

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.;
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

OURARING, INC.,
Patent Owner.

Case No. IPR2024-01077
U.S. Patent No. 10,139,859

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VIDEOTAPED DEPOSITION OF
PATRICK MERCIER, PH.D.
CONDUCTED REMOTELY
Friday, August 22, 2025
9:01 a.m. Pacific Time

Job No. 117065

Stenographically Reported By:

Lorie Rhyne, CSR, RPR, CRR

(Caption continued on following page)

Page 2 1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD 4 5 SAMSUNG ELECTRONICS CO., LTD.; 6 SAMSUNG ELECTRONICS AMERICA, INC., 7 Petitioner 8 v. 9 OURARING, INC., 10 Patent Owner. 11 12 Case No. IPR2024-01078 13 U.S. Patent No. 10,281,953 14 15 16 17 REMOTE VIDEOTAPED DEPOSITION OF 18 PATRICK MERCIER, PH.D., taken by Petitioner 19 Samsung, held remotely via Zoom videoconference 20 before Lorie Rhyne, a Certified Shorthand Reporter 21 No. 12905, Registered Professional Reporter and 22 Certified Realtime Reporter, in and for the 23 State of California, commencing on Friday, 24 August 22, 2025, 9:01 a.m. Pacific Time. 25	Page 4 1 I N D E X 2 WITNESS: PATRICK MERCIER, PH.D. 3 EXAMINATION PAGE 4 By Mr. Haber 6 5 6 E X H I B I T S 7 EXHIBIT DESCRIPTION PAGE 8 Exhibit 1081 Deposition transcript, 9 Patrick Mercier, Ph.D., 10 June 24, 2025 8 11 Exhibit 1001 Patent 10,139,859 12 Patent 10,281,953 10 13 Exhibit 1010 Mestas Patent Application 14 Publication No. 2014/0244009 50 15 Exhibit 1013 Wissmar Patent Application 16 Publication No. 2012/0218184 89 17 Exhibit 1014 Asami Patent Application 18 Publication No. 2010/0219989 72 19 Exhibit 2018 Declaration of 20 Dr. Patrick Mercier, 21 Patent No. 10,139,859 27 22 23 24 25
Page 3 1 (All Appearances via Videoconference) 2 APPEARANCES OF COUNSEL: 3 For Petitioner: 4 BENJAMIN HABER, ESQ. 5 O'Melveny & Myers LLP 6 400 South Hope Street, 19th Floor 7 Los Angeles, California 90071 8 (213) 430-6000 9 bhaber@omm.com 10 11 For Patent Owner: 12 NICHOLAS H. CIULLA, ESQ. 13 Mayer Brown LLP 14 71 South Wacker Drive 15 Chicago, Illinois 60606 16 (312) 782-0600 17 nciulla@mayerbrown.com 18 19 Also Present: 20 RENIA ZERVOS, Esq. O'Melveny & Meyers LLP 21 JASJIT VIDWAN, Esq., Mayer Brown LLP 22 23 Videographer: 24 ROB CHANG 25	Page 5 1 P R O C E E D I N G S 2 3 THE VIDEOGRAPHER: We are now going on the 4 record. 5 Good morning. This is the deposition of 6 Patrick P. Mercier in the matter of Samsung 7 Electronics, et al., vs. Ouraring Inc., Case Number 8 IPR2024-01077. 9 This deposition is being held via remote 10 method. The date is August 22nd, 2025. The time is 11 9:01 a.m. 12 I am Rob Chang, the videographer on behalf 13 of First Legal Deposition [sic] located in Los Angeles, 14 California. 15 This deposition is being videoed at all 16 times unless specified to go off the video record. 17 Would all attorneys please identify 18 yourself, beginning with the noticing attorney? 19 MR. HABER: Benjamin Haber for Petitioner 20 Samsung at O'Melveny & Myers. With me on the line is 21 my colleague Renia Zervos. 22 MR. CIULLA: Nicholas Ciulla representing 23 the patent owners, from Mayer Brown. Also with me is 24 Jas Vidwan, also from Mayer Brown. 25 THE VIDEOGRAPHER: Thank you.

Page 6 1 Will the court reporter please swear in the 2 witness? 3 THE STENOGRAPHER: Good morning. My name is 4 Lorie Rhyne. I am a California Certified Shorthand 5 Reporter and the deposition officer for today's 6 deposition. My CSR license number is 12905. 7 PATRICK MERCIER, PH.D., 8 having been duly sworn, testified as follows: 9 THE STENOGRAPHER: Thank you. 10 You can proceed, Counsel. 11 MR. HABER: Thank you. 12 13 EXAMINATION 14 BY MR. HABER: 15 Q. Can you please state your name -- full name 16 for the record? 17 A. Patrick Mercier. 18 Q. Thank you, Dr. Mercier. 19 And where are you located today? 20 A. San Diego, California. 21 Q. And this is a remote deposition, and so you 22 are on video. 23 Is there anyone else in the -- in the room 24 with you today? 25 A. No.	Page 8 1 A. I do. 2 Q. Is there any reason today why you can't give 3 your best, most truthful and accurate testimony? 4 A. No. 5 Q. Do you recall that I took your deposition 6 maybe a month or so ago in a related case -- related -- 7 on some related patents? 8 A. I do. 9 Q. And you understand that you are obligated to 10 testify under oath today just as you were in that prior 11 proceeding; correct? 12 A. That's right. 13 MR. HABER: Okay. If we could -- Rob, could 14 you put in the chat box a document that I've sent you 15 that was Exhibit 1081? 16 (Exhibit 1081 was previously marked for 17 identification.) 18 BY MR. HABER: 19 Q. And I'll also share my screen for the 20 document that should be coming to you. This is a 21 transcript of your -- of your prior deposition. 22 A. Okay. 23 Q. Let's see. So my screen is being shared. 24 Just make sure that my window is all -- hold on one 25 second.
Page 7 1 Q. You are represented by counsel who is also 2 on a video screen today. 3 Your counsel is not physically located with 4 you today; is that correct? 5 A. That's correct. 6 Q. Okay. Do you have with you in the room any 7 materials that you plan on using or referring to for 8 today's deposition? 9 A. I don't. 10 Q. You don't have any -- any physical 11 printouts? 12 A. No. 13 Q. Okay. So I'm going to show you some 14 exhibits today. I will provide them to you 15 electronically. I will also share my screen so that we 16 can look at these same documents together. As I am 17 directing you through documents, if you refer to 18 anything else or feel the need to refer to -- to 19 anything else, just let me know and I'll do my best to 20 provide it to you so that we can all follow along 21 together. 22 Is that fair? 23 A. That's fair. Thank you. 24 Q. You understand that you are to testify under 25 oath today?	Page 9 1 Okay. So you can download that document. 2 You can open it up. You can look at my screen. 3 What's been provided is -- has been 4 previously marked as Exhibit 1081. The title is -- 5 it's captioned as Volume I of your deposition 6 transcript that was taken Tuesday, June 2nd, 2025. 7 Do you see that? 8 A. June 24th, 2025, but yes. 9 Q. June 24th, 2025, correct. 10 Now, you recall that I asked you a series of 11 questions, and you provided your answers in response to 12 my questions? 13 A. That's right. 14 Q. And you testified under oath, the same as 15 you're testifying now; correct? 16 A. That's right. 17 Q. And in connection with your prior 18 depositions, you provided truthful and accurate answers 19 to my questions; right? 20 A. I did my best, yes. 21 Q. And if I were to ask you all the same 22 questions, you would give me all the same answers; 23 right? 24 A. To the extent that this deposition is for a 25 different matter, I would do my best to answer them as

Page 10 1 it relates to this matter. 2 Q. Okay. Sitting here today, are you aware of 3 any answers you would provide differently today than 4 you've provided the last time we did this? 5 A. No, not sitting here today. 6 MR. HABER: Okay. I'd like to share two 7 additional documents. They are both marked 8 Exhibit 1001. They are the patents that are at issue 9 in these two IPR proceedings. 10 (Exhibit 1001 was previously marked for 11 identification.) 12 MR. HABER: And so if you could please put 13 those up on the -- on the record -- in the chat box. 14 I'll start with one of them. 15 I'll try again. 16 BY MR. HABER: 17 Q. And so I have on the screen the first of 18 these exhibits, which is U.S. patent numbered 19 10,281,953. Let me know if you can see it and you have 20 that document. 21 A. Yes, I got it. 22 Q. Okay. And if I refer to this document as 23 the "'953 patent," you'll understand which patent I'm 24 referring to; right? 25 A. Yeah.	Page 12 1 Q. Do you understand what a divisional 2 application is? 3 A. Roughly. 4 Q. And what is your understanding? 5 A. So -- so, again, I'm not an expert in kind 6 of logistics of -- of these sort of things, but 7 sometimes patent owners or patent authors will write up 8 a patent and a specification and then will have 9 multiple different sets of claims that are associated 10 with -- with a general disclosure, and they can parse 11 these patents into multiple different patents. 12 Q. Okay. And the patent that's referenced 13 there, the '034 patent, you previously provided 14 opinions related to the '034 patent; correct? 15 A. Off the top of my head, I can't remember the 16 exact patent numbers of patents that I opined on in 17 other cases. 18 Q. Okay. That's fair. 19 I'll represent to you -- and opposing 20 counsel can correct me if I'm wrong, but you did offer 21 opinions on the '034 patent and some of the subject 22 matter that we discussed in the last deposition. 23 A. It -- it does sound familiar, but, again, 24 I'd have to verify to make sure. 25 MR. CIULLA: Counselor, I'm going to object.
Page 11 1 Q. And as part of your analysis in connection 2 with this case, you reviewed the '953 patent; right? 3 A. That's right. 4 Q. And the second document, also marked 5 Exhibit 1001, is U.S. Patent Number 10,139,859, and I 6 had that up on the screen. 7 And if I refer to this document as the "'859 8 patent," you'll understand which patent I'm referring 9 to; right? 10 A. Yes. 11 Q. And you remove -- reviewed the '859 patent 12 in connection with the opinions you offered in this 13 case? 14 A. I did. 15 Q. Okay. On the cover of the '859 patent, you 16 can see Related U.S. Application Data halfway down the 17 column on the left-hand side. 18 Do you see that? 19 A. I do. 20 Q. And the -- the statement there says that the 21 '859 patent is a "Divisional Application 22 Number 14/556,062 filed on November 28, 2014, now 23 Patent Number 9,582,034." 24 Do you see that? 25 A. I do.	Page 13 1 I'm -- I don't believe he provided an opinion on that. 2 MR. HABER: Fair. 3 BY MR. HABER: 4 Q. But that -- I -- I'm sorry. I'll withdraw 5 the question now that I'm looking back at this. The 6 '034 patent was not one you offered in a -- in a 7 declaration. 8 Regardless, are you aware of any differences 9 between the '859 patent specification and the '034 10 patent specification? 11 A. Again, I -- I can't recall the exact 12 contents of the '034 patent. It appears that I didn't 13 offer any opinions on that, so I -- I can't recall 14 what's in that patent -- 15 Q. Okay. 16 A. -- off the top of my head. 17 Q. Fair. 18 In the prior depositions, you offered 19 opinions on the '702 patent and the '178 patent; is 20 that correct? 21 A. Yes, that is correct. I do recall that. 22 Q. Okay. And the '702 patent and the '178 23 patent are also divisionals of the '034 patent. 24 Do you recall that? 25 A. I'd have to refer back to those patents

Page 14 1 to -- to make sure of that. 2 Q. Okay. Well, the -- the question that I have 3 for you is are -- are you aware of any differences 4 between the specification of the '859 patent and the 5 specifications of the '702 and '178 patents other than 6 the claims? 7 A. Again, I'd -- I'd have to review -- I 8 didn't -- I didn't review those patents in advance of 9 this deposition, so I'd have to refresh my memory of -- 10 of what's in those patents to -- to answer that for 11 sure. 12 Q. Okay. But just sitting here today, you're 13 not aware of any differences. 14 Is that fair? 15 MR. CIULLA: Object to form. 16 THE WITNESS: Again, I -- I didn't review 17 those patents in advance of this deposition, so I -- I 18 can't recall exactly what's in them and if they share 19 the same specification or not. 20 BY MR. HABER: 21 Q. Okay. I want to switch over to the other 22 patent that we're going to be talking about today, the 23 '953 patent. On the cover there is a -- again, in the 24 center, Related U.S. Application Data. This 25 application says it's a continuation-in-part of another	Page 16 1 A. Again, it's -- I reviewed the '953 patent in 2 preparation for this deposition. I don't recall or 3 I -- I don't have the rest of the application history 4 memorized, so -- so I don't recall sitting here today 5 off the top of my head. 6 Q. Okay. I want to skip ahead to some figures 7 towards the end of the list of figures in the '953 8 patent, and these are the figures beginning after 9 Figure 49. So we have Figure 50, 51, 52A, 52B, 53A, 10 53B, 53C, 53D. 11 Are you aware that these figures, beginning 12 with Figure 50 of the '953 patent, are newly added in 13 the continuation-in-part application that led to the 14 '953 patent? 15 A. Again, off the top of my head, I -- I don't 16 recall the exact history, and I don't have it 17 memorized, so I couldn't -- I couldn't say one way or 18 the other. 19 Q. Okay. Well, taking a quick look at these 20 figures, 50 -- beginning with 50 to the end, 53B, do 21 you know generally what subject matter these figures 22 relate to? 23 MR. CIULLA: Object to form. 24 BY MR. HABER: 25 Q. And feel free to flip through them.
Page 15 1 application. And if you continue on to the next page, 2 the series of applications ultimately leads back also 3 to the '034 patent. 4 Do you see that? 5 A. I do. 6 Q. Are you familiar with the term 7 "continuation-in-part" and what that means? 8 A. Loosely, yes. 9 Q. And what is your understanding of that term, 10 "continuation-in-part"? 11 A. Again, I get some of these terms mixed up in 12 terms of what means what in -- in patent nomenclature. 13 My main focus on -- on preparing my declarations and 14 for this deposition was on the technical content. 15 But my understanding of 16 "continuation-in-part" is there's a patent application, 17 you know, during prosecution, some things can change 18 and maybe they get split or divided and -- or continued 19 in different ways. And, you know, there's all sorts of 20 different paths patents can -- can take through the 21 Patent Office. 22 Q. Okay. So for this continuation-in-part 23 application, the '953 patent, are you aware of 24 information that was added to the patent that wasn't 25 present in prior applications?	Page 17 1 A. Generally, yes. 2 Q. And what would that be? 3 A. These are referring to, we'll say, signal 4 processing and control techniques. If you scroll back 5 up to the 51 and so on, looking at sensor data and 6 making decisions based on sensor data on how to proceed 7 algorithmically with various functions on -- on a 8 wearable computing device. 9 Q. Yeah. And what sort of sensor data are 10 these figures referring to? 11 A. Well, Figure 51 is referring to acceleration 12 data from an accelerometer. The specification refers 13 to many different types of sensor data, including 14 optical sensor data as -- as well. 15 Q. Does the '953 patent refer to some of this 16 functionality as -- as gesture data? 17 A. My recollection of the '953 patent is the -- 18 there is discussions of gesture recognition in the 19 patent as well as many other sensing modalities. 20 Q. Okay. And what's shown here in Figure 52A? 21 Is this an example of gesture recognition that's 22 discussed in the -- the '953 patent? 23 A. Yeah. So the Figure 52A is referring to 24 some sort of motion vibration type of sensing through 25 the accelerometer device.

Page 18 1 Q. Okay. And this additional gesture or signal 2 processing of the '953 patent -- these functionalities 3 were not present in the prior patents that you 4 considered; correct? 5 MR. CIULLA: Object -- object to form. 6 THE WITNESS: Again, I -- in preparation for 7 this deposition, I didn't rereview the previous patents 8 that I analyzed, and I don't have them memorized, so 9 I -- I couldn't say for certain sitting here today. 10 BY MR. HABER: 11 Q. Okay. So sitting here today, other than the 12 gesture functionalities that we just discussed, are you 13 aware of any additional disclosures in the '953 patent 14 that are kind of in excess of the -- the '702 or '178 15 patents that you looked at previously? 16 MR. CIULLA: Object to form. 17 THE WITNESS: Again, sitting here today, 18 I -- I didn't do a comparative analysis between these 19 patents. Instead, I focused my analysis on the patents 20 that we're discussing today and -- and the prior art 21 and did my analysis on whether or not the prior art was 22 obvious in -- in light of these patents or not. 23 So -- so I didn't do that analysis, and I 24 don't recall sitting here today. 25 //	Page 20 1 should be made to Figures 50 through 53; right? 2 MR. CIULLA: Object to form. 3 THE WITNESS: Well, not necessarily. I -- I 4 think certainly looking at those figures is instructive 5 to help understand the meaning of these claims, but 6 there's a whole lot of other content in the 7 specification of the patent that would help inform the 8 reading of these claims. 9 So, yes, those figures help understand, but 10 I -- they're not -- they aren't a comprehensive basis 11 for how these claims are written. 12 BY MR. HABER: 13 Q. We have -- if we can look at Claim 1, 14 Claim 1 recites: 15 "A wearable computing device 16 configured as a ring for being worn 17 around the finger of a user." 18 Do you see that? 19 A. I do. 20 Q. I want to go to Claim 1 of the '859 patent. 21 On the screen, we have Claim 1 of the '859 22 patent, which recites: 23 "A wearable ring computing 24 device." 25 Do you see that?
Page 19 1 BY MR. HABER: 2 Q. Take a look at some of the claims of the 3 '953 patent, specifically -- go all the way to the 4 end -- we have the claim listing. And you can see 5 Claims 11, 12, 13, 14, 15 on the screen here. 6 A. I can see it, yes. 7 Q. Claims 11, 12 and 13 -- these claims are 8 directed to the use and processing of the -- the sensor 9 data that was described in Figures 50 through 53A; 10 correct? 11 A. Well, the claims of a patent need to be read 12 in light of the specification of the patent, and of 13 course those figures exist in the specification, and 14 they do appear to be related to what it's talking about 15 here in these claims. But that doesn't necessarily 16 limit these claims to only, for example, transmission 17 of accelerometry data, if -- if that's what you're 18 referring to. It could be referring to other sensor 19 data as well. 20 Q. Okay. I -- I think the question is a little 21 bit more general than that. 22 When I'm looking at Claims 11, 12, 13, and 23 those claims talk about sensor data, you know, series 24 of samples of sensor data, you know, as I -- as I begin 25 to understand these particular patents, reference	Page 21 1 A. I do. 2 Q. Claim 1 of the '859 patent doesn't recite a 3 finger; right? 4 A. We're getting a little deep into my 5 testimony here. I would like to request a -- copies of 6 my declarations for -- for these two patents to help 7 answer these questions completely. 8 Q. Sure. Sure. And I'll -- I'll provide those 9 in just a second. 10 But just looking at this claim, you would 11 agree that the word "finger" doesn't appear in Claim 1; 12 correct? 13 MR. CIULLA: Object to form. 14 THE WITNESS: The -- the word "finger" does 15 not appear in the claim language, but the claims need 16 to be read in light of the specification and the 17 prosecution history where the prosecution history 18 reveals that it -- it was -- and -- and the 19 specification reveals that a finger-worn ring is really 20 the -- a central piece of this invention here. 21 All of the disclosures, all of the 22 embodiments described in the patent described this 23 on -- on a finger. And so a POSITA reading this claim 24 in light of that intrinsic evidence would understand 25 this to be a finger-worn ring.

Page 22 1 BY MR. HABER: 2 Q. And -- and we'll get into the specification 3 and the file history, but right now, I'm just focused 4 on the claims. 5 And, you know, unlike the '953 patent, the 6 '859 patent Claim 1 does not use the word "finger" in 7 the claim itself; right? 8 MR. CIULLA: Object to form. 9 THE WITNESS: Yes. That is correct. But, 10 again, the specification and the prosecution history -- 11 you know, a POSITA reading that would understand that 12 all of the embodiments and all of the discussion about 13 this invention describe it as a finger-worn ring. So a 14 POSITA reading this claim would understand it to be 15 referring to a finger-worn ring. 16 BY MR. HABER: 17 Q. Okay. And when we're looking at the '859 18 claim, the particular claim language, you -- I 19 understand your opinion is that one of skill in the art 20 would -- would have this understanding that there's a 21 finger component of this claim. 22 But what -- what particular word or series 23 of words are you looking at in the claim language that 24 is the basis for that understanding? 25 MR. CIULLA: Object to form.	Page 24 1 ring. 2 Q. Okay. But you would agree that despite -- 3 an ordinary meaning of the term "ring" doesn't 4 necessarily require a finger ring; right? 5 MR. CIULLA: Object to form. 6 THE WITNESS: Yeah, that -- that depends on 7 context, right. So plain and ordinary meaning of the 8 word "ring" outside of the context of this patent has a 9 broader understanding of what that could be. 10 But in the context of this patent, 11 considering the intrinsic evidence, a person of 12 ordinary skill would understand "ring" to mean a 13 finger-worn ring. 14 BY MR. HABER: 15 Q. So you mentioned a broader understanding of 16 what a ring could be. 17 Can you give me some examples of rings that 18 might not be finger-worn rings? 19 MR. CIULLA: Objection. Relevance. 20 THE WITNESS: Sure. I mean, the word "ring" 21 has all sorts of different meanings and different 22 contexts. You can think of a fire ring or ringing a 23 doorbell or a Ring camera. So there's many other ways 24 that people use the word "ring" in common parlance 25 outside of the context of this patent.
Page 23 1 THE WITNESS: Well, the claim language 2 describes a wearable ring computing device. It 3 describes in great detail how this wearable ring 4 computing device is physically constructed, what's 5 inside of it and -- and so on. 6 And a person of skill in the art reading 7 that, in light of what they just read in the 8 specification and in the prosecution history, would 9 understand that, Okay. The claims are talking about a 10 wearable ring, and all of the intrinsic evidence is 11 discussing this ring as appearing on a finger. 12 So I think it's a very easy conclusion for a 13 person of ordinary skill in the art to come to that -- 14 these as talking about a finger-worn ring. 15 BY MR. HABER: 16 Q. So is it your opinion that a ring must 17 always be a finger ring? 18 A. No. And -- and that's not what I was 19 saying. But claims need to be read in light of the 20 specification. And in light of that specification, in 21 this very specific context, it's referring to a 22 finger-worn ring. 23 Of course in any other context if you just 24 say the word "ring," it could mean something very 25 different. But in this context, it means a finger-worn	Page 25 1 BY MR. HABER: 2 Q. How about the -- 3 A. But -- but within the context of this 4 patent, it -- it's very clearly referring to a 5 finger-worn ring given all the intrinsic evidence. 6 Q. All right. So you mentioned a number of 7 rings that aren't wearable rings. 8 What kind of -- can you give me some example 9 of wearable rings that aren't, perhaps, in your 10 opinion, in -- in the same context but would still be 11 considered a wearable ring? 12 MR. CIULLA: Objection. Relevance. 13 THE WITNESS: I -- I could, I suppose. 14 Again, I'm not totally clear why we're getting outside 15 of the context of the patent. 16 But outside of the context of the patent, 17 you could have a -- a wedding ring, engagement ring or, 18 you know, many different types of rings one might wear 19 which would qualify as a wearable ring. Those aren't 20 generally wearable ring computing devices, nor are we 21 talking about a wearable ring computing device in the 22 context of this patent, which, again, given the 23 intrinsic evidence, would refer to a finger-worn ring. 24 BY MR. HABER: 25 Q. Okay. I want to direct your attention to

Page 26 1 Column 8. Around line 55, there's reference to "WCD," 2 which the patent describes as a wearable computing 3 device. 4 Do you see that? 5 A. I do. And, again, I'd like to request that 6 we put into the record my declaration for this patent 7 as -- as we continue to discuss it. 8 Q. Sure. 9 MR. HABER: Those are two documents marked 10 Exhibit 2018. You can put those in the chat box as 11 well so you have them. 12 MR. CIULLA: All right. Dr. Mercier, do you 13 have copies of those two exhibits in front of you? 14 THE WITNESS: I'm just downloading them now. 15 MR. HABER: Okay. Let me know when you have 16 them downloaded, and we can continue. 17 THE WITNESS: So I have the '859 18 declaration. 19 Can we also put the '953 declaration -- 20 MR. HABER: Sure. 21 THE WITNESS: -- as well? 22 MR. HABER: You can upload that too as -- as 23 well, Rob. That would be fine. 24 THE VIDEOGRAPHER: Counselor, my apologies. 25 I show a 2018 declaration of Dr. Mercier, but I don't	Page 28 1 BY MR. HABER: 2 Q. All right. So now you have copies of both 3 of your declarations that were offered in this matter, 4 and I had directed you to Column 8, line 55 of the 5 '853 [sic] patent. 6 And so I think what's referenced there is a 7 "WCD," which is a wearable computing device; correct? 8 A. That's correct. 9 Q. And line 55 of the '853 patent -- or the 10 '859 patent explains that: 11 "The WCD can be in the form of a 12 wristband, bracelet, necklace, earring 13 or any other type of wearable 14 accessory." 15 Do you see that? 16 A. I do. 17 Q. And you would agree that the '859 patent 18 describes an earring, which is a type of ring; correct? 19 A. The '859 patent does describe how that is -- 20 other forms of wearable computing devices. But -- but 21 I guess in addition to that, the '859 patent then goes 22 on to exclusively teach finger-worn ring 23 configurations. In addition to that, the prosecution 24 history revealed that the applicant, when they were 25 prosecuting the patent, didn't originally have some of
Page 27 1 show another 2018. 2 MR. HABER: All right. Let me e-mail that 3 to you right now. Hold on one second. 4 THE VIDEOGRAPHER: Thank you, sir. 5 MR. HABER: Should be coming to you, Rob. 6 THE VIDEOGRAPHER: Thank you, Counselor. 7 (Exhibit 2018 was previously marked for 8 identification.) 9 MR. HABER: All right. So what should be 10 now submitted for the record are your two declarations 11 in connection with these two patents, both marked 12 Exhibit 2018. 13 One of them is a declaration of Dr. Patrick 14 Mercier for the '859 patent, and the other is the 15 declaration of Dr. Mercier for the '953 patent. 16 And, again, if you feel the need to refer to 17 these documents, just let me know what it is that 18 you're referring to so that I can follow along, but you 19 should now have them for reference. 20 THE WITNESS: I still don't have the '953. 21 MR. HABER: Okay. Just let me know when 22 that's up, and we can -- we can proceed. 23 THE VIDEOGRAPHER: Counselor, the '953 is 24 up. 25 THE WITNESS: Okay. I have them now.	Page 29 1 this claim language in Claim 1 about a ring device, and 2 during prosecution history, that was added to 3 distinguish the claimed invention from prior art that 4 was worn on, for example, a -- wristbands or bracelets 5 and -- and other such form factors. 6 So the intrinsic evidence of the 7 specification of this patent, which effectively with 8 the exception of this one introductory part describing 9 the state of the art, describes all of the embodiments 10 as finger-worn rings. And then the prosecution history 11 specifically added claim language to include ring 12 language. And read in light of that specification, a 13 person of ordinary skill would understand that to be a 14 finger-worn ring. 15 Q. So I'm -- I'm focused on the specification 16 here, and the answer you provided talked about the -- 17 the prosecution history, and we'll get to that. 18 But just focusing on the specification here, 19 what's described in the '859 patent specification 20 includes, for example, an earring, which is a ring that 21 is not a finger ring; correct? 22 MR. CIULLA: Object to form. 23 THE WITNESS: Yeah, I mean, the 24 specification does mention any ring, but, again, the -- 25 the patent needs to be read as a whole in order to

Page 30 1 understand what the inventor -- inventors are intending 2 here. And when reading it as a whole, a person of 3 ordinary skill would understand that the patent and the 4 claims specifically are referring to a finger-worn ring 5 even though there's other types of wearables in the 6 prior art and other form factors that are possible. 7 BY MR. HABER: 8 Q. Right. And so you would agree that one of 9 the other form factors for a ring, for example, that's 10 described in the specification of the '859 patent is an 11 earring; correct? 12 MR. CIULLA: Object to form. 13 THE WITNESS: Yeah, same answer, the -- the 14 earring is disclosed as one possible form factor a 15 wearable computing device can take. But, again, 16 reading the entire specification and understanding the 17 claims in light of that, a person of ordinary skill 18 would understand that the claims of this patent are 19 referring to a finger-worn ring. 20 BY MR. HABER: 21 Q. Continuing down to line 57. The 22 specification -- the '859 specification says: 23 "References to the finger of a 24 user in the present application can be 25 considered to apply to other portions	Page 32 1 file history, but I'm focusing on what's in the 2 specification here. And what's in the specification, 3 the sentence that I pointed you to around line 57 of 4 Column 8, states that -- reference to a finger, could 5 include other parts of the human body, such as an ear; 6 right? That's what it says? 7 MR. CIULLA: Object to form. 8 THE WITNESS: Yes. I mean, that is what it 9 says. You're right. But, again, the understanding of 10 a patent goes beyond just the -- the words in the 11 specification only. And in order to interpret the 12 claims, which is the -- the key part of an IPR 13 proceeding such as this, we need to read the 14 specification and the prosecution history and the claim 15 language. In reading all of that, a person of ordinary 16 skill would understand that the claim language is 17 referring to a finger-worn ring. 18 BY MR. HABER: 19 Q. And that this same part of Column 8, 20 reference to a finger could include an ear, and then 21 the immediate prior sentence, there is reference to an 22 earring. 23 And so is it your opinion that despite what 24 is stated here at Column 8, an earring is not a ring as 25 referred to in Claim 1?
Page 31 1 of the human body." 2 Do you see that? 3 A. I do. 4 Q. And so what this sentence in the '859 patent 5 is saying is that when a specification is referring to 6 a finger, they may also be referring to other parts of 7 the human body; correct? 8 MR. CIULLA: Object to form. 9 THE WITNESS: Well, it -- it does say 10 "depending on the form of the WCD." So nothing in this 11 patent in terms of figures or the description of -- of 12 the teachings of this patent would apply, for example, 13 to the wrist or -- or neck or something like this 14 simply just due to size and compatibilities. 15 I think it's -- it's common for writers to 16 try and throw in extra details when they're writing 17 their specification, but then during prosecution of -- 18 of the patent, the claims were narrowed down and -- 19 and -- in order to understand the claims. A person of 20 ordinary skill -- skill reading that prosecution 21 history would understand that the claims were indeed 22 narrowed down to refer to finger-worn ring devices in 23 order to pass prosecution. 24 BY MR. HABER: 25 Q. Okay. And, again, we'll -- we'll get to the	Page 33 1 MR. CIULLA: Object to form. 2 THE WITNESS: So my general understanding of 3 how this all works is -- and obviously this is very 4 case-to-case dependent, but a patent author will write 5 up the specification, submit some claims to the 6 Patent Office, and then if those claims get rejected, 7 they have to modify the claims in order to overcome 8 prior art. 9 And in this particular case, the 10 Patent Office rejected the claims, citing prior art of 11 wrist-worn devices and things like this. And -- and so 12 the patent authors amended the claims to restrict or -- 13 or limit the embodiments to a more narrow 14 interpretation where perhaps they didn't go back and -- 15 and update the specification to reflect those -- those 16 changes. I don't know. I'm just speculating here. 17 So while the -- this one paragraph in this 18 very lengthy specification does describe other 19 form factors that rings could be put on, and that's 20 certainly said here, the entirety of -- of the rest of 21 the disclosure and the prosecution history refers to 22 finger-worn rings. And so a person of ordinary skill 23 would interpret Claim 1 as indeed being a finger-worn 24 ring and would not understand Claim 1 to be including 25 an earring.

