these are Dr. Sarrafzadeh's
14 annotations. The yellow is the boundary of the cavity that
15 he has identified that traces the components, as well as the
16 battery.

17 And even in this, I see that there is potting
18 material between the PCB and the outer metal ring. And
19 that's confirmed with the photograph on the right.

20 Q. Is there any potting material or epoxy on the
21 inside of the battery contacts?

22 A. And just so I make sure I'm orienting the Court,
23 when we say -- with respect to the battery contacts, they
24 can be seen in the lower right. And the battery contacts,
25 the top surfaces are exposed to air. And then opposite

1 that, there's potting material around it and below the
2 printed circuit board in the region of the battery contacts.

3 Q. Let's turn to slide 48, please.

4 Is it possible for potting material to cover the
5 battery contacts in RingConn's ring?

6 A. No. It would destroy the function of charging.
7 You need the electrical contact in order to charge the
8 product. So at least in that region, the prior
9 identification of the cavity was incorrect. It does not go
10 over the contacts. It could not, because it would not work.

11 And that's what I show here in my slide 47. In
12 the center image, those are the metal charging contacts.
13 And, again, they are open to air. And for reference on the
14 right-hand side is the charger with the corresponding mating
15 pins that charge the ring.

16 Q. Can you turn to slide 50, please, Mr. Merisier.

17 And let's turn to your next non-infringement
18 opinion. What also does claim 1 require?

19 A. It requires that the cavity is between
20 circumferential surfaces.

21 Q. And did the ALJ issue a construction for
22 "circumferential" in this case?

23 A. Yes, and that is plain and ordinary meaning and
24 does not require a closed shape.

25 Q. Turn to slide 51, please.

1 What is the inner surface in RingConn's product?

2 A. So I've identified it here on CX-65. I've
3 highlighted in green, traced it in green. That's the inner
4 surface of the RingConn product.

5 Q. And is this a -- how would you describe this
6 geometry of the inner surface?

7 A. So there's portions that are curved, and we can
8 see at the bottom where the contacts are. I would describe
9 that as flat or planar.

10 Q. Can you go to slide 52, please?

11 JUDGE JOHNSON HINES: Before you do that, can I
12 ask a question?

13 Slide 51 references CX-65. Is there a physical
14 exhibit that corresponds to CX-65?

15 MR. BREETZ: I'm not sure if this specific image
16 is a physical exhibit.

17 JUDGE JOHNSON HINES: Okay.

18 MR. BREETZ: But the RingConn normal, untorn-down
19 product is CPX-2.

20 JUDGE JOHNSON HINES: Thank you.

21 BY MR. BREETZ:

22 Q. Next slide, please.

23 And so does claim 1 require that only a portion
24 of the cavity be between circumferential surfaces?

25 A. No, it does not. It's clear -- for example,

1 starting in 1[c-ii], when it talks about the cavity, it
2 says, "the cavity between the outer circumferential surface
3 and the inner circumferential surface." So it's describing
4 where the cavity is relative to the circumferential
5 surfaces. And it does not say a portion of the cavity. It
6 says, "the cavity between the outer circumferential surface
7 and the inner circumferential surface."

8 When it talks about portions, it's talking about
9 things within portions of that cavity. So, for example, in
10 element 1[c-iii], when it's talking -- when it's referring
11 to the battery, it's saying that the battery extends through
12 a first portion of the cavity and then, following on with
13 that in 1[d-i], that the printed circuit board extends
14 through a second portion of the cavity.

15 Q. Next slide, please.

16 What have Complainants said about the term
17 "circumferential," for instance, in their Patent Office
18 filing?

19 A. Yes. So this is in relationship to a prior art
20 reference. And in this one -- specifically Niwa, the Niwa
21 reference. And it says -- they say that "the unit is not
22 disposed between outer and inner circumferential surfaces of
23 Niwa. Rather, the battery is located between two planar
24 surfaces of the housing protrusion, as shown below in red."
25 And that's referring to the figure where it's highlighted in

1 red around unit 20.

2 So Complainants have said that planar surfaces
3 are not circumferential, and, therefore, in this -- I read
4 this to say that this cannot be the circumferential surface
5 because there's a planar portion to it.

6 Q. Slide 54, please.

7 Now, did Complainants say that only the battery
8 had to be within the circumferential surfaces?

9 A. No. No, and this is from Complainants' expert,
10 Dr. Rosing. And what Dr. Rosing says is the PCB needs to be
11 between circumferential surfaces.

12 So what I've highlighted here, it says, "Niwa
13 does not disclose that the printed circuit board extends
14 through a cavity between the outer circumferential surface
15 of the external housing component and the inner
16 circumferential surface." And what she is pointing to here
17 -- well, and I'm using this in conjunction with the images
18 from Niwa. For example, on the right-hand side, she --
19 Dr. Rosing identifies the flat portion of the housing and
20 then goes on to say, at the bottom of the text here, "but as
21 shown in Figure 22, the first unit 10 is disposed in a
22 region of the ring that has a flat (i.e., not
23 circumferential) protrusion from the inner surface of the
24 ring to contact the finger."

25 So, again, Dr. Rosing is saying that the cavity

1 is not between inner circumferential surfaces because of the
2 existence of a flat.

3 Q. Next slide, please.

4 And so can you summarize your opinion as to
5 whether -- as to this limitation?

6 A. It's that there is no cavity between
7 circumferential surfaces. And for completion, I've
8 highlighted on the left hand of this slide, 55, the
9 left-hand image, again, showing the flat portion. And,
10 again, you can see in this CT scan that the printed circuit
11 board is, indeed, under that flat portion.

12 So, therefore, the PCB and -- well, therefore,
13 the cavity is not between circumferential surfaces.

14 MR. BREETZ: And so the record is clear, Your
15 Honor, I cited to CPX-2. It's actually RPX-2 for the
16 physical.

17 JUDGE JOHNSON HINES: Thank you.

18 BY MR. BREETZ:

19 Q. Let's turn to slide 57, please. Go back to 56,
20 please.

21 And what does the flat portion of RingConn's ring
22 do?

23 A. The flat portion aligns the charging contacts so
24 that they can be charged in the charging unit. So there are
25 four alignments with respect to charging.

1 Q. Next slide, please.

2 And then can you -- what are your opinions for
3 the dependent claims 12 and 12 through 14?

4 A. I think you meant to say claim 2. I might have
5 misheard you.

6 Q. Claim 2. Thank you.

7 A. Yes. So, specifically for claim 2, and 12
8 through 14, so my opinion is that it's not infringed, at
9 least for the same reasons as claim 1, because claim 1 is
10 the independent claim and the other claims are dependent on
11 claim 1.

12 For claim 2, there is no cavity; so, therefore,
13 there cannot be a cavity between first and second portions
14 -- sorry, therefore, there can be no first and second
15 portions of the cavity.

16 And then for claim 12, Dr. Sarrafzadeh only
17 analyzes one size of the RingConn ring product. There
18 are -- to my recollection, there are nine different outer
19 ring sizes and four different batteries. So, by necessity,
20 they all have different arcs. They all have different
21 radius of curvature. So, therefore, there are a number of
22 different permutations and sizes. And he has not done the
23 analysis to show that all of the arcs approximate the arcs
24 -- the corresponding arcs of the housing.

25 Q. Thank you.

1 JUDGE JOHNSON HINES: All right. Thank you.

2 MR. POWELL: Good morning, Your Honor.

3 JUDGE JOHNSON HINES: Good morning.

4 MR. POWELL: This is Mike Powell for Ultrahuman.

5 DIRECT EXAMINATION

6 BY MR. POWELL:

7 Q. Good morning, Mr. Alarcon.

8 A. Good morning.

9 Q. Hope you had a good weekend.

10 A. I did.

11 Q. And we are bringing up binders representing the
12 Ultrahuman evidence.

13 JUDGE JOHNSON HINES: Thank you.

14 MR. POWELL: I think the PowerPoint presentation
15 should be the same, Your Honor.

16 JUDGE JOHNSON HINES: All right. Then I'm going
17 to give this back. I don't need two. Thank you.

18 MR. POWELL: I'm sure you have enough paper back
19 there.

20 JUDGE JOHNSON HINES: I do. Thank you.

21 BY MR. POWELL:

22 Q. Are you okay to proceed, Mr. Alarcon?

23 A. Yes. I'm ready when you are.

24 Q. So we're going to talk about the Ultrahuman ring.
25 And there are some similarities to the RingConn ring, so

1 I'll hopefully go a little bit faster. But I do want to key
2 in on some key evidence and to highlight, perhaps, some of
3 the differences for the Court.

4 So can we go to the next slide, 59.

5 On this slide, you've provided your
6 non-infringement summary for the Ultrahuman ring. Can you
7 briefly summarize what the non-infringement positions are?

8 A. Yes. And these are the same categories that I
9 described for the RingConn ring. First, there is no cavity
10 or hollow space in the Ultrahuman product. Second, there's
11 no battery positioned within a cavity, much less one with a
12 shape and size configured to fit within a cavity.

13 Third, there is no internal housing component.
14 Fourth, there's no printed circuit board, battery, or cavity
15 between the internal housing component and external housing
16 component. And, finally, there's no cavity between
17 circumferential surfaces.

18 Q. All right. We'll go to the next slide, 60.

19 And you've also considered a number of materials
20 in forming your opinions; is that correct, Mr. Alarcon?

21 A. Yes. And I show them here on slide 60.
22 Obviously, the '178 patent, a number of images, including CT
23 scans, teardowns of products, images of teardowns of
24 products, and certain testimony within this matter.

25 Q. And just so the record is clear, a CT scan is an

1 x-ray, right?

2 A. Yes, and it allows you to, without opening up a
3 product, see inside a product, and it also allows you to not
4 just see it but, with the tools provided, take measurements.

5 MR. POWELL: And Your Honor, I do have a number
6 of physicals. And, unfortunately, the physical number
7 doesn't always correspond to the RX- or CX- number, but I
8 will do my best to indicate what the physical number is
9 throughout the presentation.

10 JUDGE JOHNSON HINES: Thank you. That would be
11 helpful.

12 BY MR. POWELL:

13 Q. So let's go to the next slide, please, 61.

14 I believe you talked about a slide similar to
15 this during RingConn's presentation, so I don't have to get
16 into the same detail, but can you tell us what's being
17 depicted on slide 61?

18 A. Yes. These are the claim elements of claim 1,
19 and I've highlighted in red the elements where there is at
20 least some dispute between the parties.

21 Q. Let's go to slide 62, please. And this is the
22 first non-infringement defense.

23 Why is it your opinion that the Ultrahuman ring
24 has no cavity or hollow space?

25 A. Well, as I demonstrate for these through the same

1 analysis that I used for RingConn, that, again, applying the
2 plain and ordinary meaning, which is it's positioned or
3 configured to fit within a hollow space, I have examined the
4 product extensively and come to the conclusion that there is
5 no hollow space. There is no cavity.

6 Q. And the elements that apply to this position are
7 listed on slide 62; is that correct?

8 A. Yes. Those are 1[c-i], 1[c-ii], 1[c-iii], and
9 1[d] as in dog.

10 Q. And I have a question about "configured to fit"
11 before we move on to the next slide. What does that phrase
12 mean to a person of ordinary skill in the art, such as
13 yourself?

14 A. "Configured to fit" is -- tells you a little
15 something about that you need context, you need some context
16 in order to know how to do something. And in this case, you
17 need to know what you're configuring to. So the thing to be
18 configured, you need to have something that tells you how to
19 configure it. Otherwise, it wouldn't have meaning. It
20 would just say the thing.

21 Q. All right. Let's go on to slide 63. And I
22 believe you might talk about this a little more.

23 You write in the slide, "cavity is a focus of the
24 claims." What did you mean by that?

25 A. Well, there are at least four different instances

1 where cavity is mentioned in the claims and it's a critical
2 element of the claims. And that's one -- the elements that
3 I just walked us through.

4 And what I'm showing here in this animation is
5 that, on the left-hand side -- this is Figure 4 from the
6 '178 patent -- I've highlighted in magenta the cavity within
7 the ring. So I've identified the cavity, and then I can
8 show how the battery is configured to fit in that space.
9 And, indeed, it is -- it can fit in that space.

10 Q. And, in particular, the "configured to fit"
11 limitation is shown on the right of this screen, element
12 1[c-ii]? Is that correct?

13 A. Yes, that's correct. And that's what I'm really
14 emphasizing in this animation, is that once the internal
15 housing component and external housing components are
16 identified, you can determine if there's a cavity there when
17 you're looking at and analyzing the situation.

18 And, indeed, there is a cavity there. And once
19 you've gone through that process, then you can configure a
20 battery to fit in that cavity.

21 Q. Now let's go to the next slide, 64, please.

22 And you write at the top of the slide, "the
23 cavity drives the dimension of the battery, not the
24 reverse." What concept are you attempting to illustrate on
25 slide 64?

1 A. Exactly that. You can't use any battery of any
2 arbitrary arc or radius of curvature. It has to be
3 configured to fit in the cavity. And that's what I'm
4 showing here. If -- for example, if the radius of curvature
5 was too small, it would not fit and, therefore, it would not
6 be configured to fit within that cavity.

7 Q. Let's go to slide 65, please.

8 So why does Ultrahuman's ring never have hollow
9 space or a cavity?

10 A. Right. Well, it certainly never has one in the
11 final -- in its final form. And I'm showing CX-1069 here.
12 And in this cutaway, it's clear that the potting material is
13 completely encapsulating all of the components. There is no
14 hollow space. I can find no hollow space in its final form.

15 And -- and in addition to that, there is no
16 hollow space during -- at any point during the manufacturing
17 process.

18 Q. But these are product-by-process claims, so why
19 is a manufacturing process relevant?

20 A. It's -- I agree with you, but it's relevant, I
21 think, to add to the explanation about not just the product
22 in its final state, but for clarity and completion, to
23 demonstrate that there is never a hollow space.

24 Q. And on the left side of the screen, that's
25 CX-1069. What is that illustrating?

1 A. Yeah, that's what it's -- what I was referring to
2 earlier when I mentioned that the potting material is
3 completely encapsulating the components and there is no
4 hollow space.

5 And for clarity, you can see that this is a
6 center plane teardown or cut through the Ultrahuman ring.
7 And you can see that the potting material goes -- extends
8 all the way from the alleged inner circumferential surface
9 to the outer metal band.

10 Q. All right. Let's go to the next slide, 66,
11 please.

12 And here you've set forth 1, 2, 3, and 4, a
13 number of steps in the manufacturing process. How does
14 Ultrahuman's manufacturing process ensure there is no cavity
15 ever formed within the ring?

16 A. Yes. So I think -- starting with slide 1,
17 describes the overall process. And I'm not going to go into
18 the details unless we need to later on.

19 But starting with image number 2 of slide 66, in
20 image number 2, you can see the outer metal band where the
21 battery and the printed circuit board has been installed
22 already. And those are being inserted into a mold.

23 And part 3 is a very relevant step. That's the
24 image -- that's Number 3 at RX-86. And this is done in a
25 vacuum chamber, in a vacuum environment. So the molds are

1 put inside of a vacuum environment, and you can make out a
2 white pail at the top, a white bucket, that has the potting
3 material that's in liquid form. It has a relatively low
4 viscosity. And what happens is the vacuum is pulled or the
5 vacuum environment is engaged and the vacuum draws out all
6 of the air, ensuring that the potting material is --
7 completely fills the mold and that there are no hollow
8 spaces in the ring in its final state.

9 And, indeed, maybe back to the first image on the
10 left, the one labeled Number 1, that process, there's an
11 inspection. And my understanding is that there is an
12 inspection under magnification. And they will reject a
13 product if, after having gone through the process in the
14 vacuum chamber, there are any bubbles, for example,
15 remaining, it would be rejected. So they also have a
16 process to inspect, to ensure there are no hollow spaces.

17 Q. And for the record, that's RX-0084C on the left,
18 correct?

19 A. That's correct.

20 Q. And I'll just ask one more clarifying question on
21 this slide. You mentioned a concept called viscosity. Is
22 that a concept that relates to liquids?

23 A. Yes. Yes, and I think this is probably
24 illustrative. If you recall, in the RingConn product, I
25 mentioned that they use heat. They're heating the mold.

1 They're heating the epoxy beforehand. They use heat for
2 their process. And that product has a viscosity, if memory
3 serves, somewhere between a centipoise value of 200 and 500,
4 so relatively low, like a light oil. Ultrahuman's is a
5 little bit higher. It's maybe up to 5,000 centipoise, so
6 somewhere in between water and honey. Honey for reference
7 is around 10,000 centipoise. So halfway in between water
8 and honey, approximately.

9 Ultrahuman's process is different. To achieve
10 the same or similar result, which is no cavity, they use a
11 vacuum. So two different ring products, two different
12 processes, but both of them with the aim of making sure that
13 there is no cavity, there's no air inside.

14 Q. All right. Thank you, Mr. Alarcon.

15 We can go to slide 67.

16 Were you here in the courtroom when Curt von
17 Badinski testified?

18 A. Yes, I was.

19 Q. And you've highlighted, I believe, a figure or --
20 I'll go back. On the right of this slide, you've included a
21 figure from CX-0989C.0008.

22 Was this a figure that Mr. von Badinski discussed
23 during his testimony?

24 A. That's my recollection.

25 Q. And you've also excerpted and highlighted some

1 testimony that he gave on direct.

2 A. Yes.

3 Q. What concept are you attempting to illustrate on
4 this slide, 67?

5 A. Well, here he's -- he was being asked about the
6 ring structure. And he starts -- his first answer is:
7 "Yeah. On this particular case, the outer surface of the
8 ring is generated by the inner surface of the mold cavity."

9 So keep in mind, this is actually flipped from
10 the accused products that are accused of having inner
11 potting and an outer metal band. This one was flipped. It
12 looks to me like an inner metal band and an outer potting.

13 But what he's saying here is there that that
14 surface of the ring is generated not by a structure that
15 remains with the ring, but it's actually being generated by
16 the mold. And, in fact, he is then questioned: "The mold
17 is the space-enclosing structure, not the ring itself?" And
18 his answer is: "I don't consider the mold part of the ring,
19 though. That's just the manufacturing process."

20 So two things are going on here. He's saying
21 that this -- a part of it is actually being generated by the
22 mold and saying that mold, though, is just part of the
23 manufacturing process. It's not part of the ring.

24 So that surface is not defined by any components.
25 It's defined by the mold.

1 Q. Did you find Mr. von Badinski's testimony in this
2 respect confirmatory of your opinion?

3 A. Yes. It supports my understanding of what
4 happens when you have -- put a metal band in a mold and
5 apply potting material.

6 Q. All right. Let's go to slide 68, please.

7 What is your understanding as to
8 Dr. Sarrafzadeh's cavity opinion?

9 A. That the battery fully -- well, I'm highlighting
10 here -- this is based on his expert report at page --
11 paragraph 156. And he says that the battery fully occupies
12 the cavity because once the potting material is cured and
13 solidifies, it forms a seal around the components. But if
14 the components were to be removed from the solidified
15 structure, there would exist a hollow space in its place.

16 So as I've mentioned before, here he's saying
17 that you have to do things to create a hollow space, that in
18 the finished product, there exists no hollow space. And as
19 a reminder, if you were to remove those components, for
20 example, the printed circuit board or the battery, other
21 claim elements would not be met.

22 And I can see in the image, which is RX-402C.97,
23 as well as an image from his expert report at page 189
24 through 190 -- or I believe that's it -- what he has
25 highlighted here, he has actually traced around -- so he

1 hasn't identified a cavity based on internal structure or
2 external structure. He has traced around the components
3 that are said to be in that structure, the cavity. So he
4 has identified the cavity by identifying the components, not
5 the other way around.

6 And, in fact, because he says that the potting
7 forms a seal around the components, he has traced and
8 followed almost exactly the outline of the components.

9 Q. Does Dr. Sarrafzadeh's cavity exist solely in
10 two-dimensional space or does it also extend to
11 three-dimensional space?

12 A. It's three-dimension -- I understand it to be
13 three-dimensional. And that's what's shown on the image on
14 the lower right, another angle that shows you, at least at
15 one cross-section, what he believes the cavity to be, at
16 least during his expert report.

17 Q. And just so everyone is clear, to level-set, in
18 Dr. Sarrafzadeh's report, what did he say this material
19 (indicating) was between this component (indicating) and in
20 the middle and the external band on the right? And I'm
21 referencing the lower right-hand image.

22 A. Right. In the lower right side, he's -- well, in
23 his text, he says that the potting material is cured and
24 solidifies and forms a seal around the components. So you
25 can read that to be potting material.

1 I do understand that at times he's pointing to
2 some foam, but I think in the context of this one, what he
3 has done is as I previously mentioned.

4 And as I think about it, I will clarify that
5 foam. I think that may have just been limited to the
6 context of RingConn. I don't have a perfect recollection if
7 that was also his opinion with respect to Ultrahuman.

8 Q. I believe we'll get to that in a little bit.

9 A. Okay.

10 Q. All right. Let's go to the next slide, please.
11 This is slide 69.

12 Were you in Court during Dr. Sarrafzadeh's
13 testimony?

14 A. Yes, I was.

15 Q. And was there anything notable about
16 Dr. Sarrafzadeh's testimony as it relates to this
17 cavity/hollow space limitation?

18 A. Yes, there was. And he was asked: Do you read
19 claim 1 as requiring a hollow space in the finished ring?
20 And he says: "There is no need for a hollow space. The
21 hollow space initially is there to put the PCB and the
22 battery in there." "When you have the product, what is the
23 use of a hollow space?" "You don't need it."

24 And he goes on to say, "In fact, there are
25 limitations -- there are embodiments which explicitly teach

1 that, that you don't need a hollow space."

2 So he's saying a number of things here, but I
3 think, first and foremost, he's saying in the finished
4 product, there is no hollow space.

5 And then, secondly, he's also saying that there
6 are embodiments. And that may be true, but that's not
7 necessarily the embodiments of the claims that we have here
8 in the '178. So he may be thinking of something else. And,
9 yeah, I think that captures it.

10 Q. All right. For the record, I believe we have the
11 rough hearing transcript, but -- on the slide on the left,
12 slide 69, but this is to the 12/12 final transcript and the
13 cite is 314:19 to 315:2.

14 All right. Let's go to slide 70, please.

15 What is your opinion as to whether the Ultrahuman
16 ring has a battery positioned within the cavity and one with
17 a shape and size configured to fit within the cavity?

18 A. That it does not have those elements.

19 Q. And you've highlighted two claim elements on the
20 slide, 1[c-i] and 1[c-ii]. Are those the elements that
21 apply to this opinion?

22 A. Yes.

23 Q. All right. Let's go to the next slide, 71,
24 please.

25 What is Dr. Sarrafzadeh's opinion about the

1 "configured to fit" limitations -- excuse me, strike that.

2 What is Dr. Sarrafzadeh's opinion about elements
3 1[c-i] and element 1[c-ii]?

4 A. Right. That he identifies no battery with a
5 shape, for example, with a shape and size configured to fit
6 within a cavity. And also with respect to being positioned
7 in a cavity, he has also not demonstrated that.

8 So I highlight his opening report from paragraphs
9 156 through 157, and in 156, he's talking about being
10 positioned in a cavity, that claim element. And he says the
11 curved battery is positioned in a cavity, but he goes on to
12 say that the battery fully occupies the cavity because once
13 the potting material is cured and solidifies, it forms a
14 seal around the components.

15 But -- so what he's saying there is that there is
16 no cavity in existence beforehand for one to know where to
17 position the battery in said cavity. And, indeed, it's --
18 to the extent there is a cavity, it's actually being created
19 by a battery, not by internal and external housing
20 components.

21 And then he goes on in this paragraph 157 with
22 respect to shape -- I'll start reading from the
23 highlighting. "Shape and size (curved) to fit between the
24 outer circumferential surface and the inner circumferential
25 surface."

1 So, interestingly here, he's also not talking
2 about being configured -- shape and size configured to fit
3 within a cavity. He's actually putting it, shape and size,
4 to fit between circumferential surface and -- sorry, outer
5 circumferential surface and inner circumferential surface.

6 But the claim requires it to be configured to fit
7 within a cavity. That's different.

8 Q. Did he even use the word "cavity" in paragraph
9 157 of his report?

10 A. I didn't hear you with the cough. Can you repeat
11 that?

12 Q. Did he even use the word "cavity" in paragraph
13 157?

14 A. No. That's what I was trying to explain.

15 Q. All right. Let's go to the next slide, 72.

16 In your opinion, what is Dr. Sarrafzadeh's claim
17 interpretation doing to the cavity term?

18 A. It's basically reading it out of the claim. I
19 mean, it would effectively -- as I understand his position,
20 it would effectively mean the claims could just be
21 written -- for example, 1[c-i], could say a battery
22 positioned between the internal housing component and
23 external housing component. And, likewise, with 1[c-ii], it
24 would also be read out.

25 So, therefore, what my understanding is, the

1 struck-out terms here on slide 72, "within a cavity formed"
2 and "within the cavity," those have meaning, but what he has
3 done is essentially say they really don't have any meaning.

4 Q. Do the claims merely require a battery within a
5 ring?

6 A. No. And that's what I was trying to explain, is
7 that it's not just within the ring; it has to be certain
8 things with respect to this cavity.

9 Q. Let's go to the next slide, please, 73.

10 And I believe, on this slide, you've excerpted
11 two demonstrative slides from Dr. Sarrafzadeh's
12 presentation. And we talked about how you were here during
13 his testimony.

14 During Dr. Sarrafzadeh's testimony about whether
15 the Ultrahuman ring satisfies elements 1[c-ii], did he
16 sufficiently cover the "configured to fit" part of element
17 1[c-ii]?

18 A. No. For example, if I start with his slide 96,
19 he has highlighted -- he has colored elements of the claim
20 language, but he hasn't even colored the word "cavity,"
21 which is a key element within this -- a key word within this
22 claim element. And I don't recall him testifying with
23 respect to cavity when talking about slide -- his slide 96.
24 He has identified everything else but has not talked about
25 the critical cavity in this.

1 And, likewise, in his slide 97, also the image on
2 the left, there's no identification of cavity. And, by the
3 way, that's also applicable in slide 96, no identification
4 of cavity. The text, again, "cavity" is not colored. No
5 attention is drawn to it. There is a label, one label, but
6 I don't recall testimony with respect to the critical cavity
7 element when used on these slides.

8 Q. All right. Let's go to the next slide, please,
9 74.

10 What is your opinion as to whether the Ultrahuman
11 ring has an internal housing component?

12 A. It does not have an internal housing component.
13 And that's relevant for elements 1[b], 1[c-i], 1[c-ii],
14 1[d-i], and 1[e].

15 Q. You've also included the term and the
16 construction relevant to this -- these elements and this
17 defense?

18 A. Yes, which is plain and ordinary meaning, which
19 is an internal structure that encloses space and which does
20 not necessarily exclude potting material.

21 Q. All right. Let's go to the next slide. This is
22 slide 75. And on this slide, we have CX-1089 on the left,
23 CX-0058 in the middle, and RX-0458 on the right.

24 And you write in this slide both sides' teardowns
25 show there is only one space-enclosing component, the

1 external band. How does that relate to your opinion that
2 the Ultrahuman ring lacks an internal housing component?

3 A. Well, all three of these images on this slide
4 demonstrate that opinion, that there's only a single
5 structure that encloses space. And that's the outer metal
6 band.

7 You can see it on the teardown, there is no
8 internal housing component, meaning there is no internal
9 structure that encloses space. And that's confirmed by --
10 with the CT image and also the image of the teardown.

11 Q. Okay. And we heard some testimony or some
12 suggestion during Dr. Sarrafzadeh's testimony that some
13 portion of the potting might be soft, spongy, or foamy. And
14 I'll actually make reference to the left part of the slide,
15 CX-1089.

16 Is any portion of this potting soft, foamy, or
17 spongy?

18 A. No, it is not. This is -- specifically with the
19 Ultrahuman process, they use a single potting material. And
20 that's what's shown in CX-89. You can clearly see it's the
21 same material.

22 There is -- in the RingConn product, there -- if
23 you recall, they use a two-step potting process. And my
24 understanding is one of those potting materials is -- one is
25 firmer than the other. So it seems that in this case,

1 Dr. Sarrafzadeh is taking his understanding of the -- well,
2 his contention of the RingConn product and importing it into
3 the Ultrahuman analysis, but Ultrahuman only uses a single
4 potting material.

5 So I think that would be yet another reason why I
6 disagree with his opinion.

7 Q. And just for clarity, Mr. Alarcon, do both sides'
8 teardowns illustrate the same concept as to the presence of
9 only one space-enclosing component?

10 A. When you say "both sides'," you're asking
11 Ultrahuman -- on this slide here, the Ultrahuman and the
12 Oura teardowns?

13 Q. Correct.

14 A. Yes. Yes. Admittedly, the Ultrahuman teardown
15 looks -- it looks a little bit different. That's because
16 the cut is not as clean. And it looks darker. That's,
17 again, because the cut is not as clean. And also the angle
18 of the photography, you're seeing more of the -- reflecting
19 more of the black inside. But when I observed them closely,
20 I see they are consistent and they both agree.

21 Q. All right. Let's go to the next slide, please,
22 76.

23 And you write in this slide that Oura's
24 infringement theory is a moving target. What do you mean by
25 that?

1 A. So with respect to this element, I've heard at
2 least four, if not five, different variants of what an
3 internal housing component is from Complainants. So, for
4 example, on this slide, 76, from Dr. Sarrafzadeh's opening
5 report, there's the arrow in yellow that is a double-sided
6 arrow indicating internal housing component. And I can see
7 that it extends all the way from the alleged inner
8 circumferential surface to the outer metal band. That was
9 at deposition.

10 During his deposition, I understand he testified
11 -- I reviewed the transcript -- that, instead, it should be
12 considered the outer crust layer. These are his annotations
13 on the right from his deposition, where he identifies the
14 internal housing component with some red lines, so an
15 arbitrary layer of the potting material in this case, is
16 what he has identified as the crust.

