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Paper No. 51
Entered: October 16, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

OURARING, INC.,
Patent Owner.

IPR2024-00928 (Patent 9,582,034 B2)
PGR2024-00030 (Patent 11,868,178 B2)
PGR2024-00039 (Patent 11,874,702 B2)

Record of Oral Hearing
Held: September 11, 2025

Before LINDA E. HORNER, NEIL T. POWELL, and
MICHAEL A. VALEK, *Administrative Patent Judges.*

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The above-entitled matter came on for hearing on Thursday, September 11, 2025, commencing at 12:30 p.m., in Alexandria, VA and via video teleconference.

1 P R O C E E D I N G S
2 - - - - -
3 JUDGE POWELL: Welcome. We are here today for an oral
4 argument in three matters. One is PGR 2024-00030. That involves U.S.
5 Patent Number 11,868,178 B2. Another is PGR 2024-00039. And that
6 involves U.S. Patent Number 11,874,702 B2. And, finally, we have IPR
7 2024-00928, which involves U.S. Patent Number 9,582,034 B2.
8 I'm Judge Powell, and I am joined by Judges Horner and Valek.
9 With that, I'll start with, appearances for the parties. Who's attending today
10 for Petitioner?
11 MR. HABER: Thank you, Your Honors. Benjamin Haber for
12 Petitioner Samsung. With me is my colleague Khanh Leon, who is going to
13 be doing a LEAP portion of the presentation. We also have Tim Fink, Renia
14 Zervos, and a representative of the client in the audience.
15 JUDGE POWELL: Thank you. And for Patent Owner?
16 MR. PLUTA: Good afternoon, Your Honor. Robert Pluta on
17 behalf of Oura. With me are my colleagues Jasjit Vidwan and Paul Choi.
18 From Oura today we have Sonali Shah and Kristin Lamb. Thank you.
19 JUDGE POWELL: Thank you. Next, I'd like to figure out
20 whether we need to make part or parts of today's hearing confidential to let
21 us discuss sealed information. I'm going to start with Patent Owner. Do you
22 have a preference? Do you plan to discuss sealed information today?
23 MR. PLUTA: Your Honor, yes, we do.
24 JUDGE POWELL: Okay.
25 MR. PLUTA: It'll come probably towards the end of our

1 presentation depending on how things go. I can alert the court when we feel
2 it's proper to seal the court.
3 JUDGE POWELL: Okay. All right. So we will do that. Let me
4 ask in that vein, do you know, and I'll ask Petitioner this too. Is anybody in
5 person here not on the protective order for these matters?
6 MR. PLUTA: I believe, representative for Samsung would not be.
7 JUDGE POWELL: Okay.
8 MR. HABER: That is correct, Your Honor, our Samsung rep
9 would not be.
10 JUDGE POWELL: Okay. So I assume it's okay if we clear the
11 gallery when we get to portions that may be confidential, is that okay?
12 MR. HABER: Yes, Your Honor.
13 JUDGE POWELL: All right. So that's how we'll proceed. Just
14 each party, if you're going to discuss the confidential portion, let us know so
15 we'll clear the gallery and we'll pause the -- there's a public telephone line to
16 where people can access. I don't know if anybody's on, but we'll take care of
17 that. And if you can try to put the confidential sealed portions of the
18 discussion at the end of each segment of the hearing, that'll help us keep
19 things running smoothly, so.
20 MR. PLUTA: Yes, Your Honor.
21 MR. HABER: Yes, Your Honor.
22 JUDGE POWELL: Okay. With that, let me -- so our hearing
23 order specified 90 minutes of argument time. As Petitioner noted, we
24 granted a LEAP request, so that will add 15 minutes to Petitioner's time.
25 They'll have 105 minutes total. I am going to try to keep time on the time

1 -- well, I am going to keep time on the timer behind me. I encourage you all
2 to independently keep time in case I fail to alert you that your time is
3 running short. Petitioner will begin and may reserve rebuttal time, and
4 Patent Owner will respond and may reserve surrebuttal time. So we're
5 almost there with that. Does Patent Owner have any other general questions
6 or concerns?
7 MR. PLUTA: No, Your Honor.
8 JUDGE POWELL: Okay. And Petitioner?
9 MR. HABER: No, Your Honor.
10 JUDGE POWELL: Okay. My last question for you before we
11 start is how much time would you -- if any, would you like to reserve?
12 MR. HABER: I'd like to reserve about 30 minutes.
13 JUDGE POWELL: Thirty minutes. Okay. Thank you. And,
14 please approach the podium. No rush, but you may begin when you're
15 ready.
16 MR. HABER: So we do have a slide presentation that has been
17 filed, which I understand you guys have electronic copies as well.
18 JUDGE POWELL: Yes, we do. We have the demonstratives and
19 electronic records. And I forgot to mention, when you present, if you can
20 tell us which exhibits and which demonstratives you're referring to, that's
21 good for the record and helpful to our remote judge.
22 MR. HABER: Yes, Your Honors. I may proceed?
23 JUDGE POWELL: Yes, you may begin.
24 MR. HABER: Thank you, Your Honors. Benjamin Haber for
25 Petitioner Samsung. I'm going to be discussing the three IPR matters at

1 issue today. I have on Slide 2, a brief overview of our presentation. I'm
2 going to begin with a brief overview of the alleged invention. Overview of
3 the prior art. And then I'm going to discuss some substantive issues that are
4 relative to all of the patents at issue in this case. Then my colleague, Ms.
5 Leon, will come up and do a portion of the argument. As a LEAP
6 practitioner, specifically, she's planning on discussing the substantially
7 transparent potting issue and the sealed cavity issue. And then I'll come
8 back up and address motivations and secondary indicia. And it's the
9 secondary indicia section that may touch on confidential information. I'll let
10 Your Honors know when we're going to get into that.
11 So, first, brief overview of the alleged invention, the '034 and '178
12 Patents relates to a wearable computing device that comes in various form
13 factors. And the patents themselves are related to the 030 -- '034 Patent is
14 the parent of both the '178 and '702 Patents that are at issue in this case. I
15 did just want to follow briefly on this slide and note that the '034 Patent was
16 subject to an IPR petition that raised four grounds. Patent Owner has not
17 disputed the second grounds, the grounds based on LeBouef, and they only
18 have presented substantive disputes as to the grounds based on Schröder.
19 The second grounds stand unrebutted and invalidate the challenge claims of
20 the '034 Patent for the reasons that are set out in the petition.
21 The challenged patents generally focus on internal packaging of
22 electronic components in a wearable form factor, you can see Figure 4 and
23 Figure 12. The patents don't relate to miniaturizing components or processes
24 for making existing components smaller. They just relate to packaging these
25 things into various form factors. And this is a point that is not meaningfully

1 disputed by the parties. Everyone seems to agree that these patents are about
2 packaging and not specific manufacturing processes. And so, as I
3 highlighted before, I have on Slide 8, an overview of the issues and the
4 substantial overlap with issues as they relate to a number of patents.
5 And so I'm going to go issue by issue through these three, these
6 substantive topics. So, as to the prior art -- there are six prior art patents that
7 are at issue across these proceedings. The first is Schröder. Schröder is a
8 primary reference that is asserted as invalidating all of the -- most of the
9 challenged claims. As a single reference obviousness ground, it is asserted
10 as a ground in all of our combinations. And Schröder includes ring
11 housings, it includes ring halves that are put together with a recess between
12 them. And there are inlays and electronic components that are inserted
13 between those ring halves. Mestas is a secondary reference that is another
14 wearable device, this is a wrist worn device that has curved batteries,
15 specifically for convenient packaging within a wearable device. Yuen is a
16 similar wrist worn device that has similar packaging of small components in
17 a wrist worn device. And then, we have some secondary references, Niwa,
18 LeBoeuf, Wissmar.
19 These are additional ring references directed to health monitoring
20 and packaging various sensors into a ring form factor. And what you can
21 see on Slide 16 is the asserted grounds across all of these patents. As you
22 can see, there is a single reference combination for Schröder for almost all of
23 the challenged claims. These secondary references come in for relatively
24 minor implementation details for some of the dependent claims that are
25 added, kind of, throughout the patents. Slide 17 is just summary of the

1 references.
2 So I'm going to begin with the first issue, which is the internal and
3 external housing components. And in our view, this issue really is the heart
4 of the entire dispute. We think there are a number of subsidiary issues that
5 Patent Owner raises. And we will address all of those. But the primary
6 issue of Schröder's teaching of these internal and external housing
7 components, I think, really resolves a lot of the meaningful disputes. So on
8 Slide 19, we have the claims at issue that have these internal and external
9 housing components. And on Slide 20, we have the teachings of Schröder.
10 And so, I really want -- I think it's important to start with what is not
11 disputed, what we all kind of agree on here. Schröder teaches two ring
12 halves. Schröder teaches a recess between these two ring halves. Schröder
13 teaches an inlay that's placed between the recess between these two ring
14 halves. The Schröder inlay has components that are on it, electronic
15 components and all of that really isn't meaningfully subject to dispute
16 because it's plainly what Schröder teaches.
17 So what is the parties' dispute as to Schröder? The dispute
18 appears to be that Patent Owner believes that Schröder's ring halves are
19 oriented the wrong way. They're not oriented as the claim describes, with an
20 inner ring half touching the finger and an outer external ring half facing
21 away from the finger. But that is just not consistent with what Schröder
22 actually teaches. What Schröder actually teaches is that there are a number
23 of different construction variants, and you can build Schröder's ring a
24 number of ways. And one of those ways is the ways described by Schröder's
25 Figure 4 and Figure 5. And different construction variants are shown in

1 Schröder's Figures 6 through 10. And these are different ways to construct
2 Schröder's ring. They are not different views of the ring. They're actually
3 different ways to construct the ring. And specifically, Schröder's Figure 7 is
4 constructed so that there is an inner housing 16 that is oriented against the
5 user's finger and an outer housing 18 that is oriented away from the user's
6 finger, which is what the claims require.
7 And when you look at what Schröder teaches, you can see that that
8 is kind of the obvious implementation of Schröder. So Schröder's Figure 5
9 has a ring that has these two ring halves that come together with a seam
10 down the middle. Schröder says that you can construct the ring a different
11 way. The way that's, for example, shown in Figure 7. And if you were to do
12 that, and Schröder was to show that in a similar cross section as to what's in
13 Figure 5, you'd get Figure 5 prime that shows the inner ring housing contact
14 the user's finger.
15 And what you see when you look at these different construction
16 variants, these different cross sections, you can see Schröder's construction
17 variants on the left. They are Figures 6 through 10. They look very similar
18 to the cross sections that are shown in the '178 Patent, Figures 12, 13, and 14
19 have the same sorts of cross sections demonstrating the same sort of recess
20 where the electronic components will go, because this is a standard cross
21 section that is used to show kind of the interior components of a ring device.
22 So in response to Schröder's teachings, Patent Owner really only makes two
23 major arguments. The first, they rely heavily on Schröder's Figure 3. They
24 make a lot of arguments about Schröder's Figure 3 and what Schröder's
25 Figure 3 does. And then the second response is they talk about bagels. I'll

1 get to that.
2 But first, with regard to Schröder's Figure 3, they're talking about a
3 different embodiment. Schröder's figure 3 is very specific about teaching a
4 replaceable chip module. That is not the embodiment that Patent Owner's
5 pointing to. Patent Owner's pointing to the embodiments of four and five
6 that don't have that replaceability feature. And that is not really a design
7 factor that is going into those embodiments of Schröder that we're pointing
8 to.
9 And last, the second argument, this is -- it seems to be Patent
10 Owner's view that Schröder's Figure 4 is a bagel and the recess where the
11 electronic components go is the cream cheese. And when you put this all
12 together, you get a bagel sandwich, and that's Figure 5. And their argument
13 seems to be that what Schröder is actually telling you to do is just take
14 Figure 5 and rotate it 90 degrees, and take a different slice of it, and you'll
15 get a bagel sandwich that looks like this figure that is on Slide 28. A number
16 of problems with that argument. One, if you do it, if you actually to do what
17 they say, Schröder's Figure 5 doesn't look like the bagel sandwich. The
18 inlay's oriented in the wrong direction. But moreover, Schröder is not about
19 bagels. It's not about rotating devices. It is actually about construction
20 variances, about different ways to build this ring. And if you look at what
21 Schröder says and you do what Schröder says, you get the figure that is
22 shown in the bottom, figure 5 prime, where you have Figure 7 oriented the
23 way -- the same way the patent is oriented with an inner housing that
24 contacts the user's finger.
25 So, on Slide 29, we have, for the '178 Patent, there is a secondary