Page 34 1 BY MR. HABER: 2 Q. Okay. So then just to summarize, you would 3 agree that the '859 patent discloses an earring 4 embodiment, but during prosecution, the applicants 5 narrowed the claims to exclude that embodiment. 6 Is that your testimony? 7 MR. CIULLA: Object to form. 8 THE WITNESS: I -- I can't hypothesize -- or 9 I can't speculate on -- on behalf of the inventors for 10 what they intended with their amendments. I'm just 11 reading the -- the claims and the specification and the 12 prosecution history as a POSITA and -- and trying to 13 come to some understanding of this. 14 And -- and my understanding of this -- of 15 the claim language, Claim 1 in particular, when reading 16 the specification and the prosecution history is that 17 it is a wearable finger-worn ring, and it would -- it 18 would not include a earring. 19 BY MR. HABER: 20 Q. Okay. So putting aside kind of any intent 21 on the part of the applicants, reading your review of 22 the prosecution history leads you to the opinion that 23 the claims exclude the earring embodiment that -- that 24 is described here in Column 8 of the '859 patent; is 25 that right?	Page 36 1 "This prosecution history 2 reinforces that the term 'ring' in the 3 claims was understood and argued to 4 mean a finger-worn device." 5 Do you see that? 6 A. I do. 7 Q. In the passages that you cite regarding your 8 analysis of the file history, there is no express 9 statement or argument that uses the word "finger"; 10 correct? 11 A. Well, we have to read that file history 12 in -- in light of what's described in the 13 specification. And, I mean, even in -- in the abstract 14 of the patent, it explicitly describes a finger -- a 15 ring that can be worn on the finger of a -- of a human 16 user. That's in the abstract. And then in the 17 summary, it talks about a finger of a user. 18 And then in all of the rest of the patent, 19 all of the figures, all of the disclosure, except for 20 that very first paragraph, the only embodiments 21 described are finger-worn rings. 22 Now, originally the claim language was a 23 little bit more broad, and then after -- or during 24 prosecution, the patent owners limited the claim 25 language to be a ring. And understanding the term
Page 35 1 MR. CIULLA: Object to form. 2 THE WITNESS: Yeah, I think -- yes, my -- my 3 reading of Claim 1 in light of the specification and 4 prosecution history is that the claimed ring is a 5 finger-worn device, and that would exclude a -- an 6 earring. 7 BY MR. HABER: 8 Q. Okay. So let's -- you mentioned your 9 opinion regarding the file history, and there are 10 paragraphs in your declaration, I believe, beginning at 11 paragraph 62 that recite some portions of the file 12 history. 13 See if I can bring that up so it's on the 14 screen. 15 Hold on one second. 16 Give me one second. 17 Stop sharing my screen for a moment. 18 All right. See my screen again? 19 A. Yes. 20 Q. So I have paragraph 62 of your declaration 21 for the '859 patent. And as I mentioned, I believe you 22 have some opinions on the file history in paragraphs -- 23 beginning on paragraph 62. 24 And in paragraph 64, there's a sentence that 25 says:	Page 37 1 "ring" as a person of ordinary skill in the art given 2 all of the ample evidence in -- in the specification, 3 it's very clear that this is referring to a finger-worn 4 ring. 5 Q. So when I was asking you about the file 6 history, went back to portions of the specification and 7 other parts of the -- the specification, but 8 specifically in the file history when the applicant was 9 using the word "ring" and amending the claims and 10 explaining distinctions over the prior art, the 11 applicant never distinguished the prior art on the 12 basis of a finger ring using the word "finger"; 13 correct? 14 A. I guess I'm not sure. I -- I don't have the 15 prosecution history memorized. 16 But, again, during the prosecution, the 17 examiner brought up prior art references that were 18 wrist-worn or, you know, embodiments like that. And -- 19 and so during prosecution history -- or during 20 prosecution, the patent owners decided to -- to limit 21 the claim language to refer to a ring. 22 And so the word "ring" then needs to be 23 understood in light of all of the rest of the intrinsic 24 evidence, and so it's probably unnecessary to 25 specifically say "finger-worn ring" given all of the

Page 38 1 figures, all of the disclosures in the specification 2 that very clearly identified it as -- as finger-worn 3 ring. 4 So if it didn't say "finger" in the 5 prosecution history, and I'd have to double-check to 6 see if that's true or not, it's probably unnecessary 7 because of all of the ample amount of evidence that 8 this is really directed towards a finger-worn device. 9 Q. So the paragraphs where you discussed the 10 file history, you include from excerpts and portions of 11 the file history; right? 12 A. That's right. 13 Q. And I would assume that the portions and 14 excerpts that you include in your declaration are the 15 portions and excerpts that best support your opinions; 16 correct? 17 A. That's -- 18 MR. CIULLA: Object to form. 19 THE WITNESS: I mean, yes, that's generally 20 true, but the prosecution history is long, and I can't 21 quote everything in my declaration. And so perhaps 22 there's an area that refers to it as a finger. I -- I 23 don't know. I'd have to check. But even if it 24 doesn't, I don't think it was necessary given the ample 25 amount of evidence describing this invention as a	Page 40 1 unnecessary, right. So if -- if I'm trying to write a 2 patent for a -- I don't know -- a fire hose, I don't 3 have to say, It's a fire hose for fighting fires. I 4 think it's understood that a fire hose is generally 5 used to fight fires. 6 And so in this case, the -- the word "ring," 7 given all of the ample intrinsic evidence, that's 8 really only describing it being worn on a finger. It 9 was obvious. 10 BY MR. HABER: 11 Q. So, I mean, in the example that you just 12 gave, "a fire hose for fighting a fire," that seems 13 somewhat redundant, right. And similarly, it would be 14 redundant to say, A finger ring for placing on a 15 finger. That seems redundant. 16 But you would agree that just a ring in the 17 abstract doesn't necessarily have to be on a finger, 18 could be an earring, for example, as described in the 19 '859 specification? 20 MR. CIULLA: Object to form. 21 THE WITNESS: Well, to take that analogy a 22 step further, if I were filing a patent on a fire hose 23 and then -- and I say everywhere in the patent that, 24 This is a fire hose, and then in some places I just 25 say, It's a hose, I think it would be pretty clear that
Page 39 1 finger-worn device. 2 BY MR. HABER: 3 Q. Okay. But so you would agree that the 4 portions and excerpts of the file history that you cite 5 in your declaration and you discuss in your declaration 6 don't describe the ring specifically as a finger ring 7 to distinguish the prior art; correct? 8 A. That's fair. At least skimming through my 9 declaration, it doesn't appear that there's a citation 10 to the word "finger" in that prosecution history. That 11 doesn't mean it -- it may be there. I don't know. 12 But, again, it's also probably unnecessary 13 given the ample amount of evidence of this invention 14 being a finger-worn device. 15 Q. You say "it's probably unnecessary." 16 You -- you would agree that if the applicant 17 had, for example, used the word "finger" described 18 as -- as a finger ring, that would have more clearly 19 supported the argument that you're making now; correct? 20 MR. CIULLA: Object to form. 21 THE WITNESS: Yes. Of course that -- that 22 would help my present argument. And -- and I didn't 23 mean to say "probably." I -- I should have just said 24 the -- the statement. 25 But -- but, again, sometimes this is	Page 41 1 I'm referring to a fire hose for fighting fires, right. 2 And so in the '859 patent, everywhere it 3 describes a ring being worn on a finger, including in 4 the abstract and many figures all over the 5 specification and so on. And so it's obvious, in light 6 of all of that ample evidence, that when they just use 7 the word "ring," it's referring to a finger-worn ring. 8 BY MR. HABER: 9 Q. Well, so, I mean, that's not accurate, 10 right. It doesn't describe a ring everywhere as a 11 finger-worn ring. 12 There is at least one description of an 13 earring, which is a ring that is not a finger-worn 14 ring; correct? 15 MR. CIULLA: Object to form. 16 THE WITNESS: Yeah, in -- in the very first 17 paragraph, there -- there is reference to other places 18 that a wearable computing device can -- can be -- can 19 be placed, I suppose. But I -- I think as a POSITA 20 reading that, I'm just kind of reading this as the -- 21 the state of the field, the -- you know, the -- the 22 context of the invention and so on. 23 And then aside from that one small mention, 24 the entire rest of this many-page document and -- and 25 the prosecution history and so on is all -- all of the

Page 42 1 figures and so on, it's always referring to a 2 finger-worn device. 3 And because the claims were limiting -- 4 limited during prosecution history to -- to distinguish 5 from prior art that wasn't finger-worn devices, it's -- 6 it's very clear to me that the word "ring" in the 7 claims is referring to a finger-worn device. 8 BY MR. HABER: 9 Q. So I -- I understand that's your opinion. 10 What I'm trying to understand is -- there is this very 11 broad description at the beginning of the specification 12 at Column 8 that says basically a finger [sic] isn't 13 limited to a finger, could be other parts of the body. 14 And it provides a number of different configurations, 15 including, for example, an earring. 16 And your opinion is that there was some 17 narrowing in the claims. And I'm with you that the 18 claims recite a ring, but I -- I just don't understand 19 where in the file history or in the specification 20 you're pointing to some specific narrowing of the term 21 "ring" to "finger ring." And if you could point me to 22 that, I would appreciate it. 23 MR. CIULLA: Object to form. 24 THE WITNESS: I mean, I can point you to 25 the -- to the abstract. I -- I can point you to the	Page 44 1 evidence, which all effectively points to it being a 2 finger-worn device. 3 BY MR. HABER: 4 Q. The examples you provided in the 5 specification where the term "finger" is used to 6 describe the ring, in your opinion, that word "finger" 7 should be imported into Claim 1 to exclude the earring 8 embodiment that's discussed in Column 8; right? 9 MR. CIULLA: Object to form. 10 THE WITNESS: Well, I -- I think the way 11 that I said it is that Claim 1 when read in light of 12 the specification and prosecution history would refer 13 to a finger-worn device, yes. 14 MR. CIULLA: Counsel, we've been going for a 15 little over an hour. So whenever there's a good time, 16 a quick break would be appreciated. 17 MR. HABER: All right. Just a -- a couple 18 more questions on this -- on this line, then I think we 19 can take -- take a quick break. 20 BY MR. HABER: 21 Q. So the -- the prior art that was being 22 discussed in the file history, those were generally 23 wrist-worn devices; right? 24 A. Yes. That's my understanding. 25 Q. Okay. And the prior art that was being
Page 43 1 summary of the invention. I can point you to Figure 4, 2 11, 22A, 22B, 23B, 25, 38 and all over the 3 specification where this is very clearly identified as 4 a finger-worn device. 5 BY MR. HABER: 6 Q. Okay. 7 A. And -- and, again, during the prosecution of 8 the patent, the inventors narrowed down the claim 9 language to specifically refer to a -- a ring. And 10 given all of this evidence, it's clear that that is 11 referring to a finger-worn ring. 12 Q. And you would agree that when the applicant 13 actually wanted to claim a finger ring, they used the 14 term "finger" in some of the claims, for example, in 15 the '953 patent; right? 16 MR. CIULLA: Object to form. 17 THE WITNESS: I think in the context of the 18 '953 patent, for example, it -- it never hurts to add 19 more detail to -- to claim language. So in the '953, 20 they do specifically say a ring configured to be worn 21 around the finger of a user. And that never hurts 22 to -- to add that additional detail, but that doesn't 23 mean that if that language is missing, that the -- the 24 claims are otherwise not limited because the claims 25 need to be read in light of the rest of the intrinsic	Page 45 1 discussed in the file history, they didn't include 2 other types of ring devices, like an earring, did they? 3 A. I can't recall that off the top of my head. 4 Q. So the question is the distinguishment that 5 was made over the prior art using this term "ring," it 6 wasn't trying to distinguish earrings or toe rings or 7 rings in other parts of the body besides fingers, it 8 was just trying to distinguish wrist-worn devices; 9 correct? 10 MR. CIULLA: Object to form. 11 THE WITNESS: Well, my -- my understanding 12 of this prosecution history is that the Patent Office 13 presented prior art references that were large, right, 14 worn on the -- on the wrist of a user. And that's 15 clearly not applicable or appropriate for the type of 16 device that's being described in the '859 patent that's 17 designed to be worn on the finger of a user. 18 And so the patent owners argued that, Look, 19 these prior art references, they're -- they're big. 20 They're a totally different kind of application space, 21 and it's improper to just take one of these big devices 22 and shrink it down to a device that can be, you know, 23 worn on the -- on the finger of a user. 24 And I think that -- that was the basis of 25 the argument that the patent owners took, and

Page 46 1 ultimately the Patent Office agreed with that and 2 allowed the claims through. 3 And -- and, again, the key word here is -- 4 is "ring," and "ring" needs to be understood in light 5 of the specification and the intrinsic evidence. And 6 all -- all of that effectively says -- or points to 7 finger-worn devices. 8 BY MR. HABER: 9 Q. Okay. So the -- the actual devices, though, 10 that were at issue in prosecution, they were wrist 11 devices, not other types of ring devices; correct? 12 A. That is my understanding, yes. 13 Q. And the parts of your -- your -- your prior 14 answer about how the ring needs to be understood in 15 light of the specification, et cetera, that was not an 16 argument that the applicant made. 17 That's an argument that you're making now in 18 view of -- your view of the file history; right? The 19 applicant never said how "ring" needs to be understood, 20 for example. 21 A. Again, I'd have to review the -- the file 22 history to -- to be sure of that. But if that's the 23 case, then, yeah, I -- I think that's totally fine. 24 I -- because it's simply so obvious from the ample 25 evidence that this is a finger-worn device that it	Page 48 1 definition or disclaimer of -- of any types of rings 2 other than finger rings; right? 3 MR. CIULLA: Object to form. 4 THE WITNESS: If I understood your question 5 correctly, you said the file history doesn't refer to 6 anything other than finger rings, which I believe is 7 correct. But, again, I'd have to verify that. 8 BY MR. HABER: 9 Q. Yeah, that wasn't exactly my testi- -- my 10 question. 11 My question was the -- the file history and 12 the portions that you refer to in your declaration -- 13 they don't include any sort of express definition or 14 disclaimer of -- of rings being limited to finger 15 rings; right? 16 MR. CIULLA: Object to form. 17 THE WITNESS: I see. I understand your 18 question. 19 The -- the -- the -- the things that I 20 quoted from the file history don't appear in my 21 declaration to include the word "finger." The file 22 history may or may not include the word "finger," I'm 23 not sure. But even if it didn't, it's, in my opinion, 24 unnecessary given the ample evidence that -- that these 25 are finger-worn devices.
Page 47 1 didn't necess- -- it didn't need to be -- specified to 2 be as being worn on the finger because it was obvious 3 based on the ample evidence that that was the case. 4 Q. Okay. And so -- so what I'm trying to 5 understand is, is whether or not in your opinion 6 there's some express definition or disclaimer that is 7 provided by the applicant around this term "ring," 8 period. And I think your testimony is there is no 9 express disclaimer. 10 It's just your view of -- of the intrinsic 11 record; is that right? 12 MR. CIULLA: Object to form. 13 THE WITNESS: Again, I'd have to review the 14 intrinsic evidence in detail to -- to verify whether or 15 not the word "finger" appears in it or not. 16 But if it doesn't, it's my opinion that it's 17 unnecessary given the intrinsic evidence that's present 18 here that this is very clearly referred to a -- a ring 19 that's worn on the finger, and a POSITA, which of 20 course I am, would understand that to be the case. 21 BY MR. HABER: 22 Q. Okay. And I don't think we have time to go 23 through the entire file history, but the portions of 24 the file history that you include in your 25 declaration -- those don't include an express	Page 49 1 BY MR. HABER: 2 Q. Okay. And -- and I think this is maybe a 3 slightly simpler question. 4 Whether you believe it's necessary or not, 5 the question is, is there some sort of express 6 definition or disclaimer in the file history that you 7 could point to that supports your opinion? 8 MR. CIULLA: Object to form. 9 THE WITNESS: Off the top of my head, I -- I 10 don't recall if the word "finger" is used in the file 11 history. But, again, just for helpful context here, I 12 find it to be unnecessary given the ample evidence that 13 this is a finger-worn device. 14 MR. HABER: Okay. Why -- why don't we take 15 a break? 16 THE WITNESS: Sounds good. 17 MR. HABER: About 10 minutes? 18 THE WITNESS: Yes. Thank you. 19 THE VIDEOGRAPHER: Counselors, we're going 20 off the record. The time is 10:16. 21 (A brief recess is taken from 10:16 a.m. to 22 10:29 a.m.) 23 THE VIDEOGRAPHER: We are now going back on 24 the record. The time is 10:29. 25 Please proceed.

Page 50 1 MR. HABER: Thank you. 2 I would like to put on the screen -- 3 And, Rob, if you can upload a document 4 marked -- I'm not sure if I remember -- Exhibit 1010, 5 which is a patent to Mestas. 6 (Exhibit 1010 was previously marked for 7 identification.) 8 BY MR. HABER: 9 Q. Just let me know when you -- when you have 10 that. 11 A. Okay. 12 Q. All right. So we have on the screen 13 Exhibit 1010, which is U.S. Patent Publication 14 Number 2014/0244009 to Alex Mestas. 15 If I was to refer to this patent as 16 "Mestas," you would understand what I'm referring to, 17 Dr. Mercier? 18 A. Yes. 19 Q. And as part of forming your opinions in 20 this -- connection with this case, you reviewed Mestas; 21 correct? 22 A. I did. 23 Q. Now, Mestas describes, according to the 24 title, activity monitoring, tracking and 25 synchronization.	Page 52 1 And so my interpretation of that is the size 2 and scope of the invention described by Mestas would 3 remain the same, but the shape could change, but the -- 4 but the overall size would be roughly constant. And 5 that's my interpretation of that paragraph. 6 BY MR. HABER: 7 Q. That paragraph 152 doesn't say what you just 8 described, right, that the size stays the same and the 9 shape varies, does it? 10 A. It doesn't. It doesn't, but, again, that 11 paragraph needs to be read in light of all of the other 12 evidence presented in -- in Mestas, and there's a lot 13 of functionality that's included in that device. 14 And to the extent that one would take that 15 device and miniaturize it by 5 to 10 times to fit in a 16 finger-worn ring device, that would not something -- 17 that would not be something that would be considered 18 obvious. If you wanted to shrink it by -- I don't 19 know -- 10 percent or something like that, maybe, sure. 20 But 5 to 10 times is excessive. 21 Q. But you -- you would agree that if one of 22 skill in the art wanted to shrink the Mestas device by, 23 you know, some amount -- the example you gave was 24 10 percent -- that is something that one of skill in 25 the art would have been able to do in view of Mestas'
Page 51 1 Do you see that? 2 A. Yes. 3 Q. And shown on the cover is a wrist-worn 4 device 10 on the runner's wrist. 5 Do you see that? 6 A. I do. 7 Q. Skip ahead to paragraph 152. There's a 8 sentence there in paragraph 122 -- 152 that says: 9 "The wearable device assembly 10 10 may be formed in various other shapes 11 without departing from the invention." 12 Do you see that? 13 A. I do. 14 Q. And so you would agree that the device of 15 Mestas is not limited to the specific shape shown in 16 Mestas' various figures; correct? 17 MR. CIULLA: Object to form. 18 THE WITNESS: No. I -- I mean, Mestas does 19 teach, you know, various different embodiments and -- 20 and possibilities. The figures do show an exemplary 21 embodiment, which is the primary embodiment or 22 intention of -- of the patent. Mestas does describe, 23 as -- as you point out in that paragraph, how other 24 shapes could be taken, and then he provides examples, 25 such as oval, oblong, octagonal, rectangular and so on.	Page 53 1 teachings? 2 MR. CIULLA: Object to form. 3 THE WITNESS: Well, to be fair, Mestas, 4 to -- to my recollection -- it's a 216-page patent, so 5 I don't have it memorized -- doesn't teach that type of 6 miniaturization. I think it's reasonable for one of 7 skill in the art to consider shrinking functionality by 8 a bit, especially with ongoing miniaturization of 9 electronics and so on or perhaps by other means. But 10 10 percent, I think, is very reasonable. Five or 10X 11 is not reasonable, in my opinion. 12 BY MR. HABER: 13 Q. You would agree that Mestas describes its 14 device as going around a user's wrist or other body 15 part; right? I can direct you to the last sentence in 16 paragraph 152 on that page on the screen. 17 A. Yes. Mestas does describe it could be worn 18 around other body parts, and I think that is a 19 reasonable thing for Mestas to have said. And in this 20 prior art and other prior art that describes wrist-worn 21 devices describes, you know, such devices could be worn 22 around the chest, neck, leg, you know, things like 23 this. I think that's all reasonable. 24 What I don't find reasonable is taking that 25 device and shrinking it by 5 to 10X and placing it

Page 54 1 around the finger of a user. 2 Q. Okay. But you don't disagree that there 3 could be some miniaturization, standard miniaturization 4 done on Mestas' device to fit that device around some 5 other body part of the user; correct? That's what 6 Mestas teaches? 7 MR. CIULLA: Object to form. 8 THE WITNESS: Again, I'm not sure that 9 Mestas does teach that. I'd have to look it over more 10 carefully to see. 11 I do think it's in the realm of possibility 12 for a POSITA to do some minor amount of 13 miniaturization. But, again, 10 percent is -- seems 14 reasonable to me. Five to 10X does not. 15 BY MR. HABER: 16 Q. Okay. That same last sentence of 17 paragraph 152 talks about improving traction and 18 preventing slippage for a device of Mestas', you know, 19 on a user's wrist or other body part. 20 Do you see that? 21 A. I do. 22 Q. And would you agree that at least one of the 23 teachings in Mestas' lengthy disclosure, 216 pages, is 24 to ensure a -- a tight fit or, you know, prevent 25 slippage for its wearable device?	Page 56 1 MR. CIULLA: Object to form. 2 THE WITNESS: Well, Mestas in paragraph 152 3 does describe that the outward or exterior-facing side 4 of the device would include a smooth texture while the 5 interior-facing side may include friction features. 6 That's what Mestas is -- is teaching in that 7 paragraph 152, to improve traction and prevent 8 slippage. 9 And -- and I think that's something that's 10 very natural to want to do on -- on a wrist-worn 11 device. It's, in -- in some cases, hard to get a 12 wrist-worn device to be tight around the wrist, you 13 know, as -- as a user of watches and so on. You know, 14 if the -- if it's not tight enough, it'll slip around 15 and so on, and if there's sensors on there, that could 16 adversely impact the functionality of the sensors. 17 But that's a little different from a ring, 18 which I think users are more sensitive around 19 fingertips than they are on the wrist. On the wrist, 20 you can probably tolerate friction-increasing features 21 on a device more easily than you could on a 22 finger ring, in particular because that ring needs to 23 slip on and off. Whereas a wrist-worn device is -- 24 either has some sort of strap or some sort of stretchy 25 material to allow it to go onto the wrist.
Page 55 1 A. I mean, yeah, that -- that is what Mestas 2 says. It does teach about slippage. I -- I'm not sure 3 it teaches about tightness. I'd have to review in more 4 detail. 5 Q. Would you agree that a wearable device in a 6 ring form factor should also be designed so that it 7 is -- doesn't slip off of a user's finger, for example? 8 A. I think in general that's a desired outcome 9 of a wearable ring device. You don't want it to just 10 fall off the -- the finger of a user. That's -- that's 11 something reasonable that a designer would try to 12 achieve. 13 I don't think a designer would try to 14 achieve that by increasing traction or anything like 15 that. People, at least in my opinion, tend to prefer 16 rings that are smooth and comfortable to wear. And 17 something that's ribbed and -- and has 18 traction-increasing elements wouldn't be something 19 that, I would imagine, someone would want to include in 20 a ring. 21 Q. What Mestas teaches is that the interior 22 side may be smooth. 23 You would agree that you can have even a 24 smooth interior surface designed such that it prevents 25 slippage of a -- of a ring device; correct?	Page 57 1 So it's kind of a different optimization 2 approach for a wrist-worn device than for a finger-worn 3 device. 4 BY MR. HABER: 5 Q. The approach may be different, but the 6 concern generally preventing the device from slipping 7 off of the user when they're wearing it, that's the 8 same concern; right? 9 (Stenographer clarification.) 10 BY MR. HABER: 11 Q. The approach may be different, the 12 implementation may be different, but the concern with 13 the device potentially slipping off of the user when 14 wearing it, that's the same general concern; correct? 15 A. Yes. Again, if you have sensors in a 16 ring -- a finger ring device or a wrist-worn device, 17 you probably don't want those devices to move around 18 and slip off. But the way that you implement that for 19 a wrist-worn device versus a finger-worn device is 20 quite different, in my opinion. 21 Q. Okay. That kind of implementation -- is it 22 your opinion that implementing different sort of 23 techniques for ensuring a device doesn't slip off the 24 user's body part is outside the level of skill in the 25 art?