17 Remember, in this particular instance, there is
18 no -- for Ultrahuman, there is no difference in density or a
19 durometer, the hardness of the materials.

20 Q. And you're referencing RX-0402C.53-54 and
21 CX-0058; is that correct?

22 A. That's correct.

23 Q. Is there anything in the patent that will tell
24 you that it's proper to slice and dice the potting material
25 into a crust and a non-crust component?

1 A. No, there's nothing in the patent that tells you
2 to do that.

3 Q. Let's go to slide 77, please.

4 And here you've actually excerpted some testimony
5 that Dr. Sarrafzadeh gave about the crust and, again, we
6 have his crust annotation. And in red, or you put in red
7 that he said, "The same way that we define the crust of the
8 earth, the outer layer of it, that's the internal housing
9 component."

10 Is it apt to equate the crust of the earth to
11 Ultrahuman's ring and its potting?

12 A. No, I don't think it's apt. I don't think a
13 geological construct is applicable to this particular -- to
14 a consumer product like this.

15 And it's not -- also not consistent with the
16 imagery. For example, my understanding of the crust, the
17 geologic crust, is that there's a difference between the
18 materials below the crust. There's demarcation. And,
19 clearly, you can see in the image on the right, which is
20 CX-1089, that there is no demarcation.

21 Again, that's not the only reason I don't think
22 that's apt, but that's one reason I think that is not an apt
23 comparison.

24 Q. All right. Let's go to slide 79, please. Excuse
25 me, 78.

1 How many different infringement theories
2 regarding the internal housing component did Dr. Sarrafzadeh
3 offer during the hearing?

4 A. That's, I think -- again, it's hard to keep
5 perfect track, but I think I interpreted -- I understand
6 them to be three different interpretations of internal
7 housing. And I illustrate them here on my slide 78.

8 On the left-hand side in the grouping number 1,
9 my understanding of his opinion is that it's roughly half of
10 the potting. And even within that, there is even some
11 variation of that, where -- still staying on the left-hand
12 side, where the purple highlighting is only extends through
13 a lower portion of that image. And that's what's identified
14 as the internal housing component, not continuing up into --
15 up into the left, around the arc.

16 So maybe I call that 1[a] and 1[b]. I don't
17 know. But it's not accurate. There's -- it seems to be
18 arbitrary. It's definitely different. And as a reminder,
19 all of that is potting material.

20 In the second vignette, Number 2, that's Figure
21 13 from the patent. And that's the one where the potting
22 material is outlined -- is highlighted in purple. And you
23 can see that it occupies the entirety in between -- well,
24 occupies the entirety. You can see even surrounding what is
25 the battery, even surrounding what is the printed circuit

1 board and its components, that's second.

2 And then, third, is crust of the potting. And
3 that's shown on the right. And these are his illustrations
4 where you can see in purple he has identified an
5 interpretation of the internal housing component.

6 Q. And just for the record, all of these excerpts on
7 the slide are from Dr. Sarrafzadeh's demonstrative?

8 A. Yes.

9 Q. All right. Mr. Merisier, can you pull up
10 Dr. Sarrafzadeh's testimony from day 1, December 11th, page
11 277:3 to 278:25.

12 And he was asked at line 3 about black material
13 or blackish material, and then he was asked about the
14 contrast between the blackish material and the transparent
15 material? Do you see that?

16 A. Yes. Yes.

17 Q. From 3 to 6? And then he said, starting on line
18 7: "That's a soft material. It has a foamy nature. And
19 you can see it goes pretty much around the ring for the most
20 part. And that's separate from the potting material that we
21 looked at earlier." And I think he was asked that for the
22 RingConn product.

23 And then on page 278, he was asked the similar
24 questions for the Ultrahuman product. And he said -- he was
25 asked, at line 4: "Doctor, we have what looks like similar

1 teardown images with respect to Ultrahuman's product on
2 slide 49. What are these images?"

3 Then he gave an answer: "So on the right, again,
4 those purple and brown are my coloring and the arrows are my
5 annotations, which I'm trying to show the internal housing
6 component and the inner circumferential surface. On the
7 left, again, you see the potting material is transparent.
8 You can see through it. And the other material behind it
9 that is not. So it's a different material. Again, it has a
10 soft nature."

11 Do you recall that testimony?

12 A. I recall. I recall that, yes.

13 MR. SCHULTZ: Your Honor?

14 JUDGE JOHNSON HINES: Counsel, yes.

15 MR. SCHULTZ: This subject matter wasn't covered
16 in either his expert report or his deposition, and I believe
17 it's beyond the scope of his report.

18 MR. POWELL: He's responding to Dr. Sarrafzadeh.

19 JUDGE JOHNSON HINES: I'll allow it. I will
20 allow it. Thank you.

21 BY MR. POWELL:

22 Q. All right. Let's go back to slide 78. And if
23 it's possible, can we keep up page 277, Mr. Merisier.

24 So Dr. Sarrafzadeh was differentiating -- sorry.
25 We can just go back to the slides. Thank you.

1 Dr. Sarrafzadeh was differentiating between the
2 part of the potting material that he colored in purple,
3 which is transparent, and then the part of the potting
4 material which he called non-transparent. Is that fair?

5 A. That's -- that's my understanding, yes.

6 Q. And he actually said that the non-transparent
7 portion was soft or foamy. Is that fair?

8 A. Yes. And that's what I was trying to explain
9 earlier, when I -- something -- said something to the effect
10 of he's importing his understanding -- improperly importing
11 his understanding of the RingConn product to the Ultrahuman
12 product, because he had identified a lower durometer
13 material in the RingConn product.

14 That's exactly what I'm talking about here in
15 this slide, is there is no lower durometer material.
16 There's all -- it's a single durometer material, so that
17 analysis from RingConn does not apply to Ultrahuman. And
18 that's what's being shown where you were highlighting here,
19 Mr. Powell, that material there that's not highlighted is
20 the same durometer as the purple highlighted material.

21 Q. Is this portion that I'm highlighting, the
22 non-transparent portion, is that soft or foamy?

23 A. That is the same durometer as the purple. And it
24 is also transparent. It just doesn't appear to be
25 transparent here because you're looking at part of the ring

1 from the inside. That's why you're not seeing the green
2 behind it. But that material in there is transparent. It's
3 the same material.

4 Q. Is Dr. Sarrafzadeh an expert in material science
5 or mechanical engineering?

6 A. No, I don't believe he is. I believe I heard
7 something about that in his testimony, that he said he is
8 not.

9 Q. How does your expertise in material science and
10 mechanical engineering compare to Dr. Sarrafzadeh's?

11 A. Well, I am a mechanical engineer, and mechanical
12 engineers -- part of our training is material science as
13 well. And it's design of structures. Mechanical
14 engineering has a lot of emphasis on design of structures
15 and materials to design structures.

16 So at least with respect to educational
17 background comparing to electrical engineering and/or
18 computer science, which is I understand -- hopefully, I'm
19 not mischaracterizing his background, his educational
20 background, I would say mechanical engineering is more
21 focused on structures and material properties.

22 Q. Is there a principled reason why you would just
23 color in the non- -- the transparent portion of the potting
24 in the Ultrahuman device on the left side of the screen?

25 A. Can you repeat your question? I don't think I

1 quite understand it.

2 Q. Is there a principled reason, with respect to the
3 nature of the potting material, that you would just color in
4 the transparent portion of the potting material in the
5 Ultrahuman ring?

6 A. You mean independent of the '178 patent, and if
7 you were unaware of it and just asked a question about it,
8 in general?

9 Q. Yes.

10 A. To identify it differently? No, you wouldn't --
11 generally, absent the '178 patent, you wouldn't -- a
12 mechanical engineer would not think to identify that as
13 different than the remainder of the potting material.

14 Q. All right. Let's go to the next slide, please.

15 JUDGE JOHNSON HINES: Before you do that, may I
16 ask a question?

17 Mr. Alarcon, in the photographs on the left, so I
18 think it's CX-1040 and CX-1070, it appears for what is
19 identified as the internal housing component, so that's
20 colored in purple, and then there's portions that touch the
21 metal band that's not colored in purple, right?

22 THE WITNESS: Correct.

23 JUDGE JOHNSON HINES: How come, for the part
24 that's colored in purple, you can see the grid line on the
25 mat underneath and for the other portion you cannot?

1 THE WITNESS: This is a very good question, and
2 the reason is because the ring has been cut in the middle,
3 down the middle. So you still have half of the ring on the
4 other side. And if you look at, let's say, the image in
5 vignette number 3 here, you can see what Dr. Sarrafzadeh
6 drew some boxes around, some dotted boxes. Do you see
7 those?

8 JUDGE JOHNSON HINES: Um-hum.

9 THE WITNESS: Those are flanges. So one would
10 still remain in the view on the left.

11 JUDGE JOHNSON HINES: All right.

12 THE WITNESS: One of those still remains. And
13 that's what you're looking at. You're looking at the inside
14 of the remaining flange, and that occludes your ability to
15 view the green grid background behind it. If you were to
16 remove that flange, you would be able to see the green grid
17 background behind it.

18 JUDGE JOHNSON HINES: All right. Thank you.

19 BY MR. POWELL:

20 Q. I have a three-year-old so I'm going to ask -- I
21 apologize for the way I'm going to ask this question. Is
22 the reason why you can see the flange, why there's a flange
23 visible on the left side of the screen because
24 Dr. Sarrafzadeh cut the ring hamburger -- or hotdog style as
25 opposed to hamburger style?

1 A. Yeah, yes. I think that's a reasonable way to
2 look at it. Yes.

3 Q. So there would be --

4 A. Yeah. If I --

5 Q. -- there would two flanges -- if this is the
6 outer metal band, there would be two flanges representing
7 where the palms of my hand are (indicating). And the way
8 Dr. Sarrafzadeh cut the ring is that he cut it right down
9 the middle, correct? Is that fair?

10 A. That's fair.

11 Q. And then he has removed one-half of the ring and
12 he has placed the other half down on the tile and he has
13 taken the picture from the top. Is that fair?

14 A. That's fair. So using your analogy, you would --
15 the occlusion is caused by the palm of your hand, your
16 fingers are coming in and out of the page toward you, but
17 your palm is what you're seeing in this analogy of the
18 image.

19 MR. POWELL: Your Honor, do you have any other
20 questions about this point? Because I believe it's a key
21 point.

22 JUDGE JOHNSON HINES: I don't. Thank you.

23 MR. POWELL: All right, thank you.

24 BY MR. POWELL:

25 Q. Let's go to the next slide, please, 79.

1 And on the left side of the slide, CX-0537, it
2 appears to be a post. What is that, Mr. Alarcon?

3 A. It's exactly as you said. This is a social media
4 post. It's a non-engineering document. This is -- appears
5 to be a marketing document.

6 Q. Are there any specifications or manufacturing
7 tolerances listed in the social media post?

8 A. None.

9 Q. Does this social media post tell you how to make
10 the Ultrahuman ring?

11 A. No.

12 Q. Would it be typical for a company to disclose
13 confidential engineering or manufacturing information on
14 Instagram?

15 A. No, that would not be typical. And my
16 understanding, having developed quite a few products, is
17 once you do that, you have dedicated -- you know, that's no
18 longer confidential once you publish it.

19 Q. And you say on this slide digital rendering in a
20 social media post does not show reality.

21 How do you know, Mr. Alarcon, that it does not
22 show reality?

23 A. Well, for example, the image on the right, which
24 is RX-459, the outer metal band has been removed, the outer
25 metal. And what's remaining is the epoxy surrounding the

1 printed circuit board and the battery, all as a single unit.
2 It's not separable. You can't separate the epoxy, the
3 potting material in the manner shown in this social media
4 post.

5 And, in fact, if you do so, you destroy the
6 product. You can't take the components out and service and
7 repair them. You literally destroy all of that epoxy in
8 order to get at the printed circuit board, for example.

9 Q. All right. Thank you, Mr. Alarcon. We can go on
10 to the next slide. This is 80. I believe there might be a
11 slight discrepancy between the printout and the slides.
12 This is actually opinion 4, not opinion 3.

13 Mr. Alarcon, what is your opinion as to whether
14 the Ultrahuman ring has a printed circuit board, battery, or
15 cavity between the internal housing component and the
16 external housing component?

17 A. That it does not have a printed circuit board,
18 battery, or cavity between the internal housing component
19 and external housing component.

20 Q. And what --

21 A. It --

22 Q. What claim elements relate to this opinion?

23 A. Yeah, those relate to 1[d] and 1[c-i].

24 Q. Let's go to the next slide, please, 81.

25 And you write on this slide that the PCB and

1 battery are encased in potting. What did you mean by that?

2 A. As I show in this image -- this collection of
3 images from RX-459, that during -- you know, you can see
4 from the teardown, and I saw it from the teardown, that
5 there is potting -- there's definitely potting inside,
6 outside, and on the sides of the PCB and the battery.

7 And if you take the center image, for example,
8 you can see the gloss, the glare that's hitting the epoxy.
9 And that's above -- in this image, that's above the printed
10 circuit board, but you can -- I can see the printed circuit
11 board inside of that.

12 And I've inspected -- I've torn down product, I
13 have inspected it, and I can't touch the components on the
14 printed circuit board because there's epoxy, there's potting
15 material in between or, in this view, on top of the
16 components.

17 Q. How do you know that that's potting?

18 A. Well, a number of ways. First, through the
19 manufacturing process. That's consistent with my
20 understanding of the manufacturing process. But, more
21 importantly, through physical observation, visual
22 observation, as well as probing with a semi-sharp object,
23 that I can actually inspect the durometer, I can tell what
24 type of material it is, and just for the record, when I do
25 my visual inspections, they're under magnification. So it

1 gives me a very clear view of -- that it's the same material
2 all the way around. There's no identifying -- nothing
3 identifying that there's any different material inside than
4 out.

5 Q. And you've used the word "durometer" a number of
6 times. I'm not a person of ordinary skill in the art. What
7 is a durometer?

8 A. A durometer is a measure of hardness. So
9 something with a low durometer is soft; something with a
10 high durometer is hard. I'm simplifying, but that's apt for
11 this.

12 Q. All right. Can we go to the next slide, please,
13 82.

14 What additional evidence shows that the PCB, in
15 particular, is encased within the potting in Ultrahuman's
16 device?

17 A. Yes, in the Ultrahuman, additionally this
18 evidence from the Oura teardown and the Ultrahuman teardown
19 confirmed that. In CX-1089, I can see that the potting
20 material is completely surrounding the printed circuit
21 board.

22 And that's consistent with the Ultrahuman
23 teardown, which, for the record, is RX-458.

24 Q. Let's go to the next slide, please, 83.

25 And you also write that Oura's infringement

1 evidence shows that the PCB is encased in potting.

2 What did you mean by that?

3 A. That's exactly what I meant. It's consistent
4 with what I mentioned and discussed in the prior slides,
5 that in the CT scan, you can see, in between what's
6 identified as the printed circuit board, there is space
7 between the metal, outer metal band and the printed circuit
8 board.

9 And I can see it in the CT scan that that's
10 potting material there. But it's especially clear in the
11 image on the right-hand side, CX-1069. And I've even blown
12 up a section of that, and that section is a section where
13 the PCB is located. And you can see, indeed, inward and
14 outboard of the printed circuit board exists potting
15 material. So that's just one view, but it fully encases the
16 PCB in this blowup that I'm demonstrating here.

17 Q. Just to be clear, in the Ultrahuman ring, and
18 with reference to the figure on the right, is there any
19 difference between the potting between the circuit board and
20 the external band and the potting between the circuit board
21 and the internal surface of the ring?

22 A. No. That's all the same potting material.

23 Q. Let's go to the next slide, please, slide 84.

24 In your opinion, what is Dr. Sarrafzadeh's claim
25 interpretation doing to this "between" limitation?

1 A. It's essentially reading it out. So my
2 understanding of his opinion is he's effectively rewriting
3 it to say a printed circuit board disposed within a
4 finger-worn wearable ring device.

5 Q. And this relates to element 1[d]?

6 A. Yes.

7 Q. All right. Let's go to the next slide, please.

8 And I believe you talked about -- slide 85. I
9 believe you talked about Figure 13 at length, both today and
10 on Friday. So I won't get into the same level of detail,
11 but does Ultrahuman's ring even track Figure 13, which you
12 testified was not even a claimed embodiment?

13 A. No, it does not track it. And as you rightly
14 stated, I don't think it's applicable, but even let's say
15 hypothetically it was, you can see that the patent says that
16 the 1312b and c, that extend toward each other, they have to
17 extend toward each other, and beyond portions of internal
18 surface 1312a, that's what defines in this instance a
19 partially enclosed internal space, 1320.

20 Well, in the Ultrahuman product, you can see that
21 the printed circuit board -- well, first, you can see it
22 doesn't have -- those elements have not been identified.
23 1312b and c that extend toward each other has not been
24 identified. The 1312a has not been identified. But also
25 you can see that the printed circuit board would not --

1 unlike Figure 13, would not even be within that space.

2 So that's yet another reason why, Figure 13, if
3 that's the position, does not apply to the Ultrahuman
4 product, because the printed circuit board is not even
5 within that hypothetical space.

6 Q. And just to be crystal clear, who created the
7 image on the left, CX-1089?

8 A. That's Dr. Sarrafzadeh's teardown image.

9 Q. So this is Oura's own evidence?

10 A. Yes.

11 Q. And in this image on the left, are the flanges,
12 which I believe we talked about with respect to the hotdog
13 versus hamburger, hotdog-style versus hamburger style
14 dissection, are these flanges casting a shadow in this
15 image?

16 A. I want to make sure I get your question. Yes,
17 they're casting a shadow, as well as the inner -- the inside
18 of the outer metal band affecting the way it looks. And
19 just for -- because you mentioned the hotdog, I think you
20 mentioned the hotdog, this is not the hotdog-style cut, just
21 to be clear. This is the -- an orthogonal view to that.

22 Q. And in this view of the ring, is there an
23 artifact presented that shows a transparent portion and a
24 non-transparent portion?

25 A. Oh, I think I better understand your question

1 now. Yes, it's the black -- the darker area. You're
2 looking -- that's an occlusion caused by the outer metal
3 ring, yeah. So if you remove the outer metal ring, you
4 wouldn't have that occlusion, and then you'd be better able
5 to see the green grid background behind this.

6 Of course, except in the parts where the printed
7 circuit board would be occluding it, but --

8 Q. All right. Thank you, Mr. Alarcon. I think that
9 clarifies things.

10 Let's go to slide 86.

11 And I'll just touch on this very briefly because
12 I believe RingConn's counsel already did a fine job
13 explaining this defense.

14 What is your opinion, Mr. Alarcon, about whether
15 the Ultrahuman ring has a cavity between circumferential
16 surfaces?

17 A. That it does not for the same reasons that I
18 identified with respect to the RingConn product.

19 Q. Let's go to the next slide, 87.

20 And, again, what is the reason with respect to
21 the Ultrahuman ring why there's no cavity between the
22 circumferential surfaces?

23 A. Just like with the RingConn product, the
24 Ultrahuman product has a flat portion. It's also for --
25 there are no electrical contacts there. They charge the

1 product differently. But there's a flat portion still there
2 for charging purposes. And that's for registering the
3 charging components with the charger.

4 Q. Okay. We can go to the next slide, 88.

5 What is your opinion as to whether the Ultrahuman
6 ring infringes dependent claims 2, 12, 13, and 14?

7 A. My opinion is that there is no infringement for
8 all the same reasons that I put forth with respect to claim
9 1, because claim 1 is the independent claim and these are
10 dependent on it.

11 But, additionally, with respect to claim 12, that
12 in Ultrahuman's case, they actually have more ring sizes
13 than RingConn. They have ten ring sizes. So ten different
14 diameters. And only two batteries. So only two different
15 batteries means there's only two different arcs. And my
16 opinion is -- similar to the RingConn opinion, is that
17 Dr. Sarrafzadeh has not demonstrated that each of these arcs
18 of the curved batteries approximates the corresponding arc
19 of the external housing components. He has simply
20 identified that there is a curved battery but not
21 demonstrated the arc requirement of the claims.

22 Q. All right. Let's go to the next slide. I'll
23 just briefly touch on technical domestic industry.

24 And let's go to slide 90, please.

25 What is your opinion as to whether the Oura Ring

1 Gen. 3 practices the '178 patent?

2 A. My opinion with respect to Gen. 3 of the Oura
3 Ring is that it does not because Dr. Sarrafzadeh provides
4 the same flawed analysis. And by that, I mean the arbitrary
5 line-drawing of the cavity, meaning finding the components
6 and then -- sorry, finding the battery and the printed
7 circuit board and drawing a cavity around that, rather than
8 finding a cavity that is an outcome of the internal housing
9 component and external housing component.

10 Additionally, he says there's -- potting cures
11 around the battery. So there's no battery configured to fit
12 within a cavity. The components are encased in potting. So
13 the "between" limitation is not met.

14 And, finally, there's a single housing component,
15 so a single enclosing ring. There's no internal housing
16 component, very similar in terms of the analysis to the
17 Ultrahuman and RingConn products.

18 Q. All right. Let's go to the next slide, please.

19 Has Oura or Dr. Sarrafzadeh proven that the Oura
20 Ring Gen. 4 practices the '178 patent?

21 A. No. It has not proven, Dr. Sarrafzadeh has not
22 proven that the Gen. 4 practices the '178 patent.

23 Q. And what is the difference -- or there are
24 differences, but with respect to these claims, what is the
25 primary difference between the Gen. 3 Oura Ring and the Gen.

1 4 Oura Ring?

2 A. So for the Gen. 4 ring, it actually does have a
3 metal inner band. And Dr. Sarrafzadeh identifies that. So
4 in the case of the Gen. 4, there are two metal structures.
5 And so the definition -- or his identification of the
6 internal housing component is different, which is fine for
7 the Gen. 4.

8 But he keeps -- maintains the same gerrymandered
9 cavity. Despite having, now having, a metal inner and a
10 metal outer, he keeps that same cavity. So as I've
11 described before, the identification of the cavity is wrong
12 because it's based on simply finding the battery and the
13 printed circuit board and saying: Ah-hah, there is the
14 cavity.

15 So it doesn't practice at least because of the
16 cavity limitation, but also there appears to be two
17 cavities. And we can see that in his image from the opening
18 expert report where you can see the battery at -- if we
19 think about this as a clock face, starting just before
20 midnight and going to around 3:00 o'clock, that's what was
21 identified for the battery. And then starting again maybe
22 around 3:30 and going back all the way around to about 1:00
23 o'clock, clockwise, is what's identified as the cavity for
24 the printed circuit board. So there appear in this case to
25 be two cavities.

1 So for at least these reasons, I believe that
2 Gen. 4 does not practice. Gen. 4 does not have a hollow
3 space. It is -- the potting material likewise occupies all
4 of that space. There is no hollow space.

5 Q. Does Dr. Sarrafzadeh map any portion of the
6 potting to the internal housing component in Gen. 4?

7 A. Right. He -- in -- from what I heard in his
8 testimony, he has not. You know, there are portions of the
9 internal potting material that touch the skin, and they are
10 on the internal circumference of the Gen. 4.

11 But he does not identify any crust portions of
12 those, nothing with respect to the potting being an internal
13 housing component or a portion of it.

14 Q. All right. We'll go to the last slide, 92.

15 Do the Oura Gen. 3 and Gen. 4 rings practice the
16 dependent limitations -- excuse me, the dependent claims?

17 A. No, they do not. First, for the same reasons as
18 claim 1, and then also with respect to Gen. 4, its ring does
19 not meet the non-overlapping limitation of dependent claim
20 2. And that's what I showed on -- what I was commenting on,
21 on slide 91, is that to the extent that's to be considered
22 one cavity, he hasn't demonstrated that it's not
23 overlapping.

24 Q. Okay. I have no further questions, Mr. Alarcon.

25 MR. POWELL: But as a matter of housekeeping, can

1 I read in the corresponding pictures and physicals for Your
2 Honor?

3 JUDGE JOHNSON HINES: Yes.

4 MR. POWELL: Okay. CX-1069 corresponds to
5 CPX-0199. CX-1077 corresponds to CPX-199. CX-1089
6 corresponds to CPX-199. RX-458 corresponds to RPX-15.
7 CX-1089 corresponds to CPX-199. And CX-1070 and CX-1088
8 corresponds to CPX-199.

9 JUDGE JOHNSON HINES: All right. CPX-199, does
10 that mean there are 198 other CPXs?

11 MR. POWELL: I'm not sure how this numbering was
12 created, Your Honor. And it seems like there are maybe
13 multiple sub-components within CPX-199.

14 Oh, and a few more. RX-459 corresponds to
15 RPX-14. And I believe that's everything.

16 JUDGE JOHNSON HINES: All right. Thank you.

17 MR. POWELL: Thank you, Your Honor.

18 JUDGE JOHNSON HINES: All right. Let's take our
19 morning break. We'll come back at 11:20.

20 (A recess was taken at 11:01 a.m., after which
21 the proceedings resumed at 11:20 a.m.)

22 MS. TULLY: Danielle Tully for Ultrahuman.

23 JUDGE JOHNSON HINES: Yes.

24 DIRECT EXAMINATION

25 BY MS. TULLY:

1 Q. Good morning, Mr. Alarcon.

2 A. Good morning.

3 Q. You walked us through your opinions of the
4 non-infringement of Respondents' products during this
5 investigation. Did you form any other opinions?

6 A. Yes. I formed opinions with respect to the
7 validity of the '178 patent.

8 Q. And did you prepare a presentation to assist with
9 your testimony today?

10 A. Yes.

11 Q. If we could go to slide, next slide, 94. What
12 materials did you consider in forming your opinion?

13 A. I mentioned some of them before, and I will let
14 everyone get their binders. Of course they include the '178
15 patent itself, the prosecution history, prior art evidence,
16 the state of the art, certainly my expertise, relevant
17 documents, testimony from various witnesses.

18 Q. Okay. And if we could skip to slide 96.

19 Mr. Alarcon, you testified that you reviewed the
20 '178 in consideration of your opinions. What is the '178's
21 earliest priority date?

22 A. My understanding is it is in December of 2013.

23 Q. I actually believe --

24 A. Actually, if you can pull it up and zoom in.

25 Q. If we can zoom in on the priority section, Mr.

1 Merisier.

2 Do you see the date under prior publication data
3 2023, and then if we look further down --

4 A. Here we go.

5 Q. I will represent to you, Mr. Alarcon, that it is
6 November 29, 2013.

7 A. Okay. All right.

8 Q. And is that the date you applied as priority date
9 for the '178 patent when rendering your invalidity opinions
10 in this investigation?

11 A. Yes, it is.

12 Q. And if we could go to -- take a look at this
13 slide, which specific patent claims did you render your
14 invalidity opinions upon?

15 A. Claims 1, 2, 12, 13, and 14.

16 Q. And do you know if -- are these claims dependent
17 or independent?

18 A. Claim 1 is the independent claim. And claims 2,
19 12, 13, and 14 depend on claim 1.

20 Q. All right. And do you have an understanding of
21 what that means for a claim to be dependent or independent?

22 A. Yes, I do.

23 Q. And what is that?

24 A. So an independent -- from a layman's perspective,
25 my understanding is that an independent claim stands alone.

1 And the dependent claims depend on the independent claim,
2 so, for example, to that -- in order for claim 2, for
3 example, to be found to be infringed, claim 1 has to be
4 infringed.

5 Q. And if we can go to slide 97, please.

6 Can you explain what we see here without reading
7 in detail?

8 A. Yes. So this is the claim, the element breakdown
9 of the '178 patent. It's the same elemental breakdown that
10 I have been using throughout my prior testimony.

11 Q. Okay. And if we look at slide 98, same question.

12 Can you explain what we're seeing here, without
13 reading each limitation?

14 A. These are the dependent claims that I was
15 referring to previously, 2 and 12 through 14.

16 Q. And did you apply the language of these claims in
17 conducting your analysis?

18 A. Yes, I did.

19 Q. Can we go to slide 99.

20 Next slide, please, 100.

21 Mr. Alarcon, what do we see here?

22 A. So what we're seeing on my slide 100, these are
23 the claims that were construed during the course of this
24 proceeding.

25 Q. And did you apply this construction in forming

1 your opinions?

2 A. Yes, I applied these constructions for these
3 terms.

4 Q. And if we could go to slide 102.

5 Next slide, 103.

6 Mr. Alarcon, I know that you were accepted as a
7 technical expert for wearable devices and product design in
8 the infringement portion of the case, so we won't walk
9 through all of your experience again, but just at a high
10 level, if you could explain what this slide is showing?

11 A. Right. At a very high level, you know, some of
12 this is repeating what I demonstrated before, but my
13 experience with wearables and consumer products, as well as
14 with battery industry and battery technology. By way of
15 reminder, Mighty Cast was a wearable product that I worked
16 on. It is a bracelet.

17 And 2012 is when I began working on that, so
18 prior to the priority date, first priority date of the
19 asserted patent. And that had battery technology, that had,
20 you know, tracking of the user had accelerometer, for
21 example.

22 Blu E Cigs is a very high volume consumer
23 product, included batteries, miniaturized electronics,
24 housings, and I had mentioned this is for the sports bra
25 activity monitor. Just a note, this is a representation.

1 This is not the actual brand, because I am not able to
2 publish an image of the one that I worked on.

3 But one of the products I worked on was a joint
4 venture between an apparel company and a sports company for
5 an activity monitor that was to be mounted in a sports bra.

6 So, again, another example of a wearable activity
7 monitor. And then what UL shows is, as I mentioned before,
8 I'm a member and have been since the mid-2010s. A member of
9 UL 8139, so that's the Technical Committee that establishes
10 the standards for battery safety, specifically within the
11 electronic cigarette market. So it specifically focused on
12 battery technology?

13 Q. And you mentioned battery technologies. Did any
14 of the products that we see here use curved batteries?

15 A. So with respect to the Mighty Cast product, that
16 one I don't recall what we finally went to production with,
17 but we definitely used it during the development phase. And
18 just to be clear, there was a portion where we had a trade
19 show and there was a matter of timing, so I think for that
20 -- from that perspective, we may not have used a curved
21 battery for that, but further in the development, we did.