1 ground in addition to the Schröder ground, which is a Niwa based ground.
2 And frankly, Your Honors, if you agree with the Schröder based grounds on
3 the '178 Patent, that fully resolves the patentability issue, of all of the claims
4 in the '178 Patent. And the Niwa grounds really don't need to be addressed.
5 But, if Your Honors did intend to address the Niwa Grounds, Patent Owner
6 has identified that Niwa, as a primary reference, was discussed in a separate
7 ITC matter. That is an ITC matter that Samsung was not involved in, that
8 we don't actually have the complete record of. Large portions of it are
9 sealed. We have seen a public decision by the ITC on Niwa in particular.
10 And just based on that public record, and not looking at the underlying facts,
11 there are a number of problems with the ITC decision. We don't know
12 factually what it was based on, but when you look at the order, it seems like
13 there was a claim construction, implied claim construction issue that was
14 being considered and addressed by the ITC, and that is whether or not
15 Niwa's unitary housing, a ring that is formed of a solid construction, would
16 satisfy the claims. And it seems like what the ITC said is that the claims
17 require a separability issue. In our view that is not correct. I don't think
18 there's anything in the claims that requires separability. But this is a dispute
19 that Your Honors would need to address and resolve if you wanted to deal
20 with the Niwa grounds.
21 JUDGE HORNER: How do you address, and I apologize, I don't
22 have the '178 claims in front of me, I believe they have the internal and
23 external components coupled to one another. And that was what the ITC
24 found dictated that there would be separability. How do you address that?
25 MR. HABER: Yeah. So -- right. And so, the internal housing

1 components and the external housing components have to be coupled
2 together. I think that's what it says. It doesn't say that they need to be
3 separable. The issue is that you can have portions of a larger device that are
4 all on the same device that are coupled to each other, that are not separable.
5 Consider, for example, a pipe. A pipe has one end, a first end and it has a
6 second end, and those ends are coupled together, but they're all part of a
7 larger pipe. And so, there are components that are identified by the claims
8 that have to be found present. And if in fact those components are part of
9 the device, and they are coupled together by being part of the same device,
10 then that satisfies the claim. There is no requirement for separability in the
11 claims.
12 JUDGE HORNER: But does Niwa describe how its housing is
13 made? Do we know that there's any part coupled to another part in Niwa's
14 housing or is it silent as to how the housing connects?
15 MR. HABER: So Niwa describes that it's pieces -- it's a single
16 unitary structure. Right? So it's designed as a single structure. But what we
17 can see in Niwa's figures is there is an outer edge and an inner edge. And
18 they are coupled together because they are part of the same structure. That
19 is an aspect of Niwa that is present. Now, the ITC disagreed with that. They
20 disagreed with it largely on construction grounds. We don't have the full
21 record, but what I would say is that the ITC's conclusion is a legal
22 conclusion. I'm not sure what facts it was based on, but it is a legal
23 conclusion that is not binding on this board, and ultimately, isn't binding on
24 anyone outside of the ITC.
25 JUDGE VALEK: Counsel, this is Judge Valek. I have a question

1 about Niwa's disclosure. Is there any teaching or disclosure in Niwa for how
2 that housing is actually made? I mean, for example, you could envision that
3 it could be injection molded so there's never two pieces that are coupled
4 together. It's just all molded into a unitary housing at one time. Is there any
5 teaching or disclosure in the reference itself on that point?
6 MR. HABER: Your Honors, I believe Niwa does propose that its
7 parts could be injection molded. I think that that is -- I don't know, I'm not
8 aware of any other teachings.
9 JUDGE VALEK: Doesn't that teaching undermine your position
10 on the Niwa alone ground? Because there never really are two separable
11 things that are joined together. It's just all molded at one time into a unitary
12 housing.
13 MR. HABER: And so, respectfully, Your Honor, I don't think that
14 it does because that position is based on claim construction. It's based on a
15 requirement in the claims that these things have to be formed separately and
16 then joined together. And I just don't think that's what the claims say. The
17 claims don't have that separateness requirement.
18 JUDGE VALEK: Suppose we agreed with what you're calling the
19 ITC's implied construction. Don't you have a backup ground where you rely
20 on Niwa in combination with other references to get to this idea that you can
21 have separate housings that are joined together? And wouldn't that be the
22 stronger ground?
23 MR. HABER: Yes, Your Honor. That was going to be my next
24 point. Even if Your Honors did agree with the ITC's construction we have,
25 there's really no dispute about Schröder. Schröder has these separable

1 components that come together. And we have a ground specifically to
2 address this point, that one of skill in the art to the extent they wanted to
3 make separable components for ease of manufacture or other reasons
4 would've just what Schröder said to do and design the Niwa device that way.
5 JUDGE VALEK: And so let me ask you a follow up question
6 about that since you do have the backup ground. You've mentioned before
7 that we don't need to reach that -- but the Board has a policy now where we
8 are going to reach all grounds in the final decision. That's changed. And
9 there was a public memo to that effect recently. But you're not withdrawing
10 the Niwa only grounds, are you? Or maybe you are, and just relying on the
11 backup ground?
12 MR. HABER: No, no, no, Your Honor, we're not. Because we do
13 believe that the claim construction issue would cover Niwa when the claims
14 are properly construed. But if Your Honors don't agree on that claim
15 construction point, they still are covered by the combination ground.
16 JUDGE VALEK: Thank you, Counsel.
17 MR. HABER: Yes. So, I think I'll move to the next issue on Slide
18 32, which is the flexible PCB. And again, here are the claim elements of the
19 '178, '702 Patent, and the '034 Patent that require flexible PCB. And again, I
20 think this is taught by Schröder. I think it's important again to start with
21 what everyone seems agree on with respect to Schröder and its PCB. So
22 again, I mean, we all agree that Schröder has ring halves. We all agree that
23 there is an inlay inserted into the ring halves. We all agree that there are
24 components on the inlay inserted into the ring halves, and Schröder
25 describes specifically that there are components inserted onto the ring half

1 and it described how to manufacture the inlay. And in fact, what Schröder
2 describes is exactly how one of skill in the art would manufacture a PCB.
3 And so, what is it that Patent Owner seems to dispute? They really
4 seem to be disputing the fact that Schröder doesn't use the words PCB. He
5 doesn't call it a PCB. But in fact, what Schröder is describing for its inlay is
6 and would have been understood as a PCB. What Schröder describes is that
7 the PCB is made of certain materials, PET and Kapton. And these are well
8 understood materials that are used for manufacturing PCBs. And in fact,
9 they're the same materials are used in the challenged patent.
10 What Schröder describes is that there are electronic components
11 that are put on to the PCB, and they are, by means of conductive paste, they
12 can be printed on to the carrier. They can be lasered, they can be etched.
13 And in fact, the carrier is made up foils and the foils can be multiple layers.
14 They can have multiple components on multiple layers. And then Schröder
15 describes what to do with that inlay. What Schröder describes is that you
16 should take that inlay with the components on it and cut it out as a blank, a
17 flat blank. And then you should, as described on Slide 37, take that flat
18 blank and roll it up around a central ring, a core ring. And then once it is
19 rolled up around that core ring, you put the outer housing on it, and you have
20 a sealed space that fully encompasses the inlay.
21 And what you can see when you look at Schröder's teachings on
22 Slide 88 -- oh, I'm sorry, on Slide 38, is that what Schröder is describing is
23 exactly what's described in the '178 Patent. The inlay is flat. It has various
24 depressions in it. The electronic components go in those compression
25 -- depressions. The whole thing is designed to be flat. So that the

1 components if -- even surface is present on the carrier foil to facilitate later
2 process -- processing the carrier foil with inserted devices. So you take this
3 flat blank, you curve it, you put it in the curved housing. And that is what
4 Schröder is teaching. And one of skill in the art would have understood that
5 what is being described here in Schröder is the manufacture of a flexible
6 PCB, despite that it doesn't use those words.
7 And when you look at Patent Owner's response, they really don't
8 have a meaningful response. This is a quote from their reply on Slide 39.
9 What they rely on is a citation to their expert, their expert Dr. Mercier
10 explained that a POSITA would require, at a minimum, these three things;
11 etched or printed conductive traces, multiple layers and mounted
12 components. And those are the things that their expert said are required
13 before you can call something a PCB. And all of those things are in
14 Schröder. You can see that on Slide 39 that we have printed traces, we have
15 multiple layers, we have mounted components. The only thing that is
16 missing from Schröder is the words printed circuit board describing what's
17 done here for Schröder. And frankly, that is us serving a form over function.
18 There's really no dispute. I think that Schröder teaches a PCB.
19 When you actually -- and then, we also have, in the record on Slide
20 41, additional explanations and some secondary references that provide
21 additional gloss on what a POSITA would have understood. And they
22 describe the exact same things that Schröder is describing, which is, you
23 know, inlays with sensors. And Yuen, for example, specifically calls it a
24 flexible PCB. There's light sources and photo detectors placed on flexible
25 PCB. We have the same teaching from LeBoeuf. The point is that those one

1 of skill in the art would have understood that what Schröder is telling you to
2 do is make a flexible PCB. And the secondary evidence that we have is
3 further evidence of that. And to the extent there was some sort of a
4 requirement to use the words flexible PCB, those are taught by our
5 secondary references as well.
6 So next, I'm going to talk about the battery limitations. And we
7 have on Slide 44 the claim elements that recite battery limitations. And
8 what you can see in these claims is that Claim 1 of the '178 Patent is actually
9 broader than some of the dependent claims. It recites a battery. It doesn't
10 specifically recite a curved battery. There are dependent claims that require
11 a curved battery. But Claim 1 doesn't use that word, it doesn't call it a
12 curved battery. Patent Owner has argued that Claim 1 requires a curved
13 battery, nonetheless. And when I ask their expert about this, the basis for
14 their argument, essentially is that, the claim requires a battery. The battery
15 has to be positioned between two curved housings, and so the battery must
16 be curved according to Claim 1, because it's positioned between these two
17 curved housings. Respectfully we disagree. I don't think it recites a curved
18 battery. But if that is their position, then Schröder teaches the Claim 1 for
19 the exact same reasons their argument -- the patent -- their expert argues that
20 --
21 JUDGE HORNER: Before we go to Schröder, can you talk a little
22 bit about the claim language?
23 MR. HABER: Sure
24 JUDGE HORNER: So, the Claim 1 says a shape and size
25 configured to fit within the cavity between the outer circumferential surface

1 of the external housing component and the inner circumferential surface of
2 the internal housing component. So how are we to interpret the shape and
3 size limitation if not curved?
4 MR. HABER: Right. And so, the shape and size limitation is
5 telling you that the battery essentially has to be small enough to fit within
6 the curved space. It doesn't have to be curved to fit in that curved space. It
7 may be small and may be packaged in such a way, maybe segmented, for
8 example, there are multiple flat batteries that are, kind of, positioned next to
9 each other. All that is required is that the battery has to fit within the recess.
10 And so, that's what the shape and size means. And certainly, you could do
11 that with a curved battery. And that is what some of the dependent claims
12 require. But the independent claim is broader and it just doesn't require
13 curvature. There's a number of other ways you could do it.
14 And so when you get to Schröder, I think the interesting point is
15 Schröder teaches to use a battery. Schröder teaches on Slide 46, we have an
16 excerpt from Schröder that says the external secure unit two, that is the
17 finger ring, has an energy storage device, e.g., an accumulator or a battery.
18 And so Schröder teaches that you would have a battery. And there really is
19 not a meaningful dispute as to where that battery could be placed. I asked
20 their expert, I said, and so Schröder says that in inlay 12 you can have it
21 -- you can have on it, the inlay, at least one chip module, further antenna coil
22 eight, and at least one or more electronic component such as a battery, valid,
23 right? And he said yes, because of course, that's what Schröder says.
24 Schröder says that you have the inlay that is inserted into the ring half, and
25 the inlay includes, for example, a chip module and at least one or more