Page 58 1 MR. CIULLA: Object to form. 2 THE WITNESS: I'm not sure I understood the 3 question. 4 Could you perhaps rephrase? 5 BY MR. HABER: 6 Q. Sure. 7 You mentioned that kind of there might be 8 different techniques that are applied to ensure that a 9 wrist-worn device and a finger-worn device don't slip 10 off of the user's appendage, and so the question is are 11 those different techniques something that one of skill 12 in the art would not have been aware of? 13 MR. CIULLA: Object to form. 14 THE WITNESS: I guess I'm not quite sure how 15 to answer that question. I'm just putting myself into 16 the -- into the shoes of a designer who is, for 17 example, designing a -- a finger-worn device. And as a 18 person of ordinary skill in the art, I -- I wouldn't 19 look at wrist-worn devices for inspiration on how to 20 design a finger-worn device to not slip, simply because 21 the geometry and anatomy are -- are very different, 22 and -- and the optimization criteria are different. 23 And so as a person of ordinary skill of the 24 art capable of making those design decisions, possibly. 25 Of course it depends on context and -- and so on, but I	Page 60 1 device with a rigid geometry because the -- the length 2 of the finger is -- is roughly constant in diameter -- 3 although not perfectly constant, but we'll say roughly 4 constant -- and -- and so an appropriately sized ring 5 should be able to slip onto the -- the finger of a user 6 and not easily slip off. 7 That is not true for a wrist-worn device 8 because usually the hand has a larger, we'll say, width 9 than the width of the wrist, which is why most 10 wrist-worn devices are made with some sort of clasping 11 or connecting interface that -- that allows the device 12 to pass over the wider width of the hand and then 13 connect tightly to -- to the wrist. 14 So, yes, a good tight fit is desirable in -- 15 in both applications, but the way that that's achieved 16 is very different. 17 Q. You would agree that Mestas describes that 18 its wrist-worn device can be larger or smaller in 19 circumferential size; correct? 20 A. Yes. Different users have different-sized 21 wrists, so it would be reasonable to design something 22 that has different sizes, and -- and as you -- we see 23 here in paragraph 162, they can have larger or smaller 24 loop configurations to accommodate different wrist 25 sizes.
Page 59 1 wouldn't view rings and wrist-worn devices as analogous 2 parts in that aspect, if that makes sense. 3 BY MR. HABER: 4 Q. But you would agree that there are a number 5 of potential different alternatives to design a 6 wearable device that doesn't slip off of the user's 7 appendage; right? 8 MR. CIULLA: Object to form. 9 THE WITNESS: Yeah, of course. There's -- 10 there's many different design directions one can take 11 to make that happen. 12 As Mestas teaches, friction-increasing 13 functions are desirable. And according to Mestas' 14 teachings, for a finger-worn device, it's more 15 important that the -- it's sized accurately and it's 16 smooth and conformal to the finger of the user. 17 So there're very different optimization 18 strategies between these two different arts. 19 BY MR. HABER: 20 Q. Would you also agree that, for example, one 21 way to ensure that either a wrist-worn device or a ring 22 device doesn't slip off the user's appendage is to make 23 it tight enough that it's sized appropriately so that 24 it doesn't slip off the appendage? 25 A. So, again, that is achievable in a ring	Page 61 1 Q. And they can also use spacing members, for 2 example, to appropriately size the wrist-worn device to 3 whatever tightness is comfortable to the user; correct? 4 A. That's right. Mestas does describe that. 5 And, again, just in contrast to -- to the patents here, 6 rings don't typically use spacer devices to -- to do 7 this tightness optimization, for example. 8 Q. Sure. But as described here in 9 paragraph 162, one way that Mestas describes to ensure 10 that the device doesn't slip off the user's wrist is to 11 make it appropriately tight, to be sized around the 12 user's wrist; correct? 13 A. To be fair -- and, again, Mestas is very 14 long, but my read of -- my quick read here of 15 paragraph 162 and my recollection is that Mestas 16 doesn't explicitly describe this as for ensuring a 17 tight fit with -- with reduced slippage. That's the -- 18 the teachings of the friction based -- set up in that 19 earlier paragraph we were referring to. 20 But I think that's reasonable for a person 21 of ordinary skill in the art to read paragraph 162 and 22 understand that this is to ensure a good fit for -- for 23 the user. 24 But, again, very different optimization 25 process here than would be used for a -- a finger-worn

Page 62 1 device. 2 Q. For a finger-worn device, you would 3 similarly increase or decrease the circumferential size 4 of the ring in order to ensure appropriate fit around 5 the user's finger; correct? 6 A. Well, for -- for the finger-worn device that 7 we're talking about here, we're -- we're talking about 8 a rigid structure, and so you can't increase or 9 decrease the size of an existing rigid structure, which 10 is different in contrast to a -- a wrist-worn device, 11 which might have a flexible or a stretchable strap or 12 an adjustable strap or -- or something like this 13 that -- that could accommodate different-sized wrists. 14 So it's a little different in terms of the 15 optimization here. For the ring, you have to have 16 separately sized devices that -- that one, you know, 17 chooses, depending on the size of the finger that 18 they're trying to use it for. 19 Q. Okay. So -- so if I go to the store to buy 20 a ring, the ring will come in various circumferential 21 sizes, and I'll buy the one that is appropriate for my 22 finger and then it doesn't change; correct? 23 A. Yeah. That's generally true. 24 Q. And Mestas is describing, at least what's in 25 paragraph 162, that once you buy the device, there are	Page 64 1 not slip off that user's wrist the same way that a ring 2 that was appropriately sized for a user's finger would 3 not slip off that user's finger; correct? 4 MR. CIULLA: Object to form. 5 THE WITNESS: Again, I'm not quite sure what 6 you're asking. Maybe you could rephrase, and that 7 would help. 8 BY MR. HABER: 9 Q. Sure. 10 One of the concerns that Mestas is talking 11 about is slippage of the device, and Mestas describes a 12 number of features. 13 One of those features is increasing or 14 decreasing the circumferential size of the device 10, 15 and if Mestas' device is appropriately sized for the 16 user's wrist, that device then will not slip off the 17 user's wrist; correct? 18 MR. CIULLA: Object to form. 19 THE WITNESS: Well, I guess I would say that 20 if the wrist-worn device is appropriately sized and -- 21 and has, for example, a strap or a loop that is 22 appropriately adjusted so that it has a good fit, the 23 likelihood of it slipping -- and we might need to be a 24 little bit more careful of the -- the words we're using 25 here -- slipping off the wrist is probably an unlikely
Page 63 1 components that you can use to change the 2 circumferential size of the device; correct? 3 A. Right. Yeah, there's spacers and maybe an 4 adjustable wrist strap is something that a person of 5 ordinary skill would -- would know about and 6 understand, yeah. 7 Q. And so the end result in either case, 8 Mestas' wrist-worn device or a ring device, is that 9 ultimately it is the correct circumferential size for 10 the appendage on which the user is wearing it; correct? 11 A. Well, again, Mestas -- so Mestas is teaching 12 two different things: One is features to improve 13 traction to -- to prevent slippage; and then Mestas 14 also teaches that, you know, there can be different 15 circumferential sizes of the loop, whether that's 16 through an adjustable band or different -- or a 17 flexible band or -- or something like that. And so 18 those are two different things that -- that Mestas 19 teaches in order to ensure a good fit for the user. 20 And, again, that's a little different 21 than -- than the ring, which you basically just design 22 a -- a device that's comfortable to wear, and then a 23 user chooses the appropriate size. 24 Q. You would agree that a wrist-worn device 25 that is appropriately sized for a user's wrist would	Page 65 1 scenario unless the width of your hand is much -- is 2 smaller than the width of the wrist, which may be true 3 for some people. I think for most people that's not 4 the case. But rather, slipping "around the wrist" 5 might be a better way to -- to describe this. 6 But, yes, the -- the better fit the 7 wrist-worn device has around the wrist, the lower 8 chance of slippage in terms of sizing. And then Mestas 9 also describes, of course, friction-based systems to 10 further reduce that. 11 BY MR. HABER: 12 Q. And so similarly, the -- the better fit of 13 the circumstan- -- circumferential size of a 14 finger ring will help reduce the risk of a ring 15 slipping off the finger of the user; correct? 16 MR. CIULLA: Object to form. 17 THE WITNESS: So unlike in the wrist case 18 where it's pretty hard for a device to just totally 19 slip off the -- the wrist unless that user happens to 20 have a very small hand, it is very easy for a ring to 21 totally slip off the finger if it's sized too large 22 for -- for that finger. 23 So, yes, adjusting the size of a ring -- or 24 rather, choosing the right size of a ring appropriate 25 for the finger that you'd like to wear it on is a

Page 66 1 critical part of buying a ring. We always do that when 2 we buy, whether it's a smart ring or a regular, you 3 know, wedding ring or something like this, it's 4 important to get it sized correctly to minimize the 5 chance of it slipping all the way off. 6 So a good tight fit is important, but it's 7 achieved in a slightly different way than a wrist-worn 8 device. 9 BY MR. HABER: 10 Q. I want to look at paragraph 157 of Mestas. 11 Right around the middle of that paragraph, there is a 12 sentence that's highlighted on the screen. Recites: 13 "The surfaces of the outer 14 encasement member 24 cooperate to form 15 an internal volume to house the various 16 components of the device while 17 maintaining a minimal cross-sectional 18 dimension." 19 Do you see that? 20 A. I do. 21 Q. And you would agree that what the sentence 22 is saying is that Mestas' device should have a minimal 23 cross-sectional dimension; right? 24 A. Yeah, that's what the sentence is saying for 25 the wrist-worn device of Mestas.	Page 68 1 A. Yes, I -- I don't think any designer of a 2 wearable will encourage other designers to make 3 something that's big and bulky. I think it's a 4 general -- general good design practice for a wearable 5 device to make it as small as you can. 6 In this case, Mestas is building a 7 wrist-worn device. There's a lot of functionality that 8 Mestas includes inside its -- its device. And there's 9 only so small you can make it as depicted by the 10 embodiments inside of Mestas. 11 And so, again, it's just very -- a very 12 different design space in terms of constraints than a 13 finger-worn ring. 14 Q. The constraints may be different, but the -- 15 the general kind of drive or kind of motivating concern 16 by one of skill in the art would be to minimize a 17 cross-sectional dimension of the device; right? 18 MR. CIULLA: Object to form. 19 THE WITNESS: Yeah, I mean, I think it's 20 very fair to -- to say that. Again, it's a general 21 design idea -- or principle that you want to be able to 22 wear a wearable device that's small, but that doesn't 23 mean that Mestas is applicable to ring-worn -- or 24 finger ring-worn devices. And the U.S. Patent Office 25 agreed with -- with that. It's -- it's -- you know,
Page 67 1 Q. Do you have an understanding why a designer 2 would want to maintain a minimal cross-sectional 3 dimension? 4 A. Well, I have to point out that it's actually 5 not clear what type of cross-section Mestas is 6 referring to here. So it's a -- it's a little hard to 7 speculate precisely; however, in general for wearable 8 devices, they are generally preferred by users if 9 they're thin, small, lightweight, things like this. 10 And so I think that's a reasonable statement, if 11 imprecise, to -- to have. 12 Q. So you think it's reasonable to understand 13 that the wrist-worn device of Mestas would want to 14 maintain a minimal cross-sectional dimension? 15 A. I -- I think that's reasonable, yes. 16 Q. Would you agree that it is also reasonable 17 that in a ring-worn device, you would want to maintain 18 a minimal cross-sectional dimension? 19 A. Yeah, I think that's -- that's reasonable. 20 People tend to like small, thin rings over large, bulky 21 rings. 22 Q. And so Mestas isn't suggesting that one of 23 skill in the art should make a large bulky device; 24 right? They're suggesting a device with a minimal 25 cross-section; correct?	Page 69 1 the teachings in Mestas aren't applicable to a 2 finger-worn device, which just has very different 3 geometries and constraints. 4 BY MR. HABER: 5 Q. You would agree that Mestas suggests using 6 physical gestures with its device; right? 7 A. Could you -- if there's a paragraph you're 8 referencing, it would be helpful if you could point 9 out -- 10 Q. Sure. I have it on the screen, 11 paragraph 221. 12 A. 221. Okay. 13 Mestas is a very long patent, so this is -- 14 thank you. 15 Q. Understood. 16 A. Yes, in paragraph 221, Mestas does describe 17 physical gestures as a possible way to provide 18 selection of options on -- on the device. 19 Q. And so Mestas describes using an 20 accelerometer, a gyroscope and/or other sensors. 21 Do you see that? 22 A. I do. 23 Q. Are there other sensors that you can think 24 of sitting here today that can be used to do gesture 25 recognition?

Page 70 1 A. An image sensor might be -- might be 2 possible. 3 Q. Anything else you can think of? 4 A. Ultrasound. 5 Q. Any others? 6 A. There may be others, but not -- not off the 7 top of my head that I can think of right now. 8 Q. Okay. And so those sensors that are recited 9 in Mestas and that you mentioned as -- as potential 10 other types of sensors can be used to detect physical 11 gestures and movements as described here in Mestas; 12 right? 13 A. What's the question? Sorry. 14 Q. So those sensors that you mentioned and that 15 are described here in Mestas -- accelerometers, 16 gyroscopes -- they can be used to detect physical 17 gestures and movements as described here in Mestas, 18 paragraph 221; correct? 19 A. Yes. 20 Q. You mentioned Mestas is a -- a long patent 21 with a number of figures. I want to just look at some 22 figures beginning around 50 through 60. 23 They appear to depict a -- a graphical 24 display on Mestas' device; is that right? 25 A. That's right.	Page 72 1 Number [sic] 24... 2 BY MR. HABER: 3 Q. "(In an alternative embodiment, 4 the first region 64 could be made 5 transparent or substantially 6 transparent)." 7 Do you see that? 8 A. Yes. 9 Q. And so Mestas is describing a transparent 10 portion or window onto the underlying LEDs so that a 11 user can kind of see the light that is emitted from 12 those LEDs; correct? 13 A. That's right. And this is on the -- kind of 14 the outside surface of the wrist-worn device. 15 Q. Correct. 16 MR. HABER: I want to bring up another 17 patent document, and so if you can put in the chat 18 Exhibit 1014. It's the patent to Asami. 19 (Exhibit 1014 was marked for identification.) 20 BY MR. HABER: 21 Q. Just let me know when you have it. 22 A. Okay. 23 Q. Asami is a U.S. Patent 24 Publication 2010/0219989, and it's been marked as 25 Exhibit 1014 in these proceedings, and so I will refer
Page 71 1 Q. And the display is made up of LEDs that 2 might be positioned underneath a outer enclosure of the 3 device; right? 4 A. Yeah, underneath some sort of enclosure, 5 yes. 6 Q. And so there's portions of Mestas' band that 7 are at least partially transparent so that light from 8 the LEDs can be transmitted through that outer 9 enclosure; right? 10 A. The -- the light from the LEDs, which would 11 be inside an enclosure, need to be able to shine 12 through, and so, yes, there -- there does need to be 13 some transparent material there. 14 Q. Okay. Going ahead to paragraph 170. 15 A. It's a very long paragraph. 16 Q. Yes, it's a very long paragraph. Like all 17 of Mestas, it does not want for using words. 18 So around the middle of paragraph 170 shown 19 on the screen: 20 "Light is visible through outer 21 encasement member 24 (in an alternative 22 embodiment, the first region 64 could 23 be made transparent or" -- 24 THE STENOGRAPHER: Wait. Can -- can you 25 slow down? Sorry.	Page 73 1 to this patent document as "Asami." 2 And you reviewed Asami in connection with 3 your opinions in this case? 4 A. I did. 5 Q. Luckily this patent is not 200 pages long, 6 so that's helpful. 7 I want to turn to Figure 1B. 8 Do you have a general understanding of what 9 is shown in Figure 1B? 10 A. I do. 11 Q. Can you provide your general understanding? 12 A. Sure. The general understanding is that 13 those are signals generated between electrodes 11a and 14 11b, and that will generate a -- a response that can be 15 read by current sensor 13, and the magnitude of that 16 response changes depending on whether or not the finger 17 is touching another part of the body or not, generally. 18 Q. Fair. 19 And so signal electrodes 11a and 11b -- they 20 provide either a voltage or a current signal; right? 21 A. That's right. 22 Q. And then the current sensor 13 senses the 23 current provided by those signal electrodes; correct? 24 A. That's right. 25 Q. And all of these components sit inside a

Page 74 1 body that forms a ring which may be made of, for 2 example, a resin material; is that right? 3 A. Yes. That -- that is correct. 4 Q. Would you agree that there's some source of 5 power that is required to send a signal to the signal 6 electrodes 11a and 11b? 7 A. There has to be; however, I should note that 8 Asami doesn't teach anything about the power source for 9 doing so. As far as I can recall, there's no mention 10 of a battery, energy harvester or -- or anything. The 11 only thing in Asami that's described is the signal 12 supply, which is described effectively as a driver of 13 signals to the signal electrodes. 14 Q. So in Figure 6A, you can see signal supply 15 15. 16 Is that what you were referring to? 17 A. Exactly, yeah. So signal supply is -- is -- 18 my read was effectively a -- a driver of signals onto 19 the signal electrodes. But there was never any 20 discussion of -- of how the signal supply is powered in 21 Asami. 22 Q. But you would agree that there has to be 23 some power supplied to signal supply 15 in order to 24 supply the signals to the electrodes; right? 25 A. Yeah, there -- there has to be. Of course,	Page 76 1 here, although I'm a little uncomfortable doing so. 2 But Asami, as I mentioned, teaches very 3 little about arrangement and geometry of its 4 finger-worn device. The signal electrodes, 5 accelerometer and transmitter features are relatively 6 simple in complexity, but at the same time, fitting all 7 of that into a small finger-worn ring is extremely 8 challenging. I haven't done the analysis of how much 9 power all of this would require and so on, so I have no 10 idea of what kind of battery would be required here. I 11 would find that there's a pretty heavy burden on a 12 POSITA to be able to implement all of what Asami is -- 13 is -- is teaching. 14 And because Asami lacks a certain -- pretty 15 critical teachings, for example, of the power supply of 16 the system, my on-the-fly opinion here would be that a 17 POSITA wouldn't be able to implement such a system and 18 wouldn't know how to find a battery that could meet all 19 of the requirements here in a -- in a small form factor 20 device. 21 Now, on the other hand, if they are 22 interested in building a ring device that is similar in 23 shape to, like, a Super Bowl ring or the Oura Gen 1 24 device or all of the prior art prior to the -- in smart 25 rings prior to the priority date of the asserted
Page 75 1 Asami doesn't teach this, and -- and, in fact, Asami 2 doesn't really teach much at all about the geometry or 3 arrangement of its proposed finger ring other than the 4 placement of -- of the electrodes. 5 So in my opinion, this leaves a lot of 6 burden on a POSITA to go ahead and actually implement 7 what's -- what's in Asami with very little teachings 8 from Asami on how to do that. 9 Q. Would you agree that one way to implement or 10 provide power to signal supply 15 would be the use of a 11 battery? 12 A. Yes, a battery is -- is one possible, you 13 know, source of power that one could use in an 14 application like this. Asami doesn't teach the use of 15 a battery, and it's very unclear where you would have 16 room to place a battery inside the drawings that Asami 17 has provided. 18 Q. Is it your opinion that one of skill in the 19 art would not have been able to provide a battery to 20 signal supply 15 in Asami? 21 A. So to be fair, I -- I didn't analyze this as 22 part of my analysis in -- in connection to this case 23 simply because Asami was, to my understanding, used 24 simply as teachings of a -- of a ring-worn device. But 25 I could perhaps do a little bit of analysis on the fly	Page 77 1 patents, a POSITA, I think, could -- could reasonably 2 do that. 3 Q. So if you look at Asami's Figures 3A and 3B, 4 there's shown a relatively small form factor 5 finger ring device 1; correct? 6 A. That's right. 7 Q. And so Asami doesn't suggest using a 8 different design other than a relatively smooth, small 9 finger ring; correct? 10 A. That's right, but let me point out a few 11 things: One, device 1 as depicted in Figures 3A and 3B 12 appear to be much smaller than the device depicted in 13 Figures 1A and 1B where it actually shows at least some 14 level of detail about what would go into that ring. So 15 perhaps Figures 3A and 3B are aspirational geometries 16 of -- of what they envision. 17 But point number two here is that, you know, 18 I'm a POSITA as of the priority date of the patents 19 here, and I considered building a ring that would try 20 to look like finger ring 1 shown in 3A and 3B here, 21 and -- and I was unable to do so, and nobody in the 22 prior art, to the best of my knowledge, had been able 23 to do so either. And all of the prior art had resulted 24 in kind of the larger Super Bowl-style rings. 25 So while Asami maybe had aspirations to do

Page 78 1 this in a small form factor as depicted in 3A and 3B, 2 it's my opinion that it's not enabled by the teachings 3 of Asami. 4 Q. Okay. So just to summarize, you would agree 5 that signal supply 15 has to include some source of 6 power, and one way to power signal supply 15 would be a 7 battery. 8 But in your opinion, Asami is not enabled 9 for a ring, according to its teachings, that includes a 10 battery; is that correct? 11 MR. CIULLA: Object to form. 12 THE WITNESS: If I understood you correctly, 13 I -- I think I agree. I think maybe I could boil it 14 down a little simpler. 15 If Asami wanted to include a battery, which 16 is one way that it could power the device, and it 17 needed all of this other functionality, it's my opinion 18 that as of the date of this patent, and certainly as 19 the date of the patents in question in this case, the 20 end result of a -- of a ring designed by the teachings 21 of Asami would look like a Super Bowl-style ring with 22 the electronics mounted on the top simply just due to 23 size constraints of components that were available at 24 the time and -- and engineering efforts required to -- 25 to design such a system.	Page 80 1 annular ring devices, and I believe -- correct me if 2 I'm wrong -- it is your opinion that none of those 3 prior art patents and publications are enabled to teach 4 a device that has a relatively smooth annular ring with 5 a battery inside of it. 6 Is that a fair summary of your opinions? 7 MR. CIULLA: Object to form. 8 THE WITNESS: I mean, as of circa 2013, to 9 the best of my knowledge, there were no prior art that 10 actually were able to build a device of that 11 form factor, that it included a battery, a wireless 12 transmitter and sensing features. 13 And the direct answer to your question is of 14 course it depends on the application requirements and 15 power and the very specific types of circuits and 16 features that -- that you need to build into the 17 system. 18 But to my knowledge, that -- that's correct, 19 no one had actually shown that this is possible. 20 BY MR. HABER: 21 Q. And so I'm trying to understand your opinion 22 because it's a little -- frankly, a little hard to 23 believe. Patents and publications are presumed to be 24 enabled. 25 Do you understand that?
Page 79 1 BY MR. HABER: 2 Q. And so the -- the ring of Asami shown in 3 Figure 1A, 1B, 2A, 3A, 3B doesn't include that 4 Super Bowl design. It's just a -- a annular ring. 5 And it is your opinion that Asami does not 6 enable the design of an annular ring that has all of 7 the required components to meet Asami's disclosure; is 8 that right? 9 MR. CIULLA: Object to form. 10 THE WITNESS: Yes, I -- that is my, and I'll 11 say, on-the-fly opinion here. But I think it's a 12 pretty well -- well-founded opinion given my experience 13 in -- in this area that prior to the priority date of 14 the patents in question here, which are later than the 15 application date here of Asami, no one had built a ring 16 with the types of features that are discussed here in 17 Asami that was a form factor that was a thin annular 18 band, or a thin annular ring. 19 And -- and so it's my opinion that these 20 drawings for -- from Asami were aspirational, but 21 they're not enabled by the teachings of Asami or the 22 teachings of any prior art. 23 BY MR. HABER: 24 Q. So we have in the record here Asami, we have 25 Schr der, we have LeBoeuf, we have -- we have other	Page 81 1 A. I do. 2 Q. And the petitioner has advanced a number of 3 patents and printed publications that, in Petitioner's 4 view, teach the features of these claims. 5 And for essentially all of them, your 6 opinion is that these documents that are presumed to be 7 enabled are not, in fact, enabled? 8 MR. CIULLA: Object to form. 9 THE WITNESS: So, I mean, I haven't done 10 this exact analysis. I'm forming some opinions on the 11 fly here. But at least from what I've seen in the -- 12 the prior art, I haven't seen any actual demonstrations 13 or actual prototypes of these sort of things prior to 14 circa 2013. I've seen some nice conceptual drawings. 15 But in those prior arts, like, for example, 16 Schr der, LeBoeuf and -- and so on, there's no specific 17 teachings on how to actually build such a device. They 18 have, you know, some small comments here and there 19 about the features that they want to include in such a 20 device, but then when you look at actual prototypes 21 that are actually built circa that timeline, there's -- 22 there's nothing that -- that looks like a smooth, thin, 23 annular band. 24 BY MR. HABER: 25 Q. And so is the basis for your opinion that

Page 82 1 these patents and printed publications that are 2 advanced here are not enabled -- is the basis for that 3 opinion that you have not seen kind of prototypes or 4 physical examples being -- having been built before the 5 priority date? Is that -- 6 MR. CIULLA: Object -- object to form. 7 THE WITNESS: So -- so, again, I just want 8 to re-emphasize that -- that I'm -- I'm not -- I 9 haven't done this analysis in -- in detail about 10 enablement, and I'm just kind of opining here a little 11 bit on the fly. 12 But a lot of these devices, like, for 13 example, Schr der, the base implementation for Schr der 14 is to have it wirelessly powered, without a battery. 15 And that, I think, is more believable than with the 16 battery. But even in Schr der, himself -- in that 17 patent, they talk about having this chip module that's 18 external to -- to the ring, and that's just one chip 19 that -- that we're talking about here, never mind a 20 battery and so on. And Schr der describes that as 21 having to be outside of the smooth, annular geometry of 22 the ring. 23 So to then say to a POSITA, Okay. Schr der 24 describes something that has a small chip module that 25 even though it's small, it still has to be outside of	Page 84 1 BY MR. HABER: 2 Q. So I think what you're saying is that, for 3 example, in Asami, signal supply 15 has to include some 4 sort of power, and Asami doesn't describe what that 5 power is. 6 And in your opinion, a battery sized for a 7 ring is not something that one of skill in the art 8 would have been capable of implementing in Asami's 9 form factor; is that right? 10 MR. CIULLA: Object to form. 11 THE WITNESS: Yeah, I mean, it depends on 12 the power requirements of all the features that -- that 13 Asami is including here on how large that -- that 14 battery would be. But based on my knowledge of the -- 15 of the art and my attempts at -- at doing this myself 16 circa this sort of timeline and my knowledge of all the 17 prior art that ended up placing all of the electronics 18 and the battery on the top of the ring in a 19 Super Bowl-style -- Super Bowl-sized ring, yeah, I 20 think it places too high of a burden on the -- on the 21 person of ordinary skill in the art to -- to go ahead 22 and do that. 23 BY MR. HABER: 24 Q. Well, I understand that that's your opinion. 25 Isn't another way to read Asami and Schr der
Page 83 1 the annular features of the ring, and now we want to 2 add a battery and all of this -- other features, 3 it's -- I think it goes well beyond a POSITA's 4 capability circa 2013 to cram all of that into a small 5 annular ring. 6 And that's the same here. The -- the patent 7 is describing the signal electrodes and the current 8 sensor and -- and those features, but it's silent on 9 how to power this device. So the -- the inventors 10 didn't even consider that, or if they did, they didn't 11 mention it in their patent application. Adding power 12 to such a device is certainly going to change the 13 envisioned geometry to be able to fit all of those 14 features in. 15 So there's a -- basically what I'm trying to 16 say here is there's a lot of missing gaps in the prior 17 art literature to -- to actually go ahead and build 18 what's being described here. And it wasn't until some 19 of these patents that we're discussing now that 20 describe in great detail how to actually do this that 21 there were teachings in -- in the literature on -- on 22 how to build such a device. 23 Hopefully, that -- that was a bit of a long 24 answer, but, hopefully, that clarifies my position. 25 //	Page 85 1 and all of the other references that describe powering 2 one of these annular ring devices as saying, This is so 3 obvious that I don't even need to describe it to you 4 because one of skill in the art would know how do it? 5 Like, couldn't you read Asami and Schr der that way? 6 MR. CIULLA: Object to form. 7 THE WITNESS: I don't think a POSITA would 8 because there was no -- again, to my knowledge -- 9 evidence of any prototypes that actually did that. If 10 it was commonplace to put a bunch of components into a 11 thin annular ring and have it all work and so on prior 12 to 2013, then perhaps the -- my answer to that question 13 would be different. 14 But -- but circa 2013, there was no prior 15 art prototypes, to my knowledge, that -- that -- that 16 did that, and all of the prior art at that time mounted 17 everything on the top of the ring, which is reasonable, 18 and -- and I think that's a very reasonable outcome for 19 building a device like that at that time. That would 20 have been something that a person of ordinary skill in 21 the art could have done. 22 But -- but to put all of these features 23 inside the cavity of a thin, conformal ring as depicted 24 in Figure 3A, for example, in -- in Asami, I think that 25 goes beyond the skill of a person of ordinary -- or the

Page 86 1 skill of a POSITA. 2 BY MR. HABER: 3 Q. So is it fair to say that the evidence that 4 you're looking for what would have been known to a 5 POSITA is prototypes? 6 MR. CIULLA: Object to form. 7 THE WITNESS: Well, prototypes and/or 8 teachings of specifically how to do it, right. The 9 prior art that -- that I'm aware of didn't have any 10 prototypes that -- that met these kind of size 11 constraints, and nor were there specific teachings 12 about how to achieve it, at least not until the -- the 13 patents in question in this -- in related cases 14 because -- because all of the prior art just kind of 15 said, Well, here's all the features, and we can put 16 this into a ring, right. 17 But they don't teach how to do it, and the 18 how is the important part here. How do you actually do 19 this? It's very challenging. No one had done it. 20 And -- and that's -- that's the main basis for my 21 opinion. There -- there was no demonstrations of this, 22 and there were no teachings of how to do it. 23 BY MR. HABER: 24 Q. And so it's your opinion that one of skill 25 in the art would not have known how to do this because	Page 88 1 these patents provided were the detailed teachings of 2 how to do it. 3 MR. CIULLA: Counselor, it's -- I think 4 we've been going about an hour. Whenever there's a 5 good time to stop to take a short break. 6 MR. HABER: Yeah, I think we can take a 7 10-minute break. That's fine. 8 THE WITNESS: I'm going to need to break for 9 lunch at some point, so... It's up to you, but we can 10 maybe keep going and then take a lunch break, or we can 11 take a short break and then break again in 30 to 12 45 minutes. 13 MR. HABER: Why don't we take a break, and 14 then we'll go a little bit and then we can break for 15 lunch? 16 THE WITNESS: Sounds good. Thank you. 17 MR. HABER: Thanks. 18 THE VIDEOGRAPHER: Counselors, we're going 19 off the record. The time is 11:34. 20 (A brief recess is taken from 11:34 a.m. to 21 11:42 a.m.) 22 THE VIDEOGRAPHER: We're going back on the 23 record. The time is 11:42. 24 Please proceed. 25 MR. HABER: All right. I want to move to
Page 87 1 there's no prototype or physical demonstration of -- of 2 how to implement? 3 MR. CIULLA: Object to form. 4 THE WITNESS: Or -- or teachings, right. 5 And -- and so, again, if -- if we look at Asami or -- 6 or Schr der, for example, these -- these are patents 7 that describe various different features being included 8 into a ring. 9 Asami doesn't really say anything about how 10 to actually put that into a ring. And when Schr der 11 describes how to put it into a ring, Schr der describes 12 it as a chip module mounted on top of the ring like all 13 the prior art that had come before it had done. 14 So there were no teachings in -- in this 15 art, or any prior art that I've seen, that -- that 16 teach how to put all of these components within the 17 cavity of a small annular ring. 18 BY MR. HABER: 19 Q. Are you aware of any sort of prototype that 20 was made at or around the time the '953 or the '859 21 patents were filed? Was there a prototype? 22 A. I'm not sure. I'm not aware. But -- but I 23 did, I think, clearly say that prototypes would be one 24 way to say, Okay. You can actually do this, or 25 detailed teachings, and that's really what the -- what	Page 89 1 another exhibit. It's 1013. It's patent to Wissmar. 2 Throw it in the chat. 3 (Exhibit 1013 was marked for identification.) 4 BY MR. HABER: 5 Q. Just let me know when you have it up. 6 A. I'm still waiting for it to come into the 7 chat here. 8 THE VIDEOGRAPHER: Counselor, my apology. 9 Can you give me the number one more time, please? 10 MR. HABER: It'll be Exhibit 1013. 11 Is it not included in what I sent you 12 earlier? 13 THE VIDEOGRAPHER: Counselor, exhibit's up. 14 MR. HABER: Ah, okay. 15 THE WITNESS: Okay. 16 BY MR. HABER: 17 Q. And so I have on the screen Exhibit 1013, 18 which is Patent Publication 2012/0218184 to Wissmar. 19 And I will refer to this patent as "Wissmar," and 20 Wissmar is directed to a finger ring. 21 You can see that in the abstract on the 22 cover; right? 23 A. Yes. 24 Q. And you would agree that based on Wissmar 25 and Asami and a number of the references that we were