22 Q. Okay. And in forming your opinions in this case,
23 did you rely on your experience?

24 A. Yes, I did.

25 Q. Okay. Did you also -- did you review the

1 landscape of wearable device art?

2 A. Yes, I did.

3 Q. And if we could bring up slide 105.

4 Can you describe what we're seeing here?

5 A. Yes. Did we skip over 104?

6 Q. Yes.

7 A. Okay. Slide 105, so this is just an overview of
8 some of the products, the devices with housings and
9 electronic components that were well within the art, for
10 example, what I call, what I label Asada, that is U.S.
11 patent '701, that was filed in 1997. And there are other
12 products shown here. There is the Babashan reference, which
13 is a wearable band product.

14 There's the BooHo Yang reference, which is a
15 ring-style product, a ring sensor for healthcare automation.
16 And finally there is the Yuen reference, which is this one
17 is associated with Fitbit, a popular wearable company and
18 this had a number of sensors for detecting the heart rate,
19 for example, and pulse ox of a user.

20 Q. And were all of these references known in the
21 prior art prior to the priority date of the '178 patent?

22 A. Yes, I believe I already mentioned the Asada
23 date. With respect to Babashan, that was February 2009.
24 With respect to the BooHo Yang, that was with May of 1999
25 and with respect to the Yuen that is June of 2013 so before

1 the November 2013 date of the '178 patent.

2 Q. And if we could flip back to slide 104.

3 Can you describe what we're seeing here,
4 Mr. Alarcon?

5 A. Yes. These are the exemplary invalidating prior
6 art. These are the primary references I will be discussing
7 today. One is U.S. patent 10,303,867, that's referred to as
8 the Schroder reference. And that's a finger-worn device.

9 The Niwa reference, which was filed in July of
10 2011, again, that's a finger-worn device. You can see in
11 this imagery there is certain electronic components inside.
12 I will get more into that later.

13 And, additionally, there's the U.S. patent
14 application called Wissmar. And that was published August
15 of 2012. And you're seeing those images on the right of
16 this screen. This particular ring had what's referred to as
17 a toroidal-type structure.

18 Q. And, Mr. Alarcon, I know that you have in your
19 report provided opinions with respect to all three of these
20 as primary references. For the sake of time today, we are
21 going to just focus on Niwa and its associated obviousness
22 combinations, if that's okay with you.

23 A. That's fine.

24 Q. Okay. If we could go to slide 106, please.

25 Mr. Alarcon, you stated earlier that you did have

1 some familiarity with curved batteries based on your
2 experience with wearable devices. Can you please walk us
3 through some of the examples that we're seeing here on slide
4 106?

5 A. Yes. I can. There I include five examples on
6 slide 106. The first is what is called GMBPow, that is a
7 curved battery. It is a lithium polymer battery. And,
8 associated with that reference is an October 21, 2013 date.
9 I actually have familiarity with this company for that
10 Mighty Cast bracelet product that I mentioned.

11 Additionally, there's the U.S. patent, called
12 Webster, it is the 8,715,204. That was filed in July of
13 2011. And that Webster reference discusses flexible
14 batteries. In the bottom left, there's the Henderson patent
15 publication from January of 2013. And the Nike FuelBand in
16 the bottom center of this.

17 And Henderson and Nike FuelBand are related. The
18 Nike FuelBand was a very popular wearable product at the
19 time, obviously very big brand behind it, so it was very
20 well-known.

21 And, finally, the Slaby reference, which is the
22 U.S. patented publication that was filed in November 15 of
23 2013. And that is a ring product with curved batteries.

24 Q. And, Mr. Alarcon, have you formed an opinion
25 about whether or not the references depicted on slide 106

1 are prior art to the '178 patent?

2 A. Yes, I have. And I believe they are. And that's
3 consistent with my understanding, again. I was -- as I
4 mentioned before, I began developing the bracelet product in
5 2012. It too had a curved form factor. So these types of
6 references, say, curved batteries, in general, were
7 something I was familiar with.

8 Q. And they are prior art to the '178 patent, these
9 are dated before the priority date?

10 A. Yes. Every single one of these is dated before
11 the priority date of the '178 patent.

12 Q. Okay. And if we could go to slide 108, please.
13 And actually slide 109.

14 Mr. Alarcon, in your testimony on Friday, you
15 opined regarding the level of skill in the art. In forming
16 your invalidity opinions, did you apply the same standard?

17 A. Yes, I did.

18 Q. Can you remind us, what you considered the level
19 of ordinary skill in the art to be for wearable electronic
20 devices?

21 A. A person having three or more years of experience
22 with our research and development of health or medical
23 devices, wearable sensors, or consumer products.
24 Additionally, a related degree, so, for example, a
25 Bachelor's degree in mechanical, industrial, or electrical

1 engineering or related field. And so those would be the
2 primary qualifications for a person of ordinary skill.

3 Q. And that would be at the time of the '178 patent,
4 correct?

5 A. Yes. That would be at the time of the '178.

6 Q. In 2013?

7 A. Yes.

8 Q. And do you meet this standard?

9 A. Yes, I at least meet this standard and I
10 certainly at least met the standard during the 2013 time
11 frame as well.

12 Q. And in conducting your analysis, did you apply
13 this level of skill?

14 A. Yes, I did.

15 Q. So now let's turn to slide 110.

16 We briefly touched on the Niwa reference earlier.
17 Can you remind us generally of what Niwa is directed to?

18 A. Generally Niwa is directed as a couple, I would
19 say, primary examples, one being worn on the tip of a
20 finger. And another example being worn on a ring -- on I
21 recall it is the third -- basically being worn as a ring.
22 And Niwa has a number of components that can sense the --
23 for example, the pulse of the user. So it's a wearable ring
24 product.

25 Q. Okay. Great. Thank you.

1 Can we go to the next slide, please, 111.

2 And did you form an opinion, Mr. Alarcon, as to
3 whether Niwa is prior art to the '178 patent?

4 A. Yes, it has a publication date of January 19,
5 2012.

6 Q. Great. And if we could turn to the next slide,
7 112.

8 Can you please summarize your overall opinion as
9 to how Niwa invalidates the asserted claims?

10 A. All right. So Niwa anticipates the claims, the
11 asserted claims of the '178. And to the extent that it's
12 found that it doesn't, it would have been obvious. It would
13 have been obvious in view of the battery -- some of the
14 battery references I mentioned, for example, Webster,
15 Henderson, or GMBPow that would render claim 12 obvious, and
16 furthermore, Niwa in view of Schroder would render claim 1
17 obvious.

18 Q. And can we turn to slide 114, please.

19 In discussing your anticipation opinions today,
20 will you be walking through each of these claim elements?

21 A. Yes. I will walk through these claim elements,
22 and these are the same elements that I have been -- the same
23 breakdown I have used prior.

24 Q. Can we turn to the next slide, 115.

25 And, Mr. Alarcon, is there any dispute as to

1 whether or not Niwa discloses a finger-worn ring?

2 A. No. Oura admits at RFA 256 that it discloses --
3 Niwa discloses a finger-worn wearable ring device.

4 Q. And if we could go to slide 116. What are you
5 showing here?

6 A. I am showing images from and text from the Niwa
7 patent, and specifically from paragraph 28 of the Niwa
8 patent, it says "a finger ring construction to be worn on a
9 third joint of a finger." And going to be coming back to
10 some of these images from the Niwa reference a couple times,
11 so I will just take a moment to orient us on this.

12 In the figure on the left, that's Figure 22 from
13 Niwa, and the part in the center that's shaded gray, that's
14 the finger, the user's finger. And for reference, that's
15 pointing out of the page. So think about it as someone was
16 pointing their finger at you. So you're looking at maybe to
17 use our hotdog reference from earlier, you're looking at a
18 hotdog slice.

19 And then Figure 26 from Niwa, that is not quite
20 side-on but a slight perspective from the side-on view of
21 the user. So, again, what is being demonstrated by these
22 two images is that, indeed, it's a finger-worn wearable ring
23 device.

24 Q. If we could go to the next slide, 117.

25 Is element claim 1[pre] met, in your opinion?

1 A. Yes, it is met.

2 Q. If we could go to slide 118. Is there any
3 dispute as to whether or not Niwa discloses a housing?

4 A. No. At RFA 257, Oura admits that Niwa discloses
5 a housing.

6 Q. And how if at all does this relate to your
7 opinion as to whether Niwa anticipates the claims?

8 A. It supports that opinion. I agree that Niwa
9 discloses a housing.

10 Q. Okay. And if we could go to slide 119.
11 Can you explain what you're demonstrating here?

12 A. This is Figure 26 of the Niwa patent. And what I
13 have highlighted here in blue, shaded in blue and labeled,
14 is the external housing component of -- as shown in Niwa,
15 Figure 26.

16 Q. And if we could go to slide 120.
17 Can you please explain what you're demonstrating
18 here?

19 A. What I'm demonstrating here is the outer
20 circumferential surface, nature of it. I have highlighted
21 that, colored it in in green. And you can see that this is,
22 indeed, this is a ring because we can see the whole, the
23 majority of the finger, we can see that's a ring that goes
24 around the user's finger. So it defines an outer
25 circumferential surface and it's, again, it's a finger-worn

1 wearable device.

2 Q. If we can go to the next slide.

3 So to sum up, are the elements of claim
4 limitation 1[a] met, in your opinion by Niwa?

5 A. Yes, they are met by Niwa.

6 Q. If we can look at claim element 1[b-i]. What are
7 the elements of claim element 1[b-i]?

8 A. The elements are an internal housing component
9 defining an inner circumferential surface of the finger-worn
10 wearable ring device.

11 Q. And what are you showing on this slide, 122?

12 A. Yes. Again, Figure 26 of the patent, I am
13 highlighting the internal housing component that's shown in
14 purple. And that's the -- you can see how it is in contact
15 with the flesh, the third digit of the user's finger.

16 Q. And if we could go to slide 123.

17 Can you please explain what's being demonstrated
18 here?

19 A. Yes. I'm highlighting the inner circumferential
20 surface, again, referencing Figure 26. We can see that
21 surface goes around the finger of the user and it is,
22 indeed, circumferential.

23 Q. And let's move on to the next slide, 124.

24 Mr. Alarcon, what is your opinion as to whether
25 or not the claim element 1[b-i] is met?

1 A. My opinion is that it is met.

2 Q. Okay. And if we can go to the next slide.

3 Mr. Alarcon, did you also form an opinion about
4 claim element 1[b-ii]?

5 A. Yes, I did.

6 Q. And what does that claim element say?

7 A. It says that the internal housing component
8 coupled with the external housing component.

9 Q. Okay. And what are you demonstrating in this
10 slide, 125?

11 A. I'm demonstrating applying the claim construction
12 that it's connected with, coupled means connected with, and
13 what I have highlighted in kind of an off-green is the side
14 wall that is coupling or connecting the external housing
15 component and the internal housing component, which I'm
16 applying the same -- for those elements, I'm applying the
17 same identification I used on the prior slides.

18 Q. And in forming your opinion that the internal
19 housing component is coupled to the external housing
20 component, did you apply the Court's claim construction of
21 the term "coupled"?

22 A. Yes, I did.

23 Q. Okay. And if we could go to the next slide, 126.

24 Mr. Alarcon, in your opinion, is claim element
25 1[b-ii] met by the Niwa reference?

1 A. Yes, it is.

2 Q. And can we please go to slide 127.

3 And, Mr. Alarcon, can you please tell us what
4 claim element 1[b-iii] says?

5 A. Yes. It says "wherein at least a portion of the
6 inner circumferential surface of the internal housing
7 component is configured to contact a tissue of a user when
8 the finger-worn wearable ring device is being worn by the
9 user."

10 Q. And what have you demonstrated in slide 127?

11 A. So a couple things. I'm showing paragraph 192
12 from the patent, the first -- first I have highlighted that
13 when talking about the finger ring-type housing 40, that is
14 worn on the third joint of the finger 2. So that's the
15 first aspect I'm demonstrating.

16 Then in further I highlight that the first unit
17 10, disposed at the ball side of the finger, i.e. palm,
18 which is fleshy and whose fit feeling is fine. So this is
19 -- this is telling me that it is in contact with the tissue
20 of a user.

21 And on -- the image on the right, which is,
22 again, Figure 26, for purposes of this claim, I'm
23 reidentifying the inner circumferential surface and the
24 internal housing that I identified in prior slides.

25 Q. And so in this figure here, only a portion of the

1 inner circumferential surface is illustrated, correct?

2 A. Yes. It is difficult to -- would have been
3 difficult to fill them in both, but referring to my prior
4 slides, I identified them independently, so I'm
5 incorporating that into this, but for purposes of this
6 slide, I was able to show -- this is my attempt to show both
7 on the same annotation.

8 Q. They are coextensive?

9 A. Yes.

10 Q. And if we could go to slide 128.

11 Mr. Alarcon, did you form an opinion as to
12 whether claim element 1[b-iii] is met by the Niwa reference?

13 A. Yes, it is met.

14 Q. If we could bring up the next slide, 129.

15 Mr. Alarcon, is whether or not Niwa discloses a
16 battery disputed between the parties?

17 A. No, it's not disputed. RFA 272, in that Oura,
18 admits that it discloses a battery.

19 Q. And if we could go to slide 130.

20 Can you read to us claim 1[c-i]?

21 A. Yes. 1[c-i], "a battery positioned within a
22 cavity formed between the internal housing component and the
23 external housing component."

24 Q. And can you explain what you're demonstrating on
25 slide 130, please.

1 A. Yes, I can. So, first, I identify the internal
2 housing component and the external housing component. So
3 I'm identifying with respect to Figure 28 of the patent.
4 And, again, just for reference, this is in the middle
5 labeled 2 is the finger. And you're looking at it sideways,
6 not end-on.

7 So with that in mind, I've highlighted in purple
8 the internal housing component and labeled it. I have
9 highlighted the external housing component and labeled that,
10 colored that blue, blue-ish.

11 So once I identified those, I then see that there
12 is a cavity formed between those. So I have gone through
13 the process of identifying the components, the cavity that
14 is formed between those components, and then now I go on and
15 I see that there is indeed a battery that's labeled 24 that
16 is positioned within that cavity that I identified.

17 And I want to put Figure 28 into context. So I
18 also include Figure 26, where I, again -- where I, again,
19 identify those same components. So you have a more complete
20 understanding of Niwa.

21 Q. Thank you. And if we could go to slide 131.

22 Mr. Alarcon, have you formed an opinion as to
23 whether claim element 1[c-i] is met by Niwa?

24 A. I believe it is met.

25 Q. Can we please turn to slide 132.

1 Mr. Alarcon, can you please read claim 1[c-ii] to
2 the Court.

3 A. Yes. 1[c-ii] says, "wherein the battery
4 comprises a shape and size configured to fit within the
5 cavity between the outer circumferential surface of the
6 external housing component and the internal -- sorry, let me
7 pause there -- the inner circumferential surface of the
8 internal housing component."

9 Q. And can you walk us through what you're showing
10 on slide 132?

11 A. Yes, I can. I go through the -- a similar type
12 of analysis here. So, first, I identify in green and blue
13 the outer circumferential surface in green and the external
14 housing component in blue. And that's -- I have labeled
15 that.

16 And then I also identify the inner
17 circumferential surface of the internal housing component,
18 and I have labeled that. Once I have established those, I
19 see that Niwa discloses a cavity between those. And then,
20 as I mentioned before, within Figure 28, now I can see that
21 the battery, 24, is, indeed -- does, indeed, comprise a
22 shape and size configured to fit within the cavity.

23 And for completion, I am using the Court's claim
24 construction of cavity, which is a hollow space.

25 Q. Thank you, Mr. Alarcon.

1 And if we could turn to slide 133.

2 What are you showing in slide 133?

3 A. Again, where I was showing -- let me go back.

4 Where I was showing in 132 the cross-section, now
5 I'm showing the same thing but where you can see the
6 majority of the finger. So the same elements, I have
7 reidentified the same inner circumferential surface of the
8 internal housing component, the outer circumferential
9 surface of the external housing component, and I see there's
10 a cavity formed between them. And then, indeed, I can see
11 that the battery, which for accuracy, in Figure 26, I'm
12 pointing to the general region.

13 We can see from the prior image that it's tucked
14 under one of the circuit boards, but it's in that area. And
15 I can see additionally in this view that that battery
16 comprises a shape and size configured to fit within the
17 cavity that I identified.

18 Q. Thank you. If we could turn to slide 134.

19 Mr. Alarcon, did you form an opinion as to
20 whether claim element 1[c-ii] is met by Niwa?

21 A. Yes, I believe it is met by Niwa.

22 Q. And let's turn to slide 135. Excuse me.

23 Mr. Alarcon, we see claim 1[c-iii] at the top of
24 this slide. What is claim element 1[c-iii]?

25 A. It says "wherein the battery extends through at

1 least a first portion of the cavity of the finger-worn
2 wearable ring device."

3 Q. How have you illustrated that on slide 135?

4 A. I am again using Figure 28, a cross-sectional
5 view. And what I'm showing here is the battery that extends
6 through a first portion of the cavity. And I have labeled
7 on the right-hand side of this image, what I am indicating
8 is that this area is the first portion of the cavity. And
9 the text specifically, for example, paragraph 213 of Niwa in
10 reference to Figure 28, says the second unit 20, so the
11 second unit 20 is the collection of these components that
12 are at the top here.

13 And it says that -- let's see -- I go down to the
14 next highlighted section, that in this construction example
15 includes the first substrate, 21; the power source circuit,
16 22; the memory, 23; the battery, 24. So the text supports
17 that the battery 24 is included in that second unit, which
18 is in this view on top.

19 Q. And that second unit is the first portion of the
20 cavity?

21 A. Yes. And that -- as I mentioned, that second
22 unit is the first portion of the cavity or is in the first
23 portion of the cavity.

24 Q. And do you have a sense of where that -- looking
25 at this figure, where is that first portion of the cavity in

1 relation to the finger?

2 A. In this view, that first portion of the cavity in
3 which unit 20 resides, that is on top, let's say if you had,
4 I don't know, like a jewel or something on top of your ring,
5 just to give you an orientation, I am not saying that there
6 is a jewel in this image, just orienting you that's where it
7 would be.

8 Q. Okay. And if we could go to the next slide.

9 Mr. Alarcon, did you form an opinion as to
10 whether claim element 1[c-iii] is met by Niwa?

11 A. I believe it is met by Niwa.

12 Q. And if we could go to slide 137.

13 Mr. Alarcon, do the parties dispute that Niwa
14 discloses a printed circuit board?

15 A. No. According to RFA 288, Oura admits that Niwa
16 discloses a printed circuit board.

17 Q. And if we could go to slide 138, please.

18 We see claim element 1[d-i]. Mr. Alarcon, can
19 you explain that claim element?

20 A. Yes. 1[d-i] is a printed circuit board disposed
21 between the internal housing component and the external
22 housing component.

23 Q. And how -- what have you shown on slide 138
24 relative to that claim limitation?

25 A. I'm demonstrating these elements, for example,

1 using Figure 27, which is -- it's a -- let me make sure --
2 it's a companion image to Figure 28, whereas in Figure 28,
3 it gave us the details of what's within 20.

4 Figure 27 is telling us the details of what's
5 within first unit 10. So with that understanding, this is a
6 cross-sectional view of the finger, I have identified the
7 internal housing component that's in purple, the external
8 housing component that's in light blue and the printed
9 circuit board that is the substrate, 11, I have identified
10 that and shaded that in green.

11 And, indeed, it is disposed between what I show
12 as the internal housing component and external housing
13 component. And paragraph 207 describes Figure 27, describes
14 that first unit of this construction, includes the substrate
15 11, as I mentioned, that's the printed circuit board.

16 That includes the light sensor, the measurement
17 window, the amplifier circuit and the processing circuit.
18 So those, for example, amplifier circuit and processing
19 circuit, you can see those are mounted to the substrate 11.
20 That tells -- that's another indication that that is a
21 printed circuit board.

22 Q. And in terms of relation to the finger 2 that we
23 see in Figure 27, where is that printed circuit board
24 located?

25 A. It is below the finger, sort of as the patent --

1 to use the patent's description, the fleshy portion on the
2 underside of your finger.

3 Q. Thank you. And if we can go to slide 139.

4 Mr. Alarcon, did you form an opinion as to
5 whether claim element 1[d-i] is met by Niwa?

6 A. I believe it is met by Niwa.

7 Q. And if we could go to the next slide, 140.

8 Mr. Alarcon, this slide is showing claim element 1[d-ii].

9 Can you please explain claim element 1[d-ii]?

10 A. Yes, I can. 1[d-ii] reads "wherein the printed
11 circuit board extends through at least a second portion of
12 the cavity of the finger-worn wearable ring device different
13 from the first portion."

14 Q. And what are you showing on slide 140?

15 A. I'm, again, showing Figures 27 and Figures 28
16 from the patent to provide the context to show both the
17 first -- the second portion in that it is indeed different
18 from the first portion.

19 So in Figure 27, I have again highlighted the
20 printed circuit board. And it is located in the second
21 portion that is below the fleshy portion of the finger.

22 And on the right, Figure 28, I identified that as
23 that first portion of the cavity. So that's, again, on top
24 of the finger in this view orientation.

25 Q. And if we could go to slide 141.

1 Mr. Alarcon, did you form an opinion as to
2 whether claim element 1[d-ii] is met by Niwa?

3 A. Yes, I did. And just to make it really clear, I
4 also used -- Figure 26 also tells me that -- you know, that
5 cavity, the cavity is connected. You know, I identified the
6 first and second portions of the cavity. We know those
7 cavities. That's the cavity. It is connected.

8 In Figure 26, it gives us the perspective view,
9 shows us how those are connected.

10 Q. Would you like us to bring up Figure 26?

11 A. Yeah, that would be great.

12 Q. Mr. Merisier, maybe we can go back to slide 133,
13 which has Figure 26 on it.

14 A. Yeah. And I suppose I don't have -- so Figure 26
15 shows it. You can see 30 on the left-hand side of this.
16 That is electrically connecting the first portion -- sorry,
17 the first unit to the second unit.

18 So that cavity is extending around from the first
19 unit to the second unit. And I believe it is the wires, the
20 patent calls it the wires, I believe, 30, connects those.
21 It flows through the cavity to the second portion.

22 Q. Understood. And 30 is what's labeled on the
23 left-hand side of the figure, correct?

24 A. Yes. And Figures 24 and 25 of the patent also
25 gives you a companion view of the first and second units

1 from above and below and has another rendering of the wires
2 that shows how they connect.

3 Q. Would you like us to bring up Figures 24 and 25
4 of the patent?

5 A. Yes, please.

6 Q. Mr. Merisier, can you bring up CX-1133 of Figures
7 24 and 25 and put them side-by-side if you could.

8 A. So Figure 24, you're looking at the first unit
9 20. And you're looking at the top of the finger. And
10 Figure 25 you're looking from the underside toward the
11 fleshy part of the finger. And indeed you can see those two
12 units are connected by a bundle of wires, 30. That flows
13 through the cavity and that's what electrically connects
14 those first and second units.

15 Q. Thank you, Mr. Alarcon.

16 If we could go back to slide 139.

17 Mr. -- I apologize, slide 141.

18 Mr. Alarcon, did you form an opinion as to
19 whether or not claim 1[d-ii] is met by Niwa?

20 A. Yes, my opinion is that it is met by Niwa.

21 Q. And so now if we can go on to slide 142.

22 Mr. Alarcon, do you have an understanding as to
23 whether or not the parties dispute that Niwa discloses a
24 sensor?

25 A. Yeah, my understanding is that at RFA 293, Oura

1 admits that Niwa discloses a sensor.

2 Q. And if we could go to the next slide.

3 Mr. Alarcon, can you please explain what claim
4 element 1[e] is?

5 A. Yes. Claim element 1[e] says "one or more
6 sensors electrically coupled with the printed circuit board
7 and the battery and configured to acquire data from the user
8 through the internal housing component."

9 Q. What are you showing on slide 143?

10 A. I'm showing, again, Figure 27 from the patent, as
11 well as paragraphs 210 and 208 from the patent. There are a
12 lot of elements here so I will walk you through them one by
13 one.

14 First, let's cover the one or more sensors. So
15 in paragraph 210, it describes light emitting receiving
16 surfaces of the light sensor 12. And in this case, the
17 light sensor performs measurement of plethysmography. Again
18 it is repeated further down in 210. Paragraph 208, again,
19 talks about the light sensor 12.

20 So that's the light sensor portion of it. And I
21 can see here that the light sensor is indeed mounted on the
22 printed circuit board. And I have identified that, the
23 sensor here on Figure 27. I have identified that as well.

24 And furthermore -- so I have demonstrated that
25 the sensor is electrically coupled to the printed circuit

1 board. That's how it works. And the battery, which is in
2 unit 20 above, that is connected to the printed circuit
3 board. And the battery provides power for operating the
4 circuitry and including the light sensor.

5 And, in fact, again, referring to cable 30,
6 that's the connection that provides the electrical power
7 between the -- from the battery up in unit 20 down to the
8 printed circuit board within unit 10.

9 And then, finally, with respect to being
10 configured to acquire data from the user, through the
11 internal housing, the patent describes in paragraph 210, it
12 says "with respect to the plethysmography, light to the
13 finger 2 and a reflected light go back from the finger 2 via
14 this measurement window 13. So, in addition with respect to
15 the thickness of the measurement window 13, it is desirable
16 to design appropriately in view of the depth of focus of the
17 light sensor 12.

18 So that is describing the measurement window,
19 acquiring data from the user, and we can see in Figure 27
20 I've labeled the measurement window, 13, and the light
21 sensor immediately below it, 12, and you can see how the
22 measurement window 13 is -- that is going through the
23 internal housing component, which I have labeled in purple.

24 Q. Thank you. If we could go to slide 144.

25 Mr. Alarcon, did you form an opinion as to

1 whether claim element 1[e] is met?

2 A. Yes, it is met by Niwa.

3 Q. And do you have an opinion as to whether all of
4 the elements of claim 1 are met by Niwa?

5 A. Yes, all of the claim elements are met by Niwa of
6 claim 1.

7 Q. Would that be -- I apologize.

8 A. All the elements of claim 1 are met by Niwa.

9 Q. Does that mean that Niwa anticipates claim 1, in
10 your opinion?

11 A. Yes, it does.

12 Q. If we could take a look at slide 145.

13 Mr. Alarcon, slide 145 says claim -- Niwa
14 anticipates claim 2. Can you explain claim 2, please?

15 A. Yes. Claim 2 reads "the finger-worn wearable
16 ring device of claim 1, wherein the first portion of the
17 cavity of the finger-worn wearable ring device is
18 non-overlapping with the second portion of the cavity of the
19 finger-worn wearable ring device."

20 Q. And what are you showing on slide 145?

21 A. I am showing again Figures 27 and 28 of the Niwa
22 reference and paragraph 193, which describes this. So
23 paragraph 193 describes the second unit in terms of its
24 location, and, in fact, it says about halfway through that,
25 it is describing that in this way by means of locating the

1 second unit 20, which can be a noise source for the first
2 unit 10, from the first unit 10, as far as possible, the
3 measurement accuracy of the plethysmogram can be improved.

4 So, again, the patent, Niwa, is saying that the
5 second unit 10, which in this Figure 27 view is at the top
6 of the finger, and -- sorry, second unit 20 at the top and
7 first unit 10 at the bottom, so they are in -- they are
8 located differently for minimizing the noise. And as I
9 identified earlier, the second portion of the cavity below
10 the finger and the first portion of the cavity above the
11 finger, so, again, demonstrating that these are
12 non-overlapping?

13 Q. And if we could go to the next slide, 146.

14 Mr. Alarcon, did you form an opinion as to
15 whether Niwa anticipates claim 2?

16 A. Niwa anticipates claim 2.

17 Q. If we could go to the next slide. This slide
18 refers to claim 13. Mr. Alarcon, can you please explain
19 claim 13?

20 A. Yes. Claim 13 reads "the finger-worn wearable
21 ring device of claim 1, wherein the one or more sensors
22 comprise a first light-emitting component configured to emit
23 light associated with a first wavelength, and a second
24 light-emitting component configured to emit light associated
25 with a second wavelength different from the first

1 wavelength."

2 Q. And what are you showing on slide 147?

3 A. I am showing a number of images, or figures,
4 sorry, Figure 3 and Figure 8 from the Niwa patent, as well
5 as paragraph 147. Figure 3, for example, describes a number
6 of different LEDs emitting different wavelengths.

7 And in the description of Figure 8, there's a
8 description of these output wavelengths λ_1 to λ_8
9 8, are values different from one another, and that they
10 range from the visible light region to a near infrared
11 region.

12 So that's demonstrating that there are multiple
13 wavelengths. And they are different wavelengths. There's a
14 first wavelength, it is different than a second wavelength.

15 Q. If we could move to slide 148.

16 Did you form an opinion as to whether Niwa
17 anticipates claim 13?

18 A. It anticipates claim 13.

19 Q. And if we could go to slide 149.

20 This slide, 149, looks very similar to slide 147,
21 so maybe we can walk through this one quickly and your
22 opinions there.

23 A. Yes. The main difference -- the difference here
24 is that with claim 14, the first wavelength is associated
25 with visible light. And the second wavelength is associated

1 with infrared light. That's the unique aspect of this
2 claim.

3 And, indeed, as I just read in paragraph 147 of
4 Niwa, it identifies from visible light region. And I have
5 highlighted that in yellow, to a near infrared region, and I
6 have highlighted that in green. And near infrared is part
7 of the infrared spectrum.