1 electronic device and a battery is an electronic device.
2 JUDGE HORNER: Does it give example of a battery as being an
3 electronic device.
4 MR. HABER: It does not. What Schröder says about the battery
5 is, here on Slide 46, it just says that there's a battery. It says that the battery
6 is connected to other electronic devices, it's connected to antennas, it's
7 connected to the chip module. I think one of skill in the art reading this
8 would understand that the battery is, in fact, an electronic device. And there
9 really, I don't think, is meaningful dispute about that.
10 JUDGE HORNER: And the discussion of the battery is just in that
11 one part of Schröder that you're quoting there, correct? In column 11 of
12 Schröder, is that the only reference to a battery?
13 MR. HABER: So column 11 is the only specific reference to a
14 battery. The other references -- in this portion of Schröder, what it says is
15 that, the battery is connected to the chip module and various other electronic
16 components and other parts of the patent describe that the inlay includes the
17 chip module and other electronic components. And so, Schröder doesn't
18 specifically say that the battery is an electronic component, but one of skill
19 in the art would have understood that all of the electronic components are on
20 the inlay. And that inlay is, as Schröder teaches, inserted into the recess
21 between ring halves 16 and 18. And again, that isn't really meaningfully
22 disputed. And so, what Patent Owner seems to be arguing about is that, two
23 things, one, Schröder's mention of the battery doesn't describe it as a curved
24 battery. Again, I think that is just an improper way to read the claims. But
25 Schröder's battery is at least as curved as the battery in Claim 1. So to the

1 extent that Claim 1 requires a curved battery, Schröder teaches it. But
2 secondly, they make this argument that I think just isn't accurate about
3 Schröder, which is that Schröder does not include -- does not disclose any
4 position of a battery. I just don't think that that was a fair reading of
5 Schröder. Schröder teaches that the battery is connected to the chip module.
6 Schröder teaches that electronic components are on the carrier. Schröder
7 teaches in his column 13 how the carrier is manufactured in all of these
8 electronic components, which would include a battery are on the foil, they
9 are inserted into various depressions in the inlay. Schröder describes that all
10 of these components on the inlay should be flat and present a flat surface,
11 and the inlay itself is wound up around a central core ring. So it's not correct
12 to say that that Schröder doesn't describe anything about how the battery is
13 positioned, it actually does in describing how the inlay is constructed.
14 JUDGE VALEK: Counsel, I have a question for you about
15 Schröder's Figure 3 and the embodiment shown there.
16 MR. HABER: Yes, sir
17 JUDGE VALEK: So Schröder's Figure 3, as I understand, it
18 shows a chip module 10, right? But it doesn't actually say that that's the
19 battery. But we have the teaching that the battery is connected to the chip
20 module, right?
21 MR. HABER: Yes.
22 JUDGE VALEK: And so, in Figure 3, I see that the chip module
23 or battery is connected to the inlay 12, but it also sticks out of the top of the
24 ring, I guess, out of -- beyond the line marked as two.
25 MR. HABER: Yes.

1 JUDGE VALEK: Would a configuration like that, if we assume
2 that that ten is the battery, or at least co-extensive with the battery, would
3 that read on the claim?
4 MR. HABER: Let me just find a slide where I have Schröder's
5 Figure 3. I can bring it up and --
6 JUDGE VALEK: Sure. And when I say claim I'm talking about
7 Claim 1 of the -- that we've been discussing of -- the number's escaping me.
8 What number was that again? The '174 Patent?
9 MR. HABER: '178 Patent.
10 JUDGE VALEK: '178, yes. So I mean, again, what I'm asking is,
11 would the embodiment that we see here, if we assume that ten is the battery,
12 would the embodiment shown in Schröder's Figure 4 read on Claim 1 of the
13 '178 Patent?
14 MR. HABER: Yeah. And so, I think there's an argument that it
15 would. That isn't there the argument that we're presenting. We did not base
16 our argument on Figure 3.
17 JUDGE VALEK: Fair enough. You can stop there. If that's not
18 your argument, that's not your argument. Thank you, Counsel.
19 MR. HABER: Okay. Thank you. All right. Okay. So the dispute
20 about Schröder seems to be whether or not Schröder's battery is curved and
21 where it's placed, and those teachings, I believe, come directly from
22 Schröder. But again, it's important to note what the patents, all of these
23 patents are not about. They are not about battery manufacture, battery
24 miniaturization.
25 The patents generally presume that curved batteries existed in the

1 art. And in fact, that's true. Curved batteries did exist in the art. And we
2 have an example here, Mestas, which expressly teaches a curved battery.
3 And you can see the curved batteries highlighted in blue in kind of the ring
4 that goes around a user's wrist. And so, there really is no dispute about
5 whether or not curved batteries existed. What Patent Owner argues is that
6 there's some size disparity between the Mestas embodiment, which is on a
7 user's wrist, and the ring embodiment, which is on a user's finger. And of
8 course, we're not arguing that one skill in the art would take these batteries
9 from Mestas and try to jam them into what's going on in Schröder. That isn't
10 the argument.
11 What Mestas teaches us is, and that's consistent with the patents, is
12 that those are skill in the art knew about curved batteries, knew how to
13 manufacturer them, and knew what to do with them. Stick them inside of
14 internal and external housings so that they would be tightly packaged with
15 whatever form factor they were applied to.
16 And so, when you look at the actual combination that we're
17 presenting, using a curved battery is taught by Mestas, and a curved recess,
18 which is taught by both Mestas and Schröder, would have been obvious.
19 And so again, this is something that the '178 Patent presumed existed at the
20 time, it actually did exist, curved batteries were known. And there was a
21 general trend in the industry that affected all electronic components,
22 processors, memory, batteries, to just try to make things smaller and
23 packaged as tightly as possible.
24 And so, the argument is, that one of skill in the art in implementing
25 Schröder, they would see that you would want to use a battery, and they

1 would just pick an appropriate battery that is sized properly for whatever
2 application they wanted in view of Schröder's teaching, and in view of these
3 other teachings in the art.
4 And I think it's important also to pause on this issue. Generally,
5 size reduction does not impart patentability. We have a case cited on Slide
6 53 from 1880, that stands for this kind of well-known proposition. The
7 quote here is, there is certainly nothing patentable in merely reducing the
8 size of the bracelet so as to adapt it to use in a necklace. The point is,
9 making things smaller is just not something that is inventive. And that's
10 especially true here when the '178 Patent itself doesn't describe any of these
11 things. The '178 Patent assumes that those of skill in the art know how to do
12 this. And those of skill in the art do know how to do this. All right. So I'm
13 going to go to the next substantive topic.
14 So in addition to the packaging, the form factor, all of those
15 issues that are common to all of the patents, we have some additional
16 features for some additional dependent claims where their device has to
17 include sensors that are coupled with battery and a PCB. And you can see
18 those particular claim elements in the '178 and '702 Patent. The broadest of
19 those simply require one or more sensors that are attached to the printed
20 circuit board to collect data from a user as the ring is put on their finger.
21 And, Schröder teaches that feature. Schröder teaches a biometric sensor.
22 This is on Slide 59. A biometric sensor that captures at least a partial vein
23 image of the finger when the finger is being slipped onto the user's finger.
24 And Schröder describes that there may be at least one biometric sensor, so
25 Schröder contemplates that there could be more than one. But it does just

1 disclose one.
2 It specifically discloses an IR based sensor, uses IR light to
3 capture this sensor data from the user's finger. For some of these dependent
4 claims that require more sensors or sensors placed in particular places along
5 the PCB, we have secondary references, Niwa and Yuen, which teach that
6 specifically. And so, you can see dependent claims in the '178 Patent, 13
7 and 14 for example, require sensors that have two wavelengths. And so, one
8 of the wavelengths could be IR, and that comes from Schröder. And then
9 additional wavelengths could be visible. And you can see that coming from
10 Yuen. Yuen teaches health monitoring that is done in multiple wavelengths.
11 And so, one --
12 JUDGE HORNER: What could be the reason why someone
13 skilled in the art would modify Schröder, which deals with security
14 applications to be a biometric sensor or add a biometric sensor to that?
15 MR. HABER: Right. And so, what Schröder says is it has a
16 security application, but it specifically says that you should use biometric
17 sensors, as you specifically should use one or more biometric sensors. And
18 so, Schröder already contemplates using more than one biometric sensor in
19 its device. And the application of Yuen certainly is health monitoring. But,
20 a few things. One, there's nothing about Schröder that precludes its use as a
21 health monitoring device. And two, there's nothing about these multiple
22 wavelength sensors that would preclude them being used in a security
23 application in Schröder. And so, the point is, these are the same types of
24 sensor that collect the same types of data. And Schröder had one particular
25 application for security, Yuen has another one for health monitoring. But

1 there's no reason why those things couldn't work together. And one of skill
2 in the art, when looking about biometric sensors, would obviously want to
3 find as much information as they could about any type of biometric sensor.
4 So there's nothing about these references that somehow prevents them from
5 being combined or would cause a POSITA to not look at one reference over
6 the other. And again, there are some additional dependent claims, 14, 15
7 that have to do with positioning of these multiple sensors in the ring device.
8 The actual positioning of multiple sensors comes from our secondary
9 references Yuen and Niwa that teach these multiple devices, it tells you
10 where to position them and so one of skill in the art would simply apply
11 those teachings to Schröder. All right. So I think with that, I'm going to
12 hand over presentation to my colleague, Ms. Leon, and leave you in her
13 capable hands.
14 MS. LEON: Hi, I'm Khanh Leon, for Petitioner as well. I will
15 be discussing a couple limitations that pertain to the '034 and the '702
16 Patents. So starting with the substantially transparent issue, the '702 and the
17 '034 each have claims with language requiring substantially transparent
18 material or potting.
19 Now, with regards to the '702, it relates to internal housing that
20 needs to be substantially transparent to enable light to pass through. And the
21 '034, this is in the context of internal and external potting or housing made
22 up of potting material. Now, I do note that Patent Owner does not seem to
23 dispute claim 17 of the '034.
24 So looking at the claim language at issue here, the '702 claim
25 language states that the component needs to be substantially transparent to

1 enable light to pass through. And looking at this language, it says light. It
2 does not say only visible light, it does not say only infrared light, it does not
3 say only ultraviolet light. It's just light and it should encompass at least one
4 of those wavelengths.
5 And this is further supported by the intrinsic evidence, specifically
6 the abstract of the '702 and the dependent claims of the '702 and the '034.
7 Now, Patent Owner seems to interpret this as requiring the housing
8 portion to allow visible light to pass through. And the only support for this
9 interpretation is from its expert's saying that that, oh, a regular person
10 reading this claim language would require visible light to pass through. But
11 that, again, seems to run counter to the claim language itself and to the
12 intrinsic evidence.
13 Again, I just talked about the claim language. Looking now at the
14 abstract of the '702. In describing potting material to use this substantially
15 transparent language, the abstract describes it as being transparent to visible
16 light, infrared light, and/or ultraviolet light. And so the patentee, at the time,
17 seemed to envision at least one of these three types of wavelengths.
18 And this is, again, further supported by the dependent claims.
19 Claim 9 of the '702 has the first and second light-emitting components
20 related to first and second wavelengths. The first wavelength is specified in
21 Claim 10 to be associated with visible light, and the second wavelength is
22 associated with infrared light. Now, it wouldn't make sense to have a
23 substantially transparent enough -- so it's enough for the visible light to go
24 through, but not for the infrared light to pass through.
25 And there's further evidence in the Dependent Claim 13 of the

1 '034, which then describes substantially transparent material that allows at
2 least one of visible light, infrared, radiation, and ultraviolet radiation through
3 that potting.
4 So, in light of that plain and ordinary meaning in view of the
5 intrinsic evidence, Schröder teaches transparent windows and components,
6 as well as internally-facing infrared sensors. Here, Schröder clearly states it
7 has a transparent region, specifically a window. And as Mr. Haber
8 explained earlier, Schröder teaches that it has a bioelectric sensor with at
9 least an infrared diode and an infrared sensor.
10 JUDGE HORNER: Excuse me for interrupting, but is the sense
11 -- is the transparent window in Schröder that you have on the -- let's see,
12 we're on Slide 73. That transparent region or window, is that for the sensor
13 or is that for something different?
14 MS. LEON: So that excerpt here on the left, that would read
15 towards an external window. But, as the Patent Owner's expert would agree,
16 in taking this partial vein image of the wearer's finger, this would be taken
17 from an internal window from the infrared sensor.
18 JUDGE HORNER: But does Schröder describe an internal
19 window?
20 MS. LEON: Not explicitly in the context of describing this
21 biometric sensor in this application, but a person of ordinary skill in the art,
22 reading the transparent window is on the external side, would also -- would
23 require it be necessary for an internal window to take this partial image of
24 -- partial vein image with this infrared diode and infrared sensor in this
25 biometric sensor disclosed by Schröder.