Page 90 1 looking at, that the finger ring form factor was known 2 before the challenged patents? 3 A. I agree. 4 Q. And Wissmar describes that the finger ring 5 includes a battery; right? 6 A. I believe that's the case. I would just 7 like to state for the record that Wissmar was used in 8 a -- in -- mostly for claims, I think only for 9 Claims 40 and 43 in the '953 patent. And so I focused 10 my analysis of Wissmar with respect to those claims. 11 Q. Okay. But you would agree that the 12 finger ring of Wissmar includes a battery; right? 13 A. A battery does appear to be disclosed, yes. 14 Q. And nothing about Wissmar suggests that 15 implementing a finger rim -- ring with a battery would 16 be outside of the level of skill in the art; correct? 17 MR. CIULLA: Object to form. Relevance. 18 THE WITNESS: I mean, Wissmar describes a 19 battery, describes a approximate position of where that 20 battery might be located in Figure 4, for example. 21 That's about all I can say in -- in response to that, I 22 think. 23 BY MR. HABER: 24 Q. Okay. So the -- the toroidal ring that's 25 shown in Wissmar's Figure 13, for example, that's on	Page 92 1 BY MR. HABER: 2 Q. That analysis that you discuss, that is the 3 sort of analysis one of skill in the art would have 4 done at the time Wissmar was filed; right? 5 MR. CIULLA: Object to form. 6 THE WITNESS: I -- I don't know if Wissmar 7 themselves did it or not to -- to see if they could 8 actually build this or not. I'm not -- I don't know. 9 BY MR. HABER: 10 Q. Whether or not Wissmar did it, that analysis 11 that you described is -- is the sort of analysis that a 12 POSITA would do in designing and building and 13 implementing a finger ring as described in Wissmar; 14 correct? 15 MR. CIULLA: Object to form. 16 THE WITNESS: Yeah, I mean, a -- an engineer 17 when presented with a design problem would do similar 18 types of analysis to understand the power requirements, 19 volume, availability and so on and -- and figure out if 20 it's possible to achieve the objectives or not. 21 BY MR. HABER: 22 Q. And the analysis to determine power 23 requirements, volume, availability of space, et cetera, 24 those were all routine design considerations that an 25 engineer would do to implement a system; correct?
Page 91 1 the screen, is it your opinion that one of skill in the 2 art would have been able to implement a finger ring in 3 this shape with a battery as described by Wissmar? 4 MR. CIULLA: Object to form. 5 THE WITNESS: I -- I'm not sure. I didn't 6 do that analysis. I focused my analysis on Wissmar on 7 Claims 40 to 43 with respect to the coding teachings in 8 those claims. 9 BY MR. HABER: 10 Q. Okay. Well, sitting here today, do you 11 agree or disagree that one of skill in the art would 12 have been able to implement the finger ring in the 13 shape of Wissmar's Figure 13 with a battery inside of 14 it? 15 MR. CIULLA: Object to form. 16 THE WITNESS: I just don't know simply 17 because there's -- there's a lot of analysis one would 18 need to do to -- to ensure that it's possible in -- in 19 terms of the size of the ring, the power consumption, 20 all of the different components that Wissmar envisions 21 putting in here, the -- the peak and average power of 22 those components and the volume available inside the 23 ring to -- to achieve that. 24 So there's a lot of details I would need to 25 do that analysis to provide a -- a good answer there.	Page 93 1 A. Yes. Yeah, I mean, whenever you're building 2 a -- a physical system, you need to do that type of 3 analysis to -- to make sure it's feasible and 4 practical. 5 Q. And there's no part of that analysis that 6 you described regarding implementing a physical device, 7 for example, along the lines of Figure 13 of Wissmar 8 that would be outside the level of skill in the art; 9 correct? 10 MR. CIULLA: Object to form. 11 THE WITNESS: Well -- well, now we're 12 getting beyond the analysis that I did for this case. 13 Figure 13 is depicting a particular geometry. Wissmar 14 depicts particular functionality, and I haven't done 15 the analysis to -- to understand whether or not the 16 functionality that Wissmar is describing is capable of 17 fitting into the size of device proposed here or not. 18 BY MR. HABER: 19 Q. All right. So you have no opinion one way 20 or the other on whether or not the device described by 21 Wissmar could have been implemented by one of skill in 22 the art. 23 Is that fair? 24 A. Yeah, I have no opinion one way or the 25 other. I haven't done that analysis.

Page 94 1 Q. If you go to paragraph 76 of Wissmar, 2 there's described a conformal coding 13. 3 Do you see that? 4 A. I do, yes. 5 Q. And Wissmar describes that: 6 "Commonly used conformal coatings 7 are silicone, epoxy, acrylic, urethane 8 and para-xylene." 9 Do you see that? 10 A. Yes. 11 Q. And you would agree with what Wissmar says 12 here, that these are commonly used conformal coatings? 13 A. I would agree with that. "Conformal 14 coatings" meaning, you know, something thin that is 15 used to cover or protect the electronics or something 16 like this, yes. 17 Q. And you would agree that at least some of 18 those coatings can be made transparent; right? 19 A. They could, but, again, I'd like to 20 emphasize when the people use the word "conformal 21 coating," this is usually referring to a very thin 22 coating that is used for protection, for example, from 23 environmental contaminants or something like this. And 24 a coating like this is not usually used for importing 25 structure into a device.	Page 96 1 reliability of the components and so on. 2 But I as a POSITA wouldn't describe an 3 enclosure as a coating. To me a coating is -- is 4 something that's thin and used for -- for those 5 purposes and not something that's thick and used for an 6 enclosure or some sort of mechanical -- yeah, 7 mechanical enclosure. 8 BY MR. HABER: 9 Q. Would you agree that some of these 10 substances that are described as conformal coatings, 11 like epoxy, acrylic, urethane, et cetera, could also be 12 used to describe -- to make enclosures? 13 A. They could. And that would depend on, of 14 course, the application and the thickness and so on. 15 But in that case, if we're going to make it an 16 enclosure or housing, I wouldn't call it a -- a 17 conformal coating. That -- that's implying a different 18 feature set from -- from that material. 19 Q. So there is described in paragraph 76 and 77 20 some benefits of -- of using these materials as 21 conformal coatings. 22 Do you see that? 23 A. I do. 24 Q. Would you agree that certain of those 25 benefits would accrue regardless of nomenclature,
Page 95 1 Q. You said that generally conformal coatings 2 are -- are thin. 3 Is there a particular thickness that's 4 described in Wissmar? 5 A. I -- I don't recall. I -- I don't see one 6 in paragraph 76, and I -- I don't know if it's 7 described elsewhere. I'd have to go through and -- and 8 check in more detail. 9 Q. Would you agree that the conformal coating 10 can be made as thin or as thick as -- as required by a 11 particular application? 12 MR. CIULLA: Object to form. 13 THE WITNESS: I -- I think that there's an 14 important nomenclature issue here. Coating -- a 15 conformal coating is -- and my understanding as a 16 POSITA in the art here -- is indeed typically a -- a 17 thin protective coating, but, rather, is -- is not used 18 as a -- a kind of a thicker mechanically sound encasing 19 or -- or -- I'm trying to think of other words -- or 20 enclosure is a good word. 21 And so while I -- I do agree in some sense 22 that a -- a conformal coating can be as thin or thick 23 as -- as the application demands, the use of a 24 conformal coating is to protect from environmental 25 contaminants, maybe absorb some stress, improve	Page 97 1 whether the material was described a conformal coating 2 or an enclosure or something else? 3 MR. CIULLA: Object to form. 4 THE WITNESS: I'm not certain. I guess it 5 depends on more specific context. 6 BY MR. HABER: 7 Q. So, for example, the first benefit is 8 preventing damage from rough handling. 9 Do you see that? 10 A. I do. 11 Q. So if there was an electronic component that 12 was coated with a conformal coating of epoxy, for 13 example, one of the benefits that Wissmar teaches will 14 accrue is preventing damage to that component from 15 rough handling; right? 16 A. That's right. That's what Wissmar says, 17 yeah. 18 Q. And so if a device was similarly containing 19 electronic components that were covered over with epoxy 20 or urethane and that covering was not called a 21 conformal coating but was made of the same materials, 22 it would still prevent damage from rough handling; 23 correct? 24 MR. CIULLA: Object to form. 25 THE WITNESS: It -- it depends on the

Page 98 1 relative thickness of -- of that coating, what it's 2 coating, what context it's being used in and so on. 3 BY MR. HABER: 4 Q. Okay. So I guess the question that I'm 5 asking is there are these materials that are being used 6 to provide certain benefits, and Wissmar calls them a 7 conformal coating, and is it your opinion that those 8 benefits accrue because it's a coating or because of 9 the material that's being used to provide those 10 benefits? 11 MR. CIULLA: Object to form. 12 THE WITNESS: So let me give you an example 13 of something that I've personally done, and then 14 perhaps I can then give an example of what's happening 15 in Wissmar. 16 So in my line of research, I have, for 17 example, built instrumented mouth guard systems that 18 have printed circuit boards with components on them and 19 so on. And one step that I've done, because this is 20 intending to go inside the mouth of a -- a subject, is 21 coat the printed circuit board with some material -- in 22 this case, I used parylene -- and that is to provide 23 some of the advantages described here in -- in Wissmar. 24 But that's a pretty thin coating, and while it does 25 help prevent damage from rough handling, it would not	Page 100 1 be the enclosure of the underlying electronic devices? 2 MR. CIULLA: Object to form. 3 THE WITNESS: So let me answer this question 4 in -- in the following way: Can epoxy be used as a 5 housing or an enclosure? Yes. That's very reasonable. 6 Can epoxy be used as a conformal coating? 7 Also yes. 8 And the difference between those two things 9 is -- is really the intent and application, the 10 relative size of the components relative to the -- the 11 thickness of -- of the epoxy. The -- the words 12 "coating" again imply something that is thin, and 13 Wissmar describes some -- some benefits of doing that. 14 And then Wissmar then goes and uses a different 15 material and a different approach to -- to create the 16 housing. 17 Could Wissmar have used epoxy to create a 18 housing? Possibly. Wissmar doesn't teach that. But 19 if they did, they wouldn't call it a conformal coating. 20 So it's -- I understand this is a little 21 nuanced, but there's a very different purpose for a 22 coating versus building an enclosure or housing 23 element, for example, even though they could be made of 24 the same material. 25 //
Page 99 1 be sufficient to then go ahead and put into the mouth 2 of a patient, or -- or a subject, for example. 3 And so as a result, that device is then 4 encapsulated in -- inside the matrix of the mouth guard 5 itself, which provides the mechanical enclosure for -- 6 for the device. And so there's a coating, and then 7 there's an enclosure around -- around the device. 8 And that's actually the same thing that's 9 happening here in Wissmar, where Wissmar describes this 10 coating to offer some preliminary benefits. And then 11 they put that entire device inside this metallic 12 toroidal shell that provides, you know, the housing 13 for -- for that component. 14 And so the shell isn't -- isn't a coating, 15 but the epoxy that's used to do some preliminary 16 protection, I guess, if you will, on the circuit board 17 is the conformal coating. So they're serving two 18 different purposes. Some of those purposes are 19 somewhat shared in terms of protecting the circuit, but 20 ultimately they do so in -- in different ways. 21 BY MR. HABER: 22 Q. Would you agree that if one of skill in the 23 art was designing one of these devices and they used 24 epoxy as a conformal coating and they made that coating 25 thick enough, the conformal coating itself could also	Page 101 1 BY MR. HABER: 2 Q. And I think the question that I'm asking 3 is -- is a little bit different, which is could one of 4 skill in the art use epoxy that performs both the 5 function of a conformal coating and also an enclosure? 6 A. Well, I -- I wouldn't call it -- it wouldn't 7 make sense to call it both things at the same time. 8 Either it's a conformal coating, or it's an enclosure. 9 And, yes, you can use epoxy to build either one of 10 those two things, but the conformal coating would be 11 something thin, and then presumably you'd have 12 something else acting as the enclosure, or you make 13 that epoxy really thick and mechanically rigid and 14 sound and so on, and then it becomes a housing. 15 So you can use an epoxy to build either one, 16 but I wouldn't call them the same thing, if that makes 17 sense. 18 Q. The difference between whether it's -- in 19 the example that I gave you, whether it's called a 20 conformal coating, in your view, or housing, it's just 21 the thickness; right? If it's thin, it would be a 22 conformal coating. If it's thick, basically it totally 23 encapsulates the device -- the device would be housing. 24 And in your opinion, it wouldn't be called 25 both of those things?

Page 102 1 MR. CIULLA: Object to form. 2 THE WITNESS: I mean, it depends on relative 3 size of components, but in general, yes, the 4 relative -- thickness relative to the device that it's 5 either coating or encapsulating would determine whether 6 you would call it a conformal coating or -- or a 7 housing component. 8 If it were a conformal coating, you would 9 need some other material or some other thing to -- to 10 act as the housing or the enclosure, as Wissmar itself 11 does. 12 BY MR. HABER: 13 Q. In paragraph 87, there's described -- 14 there's a term used, "hermetic encapsulation." 15 Do you see that? 16 A. I do. 17 Q. What does "hermetic encapsulation" mean? 18 A. So "hermetic" usually refers to -- or 19 "hermetic encapsulation" refers to the fact that the 20 inside of the device is totally isolated from the 21 outside environment. So there's no substance or 22 material from the outside environment that can get on 23 the inside and -- and vice versa. 24 Q. Okay. So a hermetic encapsulation is -- is 25 watertight; right?	Page 104 1 A. Okay. 2 Q. If you could flip to paragraph 111, which is 3 on page 58 of your declaration. 4 A. Okay. 5 Q. Is it your opinion that Mestas -- sorry. 6 Strike that. 7 Is it your opinion that one reason that 8 Mestas does not satisfy Claim 1 of the '953 patent 9 based on the fact that there is an outer encasement 10 member 24 that is identified by Dr. Anthony as 11 including an inner portion and an outer portion and 12 those two portions are part of the same structure? 13 A. Yes, it's my opinion that Mestas is 14 describing something that is ultimately a -- kind of a 15 single unitary structure. That's one piece. That's 16 injection molded together. 17 Q. While it's one piece, you would agree that 18 Mestas describes it as having an inner portion and an 19 outer portion; correct? 20 A. Yeah, my understanding of Mestas is -- is 21 it's -- there's an inner portion and an outer portion, 22 but it's all one single piece that -- that's created 23 through injection molding process. 24 Q. Okay. And the -- the Claim 1 of the '953 25 patent recites an interior enclosure portion and an
Page 103 1 A. I think that's fair to say, yes. 2 Q. I want to go back to your declaration for 3 the '953 patent. I think you should still have it, but 4 let me know if you need it again and I'll put it on the 5 screen. 6 MR. CIULLA: And, Counsel, I don't know how 7 much longer you intend to -- to go, but I think 8 Dr. Mercier needs to get lunch relatively soon. 9 (Stenographer clarification.) 10 THE VIDEOGRAPHER: We're going off the 11 record. The time is 12:07. 12 One moment, please. 13 (A lunch recess is taken from 12:07 p.m. to 14 12:44 p.m.) 15 THE VIDEOGRAPHER: We're going back on the 16 record. The time is 12:44. 17 Please proceed. 18 MR. HABER: Thank you. 19 Welcome back from lunch, everybody. 20 THE WITNESS: Thank you. 21 BY MR. HABER: 22 Q. I wanted to continue some questions 23 regarding your declaration on the '953 patent, so just 24 let me know when you have that in front of you and we 25 can proceed.	Page 105 1 exterior enclosure structure. 2 And in your opinion, that recitation 3 requires two separate structural pieces; right? 4 A. That's right, because the claims describe 5 how they are coupled together, and -- and the -- the 6 language used in the claims here, as you said, describe 7 a interior enclosure portion and an exterior enclosure 8 structure, which means that the interior enclosure 9 portion is, for lack of better wording, inside the 10 exterior enclosure structure. 11 Or in other words, if they're circular, the 12 diameter of the internal structure is smaller than the 13 diameter of the outer exterior enclosure structure, and 14 then the two items are then coupled together. 15 Q. Does the patent describe -- or I'm sorry. 16 Does -- strike that. 17 Does Claim 1 of the '953 patent describe how 18 they are coupled together? 19 A. The claims themselves don't describe this in 20 the '953 patent, but the specification and the figures 21 and so on do describe how -- do show how the two 22 structures are -- are separate and then brought 23 together and -- and coupled. 24 Q. Okay. The -- the feature that the 25 structures are separate and then subsequently brought

Page 106 1 together, that's not specifically recited in the 2 claims. 3 You're taking that from some of the figures; 4 correct? 5 A. That's right. The claims need to be read in 6 light of the specification, and the specification is -- 7 clearly does depict that. They're coupled together, 8 and then there's insulators that go in and protect 9 things and so on. So there's a -- quite of bit of 10 description in the specification about how that -- how 11 that happens. 12 Q. Is it possible to create a structure that 13 has a certain portion of that structure coupled to it 14 during the formation of the structure such that it's 15 all formed all at one time? 16 MR. CIULLA: Object to form. 17 THE WITNESS: I'm not sure I understand this 18 hypothetical. If you're implying that it's basically 19 all one material that may or may not be fabricated in 20 different steps, ultimately that's one structure and 21 not two things -- separate things that are coupled 22 together. 23 BY MR. HABER: 24 Q. So the claim actually require -- only 25 recites one structure, right, the exterior enclosure	Page 108 1 "exterior" and "interior" mean -- are meaningless in 2 that interpretation, right. So it's very clearly an 3 exterior enclosure structure, and then that's coupled 4 to something that's not the exterior enclosure 5 structure. You can't couple something to itself. 6 And -- and so the interior enclosure portion 7 is something else, and maybe there's portions of that 8 interior enclosure that -- I don't know -- are -- are 9 other portions of something else, but it is distinct 10 from the exterior enclosure structure. 11 That's my interpretation of reading this in 12 isolation of the specification. But then, of course, 13 when read in context of the specification, it's very 14 clear that the exterior enclosure structure and 15 interior enclosure portions are two separate things 16 that then come together to -- couple together to form 17 the housing. 18 Q. Well, the terms "interior" and "exterior," 19 those aren't -- those are positional; right? That 20 describes where something is positioned on the interior 21 versus the exterior; right? 22 MR. CIULLA: Object to form. 23 THE WITNESS: They're -- they're positional 24 and descriptive of -- of what's going on here. And if 25 you read that claim limitation in light of what's
Page 107 1 structure, and then an interior enclosure portion; 2 correct? 3 A. That's right. That's what the claim says. 4 Q. And so you would agree that a single 5 structure may have one or more portions as a part of 6 that single structure; correct? 7 A. Yeah, I'm trying to extract what you're 8 saying here and -- and read it onto the claim language, 9 and it's -- it's a -- not quite sure what -- what 10 you're getting at here. But I -- I think what you're 11 trying to say is there's an exterior enclosure 12 structure, and that structure could have multiple 13 portions. And that's true, a structure can have 14 multiple portions, but the claim language then says 15 specifically that it is coupled with the interior 16 enclosure portion to form a housing. And -- and so 17 that interior enclosure portion is its own thing. It's 18 a portion of something that is distinct from the 19 exterior enclosure structure that is then coupled 20 together to form the housing. 21 Q. So you said it's an interior enclosure 22 portion of something; right? And it could be a portion 23 of the exterior enclosure structure; right? 24 A. I'd have to think about that more. I 25 wouldn't read it that way because, otherwise, the words	Page 109 1 taught in the rest of the specification in the patent, 2 it's pretty clear that these are two separate things 3 that are coupled together. 4 I think the key word here is "coupled," and 5 you can't couple something to itself. That -- that 6 doesn't make any sense. You can't attach something to 7 itself. You can't couple something to itself. 8 And so these, by that definition, have to be 9 separate pieces. 10 BY MR. HABER: 11 Q. Well, so, I mean, is that -- so let's say 12 I'm developing or -- or making some structure, and it 13 has a flange, for example, that's going to be on the 14 end of the structure, and then when I'm making that 15 structure, the end result is a structure with a 16 portion -- flange portion that is part of that 17 structure, but the end result is a single unitary 18 structure, right. They've -- they've been coupled 19 together, perhaps, during manufacturing. 20 But they are a single structure with various 21 portions, right? 22 MR. CIULLA: Object to form. 23 THE WITNESS: I -- I think an analogy like 24 that really depends on context, and, I -- I mean, you 25 could say the entire ring is -- is its own structure,

Page 110 1 right. But it's composed of multiple subcomponents 2 that are themselves their own structures that are then 3 coupled during the manufacturing process or during the 4 assembly process. 5 And so this claim limitation is describing 6 the implementation details of -- of how you would 7 construct a ring, and the exterior enclosure structure 8 is being coupled to a distinct interior enclosure 9 portion. 10 BY MR. HABER: 11 Q. And so you seem to be reading those words 12 different than what they say there. Your opinion is 13 that there are these two separate structural pieces, 14 but one is called an enclosure structure, and one is 15 called an enclosure portion. 16 A portion has to be a portion of something 17 else, and the only other structural -- enclosure 18 structure that's there that it could be a portion of is 19 the exterior enclosure portion, right, the exterior 20 enclosure structure; right? 21 MR. CIULLA: Object to form. Foundation. 22 THE WITNESS: Yeah, I'm -- I'm thinking 23 about what you said, and it's -- it's possible that the 24 interior enclosure portion could have other portions 25 that -- that is comprising it or that it's attached to	Page 112 1 THE WITNESS: I disagree because of the word 2 "coupled." If -- if they were -- if the interior 3 component was part of the exterior component, then they 4 wouldn't be coupled together. They're kind of distinct 5 things, right, and that's exactly how it's taught in 6 the specification of the patent. 7 BY MR. HABER: 8 Q. So in your opinion, if they were joined 9 together or coupled together during manufacturing, they 10 would not be coupled? 11 MR. CIULLA: Object to form. 12 THE WITNESS: That -- that's not what I said 13 because they -- they are two distinct things that are 14 then coupled during the manufacturing or assembly of 15 the device, but they're still two distinct things, 16 right. And that's in contrast to Mestas, which 17 effectively builds a -- a housing that is a single 18 unitary component. 19 BY MR. HABER: 20 Q. The housing in Mestas is a single component, 21 but it has an inner portion and an outer portion; 22 right? That has different parts of a single unitary 23 component; right? 24 MR. CIULLA: Object to form. 25 THE WITNESS: It has different portions.
Page 111 1 or -- or whatever you -- you want to say there that -- 2 that are also there. But that doesn't mean that it's 3 part of the exterior enclosure portion. 4 BY MR. HABER: 5 Q. And I think that's fair. 6 It doesn't necessarily mean that it's part 7 of the exterior enclosure portion, but it could be; 8 right? I mean, there's no -- nothing that says that it 9 couldn't be. 10 MR. CIULLA: Object to form. 11 THE WITNESS: Well, that's not what the 12 patent teaches, right. The patent teaches the interior 13 and exterior components as being separate and distinct, 14 and then they're coupled together. If they were the 15 same structure, then it wouldn't make sense to couple 16 them together. 17 BY MR. HABER: 18 Q. Well, so, I mean, you could have an exterior 19 enclosure structure that encloses the exterior. 20 It's a structure that does it, and a portion 21 of that could also enclose the interior; right? And 22 they could be coupled together during the manufacturing 23 process the way they're created; however, there's 24 nothing in the claim that says you couldn't do that. 25 MR. CIULLA: Object to form.	Page 113 1 There's an inside-facing portion and an outside-facing 2 portion, but it's all the same component. 3 BY MR. HABER: 4 Q. Would you agree that the outer encasement 5 member 24 is a -- a single structure that has multiple 6 portions, for example, an inner portion and an outer 7 portion? 8 A. Mestas does describe the structure as having 9 an inner portion and an outer portion, which -- which 10 makes sense. You know, it's a three-dimensional 11 object. There's going to be a multiple sides of this 12 three-dimensional object, and that's, I think, 13 appropriate language to describe the geometry of the 14 device. 15 But ultimately, that inner portion and outer 16 portion are part of the same component that's creating 17 a unitary encasement, or a unitary housing. 18 Q. And so the outer encasement member 24 that 19 comprises those inner and outer portions ultimately 20 forms a housing for the electronics in Mestas; right? 21 MR. CIULLA: Object to form. 22 THE WITNESS: So -- so the housing in -- in 23 Mestas is -- again, you know, there's an inner portion 24 and an outer portion, but these aren't two distinct 25 things that are subsequently coupled together to form

Page 114 1 the housing as required in the '953 claim -- claim 2 language. 3 BY MR. HABER: 4 Q. That's fair. 5 But putting aside that they're not separate, 6 they are ultimately described by Mestas the outer 7 encasement member 24, but the inner portion and outer 8 portion ultimately is what forms the housing around 9 Mestas' internal components; correct? 10 MR. CIULLA: Object to form. 11 THE WITNESS: It -- it is tempting to see 12 the words "outer" -- or "interior" and "exterior" -- 13 sorry -- "outer" and "inner" as mapping onto the -- 14 onto the claim language of the '953 patent because they 15 use similar words. 16 But the teachings of Mestas say that it 17 is -- that these are two parts of the same structure, 18 right. It's -- it's a -- one housing that is injection 19 molded. It's made of one material. They're not 20 coupled together as described in the '953 patent. 21 So it's similar but different. 22 BY MR. HABER: 23 Q. I'm -- I'm not talking about the claim 24 language right now. I'm just asking what Mestas 25 teaches.	Page 116 1 A. I do, yes. 2 Q. And according to Asami, what's shown there 3 in element 1 is integrated into a ring form factor; 4 right? 5 A. Yes. 6 Q. And in paragraph 126, you have a sentence 7 that's there that says: 8 "Neither Mestas nor Asami teaches 9 or suggests the specific miniaturize -- 10 miniaturized and integrated arrangement 11 within a ring." 12 Do you see that? 13 A. I do. 14 Q. That's not accurate; right? Asami suggests 15 that what is identified as element 1 is integrated in a 16 ring form factor; right? 17 MR. CIULLA: Object -- object to form. 18 THE WITNESS: There's a couple things I'd 19 like to say here: One is, yes, Asami does describe a 20 ring and has aspirational drawings of making it thin 21 and, you know, a wedding band-like structure, but Asami 22 doesn't teach how to get that specific geometry in -- 23 in an implementation. Asami teaches how the device 24 ought to work, but Asami doesn't teach how to -- how to 25 integrate it into that type of form factor, and
Page 115 1 The outer encasement member 24 ultimately, 2 with its inner portion and outer portion, forms the 3 housing around the electronics that are -- that make up 4 Mestas' device; right? 5 A. Yeah. That -- that's fair to say. It 6 form -- they form a unitary housing. 7 Q. One second. 8 MR. HABER: Maybe we can just go off the 9 record for a second? 10 The -- 11 THE STENOGRAPHER: Off the record, Rob. 12 THE VIDEOGRAPHER: Counselor, we're going 13 off the record. The time is 1:06. 14 One moment, please. 15 (A brief recess is taken from 1:06 p.m. to 16 1:11 p.m.) 17 THE VIDEOGRAPHER: We're going back on the 18 record. The time is 1:11. 19 Please proceed. 20 BY MR. HABER: 21 Q. All right. If you can skip ahead to 22 paragraph 126 of your declaration. It's on page 65. 23 What's shown above that paragraph is Asami's 24 Figure 6A. 25 Do you see that?	Page 117 1 certainly neither does Mestas. 2 So what I was trying to say here is that 3 neither Asami nor Mestas teaches or suggests how to fit 4 in -- either of their functionalities into a single 5 conformal ring design. 6 We did discuss earlier that a POSITA at the 7 time of invention would likely have the skills to 8 implement this in a Super Bowl-style ring, but it's my 9 opinion that they wouldn't have the -- the skills based 10 on the teachings of Mestas and Asami and the knowledge 11 that they have to integrate this into a ring as 12 described in the '953 patent. 13 BY MR. HABER: 14 Q. Well, let's -- let's assume that one of 15 skill in the art would know how to package electronic 16 components into a ring. Let's just assume that that's 17 true. 18 Would you agree that if that was true, that 19 one of skill in the art would have known how to package 20 materials into a ring, then that information would not 21 have been necessary to include in Asami's disclosure 22 because one of skill in the art would have known how to 23 do it? 24 MR. CIULLA: Object to form. 25 THE WITNESS: So sitting here today as