8 Q. So if we could go to slide 150.

9 Mr. Alarcon, have you formed an opinion as to
10 whether Niwa anticipates claim 14?

11 A. Yes, it anticipates -- Niwa anticipates claim 14.

12 Q. Thank you.

13 And if we can move to slide 151.

14 Mr. Alarcon, have you also formed opinions with
15 respect to obviousness of the '178 patent?

16 A. Yes, I have.

17 Q. If we could bring up slide 152.

18 I'm sorry, could we bring up 162 instead.

19 Mr. Alarcon, what is this slide showing, 162?

20 A. So this is, in slide 162, with respect to claim
21 1, I believe it would have been obvious in view of Schroder,
22 again, as I -- for the reasons I have described, I believe
23 it is anticipated but to the extent it is not found to be
24 anticipated, because Oura contends that Niwa does not
25 disclose the internal/external housing components or the

1 inner/outer circumferential surfaces, I find that those are
2 disclosed in Schroder and it would have been obvious to
3 combine.

4 Q. And it may be helpful to go to slide 104 for my
5 next question.

6 Earlier today, Mr. Alarcon, you described
7 Schroder briefly for the Court. Can you describe Schroder
8 in more detail and what we're looking at in the Figures 4
9 and 7 on slide 104 on the left-hand side?

10 A. Yes. With respect to Schroder, there are two
11 images here that I think are illustrative on the left-hand
12 side. And, well, first, a little background on -- well, I
13 will cover -- I will explain and then give a little
14 background on Schroder.

15 What we're looking at here in the circular image
16 of Schroder, that is a cross-section of Schroder, where
17 there is -- it is identifying the housing structure of
18 Schroder and I can get into that in a little more detail.

19 Down below in Figure 7 of Schroder, this is one
20 of a number of examples within Schroder about how to
21 construct an internal housing component and external housing
22 component and that there is a cavity formed between them.

23 So that's at a high level what I'm describing
24 here with respect to Schroder.

25 Q. And I can't recall if you testified earlier, is

1 Schroder prior art to the '178 patent?

2 A. Yes, Schroder is prior art. There is a U.S.
3 patent, and I believe it claims priority to a German patent
4 that -- and I have reviewed the certified translation of
5 that German patent. I have reviewed the figures. And I
6 find them to disclose the same thing.

7 Q. Is it opinion than that a POA would consider
8 Schroder and Niwa to be analogous art?

9 A. Oh, yes, they are both finger-worn devices for
10 sensing, detecting user activity and/or physiologic
11 parameters.

12 Q. How does the scope and content of Schroder
13 compare to Niwa?

14 A. They are similar in terms of scope and content.

15 Q. So looking here, what are we seeing in Figure 7?
16 I know you said you wanted to go back and describe the
17 housing in a little more detail. Can you describe what
18 we're seeing here in Figure 7 with respect to Schroder?

19 A. Yes. And this is not the hotdog deal. I am
20 keeping my views straight. This is a cross-section where,
21 in Figure 7, I've identified -- of Schroder, I've identified
22 just looking through a portion of this, 18 and 16. And
23 those are the external housing component and the internal
24 housing component respectively.

25 And through this cross-section, you can also see

1 that there is an inlay, 12, that goes in there. And that
2 goes into the cavity formed by these structures. So, again,
3 it's -- these are two structures that enclose space. And
4 they are inner and outer. Well, what's the best way to
5 phrase this? Arranged inner and outer respectively, yes.

6 Q. And what type of ring in Schroder, Mr. Alarcon,
7 what is Schroder today?

8 A. Can you --

9 Q. What type of ring is Schroder?

10 A. What type of ring?

11 Q. Yes.

12 A. It is a finger-worn ring device.

13 Q. And does it have external and internal
14 components, housing components?

15 A. Right. It has -- it has an internal housing
16 component and an external housing component.

17 Q. And are we seeing that in Figure 7?

18 A. Yes. That's what I'm trying to describe in
19 Figure 7.

20 Q. Okay. Are 17 and 18 connected in Schroder? I'm
21 sorry, 16 and 18, are they connected in Schroder?

22 A. Yes, they are.

23 Q. Okay. And what is labeled as 12?

24 A. 12 is -- it is describing the inlay. So in
25 Schroder, the inlay, there is other disclosure within

1 Schroder that describes the things that go on the inlay.

2 The inlay is basically a circuit board. It's a PCB.

3 And so when it talks about inlay, it is pointing
4 to the region where the printed circuit board goes. Or at
5 least the printed circuit board goes.

6 Q. Would the printed circuit board have a battery?

7 A. Yes. The Schroder reference describes having a
8 battery. It would be connected to it. And in the other
9 view in that circular view, the cross-sectional view of
10 Schroder, you could see that there is a cavity formed all
11 the way around by the internal housing component and the
12 external housing component, and that is where, within the
13 annular cavity, that is where the PCB would reside, as well
14 as the battery to power the electrical components mounted to
15 the printed circuit board.

16 Q. And if we could bring up that slide, 104, that
17 had the curved image on it.

18 Given that Schroder's recess is curved, would it
19 be logical that a battery fitting there could also be curved
20 in a POSA's view?

21 A. Yes, yes, it would go hand in glove. When you
22 have -- when the structure is circular or looks like this,
23 it's a ring structure. The structure tells you, you know,
24 of course, you know, you would want to have a battery that's
25 curved for a number of reasons.

1 But, yes, it would -- a person of ordinary skill
2 looking at this would be motivated to use a curved battery,
3 so that, for example, they could get more capacity than if
4 they had just used a flat battery.

5 Q. And in your opinion, that curved battery, where
6 would that be located?

7 A. That would also be in the cavity that, again, the
8 patent is labeling 12. That's where the inlay resides. And
9 in conjunction with Figure 7, for example, I know that that
10 cavity is formed by the internal housing component and
11 external housing component.

12 Q. Thank you, Mr. Alarcon.

13 Now, if we could go back to slide 162.

14 In your opinion, would it have been obvious to
15 combine the teachings of Schroder with Niwa?

16 A. Yes, it would have been.

17 Q. And why is that?

18 A. Well, as I highlight here, they teach similar
19 improvements over similar devices, for example, biometric
20 sensing with similar components and technology. It would
21 have been within ordinary mechanical skills.

22 So thinking about Niwa, and knowing about
23 Schroder, there are only -- these are housings. How you
24 configure the construction of a housing, there is a limited
25 number of ways you could do it. I mean, and as I mentioned,

1 housings are quite common and Schroder provides several
2 examples, quite common examples of constructing a housing.
3 So it would have been within the ordinary skill of a
4 mechanical engineer to construct a housing in this manner.

5 And, you know, that goes with the fourth point
6 here, that, you know, really what Schroder does is it
7 provides some illustrative ways of manufacturing what is
8 disclosed in Niwa. And I think I have already touched on
9 that last one, is that, you know, Schroder also shows that
10 there are a number of different construction variants for a
11 ring housing with a recess to house electrical components.

12 So it was well-known in the art about designing
13 structures that enclose electrical components.

14 Q. And, Mr. Alarcon, I believe I heard you say that
15 Schroder illustrates what was already disclosed in Niwa.
16 What particularly are you referring to?

17 A. I'm referring to the internal and external
18 housing components. So, again, for clarity, I believe Niwa
19 discloses it, but to the extent it is found not to, it would
20 have been obvious to include Schroder for those elements.

21 Q. Thank you, Mr. Alarcon.

22 If we could go to slide 152.

23 I'm sorry, before we go there, could we go to
24 slide 163.

25 Mr. Alarcon, have you found -- have you rendered

1 an opinion as to whether or not Schroder -- Niwa in view of
2 Schroder renders claim 1 obvious?

3 A. I believe it renders it obvious.

4 Q. Can we go to slide 152, please.

5 And, again, Mr. Alarcon, we're looking at claim
6 12 here?

7 A. Yes, we are.

8 Q. And I believe that this is reflective of some of
9 the battery art that we talked about earlier, correct?

10 A. That's correct, some of the battery art.

11 Q. And specifically we're looking at GMBPow on the
12 left, Webster in the middle, and Henderson on the right; is
13 that correct?

14 A. That's correct.

15 Q. Okay. And what is your opinion with respect to
16 claim 12?

17 A. With respect to claim 12, that Niwa, in view of
18 these references, would render claim 12 obvious.

19 Q. And do you have an understanding as to whether
20 Oura admits that Niwa discloses a battery?

21 A. I recall that they admit it discloses a battery.

22 Q. Okay. And if we could go to slide 153.

23 Can you explain what you're demonstrating on this
24 slide, Mr. Alarcon?

25 A. Yes. This is -- what I have here are two

1 excerpts from the '178 patent, as well as the GMBPow on the
2 right-hand side at RX-30. So specifically with respect to
3 the text of the patent, it says the battery can be any type
4 of battery, and it goes on to say it can be thin, flexible
5 lithium, ceramic chemistry battery. It goes on to say that
6 the battery can be circular, can be a circular-formed
7 lithium polymer or lithium ion battery.

8 And it further goes on to say that the dimensions
9 of the interior and/or exterior diameter may be measured
10 according to other variables. And then it talks about some
11 of those.

12 So when it's talking about the ring, it says a
13 little further down that it has an interior diameter, d_1 ,
14 and it says that can be in an approximate range of 12
15 millimeters to 24 millimeters. So let's take the 24
16 millimeters by way of example. That's the diameter,
17 multiply it times pi, you get around 75 millimeters in total
18 circumference.

19 And then I go and I am looking at the GMBPow
20 battery and it's length is 30 millimeters. So that's the
21 arc length. So when we're considering length, we can see by
22 way of one example within the '178 patent, we have -- the
23 cavity would be -- could be approximately 75 millimeters in
24 total circumference. So certainly an arc length of 30 fits
25 within 75.

1 And then it further goes on to -- it talks about
2 the exterior -- sorry, the external diameter. That could be
3 even bigger. But then it talks about the difference between
4 d1 and d2 can be in the approximate range of 1.5 to 3
5 millimeters. Okay?

6 So let's say it's 3 millimeters and you have a
7 half a millimeter wall thickness for the metal on either
8 side. Well, that leaves you 2 millimeters. The GMBPow
9 battery has a thickness of 2 millimeters.

10 And then finally it says at the very bottom in a
11 non-limiting example, the width, WR, is in a range
12 approximately 3 to 8 millimeters. So approximately, you
13 know, non-limiting. Let's say it is 8 millimeters. You
14 have a half millimeter of wall, metal thickness, on each
15 side so let's say it is 7 millimeters for a cavity. Well,
16 the battery here was 10 millimeters in width.

17 So that's 3 millimeters over. That's just a
18 little bit over the size in this non-limiting example with
19 respect to width. So I read the patent. I read the GMBPow
20 spec. I remember from January of 2013, I had firsthand
21 experience with GMBPow. This is -- I used curved batteries
22 -- I am aware of their curved batteries myself from that
23 time frame. And this is consistent with my -- this
24 particular battery is consistent with my recollection of
25 what they had.

1 So what this tells me is here's just one example
2 where there's a battery that seems to be within the range of
3 what the inventors of the '178 patent were describing.

4 Q. Okay. So to sum it up, would a prior art
5 commercially available battery like GMBPow fit within the
6 disclosed parameters -- the parameters disclosed in the
7 patent?

8 A. Yes, the prior art, available battery would fit,
9 and to the extent, you know, I pointed out that, for
10 example, this one says it is 10 millimeters. And maybe
11 that's a little more than what's disclosed here, but that's
12 a matter of getting -- that's a capital equipment investment
13 to make a custom battery that has, you know, the size that
14 you want. All right?

15 That's a mechanical engineering task and a supply
16 chain task.

17 Q. And if you need me to put up claim 1, I just want
18 to make sure. We have been talking a lot about these
19 dimensions. Are any of these dimensions claimed in claim 1?

20 A. No, there's no claim of -- not just these
21 dimensions, but within claim 1, there's no limitation on the
22 size.

23 Q. So if we can move to slide 154.

24 Mr. Alarcon, do you have an opinion on whether or
25 not a POSA would have been motivated to combine Niwa with

1 the GMBPow reference?

2 A. Yes, they would have been motivated to combine.
3 It would have been obvious when you -- when you have -- I
4 cite here, they go hand-in-glove. When you have a structure
5 that is of that size, you know, a person of ordinary skill
6 would have been motivated to -- I should say more clearly,
7 size and shape, they would have been motivated to find a
8 curved battery to fit within that shape.

9 Curved batteries are -- as I kind of alluded to
10 earlier, they would have been more compatible because what
11 it allows you to do is essentially fit more battery, more
12 layers of anode and cathode, if you continue along the arc.
13 So you can essentially store more energy throughout -- by
14 having a curved battery. The curved batteries would not
15 disrupt wearability in that they would not force an
16 unintended shape -- change in shape or necessitate it.

17 And the existing batteries, for example, were,
18 you know, the voltage work, they were in the range of
19 current needed. Batteries had nominal current capabilities,
20 but they also had surge current capabilities to handle surge
21 beyond what's shown in the rated kind of nominal steady
22 state capability.

23 All this would have been within the capability of
24 an ordinary mechanical engineer, mechanical skill, and for
25 clarification here, knowledge of electronics as well.

1 Q. And based on everything you just said, would a
2 POSA have had a reasonable expectation of success in making
3 the modifications that you just described?

4 A. Yes, yes.

5 Q. So then if we could go to slide 155.

6 In your opinion, Mr. Alarcon, does Niwa in view
7 of GMBPow render claim 12 obvious?

8 A. Yes, it does.

9 Q. We can move to 156.

10 And I think we may be able to move a little
11 faster through the next couple of references, but can you
12 just describe what we're seeing here on slide 156?

13 A. Yes. This is Webster, discloses a curved
14 battery. And it specifically here, it's a thin-film lithium
15 ion or zinc-manganese dioxide chemistry battery. It can be
16 bent or curved. It's a type of battery that can be bent or
17 curved.

18 Q. And if we can go to slide 157.

19 Again, would a POSA have been motivated to
20 combine the teachings of Webster with Niwa?

21 A. Yes, it's just for the same reasons I mentioned
22 before.

23 Q. And if we go to slide 158, in your opinion, does
24 Niwa in view of Webster render claim 12 obvious?

25 A. Yes, it does.

1 Q. Okay. And if we go to slide 159.

2 Can you please describe what we're seeing here on
3 159?

4 A. This is a Henderson reference that discloses a
5 curved battery. I will read it from Henderson here. It
6 says batteries 142 have a curvilinear or curved
7 configuration and that the battery is defined curved planar
8 surfaces and overall size of the batteries and their
9 respective recessed compartments may vary such being larger
10 to increase battery capacity and life of the device before
11 requiring recharging.

12 So -- and, finally, at paragraph 122 it says,
13 they are lithium polymer batteries. So, again, this is
14 another example, and, again, this is related to the Nike
15 product, the very popular Nike product that Henderson
16 discloses a curved battery.

17 Q. If we can flip back to slide 156.

18 I just have one question for you about this
19 slide. Is Webster a finger-worn ring?

20 A. No, it is not. It's a vaginal temperature
21 sensing product.

22 Q. And does that matter to your opinion?

23 A. No. It's in the category of products, I think
24 would have been considered. It certainly is not a
25 finger-worn ring device. I'm not saying that. This is

1 broader outside of rings, but, again, in the same way that a
2 wrist-worn -- not Webster -- Henderson, for example,
3 describes a wrist-worn bracelet, I believe in its words, it
4 is just another example in this broad category of devices
5 that take biological data, they are wearable, there are
6 batteries. A lot of similarities. So they would have been
7 appropriately similar.

8 Q. Understood.

9 If we could go back to where we left off on slide
10 159.

11 I believe you were just wrapping up your
12 discussion of Henderson. Did you form an opinion as to
13 whether or not a POSA would be motivated to combine
14 Henderson with the teachings of Niwa?

15 A. Yes, a person of ordinary skill would have been
16 motivated to combine the teachings of Henderson with Niwa.

17 Q. Can we move to slide 160.

18 And what is your opinion?

19 A. That it would have been obvious to combine, for
20 the same reasons I mentioned with the prior two battery
21 references.

22 Q. If we could go to slide 161.

23 Did you form an opinion as to whether Niwa in
24 view of Henderson renders claim 12 obvious?

25 A. It renders it obvious.

1 Q. And if we can move to slide 255.

2 Mr. Alarcon, did you provide any opinions
3 regarding secondary considerations of non-obviousness?

4 A. Yes, I did.

5 Q. And what is your overall conclusion as to the
6 evidence of secondary considerations proffered in this case?

7 A. Overall opinion is that the secondary
8 considerations are not -- that were presented are not tied
9 to the patented claim or the claims of the patent.

10 Q. If we can go to the next slide, 256.

11 Before we get into the information contained on
12 this slide, have you heard of the Motiv ring?

13 A. I have.

14 Q. And have you heard of Motiv?

15 A. I have.

16 Q. Okay. And how would you describe Motiv?

17 A. The ring that I saw?

18 Q. Yes.

19 A. Okay. So the ring that I saw is a finger-worn
20 wearable ring device. It had sensors. It is approximately
21 the same size as the rings in this case, the Oura, the
22 Ultrahuman, the RingConn. It is very similar in size, might
23 actually be even smaller than that.

24 Now, the construction is different, but just to
25 keep the description at a high level, I will leave it at

1 that.

2 Q. And do you have an understanding about how the
3 Motiv ring relates to the technology claimed in the '178
4 patent?

5 A. Can you repeat that?

6 Q. Do you have an understanding of how the Motiv
7 ring relates to the technology claimed in the '178 patent?

8 A. Yes. I mean, it was designed by the inventors of
9 the '178 patent, and it appears to be, you know, following
10 some of the teachings of the '178 patent.

11 Q. And in your opinion, did Motiv use the technology
12 of the '178 patent?

13 A. Well, I am not saying I have done a
14 limitation-by-limitation analysis of this, but it appears
15 that at a high level, they are using the technology of the
16 '178 patent.

17 Q. And I'll ask it a different way. Does the Motiv
18 ring have an internal and external housing component
19 defining circumferential surfaces?

20 A. That's my recollection.

21 Q. And do you recall whether it has electronic
22 components inside?

23 A. Yes, I do recall it has electronic components
24 inside.

25 Q. Okay. And were you in the courtroom when Mr. von

1 Badinski testified that Motiv sold approximately 80,000
2 rings?

3 A. Yes, I heard that.

4 Q. And do you know if Motiv is still in business?

5 A. My understanding is they are not.

6 Q. And would you consider the product offered by
7 Motiv, the Motiv ring, to be a commercial success?

8 MR. SCHULTZ: Objection, Your Honor, to opinion
9 testimony on this -- objection to opinion testimony on this
10 subject, Your Honor.

11 JUDGE JOHNSON HINES: On what basis?

12 MR. SCHULTZ: He's not an expert in commercial
13 success based on what he has just testified on.

14 JUDGE JOHNSON HINES: All right. I think we -- I
15 understand the objection. I will allow the testimony.

16 BY MS. TULLY:

17 Q. Do you need me to repeat the question?

18 A. Yeah. If you wouldn't mind.

19 Q. Sure. Would you consider the product offered by
20 Motiv, the Motiv ring, to be a commercial success?

21 A. I understand -- I believe there is even testimony
22 from -- deposition testimony from some of the founders that,
23 to paraphrase, indicate there was no -- they didn't consider
24 it to be a commercial success. So I have no reason to
25 believe that there is commercial success if -- especially

1 not if the founders don't believe there was commercial
2 success.

3 Q. So I will direct your attention back to slide
4 256.

5 The first bullet point, can you read that and
6 explain to us what you mean by that?

7 A. Yes. The commercial success and industry praise
8 of the Oura product were due to factors unrelated to the
9 inventions claimed in the '178 patent. You know, the
10 evidence that I saw in terms of commercial success and
11 industry praise didn't tie back to the claimed features.
12 They seemed to be at a very high level discussing the -- you
13 know, for example, a lot of the aspects of the app.

14 And, you know, that's -- the app is not a claimed
15 element within the '178. I don't see app features claimed
16 in the '178 patent. So a good portion of that praise, for
17 example, seems to be tied to things unrelated to the claimed
18 features itself. And with respect to commercial success, I
19 understand Oura has put -- invested significant amounts in
20 marketing the product.

21 So to me that's a differentiator between Motiv,
22 who did not do it and presumably practice the -- use the
23 technology, and Oura, is that investment in marketing, that
24 seems to be a clear difference between what Motiv did and
25 Oura.

1 So, again, I think these indicators of commercial
2 successes and praise are unrelated to the claimed invention.

3 Q. Do you have a sense of how Oura's marketing spend
4 compares to its R&D spend?

5 A. Compared to its R&D spend, I don't have a great
6 recollection of that. I know I opined more on how their
7 marketing spend compares to overall revenue.

8 Q. Okay. The second bullet point, "Respondents
9 independently developed their products." What do you mean
10 by that?

11 A. So my understanding is that the patent, '178
12 patent and the portfolio of which it is part, they were
13 required by -- oh, sorry. I was answering a slightly
14 different question in my mind. I should pay more attention.

15 So with respect to Respondents, my understanding
16 is they have developed their products independently.

17 Q. Okay. And did you hear any evidence that
18 Respondents changed any of their products in response to a
19 teardown?

20 A. No, I didn't hear any evidence of that. My
21 understanding is they were doing -- well, I heard that
22 testimony that they were doing competitive analysis to do
23 feature comparison for way of example and if -- it was a
24 little bit more difficult to hear but I think the Ultrahuman
25 Respondents testified something to the effect that they were

1 in development or doing their beta program when they first
2 had the -- when they did the teardown that was being
3 discussed during testimony.

4 So that implies that they would have had to begun
5 their design beforehand. So I think that's another
6 indicator. I don't have the full verbatim of that because
7 it was a little hard to hear from the back of the courtroom.

8 Q. Understood. And the last bullet point says
9 "others did not fail prior to the patented technology."

10 What do you mean by that?

11 A. Yeah, there were -- because the prior art
12 discloses the technology, you can't have the example of
13 prior failures. So as I have discussed, at least Niwa,
14 which has priority over the '178, it anticipated. It had
15 all of the elements.

16 So it's not proper to say that prior failure is
17 related to the patent claims of the '178.

18 Q. And do you have an opinion as to whether there
19 was a long-felt but unmet need with respect to the
20 technology?

21 A. Well, as I point out, I think Asada was from
22 1997. So this is -- you know, finger-worn ring devices that
23 sense biological sensors and/or activity have been in the
24 art for a long time.

25 Q. Did the technology patented in the '178 patent

1 lead to any unexpected results?

2 A. No.

3 Q. Thank you, Mr. Alarcon.

4 MS. TULLY: I have no further questions, Your
5 Honor. I pass the witness.

6 JUDGE JOHNSON HINES: All right. So we will take
7 our lunch break now. And the test for the remote testimony
8 will be over the lunch period. So those of you who want to
9 participate in that, remain for however long you want to
10 participate in that.

11 We will reconvene at 1:45.

12 (Whereupon, at 12:44 p.m., a lunch recess was
13 taken.)

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1 A F T E R N O O N S E S S I O N

2 (1:45 p.m.)

3 JUDGE JOHNSON HINES: Thank you. Please be
4 seated.

5 Before we get started, a question on post-trial
6 briefs. Have the parties -- the parties have proposed word
7 counts for the post-trial briefing?

8 MS. CARLAN: Your Honor, we have proposed word
9 counts back and forth. I think we're down to two proposals,
10 and we're still discussing, trying to come to an agreement.

11 JUDGE JOHNSON HINES: All right. I'd like to get
12 that soon.

13 MS. CARLAN: I understand --

14 JUDGE JOHNSON HINES: I'd like to consider it
15 before it's adopted.

16 Yes. Counsel?

17 MR. POWELL: So there are two proposals. And I
18 think we had one of the two proposals, and we're fine with
19 going with the other proposal. So I think we're all in
20 agreement on word limits.

21 JUDGE JOHNSON HINES: Oh, all right. Well, can
22 you tell me what they are?

23 MR. POWELL: I believe they are -- is it --
24 25,000, 15,000?

25 MR. BREETZ: I don't want to speak for the Staff,

1 though.

2 MR. WINSTON: Yeah, my understanding is that --
3 well, the Staff agrees with RingConn's proposal, Your Honor.

4 JUDGE JOHNSON HINES: All right.

5 MR. WINSTON: Because all of the other parties
6 have joined in that.

7 JUDGE JOHNSON HINES: Okay. So what is the
8 proposal?

9 MR. BREETZ: Your Honor, the proposal is that
10 Complainants have 25,000 words for their initial brief, and
11 15,000 words for their responsive brief. The Respondents
12 have 15,000 words for their initial brief and 25,000 words
13 for their responsive brief. And then the Staff has 30,000
14 words for their initial brief and 10,000 words for their
15 responsive brief.

16 And the flip-flop, Your Honor, is because I think
17 all parties agree that there is more briefing to be had on
18 the infringement and domestic industry issues, so that's the
19 reason for that.

20 JUDGE JOHNSON HINES: All right. I'm going to
21 consider this. So do not consider it adopted until I tell
22 you that it is.

23 MR. BREETZ: Thank you, Your Honor.

24 JUDGE JOHNSON HINES: All right. Also, I was
25 hoping that someone could send me JX-11. If you put it in

1 the Box or sent it to the e-mail address for the case, I'd
2 like that.

3 That's all I have.

4 MR. MCCRUM: Your Honor, just before we start the
5 cross-examination of Mr. Alarcon, not we, but Complainants,
6 I wanted to raise an issue on behalf of the Respondents.

7 It relates to time, Your Honor. And I agree with
8 Your Honor, we will have extra time. We have extra time and
9 we will end early tomorrow. The original estimates actually
10 contemplated that we would have probably half of the day
11 tomorrow as extra time.

12 Frankly, I assumed, I hope correctly, but that
13 the extra time might be used as needed if the parties went
14 over their estimates.

15 JUDGE JOHNSON HINES: Okay.

16 MR. MCCRUM: I still do believe we'll end early
17 tomorrow, Your Honor, but Respondents are currently tracking
18 to be slightly over their estimates. In particular, we
19 anticipate that we will be over by the amount that Dr. Wang
20 is going to testify tomorrow.

21 And, Your Honor, I will represent to you that we
22 tried mightily -- our original case was prepared without
23 having Mr. Wang -- without planning for Dr. Wang to testify.

24 JUDGE JOHNSON HINES: Yeah.

25 MR. MCCRUM: And we tried to cut the 45 minutes

1 to an hour that we now intend to use with Dr. Wang tomorrow
2 out of our case. We ran into a couple obstacles there.
3 Understandably, my co-Respondents, they don't have much
4 interest in cutting 45 minutes out of the case for one of
5 our witnesses. That's one of the reasons, I think, that we
6 got to where we're at.

7 But the bottom line is Dr. Wang has flown from
8 Shanghai to Hong Kong. He is prepared and wants to testify
9 at 10 p.m. tomorrow. He has -- his wife is due literally
10 any day now, but he has very important testimony that, Your
11 Honor, I think will help develop a full record. I think
12 everyone will benefit from that. We wanted to bring him.
13 The visa issues prevented us from doing so.

14 But, Your Honor, what I would just ask is that we
15 be entitled to a little bit of extra time to accommodate
16 that testimony. I did speak with counsel for Complainants
17 over the break. My understanding is that they oppose this,
18 Your Honor. Also conferred with Staff. I'm not sure what
19 Staff's position is, but I did want to make sure everyone
20 knew and that we alerted you to this as soon as we knew that
21 this was going to be an issue.

22 JUDGE JOHNSON HINES: All right. Can I hear from
23 counsel for Complainant?

24 MS. CAPOLINO: Yes. So Complainants do oppose
25 this. The schedule is what it is. The time allocations

1 were what they were. That hasn't changed. The parties had
2 a plan for a witness schedule. Respondents have gone over
3 it. And we don't think that giving extra time in these
4 circumstances is appropriate, and it would also result in
5 Respondents having more time than Complainants, which we
6 think is unfair.

7 JUDGE JOHNSON HINES: All right. Does Staff have
8 a position?

9 MR. WINSTON: Your Honor, there does appear to be
10 some prejudice to Complainants, but the Staff is prepared to
11 proceed as Your Honor wishes.

12 JUDGE JOHNSON HINES: All right. Let me think
13 about this.

14 Does Ultrahuman have anything to add to this? I
15 assume you don't have a dog in this fight.

16 MR. POWELL: No, Your Honor. I will say with the
17 issues with the Webex and the translation, I think some of
18 the testimony, not even the Webex, just translation issues,
19 some of the testimony has taken longer and that may not have
20 been anticipated. So we have no issue with a little bit of
21 leeway to get Mr. Wang's testimony in.

22 And my understanding is that it will be, you
23 know, minor leeway, so just a couple of extra minutes, is my
24 understanding.

25 JUDGE JOHNSON HINES: Let me think about this,

1 and I will let you know before -- after we come back from
2 the afternoon break.

3 MR. MCCRUM: Thank you, Your Honor.

4 JUDGE JOHNSON HINES: So you'll know before the
5 end of the day.

6 All right. Is there anything else?

7 MS. CAPOLINO: Sorry. There is just one more
8 minor housekeeping issue. It has to do with what Your
9 Honor's preference is with respect to the physical exhibits
10 in this case.

11 Would you prefer to have them, keep them
12 physically going forward? Do you -- you know, pictures? We
13 were just looking for a little guidance on what your
14 preference is for handling those.

15 JUDGE JOHNSON HINES: All right. For the actual
16 physical exhibits, which are, like, physical rings --

17 MS. CAPOLINO: Yes.

18 JUDGE JOHNSON HINES: -- which seem mostly like
19 physical exhibits than anything else, I believe they just
20 get -- hang on one second -- okay. You ask a good question.

21 As far as I'm concerned, the physical exhibits
22 can be left here and we will take custody of them. It would
23 be helpful for me and for my team if you all coordinate with
24 that, here are all of the physical exhibits, so that we will
25 have them.

1 MS. CAPOLINO: Understood. Thank you, Your
2 Honor.

3 JUDGE JOHNSON HINES: All right. And we can do
4 that in that the collection and providing of physical
5 exhibits -- because it would be helpful to identify the
6 physical exhibits by physical exhibit number that you are
7 leaving with us, that can be done right before we close the
8 record, when the other exhibits that are not physical
9 exhibits are collectively admitted into evidence.