1 JUDGE HORNER: And is there support in your expert's
2 declaration for that finding?
3 MS. LEON: I believe there is. And at least the Patent Owner's
4 expert concedes that Schröder -- it would be pointless for Schröder not to
5 have an internally-facing infrared transmissive window to allow that light to
6 pass through in order to take that partial vein image, as shown here on this
7 slide.
8 JUDGE HORNER: I believe that Patent Owner's argued, and
9 Patent Owner can certainly correct me later if I misunderstood, that it would
10 be possible, if the housing were made of plastic, to do that vein imaging
11 using infrared without having windows. Is that right?
12 MS. LEON: So, from my understanding, if there is this plastic,
13 then that would be transparent enough for the infrared to pass through, right?
14 Would that not be a window itself?
15 JUDGE HORNER: I see. So it doesn't have to be a window. It
16 has to be transparent to the light that you're transmitting.
17 MS. LEON: I guess I want to be careful in terms of -- I guess I
18 want to say that -- so, this housing component must be substantially
19 transparent to allow the light to pass through. Yes, in terms of the infrared
20 passing through. So, yes, I agree with that.
21 JUDGE POWELL: And, sorry.
22 MS. LEON: No, go ahead.
23 JUDGE POWELL: So the disclosure of a housing portion that may
24 not be a window, per se, but is plastic, does that meet the claim language of
25 substantially transparent external potting?

1 MS. LEON: For the '034?
2 JUDGE POWELL: Yes.
3 MS. LEON: So, at least Schröder teaches that there is this
4 external-facing window for the '034, which is where the substantially
5 transparent potting material limitation is. To the extent that isn't clear, Yuen
6 certainly teaches that it has substantially transparent potting material that
7 visible light could also pass through.
8 JUDGE POWELL: Okay. Thank you.
9 MS. LEON: And, again, to iterate Mr. Haber's point, for the '034,
10 the Schröder-based grounds are here on the screen. Patent Owner did not
11 dispute Claims 1 through 5 and did not dispute any of Petitioner's arguments
12 regarding the LeBoeuf base grounds for the '034.
13 And just to recap or give background to what LeBoeuf is about,
14 LeBoeuf teaches this computing ring that has internal and external housing
15 within it; 74 and 75 are the elements mapped on there. And it encloses a
16 PCB, here annotated in purple on Slide 77. And this interior and exterior
17 housing also defines a window to allow data acquisition with its sensors to
18 acquire information from the user's finger, as well. And LeBoeuf explains
19 that that's the flexible PCB.
20 And we are talking about transparent potting here. Now, the '034
21 explains that its sealing epoxy is transparent to allow light to pass through.
22 And that's consistent -- or LeBoeuf teaches the same thing. It has a cladding
23 material that is substantially transparent, as underlined here, "optically
24 transparent or mostly transparent," to then allow light or guide light to pass
25 through to collect information from the finger.

1 And '034 -- I apologize for the typo, but '034 also explains that its
2 potting material could be made of polymer, and LeBoeuf also teaches in its
3 Claim 41 that its cladding material could be polymer as well. So LeBoeuf
4 teaches this transparent potting in its exterior in the same way that '034 does.
5 Now, relatedly, we have the sealed cavity issue, which is
6 exclusive to the '034. Now, Claims 11 and 16 recite external or internal
7 housing component that essentially seals a component in a PCB in an
8 internal space of either respective interior or exterior housing.
9 Now going to Slide 81, I'll break it down, that limitation, starting
10 with the components. So, the '034 Patent broadly describes different types
11 of components that can with its PCB. Figure 2 here shows it could be a
12 battery, it could be sensors, there can be an antenna. And Schröder also
13 teaches the same type of components that can be on its inlays. Mr. Haber
14 explained that the inlay in Schröder can have at least one chip module, at
15 least one other electronic component, such as a display, all arranged on its
16 inlay. So, however the '034 teaches this broad range of components,
17 Schröder likewise teaches components in a PCB, as well.
18 And Schröder also teaches a sealed internal space, similar to what
19 is described in the '034 Patent. I'll direct you to Claim 12D of the '034 here.
20 So, we have this element 1220, which we have this internal space where the
21 components in the PCB would be. And in it is enclosed or sandwiched
22 between these housings, these top and bottom housings, as well. And that is
23 the same thing shown in Schröder's construction variance, for instance with
24 Figure 7. There's the inlay 12, which would have its components in PCB,
25 and that is then sandwiched between an internal and external housing portion

1 and protected there.
2 And that would make sense, that this space that is between these
3 housing portions is a sealed space because, otherwise, these components
4 would be exposed to the elements and otherwise may be compromised
5 structurally. And a person of skill in the art would've known that Schröder
6 does seal these things, and would've also known there are other ways and
7 additional implementation details on how to seal things. Yuen, for example,
8 teaches that it has, in its biometric monitoring device, a sensor package that
9 is a protected with a watertight seal. And its housing, which is made of
10 metal, plastic, something rigid, is then stiff enough to provide that structural
11 integrity to protect those components. And then it further describes different
12 materials for this watertight seal, such as Gore-Tex and sealants and glues.
13 And, with that, I'll give it to Mr. Haber.
14 MR. HABER: Thank you. I'm supposed to be up here and make
15 any corrections I need to make. And I don't think I need to make any
16 corrections.
17 The one thing I will say, Judge Horner, is you asked for a citation
18 to expert testimony. In our reply, page 2, we have expert reply declaration.
19 That's at Exhibit 1079. Paragraphs 13 through 14 discuss the issue of
20 substantially transparent window, and there's additional evidence and
21 information cited there.
22 So, next, we've spoken briefly about motivations throughout the
23 presentation. I don't think I need to go through a lot of these in detail. There
24 are a number of common combinations. They're all very well motivated,
25 with arguments, citations to the references themselves, expert testimony

1 explaining exactly how and why these things would be combined.
2 What I will do is just highlight two overarching complaints that
3 Patent Owner seems to make. And the first is that they seem to argue that
4 there's some size disparity that would preclude a POSITA from taking
5 teachings from any of these references and combining them together. And,
6 frankly, that is just, I think, not borne out by the evidence. When you
7 actually look at Mestas and Yuen, these are these the wrist-worn devices, all
8 of the other devices are small ring, form factor devices.
9 And what Mestas and Yuen both teach is reducing the size of their
10 devices themselves. Mestas teaches that you can make the wrist form factor
11 smaller, you can reduce its circumferential size by taking links in and out of
12 it. And so Mestas teaches, again, that you might want to shrink the size of
13 its packaging. And Yuen, itself a wrist-worn device, largely a wrist-worn
14 device, specifically teaches a ring form factor. It teaches a small form
15 factor, an earring. It teaches a toe ring, which is a ring that goes around a
16 user's toe.
17 And so the idea that these larger devices would not have been
18 understood as something that could be shrunk down and made smaller is just
19 not borne out by the references themselves. Again, Patent Owner's own
20 expert identified and acknowledged the general trend in the industry to make
21 things smaller. And that would have obviously forced POSITAS to think
22 about making all of these larger size devices smaller.
23 Next, and we mentioned this, I think, with Judge Horner, Schröder
24 does have a security application. It has biometric sensors specifically for
25 security application. And Mestas and Yuen have a health monitoring

1 application. As I mentioned, there's no reason why you wouldn't look at
2 these things together. And, in fact, this is borne out by the '178 Patent itself.
3 The '178 Patent has almost the exact same security application as Schröder.
4 It is a security measure for doing -- they call capillary mapping. It's the
5 same thing. It's doing what Schröder is doing, looking at, basically, the
6 user's finger to authenticate the user. So the idea that one of skill in the art
7 wouldn't be looking at all of these things together is belied by the patent
8 itself.
9 JUDGE HORNER: But we can't look to the patent for motivation.
10 MR. HABER: Right. The motivation doesn't come from the
11 patent. The motivation comes from the references. But the argument that
12 Patent Owner is making, that you wouldn't look at these things together, it's
13 just not -- it's not accurate. It's not a correct reading of the record.
14 JUDGE HORNER: What about their enablement argument? That,
15 well, the only references that show curved batteries are in this larger form
16 factor, and that Petitioner's expert testified they didn't know if -- he didn't
17 know if any batteries of that size to fit in the ring were even available at that
18 time, in that relevant time period. How do you respond to that?
19 MR. HABER: Yeah, so, a few things. First, all of these references
20 are presumed to be enabled. One, they're patents; they're presumed to be
21 enabled.
22 Two, the '178 Patent itself doesn't describe anything about
23 miniaturizing these patents. It assumes that all of these batteries exist and
24 are available. The references made clear that these batteries do exist and are
25 available.

1 The testimony that our expert gave is that he didn't go out
2 specifically and look, himself, for a small battery. But what he said is that if
3 one of skill in the art wanted a small battery, they would just either make
4 one themselves or have one made. This is not something that one of skill in
5 the art would have been thinking about as a problem. They would just
6 simply go out and contract a battery manufacturer or whoever, find one on
7 the market, and get an appropriately-sized battery to implement in Schröder.
8 And that is what Schröder essentially assumes; there's a battery, it's
9 packaged in a ring device, and one of skill in the art knows how to do it.
10 And when I asked Patent Owner's expert about that, he agreed, that the
11 patents aren't about manufacturing. And, you know, he said Mestas' devices
12 are big, it's true. They are bigger than what's in Schröder. And he reached
13 the conclusion that one of skill in the art simply wouldn't know how to do
14 this. They would be baffled and befuddled about trying to shrink a battery
15 down. And I don't think that that is an accurate representation of the record.
16 All of these patents assume the batteries exist. The prior art assumes that
17 they exist. The challenged patents assume they exist. And, in fact, they did
18 exist. One of skill in the art would simply design the battery they needed for
19 the application they were looking for.
20 JUDGE HORNER: I think the ITC, though, found some merit in
21 the difference-in-scale argument.
22 MR. HABER: So, the ITC's argument -- again, we don't have the
23 full record -- but I would say is ITC was very, very focused on Niwa. And
24 Niwa has a battery in it. There's no dispute that Niwa has a battery in it.
25 And Niwa characterized its battery in a certain way. Niwa said that its

1 battery is substantially flat. And so, that's true, it was substantially flat. And
2 so what the ITC did, from the record that we can see, is they seem to take
3 that teaching from Niwa as a teaching that you Niwa required a substantially
4 flat battery.
5 I don't think that's an accurate reading of Niwa, but that is what the
6 ITC said. And what the ITC said is, if Niwa requires a flat battery, then you
7 wouldn't take a curved battery and put it into Niwa. And, frankly, that's true.
8 If Niwa had said you cannot use a curved battery here, you need a flat
9 battery, then you wouldn't combine Niwa with a curved battery device. One,
10 that isn't what Niwa said. But, putting that aside, it's certainly not what any
11 of these references say. These references say to use a battery and just use
12 whatever battery you need to use to get it to work.
13 JUDGE HORNER: But we don't have any evidence in the record
14 -- and we have lots of evidence in the record -- but we don't have any
15 evidence in the record showing a battery of this size that is curved.
16 MR. HABER: So I --
17 JUDGE HORNER: Go ahead.
18 MR. HABER: I don't think that that's accurate. So, a couple of
19 things. Dr. Anthony discussed that curved batteries were available. So we
20 have a Dr. Anthony's declaration, Exhibit 1078, paragraphs 40 through 43.
21 We also have testimony from the inventors. This, I believe, came
22 from the ITC. Again, we don't have the full record, but what the inventor
23 said is that, ultimately, they were trying to find batteries, and what they did
24 is they took a flat battery and just bent it. And, like, fine. That resulted in a
25 curved battery. And so we do have evidence in the record that those of skill

1 in the art could take a flat battery and bend it. Or you could get a
2 manufacturer to develop a curved battery for you.
3 The point is that all of this rigmarole about batteries is, one, it's not
4 borne out by the record, because the record says curved batteries exist.
5 People of skill in the art knew how to get them, knew how to curve them.
6 And, two, none of that is actually in the patent. So, to the extent that that is
7 somewhat inventive, it's certainly not claimed by these patents. So the prior
8 art describes the existence of curved batteries the same way the patent does.
9 JUDGE POWELL: Is it legally accurate or appropriate for us to
10 cite the conciseness of the challenged patents with respect to disclosure on
11 the curved, small batteries as evidence that curved, small batteries were
12 enabled at the time?
13 MR. HABER: So, I think what the argument is, is that a patent, in
14 order to be enabled, has to describe things such that one of skill in the art
15 could make and use them. And that standard applies to the prior art, it
16 applies to the patent, and I think it applies the same way. And so if we're
17 thinking about enablement, if it is true that the patent didn't need to disclose
18 these features because they were known by those of skill in the art, then that
19 same knowledge applies to the prior art.
20 The issue isn't really that you're using the patent to prove
21 enablement. What you're saying is that these features were so well known
22 that the patent didn't even need to talk about them. And so the prior art
23 doesn't need to talk about them for the same reasons, because they're well-
24 known. And that's not the only bit of evidence that we're relying on.
25 Obviously, we have expert testimony. We have substantial evidence in the