Page 118 1 someone who is comfortably well beyond the -- the 2 definition that we're using for a POSITA here, if I 3 were to have written a patent like this, even today, 4 2025, about putting all of these components inside a 5 ring, I would feel it necessary to teach the -- the 6 reader of this patent at least some details of how to 7 do this and -- and how it's possible. Asami really 8 doesn't do any of that teaching at all. 9 And so, again, to your question, 10 hypothetically, if someone knew how to do that, sure. 11 But as of the invention date of these patents, those 12 teachings weren't available in the prior art of how to 13 do this in a small conformal ring structure and -- and 14 not a Super Bowl-style ring. 15 And so in order to enable that or provide 16 those teachings to -- to allow someone to build or 17 combine the features of Mestas and Asami, those 18 teachings would need to be present, in my opinion. 19 BY MR. HABER: 20 Q. And maybe I'm -- I'm having a hard time 21 understanding this. 22 I understand that it's your opinion that one 23 of skill in the art wouldn't know how to package these 24 things or would have done it in a Super Bowl-style ring 25 or would have done it some other way, but we have these	Page 120 1 thin band. 2 BY MR. HABER: 3 Q. Well, (indiscernible) discussed that, 4 doesn't it? I mean, it shows -- 5 (Stenographer clarification.) 6 BY MR. HABER: 7 Q. I said, well, Asami shows that; right? It 8 shows a thin band? 9 MR. CIULLA: Objection. Mischaracterizes 10 the documents. 11 THE WITNESS: Asami shows a thicker band in 12 the earlier figures, a thinner band in, I think, 13 Figure 3 or something like that, but it doesn't teach 14 how to do that. No -- nowhere is -- is it taught that. 15 And the claims don't require a thin band like that. 16 The claims don't say anything about the geometry of the 17 ring, as far as I recall. 18 And so in light of the knowledge of the 19 POSITA circa 2013, my reading of this is that, Okay. 20 Yeah, we can put all of that functionality into the 21 ring, and we would put it all on the top of -- of the 22 ring where we'd integrate the battery and the PCB 23 and -- and, you know, all of these things. 24 BY MR. HABER: 25 Q. And so --
Page 119 1 references, like Asami and Schr der and others, that 2 specifically say, Put these components in a ring, and 3 essentially presume that one of skill in the art would 4 have known how to do that because it's just packaging. 5 And I don't really understand how you can 6 say that all of those references are incomplete and 7 wrong and not enabled when the references tell you what 8 to do. Like, I just don't understand the basis for 9 your opinion. 10 MR. CIULLA: Objection. Mischaracterizes 11 documents and evidence. 12 THE WITNESS: So -- so I think maybe the way 13 to think about this is Asami describes some components, 14 and they say, Put it into a ring, okay. That -- that 15 part is clear. 16 But the -- the claims of Asami don't specify 17 geometry or form or shape, as far as I recall, anyways, 18 about how to structure the geometry of this ring. And 19 so if -- I'm a POSITA sitting reading Asami through the 20 lens of someone who -- who was a POSITA, as I was as of 21 the priority date of '953, and I would read Asami and 22 say, Okay. Yeah, I can do this if I make it a 23 Super Bowl-style ring. 24 There's nothing in Asami or the prior art 25 that -- that teaches me or suggests how to do this in a	Page 121 1 A. That's how I would read Asami. 2 Q. And so Asami, frankly, in none of the patent 3 they don't describe blueprint -- blueprints or detailed 4 3D models or schematics because those things aren't 5 what's required for a patent. They describe the 6 features of the patent, the form factor. 7 And is it your opinion that more than that 8 is required? 9 MR. CIULLA: Object to form. 10 THE WITNESS: Well, the '953 patent does do 11 that, right. Of course, they're not exact schematics 12 and blueprints and so on, but they're very descriptive 13 about how you would do this. 14 And my understanding of the '953 patent is 15 that was intentional because no one in -- in the art at 16 that time had figured out how do all of this stuff, how 17 to put all of this really complex functionality into a 18 really small, thin, wearable ring-style device. 19 And so, again, as a POSITA circa 2013, when 20 I'm reading a patent like Asami talking about a 21 wearable ring device, I'm thinking of building and -- 22 and thinking about building this device, I'm going to 23 put all of those features on the top of the ring. 24 And Schr der does this too as well. You 25 know, there's this chip module -- and Schr der, by the

Page 122 1 way, is -- is, at least in the main embodiments, much 2 more simple than even Asami where there's one chip 3 module and one antenna. Even in that embodiment, 4 Schr der's putting a chip module extruding from the 5 thin portion of the ring. 6 So -- so this is -- this is how I'm -- how 7 I'm reading this. And -- and to suggest that, Oh, you 8 can just easily put all of this into a thin -- a thin 9 conformal ring, I mean, that's really what the -- what 10 the '953 patent is -- is about and why they spent a 11 great deal of time and -- and effort teaching the 12 reader how to do so. 13 BY MR. HABER: 14 Q. So the -- you mentioned miniaturization and 15 integration within a ring as not being taught by Asami, 16 and you also mentioned teachings of the '953 patent. 17 There isn't any particular teaching in the 18 '953 patent of how to miniaturize a battery, for 19 example; right? 20 A. To the best of my recollection, no. The 21 '953 patent is not a battery-manufacturing patent, and 22 they don't describe that. 23 Q. And so the '953 patent, in your opinion, 24 describes packaging of these components, like where to 25 place them, for example; right?	Page 124 1 And I think you'd agree with me that the 2 '953 patent describes packaging components that are 3 small as opposed to taking large components and 4 miniaturizing them; right? 5 MR. CIULLA: Object to form. 6 THE WITNESS: It's a good question. I -- I 7 hadn't thought of it in -- in that way specifically, 8 and I'd probably need more time to -- to think about 9 that to provide a good answer. 10 Certainly, the '953 patent does provide 11 pretty specific blueprints about how you would 12 structure, how would you -- how you would design the -- 13 the housing components, how you would design the 14 arrangement of batteries and PCBs and sensors and -- 15 and things like this, and many other things, of course. 16 So it does a really good job, in my opinion, of -- of 17 teaching all of those things that isn't present in the 18 prior art. 19 Does it teach how to miniaturize those 20 components? I'm not sure. I'd have to go back and -- 21 and read it in -- in more detail. 22 BY MR. HABER: 23 Q. So would you agree with me, then, that the 24 '953 patent -- and it presumes the existence of these 25 miniaturized components, like batteries and processors
Page 123 1 A. The '953 patent describes how to structure 2 the external and internal housing components, how to 3 place a curved battery, how to put the PCB in there and 4 arrange the sensors and so on. And it -- it provides a 5 great deal of detail of how to do all of that, yes. 6 Q. And it's that packaging detail that, in your 7 opinion, is missing from Asami and -- and Schr der. 8 Is that fair? 9 MR. CIULLA: Object to form. 10 THE WITNESS: Well, I mean, first of all, 11 Asami and Schr der are for very different applications 12 with different sensors and -- and so on. 13 But in general, yes, I mean, Schr der and 14 Asami don't really teach how to -- how to build this 15 into a thin conformal ring. And Schr der does have 16 some more specific discussion about geometry than 17 Asami, but that -- that discussion of geometry shows an 18 extrusion outside of the confines of the ring like the 19 prior art before it. 20 BY MR. HABER: 21 Q. And I guess what I'm trying to understand is 22 there -- there seems to be a difference between 23 miniaturization and packaging, taking a big internal 24 component and making it smaller as opposed to taking a 25 number of components and putting them in a small space.	Page 125 1 and circuit boards, and provides instructions for how 2 to put them into a small ring form factor? 3 MR. CIULLA: Object to form. 4 THE WITNESS: I'd have to think about that 5 further if -- if it -- yeah, I'd have to -- I didn't do 6 that exact analysis in preparation for my report, so 7 I'd -- I'd have to think about that further. 8 BY MR. HABER: 9 Q. Well, you would agree that the '953 patent 10 doesn't describe the miniaturize -- miniaturization 11 process of these internal components; right? 12 A. That's right, the '953 patent doesn't 13 describe how to miniaturize batteries and other -- 14 other things like that. 15 Q. I'm going to go to paragraph 138 of your 16 declaration. 17 A. Okay. 18 Q. Actually, I -- let's go to paragraph 140. 19 And in the middle of paragraph 140, there's a 20 statement: 21 "The claim requires the window to 22 be defined by 'at least one of the 23 interior enclosure portion and the 24 exterior enclosure structure.'" 25 Do you see that?

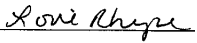
Page 126 1 A. I do. 2 Q. And so can -- one of the '953 patent 3 requires a window on either the interior or the 4 exterior or both of the ring device; correct? 5 A. That's my understanding, yes. 6 Q. And so that particular requirement could be 7 met by prior art that shows a window only on the 8 exterior as opposed to the interior; right? 9 A. If prior art had an external -- exterior 10 enclosure structure and an interior enclosure portion, 11 then yes. But I'm not aware of any prior art that is 12 constructed in that way. 13 Q. I'm going to go to paragraph 198. 14 A. Okay. 15 Q. And the claim term that you're talking about 16 in this paragraph is a claim -- is a curved printed 17 circuit board? 18 A. That's right. 19 Q. And is it your opinion that a curved printed 20 circuit board cannot be a flat board that is then bent 21 into a curved shape? 22 A. So -- so my -- my read on this is from -- 23 Claim 1 describes a flexible circuit board, and then 24 here in Claim 38, they describe a curved printed 25 circuit board.	Page 128 1 is a flexible circuit board that's just bent into a 2 curved shape? 3 A. I -- I'm not sure I understood what you were 4 asking me. 5 Could you perhaps rephrase? 6 Q. Sure. 7 Is it a fair reading of this claim, the 8 dependent claim, to say that Claim 1 requires a 9 flexible circuit board, maybe flat in any given 10 situation, but claim -- the dependent claim 11 specifically requires that that flexible circuit board 12 is bent into a curved shape? 13 MR. CIULLA: Object to form. 14 THE WITNESS: Well, I guess those are the 15 same things, right. So a flexible circuit board are 16 usually -- although I suppose not exclusively -- 17 fabricated flat and then are subsequently bent into 18 a -- a curve if -- if needed. And my understanding is 19 that's the intent of Claim 1 there. 20 Whereas Claim 38 specifically describes a 21 curved printed circuit board, which my read of that, if 22 it has to be different than a flexible printed 23 circuit board, simply must mean that it's designed and 24 manufactured as a curved board. 25 //
Page 127 1 And so my understanding of -- of patent law 2 is that if -- if different words are -- are used, 3 they -- in the same patent, they have to have different 4 meanings. And so I was -- I was trying to find a way 5 that this could be -- this could mean different things. 6 And so my conclusion here is that a -- a 7 flexible circuit board could be, obviously, arranged 8 into a curved configuration. But a curved 9 circuit board is something that is designed to directly 10 have curvature, if that makes sense. 11 Q. The circuit board that's described by the 12 '953 patent is a flexible circuit board that is then 13 arranged into a curve shape; right? 14 A. That is the -- the embodiments that are 15 taught in the specification, yes. 16 Q. Is there a embodiment taught in the 17 specification where there is a curved printed 18 circuit board that is fabricate -- fabricated so that 19 it is always curved as opposed to being bent into a 20 curved shape? 21 A. I'm not sure. 22 Q. Is it a fair reading of this particular 23 claim element to say that Claim 1 requires a flexible 24 circuit board, maybe in any shape, maybe flat, and the 25 dependent claim requires a curved circuit board, which	Page 129 1 BY MR. HABER: 2 Q. Well, couldn't it just be that it's 3 different because in one case the flexible printed 4 circuit board is flat and then in another case it's 5 curved, it's bent? It's different; right? It's 6 configured -- it's positioned differently? 7 MR. CIULLA: Object to form. 8 THE WITNESS: I haven't considered it that 9 way, and -- and I didn't interpret that way either in 10 real-time reflection here simply because the -- the 11 specification of the patent always shows the -- the 12 circuit board as being, you know, flexed and curved 13 around the perimeter of the -- of the ring. 14 And -- and so it wasn't my interpretation of 15 Claim 1 that a flat circuit board, even though it's 16 flexible, could be -- could meet that limitation, but, 17 rather, it's flexible for a reason, such that it could, 18 you know, have the curved features necessary to fit 19 inside the ring's cavity. Whereas -- and -- and I did 20 mention in my specification, there are ways through 21 molded interconnect devices and so on that you could 22 design a curved circuit board. 23 I admit this is not something that's super 24 common, but I -- I can't speculate on -- on why the 25 inventors would have tried to claim this. But that's

Page 130 1 certainly one interpretation of that claim -- claim 2 language that -- that I would -- ended up, you know, 3 deciding on. 4 BY MR. HABER: 5 Q. And so idea of a fabricated curved 6 circuit board is not super common and, in fact, is not 7 disclosed in the '953 patent; right? 8 A. Yeah, my understanding is that they don't 9 specifically disclose that. 10 Q. Okay. 11 A. It doesn't mean that they couldn't do that, 12 and a person of skill in the art is familiar with 13 molded interconnect devices and the ability to do 14 something like that. But as I said, it's not super 15 common. 16 Q. And a person of skill in the art at the time 17 is familiar with molded interconnect devices, curved 18 devices and is certainly capable of designing a curved 19 device like this to fit inside a ring? 20 MR. CIULLA: Object to form. 21 THE WITNESS: Yeah, I -- I think that's 22 reasonable. A -- a POSITA could have done this at the 23 time. 24 BY MR. HABER: 25 Q. Okay. I want to go to paragraph 237. And	Page 132 1 battery and bent it so that it had a curve it would not 2 be a curved battery? 3 A. In the context of these patents, it appears 4 that the inventors were careful with their choice of 5 words, and "curved" versus "flexible" were -- meant 6 different things. 7 And so taking a flat battery and bending it 8 is basically admitting that that battery is flexible, 9 and that's different from manufacturing from the ground 10 up a battery that is curved. 11 MR. HABER: Okay. I don't have any further 12 questions at this time. I think -- pass the witness -- 13 witness if you have anything else. 14 MR. CIULLA: Do you mind if I take a 15 five-minute recess to look over my notes? 16 Thanks. 17 THE VIDEOGRAPHER: Counselors, we're going 18 off the record. The time is 1:41. 19 (A brief recess is taken from 1:41 p.m. to 20 1:46 p.m.) 21 THE VIDEOGRAPHER: We're going back on the 22 record. The time is 1:46. 23 Please proceed. 24 MR. CIULLA: All right. Dr. Mercier, I 25 don't have any further -- I don't have any questions
Page 131 1 this portion of your declaration is describing the 2 inventor's work trying to find a curved battery for use 3 inside a ring device. And what you describe here is 4 that the inventor had a flat battery made and just bent 5 it. 6 Do you see that? 7 A. I do. 8 Q. And so you would agree that taking a flat 9 battery and just bending it is something that could 10 have been done with existing technology at the time 11 these patents were filed; right? 12 MR. CIULLA: Object to -- object to form. 13 THE WITNESS: Well, that -- that is -- is 14 what the inventor testifies that they tried. I don't 15 know how successful they were in -- in doing that, but 16 it appears that that is within the skill set of a 17 POSITA at the time. 18 But similar to our discussions that we just 19 had on curved versus flexible PCBs, I wouldn't call a 20 flat battery that you bent a curved battery in the same 21 way that I wouldn't call a flexible PCB in the context 22 of this patent that's arranged into a curve a curved 23 PCB with the same nomenclature. 24 BY MR. HABER: 25 Q. Is it your opinion that if I took a flat	Page 133 1 for you on redirect. 2 MR. HABER: All right. 3 THE VIDEOGRAPHER: Madam Court Reporter, do 4 you have anything to add for the record? 5 THE STENOGRAPHER: Oh, we can do it off the 6 record. 7 THE VIDEOGRAPHER: Counselors, does either 8 party want the transcript synced to their -- do they 9 want -- do you want the video synced to your 10 transcript, or would you like us to archive it for now? 11 MR. HABER: Whatever our order was. The 12 case assistant put it in, so she knows better than I do 13 of what we want. 14 THE VIDEOGRAPHER: Thank you, Counselors. 15 Counselors, we're going off the record. The 16 time is 1:46. 17 One moment, please. 18 THE STENOGRAPHER: Okay. Nicholas, did you 19 need a copy of the transcript? 20 MR. CIULLA: We don't need anything rushed, 21 just normal. 22 THE STENOGRAPHER: Okay. Just normal. 23 Okay. 24 MR. CIULLA: And if there's a mini -- I 25 don't know if that's an added cost or -- or not.

Page 134

1 THE STENOGRAPHER: No, it's -- it's not.
 2 MR. CIULLA: Okay. We'd like the mini too.
 3 THE STENOGRAPHER: And you don't need a
 4 rough draft; correct?
 5 MR. CIULLA: We don't.
 6 THE STENOGRAPHER: Okay. Sounds good.
 7 MR. HABER: I'd like a rough as soon as you
 8 can have it.
 9 THE STENOGRAPHER: Did you say you'd like a
 10 rough? Yeah, I saw that -- I saw that on the order.
 11 Thank you.
 12 (Time noted: 1:47 p.m.)
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Page 135

1 REPORTER'S CERTIFICATE
 2 I, Lorie Rhyne, RPR, CRR, CSR No. 12905, do hereby certify
 3 that the foregoing deposition of Patrick Mercier, PH.D.,
 4 was taken on August 22, 2025 via zoom videoconference before
 5 me at 09:01 a.m. for the purpose in the caption stated; that
 6 the Witness was first duly sworn to tell the truth, the
 7 whole truth, and nothing but the truth; that the deposition
 8 was taken before me stenographically and afterwards
 9 transcribed under my direction; that the foregoing is a
 10 full, true, and correct transcript of the said deposition
 11 so given; that counsel for all parties were present at
 12 the time of the deposition; that there was not a request that
 13 the witness read and sign the transcript.
 14 I further certify that i am neither of counsel nor
 15 of kin to any of the parties to this action, and am in
 16 no way interested in the outcome of said action.
 17
 18
 19 Witness My Signature on this 25th day of August, 2025.
 20
 21
 22 
 23
 24 LORIE RHYNE, CSR No. 12905
 25

Exhibits	127:23 128:8, 19 129:15	88:21,23	56:2,7	80:8 81:14 83:4 85:12,14 120:19 121:19
Exhibit 1001 4:11 10:8,10 11:5	10 49:17 51:4,9 52:15,19,20, 24 53:10 54:13 64:14	11a 73:13,19 74:6	157 66:10	2014 11:22
Exhibit 1010 4:13 50:4,6,13	10,139,859 11:5	11b 73:14,19 74:6	162 60:23 61:9,15, 21 62:25	2014/0244009 50:14
Exhibit 1013 4:15 89:3,10, 17	10,281,953 10:19	12 19:5,7,22	170 71:14,18	2018 26:10,25 27:1, 7,12
Exhibit 1014 4:17 72:18,19, 25	10-minute 88:7	122 51:8	178 13:19,22 14:5 18:14	2025 5:10 9:6,8,9 118:4
Exhibit 1081 4:8 8:15,16 9:4	1001 10:8,10 11:5	12905 6:6	198 126:13	216 54:23
Exhibit 2018 4:19 26:10 27:7,12	1010 50:4,6,13	12:07 103:11,13	1:06 115:13,15	216-page 53:4
	1013 89:1,3,10,17	12:44 103:14,16	1:11 115:16,18	221 69:11,12,16 70:18
0	1014 72:18,19,25	13 19:5,7,22 73:15,22 90:25 91:13 93:7,13 94:2	1:41 132:18,19	22A 43:2
034 12:13,14,21 13:6,9,12,23 15:3	1081 8:15,16 9:4	138 125:15	1:46 132:20,22 133:16	22B 43:2
1	10:16 49:20,21	14 19:5	1A 77:13 79:3	22nd 5:10
	10:29 49:22,24	14/556,062 11:22	1B 73:7,9 77:13 79:3	237 130:25
1 20:13,14,20, 21 21:2,11 22:6 29:1 32:25 33:23, 24 34:15 35:3 44:7,11 76:23 77:5,11,20 104:8,24 105:17 116:3, 15 126:23	10X 53:10,25 54:14	140 125:18,19	2	23B 43:2
	11 19:5,7,22 43:2	15 19:5 74:15,23 75:10,20 78:5, 6 84:3	200 73:5	24 66:14 71:21 72:1 104:10 113:5,18 114:7 115:1
	111 104:2	152 51:7,8 52:7 53:16 54:17	2010/0219989 72:24	24th 9:8,9
	11:34 88:19,20		2012/0218184 89:18	
	11:42		2013	

25 43:2	49 16:9	70:22	24 35:21 40:19 41:2 45:16 87:20	130:13
28 11:22	5	62 35:11,20,23	87 102:13	able 52:25 60:5 68:21 71:11 75:19 76:12, 17 77:22 80:10 83:13 91:2,12
2A 79:3	5 52:15,20 53:25	64 35:24 71:22 72:4	9	
2nd 9:6	50 16:9,12,20 19:9 20:1 70:22	65 115:22	9,582,034 11:23	absorb 95:25
3	51 16:9 17:5,11	6A 74:14 115:24	953 10:23 11:2 14:23 15:23 16:1,7,12,14 17:15,17,22 18:2,13 19:3 22:5 26:19 27:15,20,23 43:15,18,19 87:20 90:9 103:3,23 104:8,24 105:17,20 114:1,14,20 117:12 119:21 121:10,14 122:10,16,18, 21,23 123:1 124:2,10,24 125:9,12 126:2 127:12 130:7	abstract 36:13,16 40:17 41:4 42:25 89:21
3 120:13	52A 16:9 17:20,23	7		acceleration 17:11
30 88:11	52B 16:9	702 13:19,22 14:5 18:14		accelerometer 17:12,25 69:20 76:5
38 43:2 126:24 128:20	53 20:1	76 94:1 95:6 96:19		accelerometer s 70:15
3A 77:3,11,15,20 78:1 79:3 85:24	53A 16:9 19:9	77 96:19		accelerometry 19:17
3B 77:3,11,15,20 78:1 79:3	53B 16:10,20	8		accessory 28:14
3D 121:4	53C 16:10	8 26:1 28:4 32:4,19,24 34:24 42:12 44:8		accommodate 60:24 62:13
4	53D 16:10	853 28:5,9	9:01 5:11	according 50:23 59:13 78:9 116:2
4 43:1 90:20	55 26:1 28:4,9	859 11:7,11,15,21 13:9 14:4 20:20,21 21:2 22:6,17 26:17 27:14 28:10, 17,19,21 29:19 30:10, 22 31:4 34:3,	A	accrue 96:25 97:14 98:8
40 90:9 91:7	57 30:21 32:3		a.m. 5:11 49:21,22 88:20,21	accurate 8:3 9:18 41:9 116:14
43 90:9 91:7	58 104:3		ability	accurately
45 88:12	6			
	60			

59:15	addition 28:21,23	94:11,13,17	ample 37:2 38:7,24	58:15 80:13
achievable 59:25	additional 10:7 18:1,13	95:9,21 96:9, 24 99:22	39:13 40:7	83:24 85:12
achieve 55:12,14	43:22	104:17 107:4	41:6 46:24	91:25 100:3
86:12 91:23	adjustable 62:12 63:4,16	113:4 117:18	47:3 48:24	124:9
92:20	adjusted 64:22	124:1,23	49:12	answers 9:11,18,22
achieved 60:15 66:7	adjusting 65:23	125:9 131:8	analogous 59:1	10:3
acrylic 94:7 96:11	admit 129:23	agreed 46:1 68:25	analogy 40:21 109:23	antenna 122:3
act 102:10	admitting 132:8	ahead 16:6 51:7	analysis 11:1 18:18,19,	Anthony 104:10
acting 101:12	advance 14:8,17	71:14 75:6	21,23 36:8	anyone 6:23
activity 50:24	advanced 81:2 82:2	83:17 84:21	75:22,25 76:8	anything 7:18,19 48:6
actual 46:9 81:12,13, 20	advantages 98:23	99:1 115:21	81:10 82:9	55:14 70:3
actually 43:13 67:4	adversely 56:16	Alex 50:14	90:10 91:6,17,	74:8,10 87:9
75:6 77:13	after 16:8 36:23	algorithmically 17:7	25 92:2,3,10,	120:16 132:13
80:10,19	agree 21:11 24:2	allow 56:25 118:16	11,18,22 93:3,	133:4,20
81:17,21	28:17 30:8	allowed 46:2	5,12,15,25	apologies 26:24
83:17,20 85:9	34:3 39:3,16	allows 60:11	125:6	apology 89:8
86:18 87:10,	40:16 43:12	alternative 71:21 72:3	analyze 75:21	appear 19:14 21:11,
24 92:8 99:8	51:14 52:21	alternatives 59:5	analyzed 18:8	15 39:9 48:20
106:24 125:18	53:13 54:22	amended 33:12	anatomy 58:21	70:23 77:12
add 43:18,22 83:2 133:4	55:5,23 59:4, 20 60:17	amending 37:9	and/or 69:20 86:7	90:13
added 15:24 16:12	63:24 66:21	amendments 34:10	Angeles 5:13	appearing 23:11
29:2,11	67:16 69:5	amount 38:7,25 39:13	annular 79:4,6,17,18	appears 13:12 47:15
133:25	74:4,22 75:9	52:23 54:12	80:1,4 81:23	131:16 132:3
Adding 83:11	78:4,13 89:24		82:21 83:1,5	appendage 58:10 59:7,22,
	90:3,11 91:11		85:2,11 87:17	24 63:10
			answer 9:25 14:10	applicable 45:15 68:23
			21:7 29:16	69:1
			30:13 46:14	

applicant 28:24 37:8,11 39:16 43:12 46:16,19 47:7	argument 36:9 39:19,22 45:25 46:16, 17	arts 59:18 81:15	aspirations 77:25	16:11 18:13 58:12 86:9 87:19,22 126:11
applicants 34:4,21	arrange 123:4	Asami 72:18,23 73:1, 2 74:8,11,21 75:1,7,8,14, 16,20,23 76:2, 12,14 77:7,25 78:3,8,15,21 79:2,5,15,17, 20,21,24 84:3, 4,13,25 85:5, 24 87:5,9 89:25 116:2,8, 14,19,21,23, 24 117:3,10 118:7,17 119:1,13,16, 19,21,24 120:7,11 121:1,2,20 122:2,15 123:7,11,14, 17	assembly 51:9 110:4 112:14	B
application 11:16,21 12:2 14:24,25 15:1, 16,23 16:3,13 30:24 45:20 75:14 79:15 80:14 83:11 95:11,23 96:14 100:9	arranged 127:7,13 131:22		asserted 76:25	back 13:5,25 15:2 17:4 33:14 37:6 49:23 88:22 103:2, 15,19 115:17 124:20 132:21
applications 15:2,25 60:15 123:11	arrangement 75:3 76:3 116:10 124:14		assistant 133:12	
applied 58:8	art 18:20,21 22:19 23:6,13 29:3,9 30:6 33:8,10 37:1, 10,11,17 39:7 42:5 44:21,25 45:5,13,19 52:22,25 53:7, 20 57:25 58:12,18,24 61:21 67:23 68:16 75:19 76:24 77:22, 23 79:22 80:3, 9 81:12 83:17 84:7,15,17,21 85:4,15,16,21 86:9,14,25 87:13,15 90:16 91:2,11 92:3 93:8,22 95:16 99:23 101:4 117:15, 19,22 118:12, 23 119:3,24 121:15 123:19 124:18 126:7, 9,11 130:12, 16		assume 38:13 117:14, 16	
apply 30:25 31:12			attach 109:6	band 63:16,17 71:6 79:18 81:23 120:1,8,11,12, 15
appreciated 44:16		Asami's 77:3 79:7 84:8 115:23 117:21	attached 110:25	band-like 116:21
approach 57:2,5,11 100:15		ask 9:21	attempts 84:15	base 82:13
appropriately 59:23 60:4 61:2,11 63:25 64:2,15,20,22		asked 9:10	attention 25:25	based 17:6 47:3 61:18 84:14 89:24 104:9 117:9
approximate 90:19		asking 37:5 64:6 98:5 101:2 114:24 128:4	attorney 5:18	basically 42:12 63:21 83:15 101:22 106:18 132:8
archive 133:10		aspect 59:2	attorneys 5:17	basis 20:10 22:24 37:12 45:24 81:25 82:2 86:20 119:8
area 38:22 79:13		aspirational 77:15 79:20 116:20	August 5:10	batteries 124:14,25 125:13
argued 36:3 45:18			author 33:4	
			authors 12:7 33:12	
			availability 92:19,23	
			average 91:21	
			aware 10:2 13:8 14:3,13 15:23	

battery 74:10 75:11, 12,15,16,19 76:10,18 78:7, 10,15 80:5,11 82:14,16,20 83:2 84:6,14, 18 90:5,12,13, 15,19,20 91:3, 13 120:22 122:18 123:3 131:2,4,9,20 132:1,2,7,8,10	97:13 98:6,8, 10 99:10 100:13 Benjamin 5:19 bent 126:20 127:19 128:1,12,17 129:5 131:4, 20 132:1 besides 45:7 best 7:19 8:3 9:20, 25 38:15 77:22 80:9 122:20 better 65:5,6,12 105:9 133:12 between 13:9 14:4 18:18 59:18 73:13 100:8 101:18 123:22 big 45:19,21 68:3 123:23 bit 19:21 36:23 53:8 64:24 75:25 82:11 83:23 88:14 101:3 106:9 blueprint 121:3 blueprints 121:3,12 124:11	board 98:21 99:16 126:17,20,23, 25 127:7,9,11, 12,18,24,25 128:1,9,11,15, 21,23,24 129:4,12,15, 22 130:6 boards 98:18 125:1 body 31:1,7 32:5 42:13 45:7 53:14,18 54:5, 19 57:24 73:17 74:1 boil 78:13 both 10:7 27:11 28:2 60:15 101:4,7,25 126:4 Bowl 76:23 79:4 Bowl-sized 84:19 Bowl-style 77:24 78:21 84:19 117:8 118:14,24 119:23 box 8:14 10:13 26:10 bracelet 28:12 bracelets	29:4 break 44:16,19 49:15 88:5,7, 8,10,11,13,14 bring 35:13 72:16 broad 36:23 42:11 broader 24:9,15 brought 37:17 105:22, 25 Brown 5:23,24 build 80:10,16 81:17 83:17, 22 92:8 101:9, 15 118:16 123:14 building 68:6 76:22 77:19 85:19 92:12 93:1 100:22 121:21,22 builds 112:17 built 79:15 81:21 82:4 98:17 bulky 67:20,23 68:3 bunch 85:10 burden	75:6 76:11 84:20 buy 62:19,21,25 66:2 buying 66:1 C California 5:14 6:4,20 call 96:16 100:19 101:6,7,16 102:6 131:19, 21 called 97:20 101:19, 24 110:14,15 calls 98:6 camera 24:23 can 6:10,15 7:16, 20 9:1,2 10:19 11:16 12:10, 20 15:17,20 19:4,6 20:13 24:17,22 25:8 26:10,16,19, 22 27:18,22 28:11 30:15, 24 35:13 36:15 41:18 42:24,25 43:1 44:19 45:22 50:3 53:15 55:23 56:20
---	---	---	--	--