10 MS. CAPOLINO: Understood. Thank you, Your
11 Honor.

12 JUDGE JOHNSON HINES: Okay. Anything else?
13 (No response.)

14 JUDGE JOHNSON HINES: All right.

15 MR. SCHULTZ: Good afternoon, Your Honor.

16 JUDGE JOHNSON HINES: Good afternoon.

17 CROSS-EXAMINATION

18 BY MR. SCHULTZ:

19 Q. And nice to see you again, Mr. Alarcon.

20 A. Likewise.

21 Q. Could I have CX-1040 and CX-1069, please.

22 Now, Mr. Alarcon, just for the record, you
23 referred to these -- you're familiar with the teardowns
24 shown up on the slide here?

25 A. Yes. Yes, I am. They appear to be the RingConn

1 ring on the left, hotdog style, and it looks like the
2 Ultrahuman on the right. It doesn't have the number in
3 front of me, but that's what appears to be.

4 Q. And, James, could I ask you to focus on the ring
5 on the right of each of these exhibits? Perfect. Thank
6 you.

7 So, Mr. Alarcon, I think you would agree with me
8 that Respondents' products, as well as the Oura Gen. 3, all
9 use potting material. Is that right?

10 A. I would add a little bit to that, that also the
11 Gen. 4 additionally, my understanding is, it also uses
12 potting material.

13 Q. And the potting material used by these products
14 forms a layer that covers the components and the ring; isn't
15 that right?

16 A. I would characterize it differently. I would say
17 the potting material surrounds and encapsulates the
18 components.

19 Q. In your rebuttal report, you said it covers the
20 components. Do I need to show you that or do you agree with
21 me?

22 A. Well, I take your representation. I'm -- and I
23 would say "covers" is an aspect. A more complete is that it
24 surrounds. So part of covering -- sorry, part of
25 surrounding is covering.

1 Q. Okay. So you would agree with me that they cover
2 the components, the potting material? In addition to
3 whatever other functionality that you think is associated
4 with the potting material.

5 A. I wouldn't describe that as other functionality.
6 If I could try to make it clear again, certainly they cover
7 and more broadly -- that's -- covering is referring to part
8 of what encapsulation is.

9 Q. And all of these products use -- and I'll refer
10 generally to the two Respondents' accused products, as well
11 as the Gen. 3 that use potting material for now. Is that
12 okay?

13 A. Okay. I will have the two accused products, as
14 well as the Gen. 3, in mind for the next question.

15 Q. And they all use potting material to seal the
16 components; isn't that right?

17 A. I think it's fair to say that when the potting
18 material surrounds the components, it seals them.

19 Q. And covers them?

20 A. Along the lines of what I just testified to, two
21 questions ago, in that respect, yes.

22 Q. Okay. Let's just show Alarcon Rebuttal Report at
23 paragraph 100.

24 And just so we're on the same page, Mr. Alarcon,
25 herein you say, "but potting material is not an internal

1 housing component and does enclose space. It covers
2 components and fills unoccupied space." Just so you know it
3 wasn't misrepresenting you.

4 A. I believe you.

5 Q. Now, these products also use potting material to
6 form the inner surface of the rings, correct?

7 A. Still sticking with the accused products and the
8 Gen. 3 Oura?

9 Q. Yes, sir.

10 A. Yes, the -- the inner surface of the rings,
11 that's when you're touching that. That you're touching
12 potting material.

13 Q. Ah, the patent, very important. In the language
14 of the claim, it states that the inner circumferential
15 surface -- excuse me -- the internal housing component
16 defines an inner circumferential surface. Is that right?

17 A. I see that, verbatim, internal housing component
18 defining an inner circumferential surface.

19 Q. Now, in all the products, the potting material
20 forms the inner surface, correct, of the ring?

21 A. In -- well, again, I'm not responding with
22 respect to Gen. 4.

23 Q. Sure.

24 A. It's the -- with respect to the products
25 exclusive of -- well, this answer is not responsive to Gen.

1 4. Potting material forms the inner surface of the ring.

2 Q. And in all three products, the Respondents'
3 products and Gen. 3, the potting material forms a curved
4 inner surface, at least in part of the ring surface; is that
5 right?

6 A. I think it's fair to say there are portions of
7 that surface that are curved.

8 Q. Now, you would agree with me, would you not, that
9 covering the components, sealing the components, forming an
10 inner surface of the ring, those are all functions of the
11 internal housing component of the '178 patent; isn't that
12 right?

13 A. I haven't thought about the functions with
14 respect to the way you phrased that question, so maybe we
15 could break it down one by one and I can answer your
16 question element by element.

17 Q. Sure. Is a function of the internal housing
18 component to form the inner surface of the ring?

19 A. The internal housing -- the internal housing
20 component, what it does is it defines the inner
21 circumferential surface in the patents. And in the case of
22 the products, there's potting that forms the inner surface.

23 Q. And it's a function of the internal housing
24 component to house the components, right?

25 A. I think adopting -- you know, applying the claim

1 construction, whether it be an external or an internal
2 housing component, that's a structure that encloses space
3 and, indeed, those housing components house the battery,
4 house the circuit board and its components.

5 Q. And part of that housing purpose is to cover the
6 components, right?

7 A. I'm not sure that the patent says part of the
8 purpose is to cover. It's a housing. It's meant to house
9 the components.

10 Q. Okay. So the internal housing component in the
11 '178 covers the components. Fair?

12 A. I don't know I've evaluated it for covering the
13 components. I've evaluated it with an eye toward housing
14 components. The '178 says they are housing components, and
15 they house the -- they do things such as form the cavity.
16 And the components reside in that cavity. That's my
17 understanding of how the '178 describes its housing
18 components.

19 Q. And the '178 -- I'm sorry.

20 The internal housing component is also coupled in
21 claim 1 to the external housing component, correct?

22 A. Yes. Claim 1 requires that those two respective
23 housing components, that they are coupled or, you know, as
24 construed, connected.

25 Q. Okay. And the potting material in the three

1 products, how does that interact with the external housing
2 component? Let me be more specific.

3 The potting material in the three products, it
4 adheres to the external housing component; is that fair?

5 A. I think it's fair to say that the potting
6 material, which is epoxy, adheres to the metal of what's
7 shown in these images here, which is the outer metal
8 component.

9 Q. So all the functions of the internal housing
10 component in the '178 patent are performed by the potting
11 material in the three accused products, aren't they?

12 A. Again, I don't think I have opined on the various
13 functions of them. I have opined on the presence of the
14 elements, for example, the housing structures -- sorry, the
15 housing components that form cavities in which these
16 components reside within the '178.

17 That's, well, my opinion. I don't think I have
18 offered functional analysis of them all.

19 Q. So in response to my question, your answer is you
20 haven't offered an opinion on that?

21 A. With respect to your question, what I'm saying is
22 I've considered -- I understand that the function, that what
23 housing -- housings do is they house -- they're meant to
24 house things, house components. And, specifically, in this
25 patent, we have a construction here that says they enclose

1 space.

2 So I identified, evaluate they enclose space,
3 whether or not they enclose space. Those are the types of
4 analyses I have done.

5 Q. Okay. So you don't dispute that the potting
6 material in the three products serves the same function as
7 the claimed internal housing component, do you, yes or no?

8 A. Well, my understanding is that what's claimed is
9 inner housing for inner and -- internal and external
10 housings, and one of the things that they do is they're --
11 they enclose space. So there's a difference between the
12 potting material, because as I have testified that's not
13 enclosing space. That's not an internal housing component
14 that's enclosing space.

15 So with respect to that limitation which is
16 relevant, it's not doing what you're describing as the
17 function. The potting material is not enclosing space.

18 Q. It's sealing? You have testified it's sealing,
19 correct?

20 A. Yes, my understanding is it seals.

21 Q. Mr. Alarcon, you don't believe that potting
22 material can constitute the internal housing component, do
23 you, in the '178 patent?

24 A. Is your question with respect to before claim
25 construction order was issued or after, whether or not I've

1 adopted the claim construction? Because my understanding is
2 the claim -- the Court has said it's not -- the construction
3 is -- doesn't preclude it from being potting material.

4 Q. Okay. So your opinion changed before and after
5 the claim construction opinion?

6 A. No, that's not what I said. I was looking for
7 clarification. Clearly, before claim construction, I
8 offered opinions based on the different constructions
9 offered by parties. And for purposes of my testimony, my
10 testimony is with respect to the Court's claim construction
11 order.

12 Q. Let me ask you one more question about the
13 teardowns shown. You've testified that there's potting
14 material behind the PCB, correct?

15 A. Yes. If not verbatim to that effect, there's --
16 if you go from the center point of this circle radially
17 outward from the PCB in both of these, there is potting
18 material.

19 Q. What function does that perform, the potting
20 material behind the components?

21 A. Again, this is the same -- I think it's the same
22 answer to the question. There's no -- I have not
23 differentiated. The potting material, as I've testified,
24 it's all one potting material. For example, on the
25 right-hand image, you can -- it's clear here, you can see

1 that's all the same potting material, and that is
2 encapsulating the components.

3 Q. Well, you testified earlier that the potting
4 material forms the inner surface of the ring. That's not
5 being performed by the potting material that you've
6 testified is behind the PCB, is it?

7 A. I think, if I understand your question, the inner
8 surface of the potting material is the innermost surface.
9 There's no way that the -- let's say the middle, an
10 arbitrary middle slice through this potting material, would
11 be thought by anyone to be touching the human -- the finger.

12 Q. Okay. So it's not performing -- it's not forming
13 the circumferential surface of the inner ring, right?

14 A. Correct. If you take an arbitrary slice through
15 here, through the -- let's say, through the middle of the
16 potting material, it's arbitrary. It wouldn't form an inner
17 surface.

18 Q. Is there a technical reason that potting material
19 is behind -- as you have testified, behind the PCB? Is
20 there an advantage to it?

21 A. Well, as I've said, the reason for the potting
22 material is to encapsulate the products -- sorry -- back
23 track, is to encapsulate the components; for example, the
24 PCB and the battery.

25 So in order to do that, it's flowing in, it's

1 surrounding those components.

2 Q. Can we put Figure 13 of the '178 patent up,
3 please.

4 Now, you've already testified you don't believe
5 this figure or this embodiment is covered by claim 1,
6 correct?

7 A. Yeah, for the reasons I've discussed, I don't
8 think this is an embodiment of claim 1. It may be an
9 embodiment of claim -- sorry, of a different patent, such as
10 the '124. I haven't offered it -- that opinion, but it
11 looks more similar to that than certainly the '178.

12 Q. Could we have Figure 14A, please.

13 Is 14A covered by claim 1?

14 A. I don't know that I've opined specifically with
15 respect to Figure 14. I don't recall opining specifically
16 on 14, but if I did, maybe you can point me to it.

17 Q. We're at trial here, Mr. Alarcon. You've read
18 this patent many times, and these issues are -- have been
19 discussed for a while.

20 You don't have an opinion as to whether Figure
21 14A is covered by claim 1?

22 A. Well, I have, indeed, read the patent many times.
23 And it's a long patent. I've read it with a very specific
24 eye toward the products, toward being responsive to
25 Complainants' contentions. I haven't evaluated every single

1 embodiment, every single figure that wasn't part of --
2 wasn't necessary to produce the opinions that I've produced
3 so far.

4 Q. Okay. Let's show Figure 14E.

5 Again, do you have an opinion as to whether claim
6 1 covers this embodiment?

7 A. Same answer as for 14. I could take some time.
8 I could read through it. But I don't recall in my report.
9 I may have -- it's quite a long report -- but I don't recall
10 concentrating on Figure 14 to be responsive to the
11 contentions by Complainants and the expert's report.

12 Q. You don't know?

13 A. That's not what I said. I said I haven't
14 evaluated it with an eye toward that. I'm happy to do so,
15 but I'll need some time to do that.

16 Q. What about Figure 18A, is that covered by claim
17 1? And I'll direct your attention to the ring portion of
18 Figure 18A.

19 A. I think it's the same answer. I don't recall
20 specifically opining on whether or not claim 18 practices
21 the claims of the -- or is exemplary of the claims of the
22 '178. It was a long report, but I'm happy to do so. I just
23 need some time to do that.

24 Q. Well, let me ask a broader question, then. Are
25 there any embodiments in the '178 patent that you believe

1 are covered by claim 1 that include potting material as the
2 internal housing component?

3 A. Let me think through the different examples,
4 because there are many in the patent. And I specifically
5 opine on certain figures demonstrating certain claimed
6 elements, for example, the internal housing component,
7 external housing component. I don't recall if I identified
8 all of the elements in that particular figure, but your
9 question was with respect to the ones containing potting; is
10 that correct?

11 Q. That's the question I asked.

12 A. Okay. Thank you. And let me ask a -- well, let
13 me answer your question. I believe there are some, for
14 example -- let me pull up the figure for you.

15 So, for example, in Figure 15, I understand
16 there's potting layers 1502 and 1504. And those can be seen
17 in Figure 15B.

18 Q. Let me stop you there for a moment.

19 Is it your testimony that 1502 and 1504 are
20 internal housing components under claim 1?

21 A. Oh, I'm sorry. I thought your question was with
22 respect to any embodiments that have potting material.

23 Q. As the internal housing component.

24 A. Got you. Thank you for that qualification.

25 Q. You're welcome.

1 A. I don't think I have opined on any of embodiments
2 within the patent, any of the figures, for example, for
3 which I've done a full analysis saying that this particular
4 example with potting material fully embodies claim 1. I
5 don't recall doing that.

6 Q. Mr. Alarcon, you're sitting here as an expert on
7 this patent at trial testifying as to what's the ultimate
8 conclusion in this case, and you don't know what embodiments
9 are covered -- in the patent are covered by claim 1?

10 A. It's not my testimony. Your question was very
11 specific to -- I have to imagine limiting the potting
12 material to something that is an internal housing component.
13 And what --

14 Q. Like all the Respondents' products, correct?

15 A. I'm sorry, I thought your question was with
16 respect to the patents, not -- we weren't talking about the
17 products. We were talking about --

18 Q. We're absolutely talking about the patent. And
19 you can't tell me what embodiments are covered by claim 1
20 that use potting material as the internal housing component?
21 You don't think that's an important issue in this case?

22 A. What I'm saying is I have not identified any
23 embodiments that use potting material as an internal housing
24 component and embody the claims. I have not been able to
25 identify any.

1 Q. All right. Maybe I'm not understanding your
2 testimony. Are you saying you're not sure or are you saying
3 you've looked but you couldn't find any?

4 A. I have looked and I have not seen any that use
5 internal potting material as an -- as an internal housing
6 component and, therefore, with respect to that limitation,
7 embody claim 1.

8 Q. Thank you.

9 Now, which leads to my next point, Mr. Alarcon.
10 You're reading potting material out of this
11 patent, aren't you? And I'd like to --

12 A. Can I answer that?

13 Q. Can I go to slide 2, please?

14 Now, you mentioned it earlier. You're aware that
15 there has been a claim construction proceeding in this case?

16 A. Yes, I am. And I am not reading potting material
17 out.

18 Q. Okay.

19 A. If there was an example that showed potting
20 material --

21 Q. There's no question pending, Mr. Alarcon.

22 Now, as shown in slide 2, Respondents sought
23 constructions in two respects that attempted to exclude
24 potting material from the '178 patent. First, they said
25 encloses, rather than fills. Is that your understanding as

1 well?

2 A. My understanding is that RingConn's proposed
3 construction was encloses, rather than fills, but that
4 construction is silent with respect to potting material.

5 Q. Well, potting material fills, doesn't it?

6 A. Potting material can fill. It doesn't
7 necessarily fill.

8 Q. Okay. And Ultrahuman was more straightforward.
9 They sought a construction that said claim 1 could not
10 include potting material as the internal housing component.
11 Do you remember that?

12 A. I remember that.

13 Q. You agreed with those constructions, correct?

14 A. I agreed -- I agreed -- I agree these are ways to
15 look at it, but I adopted the Court's construction.

16 Q. Well we'll see --

17 A. And --

18 Q. We'll see about that.

19 Can we look at slide 3, please.

20 Now, in your rebuttal report, you adopted both of
21 the constructions, correct, in arriving at your
22 non-infringement opinions? And you said potting material is
23 not an internal housing component and does not enclose
24 space. It fills unoccupied space. And, again, in paragraph
25 119, "It cannot be made of only potting material."

1 It looks to me here like you've applied both
2 RingConn's and Ultrahuman's constructions in your expert
3 report. Is that fair?

4 A. It says what it says, yes.

5 Q. Okay. Now -- next slide, please -- at your
6 deposition, I asked you about this.

7 "Question: So you interpret 'housing component'
8 used in the claims as excluding potting material, correct?"

9 And you said: "It's not talking about potting
10 material. The housing encloses a space, whereas potting
11 material fills the space."

12 Do you remember that?

13 A. I remember that's what I said, yes.

14 Q. So you're again applying RingConn's and
15 Ultrahuman's proposed constructions here. So you --
16 undoubtedly, you agreed with that construction since you
17 were under oath here, right?

18 A. In this answer, I was responsive to all three
19 proposed constructions.

20 Q. Next slide, please.

21 The Court ultimately disagreed with you and the
22 Respondents on those constructions, correct?

23 A. I'm not sure if it was -- I understand it's
24 different than the exact wording that Respondents proposed.

25 Q. Well, the order said the constructions proposed

1 by RingConn and Ultrahuman are rejected, right?

2 A. I see that.

3 Q. Okay. Now, what I've heard from you today, last
4 week, I've heard you talking a lot about how potting
5 material fills the space and how it -- and how it's one of
6 your reasons that the products are not covered by claim 1.

7 And let's go to the next slide. And, actually, I
8 think you mentioned it again this morning, but I'll go to
9 last week.

10 You said: "But inside of that is potting
11 material. We can see to the cross-section of 2 of the
12 contacts that are cut, but here we can clearly see the
13 potting material that completely -- potting material
14 completely filling the space."

15 Mr. Alarcon, this is irrelevant. The Court
16 rejected the construction that the internal housing
17 component could not fill the space. You understand that,
18 right?

19 A. I understand that.

20 Q. But your opinions are, again, parroting this
21 rejected construction. So, correct me if I'm wrong, the
22 highlighted here in red, it's completely irrelevant to this
23 case, isn't it?

24 A. You're wrong.

25 Q. Under the Court's construction?

1 A. You're wrong. I used the word "filling." I
2 could have equally used the word "occupies the space," it
3 extends from one region to another. I was using it to
4 describe to describe where the potting material is. But I
5 further testified that to determine -- in my analysis to
6 determine if there's a cavity, I look for a hollow space.

7 So this is aiding in my verbal description of
8 identifying whether or not there is existence of a hollow
9 space or not. I could have equally used the -- different
10 terminology. It occupies that space. So --

11 Q. You're --

12 A. -- I'm being consistent with the Court's claim
13 construction.

14 Q. I'm sorry. So you're shifting the rejected
15 construction into -- into a different limitation, but you're
16 arguing the same thing you argued before the Court's
17 construction and before the Court rejected your
18 construction, correct?

19 A. I disagree.

20 Q. Let's talk about slide -- I'm sorry, Figure 13
21 again, please, James. And, actually, let's go to RDX-1C.36.
22 I'm sorry.

23 Now, I admit, this came as a bit of a surprise to
24 me. I have never -- I read the '178 patent. I've read your
25 expert reports. And then I see this argument all of a

1 sudden that products and embodiments that use potting
2 material as an internal housing component, suddenly they're
3 a single structure that encloses space. They're not two
4 structures; they're a single structure. And I want to
5 explore that with you, if I may.

6 Now, first of all, does the patent say that?
7 Does the patent say, if the potting material is used as an
8 internal or external housing component, that it's not a
9 structure?

10 A. I'm applying here, what I'm pointing to, the
11 single structure, maps to claim 1, external housing
12 component, which is a structure that encloses space. What
13 I'm showing here is there is one of those.

14 The claims also require an internal housing
15 component, which is another structure that encloses space.
16 What I'm indicating here is that is not present. Only the
17 first one that I mentioned. That's why I say there's a
18 single structure that encloses space.

19 Q. So your testimony is that one skilled in the art
20 would not consider the potting material, which forms the
21 inside of the ring, a structure?

22 A. It's not my testimony, but for the purpose of
23 this, I'm following the claim construction, which is a
24 structure that encloses space. That's what I'm applying.
25 The internal housing component has to be a structure that

1 encloses space. And a person of ordinary skill would see
2 that there is not an internal structure that encloses space.
3 That is my testimony.

4 Q. All right. So you've got two parts of that.
5 You've got an enclosing structure, is the term I think
6 you've used.

7 A. If I wasn't clear, I tried to repeat verbatim the
8 Court's claim construction.

9 Q. All right. So let me take that apart.
10 There's two words there. First, is potting
11 material that forms an internal housing component -- I won't
12 use the pejorative terms that you're not agreeing with. If
13 potting material -- the patent talks about potting material
14 as the internal housing component or external housing
15 component, correct? You would agreed with me?

16 A. I have to -- it's a long patent, but I will -- my
17 understanding is internal housing component, according to
18 the construction, can be made of potting.

19 Q. Okay.

20 A. But my testimony is that in this case, it is not.
21 It's not an internal -- there's no -- it can't be because
22 there is no structure that encloses space or, more
23 precisely, no internal structure that encloses space.

24 Q. And I just want to -- I don't really understand
25 your testimony, so I want to take it apart. You used the

1 word "structure" repeatedly.

2 Is potting material a structure as formed in
3 these rings?

4 A. My testimony is that, yes, potting material
5 broadly, generally speaking, can be a structure. But --

6 Q. Okay. Now --

7 A. -- I'm applying the Court's claim construction of
8 a structure that encloses space.

9 Q. Okay. I'm just --

10 A. Not necessarily excluding potting.

11 Q. I'm just trying to understand your slides.

12 A. That's what I'm saying is not --

13 Q. I'm just trying to understand your slides. So
14 you just agreed that potting material as used in the rings
15 is a structure. So the only other word, I guess, that you
16 use to exclude it is the word "enclosing."

17 So your testimony is that potting material is not
18 -- it's a structure, but not an enclosing structure? Is
19 that fair?

20 A. I'm saying it doesn't meet what the claim
21 construction is. I'm very closely following and applying
22 the Court's claim construction.

23 And the reason it is not the claimed structure is
24 because it does not -- is not a structure that encloses
25 space.

1 Q. Well, you call this a single structure. So
2 you're the one saying potting material is not a structure.
3 And you're identifying the external housing component, so
4 you're saying the internal housing -- the internal housing
5 potting material, I'll call it, you're saying that's not a
6 structure or not an enclosing structure, right? Because you
7 say single here.

8 So this is your testimony.

9 A. You selectively read that. And what I'm pointing
10 to here is the metal that's a single structure that encloses
11 space. That maps with the claim construction, and what I'm
12 saying here is there is no corresponding internal housing
13 component, which would be a matching structure that also
14 encloses space.

15 Q. Well, you've testified that it's a structure.
16 And earlier you testified you agreed with me that it covers
17 the components.

18 So what's the difference between enclosing and
19 covering?

20 A. When you say "it" there, what is "it" referring
21 to?

22 Q. Well, potting material.

23 A. Okay. Can you ask it again so I have it in mind
24 fresh?

25 Q. Yes. You've admitted that it's a structure. And

1 I'm trying to ascertain what you mean when you're saying
2 potting material doesn't act as -- perform the function of
3 enclosing, where you've already testified that potting
4 material covers. So you're saying it covers but doesn't
5 enclose.

6 Can you understand the -- explain to me the
7 distinction you're making there?

8 A. Well, it's quite clear. You say "cover," which
9 is part of encapsulating. It encapsulates. I agree that it
10 encapsulates it.

11 And in the process of doing so, or in doing so,
12 that's, to me -- you can see that there is no space that is
13 enclosed. There is no hollow space.

14 Q. Well, now you're talking about another term;
15 cavity is a hollow space. We're talking about the internal
16 housing component. Right? And you're saying it's not a
17 structure, an enclosing structure?

18 A. Well, I'm saying --

19 Q. And you just mentioned encapsulation. So the
20 abstract of this patent says that the -- and if you could
21 call that up, James -- potting material encapsulates the
22 components, at the bottom of the abstract, right?

23 A. Can you highlight that?

24 Q. Could you add some highlighting to that, please?
25 So it covers, it's a structure, and it

1 encapsulates but it doesn't enclose, that's your testimony?

2 A. You did two things there. One, it encapsulates,
3 that's what it says here. And I'm not denying that in the
4 abstract potting material can be a structure.

5 What I'm saying is it's not a claim -- in the
6 abstract, it's not a claimed element of claim 1. You know,
7 yes, this is the abstract, but it's not necessary -- not
8 necessarily true that everything said in the abstract
9 applies to claim 1. There are multiple patents in this
10 family, with different claim sets. So it's not necessarily
11 true that simply because potting material that encapsulates
12 components is in the abstract, that that relates to claim 1
13 of the '178.

14 Q. So you just said potting material encloses
15 components in the abstract?

16 A. Encapsulates the components in the abstract.
17 You're showing me the abstract.

18 Q. Oh. But you haven't explained to me why
19 encapsulating and covering it and sealing is not enclosing?

20 A. I think I have explained it, that there is no
21 structure. The potting material identified by
22 Dr. Sarrafzadeh does not enclose space.

23 Q. Now, let's move on to -- let's go back to Figure
24 13, please.

25 So I want to move on to the cavity limitation.

1 Now, your testimony is that Figure 13 is not covered by
2 claim 1 of the '178 patent. And I believe your testimony --
3 and correct me if I'm wrong -- is that there's no cavity
4 shown in Figure 13; is that right? One of the things in
5 your opinion it doesn't show is a cavity?

6 A. Right. In claim 13, there is no claimed cavity
7 here. There's no example of the cavity that we're told
8 about in claim 1.

9 Q. Okay. Why is there not a cavity here where the
10 components are -- the battery and the PCB are shown?

11 A. Well, there is no hollow space.

12 Q. Okay. So is your testimony that -- explain that
13 to me. Does there need to be air around the components to
14 have a cavity under claim 1?

15 A. Well, I'm being responsive to what
16 Dr. Sarrafzadeh has identified as the encapsulant. So I'm
17 responding to his theory on this matter. And he has
18 highlighted in purple in his drawings all of the encapsulant
19 with no separation between 1330 and 1340, which, for
20 example, is the printed circuit board.

21 So even he has not identified air around
22 components, to your question. He has identified all of that
23 as an internal housing component.

24 Q. And I'm trying to ascertain what you mean by
25 hollow space. So you're not saying there needs to be air on

1 the components or space around the components?

2 A. Well, that's not my testimony. I was saying
3 that's what he has identified, I think. And your question
4 was -- you embedded that in your question.

5 Q. Well, I'm not asking you in response to
6 Dr. Sarrafzadeh. I'm asking you a question about the
7 patent. And I'd like to know why this does not show a
8 hollow space.

9 Is it because the potting material fills the
10 cavity, per your other opinions?

11 A. Well, that's a reason -- well, I reject that
12 there is a cavity here. There, at best, if you read from
13 the patent -- let me get there -- okay. So there -- I
14 guess, starting near the top of column 19, includes an
15 internal surface 1312a that generally has a C-shaped
16 cross-section -- but alternative cross-section shapes such
17 as with an external notch or groove. The external housing
18 includes flanges, 1312b and c that extend toward each other
19 beyond portions of the internal surface 1312a to define a
20 partially enclosed internal space.

21 So even here when it's talking about internal
22 space, it's talking -- it's saying it's a partially enclosed
23 internal space and it's not identifying it as a cavity.

24 At best, it's a partially enclosed internal
25 space, and when the potting material is applied and the

1 components are in there, there is no cavity. I do not think
2 this is a claimed embodiment or that at least those aspects
3 are not represented in the claims.

4 Q. So can we put claim 1 up? And can we highlight
5 "configured to fit" on line 60.

6 What do you believe is meant by this term
7 "configured to fit within the cavity" as it's describing the
8 battery?

9 A. So with respect to being configured to fit, it's
10 in context of the cavity. So identify the cavity. The
11 cavity is identified. And then the battery has to be -- its
12 shape and size, that's cut off here, of the battery, need to
13 be configured to fit within that cavity.

14 So you look for the cavity, and then you can
15 shape and size the configuration of that battery to fit.

16 Q. Now, this allows for the battery filling the
17 cavity, correct, configured to fit? What if it fits
18 perfectly?

19 A. What's your question on -- it seems like a
20 rhetorical --

21 Q. I'm trying to understand -- I'm trying to
22 understand how you're interpreting this Figure 13 and the
23 products when you say there's no hollow space.

24 Why does there need to be a hollow space? What
25 are you trying to identify?

1 A. Well, I'm identifying that there is a cavity, a
2 hollow space, formed by the internal and external housing
3 components, two structures that enclose space. That's what
4 defines your cavity. That is not present in the accused
5 products, for one example.

6 Q. Okay.

7 A. So I'm responding to the analysis that didn't
8 identify a cavity formed by those two things, and then a
9 battery configured to fit within that cavity.

10 Q. Do you think "configured to fit" means there has
11 to be some, I guess, air around the component?

12 A. I think there needs to be a cavity.

13 Q. Okay.

14 A. To tell you how to configure the shape and size
15 of the battery.

16 Q. Can the battery fit in the cavity without any
17 surrounding space?

18 A. I think that's a hypothetical you would never
19 achieve.

20 Q. Okay. Does the patent say anything --

21 A. Batteries have --

22 Q. Does the patent say anything about there being
23 air around the battery when it's placed in the cavity?

24 A. The claims don't say air. The patent I don't
25 recall saying air around it --

1 Q. It says "fit" --

2 A. -- but a POSA understands --

3 Q. It says "configured to fit," correct?

4 A. Yeah, exactly. A POSA understands, when you read
5 this, that there is a cavity, and then the battery is then
6 -- comprises a shape and size configured to fit within that.
7 So the cavity is identified in shape and size, the battery
8 to fit.