1 prior art itself. And so I would say that's one bit of evidence; I don't think
2 that's the only bit of evidence.
3 JUDGE POWELL: Right. I understand you have quite a lot of
4 other evidence to cite for that. I was just trying to think about whether I can
5 also cite what's disclosed in the challenged patents as being on your side of
6 the scale for enablement of small, curved batteries at the time, at the relevant
7 time.
8 MR. HABER: Frankly, I think that you can cite evidence of skill
9 in the art that comes from the sources, including the patent.
10 JUDGE POWELL: Okay.
11 JUDGE VALEK: Counsel, let me ask you, to put a finer point on
12 that, are you aware of a case that does that? Because, I'll tell you right now,
13 this particular argument is not a novel one. It's made in other cases. I've
14 heard it made in other cases. And so what I'm asking is, are you aware of
15 precedent, particularly if it comes from our reviewing court, the Federal
16 Circuit, that says very specifically that when you're considering the
17 enablement of the prior art in a 102 or 103 context, that you can look to the,
18 you know, the amount, or lack thereof, of disclosure in the specification of
19 the challenged patent as evidence on that issue?
20 MR. HABER: Yeah, standing here right now, I'm not aware. But
21 I will look through our papers on rebuttal time to see if I have a citation for
22 you.
23 JUDGE VALEK: Thank you.
24 MR. HABER: Thank you. All right. So, I was going to spend the
25 last bit of my opening time on secondary considerations, which may

1 implicate some confidential information. So, do you mind if we just take a
2 second and close things?
3 JUDGE POWELL: Oh, yes. Certainly. Let me stop the timer
4 momentarily. And let's have the virtual public line paused. And if we can
5 have anybody who's not on protective order wait in the lobby.
6 (Whereupon, the above-entitled matter went off the record at 1:35
7 p.m. and resumed at 2:01 p.m.)
8 JUDGE POWELL: Okay, with that, I believe we are ready to
9 continue with Patent Owner. Would you like to reserve some time?
10 MR. PLUTA: I would, Your Honor. Twenty minutes.
11 JUDGE POWELL: Twenty minutes. We are ready when you are.
12 MR. PLUTA: Good afternoon, Your Honors. Robert Pluta on
13 behalf of Oura.
14 Oura Ring is a pioneer in the wearable electronic devices, and
15 specifically finger-worn wearable devices. And to emphasize this, I think
16 it's important to walk briefly through the development of the early work in
17 wearable ring devices. The early work in wearable ring design was
18 performed by MIT researchers Asada and his graduate student Rhee. Asada
19 and his team filed for patents, constructed prototypes, and published articles
20 about their work.
21 In 1997, Asada filed for a patent and recognized the advantage of
22 health monitoring using a finger ring. Three years later, his student Rhee
23 published his dissertation on a wearable ring and noted such long-term
24 ambulatory devices must be compact, lightweight, and comfortable to wear
25 at all times. The two prototypes, shown on Slide 4, that were included in the

1 dissertation stacked components on top of the ring.
2 In an IEEE article published in 2003, shown on Slide 5, Asada
3 again acknowledged that the ring is ideal for long-term measurements.
4 Asada recognized that comfort and compactness were keys to making a
5 usable, wearable finger ring. Yet Asada's prototype changed little in the
6 three years since the Rhee dissertation, again mounting the circuit board and
7 battery on top of the ring.
8 On Slide 6, Patent Owner's expert, Dr. Mercier, previously met
9 Asada and physically inspected Asada's early prototypes. And when Dr.
10 Mercier was establishing a Center for Wearable Sensors at UC San Diego, in
11 2012 and 2013, which is right around the priority date of the patents-in-suit,
12 he testified, at Paragraph 70 of his declaration, Exhibit 2018, that he
13 considered building a finger-worn, wearable smart ring device. But despite
14 having skills far beyond that of a POSITA, Dr. Mercier admits that he also
15 looked to stack the components external to the ring, after considering
16 various factors, including power requirements needed for the finger-worn,
17 wearable smart ring. In fact, one of Dr. Mercier's colleagues, Dr. Wang
18 (phonetic), subsequent the 2013, also made a ring, but yet he still continued
19 to house the circuitry on top of the ring.
20 On Slide 7, in 2012, about ten years after Asada's design, Niwa
21 again kept the same basic design taught by Asada. Niwa stacked its circuit
22 and battery at the top of the ring, and mounted the light sensor at the bottom
23 of the finger.
24 In sum, nothing similar to the Oura Ring, implemented in the Oura
25 patents, embodied in the Oura Ring, had ever been seen before. And

1 Samsung, a recent entry into this market, now comes in here and says, well,
2 all this development of this revolutionary product for the last 12 years,
3 protected by the Oura patents, well, that's just obvious. That's simply not the
4 case. And I'd like to explain it why.
5 Based on the time we have, I'd like to walk through the '178 Patent
6 and then discuss secondary considerations. And with whatever remaining
7 time I may have, look at the other issues. On Slide 10, we have the
8 definition of a POSITA proposed in the petition. This is a particular
9 definition. And this definition offered by Petitioner is impactful here
10 because, based on this definition proposed in the petition, it's clear that a
11 POSITA would not have found the claimed inventions obvious.
12 And that point is best exemplified by looking at the work of Drs.
13 Asada, Rhee, and Mercier, scientists in the field at the time of the invention.
14 Yet none of them created a smart ring, as claimed in the '178 Patent, but
15 continued to follow the prior art that mounted electronics on top of the ring.
16 So, with that, I'd like to go in to Ground 1 and talk about Schröder.
17 On Slide 13, as has been discussed already, Schröder describes an external
18 secure unit for purpose of authenticating a user, not health monitoring.
19 Now, Schröder attempts to improve on existing smartcard and RFID
20 devices, which have poor range. Schröder employs an antenna coil in the
21 ring to achieve this purpose. But the rest of Schröder's disclosure is
22 rudimentary, nonspecific, and completely lacks any tangible tie to the
23 particular claimed structure claimed in the '178 Patent.
24 The only component, we're on Slide 14, shown in the figures is
25 chip module ten, which protrudes beyond the surface of the ring housing,

1 making it accessible via hinged cover 14. Now, Petitioner claims that
2 they're not relying on Figure 3, but they do rely on Figure 3 in introducing
3 their annotated version of Figure 7 in the petition. And regardless of
4 whether they're relying on Figure 3, the prior art reference must be
5 considered as a whole. Figure 3 is the only figure that shows chip module
6 ten and significantly, none of the figures of Schröder include a battery or a
7 sensor because it's focused on an improved antenna used for RFID and NFC
8 devices.
9 JUDGE HORNER: Do you understand Schröder's battery to be
10 optional?
11 MR. PLUTA: Yes, Your Honor.
12 JUDGE HORNER: And so this ring can function without battery
13 source?
14 MR. PLUTA: Yeah.
15 JUDGE HORNER: Power source.
16 MR. PLUTA: Excuse me. Yeah, Schröder talks -- I think it
17 introduces the energy storage device as an accumulator or a battery. And the
18 evidence in the record shows that Schröder is directed towards RFID and
19 NFC. And Dr. Mercier testifies that RFC and -- RFID and NFC applications
20 are low power situations. They don't even need a battery. So, given the
21 focus of Schröder, it's too far of a stretch to think that there's this battery of
22 any sort of size within the disclosure.
23 Schröder has other issues. I'd like to talk about Elements 1A and
24 1B, the internal and external housing components. Now, Petitioner has
25 taken a shifting sands approach to its analysis of Schröder throughout these

1 proceedings, all of which amounts to impermissible hindsight. Petitioner,
2 I'm on Slide 16, their arguments rest heavily on incorrect figure labels and
3 arbitrary coloring, each of which misrepresents Schröder.
4 On Slide 16, the petition was unequivocal as to what elements it
5 was pointing to. It said ring half 18 is the claimed external housing
6 component and ring half 16 is the claimed internal housing component. And
7 Figure 4, in the petition, further misrepresents Schröder by pointing to an
8 internal housing component. They actually, in the petition, call it 16, when
9 it is very clearly not that. Petitioner --
10 JUDGE HORNER: I'll grant you that Figure 4, as labeled here,
11 does not look right to me. But what about Figure 7, why isn't that a different
12 variation of the Figure 4 embodiment where 16 is internal, in that particular
13 embodiment, and 18 is external?
14 MR. PLUTA: According to Schröder, Your Honor, Figure 7 is not
15 internal and external. It's two halves of a ring. And --
16 JUDGE HORNER: But do they use the word, halves?
17 MR. PLUTA: Yes, Your Honor. Right --
18 JUDGE HORNER: I think they use U-shaped component for
19 Figure 7, as opposed to ring half.
20 MR. PLUTA: But ring half 16 and ring half 18 are present in
21 Figure 7 and Dr. Mercier testifies that there's no reason to suggest, in fact,
22 all the figures of Schröder do suggest that Elements 16 and 18 don't change
23 throughout the figures. In fact, Schröder discloses Figures 6 through 10 are
24 different cross sections through a ring.
25 JUDGE POWELL: So, are you using the word half, or the words

1 half or halves as equivalent to sides then?
2 MR. PLUTA: No, it's half, halves. And like it or not, on Slide 17,
3 our expert likened the ring halves of Schröder to a bagel. And I grant that
4 we are using the bakery analogy, but Dr. Mercier testified that, you know,
5 you use a little cream cheese, dig a trench within the bagel, but ring half 16
6 and 18 are the bagel bottom, and bagel top.
7 And on Slide 18, Schröder introduces this. Figure 4 shows a
8 longitudinal cross section. I'm sorry. Figure 4 shows a longitudinal section
9 through a finger-ring 2. Inlay 12 is inserted into one half, 18, of a finger-
10 ring. And we overlayed Figure 4, obviously, onto the bagel. On Slide 19,
11 Figure 5, this shows Dr. Mercier's interpretation of Figure 5, which is a cross
12 section corresponding to Figure 4 where we can see the two ring halves, 16
13 and 18, coming together and showing the inlay.
14 And Figure 7, going back to your question, Judge Horner, is again
15 a cross section through finger-ring 2. Again, showing ring half 16 and 18
16 with inlay 12. And on cross examination of Dr. Mercier, our expert,
17 Petitioner attempted to rehabilitate its reliance on Elements 16 and 18 as the
18 claimed inner and outer housing components. But Dr. Mercier testified that
19 Elements 16 and 18 in Figure 7 are the same as Elements 16 and 18 in
20 Figure 5.
21 JUDGE HORNER: But on that picture right there, wouldn't it be
22 flipped the other way? I mean, because you -- we're only seeing the cross
23 section through one part of the ring, not the rest of the half, like in Figure 5?
24 MR. PLUTA: Figure 5? On Slide 19?
25 JUDGE HORNER: So, Figure 5 you see kind of a cross section

1 taken so that you see the top of the ring, and the bottom of the ring, and then
2 the back half of the ring, let's say. And then in Figure 7, that to me is a
3 different cross section. They're only showing the top part of what you see in
4 Figure 5, not the bottom. So, it would be flipped the other way, I think, from
5 the bagel example.
6 MR. PLUTA: Our interpretation of this, based on Figure 5, is that
7 Element 16 and 18 are still the top and bottom, respectively, of bagel halves
8 with an inlay put in between and Figure 7 is simply a 90 degree turn of the
9 bagel. So, we have 16 and 18, top and bottom half of the bagel, with a
10 different cross section through the bagel. That's -- so --
11 JUDGE VALEK: Let me ask you about that Counsel. Is it your
12 position that Schröder's Figure 6 through 10, that all of those are showing
13 the exact same embodiment of a ring?
14 MR. PLUTA: Your Honor, it's very unclear from Schröder.
15 JUDGE VALEK: I'm just asking for your position. I'm trying to
16 understand your interpretation because honestly, it seems like a stretch to
17 me. So, I want to explore it a little bit more based upon what you just said
18 about Figure 7. What I'm asking you is, it seems like your theory is that the
19 cross-sections , the ones shown in Figures 6 through 10, are all the exact
20 same ring? Is that your position?
21 MR. PLUTA: Yes, Your Honor.
22 JUDGE VALEK: How do you reconcile all those wildly different
23 cross-sections? I mean, are they all -- I don't understand how you can say
24 that's all the same ring, just different points around the circular surface.
25 MR. PLUTA: I think I would answer that in this way, Your