59:10 60:18, 23 61:1 63:1, 14 68:5,9 69:23,24 70:3, 7,10,16 71:8, 24 72:11,17 73:11,14 74:9, 14 86:15 87:24 88:6,9, 10,14 89:9,21 90:21 94:18 95:10,22 98:14 100:4,6 101:9,15 102:22 103:25 107:13 115:8, 21 119:5,22 120:20 122:8 126:2 133:5	case 5:7 8:6 11:2, 13 33:9 40:6 46:23 47:3,20 50:20 63:7 65:4,17 68:6 73:3 75:22 78:19 90:6 93:12 96:15 98:22 129:3,4 133:12	challenging 76:8 86:19	125:1 126:17, 20,23,25 127:7,9,11,12, 18,24,25 128:1,9,11,15, 21,23 129:4, 12,15,22 130:6	54:7 56:1 58:1,13 59:8 64:4,18 65:16 68:18 78:11 79:9 80:7 81:8 82:6 84:10 85:6 86:6 87:3 88:3 90:17 91:4,15 92:5, 15 93:10 95:12 97:3,24 98:11 100:2 102:1 103:6 106:16 108:22 109:22 110:21 111:10,25 112:11,24 113:21 114:10 116:17 117:24 119:10 120:9 121:9 123:9 124:5 125:3 128:13 129:7 130:20 131:12 132:14,24 133:20,24
can't 8:2 12:15 13:11,13 14:18 34:8,9 38:20 45:3 62:8 108:5 109:5,6,7 129:24	case-to-case 33:4	changes 33:16 73:16	circuits 80:15	
cannot 126:20	cases 12:17 56:11 86:13	chat 8:14 10:13 26:10 72:17 89:2,7	circular 105:11	
capability 83:4	cavity 85:23 87:17 129:19	check 38:23 95:8	circumferential 60:19 62:3,20 63:2,9,15 64:14 65:13	
capable 58:24 84:8 93:16 130:18	center 14:24	chest 53:22	circumstan- 65:13	
captioned 9:5	central 21:20	chip 82:17,18,24 87:12 121:25 122:2,4	citation 39:9	
careful 64:24 132:4	certain 18:9 76:14 96:24 97:4 98:6 106:13	choice 132:4	cite 36:7 39:4	
carefully 54:10	certainly 20:4 33:20 78:18 83:12 117:1 124:10 130:1,18	chooses 62:17 63:23	citing 33:10	
	Certified 6:4	choosing 65:24	Ciulla 5:22 12:25 14:15 16:23 18:5,16 20:2 21:13 22:8,25 24:5,19 25:12 26:12 29:22 30:12 31:8 32:7 33:1 34:7 35:1 38:18 39:20 40:20 41:15 42:23 43:16 44:9,14 45:10 47:12 48:3,16 49:8 51:17 53:2	claim 19:4 20:13,14, 20,21 21:2,10, 11,15,23 22:6, 7,14,18,21,23 23:1 29:1,11 32:14,16,25 33:23,24 34:15 35:3 36:22,24 37:21 43:8,13, 19 44:7,11 104:8,24 105:17 106:24 107:3,8,14 108:25 110:5 111:24 114:1,
	cetera 46:15 92:23 96:11	circuit 98:18,21 99:16,19		
	challenged 90:2			

14,23 125:21 126:15,16,23, 24 127:23,25 128:7,8,10,19, 20 129:15,25 130:1	clearly 25:4 38:2 39:18 43:3 45:15 47:18 87:23 106:7 108:2	118:1	123:2,25 124:2,3,13,20, 25 125:11	conformal 59:16 85:23 94:2,6,12,13, 20 95:1,9,15, 22,24 96:10, 17,21 97:1,12, 21 98:7 99:17, 24,25 100:6, 19 101:5,8,10, 20,22 102:6,8 117:5 118:13 122:9 123:15
claimed 29:3 35:4	coat 98:21	comments 81:18	composed 110:1	connect 60:13
claims 12:9 14:6 19:2,5,7,11, 15,16,22,23 20:5,8,11 21:15 22:4 23:9,19 30:4, 17,18 31:18, 19,21 32:12 33:5,6,7,10,12 34:5,11,23 36:3 37:9 42:3,7,17,18 43:14,24 46:2 81:4 90:8,9,10 91:7,8 105:4, 6,19 106:2,5 119:16 120:15,16	coated 97:12	common 24:24 31:15 129:24 130:6, 15	comprehensive 20:10	connecting 60:11
	coating 94:21,22,24 95:9,14,15,17, 22,24 96:3,17 97:1,12,21 98:1,2,7,8,24 99:6,10,14,17, 24,25 100:6, 12,19,22 101:5,8,10,20, 22 102:5,6,8	commonly 94:6,12	comprises 113:19	connection 9:17 11:1,12 27:11 50:20 73:2 75:22
		commonplace 85:10	comprising 110:25	consider 53:7 83:10
		comparative 18:18	computing 17:8 20:15,23 23:2,4 25:20, 21 26:2 28:7, 20 30:15 41:18	considerations 92:24
		compatibilities 31:14	complex 121:17	considered 18:4 25:11 30:25 52:17 77:19 129:8
	coatings 94:6,12,14,18 95:1 96:10,21	completely 21:7	conceptual 81:14	considering 24:11
	coding 91:7 94:2	complexity 76:6	concern 57:6,8,12,14 68:15	constant 52:4 60:2,3,4
clarification 57:9 103:9 120:5	colleague 5:21	component 22:21 97:11, 14 99:13 102:7 112:3, 18,20,23 113:2,16 123:24	concerns 64:10	constraints 68:12,14 69:3 78:23 86:11
clarifies 83:24	column 11:17 26:1 28:4 32:4,19, 24 34:24 42:12 44:8	components 63:1 66:16 73:25 78:23 79:7 85:10 87:16 91:20, 22 96:1 97:19 98:18 100:10 102:3 111:13 114:9 117:16 118:4 119:2, 13 122:24	conclusion 23:12 127:6	construct 110:7
clasping 60:10	combine 118:17		configuration 127:8	constructed 23:4 126:12
clear 25:14 37:3 40:25 42:6 43:10 67:5 108:14 109:2 119:15	comfortable 55:16 61:3 63:22		configurations 28:23 42:14 60:24	
	comfortably		configured 20:16 43:20 129:6	
			confines 123:18	

consumption 91:19	cooperate 66:14	24:9,16 25:13, 17 32:4,20 33:19 40:18 42:13,21 49:7 51:24 52:3 53:17,21 54:3 56:15,21 58:4 62:13 64:6 69:7,8 71:22 72:4 75:13,25 76:18 77:1 78:13,16 85:21 92:7 93:21 94:19 96:11,13 99:25 100:17, 23 101:3 104:2 107:12, 22 109:25 110:18,24 111:7,18,21, 22 126:6 127:5,7 128:5 129:16,17,21 130:22 131:9	couple 44:17 108:5, 16 109:5,7 111:15 116:18	cross-sectional 66:17,23 67:2, 14,18 68:17
containing 97:18	copies 21:5 26:13 28:2		coupled 105:5,14,18, 23 106:7,13, 21 107:15,19 108:3 109:3,4, 18 110:3,8 111:14,22 112:2,4,9,10, 14 113:25 114:20	CSR 6:6
contaminants 94:23 95:25	copy 133:19			current 73:15,20,22, 23 83:7
content 15:14 20:6	correct 7:4,5 8:11 9:9, 15 12:14,20 13:20,21 18:4 19:10 21:12 22:9 28:7,8,18 29:21 30:11 31:7 36:10 37:13 38:16 39:7,19 41:14 45:9 46:11 48:7 50:21 51:16 54:5 55:25 57:14 60:19 61:3,12 62:5,22 63:2, 9,10 64:3,17 65:15 67:25 70:18 72:12, 15 73:23 74:3 77:5,9 78:10 80:1,18 90:16 92:14,25 93:9 97:23 104:19 106:4 107:2,6 114:9 126:4			curvature 127:10
contents 13:12			court 6:1 133:3	curve 123:3 127:13 128:18 131:22 132:1
context 23:21,23,25 24:7,8,10,25 25:3,10,15,16, 22 41:22 43:17 49:11 58:25 97:5 98:2 108:13 109:24 131:21 132:3			cover 11:15 14:23 51:3 89:22 94:15	curved 126:16,19,21, 24 127:8,17, 19,20,25 128:2,12,21, 24 129:5,12, 18,22 130:5, 17,18 131:2, 19,20,22 132:2,5,10
contexts 24:22	contexts 24:22		covered 97:19	
continuation-in-part 14:25 15:7,10, 16,22 16:13		couldn't 16:17 18:9 85:5 111:9,24 129:2 130:11	covering 97:20	
continue 15:1 26:7,16 103:22		counsel 6:10 7:1,3 12:20 44:14 103:6	cram 83:4	
continued 15:18		Counselor 12:25 26:24 27:6,23 88:3 89:8,13 115:12	create 100:15,17 106:12	D
Continuing 30:21	correctly 48:5 66:4 78:12		created 104:22 111:23	damage 97:8,14,22 98:25
contrast 61:5 62:10 112:16	cost 133:25	Counselors 49:19 88:18 132:17 133:7, 14,15	creating 113:16	data 11:16 14:24 17:5,6,9,12, 13,14,16 19:9, 17,19,23,24
control 17:4	could 8:13 10:12 19:18 23:24		criteria 58:22	date 5:10 76:25 77:18 78:18, 19 79:13,15
			critical 66:1 76:15	
			cross-section 67:5,25	

82:5 118:11 119:21 deal 122:11 123:5 decided 37:20 deciding 130:3 decisions 17:6 58:24 declaration 13:7 26:6,18, 19,25 27:13, 15 35:10,20 38:14,21 39:5, 9 47:25 48:12, 21 103:2,23 104:3 115:22 125:16 131:1 declarations 15:13 21:6 27:10 28:3 decrease 62:3,9 decreasing 64:14 deep 21:4 defined 125:22 definition 47:6 48:1,13 49:6 109:8 118:2 demands 95:23 demonstration 87:1	demonstration s 81:12 86:21 departing 51:11 depend 96:13 dependent 33:4 127:25 128:8,10 depending 31:10 62:17 73:16 depends 24:6 58:25 80:14 84:11 97:5,25 102:2 109:24 depict 70:23 106:7 depicted 68:9 77:11,12 78:1 85:23 depicting 93:13 depicts 93:14 deposition 5:5,9,13,15 6:5,6,21 7:8 8:5,21 9:5,24 12:22 14:9,17 15:14 16:2 18:7 depositions 9:18 13:18 der 79:25 81:16 82:13,16,20,	23 84:25 85:5 87:6,10,11 119:1 121:24, 25 123:7,11, 13,15 der's 122:4 describe 22:13 28:19 33:18 39:6 41:10 44:6 51:22 53:17 56:3 61:4,16 65:5 69:16 83:20 84:4 85:1,3 87:7 96:2,12 105:4, 6,15,17,19,21 113:8,13 116:19 121:3, 5 122:22 125:10,13 126:24 131:3 described 19:9 21:22 29:19 30:10 34:24 36:12, 21 39:17 40:18 45:16 52:2,8 61:8 70:11,15,17 74:11,12 83:18 91:3 92:11,13 93:6, 20 94:2 95:4,7 96:10,19 97:1 98:23 102:13 114:6,20 117:12 127:11 describes 23:2,3 26:2 28:18 29:9	36:14 41:3 50:23 53:13, 20,21 60:17 61:9 64:11 65:9 69:19 82:20,24 87:11 90:4,18, 19 94:5 99:9 100:13 104:18 108:20 119:13 122:24 123:1 124:2 126:23 128:20 describing 29:8 38:25 40:8 62:24 72:9 83:7 93:16 104:14 110:5 131:1 description 31:11 41:12 42:11 106:10 descriptive 108:24 121:12 design 58:20,24 59:5, 10 60:21 63:21 68:4,12, 21 77:8 78:25 79:4,6 92:17, 24 117:5 124:12,13 129:22 designed 45:17 55:6,24 78:20 127:9 128:23 designer 55:11,13 58:16 67:1 68:1	designers 68:2 designing 58:17 92:12 99:23 130:18 desirable 59:13 60:14 desired 55:8 despite 24:2 32:23 detail 23:3 43:19,22 47:14 55:4 77:14 82:9 83:20 95:8 123:5,6 124:21 detailed 87:25 88:1 121:3 details 31:16 91:24 110:6 118:6 detect 70:10,16 determine 92:22 102:5 developing 109:12 device 17:8,25 20:15, 24 23:2,4 25:21 26:3 28:7 29:1 30:15 35:5 36:4 38:8 39:1,14 41:18 42:2,7 43:4
--	--	--	--	--

44:2,13 45:16, 22 46:25 49:13 51:4,9, 14 52:13,15, 16,22 53:14, 25 54:4,18,25 55:5,9,25 56:4,11,12,21, 23 57:2,3,6, 13,16,19,23 58:9,17,20 59:6,14,21,22 60:1,7,11,18 61:2,10 62:1, 2,6,10,25 63:2,8,22,24 64:11,14,15, 16,20 65:7,18 66:8,16,22,25 67:13,17,23, 24 68:5,7,8, 17,22 69:2,6, 18 70:24 71:3 72:14 75:24 76:4,20,22,24 77:5,11,12 78:16 80:4,10 81:17,20 83:9, 12,22 85:19 93:6,17,20 94:25 97:18 99:3,6,7,11 101:23 102:4, 20 112:15 113:14 115:4 116:23 121:18,21,22 126:4 130:19 131:3	45:2,8,21 46:7,9,11 48:25 53:21 57:17 58:19 59:1 60:10 61:6 62:16 67:8 68:24 80:1 82:12 85:2 99:23 100:1 129:21 130:13,17,18 diameter 60:2 105:12, 13 didn't 13:12 14:8,16 18:7,18,23 28:25 33:14 38:4 39:22 45:1 47:1 48:23 75:21 83:10 86:9 91:5 125:5 129:9 Diego 6:20 difference 100:8 101:18 123:22 differences 13:8 14:3,13 different 9:25 12:9,11 15:19,20 17:13 23:25 24:21 25:18 42:14 45:20 51:19 56:17 57:1,5,11,12, 20,22 58:8,11, 21,22 59:5,10,	17,18 60:16, 20,22,24 61:24 62:10, 14 63:12,14, 16,18,20 66:7 68:12,14 69:2 77:8 85:13 87:7 91:20 96:17 99:18, 20 100:14,15, 21 101:3 106:20 110:12 112:22,25 114:21 123:11,12 127:2,3,5 128:22 129:3, 5 132:6,9 different-sized 60:20 62:13 differently 10:3 129:6 dimension 66:18,23 67:3, 14,18 68:17 direct 25:25 53:15 80:13 directed 19:8 28:4 38:8 89:20 directing 7:17 directions 59:10 directly 127:9 disagree 54:2 91:11 112:1	disclaimer 47:6,9 48:1,14 49:6 disclose 130:9 disclosed 30:14 90:13 130:7 discloses 34:3 disclosure 12:10 33:21 36:19 54:23 79:7 117:21 disclosures 18:13 21:21 38:1 discuss 26:7 39:5 92:2 117:6 discussed 12:22 17:22 18:12 38:9 44:8,22 45:1 79:16 120:3 discussing 18:20 23:11 83:19 discussion 22:12 74:20 123:16,17 discussions 17:18 131:18 display 70:24 71:1 distinct 107:18 108:9 110:8 111:13 112:4,13,15	113:24 distinctions 37:10 distinguish 29:3 39:7 42:4 45:6,8 distinguished 37:11 distinguishme nt 45:4 divided 15:18 divisional 11:21 12:1 divisionals 13:23 do 7:6,19 8:1,5,8 9:7,25 11:18, 19,24,25 12:1 13:21,24 15:4, 5 16:20 18:18, 23 19:14 20:18,19,25 21:1 26:4,5,12 28:15,16 31:2, 3 36:5,6 43:20 51:1,5,6,12, 13,20 52:25 54:11,12,20, 21 56:10 61:6 66:1,19,20 67:1 69:21,22, 24 72:7 73:8, 10 75:8,25 77:2,21,23,25 80:25 81:1 83:20 84:22 85:4 86:8,17,
--	---	--	---	---

18,22,25 87:24 88:2 91:6,10,18,25 92:12,17,25 93:2 94:3,4,9 95:21 96:22, 23 97:9,10 99:15,20 102:15,16 105:21 111:24 115:25 116:1, 12,13 117:23 118:7,8,10,13 119:4,8,22,25 120:14 121:10,13,16 122:12 123:5 125:5,25 126:1 130:11, 13 131:6,7 132:14 133:3, 5,8,9,12	98:24 102:11, 17 104:8 105:15,16,17 106:7 111:20 113:8 116:19 117:1 121:10, 24 123:15 124:10,16,19 133:7 doesn't 19:15 21:2,11 24:3 38:24 39:9,11 40:17 41:10 43:22 47:16 48:5 52:7,10 53:5 55:7 57:23 59:6,22,24 61:10,16 62:22 68:22 74:8 75:1,2,14 77:7 79:3 84:4 87:9 100:18 109:6 111:2,6 116:22,24 118:8 120:4, 13 125:10,12 130:11 doing 74:9 76:1 84:15 100:13 131:15 don't 7:9,10 13:1 16:2,3,4,15,16 18:8,24 26:25 27:20 33:16 37:14 38:23, 24 39:6,11 40:2 42:18 47:22,25 48:13,20	49:10,14 52:18 53:5,24 54:2 55:9,13 57:17 58:9 61:6 68:1 85:3,7 86:17 88:13 91:16 92:6,8 95:5,6 103:6 105:19 108:8 119:5,8, 16 120:15,16 121:3 122:22 123:14 130:8 131:14 132:11,25 133:20,25 done 54:4 76:8 81:9 82:9 85:21 86:19 87:13 92:4 93:14,25 98:13,19 118:24,25 130:22 131:10 doorbell 24:23 double-check 38:5 download 9:1 downloaded 26:16 downloading 26:14 drawings 75:16 79:20 81:14 116:20 drive 68:15	driver 74:12,18 due 31:14 78:22 duly 6:8 E e-mail 27:2 ear 32:5,20 earlier 61:19 89:12 117:6 120:12 earring 28:12,18 29:20 30:11, 14 32:22,24 33:25 34:3,18, 23 35:6 40:18 41:13 42:15 44:7 45:2 earrings 45:6 easily 56:21 60:6 122:8 easy 23:12 65:20 effectively 29:7 44:1 46:6 74:12,18 112:17 effort 122:11 efforts 78:24	either 56:24 59:21 63:7 73:20 77:23 101:8,9, 15 102:5 117:4 126:3 129:9 133:7 electrodes 73:13,19,23 74:6,13,19,24 75:4 76:4 83:7 electronic 97:11,19 100:1 117:15 electronically 7:15 electronics 5:7 53:9 78:22 84:17 94:15 113:20 115:3 element 100:23 116:3, 15 127:23 elements 55:18 else 6:23 7:18,19 70:3 97:2 101:12 108:7, 9 110:17 132:13 elsewhere 95:7 embodiment 34:4,5,23 44:8 51:21 71:22 72:3 122:3 127:16 embodiments
--	---	--	---	---

21:22 22:12 29:9 33:13 36:20 37:18 51:19 68:10 122:1 127:14	enclosure 71:2,4,9,11 95:20 96:3,6, 7,16 97:2 99:5,7 100:1, 5,22 101:5,8, 12 102:10 104:25 105:1, 7,8,10,13 106:25 107:1, 11,16,17,19, 21,23 108:3,4, 6,8,10,14,15 110:7,8,14,15, 17,19,20,24 111:3,7,19 125:23,24 126:10	ensure 54:24 58:8 59:21 61:9,22 62:4 63:19 91:18	everything 38:21 85:17	exclude 34:5,23 35:5 44:7
emitted 72:11		ensuring 57:23 61:16	everywhere 40:23 41:2,10	exclusively 28:22 128:16
emphasize 94:20		entire 30:16 41:24 47:23 99:11 109:25	evidence 21:24 23:10 24:11 25:5,23 29:6 37:2,24 38:7,25 39:13 40:7 41:6 43:10 44:1 46:5,25 47:3, 14,17 48:24 49:12 52:12 85:9 86:3 119:11	exemplary 51:20
enable 79:6 118:15		entirety 33:20		exhibit 8:15,16 9:4 10:8,10 11:5 26:10 27:7,12 50:4,6,13 72:18,19,25 89:1,3,10,17
enabled 78:2,8 79:21 80:3,24 81:7 82:2 119:7		environment 102:21,22		exhibit's 89:13
enablement 82:10		environmental 94:23 95:24	exact 12:16 13:11 16:16 81:10 121:11 125:6	exhibits 7:14 10:18 26:13
encapsulated 99:4	enclosures 96:12	envision 77:16		exist 19:13
encapsulates 101:23	encourage 68:2	envisioned 83:13	exactly 14:18 48:9 74:17 112:5	existence 124:24
encapsulating 102:5	end 16:7,20 19:4 63:7 78:20 109:14,15,17	envisions 91:20	EXAMINATION 6:13	existing 62:9 131:10
encapsulation 102:14,17,19, 24	ended 84:17 130:2	epoxy 94:7 96:11 97:12,19 99:15,24 100:4,6,11,17 101:4,9,13,15	examiner 37:17	experience 79:12
encasement 66:14 71:21 104:9 113:4, 17,18 114:7 115:1	energy 74:10		examples 24:17 44:4 51:24 82:4	expert 12:5
encasing 95:18	engagement 25:17	especially 53:8	exception 29:8	explaining 37:10
enclose 111:21	engineer 92:16,25	essentially 81:5 119:3	excerpts 38:10,14,15 39:4	explains 28:10
encloses 111:19	engineering 78:24	et al 5:7	excess 18:14	explicitly 36:14 61:16
	enough 56:14 59:23 99:25	everybody 103:19	excessive 52:20	express 36:8 47:6,9,25 48:13 49:5

extent 9:24 52:14	130:6	118:17 121:6, 23 129:18	45:1 46:18,21 47:23,24 48:5, 11,20,21 49:6, 10	89:20 90:1,4, 12,15 91:2,12 92:13
exterior 105:1,7,10,13 106:25 107:11,19,23 108:1,3,4,10, 14,18,21 110:7,19 111:3,7,13,18, 19 112:3 114:12 125:24 126:4,8,9	factor 30:14 55:6 76:19 77:4 78:1 79:17 80:11 84:9 90:1 116:3,16, 25 121:6 125:2	feel 7:18 16:25 27:16 118:5	filed 11:22 87:21 92:4 131:11	finger-worn 21:19,25 22:13,15 23:14,22,25 24:13,18 25:5, 23 28:22 29:10,14 30:4, 19 31:22 32:17 33:22, 23 34:17 35:5 36:4,21 37:3, 25 38:2,8 39:1,14 41:7, 11,13 42:2,5,7 43:4,11 44:2, 13 46:7,25 48:25 49:13 52:16 57:2,19 58:9,17,20 59:14 61:25 62:2,6 68:13 69:2 76:4,7
exterior-facing 56:3	factors 29:5 30:6,9 33:19	fight 40:5	filing 40:22	
external 82:18 123:2 126:9	fair 7:22,23 12:18 13:2,17 14:14 39:8 53:3 61:13 68:20 73:18 75:21 80:6 86:3 93:23 103:1 111:5 114:4 115:5 123:8 127:22 128:7	fighting 40:3,12 41:1	find 49:12 53:24 76:11,18 127:4 131:2	
extra 31:16		figure 16:9,12 17:11, 20,23 43:1 73:7,9 74:14 79:3 85:24 90:20,25 91:13 92:19 93:7,13 115:24 120:13	fine 26:23 46:23 88:7	
extract 107:7		figured 121:16	finger 20:17 21:3,11, 14,23 22:6,21 23:11,17 24:4 29:21 30:23 31:6 32:4,20 36:9,14,15,17 37:12 38:4,22 39:6,10,17,18 40:8,14,15,17 41:3 42:12,13, 21 43:13,14, 21 44:5,6 45:17,23 47:2, 15,19 48:2,6, 14,21,22 49:10 54:1 55:7,10 56:22 57:16 59:16 60:2,5 62:5, 17,22 64:2,3 65:14,15,21, 22,25 68:24 73:16 75:3 77:5,9,20	
extremely 76:7	fall 55:10	figures 16:6,7,8,11, 20,21 17:10 19:9,13 20:1, 4,9 31:11 36:19 38:1 41:4 42:1 51:16,20 70:21,22 77:3, 11,13,15 105:20 106:3 120:12		fingers 45:7
extruding 122:4	familiar 12:23 15:6 130:12,17			fingertips 56:19
extrusion 123:18	feasible 93:3			fire 24:22 40:2,3, 4,12,22,24 41:1
F	feature 96:18 105:24			fires 40:3,5 41:1
fabricate 127:18	features 56:5,20 63:12 64:12,13 76:5 79:16 80:12, 16 81:4,19 83:1,2,8,14 84:12 85:22 86:15 87:7	file 22:3 32:1 35:9,11,22 36:8,11 37:5,8 38:10,11 39:4 42:19 44:22		first 5:13 10:17 36:20 41:16 71:22 72:4 97:7 123:10
fabricated 106:19 127:18 128:17 130:5				
fact 75:1 81:7 102:19 104:9				

fit 52:15 54:4,24 60:14 61:17, 22 62:4 63:19 64:22 65:6,12 66:6 83:13 117:3 129:18 130:19	29:15 90:9 91:6	111:10,25 112:11,24 113:21,25 114:10 115:6 116:3,16,17, 25 117:24 119:17 121:6, 9 123:9 124:5 125:2,3 128:13 129:7 130:20 131:12	function 101:5	geometries 69:3 77:15
focusing 29:18 32:1			functionalities 18:2,12 117:4	geometry 58:21 60:1 75:2 76:3 82:21 83:13 93:13 113:13 116:22 119:17,18 120:16 123:16,17
follow 7:20 27:18			functionality 17:16 52:13 53:7 56:16 68:7 78:17 93:14,16 120:20 121:17	
following 100:4			functions 17:7 59:13	gesture 17:16,18,21 18:1,12 69:24
form 14:15 16:23 18:5,16 20:2 21:13 22:8,25 24:5 28:11 29:5,22 30:6, 9,12,14 31:8, 10 32:7 33:1, 19 34:7 35:1 38:18 39:20 40:20 41:15 42:23 43:16 44:9 45:10 47:12 48:3,16 49:8 51:17 53:2 54:7 55:6 56:1 58:1,13 59:8 64:4,18 65:16 66:14 68:18 76:19 77:4 78:1,11 79:9,17 80:7, 11 81:8 82:6 84:9,10 85:6 86:6 87:3 90:1,17 91:4, 15 92:5,15 93:10 95:12 97:3,24 98:11 100:2 102:1 106:16 107:16,20 108:16,22 109:22 110:21	formation 106:14	formed 51:10 106:15	G	gestures 69:6,17 70:11, 17
flange 109:13,16			gaps 83:16	get 15:11,18 22:2 29:17 31:25 33:6 56:11 66:4 102:22 103:8 116:22
flat 126:20 127:24 128:9,17 129:4,15 131:4,8,20,25 132:7		forming 50:19 81:10	gave 40:12 52:23 101:19	getting 21:4 25:14 93:12 107:10
flexed 129:12		forms 28:20 74:1 113:20 114:8 115:2	Gen 76:23	give 8:2 9:22 24:17 25:8 35:16 89:9 98:12,14
flexible 62:11 63:17 126:23 127:7, 12,23 128:1,9, 11,15,22 129:3,16,17 131:19,21 132:5,8		Foundation 110:21	general 12:10 19:21 33:2 55:8 57:14 67:7 68:4,15,20 73:8,11,12 102:3 123:13	go 5:16 19:3 20:20 33:14 47:22 56:25 62:19 75:6 77:14 83:17 84:21 88:14 94:1 95:7 98:20 99:1 103:2,7 106:8 115:8 124:20
flip 16:25 104:2		frankly 80:22 121:2		
fly 75:25 81:11 82:11		free 16:25		
focus 15:13		friction 56:5 61:18	generally 16:21 17:1 25:20 38:19 40:4 44:22 57:6 62:23 67:8 73:17 95:1	
focused 18:19 22:3		friction-based 65:9	generate 73:14	
		friction-increasing 56:20 59:12	generated 73:13	
		front 26:13 103:24		
		full 6:15		