9 Q. So the claim specifically contemplates the
10 battery fitting within the cavity, correct?

11 A. It says "configured to fit within the cavity."

12 Q. So when you say there's no hollow space, what are
13 you observing in Figure 13?

14 A. I'm sorry, can you repeat your question?

15 Q. You're saying there's no hollow space in Figure
16 13.

17 Could you show Figure 13?

18 What are you observing here that tells you
19 there's no hollow space?

20 A. There is potting material, and this is consistent
21 with the way Dr. Sarrafzadeh has annotated this. There is
22 potting material completely encapsulating the 1330 and 1340.
23 And I don't -- I don't see that even with his -- under his
24 annotation, that any hollow space is identified.

25 Q. Can we go to RDX-1C.75. And can you focus on

1 Ultrahuman's teardown.

2 Now, first, let me ask you, Mr. Alarcon, did you
3 drop this in mud before you took this picture?

4 A. I have lost track of which pictures I've taken,
5 but this looks consistent with one of the ones that I've
6 taken. So the answer is no, but it is a poor cut. And as
7 I've explained, you know, it's both poor cut and poor
8 photography, so compared to the Ultrahuman one -- sorry,
9 compared to the image taken by Oura, but I did verify that
10 it is consistent with the image taken by Oura.

11 Q. Well, whoever did the -- who did the cutting on
12 this teardown?

13 A. If I had a map of the RXs in front of me, I could
14 line that up, but I certainly did some teardowns. This may
15 have been one of my teardowns.

16 Q. You did Ultrahuman teardowns?

17 A. I did both Ultrahuman and RingConn teardowns.

18 Q. Did you order the ring -- the rings for your
19 teardowns through the post?

20 A. I was provided rings by counsel.

21 Q. And where did those come from, directly from the
22 clients?

23 A. To be honest, I don't recall if they were shipped
24 from the clients directly to me or from the clients through
25 counsel to me, but counsel certainly arranged to have them

1 delivered to me.

2 Q. So --

3 A. And I understand them to be representative.

4 Q. So you used the word "poor" with respect to this
5 teardown, correct?

6 A. I was -- yes. I was being a little bit
7 self-deprecating there, I think, but it certainly is not of
8 the same quality. I could have cleaned it up a little bit,
9 if necessary, but, like I said, I think what's more powerful
10 is that the Oura images show the same thing. So it's more
11 powerful to me to be able to see these things from the
12 Complainants' side, from their -- from the imagery they have
13 provided.

14 Q. As a scientist, you thought it was okay to rely
15 on this poor image, didn't you?

16 A. To be honest, I wish I had -- I didn't know there
17 wouldn't be another opportunity maybe to clean it up a
18 little bit by polishing. So I -- this was from my initial
19 process of my own teardown, and I could have, if asked,
20 cleaned it up.

21 Q. Now, could we go back to CX-1040 and 65.
22 CX-1040, the first two images that we looked at. Thank you.
23 Now, you've mentioned Dr. Sarrafzadeh's analysis.
24 And you understand that he identified a portion of the, I
25 guess, outer part of the potting material as crust, correct?

1 A. I would refer to it as the -- well, it has
2 changed, but I recall at least one area where it's the
3 inner, where he identified that as the crust.

4 Q. And you understand what he was -- what he was
5 identifying, correct?

6 A. Well, as I mentioned, he -- in different portions
7 of his testimony, in his demonstratives, in his report,
8 identifications have been different, so you have to tell me
9 which of those I need to have in mind, maybe with a visual,
10 so that I can have a real clear understanding of which of
11 his opinions you're asking me about.

12 Q. You're familiar with his hand drawing in red?

13 A. Yes, the cross -- in that cross-sectional view is
14 different -- that cross-sectional annotation from his
15 deposition is of a different view than this.

16 Q. I understand. I understand your contentions.

17 My simple question is, under Dr. Sarrafzadeh's
18 theory -- which I understand you have a problem with, his
19 identification of crust as the internal housing component of
20 the potting material -- now, with respect to that portion of
21 the potting material, the PCB and the battery are in between
22 Dr. Sarrafzadeh's crust and the external housing component,
23 aren't they?

24 A. I'm just trying to form the image in my brain
25 that you're talking about. So I'm to imagine his crust

1 argument, which is from a transverse view, which is from a
2 different view of this, and you want me to apply it to which
3 section of this other view, if you could point me to -- if
4 you have a pointer, where you want me to think about that?

5 Q. My question is much simpler than that. Is the
6 crust identified by Dr. Sarrafzadeh, is the PCB between the
7 crust and the external housing component?

8 A. Again, he took a cross-section. And let's say it
9 was through the RingConn on one of the domes. I recall one
10 of his highlights was through one of the dome sections.
11 Let's call it the one on the bottom left, if I recall.

12 So with that in mind, I recall he didn't even --
13 that didn't even follow the dome, which is the part that
14 touches the user's finger. It's an arbitrary layer -- with
15 respect to RingConn, an arbitrary layer through the middle.

16 So now that -- between that arbitrary layer and
17 the outer, yes, there is a printed circuit board between
18 there, but, again, for the reasons I've described, that
19 doesn't meet the claim limitations.

20 Q. And same question with respect to the battery.

21 The battery is in between the -- his
22 quote/unquote "crust" and the external housing component,
23 correct?

24 A. Well, here he didn't -- he never drew -- well,
25 you'll have to put an image in front of me, because I pushed

1 -- I answered your prior question when I had a precise
2 recollection of where he cross-sectioned this to draw his
3 hypothetical crust.

4 With respect to the battery, I would need an
5 image in front of me to answer your question because it has
6 just changed so much that I actually -- it's hard to keep
7 straight what his actual opinion is.

8 Q. I'll be much simpler. If you look at this CDX --
9 is this 1040? I'm sorry. My eyes aren't that good anymore.

10 With respect to CX-1040, you see a layer of
11 potting material above the battery inside the battery,
12 correct, that I just highlighted?

13 A. Yes, it's somewhere in the neighborhood of .4
14 millimeters thick.

15 Q. Okay.

16 A. Maybe a little bit thicker on the right-hand one
17 than the left.

18 Q. And you don't dispute, do you, that the battery
19 is in between that layer of the potting material and the
20 external housing component, do you?

21 A. It's situated there. I wouldn't call it a layer.
22 That potting material is completely surrounding, but if you
23 just -- if you adopt -- if that's what you're calling the
24 crust, again, I disagree that a POSA would think about that
25 or should be thought of as a crust, but if that is a crust,

1 if that was to be adopted, those would be -- the battery
2 would be between.

3 Q. Okay. Now, there's a circumferential surface in
4 this teardown formed by the potting material, correct, right
5 above the battery?

6 A. I would say there is -- you know, I would say
7 this is a closed shape. So I wouldn't say -- I would say
8 that's an arc. That's not -- the circumference is around
9 the whole thing. It's a closed shape.

10 The construction doesn't -- the construction says
11 plain and ordinary but doesn't -- doesn't require a closed
12 shape. Here we have a closed shape. So I wouldn't
13 characterize just that portion as a circumferential.

14 Q. I'm glad you mentioned this. So your
15 interpretation of the Court's claim construction order with
16 respect to that limitation is that this is not a
17 circumferential surface?

18 A. Well, my --

19 Q. Is that right?

20 A. At least for the reasons that claimants have
21 said, first, that through -- to the Patent Office, have said
22 a flat, a flat portion, says it can't be a circumferential
23 surface, and through Dr. Rosing's -- I can't recall if it's
24 her testimony, her report or her testimony, I believe it was
25 her report, also identified in the Niwa reference that

1 because there was a flat, it should not be considered a
2 circumferential surface.

3 Q. Okay. Let me ask a pointed question here. The
4 Court said that the circumferential surface need not be
5 closed. Is that fair?

6 A. It's my understanding of the construction.

7 Q. And so I'm going to start at this bubble here
8 (indicating), and I'm going to go all the way around to the
9 next bubble, which covers the area that the battery is in.
10 Do you understand that?

11 A. I see that.

12 Q. Okay. That area I just outlined, that's not a
13 circumferential surface, in your opinion, under the Court's
14 construction?

15 A. It's not what Dr. Sarrafzadeh identified as the
16 circumferential surface.

17 Q. I'm not asking what you think Dr. Sarrafzadeh's
18 opinion was. I'm asking what your opinion was.

19 A. Yeah, I could think about it, but, again, I'm
20 here to be responsive. I'm not here to offer new
21 infringement theories. But I would say that that area is
22 curved. I think where you just highlighted in this range
23 from, let's say, about the -- specifically on the --
24 specifically on the RingConn product, from about 8:00
25 o'clock position all the way to about the -- I guess I would

1 call it the 3:30 position, that surface is curved.

2 Q. Okay. But you don't think it's a circumferential
3 surface under -- in claim 1?

4 A. I think at least for the reasons that claimants
5 have said, because the whole surface -- we have in front of
6 us a closed -- this is closed. This ring is closed. My
7 understanding is, you know, if it was open, that would be
8 something different, but here we have a closed ring. And so
9 this would not meet the requirement of being a
10 circumferential surface.

11 Q. Let me help you out with that. Complainants
12 contend this is a circumferential surface (indicating).
13 Okay? Is your contention that it's not a circumferential
14 surface?

15 A. So you're referring to the original contentions,
16 not to testimony?

17 Q. I'm referring to our trial, to this trial.
18 Dr. Sarrafzadeh testified as to infringement, and he said
19 that's a circumferential surface. Are you saying it's not?

20 A. Again, he has identified multiple different
21 elements, and the circumferential surface is defined by the
22 internal housing component. At least in one example, he
23 stopped his internal housing component short of the
24 contacts, which is the flat portion.

25 So it's very difficult to understand what the

1 true theory is in terms of what's an internal housing
2 component and an inner circumferential or what portion is an
3 inner circumferential because it appears to be changing. So
4 that's why it's difficult to keep track of what the
5 contentions are from Complainants.

6 Q. So you're not sure whether this limitation --
7 that limitation is met by the accused products? I'm not
8 understanding your testimony.

9 A. Well, to be absolutely clear, I'm being
10 responsive to Complainants' contention. As I understand the
11 expert has testified, it's just a portion. And I don't
12 think that's what it's referring to.

13 Q. I started --

14 A. And it seems to me you're asking me a question
15 beyond what the contentions are.

16 Q. I started this questioning off by identifying a
17 portion of the inner surface of the ring as a
18 circumferential surface. And you're saying that it's not?

19 A. I believe circumference has a meaning. And when
20 it's a closed -- when it's -- if it is closed, it's to be --
21 it's the all the way around, and I've adopted that it has to
22 be curved.

23 Q. Okay. Did the Court say it has to be all the way
24 around?

25 A. The Court's construction, if I recall, is plain

1 and ordinary meaning, but not necessarily closed. But here
2 we have a closed surface. So I'm evaluating that surface.

3 Q. So in your opinion, both of these products
4 displayed have closed inner surfaces; is that fair?

5 A. I think that's fair. Both of these products have
6 closed inner surfaces.

7 Q. And neither of them are circumferential surfaces
8 because they're not curved all the way around?

9 A. Consistent with Complainants', they have flats.
10 And no -- I don't think -- well, a POSA would not consider a
11 flat to be circumferential. And that's consistent with what
12 Complainants have said. And, again, I view this in the
13 broader context of the claims as well, that say that the
14 cavity has to be between circumferential surfaces, not
15 simply a portion of the cavity has to be between
16 circumferential surfaces.

17 Q. Mr. Alarcon, I believe you testified these are
18 charging contacts? And I'm pointing at the RingConn
19 product. The two rectangles at the bottom of CX-1040?

20 A. Yes, the RingConn product has two charging
21 contacts.

22 Q. Charging contacts aren't printed circuit boards,
23 are they?

24 A. The charging contacts are mounted to the printed
25 circuit board, but the contacts themselves are not printed

1 circuit board.

2 Q. Can I have slide 10, please.

3 Do you recognize the figure on the right?

4 A. Yeah. That appears to be from Schroder, Figure 4
5 of Schroder.

6 Q. That's one of the references you're relying on in
7 your invalidity allegations; is that right?

8 A. Yes. That's an -- only to the extent it's found
9 that or it's determined that Niwa does not anticipate by
10 itself, with respect to the claim 1.

11 Q. Now, I noticed, I don't know if anyone else did,
12 that you talked a lot about hollow spaces when you talked
13 about the accused products and Figure 13. But when you got
14 to Schroder, all you said was: Oh, there's a cavity there.

15 Is there a cavity in Schroder?

16 A. Well, I don't think that's a fair
17 characterization of my testimony. With respect to Schroder,
18 there is an inlay 12. And the patent teaches that that
19 inlay 12 is -- basically is a printed circuit board. It's a
20 PCB. It has electronic components on it.

21 Q. It calls it an inlay, correct?

22 A. It absolutely calls it an inlay. And it says --
23 again, I don't have the language of the patent in front of
24 me, but if memory serves, it's called a recess. And the
25 patent teaches that that inlay is in the recess. And you

1 can clearly see from the figures, Figure 4, as well as
2 Figures 6 through 10, I believe, where that recess is. And
3 that recess is a cavity.

4 And in reading the totality of the patent, you
5 understand that that inlay goes into the recess, that inlay
6 is a PCB, and that there is also a power source or battery
7 supplying that. And that's the only place it can be.

8 Q. Actually, it says the inlay carries an antenna,
9 right?

10 A. I need to pull up in front of me, but, yes, I
11 think one of the -- one of the components here -- thank you
12 for pulling that up. The inlay serves as a carrier for at
13 least one antenna coil. And there are other things it tells
14 you that are there. The chip module 10 is inserted into
15 recess of the finger-ring 2. So that, the chip module, also
16 is connected to the inlay, if we were to zoom out. I can't
17 quite make it in the grayed-out area.

18 Q. So can we move back --

19 THE REPORTER: Sorry, could you turn your mic on?

20 MR. SCHULTZ: I'm sorry. Sorry.

21 BY MR. SCHULTZ:

22 Q. Can we move back to the slide, please.

23 So where is the hollow space in Figure 4? Can
24 you point to it with your pointer?

25 A. I don't have a pointer with me.

1 Q. If you had a pointer, could you point to it?

2 A. Yes. And I would also ask to pull up the other
3 figures that I mentioned, and that would fully identify
4 where the hollow space is. And it corresponds to the recess
5 that I mentioned.

6 Q. Other figures of Schroder?

7 A. Yes, other figures of Schroder.

8 Q. Okay. Can we pull up Schroder, please.

9 And you have Schroder in front of you,
10 Mr. Alarcon?

11 A. I think it's in one of the other binders. Yeah,
12 I think it's --

13 Q. It should be in your direct binder, since you
14 discussed it with your counsel.

15 A. Yeah. I think there are a couple volumes.
16 That's non-infringement. I think it's in one of these don't
17 here if you don't mind?

18 Q. No. Go right ahead. My apologies. Oh, there it
19 is. RX-18.3. And if you could let me know when you have
20 that.

21 A. I'm getting closer, I promise. Volume 1. Okay.
22 I apologize, I have, I think, seven binders here.

23 Q. Quite all right.

24 And you were about to point to a figure in
25 Schroder that shows a hollow space.

1 A. Yes. Do you have a question or do you want me to
2 continue?

3 Q. I'd like to know where you see a hollow space in
4 the figures of Schroder.

5 A. Okay. So I'm considering Figures 4, 5, and 6
6 through 10. And --

7 Q. Okay. Can I take one at a time?

8 A. Yes. I think this page that you have up is -- is
9 a decent start.

10 Q. Okay. Schroder says -- well, I'm sorry. I asked
11 you a question, if you could identify the hollow space.

12 A. Right. So in Figure 4, just to orient you, we're
13 looking at a cross-section, back to our hotdog-style cut,
14 and Figure -- sorry, not Figure 12 -- inlay 12 is indicated
15 by Figure 4.

16 And then if we go on to Figure 5, inlay 12 -- so
17 this is a different view. This is two halves of the ring.
18 And it also points to 12. And the reason why you see 12 at
19 the top and the bottom is because it's a ring. So this
20 inlay, as described, goes around the ring and then out of
21 the page.

22 And if you go to Figure 7, for example, this
23 is -- if you have Figure 5, keep Figure 5 in mind, you have
24 Figure 7, this is another arrangement of the internal and
25 external housing components. And then indicated by 12,

1 where -- the inlay, and that inlay goes into a recess --
2 that recess that is formed by the internal and external
3 housing components.

4 Q. Okay. So the inlay -- in each case, you've
5 identified inlay 12 as the cavity; is that right?

6 A. The inlay is the printed circuit board. And in
7 reading the totality of the disclosure in the Schroder
8 reference, it tells you there are -- that the inlay is a
9 circuit board and it has components on it. And so a POSA
10 reading this knows that there is -- that this inlay is a
11 circuit board. And that goes inside of the hollow space
12 created by what's labeled here 16 and 18 on Figure 7.

13 Q. Schroder doesn't call inlay 12 a circuit board,
14 does he?

15 A. No, it does not.

16 Q. Okay. Now, your counsel said the other day, all
17 words of a patent have meaning. And I think you agreed with
18 him, didn't you?

19 A. Yeah, I agree with that.

20 Q. All right. In 2014, did one of skill in the art
21 know what -- one of ordinary skill in the art know what a
22 printed circuit board was?

23 A. Do you mean 2013?

24 Q. When Schroder was filed, when this was written.

25 A. Oh. So just for clarity --

1 Q. Around 2014?

2 A. I'm sorry?

3 Q. Around 2014 when Schroder was written.

4 A. Well, again, if you recall, this -- the U.S.
5 patent claims priority to a German filing. That was in
6 2013. And as I've testified, I have reviewed the certified
7 translation. I have reviewed the figures. They match.
8 They align. It's the same disclosure.

9 So with that in mind, with that framework, can
10 you ask your question again so I can make sure --

11 Q. I said, yes, in whatever year you want to pick
12 that you just talked about, did one having ordinary skill in
13 the art know what a printed circuit board was?

14 A. Yes. A person of ordinary skill in the art would
15 know what a printed circuit board was -- excuse me -- what a
16 printed circuit board was, as well as a flex circuit.

17 Q. Okay. And Schroder chose to call item 12 an
18 inlay, correct?

19 A. It is a translation, but, yes.

20 Q. Oh, really? What did you mean by that, it's a
21 translation?

22 A. Well, my understanding is it's based on a German
23 filing.

24 Q. Okay.

25 A. And there is a translation. And sometimes they

1 might not use the same words that we use in English for some
2 technical things, but in reading the patent, as I've
3 testified, I understand that that is a circuit board.

4 Q. Okay. But he chose to use the word "inlay"?

5 A. Yes. He uses the word "inlay."

6 Q. And in column 22, line 49, he used the phrase
7 "circuit board," right? And he's not talking about the
8 inlay there, is he?

9 A. Give me a minute to review.

10 In this case, it appears further up to be talking
11 about the external -- let's see.

12 Q. Schroder chose to use the term "circuit board"
13 here when he wanted to describe a circuit board, right? And
14 when he wanted to describe an inlay, he chose an inlay. And
15 he labeled all the figures you identified as an inlay, as
16 the hollow -- that you're identifying as the hollow space
17 the area occupied by the inlay. He never says there's a
18 hollow space there, does he?

19 A. Well, there's a two-step process there. I agree
20 "inlay" is not the same word as "circuit board," but a
21 person of ordinary skill reading this in full context,
22 understanding the components that are connected to the
23 inlay, understand that to be a circuit board. And that
24 that's the first part. And then --

25 Q. Even though all claims have -- words of a patent

1 have meaning, right? You're saying they mean the same thing
2 here?

3 A. Well, claims, we're talking about the
4 specification here. I'm citing to the specification to
5 determine if Schroder discloses these elements. So my
6 understanding is that, you know, within a patent, to
7 describe something -- I'm not a lawyer, but I don't know if
8 it wouldn't be -- if it would be improper to use different
9 words to describe the same thing.

10 Well, let me say I'm not sure that it would be
11 improper to do so. It may be okay to use synonyms.

12 Q. Can we go to RDX-1C.116.

13 And you discussed this reference earlier today --
14 this is Niwa -- correct?

15 A. Yes, this is Niwa.

16 Q. Now, you talked about -- well, you're showing
17 here both Figures 22 and 26, correct?

18 A. Yes, 22 and 26.

19 Q. Okay. Can you show paragraph 107 and 111 of
20 Niwa, please.

21 Now, with respect to Figure 22 -- well, let me
22 ask you this question, first: Both these figures refer to
23 the same example, as Niwa puts it, example 2, in Niwa's
24 disclosure, correct? And that's described in paragraph 107
25 and 111.

1 A. This is an implementation of example 2. They
2 both refer to it, but they are describing different forms.

3 Q. All right. So your testimony is that example 2
4 has different forms? I just want to be clear about that.

5 A. Yeah. And I can -- give me a moment to pull up
6 the patent. I can explain.

7 Q. Well, I'll ask you some more questions before you
8 do that. And feel free to pull up the patent as well.

9 It also says Figure 22 is a cross-section diagram
10 illustrating a construction example. What does that mean to
11 you?

12 A. That that's an example of how to -- just what it
13 says, it's "a cross-section diagram illustrating a
14 cross-section example of the plethysmogram sensor
15 schematically in accordance with the implementation of
16 example 2." So it's demonstrating the construction
17 "schematically" so, again --

18 Q. It's demonstrating an example of how to construct
19 example 2, correct?

20 A. Schematically.

21 Q. Okay. And when we -- could you pull up Niwa
22 paragraph 206.

23 It says here Figure 26, in the middle of the
24 paragraph, it's a see-through illustration of this example,
25 right? And the see -through part is the housing, correct?

1 A. If you could pull it up.

2 Q. Pull up what, Figure 26?

3 A. Figure 26.

4 Q. Could you go back to the slides we just had up.

5 So, again, the illustration, not a construction
6 example like Figure 22, the illustration of Figure 26 is
7 showing, I guess, a ghost of a housing but in more detail --
8 in solid lines, it's showing the components of the ring of
9 Niwa, correct?

10 A. It's -- I think you got that. Let me recap the
11 elements, but, yes, the purpose of Figure 26 is to allow the
12 reader to understand -- to see it's see-through so that you
13 can see the things that are inside the housing.

14 Q. Right. And in your subsequent slides, in
15 particular when you're relying on Niwa for the
16 internal/external housing components, you rely on Figure 26,
17 correct?

18 A. Not exclusively. I point to other figures that
19 also support Figure 26. I understand -- and Figure 22 is
20 through a different view.

21 Q. Okay.

22 A. Remind me what this is, RX- --

23 Q. Could we go to RX-120, please. I'm sorry, RDX,
24 slide 120. RDX-1C, slide 120. Thank you.

25 Now, you testified --

1 A. I think it's in that binder.

2 Q. You testified about this slide earlier today,
3 correct?

4 A. Yes. Yes, I did.

5 Q. And you're relying on Figure 26 as disclosing the
6 external housing component?

7 A. That's one of the figures that I used to
8 demonstrate it.

9 Q. And can we go back one, the previous slide. And,
10 again, Figure 26 describing claim element 1[a]. And could
11 we go to slide 122. Again, Figure 26. And could we go to
12 slide 123. Again, relying on the illustration with the
13 ghost of a housing.

14 Now, can we go back to the cross slides, please.
15 Next slide.

16 Now, first of all, you testified at your
17 deposition that Niwa did not disclose circumferential
18 surfaces of claim 1; is that right?

19 A. I don't think that's quite accurate. I think my
20 -- if I recall my testimony, it's that with respect to
21 Figure 22 of Niwa. But, as I show with Figure 26 and some
22 of the other figures, some of the other cross-sections that
23 are different side-view cross-sections, not end on view
24 cross-sections as Figure 22 is --

25 Q. Perhaps I misspoke. My question was with respect

1 to Figure 22.

2 You testified at your deposition, did you not,
3 that Figure 22 does not disclose circumferential inner and
4 outer surfaces above component 20, correct?

5 A. I am not relying on Figure 22 for circumferential
6 surfaces, as I agree it has flats. It does not disclose
7 circumferential surfaces.

8 Q. Okay. Now, you did say at your deposition that
9 housing 40 of Figure 22 disclosed internal and external
10 housing components. Do you recall that?

11 A. I think I said -- I don't know if it was limited
12 to the context of Figure 22, but 40 is housing and, as I
13 have illustrated, discloses internal and external housing
14 components.

15 Q. Okay. Can you point to me where -- and we've
16 blown it up a bit -- where does the internal housing
17 component start and the external housing component end or
18 vice versa?

19 A. Well, again, I wasn't --

20 Q. Housing 40.

21 A. I'd feel more comfortable doing it with respect
22 to one of the figures I relied on, like Figure 26 or Figure
23 24 or 5, any of those.

24 Q. So you don't feel --

25 A. Because I don't rely on this.

1 Q. You don't feel comfortable doing -- identifying
2 those claim elements in the construction example of Figure
3 22. You would rather do it in the ghost illustration of
4 Figure 26; is that right?

5 A. That's not accurate. There are other
6 illustrations --

7 Q. Well, that's the figure you relied on, on your
8 slides. It's the only figure you relied on for internal and
9 external housing component, correct?

10 A. No. I used other slides with non-ghosts that are
11 also cross-sections, solid lines, not ghost lines, and also
12 identified the components in those.

13 Q. Okay. So, again, where does -- where is the
14 internal housing component versus the external housing
15 component in this Figure 22?

16 A. Well, again, in this Figure 22, I cannot identify
17 the claimed internal or external housing component because,
18 remember, the claimed one defines a circumferential inner
19 and outer surface respectively. That's why I use other
20 figures.

21 So I could perhaps discuss internal and external
22 housing components generally, but not claimed with respect
23 to this figure.

24 Q. This doesn't show a cross-section of the ring in
25 Niwa?

1 A. As I've explained, this shows a cross-section --

2 Q. Okay.

3 A. -- straight on, but there are other
4 cross-sections with other cross-sectional views that I rely
5 on for my opinion. So what I'm saying is I cannot identify
6 the claimed internal or external housing components because
7 of the lack of circumferential aspect. So that's why I'm
8 asking to identify in one of the other figures on which I
9 rely for my opinions.

10 Q. Does Niwa say housing 40 has more than one piece?

11 A. Clearly, if you read the other figures, for
12 example, 24, 25, 26, 27, you can see there is -- there are
13 different -- Niwa discloses other shapes, other than what's
14 disclosed in Figure 22.

15 Q. So you said 24?

16 Could you show Figure 24, please?

17 A. I'm working from memory here. So not 24. I
18 mis-recalled the other cross-section.

19 Q. Did you mention 25?

20 Can you show 25, please?

21 A. Yeah, it's not 24 and 25. Let's see.

22 MR. POWELL: Your Honor, may the witness consult
23 the actual exhibit instead of going off memory?

24 JUDGE JOHNSON HINES: Of course he can.

25 MR. SCHULTZ: I thought he had it. I'm sorry.

1 THE WITNESS: No, no. You said let's put it up
2 for now, so I didn't go --

3 BY MR. SCHULTZ:

4 Q. I'm sorry. I thought --

5 A. -- continue to search.

6 Q. -- you were looking for it. By all means.

7 A. Okay.

8 Q. You deserve to look at the patent before I ask
9 any more questions about it.

10 A. Thank you. Just was expecting it to be right
11 after my Schroder here, and it was -- it's out of order.

12 JUDGE JOHNSON HINES: And perhaps -- counsel,
13 perhaps someone can help.

14 THE WITNESS: Yeah, this is Figure --

15 JUDGE JOHNSON HINES: Or perhaps you can help him
16 find it in the binder.

17 MR. POWELL: Yes.

18 JUDGE JOHNSON HINES: Thank you.

19 BY MR. SCHULTZ:

20 Q. CX-1133?

21 A. Yes. Sorry. It was in the biggest binder of
22 all.

23 JUDGE JOHNSON HINES: Thank you.

24 THE WITNESS: Okay. So I would -- what I had in
25 mind in thinking about it, Figures 27 and Figures 28 were

1 the other examples that I relied upon. And I see now that
2 they're dotted lines, they're not solid lines, but I think
3 these also illustrate, in conjunction with Figure 26, my
4 opinion.

5 BY MR. SCHULTZ:

6 Q. Okay. Figure 27, where is the internal housing
7 component and the external housing component?

8 A. Right. So just to orient the Court, in Figure
9 27, we're looking at the finger sideways, not end-on.
10 That's labeled as Number 2. And you can see the dotted line
11 above, immediately above and immediately below the finger,
12 which is 2. That is the inner circumferential surface.
13 Okay?

14 And that is -- that inner circumferential surface
15 -- remember, we know that Niwa has a housing. That is the
16 inner circumferential surface of the internal housing
17 component. And I labeled that also in Figure 26 in my
18 demonstratives.

19 And what's labeled as 40, again, this is going
20 around your finger. That goes all the way around. And that
21 is the exterior -- the outer circumferential surface, and
22 that is pointing to part -- the external housing component.

23 BY MR. SCHULTZ:

24 Q. So where does the internal housing component end
25 and the external housing component begin in this figure?

1 A. Um-hum. So you can take it one by one. Let's
2 take the external housing component. So that, we know it's
3 a housing. We know it has that -- that outer surface. And
4 housings have a thickness. So it has some thickness to it.

5 It doesn't indicate visually here the thickness
6 of that housing, but a person reading this, understanding
7 that it's a housing, understands housings have thickness.
8 And because it's a housing, has a wall that has some
9 thickness. Likewise with the inner circumferential surface,
10 again, it's a housing, and I highlighted, back in Figure 26,
11 the internal housing component.

12 Q. Okay. So let me see if I understand that.

13 You can't see that visually, but one would
14 understand that from reading this?

15 A. I'm saying it discloses it, yes. A person of
16 ordinary skill reading Niwa, knowing Figures 27 and 28
17 within the context of Figure 26, that further informs you as
18 to the shape that's being disclosed, one of the shapes
19 that's being disclosed, that it has those elements, as I
20 demonstrated in my slides.