1 Honor. First, Schröder does talk about Figure 6 through 10 as cross sections
2 through rings. All of the figures show three elements: 16, 18, and 12; the
3 inlay 12 and then the first -- ring-half 16 and ring-half 18. I guess I would
4 disagree that they're wildly different. The difference between some of them
5 is that maybe, the top ring half, extends down a little bit and the, maybe on
6 the right-hand side of the element 18 and 16, the left-hand bottom extends
7 up a little bit. And they're all variations of that same cross-section.
8 JUDGE VALEK: Where is Figure 9, though? So, in Figure 9,
9 where is that? If you go back to Figure 5, what cross section of Figure 5 or
10 Figure 4 is Figure 9?
11 MR. PLUTA: If you give me a minute, I'm going to grab Figure
12 9.
13 JUDGE VALEK: Okay. And let me give you a little bit of
14 context. You've explained to us just now that Figure 7, in your view, is the
15 same as what we see in Figure 5, just rotated 90 degrees.
16 MR. PLUTA: Yes.
17 JUDGE VALEK: And so, I'm asking you, where's the cross
18 section in Figure 9, if you compare it that to Figure 5?
19 MR. PLUTA: The Figure 9 cross section, similar to the Figure 7
20 cross-section, if I may -- can you see the slides, Your Honor? I just want to
21 make sure that, because otherwise --
22 JUDGE VALEK: I can.
23 MR. PLUTA: My interpretation of Figure 7 -- Figure 9, in light of
24 Figure 7, keeping with the bagel analogy, would be that someone overloaded
25 the interior of the bagel with cream cheese and the inlay, for example, in

1 Schröder would extend entirely across the two ring halves of Figure 9.
2 JUDGE VALEK: Okay. And so, is there any portion of the ring
3 that's described in Figure 5 that Figure 9 would be a cross section of it?
4 Because I understand your theory, is that you think that all of the figures in
5 Schröder are describing the exact same embodiment, is that correct?
6 MR. PLUTA: Yes, Your Honor. And --
7 JUDGE VALEK: Okay. Including Figure 3?
8 MR. PLUTA: Figure 3 is part of Schröder's disclosure. Schröder
9 --
10 JUDGE VALEK: But we don't see it in Figure 5. So, you're
11 telling me that you think Figure 3 and Figure 5 show the same thing, but I
12 don't see the bump in Figure 3 and Figure 5. So, maybe it's away from the
13 plane of the picture. Is that what you're saying?
14 MR. PLUTA: Yeah. Again, Schröder is very unclear. Figure 3 is
15 the only figure that shows the bump and Figures 4, 5, 6 through 10, all show
16 some type of cross section and --
17 JUDGE VALEK: Yeah.
18 MR. PLUTA: And again it's very unclear. Figure 9 was not relied
19 on in the petition. So, we're speculating a bit about what things would look
20 like. But in -- to try to answer your question, again I think Figure 9 would
21 be another 90, or a 90-degree angle turned, similar to Figure 7, but as I
22 suggested, that the inlay would go right across the two halves. Or to put it in
23 the bakery analogy, you know, somebody overloaded the halves with cream
24 cheese.
25 JUDGE VALEK: And your position is that that's still the same

1 embodiment that we see in Figures 4 and 5, it's just because of the
2 perspective in four and five, you can't see the part of the bagel or part of the
3 ring where the inlay is overloaded and extends to the housing?
4 MR. PLUTA: I think so, Your Honor. But again, Schröder is
5 entirely unclear. It shows in all those, other than Figure 3, three elements,
6 ring half 18, ring half 16, and the inlay. Schröder is not really clear in the
7 specification about what it's showing. So, we --
8 JUDGE VALEK: Well, it's often the -- oh, go ahead. I didn't
9 mean to speak over you. Finish your thought.
10 MR. PLUTA: So, we have what I would characterize as a bunch
11 of rectangles and one of skill in the art is supposed to interpret that. And
12 there's actually testimony from Dr. Mercier in looking at Schröder, who also
13 confirmed that he didn't quite understand what Schröder was getting at, and
14 he looked at, and he testified that, you know, when he supervises graduate
15 students, if he would have given Schröder to one of his graduate students,
16 they wouldn't have known what to make with it. And certainly they
17 wouldn't have arrived at the claims of the '178 Patent.
18 JUDGE VALEK: What about, I mean, what about Petitioner's
19 interpretation that one of skill in the art would look at the different cross
20 sections in Figures 6 through 10 and interpret those to be Schröder teaching
21 that there's different ways you could construct the two halves of the ring and
22 it's showing you different ways that you could do as alternatives to the
23 specific cross section shown in Figure 5?
24 MR. PLUTA: I think Figures 6 through 10 show different ways to
25 construct the ring halves. As we discussed earlier, the, you know, one side

1 might go down a little bit, one side might go up a little bit, depending on
2 ring half 18 or 16. But Petitioner doesn't show that ring half 18 or 16,
3 regardless of which figure it's in, is the internal and external housing of the
4 claim invention having a cavity through it. So, it doesn't, I guess map -- first
5 of all, they don't rely on anything other than I think, claims or Figures 4, 5,
6 and 7. So, I could be wrong on that. But, you know, that's where they focus
7 their most attention on. But --
8 JUDGE VALEK: So, what I understand you to be saying is that
9 Figure 7 shows an alternate way that you could construct the two halves of
10 the ring. Is that correct?
11 MR. PLUTA: I don't know if we understand it that way. I -- the
12 elements are the same as in Figure 5 and 7, and Dr. Mercier testified that the
13 elements in Claim 5, 16 and 18, are the same elements as shown in Figure 7,
14 just with a different cross section through the halves.
15 JUDGE VALEK: I think I understand your position, Counsel.
16 MR. PLUTA: Okay. Thank you. And we think that Petitioner
17 might understand our position as well, because in their reply, Petitioner
18 attempts to change the theory as to how Schröder applies to the claims by
19 providing this modified Figure 5 prime, which is on Slide 21. This is one of
20 several modified Figure 5 primes of Schröder that Petitioner presents in this
21 case.
22 This particular modified Figure 5 prime, on Slide 21, is completely
23 divorced from Schröder's disclosure and unsupported by any arguments in
24 the petition. This is a fabricated modification of Figure 5 that now removes
25 the centerline, and that denoted the top and bottom halves of the ring coming

1 together, extending the internal lines in red all the way up to the inlay 12,
2 which is now in purple to abut against its arbitrary external housing, which
3 is now in green. And they've also switched around the numbers to suit their
4 purposes, and the cavity now has completely disappeared. None of these
5 arbitrary modifications are shown or described anywhere in Schröder, much
6 less argued in the petition.
7 It was their job to particularly point out what their contentions
8 were. They said the ring-half 18 is the external housing component. They
9 said ring-half 16 is the internal housing component. Now they're doing an
10 about face further altering the figures of Figure 5 to attempt to map the
11 claims. That is impermissible hindsight. Now, Petitioner's excuse is that
12 Figure 7 is a different embodiment than the disclosures in Schröder that
13 teach two ring halves. But the evidence doesn't support that contention.
14 As we discussed just a minute ago, Dr. Mercier testified Figure 7 is
15 simply just showing Figure 5 rotated by 90 degrees with a different cross
16 section through the ring. It's Exhibit 1081 at page 85, lines 13 through 23.
17 JUDGE POWELL: So, one thing that puzzles me a bit about that,
18 this might be nothing, but if Figure 7 is just rotated 90 degrees and taken
19 through a different part of the ring, isn't Figure 7 redundant to Figure 5?
20 They're just exactly the same thing roughly under your theory. So why is it
21 in there?
22 MR. PLUTA: Your guess is as good as mine, Judge Powell. But
23 we think that it's in there to show different cross sections through finger-ring
24 2, which Schröder does introduce, particularly in Figure 3 and all the other
25 figures. Again, we're a bit stymied as to what Schröder discloses to one of

1 skill in the art. And certainly it doesn't disclose enough detail to arrive at the
2 claimed invention, which is very specific as to the internal and external
3 housings, the cavity in between it, and with additional other components that
4 we'll get to that a little bit. And, again, on Slide 23, Schröder states
5 -- Figures 6 through 10 show different cross-sections through a finger ring,
6 consisting of ring-shaped components 16 and 18 of the finger-ring 2 and of
7 an inlay 12. That's at Schröder Exhibit 1007, column 12, lines 43 through
8 45.
9 JUDGE HORNER: What strikes me with that quote, that
10 language, is that they changed from calling it ring halves to ring-shaped
11 components and then they go on in describing each different figure, naming
12 those components, 16 and 18, with different modifiers. So, Figure 6 is two
13 L-shaped components 16 and 18. Figure 7 is two U-shaped components.
14 They're no longer calling them ring halves like they did with the Figure 4
15 and 5 embodiment. Did Dr. Mercier consider that, that language, change in
16 language there?
17 MR. PLUTA: I think he did with respect to his opinion on what
18 Figures 5 and 7 mean along with his opinions with respect to Figure 3 and
19 Figure 5. But -- and again this is a bit of speculation, but I think what
20 Schröder's getting at there, is that it's no longer halves, literally halves. With
21 the components or the L-shaped, as you said, Judge Horner, it can no longer
22 really be characterized as a half. But it doesn't mean that it transforms the
23 ring halves into an, respective, internal and external housing that was very
24 clearly defined in the petition as Claim Elements 1A and 1B.
25 JUDGE VALEK: Counsel, what about the language at column 12,

1 lines 1 through 3 of Schröder, where it says that Figures 4 to 10 describe, by
2 way of example, possible construction variants, of the finger ring? Doesn't
3 the fact that it says these are different "construction variants," doesn't that
4 suggest that those cross sections are showing different ways that you could
5 construct this ring? It's not limited to just what you see in Figures 4 and 5,
6 but you could also have the cross sections shown in Figures 6 through 10.
7 JUDGE HORNER: And I'll add to that. It's not of the finger ring.
8 It's of an external secure unit two in the form of a finger ring. So, they're
9 using, a, instead of, the. Which, in patentese, means they're not referring
10 back to the finger ring 2 of the prior embodiment but now they're showing a
11 different construction variant of a finger ring.
12 MR. PLUTA: To that point, Judge Horner, I think Schröder is
13 very consistent with how it refers to Unit 2, whether it's finger ring 2 or an
14 external secure unit 2, the -- Schröder uses it interchangeably throughout the
15 specification. Judge Valek, to your question, I don't think that portion of
16 Schröder is inconsistent with the portion on Slide 23 that shows they're
17 different cross sections. I think what -- and again, Schröder, I think what
18 Schröder means here is the construction variants of these halves adds, you
19 know, the lips or however you want to call it, you know, L-shaped functions
20 of Elements 16 or 18 or no different sections. So, those are the construction
21 variants we believe he's discussing.
22 JUDGE VALEK: Counsel, is that your position that Figures 4 to
23 10 describe the same construction variant, singular? And isn't that
24 undermined by the fact that it's plural there in Schröder's disclosure itself?
25 MR. PLUTA: I think you can have different construction variants.

1 And still being shown the same embodiment of the ring. In any event,
2 Petitioner, again, it's clear on what it went with and relied on as inner and
3 outer housings. Our position is that they didn't show that in Schröder.
4 Schröder is very unclear as to what Schröder is disclosing, and it certainly
5 doesn't mean the Claim Limitations A and B. Unless the Board has any
6 further questions on Limitations A and B, I'd like to go to the battery
7 limitation.
8 So, Schröder does not disclose any position of a battery. Early on
9 and in my time up here, we discussed the focus of Schröder, which is RFID
10 and NFC and Schröder's disclosure of an energy storage device, which is,
11 could be an accumulator or he does mention battery. But Schröder does not
12 disclose any position of that battery or what that battery would look like. As
13 the Board recognized in the institution decision, a battery is not shown in
14 any figure of Schröder nor does Schröder disclose the -- excuse me, the
15 position, size, or shape in describing this one unshown battery that refers to
16 an energy storage device.
17 Since Schröder doesn't disclose a shape, size, or position of the
18 battery, it cannot disclose, as Dr. Mercier testifies at paragraph 92 of Exhibit
19 2018, it can't disclose the battery extends through at least a first portion of
20 the cavity of the finger worn wearable device. Again, Schröder discloses an
21 unshown optional battery that's not required, and Schröder's lack of detail
22 here is not surprising. Again, Schröder relates to security. It relates to
23 RFID. And Dr. Mercier testified at his deposition, excuse me, on his
24 declaration, that RFIDs are usually fully passive and do not require battery at
25 all.