125:15,18 126:13 130:25 goes 28:21 32:10 83:3 85:25 100:14 going 5:3 7:13 12:25 14:22 44:14 49:19,23 53:14 71:14 83:12 88:4,8, 10,18,22 96:15 103:10, 15 108:24 109:13 113:11 115:12,17 121:22 125:15 126:13 132:17,21 133:15 good 5:5 6:3 44:15 49:16 60:14 61:22 63:19 64:22 66:6 68:4 88:5,16 91:25 95:20 124:6,9,16 graphical 70:23 great 23:3 83:20 122:11 123:5 ground 132:9 guard 98:17 99:4 guess 28:21 37:14	58:14 64:19 97:4 98:4 99:16 123:21 128:14 gyroscope 69:20 gyroscopes 70:16 H Haber 5:19 6:11,14 8:13,18 10:6, 12,16 13:2,3 14:20 16:24 18:10 19:1 20:12 22:1,16 23:15 24:14 25:1,24 26:9, 15,20,22 27:2, 5,9,21 28:1 30:7,20 31:24 32:18 34:1,19 35:7 39:2 40:10 41:8 42:8 43:5 44:3,17,20 46:8 47:21 48:8 49:1,14, 17 50:1,8 52:6 53:12 54:15 57:4,10 58:5 59:3,19 64:8 65:11 66:9 69:4 72:2,16, 20 79:1,23 80:20 81:24 84:1,23 86:2, 23 87:18 88:6, 13,17,25 89:4, 10,14,16	90:23 91:9 92:1,9,21 93:18 96:8 97:6 98:3 99:21 101:1 102:12 103:18,21 106:23 109:10 110:10 111:4, 17 112:7,19 113:3 114:3, 22 115:8,20 117:13 118:19 120:2,6,24 122:13 123:20 124:22 125:8 129:1 130:4, 24 131:24 132:11 133:2, 11 had 11:6 28:4 39:17 77:22, 23,25 79:15 80:19 86:19 87:13 121:16 126:9 131:4, 19 132:1 hadn't 124:7 halfway 11:16 hand 60:8,12 65:1, 20 76:21 handling 97:8,15,22 98:25 happen 59:11	happening 98:14 99:9 happens 65:19 106:11 hard 56:11 65:18 67:6 80:22 118:20 harvester 74:10 have 7:6,10 10:17, 19 12:8,24 13:25 14:2,7,9 16:3,9,16 18:8 19:4 20:13,21 22:20 25:17 26:11,13,15, 17 27:19,20, 25 28:2,25 33:7 35:20,22 36:11 37:14 38:5,23 39:18, 23 40:3,17 46:21 47:13, 22 48:7 50:9, 12 52:25 53:5, 19 54:9 55:3, 23 57:15 58:12 60:20, 23 62:11,15 65:20 66:22 67:1,4,11 69:10 72:21 73:8 75:15,19 76:9 79:24,25 81:18 82:3,14 84:8 85:11,20, 21 86:4,9,25 89:5,17 91:2, 12 92:3 93:19, 21,24 95:7	98:16,18 100:17 101:11 103:3,24 107:5,12,13, 24 109:8 110:24 111:18 116:6 117:7,9, 11,19,21,22 118:3,24,25 119:4 123:15 124:20 125:4, 5,7 127:3,10 129:18,25 130:22 131:10 132:11,13,25 133:4 haven't 76:8 81:9,12 82:9 93:14,25 129:8 head 12:15 13:16 16:5,15 45:3 49:9 70:7 heavy 76:11 held 5:9 help 20:5,7,9 21:6 39:22 64:7 65:14 98:25 helpful 49:11 69:8 73:6 hermetic 102:14,17,18, 19,24 high 84:20
--	---	--	---	--

highlighted 66:12	124:13	91:2,12 92:25 117:8	22 55:19 56:4, 5 78:5,15 79:3 81:19 84:3 117:21	105:9 118:4 129:19 130:19 131:3
history 16:3,16 21:17 22:3,10 23:8 28:24 29:2,10, 17 31:21 32:1, 14 33:21 34:12,16,22 35:4,9,12,22 36:1,8,11 37:6,8,15,19 38:5,10,11,20 39:4,10 41:25 42:4,19 44:12, 22 45:1,12 46:18,22 47:23,24 48:5, 11,20,22 49:6, 11	human 31:1,7 32:5 36:15 hurts 43:18,21 hypothesize 34:8 hypothetical 106:18 hypothetically 118:10 I	implementatio n 57:12,21 82:13 110:6 116:23 implemented 93:21 implementing 57:22 84:8 90:15 92:13 93:6 imply 100:12 implying 96:17 106:18 important 59:15 66:4,6 86:18 95:14 imported 44:7 importing 94:24 imprecise 67:11 improper 45:21 improve 56:7 63:12 95:25 improving 54:17 include 29:11 32:5,20 34:18 38:10, 14 45:1 47:24, 25 48:13,21,	included 52:13 80:11 87:7 89:11 includes 29:20 68:8 78:9 90:5,12 including 17:13 33:24 41:3 42:15 84:13 104:11 incomplete 119:6 increase 62:3,8 increasing 55:14 64:13 indeed 31:21 33:23 95:16 indiscernible 120:3 inform 20:7 information 15:24 117:20 injection 104:16,23 114:18 inside 23:5 68:8,10 71:11 73:25 75:16 80:5 85:23 91:13, 22 98:20 99:4, 11 102:20,23	inside-facing 113:1 inspiration 58:19 Instead 18:19 instructions 125:1 instructive 20:4 instrumented 98:17 insulators 106:8 integrate 116:25 117:11 120:22 integrated 116:3,10,15 integration 122:15 intend 103:7 intended 34:10 intending 30:1 98:20 intent 34:20 100:9 128:19 intention 51:22 intentional 121:15
hold 8:24 27:3 35:15	identification 8:17 10:11 27:8 50:7 72:19 89:3	implied 44:7	incomplete 119:6	integrated 116:3,10,15
hose 40:2,3,4,12, 22,24,25 41:1	identified 38:2 43:3 104:10 116:15	improper 45:21	information 15:24 117:20	intending 30:1 98:20
hour 44:15 88:4	identify 5:17	improve 56:7 63:12 95:25	injection 104:16,23 114:18	intent 34:20 100:9 128:19
house 66:15	image 70:1	improving 54:17	inside 23:5 68:8,10 71:11 73:25 75:16 80:5 85:23 91:13, 22 98:20 99:4, 11 102:20,23	intention 51:22
housing 96:16 99:12 100:5,16,18, 22 101:14,20, 23 102:7,10 107:16,20 108:17 112:17,20 113:17,20,22 114:1,8,18 115:3,6 123:2	immediate 32:21 impact 56:16 implement 57:18 75:6,9 76:12,17 87:2	include 29:11 32:5,20 34:18 38:10, 14 45:1 47:24, 25 48:13,21,	intentional 121:15	

interconnect 129:21 130:13,17	invention 21:20 22:13 29:3 38:25 39:13 41:22 43:1 51:11 52:2 117:7 118:11	joined 112:8	85:4 89:5 91:16 92:6,8 94:14 95:6 99:12 103:4,6, 24 108:8 113:10,23 116:21 117:15 118:23 120:23 121:25 129:12,18 130:2 131:15 133:25	large 45:13 65:21 67:20,23 84:13 124:3
interested 76:22		June 9:6,8,9		
interface 60:11		K		larger 60:8,18,23 77:24
interior 55:21,24 104:25 105:7, 8 107:1,15,17, 21 108:1,6,8, 15,18,20 110:8,24 111:12,21 112:2 114:12 125:23 126:3, 8,10	inventor 30:1 131:4,14	key 32:12 46:3 109:4	knowledge 77:22 80:9,18 84:14,16 85:8, 15 117:10 120:18	last 10:4 12:22 53:15 54:16
interior-facing 56:5	inventor's 131:2	kind 12:5 18:14 25:8 34:20 41:20 45:20 57:1,21 58:7 68:15 72:11, 13 76:10 77:24 82:3,10 86:10,14 95:18 104:14 112:4		later 79:14
internal 66:15 105:12 114:9 123:2, 23 125:11	inventors 30:1 34:9 43:8 83:9 129:25 132:4		known 86:4,25 90:1 117:19,22 119:4	law 127:1
interpret 32:11 33:23 129:9	IPR 10:9 32:12	knew 118:10	knows 133:12	leads 15:2 34:22
interpretation 33:14 52:1,5 108:2,11 129:14 130:1	IPR2024-01077 5:8	know 7:19 10:19 15:17,19 16:21 19:23, 24 22:5,11 25:18 26:15 27:17,21 33:16 37:18 38:23 39:11 40:2 41:21 45:22 50:9 51:19 52:19, 23 53:21,22 54:18,24 56:13 62:16 63:5,14 66:3 68:25 72:21 75:13 76:18 77:17 81:18	L	least 39:8 41:12 54:22 55:15 62:24 71:7 77:13 81:11 86:12 94:17 118:6 122:1 125:22
intrinsic 21:24 23:10 24:11 25:5,23 29:6 37:23 40:7 43:25 46:5 47:10,14, 17	isolated 102:20		lack 105:9	leaves 75:5
introductory 29:8	isolation 108:12		lacks 76:14	Leboeuf 79:25 81:16
	issue 10:8 46:10 95:14		language 21:15 22:18, 23 23:1 29:1, 11,12 32:15, 16 34:15 36:22,25 37:21 43:9,19, 23 105:6 107:8,14 113:13 114:2, 14,24 130:2	led 16:13
	items 105:14			LEDs 71:1,8,10 72:10,12
	J			left-hand 11:17
	Jas 5:24			leg 53:22
	job 124:16			Legal

5:13	65:25 66:3	literature		manufactured
length	67:9,20 71:16	83:17,21	M	128:24
60:1	75:14 76:23	located	Madam	manufacturing
lengthy	77:20 78:21	5:13 6:19 7:3	133:3	109:19 110:3
33:18 54:23	81:15,22	90:20	made	111:22 112:9,
lens	82:12 85:5,19	logistics	20:1 45:5	14 132:9
119:20	87:12 90:7	12:6	46:16 60:10	many-page
let	94:16,19,23,	long	71:1,23 72:4	41:24
7:19 10:19	24 96:11	38:20 61:14	74:1 87:20	mapping
26:15 27:2,17,	109:23 116:19	69:13 70:20	94:18 95:10	114:13
21 50:9 72:21	118:3 119:1,8	71:15,16 73:5	97:21 99:24	marked
77:10 89:5	120:13,15	83:23	100:23 114:19	8:16 9:4 10:7,
98:12 100:3	121:20 122:24	longer	131:4	10 11:4 26:9
103:4,24	123:18	103:7	magnitude	27:7,11 50:4,6
level	124:15,25	looked	73:15	72:19,24 89:3
57:24 77:14	125:14	18:15	main	material
90:16 93:8	130:14,19	loop	15:13 86:20	56:25 71:13
license	133:10	60:24 63:15	122:1	74:2 96:18
6:6	likelihood	64:21	maintain	97:1 98:9,21
light	64:23	Loosely	67:2,14,17	100:15,24
18:22 19:12	likely	15:8	maintaining	102:9,22
21:16,24 23:7,	117:7	Lorie	66:17	106:19 114:19
19,20 29:12	limit	6:4	make	materials
30:17 35:3	19:16 33:13	Los	8:24 12:24	7:7 96:20
36:12 37:23	37:20	5:13	14:1 59:11,22	97:21 98:5
41:5 43:25	limitation	lot	61:11 67:23	117:20
44:11 46:4,15	108:25 110:5	20:6 52:12	68:2,5,9 93:3	matrix
52:11 71:7,10,	129:16	68:7 75:5	96:12,15	99:4
20 72:11	limited	82:12 83:16	101:7,12	matter
106:6 108:25	36:24 42:4,13	91:17,24	109:6 111:15	5:6 9:25 10:1
120:18	43:24 48:14	lower	115:3 119:22	12:22 16:21
lightweight	51:15	65:7	makes	28:3
67:9	limiting	Luckily	59:2 101:16	may
like	42:3	73:5	113:10 127:10	31:6 39:11
10:6 21:5 26:5	lines	lunch	making	48:22 51:10
31:13 33:11	93:7	88:9,10,15	17:6 39:19	55:22 56:5
37:18 45:2	list	103:8,13,19	46:17 58:24	57:5,11,12
50:2 52:19	16:7	listing	109:12,14	65:2 68:14
53:22 55:14	listing	19:4	116:20 123:24	70:6 74:1
62:12 63:17				106:19 107:5

maybe 8:6 15:18 49:2 52:19 63:3 64:6 77:25 78:13 88:10 95:25 108:7 115:8 118:20 119:12 127:24 128:9	mechanical 96:6,7 99:5 mechanically 95:18 101:13 meet 79:7 129:16 meet all 76:18 member 66:14 71:21 104:10 113:5, 18 114:7 115:1 members 61:1 memorized 16:4,17 18:8 37:15 53:5 memory 14:9 mention 29:24 41:23 74:9 83:11 129:20 mentioned 24:15 25:6 35:8,21 58:7 70:9,14,20 76:2 122:14, 16 Mercier 5:6 6:7,17,18 26:12,25 27:14,15 50:17 103:8 132:24 Mestas 50:5,14,16,20, 23 51:15,18,	22 52:2,12,22 53:3,13,17,19 54:6,9 55:1,21 56:2,6 59:12 60:17 61:4,9, 13,15 62:24 63:11,13,18 64:10,11 65:8 66:10,25 67:5, 13,22 68:6,8, 10,23 69:1,5, 13,16,19 70:9, 11,15,17,20 71:17 72:9 104:5,8,13,18, 20 112:16,20 113:8,20,23 114:6,16,24 116:8 117:1,3, 10 118:17 Mestas' 51:16 52:25 54:4,18,23 59:13 63:8 64:15 66:22 70:24 71:6 114:9 115:4 met 86:10 126:7 metallic 99:11 method 5:10 middle 66:11 71:18 125:19 might 24:18 25:18 58:7 62:11 64:23 65:5 70:1 71:2	90:20 mind 82:19 132:14 mini 133:24 miniaturization 53:6,8 54:3,13 122:14 123:23 125:10 miniaturize 52:15 116:9 122:18 124:19 125:10,13 miniaturized 116:10 124:25 miniaturizing 124:4 minimal 66:17,22 67:2, 14,18,24 minimize 66:4 68:16 minor 54:12 minutes 49:17 88:12 Mischaracteriz es 119:10 120:9 missing 43:23 83:16 123:7 mixed 15:11 modalities 17:19 models	121:4 modify 33:7 module 82:17,24 87:12 121:25 122:3,4 molded 104:16 114:19 129:21 130:13,17 molding 104:23 moment 35:17 103:12 115:14 133:17 monitoring 50:24 month 8:6 more 19:21 33:13 36:23 39:18 43:19 44:18 54:9 55:3 56:18,21 59:14 64:24 82:15 89:9 95:8 97:5 107:5,24 121:7 122:2 123:16 124:8, 21 morning 5:5 6:3 most 8:3 60:9 65:3 mostly 90:8
--	--	---	---	---

motion 17:24	necess- 47:1	nomenclature 15:12 95:14 96:25 131:23	oath 7:25 8:10 9:14	objectives 92:20
motivating 68:15	necessarily 19:15 20:3 24:4 40:17 111:6	none 80:2 121:2	object 12:25 14:15 16:23 18:5,16 20:2 21:13 22:8,25 24:5 29:22 30:12 31:8 32:7 33:1 34:7 35:1 38:18 39:20 40:20 41:15 42:23 43:16 44:9 45:10 47:12 48:3,16 49:8 51:17 53:2 54:7 56:1 58:1,13 59:8 64:4,18 65:16 68:18 78:11 79:9 80:7 81:8 82:6 84:10 85:6 86:6 87:3 90:17 91:4,15 92:5,15 93:10 95:12 97:3,24 98:11 100:2 102:1 106:16 108:22 109:22 110:21 111:10,25 112:11,24 113:11,12,21 114:10 116:17 117:24 121:9 123:9 124:5 125:3 128:13 129:7 130:20 131:12	obligated 8:9
mounted 78:22 85:16 87:12	neck 31:13 53:22	normal 133:21,22		oblong 51:25
mouth 98:17,20 99:1, 4	necklace 28:12	note 74:7		obvious 18:22 40:9 41:5 46:24 47:2 52:18 85:3
move 57:17 88:25	needed 78:17 128:18	notes 132:15		octagonal 51:25
movements 70:11,17	neither 116:8 117:1,3	nothing 31:10 81:22 90:14 111:8, 24 119:24		off 5:16 12:15 13:16 16:5,15 45:3 49:9,20 55:7,10 56:23 57:7,13,18,23 58:10 59:6,22, 24 60:6 61:10 64:1,3,16,25 65:15,19,21 66:5 70:6 88:19 103:10 115:8,11,13 132:18 133:5, 15
multiple 12:9,11 107:12,14 110:1 113:5, 11	never 37:11 43:18, 21 46:19 74:19 82:19	noticing 5:18		offer 12:20 13:13 99:10
must 23:16 128:23	newly 16:12	November 11:22		offered 11:12 13:6,18 28:3
Myers 5:20	nice 81:14	nuanced 100:21		Office 15:21 33:6,10 45:12 46:1 68:24
myself 58:15 84:15	Nicholas 5:22 133:18	number 5:7 6:6 11:5, 22,23 25:6 42:14 50:14 59:4 64:12 70:21 72:1 77:17 81:2 89:9,25 123:25		officer 6:5
N	no 6:25 7:12 8:4 10:5 23:18 36:8 47:8 51:18 74:9 76:9 79:15 80:9,19 81:16 85:8,14 86:19, 21,22 87:1,14 93:5,19,24 102:21 111:8 120:14 121:15 122:20	numbered 10:18	Objection 24:19 25:12 119:10 120:9	
narrow 33:13		numbers 12:16		
narrowed 31:18,22 34:5 43:8		O		
narrowing 42:17,20		O'MELVENY 5:20		
natural 56:10	nobody 77:21			

on-the-fly 76:16 79:11	22 119:9 121:7 122:23 123:7 124:16 126:19 131:25	other 12:17 14:5,21 16:18 17:19 18:11 19:18 20:6 23:23 24:23 27:14 28:13,20 29:5 30:5,6,9,25 31:6 32:5 33:18 37:7 41:17 42:13 45:2,7 46:11 48:2,6 51:10, 23 52:11 53:9, 14,18,20 54:5, 19 68:2 69:20, 23 70:10 75:3 76:21 77:8 78:17 79:25 83:2 85:1 93:20,25 95:19 102:9 105:11 108:9 110:17,24 118:25 124:15 125:13,14	6,9,15,18,19, 24 114:6,7,12, 13 115:1,2 outside-facing 113:1 outward 56:3 oval 51:25 overall 52:4 overcome 33:7 owners 5:23 12:7 36:24 37:20 45:18,25	51:7,8,23 52:5,7,11 53:16 54:17 56:2,7 60:23 61:9,15,19,21 62:25 66:10, 11 69:7,11,16 70:18 71:14, 15,16,18 94:1 95:6 96:19 102:13 104:2 115:22,23 116:6 125:15, 18,19 126:13, 16 130:25
ongoing 53:8	opinions 11:12 12:14, 21 13:13,19 35:22 38:15 50:19 73:3 80:6 81:10			paragraphs 35:10,22 38:9
only 19:16 32:11 36:20 40:8 68:9 74:11 90:8 106:24 110:17 126:7	opposed 123:24 124:3 126:8 127:19			parlance 24:24
onto 56:25 60:5 72:10 74:18 107:8 114:13, 14	opposing 12:19			parse 12:10
open 9:2	optical 17:14			part 11:1 29:8 32:12,19 34:21 50:19 53:15 54:5,19 57:24 66:1 73:17 75:22 86:18 93:5 104:12 107:5 109:16 111:3, 6 112:3 113:16 119:15
opined 12:16	optimization 57:1 58:22 59:17 61:7,24 62:15		P	partially 71:7
opining 82:10	options 69:18		p.m. 103:13,14 115:15,16 132:19,20	particular 19:25 22:18, 22 33:9 34:15 56:22 93:13, 14 95:3,11 122:17 126:6
opinion 13:1 22:19 23:16 25:10 32:23 34:22 35:9 42:9,16 44:6 47:5,16 48:23 49:7 53:11 55:15 57:20,22 75:5, 18 76:16 78:2, 8,17 79:5,11, 12,19 80:2,21 81:6,25 82:3 84:6,24 86:21, 24 91:1 93:19, 24 98:7 101:24 104:5, 7,13 105:2 110:12 112:8 117:9 118:18,	order 29:25 31:19, 23 32:11 33:7 62:4 63:19 74:23 118:15 133:11	others 70:5,6 119:1	package 117:15,19 118:23 packaging 119:4 122:24 123:6,23 124:2 pages 54:23 73:5 para-xylene 94:8 paragraph 33:17 35:11, 20,23,24 36:20 41:17	
	ordinary 23:13 24:3,7, 12 29:13 30:3, 17 31:20 32:15 33:22 37:1 58:18,23 61:21 63:5 84:21 85:20, 25	otherwise 43:24 107:25		
	originally 28:25 36:22	Oura 76:23 Ouraring 5:7 outcome 55:8 85:18 outer 66:13 71:2,8, 20 104:9,11, 19,21 105:13 112:21 113:4,		

127:22	35:21 36:14, 18,24 37:20	131:11 132:3	25 130:12,16	42:21,24,25
parts	40:2,22,23	paths	personally	43:1 49:7
31:6 32:5 37:7	41:2 43:8,15,	15:20	98:13	51:23 67:4
42:13 45:7	18 45:12,16,	patient	petitioner	69:8 77:10,17
46:13 53:18	18,25 46:1	99:2	5:19 81:2	88:9
59:2 112:22	50:5,13,15	Patrick	Petitioner's	pointed
114:17	51:22 53:4	5:6 6:7,17	81:3	32:3
party	68:24 69:13	27:13	PH.D.	pointing
133:8	70:20 72:17,	PCB	6:7	42:20
parylene	18,23 73:1,5	120:22 123:3	physical	points
98:22	78:18 82:17	131:21,23	7:10 69:6,17	44:1 46:6
pass	83:6,11 89:1,	PCBS	70:10,16 82:4	portion
31:23 60:12	18,19 90:9	124:14 131:19	87:1 93:2,6	72:10 104:11,
132:12	103:3,23	peak	physically	18,19,21,25
passages	104:8,25	91:21	7:3 23:4	105:7,9
36:7	105:15,17,20	people	piece	106:13 107:1,
patent	109:1 111:12	24:24 55:15	21:20 104:15,	16,17,18,22
5:23 10:18,23	112:6 114:14,	65:3 67:20	17,22	108:6 109:16
11:2,5,8,11,	20 117:12	94:20	pieces	110:9,15,16,
15,21,23 12:7,	118:3,6 121:2,	percent	105:3 109:9	18,19,24
8,12,13,14,16,	5,6,10,14,20	52:19,24	110:13	111:3,7,20
21 13:6,9,10,	122:10,16,18,	53:10 54:13	place	112:21 113:1,
12,14,19,22,	21,23 123:1	perfectly	75:16 122:25	2,6,7,9,15,16,
23 14:4,22,23	124:2,10,24	60:3	123:3	23,24 114:7,8
15:3,12,16,21,	125:9,12	performs	placement	115:2 122:5
23,24 16:1,8,	126:2 127:1,3,	101:4	75:4	125:23 126:10
12,14 17:15,	12 129:11	perimeter	places	131:1
17,19,22 18:2,	130:7 131:22	129:13	40:24 41:17	portions
13 19:3,11,12	patents	period	84:20	30:25 35:11
20:7,20,22	8:7 10:8	47:8	placing	37:6 38:10,13,
21:2,22 22:5,6	12:11,16	person	40:14 53:25	15 39:4 47:23
24:8,10,25	13:25 14:5,8,	23:6,13 24:11	84:17	48:12 71:6
25:4,15,16,22	10,17 15:20	29:13 30:2,17	plain	104:12 107:5,
26:2,6 27:14,	18:3,7,15,19,	31:19 32:15	24:7	13,14 108:7,9,
15 28:5,9,10,	22 19:25 21:6	33:22 37:1	plan	15 109:21
17,19,21,25	27:11 61:5	58:18,23	7:7	110:24 112:25
29:7,19,25	77:1,18 78:19	61:20 63:4	point	113:6,19
30:3,10,18	79:14 80:3,23	84:21 85:20,		POSITA
31:4,11,12,18	81:3 82:1			21:23 22:11,
32:10 33:4,6,	83:19 86:13			14 34:12
10,12 34:3,24	87:6,21 88:1			41:19 47:19
	90:2 118:11			