21 Q. You're saying there has to be an internal housing
22 component and an external housing component, even though the
23 border between the two is not shown in these figures?

24 A. Well, I think in these two figures, what I
25 identified as the -- in Figure 26, the part that connects

1 them, that's not shown in this particular -- in Figures 27
2 or Figure 28.

3 Q. Okay. So wait a minute. You just talked about
4 Figure 26, right?

5 A. Well, I'm saying that Figure 26 -- the
6 understanding of Figure 27 and Figures 28, additional
7 understanding is provided and clarity provided by Figure 26.

8 Q. So you said Figure 22 was different from Figure
9 26, because it was -- I'm not sure why -- but you said it
10 was a different embodiment of the same example?

11 A. I said, clearly, when you look at Figure 22, it's
12 showing a different shape than, say, for example, Figure 26.

13 Q. So paragraph 112 of Niwa -- so this is another
14 example of a construction example of example 2. You chose
15 to rely on this construction example 2, but not the
16 construction example of Figure 22? You're saying that one
17 doesn't fit your argument but this one does with respect --
18 you match this with Figure 26?

19 A. I wouldn't phrase it like that. I look at Figure
20 22 and I wouldn't --

21 Q. I think that's what you just did.

22 A. I wouldn't phrase it like that. That's not what
23 I did.

24 I understand that these are implementation
25 examples too. They have different shapes. And what's

1 disclosed in Figure 22 is a different shape than what is
2 disclosed, let's say, for example, in Figure 26. All I'm --
3 what I'm doing is I'm saying I look at Niwa and I ask myself
4 the question as to whether or not that claim element is
5 present in Niwa.

6 Q. Okay. Could you go to paragraph 217 of Niwa.
7 Can you highlight "highly flat" for me? It's on the fifth
8 line from the bottom.

9 Did you consider this excerpt when you
10 interpreted Niwa?

11 A. Yes, I read the patent as a whole.

12 Q. Do you recall it saying the battery is highly
13 flat?

14 A. I said, according to this construction, the
15 battery is highly flat.

16 Q. Okay. What's the advantage of having a highly
17 flat battery? How would one of ordinary skill in the art
18 interpret that?

19 A. In this one, it says it is possible to enhance
20 the affinity of the plethysmogram sensor 1 when the pulse
21 sensor 1 is worn on the finger 2. So it says it enhances
22 the affinity.

23 Q. Okay. So Niwa is acknowledging the advantage of
24 having a highly flat battery here, correct?

25 A. Niwa is saying, well, as I understand what this

1 is saying, this is saying that much in the same way, let's
2 say, the Oura Gen. 3 Heritage had a flat at the top, that it
3 had -- that has an affinity. So the sensors are pointed
4 toward the fleshy part. That's how I understand this, is
5 that flat, similar to the Oura Gen. 3, which also has a
6 curved battery, that's what I mean by saying a flat battery
7 is the way to provide that affinity.

8 Q. Okay. Do Oura Gen. 3s have highly flat
9 batteries?

10 A. No, they do not. That's my point. My point is,
11 though, that -- the idea of the highly flat, I think, was to
12 provide something of the form that would provide for this
13 affinity. It's not how you have it in the Oura Gen. 3.
14 There is a curved battery in the Oura Gen. 3.

15 Q. Go to paragraph 219, please.

16 Now, Niwa talks about a stacked-layer
17 construction highlighted here. Do you recall that part?

18 A. I recall that was one of the parts.

19 Q. What is Niwa talking about in terms of a
20 stacked-layer construction?

21 A. Give me a moment to review the whole thing. It
22 has been a while since I reviewed this paragraph.

23 Okay. I've reviewed a good portion of it. Can
24 you ask your question again so I can answer it?

25 Q. So, correct me if I'm wrong, a stacked-layer

1 construction of Niwa is piling up the components on top of
2 one another, correct?

3 A. It seems to be saying that that's one way of
4 doing it. You can stack the layers so that each area of the
5 first and second -- first substrate 21 and second substrate
6 21 is decreased. Therefore, the largeness of the second
7 unit, 20, can be restrained not to protrude from the third
8 joint of the finger 2. So I understand it's one way that
9 Niwa describes it can be done.

10 Q. And Niwa is highlighting that stacked-layer
11 construction as an advantage, correct?

12 A. It's saying a reason why one might do this.

13 Q. Okay. Now, the rings at issue in this case are
14 not stacked-layer constructions, are they?

15 A. Well, I don't know that I've opined exactly on
16 that. I do know some things get stacked. For example, the
17 -- just to be -- you know, I want to be clear that I'm not
18 going beyond these, but with respect to the battery, for
19 example, I know that in some instances the charging coil,
20 you know, is not separated from that, for example.

21 So that -- you know --

22 Q. Let's talk about --

23 A. -- that may be one example of stacking.

24 Q. Let's talk about the important components. The
25 PCB and the battery, that's not a stacked-layer

1 construction; and, in fact, claim 2 specifically says
2 they're non-overlapping. So the battery -- the products at
3 issue here do not employ a stacked-layer construction, do
4 they?

5 A. Well, that -- maybe I wasn't clear. That's what
6 I'm trying to communicate, is that, indeed, some of them
7 have the antenna stacked -- I guess if that's how you define
8 stacked -- have the charging coil, the receiving coil for
9 charging in -- stacked, I guess you would say, according to
10 that, with the battery.

11 Q. Okay. But the PCB and the battery are not
12 stacked in the rings that we're talking about?

13 A. The coil itself is on a substrate, and it -- the
14 charging coil I believe is also printed. So that may also
15 be considered a PCB. So that may be stacked.

16 Q. You're saying --

17 A. Stacked PCB.

18 Q. You're saying that the charging coil is stacked
19 on the battery?

20 A. Yes. Not in all cases.

21 Q. Can we go to Schroder, Figure 3, please.

22 Do you recognize Figure 3? And, again, this is a
23 reference you relied on earlier today.

24 A. Yes. This is Figure 3 of Schroder. I don't
25 think I -- you know, there are -- this is one aspect of

1 Schroder. I'm relying, for example, on aspects of Figure 4
2 and as demonstrated in Figures 6 through 10, but this is one
3 from Schroder.

4 Q. Where is the battery in Figure 3?

5 A. Let me put this guy aside first.

6 So we have our chip module 10, which is indicated
7 here, and -- let's see, where was that? Okay. And then
8 there is a cover 14. I'm trying to recall with respect to
9 this figure, because I haven't -- again, I don't rely on
10 Figure 3, so I need a little time to analyze it with respect
11 to the battery.

12 Q. Well, I'll represent to you that there's one
13 place in this patent that talks about the battery. And it's
14 column 11, line 46. Do you see that?

15 A. I see that.

16 Q. Now, this is the first mention of -- they call it
17 an energy storage device. We can call it a battery.

18 This is an optional feature in Schroder, correct?

19 A. I don't think that's a fair characterization of
20 all aspects of Schroder. There are certainly -- Schroder
21 goes on to disclose components. And those components need
22 energy in which to operate. And, again, a battery is -- as
23 disclosed, a battery will provide energy, right?

24 Q. You're familiar with passive RFID devices?

25 A. Yes, I am.

1 Q. Schroder is an RFID device, correct?

2 A. That's one of the things it can do, yes.

3 Q. So Schroder doesn't necessarily need a battery,
4 does he?

5 A. It can be passive, but as it says here, it --
6 energy storage device, you know, is one -- a battery is an
7 energy storage device.

8 Q. Okay. So it says here it's connected to the chip
9 module 10.

10 A. Yep. Yes, it does.

11 Q. So could we go back to Figure 3 of Schroder and
12 you could point to me where the battery is?

13 A. I don't think I've opined on where the battery in
14 Figure 3 is. I don't rely on Figure 3. I see, just as you
15 pointed me out in column 11, that the battery is there and
16 it's connected to chip module 10. But, you know, my -- I
17 relied on Figures 4 and 6 through 10 -- 4 and 5 and 6
18 through 10 for my opinion. I believe it's a different
19 disclosure.

20 Q. All right. So you can't point to a battery in
21 Figure 3 because either you can't find it or you haven't
22 reviewed Schroder in enough detail to do that?

23 A. I think with respect to Figure 3, I haven't -- I
24 haven't reviewed it in enough detail to do that with respect
25 to Figure 3. Once I got to the point of reviewing it and

1 identified in Figure 4, the figures that I mentioned, there
2 was no need to continue to find additional because I found
3 that it was disclosed within Schroder.

4 Q. Okay. Well, it says it's connected to chip
5 module 10, which is shown in Figure 3, correct?

6 A. Correct.

7 JUDGE JOHNSON HINES: Mr. Schultz, would this be
8 a good time for a break?

9 MR. SCHULTZ: Absolutely.

10 JUDGE JOHNSON HINES: All right. We'll come back
11 at 5 after 4:00.

12 (A recess was taken at 3:49 p.m., after which the
13 proceedings resumed at 4:05 p.m.)

14 JUDGE JOHNSON HINES: Thank you. Please be
15 seated.

16 BY MR. SCHULTZ:

17 Q. Mr. Alarcon, we were discussing the Schroder
18 reference. Do you recall that?

19 A. Yes. I put that aside, but, yes.

20 Q. Did you obtain a copy of that?

21 A. I can pull it back up, yes.

22 Q. Thank you.

23 A. Okay. I have Schroder generally in front of me.

24 Q. So I had asked you where the battery was located
25 in Figure 3. Based on the disclosure of Schroder that says

1 it is connected to the chip module, you said you haven't
2 relied on Figure 3, I don't believe. I don't want to put
3 words in your mouth. But where's the battery shown in
4 Figures 4 through 10?

5 A. So maybe we will pull one of those up. Figure 4
6 -- that's a great page to put up. So, as I describe,
7 through the -- I think I have described this process. So
8 hopefully I can repeat it well.

9 The inlay is a printed circuit board. There are
10 components on it and it's also -- Schroder also discloses
11 that there is a -- that it's connected to its power source,
12 right? And in these, there is no other -- there is no --
13 unlike Figure 13 that has this cover, these are different --
14 sorry. Unlike Figure 3 that has this cover, these shapes do
15 not.

16 So in reading that, a person of ordinary skill
17 would understand the battery because it is powering the
18 circuitry to be within the cavity that I previously
19 identified.

20 Q. Okay. Meaning the inlay 12, that carries a wire?
21 You're saying there's a battery in there?

22 A. I'm saying that inlay 12 has circuitry. And it
23 is powered, Schroder discloses a battery. It is powered.
24 And that is -- a person of ordinary skill reading that,
25 understands that's where it would be.

1 Q. Okay. Wouldn't a person of ordinary skill read
2 the only disclosure in Schroder that says anything about the
3 battery, which is that it's connected to the chip module 10,
4 which the only place that's shown is in Figure 3; isn't that
5 right?

6 A. I'd have to go through and see if there are any
7 other instances where it says "battery," but outside of the
8 context of Figure 3, but as I have explained, it has --
9 Schroder discloses a battery. And a person of ordinary
10 skill reading this as a whole understands in those other
11 examples, for example, I showed -- as shown in Figures 4 and
12 5, they also have the inlay. And something like a battery
13 is going to power it. So where else is it going to be?

14 It's in that cavity that I identified. That's
15 what a person of ordinary skill would understand in reading
16 the patent as a whole and specifically looking at Figures 4
17 and 5 by way of example.

18 Q. Well, you have already testified that Schroder
19 could be passive and not have a battery at all, right?

20 A. It could -- my understanding is it could be
21 passive.

22 Q. Okay. The chip module 10, what is that in Figure
23 3?

24 A. Schroder discloses it has certain elements to it.
25 I have to refresh which -- the electronics that are inside

1 the chip module. Certainly the chip as described.

2 Q. So why isn't chip module included in this inlay?

3 A. I'm sorry, I don't --

4 Q. Why isn't the chip module 10 inside the inlay?

5 A. In Figure 3? In Figures 4 and 5, for example,
6 the patent indicates that it is.

7 Q. Oh, really? Where does it say that?

8 A. Well, so the chip module is connected to the
9 inlay. So in Figures 4 and 5, it tells you where the inlay
10 is, so you know where the chip module is.

11 Q. Let me stop you a moment. Figure 3, it shows the
12 chip module connected to the inlay, correct? Is that what
13 you're saying?

14 A. I don't want to misquote the patent here, but the
15 chip module 10 is my understanding connected to the inlay
16 12.

17 Q. And that's shown in Figure 3, right?

18 A. I'm looking at Figure 3, yes.

19 Q. Okay. Is chip module shown in any of the other
20 figures?

21 A. In those other figures, the figures themselves do
22 not have a label for chip module 10, but they label the
23 inlay 12.

24 Q. Okay. And you're saying Schroder says chip
25 module 10 is inside inlay 12 in these other figures?

1 A. It's --

2 Q. Is that your testimony? Because it doesn't look
3 like to me it can fit.

4 A. I don't believe this is a limiting example of
5 size of what a chip module could be.

6 Q. Well, it's about 20 times thicker than that inlay
7 12 in Figure 3 and the other figure, so I want to clarify,
8 is your testimony that the chip module 10, the only place it
9 is shown in Figure 3, that's inside the inlay 12 in the
10 other figures?

11 A. Well, that is in the cavity I identified, that
12 recess formed between 16 and 18 respectively. That's where
13 it would reside. And I don't see anything in Schroder that
14 --

15 Q. That's not shown, but you're saying it's in there
16 somewhere?

17 A. I'm saying it's in there. A person of ordinary
18 skill reading would understand it would be there. And I
19 don't see anything in Schroder that restricts the size of
20 the electronic components to what is shown in Figure 3.

21 Q. All right. So what does this mysterious unshown
22 battery look like?

23 A. I guess I don't understand your -- the
24 formulation of your question.

25 Q. You say there's a battery here (indicating),

1 right?

2 A. I'm saying there in Figure 4 and 5, by way of
3 example, there is -- there would be a battery. And that
4 battery would be configured to fit in the cavity that I
5 identified as being formed by the elements -- by the
6 internal housing component and external housing component.

7 Q. It would be configured to fit in the cavity; is
8 that what you just said? So you're using the claim language
9 from the '178 patent to tell us where the battery in
10 Schroder is, right?

11 A. I'm using that by way of example, but I can --

12 Q. Well, that sounds to me like a classic case of
13 hindsight, Mr. Alarcon, which is impermissible in an
14 obviousness analysis. You understand that, right?

15 A. I understand that. And what I'm saying is that a
16 person of ordinary skill reading this understands that there
17 is this inlay and that's a printed circuit board, it has
18 these components on it, electronic components, and also
19 knows that its powered by an energy source, such as the
20 battery disclosed within the reference.

21 And it also says where that -- it also indicates
22 in Figures 6 through 10, for example, as well as 4 and 5,
23 that the external housing component and internal housing
24 component, they are connected and they form a cavity. So
25 with all of those in place, a POSA knows where, with respect

1 to the internal and external housing components, where the
2 printed circuit board and the battery are located.

3 Q. A POSA knows that if he has read the '178 patent,
4 right?

5 A. A POSA, irrespective of the '178 patent, would
6 know that.

7 Q. So is it your testimony -- does this battery of
8 Schroder that's not shown, is it curved as well?

9 A. Well, my testimony is -- again, I also bring in
10 the curved battery for obviousness combination, to the
11 extent that it's not disclosed.

12 Q. Okay. You're familiar with the antenna disclosed
13 in Schroder that's on carrier inlay 12, that Schroder talks
14 about, you testified?

15 A. I recall it has an antenna on the inlay.

16 Q. That's a wire, correct?

17 A. I think it can be formed in a number of different
18 ways. I think one way it can be formed is with a wire.

19 Q. Okay. How thick is a wire in this context?

20 A. I don't think I have opined on how thick the wire
21 in Schroder is.

22 Q. You're the expert, Mr. Alarcon. Do you know?

23 A. With respect -- well, my understanding is there
24 are a lot of ways to design an antenna. And depending on
25 the type of communication, there are different types of

1 thicknesses. I would have to go through, do the analysis.
2 There's a lot of modeling involved in terms of antenna
3 design. It's a fair bit of art to that.

4 So I can't just sit here and give you dimensions
5 for an antenna. And I don't recall Schroder disclosing the
6 thickness of its antenna.

7 Q. So you're not familiar with the thickness of RFID
8 antennas in this context?

9 A. Well, that's what I'm explaining to you is they
10 can vary. And one has to do modeling. You know, you can --
11 I guess I'm comfortable saying that they can be small. They
12 can be on circuit boards. They can be miniature. They can
13 be relatively thin. But to know -- and clearly they can fit
14 in a lot of wearable products and not take up a lot of
15 space.

16 But to give you a precise answer, I would need to
17 design the product and do the modeling.

18 Q. It wouldn't be as thick as the chip module 10,
19 would it?

20 A. Again, I don't -- I see 10 as being a
21 representation. I don't think -- I don't read 10 as being
22 limited -- I don't -- you know, in fact, with respect to
23 Figure 3, I don't see anything that limits the relative
24 portions.

25 For example, in the '178 patent, there's some

1 discussion of some dimensions. And I don't think with --
2 well, as I say independently, I don't think Schroder
3 described its unit 10 in terms of any number of millimeters.

4 Q. It's just disclosed as a lot thicker than the
5 inlay, correct?

6 A. I take it to be a representation of the
7 component, but I don't take it to be limiting. And I think
8 a person of ordinary skill understands how -- that you can
9 buy components in lots of different package styles. The
10 same component can come in any number of package styles.

11 You can also mount it directly to a printed
12 circuit board with a chip-on-board process. There are a lot
13 of ways that a person of ordinary skill would understand you
14 can package electronic components.

15 Q. What is item 14 in this figure?

16 A. It says it's a cover.

17 Q. What is that used for?

18 A. The patent describes it, says the cover is --
19 sorry, says the chip module 10 is protected against external
20 influences by a cover 14.

21 Q. Okay. So to be clear, Figure 3 of Schroder does
22 not show chip module 10 between an internal and external
23 housing component, does it?

24 A. I don't rely on Figure 3 to demonstrate that, no.

25 Q. You opined that Oura's commercial success is due

1 to their marketing spend; am I right about that?

2 A. I think my answer was phrased a little bit
3 differently, but it is -- I was highlighting the difference
4 of the marketing spend of Oura compared to the relative
5 spend of Motiv, which in my understanding was very small.
6 So I opined on it, to the extent to show that it was
7 significantly more than Motiv.

8 Q. Okay. Why is that important?

9 A. That's important because if -- to illustrate that
10 my opinion is that the -- to the extent there is commercial
11 success -- well, to the extent that Oura claims to practice
12 the asserted claims, my understanding is that the Motiv
13 product also practiced the technology, and yet the Motiv
14 product was not successful.

15 And it's important because if they're both using
16 the same technology, but one was successful and one was not,
17 how can you attribute it to the technology? So I say:
18 Well, one thing that Oura does is they market their product
19 and they put a lot of resources behind marketing the
20 product, and to say that that is an example differentiator
21 and that goes towards commercial success, not the patent --
22 not the -- not the claimed technology.

23 Q. Well, what do you mean to the extent that Oura
24 claims to practice the asserted claims? My understanding is
25 that Motiv product also practiced the technology. What does

1 that mean?

2 A. That was probably not phrased well. My thoughts
3 were forming.

4 So I can break it down, though. And hopefully
5 make it more clear.

6 So my understanding is that Oura believes they
7 are commercially successful. And I'm not debating that Oura
8 may be commercially successful.

9 I also understand that through its DI analysis,
10 believes that it practices the '178 patent and, thus, at
11 least an aspect of the technology of the '178. My
12 understanding is further that Motiv also practiced the
13 technology. That's what I meant with that -- through that
14 section that you read back to me.

15 Q. It's that last portion I'm curious about. You
16 say your understanding is that further, that Motiv also
17 practiced the technology. Where does that understanding
18 come from? How many teardowns did you do of the Motiv
19 product?

20 A. So as I described earlier, I did not do an
21 assessment of the Motiv product claim by claim, limitation.
22 That's not what I'm testifying to. My understanding is
23 based on a number of things, looking at -- well, first,
24 understanding that it was -- the Motiv ring was made by the
25 inventors of the '178 patent and that they intended to

1 implement their technology that they had developed.

2 Q. Can I ask you a question about what you just
3 said?

4 A. Yes.

5 Q. So --

6 MR. POWELL: Your Honor, I think he was
7 mid-answer.

8 JUDGE JOHNSON HINES: I'm sorry?

9 MR. POWELL: I believe --

10 JUDGE JOHNSON HINES: I just didn't hear what you
11 said.

12 MR. POWELL: Sorry, I am on mute. I believe he
13 was mid-answer. So I would just ask if the witness has
14 additional parts of his answer, he be allowed to express
15 them before jumping to the next question.

16 JUDGE JOHNSON HINES: All right.

17 THE WITNESS: So I was -- okay to continue?

18 JUDGE JOHNSON HINES: Yes.

19 THE WITNESS: Somewhat lost my train of thought,
20 but I think I said my understanding was further that the --
21 that the inventors of the '178 patent intended to practice
22 the technology they had developed. And then, furthermore, I
23 have reviewed the evidence in this case. I saw some
24 information about the ring.

25 I have seen the ring. It looks, again, as I have

1 testified, it looks to be a finger-worn wearable device. I
2 understand it has a certain type of construction that is
3 similar in nature, at least similar in nature to some of the
4 figures. So it's at least for those reasons that I believe
5 that my understanding -- that provides my understanding that
6 the Motiv ring practices the technology.

7 BY MR. SCHULTZ:

8 Q. Practices the technology of the '178 patent?

9 A. Well, that's what I'm not saying, is that I have
10 not done an analysis of the claimed invention
11 limitation-by-limitation for the Motiv ring. I'm not making
12 that representation.

13 I'm saying generally that it -- my understanding
14 is it practices the technology.

15 Q. So are you saying the Motiv Ring is the same as
16 the Oura Ring that you have analyzed in this case?

17 A. I'm not saying that. Again, I have not done a
18 limitation-by-limitation breakdown. I understand that --
19 certain things about the structure of the Motiv product in
20 relation to the patent and how those relate to the claims,
21 but I have not done the step-by-step analysis that I did
22 for, for example, going through the non-infringement
23 analysis.

24 Q. Okay. Is the Motiv Ring covered by claim 1?

25 A. Again, I think you're asking me to complete an

1 analysis I have not completed. I believe certain structures
2 are analogous to structures in claim 1, so it wouldn't
3 surprise me if it did embody it, but I have not completed
4 that analysis.

5 Q. But, Mr. Alarcon, you're making a conclusion
6 about commercial success based on a comparison of the Oura
7 product and the Motiv product. If you haven't done the
8 analysis on whether the Motiv product is covered by claim 1,
9 what relevance does your conclusion have?

10 A. So the relevance is it's not simply limited to
11 that aspect that we were just discussing. I indicated there
12 were others.

13 And I also understand through the founder's
14 testimony that they were aiming to commercialize a product
15 based on the technology that they had created. And my
16 understanding is that technology is embodied in the patent
17 family, including the initial patent that they filed, which
18 isn't the '178, but I think they -- I don't know if they
19 described it as an omnibus or some term to basically say,
20 like, a catch-all for their technology.

21 So my understanding is their first filed patent
22 or at least the patent from which '178 is derived was
23 intended to capture their technology and they intended to
24 commercialize that technology.

25 Q. So your testimony in this regard is based on your

1 belief or assumption that the inventors intended to use some
2 technology of the '178 patent? Is that fair?

3 A. I think I phrased it differently. It's not an
4 assumption. It's an understanding that they intended to --
5 they filed a patent on which the '178 is based, and that was
6 supposed to capture a number of embodiments that they
7 thought they had invented.

8 And that's what they intended to commercialize.
9 So I'm relating the technologies.

10 Q. Okay. Well, you can commercialize embodiments
11 that aren't necessarily covered by a patent, right?

12 A. Yes, you could commercialize embodiments not
13 covered by a patent, specifically with respect to
14 structures. However, I understand that the Motiv has -- is
15 -- at least looks like, if recollection serves, the
16 construction is similar to Figure 16 of the '178 patent.

17 But, yes, I understand you can commercialize
18 embodiments that are not claimed.

19 Q. How many Motiv -- I understand you said you
20 haven't done a teardown. How many Motiv products did you
21 inspect?

22 A. Just one.

23 Q. Where did you get that?

24 A. I think Mr. Strasser provided that.

25 Q. So can we go to the expert report, paragraph 476.

1 So this, I think, is the basis for the opinion
2 you provided about Oura's, I guess, commercial success being
3 based on something other than the technology embodied in the
4 '178.

5 A. I see that.

6 Q. And you based your testimony on this M. Strasser
7 -- I'm sorry. You based your opinion on this M. Strasser
8 testimony? Who is that?

9 A. Mike Strasser.

10 Q. And can we show what Mr. Strasser testified to?
11 So he was asked: "Approximately how many rings did Motiv
12 sell?

13 "Answer: I don't know.

14 "Question: Over a hundred? Over or under a
15 hundred Motiv rings?

16 "Answer: Over a hundred.

17 "Question: Do you have an estimate -- general
18 estimate of how many Motiv Rings during the time of Motiv's
19 existence did Motiv sell?

20 "Answer: I don't know.

21 "Question: Would it be less than a thousand
22 Motiv Rings?"

23 Objection. Asked and answered.

24 "Answer: Yeah."

25 So this is the basis for your opinion, correct,

1 Mr. Strasser's testimony?

2 A. It was part of it, yes. My understanding is
3 irrespective of whether it was 100 or, as I cite, as I
4 mention in my report, under a thousand, right, yes, that's
5 one of the bases for my understanding of their lack of
6 commercial success and --

7 Q. Do you know -- I'm sorry, I didn't mean to
8 interrupt you.

9 A. I further understand they are no longer operating
10 and they had to liquidate, so I also take -- I don't think
11 that's a contested fact that Motiv sold their assets and
12 they were liquidated. So I think that's a further
13 indication that with their product, it was not a commercial
14 success.

15 Q. So a significant fact in your opinion here is the
16 number of rings sold by Motiv, correct?

17 A. I think that's fair to say. If you had told me
18 they sold a million, I might have a different opinion, but
19 my understanding is that the number is relatively low.

20 Q. Okay. Were you here when Mr. -- the inventor,
21 Mr. von Badinski, testified?

22 A. Yes, I was.

23 Q. And he testified that they sold about 80,000
24 units. Do you recall that?

25 A. I recall that.

1 Q. Do you have any reason to doubt that testimony?

2 A. I understand it's in conflict with this here, but
3 I don't -- I don't think he was -- I have no reason to doubt
4 that he was untruthful.

5 Q. Okay. So would you reevaluate this opinion if
6 the number was 80,000, instead of less than a thousand?

7 A. I think I would -- I would take that into
8 consideration, but it wouldn't necessarily change my
9 opinion.

10 Q. 80,000 versus less than a thousand and it
11 wouldn't change your opinion here?

12 A. I said it wouldn't necessarily. I would want to
13 then ask other questions, such as did they recuperate their
14 investment? Were they profitable? Those sort of things. I
15 would want to know those things.

16 But 80,000 in the context of a consumer product
17 is certainly more than a thousand, but it still as an
18 isolated indicator may not necessarily be one way or
19 another. But I would want to know other things, such as the
20 ones I just mentioned.

21 Q. Okay. Which you did not include in your expert
22 report, those other factors?

23 A. I don't recall mentioning profitability, for
24 example, in the context of 80,000 rings. I would want to
25 know, for example, did you recuperate your cost, your

1 investment, those things. I do not -- I do not recall
2 mentioning those in my report.

3 Q. So as an expert, you're in the business of
4 offering opinions, correct, at least in this context?

5 A. Yes. I try to provide opinions in this case,
6 yes.

7 Q. And you try to base those opinions on facts,
8 correct?

9 A. Yes. I base them on facts and observations and
10 data.

11 Q. And if they are based on false information, those
12 opinions don't have much use, do they?

13 A. I agree that I would need to -- 80,000 is
14 definitely different than a thousand. I don't know that I
15 would characterize it as not having much use in this
16 particular instance. I would want to know more. But it
17 certainly is worth considering.

18 Q. Could I have CX-1391.

19 Now, I don't know, Mr. Alarcon, have you seen
20 Exhibit CX-1391 before?

21 A. Give me a moment to familiarize myself with it.

22 MR. POWELL: Do we have multiple copies of this
23 exhibit? This was not in the binder that was provided
24 earlier.

25 JUDGE JOHNSON HINES: Do you have a copy?

1 MR. POWELL: We only have one copy for two
2 Respondents. Also, I will note this appears to be outside
3 the scope of direct. And I do not believe this was part of
4 Mr. Alarcon's report or used during his direct, so I am
5 unclear exactly why it is being used now.

6 MR. SCHULTZ: It's impeaching his commercial
7 success opinion, Your Honor.

8 JUDGE JOHNSON HINES: I understand that. I will
9 allow it.

10 BY MR. SCHULTZ:

11 Q. Mr. Alarcon, have you seen this document before?

12 A. I don't have a fresh recollection of it. Was it
13 in my materials considered?

14 Q. Standing here today, I don't know that. But I
15 will ask you, are you familiar with this type of document, a
16 Board of Directors update as it is indicated on page -- I
17 guess the first page of the exhibit?

18 A. I have certainly seen documents of this nature.
19 This says agenda. And I will take your representation that
20 it was given to the Board of Directors.

21 Q. What do -- what are Board of Directors updates
22 typically used for, in your experience?

23 A. They are typically used to give the Board an
24 update of the business, the progress of the business, and
25 consider motions, consider things that are actions the

1 company -- high-level actions, high-level decisions that a
2 company needs to take.

3 Q. And on that page, there's a picture of what I
4 assume to be the Motiv -- a group of Motiv employees at the
5 time. Do you recognize Michael Strasser in that picture?

6 A. Yes, I think he's the one in the white, call it a
7 sweater jacket, on the -- toward the right-hand side.

8 Q. He's the gentleman that testified in this case,
9 right?

10 A. Yes.

11 Q. And I am going to direct you to a specific page.
12 There's a Q4 sales. Do you see that?

13 A. Yes, I have this page up.

14 Q. And that talks about in 2017, it indicates --
15 well, Q4 is 7,634 units. And in 2017, it indicates there
16 were 13,779 units, right?