1 So Schröder fleeting, passing -- fleeting reference to a battery,
2 given Schröder's focus on security and given Schröder's specific disclosure
3 of RFID and NFC, would lead one of skill in the art to, frankly, dismiss the
4 reference to the battery in Schröder and what the petition is left with is
5 reliance on Dr. Anthony, who opines that it would have been obvious that
6 because Schröder's energy storage unit powers chip module 10 and chip
7 module 10 resides in inlay 12, the battery is also positioned inside that ring.
8 But this is incorrect. Schröder does not disclose that the chip module 10
9 resides in inlay 12, which is a necessary predicate for Petitioner's theory that
10 the battery also resides in inlay 12.
11 What Schröder actually says is the chip module 10 is inserted into
12 a recess of a finger-ring 2. Dr. Anthony, on cross examination, admitted this
13 mistake at Exhibit 2020, page 195 through 11 -- lines 11 through 18. This
14 passage is actually describing the recess on the exterior surface of the ring in
15 Figure 3, in which the chip module is inserted. And the institution decision
16 noted this. That, quote, Schröder's Figure 3 shows chip module 10 inserted
17 into a recess that protrudes from finger-ring 2, not a recess between ring-
18 shaped components 16 and 18, as Petitioner tries to suggest.
19 JUDGE HORNER: What about column 13 of Schröder, where it's
20 talking about how the inlay is made? So, around line 23.
21 MR. PLUTA: What line, Your Honor?
22 JUDGE HORNER: Twenty-three. Column 13, line 23. It's
23 talking about applied -- there's a chip module and an antenna coil applied to
24 a carrier foil and it that a depression is manufactured in the foil, and then the
25 devices are inserted into the depressions so they don't protrude beyond the

1 carrier foil.
2 MR. PLUTA: Yes, Your Honor.
3 JUDGE HORNER: Does that describe a chip module in the inlay?
4 MR. PLUTA: No, Your Honor. There is no evidence, from that
5 paragraph at least, that Schröder puts its chip module 10 in the inlay. What
6 Schröder discusses in context of its inlay is its antenna coil. And Schröder
7 focuses on the improved antenna and what we think Schröder is getting at is,
8 it has the antenna going through the body of the ring and then it mounts
9 whatever devices it needs within that recess to the antenna coil. And that's
10 what results in the protrusion as in Figure 3. And certainly --
11 JUDGE VALEK: But it --
12 MR. PLUTA: Certainly, Schröder does not disclose putting a
13 battery in the inlay 12.
14 JUDGE VALEK: But, Counsel, in that passage that Judge Horner
15 referred to, it does specifically mention the chip module there. It says the
16 chip module and the antenna coil are both applied to the carrier foil, and it
17 talks about inserting those into depressions. And then it says not just the
18 antenna, but also other electronics -- optional further electronic devices.
19 So, I understand Petitioner's position to be that those further
20 electronic devices would include things like a battery. And you have a
21 different interpretation. So, why don't you explain what you think those
22 other electronic devices are?
23 MR. PLUTA: Yes, Your Honor. A couple things, I think the
24 portion that you just read doesn't undermine our position that chip module
25 10 actually isn't inserted into the inlay. It says, rather than simply the recess

1 making contact with the antenna coil. Schröder does say optional further
2 electronic devices are inserted into the depression. Schröder is entirely
3 silent on what those electronic devices are. Given Schröder's focus on the
4 security, they would -- Schröder would have no need to put a battery in the
5 inlay 12. Particularly where a battery isn't even required for its application.
6 So --
7 JUDGE VALEK: But it does describe that a battery could be
8 optionally included. Right?
9 MR. PLUTA: It says a battery is optionally included, but not -- it
10 has no disclosure of where that battery is, how big it is, and where it's
11 position within the ring. So, I think it would be speculation and certainly not
12 with any evidence in the record to suggest that, well, Schröder's battery is
13 simply shoved in the inlay of Schröder. I think the more logical point would
14 be, to the extent that Schröder does include a battery, it would include it on
15 the protrusion, just like all the prior art did; Asada, Rhee, what Dr. Mercier
16 contemplated. You know, and because Schröder talks about the antenna coil
17 in the inlay. So, the antenna coil could address, you know, the chip module
18 that's protruding from the ring. There's no suggestion at all that Schröder
19 would put those types of devices, such as a battery in the inlay 12.
20 JUDGE VALEK: Well, again, I'm still trying to figure out it's line
21 30 in column 13 of Schröder, where it says antenna coil and optional further
22 electronic devices. It seems like you're saying those would be other optional
23 electronic components, just not the battery? Is that your position?
24 MR. PLUTA: We don't know what the electronic devices are.
25 Schröder doesn't say so, but we do have some clues as to what Schröder -- I

1 mean, and I can jump to -- first of all, we don't -- our position is, again, with
2 respect to 1D is that Schröder doesn't disclose a printed circuit board.
3 JUDGE VALEK: Okay.
4 MR. PLUTA: What Schröder is disclosing is a carrier foil that
5 carries the antenna coil. So, we don't --
6 JUDGE VALEK: But --
7 MR. PLUTA: Go ahead.
8 JUDGE VALEK: No, I was just going to -- go ahead.
9 MR. PLUTA: So, to the extent that any electronic devices could
10 be placed in the inlay, it would have to be accommodated by the carrier foil.
11 Which, again, Schröder talks about Kapton and PET, not circuit boards.
12 That would counsel against putting a battery in the inlay 12.
13 JUDGE VALEK: Do you have any sort of interpretation of what
14 Schröder means when it says optional further electronic devices are inserted
15 into the depression and the carrier foil? There in column 13.
16 MR. PLUTA: No, Your Honor. As I mentioned, Schröder is very
17 unclear. What Schröder does say, and I'd like to revisit this in the context of
18 Limitation 1D, but Schröder actually references a circuit board, but it's
19 totally different than inlay 12. So, Schröder contemplates a circuit board,
20 but it's not within the, I guess, for lack of a better word, housing of the ring.
21 Again, we're not conceding Schröder shows housing, but if there was some
22 electronic component that would require a circuit board to which Schröder
23 references, it wouldn't be in inlay 12.
24 JUDGE HORNER: Can you remind me where in Schröder it
25 references the circuit board? Oh, I think I found it. Is it column 22?

1 MR. PLUTA: I can, Your Honor. Twenty-two, lines 48 to 49.
2 JUDGE HORNER: Thank you.
3 MR. PLUTA: Okay. So you don't have to take my word for it that
4 Schröder doesn't disclose anything about a battery or where its location is.
5 Dr. Anthony does not know any of the details about Schröder's battery. He
6 simply states, and this is Slide 29, a POSITA would size the battery
7 appropriately for the function that they were trying to accomplish.
8 Okay. That's pure hindsight. And he didn't make any effort to see
9 what types of batteries were available in 2013 that was appropriate to fit in
10 Schröder, as they've proposed in the petition. He didn't find it necessary to
11 do that. And Dr. Anthony further admitted that Schröder's battery, there's
12 no disclosure about the capacity of it. So, the extent to which, if Schröder
13 has a battery, the types of things it could power is entirely unclear.
14 And, again, I think the evidence from Schröder suggests that to the
15 extent there is an energy storage device, which it discloses as an accumulator
16 or a battery, it would only need to power what Schröder is focused on. And
17 that's RFID and NFC, which, as Dr. Mercier testified, is a low power
18 situation. You don't need a lot of power to power RFID or NFC. I mean
19 you think about, like, an access card or a credit card chip or anything like
20 that that gives access. You don't need a lot of power to be able to make that
21 communication between the two devices and Schröder explicitly says it's a
22 security device.
23 And, again, we might be beating a dead horse here, but on Slide
24 32, the only way -- the only place that chip module 10 is shown is outside of
25 the recess occupied by inlay 12. And Dr. Anthony, on cross examination,

1 backed away from his reliance on Figure 3. He said it was a mistake. But
2 the teachings of Schröder must be considered as a whole, which we have
3 been talking about.
4 And Figure 3 is the only figure that discloses the chip module 10.
5 Which would plainly not fit in the recess within inlay 12. And again, it's a
6 bit unclear. They say they're not relying on Figure 3, but in the petition they
7 do rely on Figure 3. The petition quotes Schröder's statement that chip
8 module 10 is inserted into the recess of the finger ring immediately
9 preceding their annotated version of Figure 7.
10 And in the institution decision, the Board noted this misleading
11 description. Without knowing the size or the shape of battery, it's entirely
12 conclusory to suggest that a POSITA would place an optional and unknown
13 sized battery in an alleged cavity of Schröder that's outfitted to carry no
14 more than an antenna wire. And Dr. Mercier testifies at paragraph 108 of
15 his declaration, Exhibit 2018, that beyond the passive RFID authentication
16 functionalities of Schröder, the additional proposed functionalities of
17 Schröder would add significant power requirements and thus impact the size
18 of the battery and in turn impact the placement of the battery on the ring.
19 So, as suggested earlier, to the extent that Schröder is attempting to
20 power things beyond RFID and NFC, one of skill in the art would look to
21 the top of the ring to put it, just as all the prior art did at the time. I mean,
22 Dr. Asada, Dr. Rhee, Dr. Mercier, they're all MIT folks. All of them were
23 putting the electronics on top of the ring. Not until Oura came around was
24 everything combined within the ring. All the, and we'll talk about this in,
25 with respect to secondary considerations, all those ring form factors that my

1 friend showed you. Those are all post 2013. Those are all post 2013. It's
2 not prior art. And every --
3 JUDGE VALEK: But, Counsel, weren't they doing that because
4 the components were not sufficiently small to be placed inside the ring? So,
5 they had to stack them on top?
6 MR. PLUTA: That was part of it, Your Honor. I think a lot of
7 things went into that.
8 JUDGE VALEK: But part of it was the size, right? I think you
9 pointed to testimony to that effect --
10 MR. PLUTA: Yeah, yeah.
11 JUDGE VALEK: -- earlier or something, right?
12 MR. PLUTA: Yeah. Part of it -- go ahead.
13 JUDGE VALEK: I was just going to -- let me just finish my
14 question. But so, at least some of the reasons, the prior art devices you were
15 talking about put the batteries and the other components on top is because
16 they weren't sufficiently miniaturized at the time, right?
17 MR. PLUTA: Right. I think it depends, Your Honor, on what the
18 goal of -- what they were trying to power, for example.
19 JUDGE VALEK: And so they put it on top because they had to,
20 because they were trying to power more elaborate functionality, perhaps
21 than what Schröder was doing?
22 MR. PLUTA: Correct. For example, Asada was attempting to
23 take, you know, PPG measurements and all these functions, all this
24 functionality, PPG sensing, other biometric sensing. I couldn't tell you how
25 much power, but it certainly requires more power. And Dr. Mercier testified

1 to that effect and, at paragraph 108 of his declaration.
2 JUDGE VALEK: And so maybe they would have preferred to
3 have it in the interior of the ring to give it a uniform thickness. But they just
4 couldn't do that because the power requirements, for these more elaborate
5 electronic components, couldn't be accommodated in that way, at least at
6 that time.
7 MR. PLUTA: I think that's partly right, Your Honor. I think there
8 was a lot of things embodied in the claims of the Oura Patents that persons
9 of ordinary skill in the art at the time wanted to do. That's why we've put in
10 a long-felt need case. It's because there was activity in this area, but no one
11 until Oura did it.
12 JUDGE VALEK: But --
13 MR. PLUTA: And, you know, you can come in and say that, well,
14 it would have been obvious just to scale everything down. Okay. Well, no
15 one did it.
16 JUDGE VALEK: But the patents in question, do they teach how
17 to do it? I mean, isn't that part of the argument here that you don't explain
18 how to miniaturize the battery and these other components so they can fit
19 into a uniform form factor, and the reason you don't do that is because one of
20 skill in the art could do that? I mean, isn't there some tension between those
21 arguments, and what you're saying is the point of novelty here?
22 MR. PLUTA: I think there might be some tension, Your Honor,
23 but I think in the context of the claims as a whole and all the elements that
24 are claimed and issued, it wouldn't have been obvious to one of skill in the
25 art at the time. So yes, there's some tension, but all of those leading