54:12 75:6 76:12,17 77:1, 18 82:23 85:7 86:1,5 92:12 95:16 96:2 117:6 118:2 119:19,20 120:19 121:19 130:22 131:17	84:4,5,12 91:19,21 92:18,22 powered 74:20 82:14 powering 85:1 practical 93:4 practice 68:4 precisely 67:7 prefer 55:15 preferred 67:8 preliminary 99:10,15 preparation 16:2 18:6 125:6 preparing 15:13 present 15:25 18:3 30:24 39:22 47:17 118:18 124:17 presented 45:13 52:12 92:17 presumably 101:11 presume 119:3 presumed	80:23 81:6 presumes 124:24 pretty 40:25 65:18 76:11,14 79:12 98:24 109:2 124:11 prevent 54:24 56:7 63:13 97:22 98:25 preventing 54:18 57:6 97:8,14 prevents 55:24 previous 18:7 previously 8:16 9:4 10:10 12:13 18:15 27:7 50:6 primary 51:21 principle 68:21 printed 81:3 82:1 98:18,21 126:16,19,24 127:17 128:21,22 129:3 printouts 7:11 prior 8:10,21 9:17 13:18 15:25	18:3,20,21 29:3 30:6 32:21 33:8,10 37:10,11,17 39:7 42:5 44:21,25 45:5, 13,19 46:13 53:20 76:24, 25 77:22,23 79:13,22 80:3, 9 81:12,13,15 83:16 84:17 85:11,14,16 86:9,14 87:13, 15 118:12 119:24 123:19 124:18 126:7, 9,11 priority 76:25 77:18 79:13 82:5 119:21 probably 37:24 38:6 39:12,15,23 56:20 57:17 64:25 124:8 problem 92:17 proceed 6:10 17:6 27:22 49:25 88:24 103:17, 25 115:19 132:23 proceeding 8:11 32:13 proceedings 10:9 72:25 process 61:25 104:23	110:3,4 111:23 125:11 processors 124:25 processing 17:4 18:2 19:8 proposed 75:3 93:17 prosecuting 28:25 prosecution 15:17 21:17 22:10 23:8 28:23 29:2,10, 17 31:17,20, 23 32:14 33:21 34:4,12, 16,22 35:4 36:1,24 37:15, 16,19,20 38:5, 20 39:10 41:25 42:4 43:7 44:12 45:12 46:10 protect 94:15 95:24 106:8 protecting 99:19 protection 94:22 99:16 protective 95:17 prototype 87:1,19,21 prototypes 81:13,20 82:3 85:9,15 86:5, 7,10 87:23
---	---	--	--	---

provide 7:14,20 10:3 21:8 69:17 73:11,20 75:10,19 91:25 98:6,9, 22 118:15 124:9,10 provided 9:3,11,18 10:4 12:13 13:1 29:16 44:4 47:7 73:23 75:17 88:1 provides 42:14 51:24 99:5,12 123:4 125:1 Publication 50:13 72:24 89:18 publications 80:3,23 81:3 82:1 purpose 100:21 purposes 96:5 99:18 put 8:14 10:12 26:6,10,19 33:19 50:2 72:17 85:10, 22 86:15 87:10,11,16 99:1,11 103:4 119:2,14 120:20,21 121:17,23 122:8 123:3 125:2 133:12	putting 34:20 58:15 91:21 114:5 118:4 122:4 123:25 Q qualify 25:19 question 13:5 14:2 19:20 45:4 48:4,10,11,18 49:3,5 58:3, 10,15 70:13 78:19 79:14 80:13 85:12 86:13 98:4 100:3 101:2 118:9 124:6 questions 9:11,12,19,22 21:7 44:18 103:22 132:12,25 quick 16:19 44:16, 19 61:14 quote 38:21 quoted 48:20 R rather 65:4,24 95:17 129:17 re-emphasize	82:8 read 19:11 21:16 23:7,19 29:12, 25 32:13 36:11 43:25 44:11 52:11 61:14,21 73:15 74:18 84:25 85:5 106:5 107:8, 25 108:13,25 119:21 121:1 124:21 126:22 128:21 reader 118:6 122:12 reading 20:8 21:23 22:11,14 23:6 30:2,16 31:20 32:15 34:11, 15,21 35:3 41:20 108:11 110:11 119:19 120:19 121:20 122:7 127:22 128:7 real-time 129:10 realm 54:11 reason 8:2 104:7 129:17 reasonable 53:6,10,11,19, 23,24 54:14 55:11 60:21 61:20 67:10, 12,15,16,19	85:17,18 100:5 130:22 reasonably 77:1 recall 8:5 9:10 13:11,13,21, 24 14:18 16:2, 4,16 18:24 45:3 49:10 74:9 95:5 119:17 120:17 recess 49:21 88:20 103:13 115:15 132:15,19 recitation 105:2 recite 21:2 35:11 42:18 recited 70:8 106:1 recites 20:14,22 66:12 104:25 106:25 recognition 17:18,21 69:25 recollection 17:17 53:4 61:15 122:20 record 5:4,16 6:16 10:13 26:6 27:10 47:11 49:20,24 79:24 88:19,	23 90:7 103:11,16 115:9,11,13, 18 132:18,22 133:4,6,15 rectangular 51:25 redirect 133:1 reduce 65:10,14 reduced 61:17 redundant 40:13,14,15 refer 7:17,18 10:22 11:7 13:25 17:15 25:23 27:16 31:22 37:21 43:9 44:12 48:5,12 50:15 72:25 89:19 reference 19:25 26:1 27:19 32:4,20, 21 41:17 referenced 12:12 28:6 references 30:23 37:17 45:13,19 85:1 89:25 119:1,6, 7 referencing 69:8 referred 32:25 47:18
--	--	---	---	---

referring 7:7 10:24 11:8 17:3,10,11,23 19:18 22:15 23:21 25:4 27:18 30:4,19 31:5,6 32:17 37:3 41:1,7 42:1,7 43:11 50:16 61:19 67:6 74:16 94:21	12:14 14:24 19:14 86:13	require 24:4 76:9 106:24 120:15	17	36:2,15,25 37:1,4,9,12, 21,22,25 38:3 39:6,18 40:6, 14,16 41:3,7, 10,11,13,14 42:6,18,21 43:9,11,13,20 44:6 45:2,5 46:4,11,14,19 47:7,18 52:16 55:6,9,20,25 56:17,22 57:16 59:21, 25 60:4 62:4, 15,20 63:8,21 64:1 65:14,20, 23,24 66:1,2,3 68:13 74:1
refers 17:12 33:21 38:22 102:18, 19	relates 10:1	required 74:5 76:10 78:24 79:7 95:10 114:1 121:5,8	resulted 77:23	75:3 76:7,22, 23 77:5,9,14, 19,20 78:9,20, 21 79:2,4,6, 15,18 80:1,4 82:18,22 83:1, 5 84:7,18,19 85:2,11,17,23 86:16 87:8,10, 11,12,17 89:20 90:1,4, 12,15,24 91:2, 12,19,23 92:13 109:25 110:7 116:3, 11,16,20 117:5,8,11,16, 20 118:5,13, 14,24 119:2, 14,18,23 120:17,21,22 121:21,23 122:5,9,15 123:15,18 125:2 126:4
reflect 33:15	relative 98:1 100:10 102:2,4	requirement 126:6	revealed 28:24	
reflection 129:10	Relevance 24:19 25:12 90:17	requirements 76:19 80:14 84:12 92:18, 23	reveals 21:18,19	
refresh 14:9	reliability 96:1	requires 105:3 125:21 126:3 127:23, 25 128:8,11	review 14:7,8,16 34:21 46:21 47:13 55:3	
regarding 35:9 36:7 93:6 103:23	remain 52:3	rereview 18:7	reviewed 11:2,11 16:1 50:20 73:2	
regardless 13:8 96:25	remember 12:15 50:4	research 98:16	Rhyne 6:4	
region 71:22 72:4	remote 5:9 6:21	resin 74:2	ribbed 55:17	
regular 66:2	remove 11:11	respect 90:10 91:7	rigid 60:1 62:8,9 101:13	
reinforces 36:2	Renia 5:21	response 9:11 73:14,16 90:21	rim 90:15	
rejected 33:6,10	rephrase 58:4 64:6 128:5	rest 16:3 33:20 36:18 37:23 41:24 43:25 109:1	ring 20:16,23 21:19,25 22:13,15 23:2, 3,10,11,14,16, 17,22,24 24:1, 3,4,8,12,13, 16,20,22,23, 24 25:5,11,17, 19,20,21,23 28:18,22 29:1, 11,14,20,21, 24 30:4,9,19 31:22 32:17, 24 33:24 34:17 35:4	
relate 16:22	report 125:6	restrict 33:12		
related 8:6,7 11:16	reporter 6:1,5 133:3	result 63:7 78:20 99:3 109:15,		
	represent 12:19			
	represented 7:1			
	representing 5:22			
	request 21:5 26:5			

129:13 130:19 131:3 ring's 129:19 ring-style 121:18 ring-worn 67:17 68:23, 24 75:24 ringing 24:22 rings 24:17,18 25:7, 9,18 29:10 33:19,22 36:21 45:6,7 48:1,2,6,14,15 55:16 59:1 61:6 67:20,21 76:25 77:24 risk 65:14 Rob 5:12 8:13 26:23 27:5 50:3 115:11 room 6:23 7:6 75:16 rough 97:8,15,22 98:25 roughly 12:3 52:4 60:2,3 routine 92:24 runner's 51:4	rushed 133:20 S said 33:20 39:23 44:11 46:19 48:5 53:19 86:15 95:1 105:6 107:21 110:23 112:12 120:7 130:14 samples 19:24 Samsung 5:6,20 San 6:20 satisfy 104:8 scenario 65:1 schematics 121:4,11 Schr 79:25 81:16 82:13,16,20, 23 84:25 85:5 87:6,10,11 119:1 121:24, 25 122:4 123:7,11,13, 15 scope 52:2 screen 7:2,15 8:19,23 9:2 10:17 11:6 19:5 20:21	35:14,17,18 50:2,12 53:16 66:12 69:10 71:19 89:17 91:1 103:5 scroll 17:4 selection 69:18 send 74:5 sense 59:2 95:21 101:7,17 109:6 111:15 113:10 127:10 senses 73:22 sensing 17:19,24 80:12 sensitive 56:18 sensor 17:5,6,9,13,14 19:8,18,23,24 70:1 73:15,22 83:8 sensors 56:15,16 57:15 69:20, 23 70:8,10,14 123:4,12 124:14 sentence 31:4 32:3,21 35:24 51:8 53:15 54:16 66:12,21,24	116:6 separate 105:3,22,25 106:21 108:15 109:2,9 110:13 111:13 114:5 separately 62:16 series 9:10 15:2 19:23 22:22 serving 99:17 set 61:18 96:18 131:16 sets 12:9 shape 51:15 52:3,9 76:23 91:3,13 119:17 126:21 127:13,20,24 128:2,12 shapes 51:10,24 share 7:15 8:19 10:6 14:18 shared 8:23 99:19 sharing 35:17 shell 99:12,14 shine 71:11	shoes 58:16 short 88:5,11 Shorthand 6:4 should 8:20 20:1 27:5,9,19 39:23 44:7 55:6 60:5 66:22 67:23 74:7 103:3 show 7:13 26:25 27:1 51:20 105:21 shown 17:20 51:3,15 71:18 73:9 77:4,20 79:2 80:19 90:25 115:23 116:2 shows 77:13 120:4,7, 8,11 123:17 126:7 129:11 shrink 45:22 52:18, 22 shrinking 53:7,25 sic 5:13 28:5 42:12 72:1 side 11:17 55:22 56:3,5 sides
--	--	---	--	---

113:11	sir 27:4	58:11,18,23	small 41:23 65:20	99:10,15,18
signal 17:3 18:1 73:19,20,23 74:5,11,13,14, 17,19,20,23 75:10,20 76:4 78:5,6 83:7 84:3	sit 73:25	61:21 63:5 67:23 68:16 75:18 84:7,21 85:4,20,25 86:1,24 90:16 91:1,11 92:3 93:8,21 99:22 101:4 117:15, 19,22 118:23 119:3 130:12, 16 131:16	67:9,20 68:5, 9,22 76:7,19 77:4,8 78:1 81:18 82:24, 25 83:4 87:17 118:13 121:18 123:25 124:3 125:2	100:13 102:9 103:22 106:3 109:12 118:6, 25 119:13 123:16
signals 73:13 74:13, 18,24	sitting 10:2,5 14:12 16:4 18:9,11, 17,24 69:24 91:10 117:25 119:19	skills 117:7,9	smaller 60:18,23 65:2 77:12 105:12 123:24	someone 55:19 118:1, 10,16 119:20
silent 83:8	situation 128:10	skimming 39:8	smart 66:2 76:24	something 23:24 31:13 52:16,17,19, 24 55:11,17, 18 56:9 58:11 60:21 62:12 63:4,17 66:3 68:3 82:24 84:7 85:20 94:14,15,23 96:4,5 97:2 98:13 100:12 101:11,12 104:14 107:18,22 108:4,5,7,9,20 109:5,6,7 110:16 120:13 127:9 129:23 130:14 131:9
silicone 94:7	size 31:14 52:1,4,8 60:19 61:2 62:3,9,17 63:2,9,23 64:14 65:13, 23,24 78:23 86:10 91:19 93:17 100:10 102:3	skip 16:6 51:7 115:21	smooth 55:16,22,24 56:4 59:16 77:8 80:4 81:22 82:21	
similar 76:22 92:17 114:15,21 131:18	sized 59:15,23 60:4 61:11 62:16 63:25 64:2,15, 20 65:21 66:4 84:6	slightly 49:3 66:7	some 7:13 8:7 12:21 15:11,17 16:6 17:15,24 19:2 24:17 25:8 28:25 33:5 34:13 35:11, 22 40:24 42:16,20 43:14 47:6 49:5 52:23 54:3,4,12 56:11,24 60:10 65:3 70:21 71:4,13 74:4,23 77:13 78:5 81:10,14, 18 83:18 84:3 88:9 94:17 95:21,25 96:6, 9,20 98:21,23	
similarly 40:13 62:3 65:12 97:18	sizes 60:22,25 62:21 63:15	slip 55:7 56:14,23 57:18,23 58:9, 20 59:6,22,24 60:5,6 61:10 64:1,3,16 65:19,21		
simple 76:6 122:2	sizing 65:8	slippage 54:18,25 55:2, 25 56:8 61:17 63:13 64:11 65:8		sometimes 12:7 39:25
simpler 49:3 78:14	skill 22:19 23:6,13 24:12 29:13 30:3,17 31:20 32:16 33:22 37:1 52:22,24 53:7 57:24	slipping 57:6,13 64:23, 25 65:4,15 66:5		somewhat 40:13 99:19
simply 31:14 46:24 58:20 75:23, 24 78:22 91:16 128:23 129:10		slow 71:25		sort 12:6 17:9,24 48:13 49:5 56:24 57:22 60:10 71:4 81:13 84:4,16 87:19 92:3,11 96:6
single 104:15,22 107:4,6 109:17,20 112:17,20,22 113:5 117:4				

sorts 15:19 24:21	29:7,12,15,18, 19,24 30:10, 16,22 31:5,17 32:2,11,14 33:5,15,18 34:11,16 35:3 36:13 37:2,6,7 38:1 40:19 41:5 42:11,19 43:3 44:5,12 46:5,15 105:20 106:6, 10 108:12,13 109:1 112:6 127:15,17 129:11,20	32:24 statement 11:20 36:9 39:24 67:10 125:20 states 32:4 stays 52:8 stenographer 6:3,9 57:9 71:24 103:9 115:11 120:5 133:5,18,22 step 40:22 98:19 steps 106:20 still 25:10 27:20 82:25 89:6 97:22 103:3 112:15 stop 35:17 88:5 store 62:19 strap 56:24 62:11, 12 63:4 64:21 strategies 59:18 stress 95:25 stretchable 62:11 stretchy 56:24	strike 104:6 105:16 structural 105:3 110:13, 17 structure 62:8,9 94:25 104:12,15 105:1,8,10,12, 13 106:12,13, 14,20,25 107:1,5,6,12, 13,19,23 108:3,5,10,14 109:12,14,15, 17,18,20,25 110:7,14,18, 20 111:15,19, 20 113:5,8 114:17 116:21 118:13 119:18 123:1 124:12 126:10 structure.' 125:24 structures 105:22,25 110:2 stuff 121:16 subcomponent s 110:1 subject 12:21 16:21 98:20 99:2 submit 33:5 submitted 27:10	subsequently 105:25 113:25 128:17 substance 102:21 substances 96:10 substantially 72:5 successful 131:15 sufficient 99:1 suggest 77:7 122:7 suggesting 67:22,24 suggests 69:5 90:14 116:9,14 117:3 119:25 summarize 34:2 78:4 summary 36:17 43:1 80:6 super 76:23 77:24 78:21 79:4 84:19 117:8 118:14,24 119:23 129:23 130:6,14 supplied 74:23 supply 74:12,14,17, 20,23,24
sound 12:23 95:18 101:14 Sounds 49:16 88:16 source 74:4,8 75:13 78:5 space 45:20 68:12 92:23 123:25 spacer 61:6 spacers 63:3 spacing 61:1 specific 23:21 42:20 51:15 80:15 81:16 86:11 97:5 116:9,22 123:16 124:11 specifically 19:3 29:11 30:4 37:8,25 39:6 43:9,20 86:8 106:1 107:15 119:2 124:7 128:11, 20 130:9 specification 12:8 13:9,10 14:4,19 17:12 19:12,13 20:7 21:16,19 22:2, 10 23:8,20	specifications 14:5 specified 5:16 47:1 specify 119:16 speculate 34:9 67:7 129:24 speculating 33:16 spent 122:10 split 15:18 standard 54:3 start 10:14 state 6:15 29:9 41:21 90:7 stated			

75:10,20 76:15 78:5,6 84:3 support 38:15 supported 39:19 supports 49:7 suppose 25:13 41:19 128:16 surface 55:24 72:14 surfaces 66:13 swear 6:1 switch 14:21 sworn 6:8 synced 133:8,9 synchronizatio n 50:25 system 76:16,17 78:25 80:17 92:25 93:2 systems 65:9 98:17	30:15 40:21 44:19 45:21 49:14 52:14 59:10 88:5,6, 10,11,13 132:14 taken 9:6 49:21 51:24 88:20 103:13 115:15 132:19 taking 16:19 53:24 106:3 123:23, 24 124:3 131:8 132:7 talk 19:23 82:17 talked 29:16 talking 14:22 19:14 23:9,14 25:21 62:7 64:10 82:19 114:23 121:20 126:15 talks 36:17 54:17 taught 109:1 112:5 120:14 122:15 127:15,16 teach 28:22 51:19 53:5 54:9 55:2 74:8 75:1,2,14 80:3 81:4 86:17 87:16 100:18 116:22,24	118:5 120:13 123:14 124:19 teaches 54:6 55:3,21 59:12 63:14, 19 76:2 97:13 111:12 114:25 116:8,23 117:3 119:25 teaching 56:6 63:11 76:13 118:8 122:11,17 124:17 teachings 31:12 53:1 54:23 59:14 61:18 69:1 75:7,24 76:15 78:2,9,20 79:21,22 81:17 83:21 86:8,11,22 87:4,14,25 88:1 91:7 114:16 117:10 118:12,16,18 122:16 technical 15:14 techniques 17:4 57:23 58:8,11 technology 131:10 tempting 114:11 tend 55:15 67:20	term 15:6,9 24:3 36:2,25 42:20 43:14 44:5 45:5 47:7 102:14 126:15 terms 15:11,12 31:11 62:14 65:8 68:12 91:19 99:19 108:18 testi- 48:9 testified 6:8 9:14 testifies 131:14 testify 7:24 8:10 testifying 9:15 testimony 8:3 21:5 34:6 47:8 texture 56:4 there're 59:17 thick 95:10,22 96:5 99:25 101:13, 22 thicker 95:18 120:11 thickness 95:3 96:14 98:1 100:11 101:21 102:4	thin 67:9,20 79:17, 18 81:22 85:11,23 94:14,21 95:2, 10,17,22 96:4 98:24 100:12 101:11,21 116:20 120:1, 8,15 121:18 122:5,8 123:15 thing 53:19 74:11 99:8 101:16 102:9 107:17 things 12:6 15:17 33:11 48:19 53:22 63:12, 18 67:9 77:11 81:13 100:8 101:7,10,25 106:9,21 108:15 109:2 112:5,13,15 113:25 116:18 118:24 120:23 121:4 124:15, 17 125:14 127:5 128:15 132:6 think 19:20 20:4 23:12 24:22 28:6 31:15 35:2 38:24 40:4,25 41:19 43:17 44:10, 18 45:24 46:23 47:8,22 49:2 53:6,10,
T				
take 15:20 19:2				

18,23 54:11 55:8,13 56:9, 18 61:20 65:3 67:10,12,15, 19 68:1,3,19 69:23 70:3,7 77:1 78:13 79:11 82:15 83:3 84:2,20 85:7,18,24 87:23 88:3,6 90:8,22 95:13, 19 101:2 103:1,3,7 107:10,24 109:4,23 111:5 113:12 119:12,13 120:12 124:1, 8 125:4,7 130:21 132:12	tightness 55:3 61:3,7 time 5:10 10:4 44:15 47:22 49:20,24 76:6 78:24 85:16, 19 87:20 88:5, 19,23 89:9 92:4 101:7 103:11,16 106:15 115:13,18 117:7 118:20 121:16 122:11 124:8 130:16, 23 131:10,17 132:12,18,22 133:16 timeline 81:21 84:16 times 5:16 52:15,20 title 9:4 50:24 today 6:19,24 7:2,4, 14,25 8:2,10 10:2,3,5 14:12,22 16:4 18:9,11,17,20, 24 69:24 91:10 117:25 118:3 today's 6:5 7:8 toe 45:6 tolerate 56:20	top 12:15 13:16 16:5,15 45:3 49:9 70:7 78:22 84:18 85:17 87:12 120:21 121:23 toroidal 90:24 99:12 totally 25:14 45:20 46:23 65:18, 21 101:22 102:20 touching 73:17 tracking 50:24 traction 54:17 55:14 56:7 63:13 traction- increasing 55:18 transcript 8:21 9:6 133:8,10,19 transmission 19:16 transmitted 71:8 transmitter 76:5 80:12 transparent 71:7,13,23 72:5,6,9 94:18 tried 129:25 131:14	true 38:6,20 60:7 62:23 65:2 107:13 117:17,18 truthful 8:3 9:18 try 10:15 31:16 55:11,13 77:19 trying 34:12 40:1 42:10 45:6,8 47:4 62:18 80:21 83:15 95:19 107:7, 11 117:2 123:21 127:4 131:2 Tuesday 9:6 turn 73:7 type 17:24 28:13, 18 45:15 53:5 67:5 93:2 116:25 types 17:13 25:18 30:5 45:2 46:11 48:1 70:10 79:16 80:15 92:18 typically 61:6 95:16	U U.S. 10:18 11:5,16 14:24 50:13 68:24 72:23 ultimately 15:2 46:1 63:9 99:20 104:14 106:20 113:15,19 114:6,8 115:1 Ultrasound 70:4 unable 77:21 unclear 75:15 uncomfortable 76:1 underlying 72:10 100:1 underneath 71:2,4 understand 7:24 8:9 10:23 11:8 12:1 19:25 20:5,9 21:24 22:11, 14,19 23:9 24:12 29:13 30:1,3,18 31:19,21 32:16 33:24 42:9,10,18 47:5,20 48:17 50:16 61:22 63:6 67:12 80:21,25
--	--	--	---	---

84:24 92:18 93:15 100:20 106:17 118:22 119:5,8 123:21 understanding 12:4 15:9,15 22:20,24 24:9, 15 30:16 32:9 33:2 34:13,14 36:25 44:24 45:11 46:12 67:1 73:8,11, 12 75:23 95:15 104:20 118:21 121:14 126:5 127:1 128:18 130:8 understood 36:3 37:23 40:4 46:4,14, 19 48:4 58:2 69:15 78:12 128:3 unitary 104:15 109:17 112:18,22 113:17 115:6 unless 5:16 65:1,19 unlikely 22:5 65:17 unlikely 64:25 unnecessary 37:24 38:6 39:12,15 40:1 47:17 48:24 49:12 until	83:18 86:12 update 33:15 upload 26:22 50:3 urethane 94:7 96:11 97:20 use 19:8 22:6 24:24 41:6 61:1,6 62:18 63:1 75:10,13, 14 94:20 95:23 101:4,9, 15 114:15 131:2 used 39:17 40:5 43:13 44:5 49:10 61:25 69:24 70:10, 16 75:23 90:7 94:6,12,15,22, 24 95:17 96:4, 5,12 98:2,5,9, 22 99:15,23 100:4,6,17 102:14 105:6 127:2 user 20:17 30:24 36:16,17 43:21 45:14, 17,23 54:1,5 55:10 56:13 57:7,13 59:16 60:5 61:3,23 63:10,19,23 65:15,19 72:11	user's 53:14 54:19 55:7 57:24 58:10 59:6,22 61:10,12 62:5 63:25 64:1,2, 3,16,17 users 56:18 60:20 67:8 uses 36:9 100:14 using 7:7 37:9,12 45:5 64:24 69:5,19 71:17 77:7 96:20 118:2 usually 60:8 94:21,24 102:18 128:16 V varies 52:9 various 17:7 51:10,16, 19 62:20 66:15 87:7 109:20 verify 12:24 47:14 48:7 versa 102:23 versus 57:19 100:22 108:21 131:19 132:5	vibration 17:24 vice 102:23 video 5:16 6:22 7:2 133:9 videoed 5:15 Vidwan 5:24 view 46:18 47:10 52:25 59:1 81:4 101:20 visible 71:20 voltage 73:20 volume 9:5 66:15 91:22 92:19, 23 W Wait 71:24 waiting 89:6 want 14:21 16:6 20:20 25:25 55:9,19 56:10 57:17 66:10 67:2,13,17 68:21 70:21 71:17 72:16 73:7 81:19	82:7 83:1 88:25 103:2 111:1 130:25 133:8,9,13 wanted 43:13 52:18, 22 78:15 103:22 wasn't 15:24 42:5 45:6 48:9 83:18 129:14 watches 56:13 watertight 102:25 ways 15:19 24:23 99:20 129:20 WCD 26:1 28:7,11 31:10 wear 25:18 55:16 63:22 65:25 68:22 wearable 17:8 20:15,23 23:2,3,10 25:7,9,11,19, 20,21 26:2 28:7,13,20 30:15 34:17 41:18 51:9 54:25 55:5,9 59:6 67:7 68:2,4,22 121:18,21 wearables 30:5
---	--	---	---	--

wearing 57:7,14 63:10	12:7,8 33:4 62:20 64:16 65:14 68:2 72:25 73:14 89:19 97:13 99:16	70:21 73:2 75:7 78:21 79:16 80:4 82:15 90:10, 15 91:3,7,13 92:17 94:11, 13 97:12,19 98:18,21 107:15 109:15,20 115:2 123:12 124:1,23 130:12,17 131:10,23 132:4	64:5,19 65:17 68:19 78:12 79:10 80:8 81:9 82:7 84:11 85:7 86:7 87:4 88:8,16 89:15 90:18 91:5,16 92:6,16 93:11 95:13 97:4,25 98:12 100:3 102:2 103:20 106:17 108:23 109:23 110:22 111:11 112:1, 12,25 113:22 114:11 116:18 117:25 119:12 120:11 121:10 123:10 124:6 125:4 128:14 129:8 130:21 131:13 132:12,13	105:11 107:25 110:11 114:12,15 127:2 132:5
wedding 25:17 66:3 116:21				work 85:11 116:24 131:2
well-founded 79:12	window 8:24 72:10 125:21 126:3, 7			works 33:3
whether 18:21 47:5,14 49:4 63:15 66:2 73:16 92:10 93:15, 20 97:1 101:18,19 102:5	wireless 80:11			worn 20:16 29:4 36:15 40:8 41:3 43:20 45:14,17,23 47:2,19 53:17, 21
which 10:18,23 11:8 20:22 25:19, 22 26:2 28:7, 18 29:7,20 32:12 41:13 44:1 47:19 48:6 50:5,13 51:21 56:18 60:9 62:9,11 63:10,21 65:2 69:2 71:10 74:1,12 78:15 79:14 85:17 89:18 99:5 101:3 104:2 105:8 112:16 113:9 127:25 128:21	wirelessly 82:14	Wissmar 89:1,18,19,20, 24 90:4,7,10, 12,14,18 91:3, 6,20 92:4,6, 10,13 93:7,13, 16,21 94:1,5, 11 95:4 97:13, 16 98:6,15,23 99:9 100:13, 14,17,18 102:10	withdraw 13:4	would 5:17 9:22,25 10:3 17:2 20:7 21:5,10,24 22:11,14,20 23:8 24:2,12 25:10,19,23 26:23 28:17 29:13 30:3,8, 18 31:12,21 32:16 33:23, 24 34:2,17,18 35:5 38:13 39:3,16,18,22 40:13,16,25 42:22 43:12 44:12,16 47:20 50:2,16 51:14 52:2,4, 14,16,17,21, 25 53:13 54:22 55:5,11, 13,19,23 56:4 58:12 59:4,20 60:17,21 61:25 62:2
	Wissmar's 90:25 91:13	within 25:3 87:16 116:11 122:15 131:16	word 21:11,14 22:6, 22 23:24 24:8, 20,24 36:9 37:9,12,22 39:10,17 40:6 41:7 42:6 44:6 46:3 47:15 48:21,22 49:10 94:20 95:20 109:4 112:1	
	with 5:18,20,23 6:24 7:3,6 9:17 10:14 11:2,12 12:10 15:6 16:12,20 17:7 27:11 29:7 34:10 42:17 46:1 50:20 53:8 57:12 60:1,10 61:17 67:24 68:25 69:6	without 51:11 82:14	word 21:11,14 22:6, 22 23:24 24:8, 20,24 36:9 37:9,12,22 39:10,17 40:6 41:7 42:6 44:6 46:3 47:15 48:21,22 49:10 94:20 95:20 109:4 112:1	
		witness 6:2 14:16 18:6,17 20:3 21:14 22:9 23:1 24:6,20 25:13 26:14, 17,21 27:20, 25 29:23 30:13 31:9 32:8 33:2 34:8 35:2 38:19 39:21 40:21 41:16 42:24 43:17 44:10 45:11 47:13 48:4,17 49:9, 16,18 51:18 53:3 54:8 56:2 58:2,14 59:9	wording 105:9	
wider 60:12			words 22:23 32:10 64:24 71:17 95:19 100:11	
width 60:8,9,12 65:1,2				
will 6:1 7:14,15				

63:5,24,25	wrist		
64:2,7,19	31:13 45:14	Y	
66:21 67:2,13,	46:10 51:4		
16,17 68:16	53:14 54:19	you're	
69:5,8 71:10	56:12,19,25	9:15 14:12	
74:4,22 75:9,	60:9,13,24	19:17 27:18	
10,15,19 76:9,	61:10,12 63:4,	32:9 39:19	
10,11,16	25 64:1,16,17,	42:20 46:17	
77:14,19 78:4,	25 65:2,4,7,	64:6 69:7 84:2	
6,21 84:8,14	17,19	86:4 93:1	
85:4,7,13,19	wrist-worn	106:3,18	
86:4,25 87:23	33:11 37:18	107:7,10	
89:24 90:6,11,	44:23 45:8	126:15	
15 91:2,11,17,	51:3 53:20	you've	
24 92:3,12,17,	56:10,12,23	10:4	
25 93:8 94:11,	57:2,16,19	yourself	
13,17 95:9	58:9,19 59:1,	5:18	
96:9,13,24,25	21 60:7,10,18		
97:22 98:25	61:2 62:10		
99:22 101:10,	63:8,24 64:20	Z	
21,23 102:5,6,	65:7 66:7,25		
8 104:17	67:13 68:7	Zervos	
107:4 110:6	72:14	5:21	
112:10 113:4	wristband		
117:7,15,18,	28:12		
19,20,22	wristbands		
118:5,18,24,	29:4		
25 119:3,21	wrists		
120:21 121:1,	60:21 62:13		
13 124:11,12,	write		
13,23 125:9	12:7 33:4 40:1		
129:25 130:2	writers		
131:8 132:1	31:15		
133:10	writing		
wouldn't	31:16		
55:18 58:18	written		
59:1 76:17,18	20:11 118:3		
96:2,16	wrong		
100:19 101:6,	12:20 80:2		
16,24 107:25	119:7		
111:15 112:4			
117:9 118:23			
131:19,21			