17 A. I see that.

18 Q. Do you have any reason to doubt that?

19 A. No, I don't.

20 Q. Now, there's a pro forma towards the end of the
21 document. The slide entitled Pro Forma. And let me know
22 when you have gotten there.

23 A. Okay. I see it. I see it on the screen.

24 Q. Now --

25 A. I am getting close to the hard copy.

1 Q. Now, this says that as of fiscal year 2018, there
2 were 71,450 units?

3 MR. WINSTON: Your Honor, if I may.

4 JUDGE JOHNSON HINES: Yes.

5 MR. WINSTON: May I inquire as to whether this
6 should be on the confidential record?

7 MR. SCHULTZ: No, Your Honor.

8 JUDGE JOHNSON HINES: All right.

9 MR. SCHULTZ: This is an Oura document. I
10 believe we are okay with it being on the public record.

11 JUDGE JOHNSON HINES: Okay.

12 BY MR. SCHULTZ:

13 Q. So on this pro forma slide deck, do you see
14 fiscal year 2018 showing 71,450 units sold?

15 A. I see that.

16 Q. Do you have any reason to doubt that?

17 A. No, I do not.

18 Q. Do you know how long Motiv existed for?

19 A. I recall testimony about when they were
20 incorporated. I'm having a hard time recalling the exact
21 date. Was it in -- I believe it was in 2014. It was
22 certainly before the dates on the pro forma.

23 Q. What I was asking is do you know when they
24 stopped selling product?

25 A. Oh, I'm sorry. I misunderstood. So when they

1 completed -- no longer their last sale?

2 Q. Correct.

3 A. I don't have a fresh recollection of that.

4 Q. Can we go to, I believe, slide 85 of Respondents'
5 demonstratives for Mr. Alarcon.

6 Now, you testified -- no, that was right.

7 I'm sorry, slide 86, is it, Respondents
8 Demonstrative 1C, slide 86.

9 Do you recall testifying about this slide?

10 A. Did the slide update or were you still looking
11 for a different slide?

12 Q. This is the slide I wanted to ask you a couple of
13 questions about.

14 A. Okay. Yes.

15 Q. Now, you testified that the walls of the -- well,
16 the printed circuit board shown here was -- in effect,
17 passed the walls of the external housing component; is that
18 a fair way to characterize your testimony?

19 A. I don't recall verbatim, but -- so I don't risk
20 repeating myself, I think I said something to the effect
21 that with respect, an additional reason, let's say, for
22 example, under an interpretation that 13 was an example of
23 the claims, the Ultrahuman product would not infringe for
24 the additional reason that I would say that that circuit
25 board would not be within the partially enclosed internal

1 space 1320.

2 Q. And just to be clear, this is a single
3 cross-section of this particular teardown, correct?

4 A. With respect to the Ultrahuman, yes, that's a
5 single teardown.

6 Q. Now, there are sections of the Ultrahuman and
7 RingConn products for that matter and Gen. 3 products as
8 well where the circuit board is below these outer walls, the
9 end of the outer walls of the external housing component;
10 isn't that right?

11 A. I think it's fair to say that the distance
12 between the printed circuit board and the outer metal that
13 we see here, that varies, so the amount of epoxy back there
14 increases, decreases in thickness. And, yeah, at other
15 cross-sections, it may.

16 I didn't see Dr. Sarrafzadeh make an argument
17 showing affirmatively that it is, but I will grant you that,
18 yes, that distance with the circuit board will vary.

19 Q. And just to put a bow on that, it varies to the
20 extent where the circuit board could be past these outer
21 walls of the external housing component, correct?

22 A. I understand that it comes up and comes down and
23 it may be. I'd have to look at a particular image to
24 evaluate it. But I'm not debating that that distance
25 varies, but I would want to see an image to give you more

1 clarity on your answer.

2 Q. Now, you talked about, earlier today, different
3 size rings for Respondents. Do you recall that testimony?

4 A. You will have to give me a little more -- I
5 talked about it in several instances, so you have to be a
6 little more specific, please.

7 Q. Different -- you talked about it with reference
8 to the curvature of the claim 12, in particular.

9 A. Okay. I remember talking about claim 12. And I
10 talked about it with respect to both RingConn and
11 Ultrahuman.

12 Q. And just for the record, claim 12 recites,
13 "wherein an arc of the curved battery approximates a
14 corresponding arc of the external housing component."

15 A. I see that.

16 Q. And I think you testified that Dr. Sarrafzadeh
17 has not -- had not shown that that was the case with respect
18 to all different sizes; is that fair?

19 A. I think it's fair to say that with regard, there
20 -- there are a number of different ring sizes, so different
21 diameters, therefore, different arc diameters and a limited
22 number of batteries. And they are necessarily different in
23 cases -- in their arc -- in their -- well, in their arc
24 lengths, but also most importantly their radii of curvature,
25 the radius of curvature.

1 And what I was testifying here was that
2 Dr. Sarrafzadeh did not do a complete analysis showing that
3 for every one of those combinations, there were
4 measurements, for example, the radius, for example, that --
5 in order to sufficiently demonstrate what they approximate.

6 Q. Okay. It's fair to say both parties did a bunch
7 of teardowns in this case that you've seen?

8 A. It is fair to say that all parties did teardowns
9 or Respondents and Complainants did teardowns.

10 Q. Did you observe any rings, Respondents' or
11 domestic industry products, in which the arc of the battery
12 did not approximate a corresponding arc of the external
13 housing component?

14 A. What I am responding to here is Dr. Sarrafzadeh
15 doesn't measure -- doesn't -- it's a burden of proof. Its
16 his burden of proof to show that.

17 He could have done some measurements. He didn't
18 do it. And so I don't know what the extent --

19 Q. With all due respect, Mr. Alarcon --

20 A. -- should be --

21 Q. So I am asking you. I am not asking
22 Dr. Sarrafzadeh. I am asking you whether you have observed
23 all these teardowns you have done, have you ever observed
24 for Ultrahuman, RingConn domestic industry products, have
25 you ever observed where an arc of the curved battery did not

1 approximate a corresponding arc of the external housing
2 component?

3 A. I have -- I have only looked at a limited number
4 of the ring configurations.

5 Q. Okay. And that's what I am talking about, the
6 ones you have looked at.

7 A. The ones I looked at, they are certainly -- they
8 are between the outer circumferential -- with respect to the
9 battery, they are -- they are -- they are in between the
10 outer circumferential and alleged inner circumferential
11 surfaces. I'm not debating that for the ones I have
12 inspected.

13 All I'm saying is that the burden of proof lies
14 on Complainants. I didn't see that analysis, so I can't
15 rebut -- I can't evaluate that analysis and I can't rebut
16 that analysis. That's all I am saying here.

17 JUDGE JOHNSON HINES: Mr. Alarcon, can you answer
18 the question?

19 THE WITNESS: Yes, yes. I've, with respect to
20 the ones I have seen, I think I have observed two or three
21 different sizes. And I think it is fair to say they are
22 close, that they fit within those. And if that's what
23 "approximates" means, then I would say yes.

24 JUDGE JOHNSON HINES: Thank you.

25 BY MR. SCHULTZ:

1 Q. And I asked both Ultrahuman and RingConn's
2 corporate representatives about the different size rings.
3 And I would like to show you -- put up Kumar, 83.

4 I asked him: Would the CT scans of different
5 sized Ring AIRs look any different from this, other than
6 being bigger? And he said: No, I think apart from the size
7 generally, they shouldn't look different.

8 Do you have any reason to doubt that.

9 A. You said this is Mr. Kumar's --

10 Q. Yes.

11 A. -- deposition?

12 Q. Do you doubt that all sizes don't look different?
13 Sorry for the double negative.

14 A. I understand. I mean, I take it to mean that I'm
15 sure they look -- they would look different in terms of the
16 different sizes, but I take -- I have no reason to doubt
17 what he says here. Of course, they would be different
18 diameters.

19 So within the context of them being different
20 diameters, I don't have any reason to doubt -- that's what I
21 mean by apart from size, they shouldn't look any different.

22 Q. Can I see Mr. Min's testimony on page 31.

23 And this is the RingConn corporate
24 representative. And I asked him on line 8:

25 "Question: Would this depiction be the same for

1 all size rings?"

2 And he said:

3 "Answer: The differences between our products
4 just like with the sizes, the sizes of the components are
5 different. However, the construction of the components
6 within the products are the same."

7 And on the next page, 32, line 11, I asked him:

8 "Question: And the layout shown here would be
9 the same for all the sizes?"

10 And he said:

11 "Answer: It is applicable to all sizes."

12 So do you have any reason to believe that all the
13 sizes of Respondents' rings meet this claim limitation of
14 claim 12, based on this testimony?

15 A. I am trying to parse this particular testimony to
16 make -- so I don't think -- again, I think -- I think the
17 batteries fit between the surfaces I mentioned, so I think
18 they may -- and this testimony appears to support that.

19 MR. SCHULTZ: Nothing further, Your Honor.

20 JUDGE JOHNSON HINES: All right, thank you.

21 EXAMINATION BY COUNSEL FOR ITC

22 BY MR. WINSTON:

23 Q. Good afternoon, Mr. Alarcon.

24 A. Good afternoon.

25 Q. I would like to ask you some questions regarding

1 the RingConn accused product. I have put up RDX-1C, slide
2 41.

3 Do you see that on your screen?

4 A. I see that.

5 Q. What is the figure -- what are the figures on
6 this slide show?

7 A. The figures on this slide, just so I can orient
8 myself, just because in this particular view, it's hard to
9 tell the difference between the -- well, actually, I can
10 tell the difference now.

11 So in this, this is the RingConn product that's
12 been disassembled. It has been -- well, first, it has been
13 sectioned, so it has been cut. And then the outer metal
14 ring has been removed from the remainder of the product.

15 Q. And what does the top image on this slide show?

16 A. The top image shows two halves of the outer metal
17 band. And we're actually looking at the inside of them.
18 And, more specifically of those two metal bands, I will note
19 there is the white label.

20 And has adhered to the outer metal band. And
21 where I have the green arrow, you can kind of see
22 immediately to the right, there's an outline there. That's
23 residual potting material that's adhering the label to the
24 metal band.

25 Q. Okay. And you mentioned the white label in the

1 left component that is shown in the top image. Where did
2 that white label come from?

3 A. My understanding is that was from the battery.

4 Q. And the battery with the white label was attached
5 to the external housing component with glue, correct?

6 A. Well, the -- with RingConn, they have a two-part
7 process. My understanding is the first part gets applied to
8 the printed circuit board. And there may be a drop spot
9 applied to the battery to also tack that down. And I think
10 that's why we see the black under a portion of the label,
11 that's a spot.

12 So that if what you're referring to is the glue,
13 that's the first epoxy step. That's my understanding.

14 Q. Okay. Now, if we look at the image in the bottom
15 left, there's a component that has black material on top of
16 it. What is that?

17 A. So it's hard to tell from this particular image,
18 but I think that one is pointing to the -- I think that
19 corresponds to the inner portions that were on the --
20 removed from the outer metal band that is shown in the image
21 above it.

22 Q. Okay. And now, to be clear, this slide is -- was
23 used for your direct testimony earlier, correct?

24 A. Yes, yes. I am just trying to relate it to the
25 ones above it.

1 Q. Okay. All right. Can I have slide 42, please.

2 So, Mr. Alarcon, slide 42 shows an image on the
3 left -- on the bottom left side. You can probably -- you
4 can see it on your screen in front of you as well.

5 A. Yeah. I didn't know if you were pointing to
6 anything with your laser.

7 Q. What are the two electrical contacts -- well,
8 excuse me. Strike that.

9 There were two electrical contacts on the printed
10 circuit board shown in this figure, correct?

11 A. That's correct.

12 Q. And what is the purpose of these contacts?

13 A. Those two contacts are -- they transfer power
14 from the charger to the battery via the circuit board.

15 Q. All right.

16 A. So they charge -- they serve to charge the
17 battery.

18 Q. And we can see the black tape in certain portions
19 between or next to the outer housing component. Is that
20 correct?

21 A. So there is black tape there, yes. You recall
22 there's, to protect against short circuits, to electrically
23 isolate, they apply very thin, I think it's a 0.05
24 millimeter thickness of tape. Just so I am super clear on
25 this image, we're also looking at some of the first step

1 potting material as well.

2 Q. And by the first step potting material, is what
3 is shown beneath the left contact and extending towards the
4 right contact; is that correct?

5 A. Yes. That's correct. And there's a component
6 that looks like it fell out during the disassembly or during
7 the sectioning process. But, yes.

8 Q. Why is there a break in the black tape here
9 (indicating) on the right side beneath the right contact?

10 A. I'm not -- so, again, this tape is 0.05
11 millimeters thick. It's applied before the circuit board is
12 installed. So there is tape there. And I don't think it is
13 removed. I think you're just not able to see it in this
14 image.

15 And the purpose of the tape, among other things,
16 is to prevent electrical short-circuiting. And so it
17 doesn't make sense that it would be removed or missing. I
18 mean, perhaps some came out during the cutting process, but
19 a completely assembled ring that hasn't been cut, my
20 understanding is the tape, the 0.0 -- roughly 0.05
21 millimeter tape that's there, that's present throughout this
22 whole portion that we're seeing on the video -- on the image
23 here.

24 Q. Which one of these contacts is the ground
25 contact?

1 A. I don't recall. I would have to look at other
2 images and look at the labeling on the circuit board to know
3 which of the two was positive and which was negative,
4 although as I think about it, I think you can put the
5 charger -- you can put the ring in either way into the
6 charger. So I think they have designed their circuitry such
7 that it's tolerant to put it in either way, so maybe it
8 wouldn't be correct to think about either one of those
9 contacts as permanently ground or permanently powered.

10 I think they have got rectifying circuitry in
11 there so that, for better convenience, ease of use, I would
12 assume, for the customer, you can put the battery in one way
13 or another.

14 Q. With respect to the first application of epoxy, I
15 believe is how you referred to it, beneath the -- between
16 and beneath the two contacts and beneath the printed circuit
17 board, it appears that a little bit has pulled away from the
18 outer housing component. Do you see that?

19 A. You're highlighting the goldish hue area?

20 Q. That's correct, yeah.

21 A. So there's also just under the battery contact --
22 oh, I should call them the charge contacts, just under those
23 contacts, there is an additional layer, approximately the
24 same thickness as the black tape, of mylar. That's -- my
25 understanding is RingConn identified this as an area that is

1 -- would be especially prone to short-circuiting. So they
2 really want to ensure electrical isolation, so that's why
3 just under this section here that we're seeing, there is
4 another thin layer of mylar tape.

5 Q. Okay. Thank you.

6 Can I get slide 84, please.

7 All right. Let's turn to Ultrahuman's accused
8 products. Looking at slide 84, what does this slide show?

9 A. So this is of the Ultrahuman product. And on the
10 left-hand side the image is from Dr. Sarrafzadeh's opening
11 report. It's a CT scan. And there is a corresponding image
12 of a physical teardown on the right-hand side with a blowup
13 of a section where the printed circuit board is -- and
14 associated components are shown.

15 Q. If we look at the image on the left, can you see
16 where the leads of the battery connect to the printed
17 circuit board?

18 A. Yes. Let me think of the best way to describe
19 it. So you're saying the connection between the battery and
20 the PCB, that's your question?

21 Q. Yes.

22 A. Yes. So they are located, again, if we use the
23 clock metaphor, from somewhere around the, let's call it,
24 7:45 or 8:00 o'clock position to 8:15 -- I am doing a
25 terrible job. Let's see.

1 Yeah, let's call it in approximately the region
2 between the 7:30 and 8:30 positions.

3 Q. Okay. Thank you.

4 If we -- and that includes this portion here
5 (indicating) that I am highlighting, correct?

6 A. Let me -- give me a moment. Can you rehighlight
7 that?

8 Q. (Indicating.)

9 A. You know, it's hard to tell here. I think the
10 best way to describe it to you is there's -- if you look at
11 the principal part of the battery, there are layers. You
12 can kind of see the anode and cathode. That's where the --
13 and the electrolyte is in there. That's the principal area
14 for the battery.

15 However, they are packaged in a packaging
16 structure. And that packaging structure, as you look at
17 this image here, continues clockwise a certain amount. And
18 it is like a foil almost wrapped back on itself. And the
19 two charge -- the two battery contacts emerge from that.

20 So a portion of the neck-down part of the
21 battery, you see some -- what you're seeing in this image is
22 part of the foil or the wrapping of the battery. And then
23 continuing clockwise you see emerge from that the actual
24 electrical contacts.

25 Q. So I'm not clear -- I'm not sure I fully

1 understand your answer there, Mr. Alarcon.

2 Is this part of the electrical contact between
3 the battery and the printed circuit board (indicating),
4 looking at about 8:00 o'clock on there?

5 A. Yeah, I think if you look -- on the CT scan it is
6 actually clearer. You can see what I was talking about in
7 terms of the end of the battery. The pouch is kind of
8 folding and making some, you know, some interesting
9 geometry. And then you can see where the package ends and
10 out of that, that's the contact that gets soldered to the
11 printed circuit board.

12 Q. So --

13 A. Does that make sense?

14 Q. No, I am not following you. So is that in a
15 different position than I was highlighting or --

16 A. I couldn't quite tell with precision where you
17 were highlighting on your CT. So I was trying to draw you
18 to the physical, because I think it's a little clearer, as I
19 understand your question, to describe it in terms of the
20 physical because you can see the coloration, slight
21 difference in coloration.

22 Q. So at about 8:00 o'clock here on this figure on
23 the left, it looks like there's two lines. It is hard to
24 see while I am highlighting it, but do you see that?

25 A. Yes. There are two lines.

1 Q. Are those two leads that are part of the
2 connection between the battery and the printed circuit
3 board?

4 A. Yes, they are part of the connection.

5 Q. Okay. Thank you.

6 Now, it looks like a portion of those leads is
7 awfully close to the outer housing component. What keeps
8 those leads from contacting the metal external housing
9 component and shorting?

10 A. Well, I would say at least the -- my
11 understanding is there are a couple things that Ultrahuman
12 does. They too apply a tape, but then they also have -- my
13 understanding is they have a way to fixture or form so that
14 they prevent short circuits. And then, indeed, they also
15 test the device to make sure that, let's say, if something
16 shifted during manufacturing, they would test that.

17 And so if there was a short-circuit, they would
18 capture that short-circuit. They would identify that
19 short-circuit and reject it.

20 Q. Now, if we can go back to the full image, please.

21 If we look at about 1:00 o'clock, we see the
22 other end where the right arrow for the second portion of
23 cavity occupied by PCB points. Do you see that?

24 A. So you are saying specifically within the CT
25 scan?

1 Q. At the end of what has been labeled as the
2 cavity, the yellow markings of the cavity where the blue
3 arrow points at the right on 1:00 o'clock on the image.

4 A. I see that.

5 Q. That also appears to be very close if not -- very
6 close to touching the outer housing component. What keeps
7 that contact from shorting the printed circuit board?

8 A. I think the same -- the same that I described
9 with respect to the other contacts. And I can't tell if
10 I -- in looking at this particular one, if I had the
11 software in front, I could actually measure and indicate to
12 you the distance. These are Dr. Sarrafzadeh's annotations.

13 So I don't necessarily adopt them with that
14 degree of precision. So I would need to go -- I would want
15 to go, I would measure it, but my understanding is the same,
16 that it keeps the battery contacts from shorting. And,
17 again, if it was, they would -- you know, they are testing.
18 They have a testing procedure that would catch that.

19 And then also typically at the end of your
20 circuit board, it terminates. You don't have -- at the
21 edges of your board, you aren't making connections to other
22 things. And you don't have a component at the very, very
23 end of the board. So even if it were, that might not make
24 -- even if it were to touch, it wouldn't necessarily cause a
25 short-circuit and that would be accomplished through the

1 design, the electrical design of the printed circuit board.

2 Q. Okay. Thank you.

3 So --

4 JUDGE JOHNSON HINES: Counsel, we're at about
5 5:15. And as you likely know, the rules say we end the day
6 at 5:00. Do you have an estimate for how much longer you're
7 going to be going today?

8 MR. WINSTON: I have one very short topic left,
9 Your Honor.

10 JUDGE JOHNSON HINES: All right. Can I get an
11 estimate? Is there going to be redirect?

12 MR. POWELL: It might be very short redirect.

13 JUDGE JOHNSON HINES: All right. Okay.

14 BY MR. WINSTON:

15 Q. Mr. Alarcon, I want to talk about -- we were just
16 talking about the Ultrahuman product. I want to talk about
17 all of the accused products now for this question.

18 So all of the accused products have batteries and
19 PCBs, correct?

20 A. And you say accused, but so I have the right
21 understanding, you're also including the DI products or no?

22 Q. No.

23 A. No, okay. So just the RingConn and Ultrahuman?
24 Okay. Yes, they have batteries. And your other was whether
25 or not they have PCBs? Yes, they have PCBs.

1 Q. And the batteries and PCBs in those products are
2 inside the rings, correct?

3 A. Yes, they are the -- the batteries and PCBs are
4 inside the rings.

5 Q. If those components are not in a cavity, where
6 are they located?

7 A. I guess I don't understand your question there.
8 They are within the ring, but as I have demonstrated, there
9 is no cavity. This is something different. The cavity has
10 a meaning, and there are no cavities, as I have testified
11 to.

12 Q. All right. But batteries and PCBs do take up
13 space, correct?

14 A. Yes, they take up space.

15 Q. All right.

16 MR. WINSTON: Thank you. I have no further
17 questions.

18 JUDGE JOHNSON HINES: Thank you.

19 MR. POWELL: I just have two very short topics.

20 REDIRECT EXAMINATION

21 BY MR. POWELL:

22 Q. Is it possible to pull up of the live transcript
23 at 15:41:12, the question that begins with "let's talk
24 about"?

25 MR. MERISIER: I don't have access to the

1 realtime.

2 MR. POWELL: So we cannot do that.

3 BY MR. POWELL:

4 Q. Then we can do the next best thing.

5 And, please, while I am doing this, pull up
6 CDX-0008.7, Mr. Merisier.

7 I will read the question to you. The question
8 was: Let's talk about the important components, the PCB and
9 the battery. That's not a stacked layer construction. And,
10 in fact, claim 2 specifically says there are
11 non-overlapping. So the battery, it's products at issue
12 here, do not employ a stacked-layer construction, do they?

13 Mr. Alarcon, do you recall the questioning about
14 stacked-layer constructions?

15 A. I recall that.

16 Q. And the implication was that stacked-layer
17 constructions don't track the claims?

18 A. That -- that was my understanding of what the
19 implication is.

20 Q. Okay. Let's look at Figure 13.

21 Which one of those items on the left part of the
22 screen is the battery?

23 A. That's, if I recall, 1330 is the battery.

24 Q. And where is the battery?

25 A. 1340 as indicated to be the PCB.

1 Q. Are those two components in Figure 13 stacked on
2 top of each other?

3 A. Yes, with respect to -- that's how I was thinking
4 about the term "stacked," yes.

5 Q. So Figure 13 discloses a stacked-layer
6 construction?

7 A. I believe so, yes.

8 Q. All right. We can put that down.

9 I would like to go to the Excel spreadsheet that
10 was introduced. And it is CX-1391C.

11 And you were asked about, I believe, the pro
12 forma section.

13 A. I recall that.

14 Q. Bear with us. The Excel spreadsheet only has one
15 production number. So you have to --

16 A. I have the hard copy in front of me that says pro
17 forma.

18 Q. Okay. Are we able to get the pro forma up on the
19 screen, Mr. Merisier.

20 And while we're doing that, you know how to read
21 a balance sheet, right?

22 A. Yes. There are, you know, there are certain
23 companies that have their nuances about how they do it, but
24 at a high level, yes.

25 Q. And on a balance sheet, when you put numbers not

1 in a parenthesis, not in parenthesis, that means that those
2 are positive numbers; is that a fair characterization?

3 A. Yes, yes, positive. And oftentimes -- well, yes,
4 yes, unless otherwise indicated.

5 Q. And then when a number is negative, it is within
6 parenthesis, correct?

7 A. Yes, unless otherwise indicated.

8 Q. Okay. So this is for Motiv. The starting -- the
9 ending cash balance in fiscal year 2017, that was a positive
10 number in the pro forma?

11 A. Let me look at that. Yes, ending cash balance
12 for fiscal year 2017 was positive.

13 Q. And then in fiscal year 2018, it is still
14 positive, but slightly lower?

15 A. The ending cash balance, and these are through
16 the -- yes, for example, by the end of Q4 2018, it has --
17 yeah, there we go -- I was looking at your highlighting.
18 Yes, by the end of 2018 it has gone down.

19 Q. Then actually in Q2 of 2018, it actually becomes
20 negative; is that right?

21 A. Yes. Sorry, I was jumping ahead to Q4. So Q1,
22 still slightly positive. Q2, trended down further. And
23 that trend continues through Q4 of 2018.

24 Q. So in layman's terms, the cash that Motiv was
25 generating from sales of its products was not sufficient for

1 -- strike that.

2 The ending cash balance from fiscal year 2017 to
3 Q4 2018 was going down because the money that Motiv was
4 making from the sale of its products was not sufficient to
5 support its operations. Is that a fair read of this pro
6 forma?

7 A. Yes, they were -- it's a classic, you're burning
8 through cash is what you would say as a startup. And cash
9 burn is important. And obviously, you know, you don't want
10 -- you don't -- if all you have is your revenue, you're
11 going to need to find other sources like investment, for
12 example, to keep operations going. So this indicates cash
13 burn.

14 Q. Does this information affect your opinion about
15 whether Motiv was commercially successful?

16 A. Yeah, this goes to what I had -- was getting at,
17 is you would want to look at other factors. I recall --
18 seeing that Mr. Strasser testified there were a thousand
19 units, Mr. von Badinski, somewhere in the neighborhood of
20 80,000 units. And those units seem to have close agreement
21 with what I see here from a unit basis.

22 I said, I would want to see other factors, such
23 as, you know, how much they are spending. Are they
24 profitable? And clearly they are not profitable. So this
25 supports the opinion that I don't think Motiv was -- I

1 wouldn't call them successful.

2 Q. Thank you, Mr. Alarcon.

3 Can we put up the '178 patent, I believe that is
4 JX-1.

5 And just briefly can you put up Figure 14D and
6 14E. I will just ask two questions.

7 Is Figure 14D a stacked or non-stacked example?

8 A. Figure 14D as in "dog"?

9 Q. Yes.

10 A. I am trying to determine. I forget the labeling
11 of 1442. And if that's a battery, not labeled below it.
12 And if it is, then I would say that's stacked. Oh, I can
13 see in 14E the labeling.

14 Q. Is 14E stacked or non-stacked?

15 A. It looks to be stacked. I want to go
16 double-check 1442, but it looks to be stacked just by the
17 images.

18 Q. Okay.

19 MR. POWELL: Thank you, Mr. Alarcon. I have no
20 further questions.

21 JUDGE JOHNSON HINES: All right. Can we excuse
22 Mr. Alarcon?

23 MR. POWELL: Yes.

24 JUDGE JOHNSON HINES: Thank you. You are
25 excused. Thank you for your time.

1 THE WITNESS: Thank you.

2 (The witness stood down.)

3 JUDGE JOHNSON HINES: All right. We will start
4 with Dr. Wang's testimony tomorrow morning. So to the
5 extent there was a question on that, that is the answer that
6 we will start with his testimony tomorrow.

7 Earlier today I thought we were ahead. It
8 doesn't appear to be the case anymore. So congratulations
9 for that.

10 But we will finish tomorrow, including getting
11 all the exhibits in. So whatever it takes to get that done,
12 we are going to get it done. And the time to conclude
13 should be around 5:00 p.m. So keep that in mind when you
14 are preparing for what is going to happen tomorrow.

15 All right. I will see you tomorrow.

16 (Whereupon, at 5:26 p.m., the hearing recessed,
17 to reconvene on Tuesday, December 17, 2024 at 9:00 a.m.)

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C O N T E N T S

WITNESS	DIRECT	CROSS	REDIRECT	RE CROSS	STAFF
Ramon Alarcon	910	1024	1127		1116
	922				
	964				

AFTERNOON SESSION: 1018

CONFIDENTIAL SESSIONS - NONE

1 E X H I B I T S

2 EXHIBITS SUBMITTED FOR ADMISSION:

3 12/16/2024

4 CX-0006C

5 CX-0009C

6 CX-0010C

7 CX-0011C

8 CX-0012C

9 CX-0013C

10 CX-0014C

11 CX-0014C

12 CX-0017C

13 CX-0020C

14 CX-0027C

15 CX-0945

16 CX-1103

17 RX-0004

18 RX-0068C

19 RX-0077C

20 RX-0084C

21 RX-0086C

22 RX-0338

23 RX-0339

24 RX-0340

25 RX-0342

1 RX-0343
2 RX-0344
3 RX-0345
4 RX-0346
5 RX-0348
6 RX-0349
7 RX-0350
8 RX-0401C
9 RX-0457
10 RX-0458
11 RX-0459
12 RDX-0001C
13 RDX-0002
14 RDX-0004
15 RDX-0009
16 RDX-0010
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1 CERTIFICATE OF REPORTER

2 TITLE: Certain Smart Wearable Devices

3 INVESTIGATION NO: 337-TA-1398

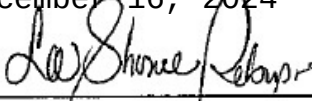
4 HEARING DATE: December 16, 2024

5 LOCATION: Courtroom A

6 NATURE OF HEARING: Evidentiary Hearing

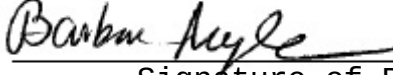
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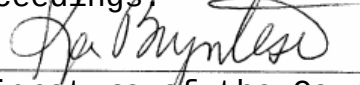
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