1 researchers putting out papers, writing dissertations at MIT, none of them
2 did this. They all stacked things on the ring, things being the technical term
3 for electronic components. I'd like to just address another point with respect
4 to the battery. Dr. Anthony, on Slide 37, claims that Schröder's battery must
5 fit within the ring's cavity between the housing components. This is pure
6 speculation. Petitioner concedes Schröder is silent on the battery's limitation
7 position, but contends that POSITA would know to place it inside the ring.
8 Again, I believe this was the conversation we were just having. Well, if it
9 was so obvious, it was not done. Such a conclusion by Dr. Anthony is
10 entirely conclusory and contrary to all the evidence leading up to the
11 inventions embodied in the challenged claims.
12 And even if Schröder taught that the chip module resides in inlay
13 12, it doesn't follow that a battery must also reside in inlay 12. In making
14 these assertions, Petitioner and Dr. Anthony kind of set forth a very textbook
15 example of impermissible hindsight. They look at the claim language, they
16 say, well, it must be in there because somebody would have done it. Well,
17 they haven't shown that in the evidence. In fact, in paragraph 166 of Dr.
18 Anthony's declaration, he parrots the claim language. He says in order to fit
19 inside the finger ring, the battery must be configured in size and shape to fit
20 within the cavity, and he goes on, the battery must be arranged within the
21 cavity between the internal and external housing components. Well, that's
22 the claim language, but he doesn't offer anything beyond that. That's
23 impermissible hindsight.
24 He provides justifications for those. We think those are not right.
25 I can go through those. I'm seeing my time is coming up so if the board has

1 any further questions on the battery limitation, I can move on. Okay.
2 So I'd like to move to the printed circuit board and sensor
3 limitations, limitations [d] and [e]. So Claim 1 of the '178 patent describes a
4 very specific arrangement of PCB, printed circuit board, battery and sensors
5 within the first and second portions of a cavity between internal and external
6 housing components. Slide 42. When asked on cross examination where all
7 the rectangles in Schröder the POSITA where to put the PCB and the sensors
8 and a battery, Petitioner's expert confirmed that Schröder did not disclose
9 these claim limitations, but that he relied on a POSITA to fill in the blanks.
10 Okay, that asks too much of a POSITA at the time, and it's not
11 surprising that Schröder did not disclose any of these key details. And I'll go
12 a little quicker over this unless the board has any questions, because we
13 touched on this before. But Schröder's inlay is meant to accommodate a thin
14 antenna coil. RFID and NFC applications all require low power. On Slide
15 43, the petition's evidence is simply to color in half of the rectangular inlay
16 12 Schröder to show the claimed PCB, but Petitioner's annotated Figure 7 of
17 Schröder is contrary to the teachings of Schröder as recognized by the board.
18 They're arbitrary, and they're not supported by Schröder.
19 Schröder's inlay 12 is shown in Schröder to occupy the entire space
20 between the ring halves 16 and 18, yet Petitioner, without stating why or
21 how, contends that a POSITA would have understood that inlay 12, contrary
22 to Schröder's Figure 7, only occupies about roughly half of the recess.
23 Petitioner fails to explain why the side by side arrangements and the PCB
24 with the battery, for example, could be accomplished at the time of the
25 invention.

1 Slide 44. Further problematic is Petitioner's contention when it
2 suits them that on the one hand, Schröder's inlay 12 constitutes a printed
3 circuit board, but on the other hand, they contend that inlay 12 is the cavity.
4 It's very unclear what it is, as Dr. Mercier testified in his declaration, Exhibit
5 2018 at paragraph 96, an inlay cannot be a cavity and a PCB. Now,
6 Petitioner's expert, Dr. Anthony, at Slide 45 ascribed a meaning to a PCB,
7 citing the Wikipedia article entitled Printed Circuit Board, but this definition
8 is simply not met by Schröder's inlay. Despite adopting this definition of
9 PCB, Dr. Anthony fails to provide any analysis as to how the inlay 12 of
10 Schröder meets this definition. Schröder's inlay does not include the
11 described features.
12 For example, there's no disclosure in Schröder of copper laminated
13 onto or between sheet layers, and again, Schröder references a circuit board
14 when it was --wanted to reference a circuit board. Now, Petitioner argues
15 that Dr. Anthony was just using this article for use of the acronym PCB, and
16 but his testimony suggests otherwise. He said it's consistent with both the
17 Wiki and all the other references that I cite, as well as with how PCBs are
18 constructed both rigid and flexible. Slide 45.
19 JUDGE HORNER: So what exactly is missing from Schröder's
20 disclosure? Because it does talk about laminating layers together.
21 MR. PLUTA: Mm-hmm.
22 JUDGE HORNER: And it talks about etching and -- is it that the
23 layers are not disclosed as being made of copper, what is it exactly?
24 MR. PLUTA: Yeah. Copper, the tracings, when it's talking about
25 laminating together, Schröder does specifically reference the Kapton and

1 PET, and I just want to show the board on Slide 46, we've put an image of
2 Kapton on the top and PET on the bottom. So in circuit board manufacture,
3 items such as PET and Kapton can be used, but it's insulative, it's not
4 conductive. So when Schröder uses PET or Kapton to put its antenna on, it's
5 acting as an insulator to drive the antenna. There's no evidence in Schröder
6 that Schröder is putting, if you can imagine like, a little copper tracing, and
7 putting a bunch of little things in there. Again, Schröder references a circuit
8 board when Schröder's talking about a circuit board.
9 All right. If the board doesn't have any further questions, I think
10 I'm going to jump ahead to Ground 2 and discuss briefly the Niwa grounds.
11 A person of ordinary skill in the art would not combine Schröder with Niwa.
12 Dr. Anthony actively stated that the sole goal of Schröder in isolation is
13 targeted to providing security, that's Exhibit 2020 at page 244, lines 18
14 through 20. Niwa, on the contrary, is directed to sensing heart rate using a
15 PPG sensor.
16 Again, as we alluded to before, a bit more of a power hungry
17 device. On Slide 50 we see Petitioner offering generalized conclusions that
18 the two references relate to the same well known technologies and are the
19 same devices and have similar structural components. But in a case brought
20 by Oura, this is on Slide 51, against Ultrahuman and RingConn asserting the
21 '178 patent, the ITC recently rejected this precise proposed combination of
22 Schröder and Niwa. And ITC found one of skill in the art would understand
23 that the thickness of Schröder's inlay is on the order of 100 microns. This
24 stands in stark contrast to the battery in Niwa's sensor, which is between 2
25 and 5 millimeters, or at least 20 times the thickness of the inlay.

1 And I just want to address something, with respect to a lot of the
2 validity analysis of the ITC and the decision, I'm not aware of any not public
3 information that hasn't been provided. So my friend kept asking for, well,
4 we don't have the whole record. That's true, we don't either. It's not in this
5 record, but with respect to the analysis of the ITC and its determination on
6 these specific patents and these specific prior art references, all that
7 information is public.
8 JUDGE VALEK: Counsel, I want to ask you a question about
9 your Slide 51 --
10 MR. PLUTA: Sure.
11 JUDGE VALEK: -- and the testimony that's cited here. Do we
12 have testimony like that in the record here from your expert?
13 MR. PLUTA: Yes, Your honor.
14 JUDGE VALEK: Okay.
15 MR. PLUTA: I don't have the cite exactly with me, I can maybe
16 look at it, but Dr. Mercier did discuss the order of magnitude of Schröder's
17 inlay and relative to Niwa, and I can provide that when I get back up.
18 JUDGE VALEK: Thank you.
19 MR. PLUTA: On Slide 52 the ITC went on and said, Mr. Alarcon,
20 who was Respondent's expert, testified that one of skill in the art would
21 understand that the battery would be disposed in the inlay of Schröder's
22 Figure 4, because where else is it going to be? And the ITC found that this
23 reasoning is belied by Schröder itself, which only addresses a battery with
24 respect to Figure 3. And my colleague just gave me the cite for Dr.
25 Mercier's testimony with respect to Judge Valek's question. And that's

1 Exhibit 1081 at page 96, lines 1 through 9.
2 So if we go to Slide 53, Petitioner fails to explain why it would
3 have been obvious to modify Schröder in view of Niwa, especially since
4 Petitioner already contends that Schröder allegedly discloses the printed
5 circuit board. And on Slide 54, similar to Ground 1, Schröder does not
6 disclose or suggest that the battery is located in inlay 12, if inlay 12 is a
7 cavity, as in Petitioner's annotated Figure 5, Figure 5 prime. This is again
8 another five prime figure that Petitioner is offering in this case. Niwa does
9 not cure this deficiency. Niwa teaches forming battery 24 in second unit 20
10 stacked with additional power supply requirements. In constructing this yet
11 another modified figure five of Schröder, Petitioner relies on the fact that
12 Niwa discloses a battery and a PCB in two different sections of Niwa's
13 housing, but Niwa teaches using a highly flat battery and the advantages of
14 stacking planar flat elements instead of the arrangement proposed by
15 Petitioner. And this stacking arrangement taught by Niwa is counter to the
16 curved inlay arrangement of Schröder because arranging Niwa's flat
17 components in the thin curved inlay of Schröder would not be feasible and
18 would result in too wide of a ring. That is testified to by Dr. Mercier at
19 Exhibit 2018, paragraph 139, which is further consistent with the ITC's
20 opinion. So because the power source circuit 22 and charging circuit 25 are
21 a necessary part of the power supply of Niwa that accompany battery 24,
22 combining Niwa and Schröder would presumably result in a second
23 unsightly or uncomfortable protrusion in the device, in addition to chip
24 module 10. And the only motivation that Petitioner provides for this
25 modification is simply an improper hindsight restatement of the claim

1 limitation at issue. From the petition at 38, they say one of skill in the art
2 would do this to separate a battery and PCB that are in the same ring
3 housing, okay, and that's the claim language.
4 To jump to Ground 5, and this is Niwa, Ground 5 is Niwa alone for
5 Claims 1 through 3 and 13 through 18. Niwa does not disclose or suggest
6 limitations 1[a] and 1[b], the housing. Niwa, as was alluded to earlier,
7 discloses a unitary housing 40 shown in Figure 23 and fails to disclose how
8 the housing is constructed. In fact, this is on Slide 64 Niwa strips away the
9 housing and nearly every figure to show the internal components of the ring.
10 And in Slide 65 the testimony from Dr. Anthony noting that Niwa is silent
11 as to the construction of housing 40. The petition, Slide 66, includes no
12 explanation as to why it would be obvious to use a unitary housing instead
13 of the claimed components. Rather, it appears that Petitioner is identifying
14 sections of the unitary housing 40 as being components.
15 Petitioner's interpretation of Niwa reads at least the limitations, as
16 Judge Horner alluded to, component and coupled with completely out of the
17 claims. Under Petitioner's interpretation, the term housing is synonymous
18 with both external housing component and internal housing component, and
19 the internal housing component coupled with the external housing
20 component would have no meaning at all.
21 Claim 1 specifically separately recites the internal and external
22 housing components, and when a claim lists elements as separate
23 components, there's a rebuttable presumption that those elements are distinct
24 components of the patented invention. That's the *Becton, Dickinson* case
25 from the Federal Circuit, 616 F.3d 1249. This presumption is also supported

1 by the specification, which shows and discusses individual components of
2 the housing as separate, for example, in Figures 12, 13, 14, 15, but on the
3 other hand, shows in Figure 4 and 16 where unitary housing is disclosed. So
4 the claims are specific. Niwa's housing is unitary and therefore Niwa does
5 not disclose limitations [a] and [b].
6 And again, the ITC examined Niwa and found that Niwa does not
7 disclose separate external and internal housing components. ITC found the
8 evidence does not support that Niwa discloses the external and internal
9 housing components arranged or combined in the same way as in the claim.
10 And if we look on Slide 68, on the top is Respondent's evidence in the ITC
11 action. On the bottom is Petitioner's evidence in this proceeding. It's
12 exactly the same. The result here should be exactly the same, that Niwa
13 does not disclose limitations 1[a] and 1[b].
14 JUDGE VALEK: What about the backup ground that Petitioner
15 has offered where they're combining Niwa with Schröder and saying it
16 would have been obvious to implement the housing as two separate
17 components that are coupled together, based upon some of those
18 construction variants that Schröder alludes to, such as Figure 7?
19 MR. PLUTA: Yeah. And that's, Your Honor, that's Ground 6 and
20 Petitioner cites back to Ground 2 for the combination of Niwa and Schröder.
21 So it really doesn't distinguish between its Schröder and Niwa ground and
22 the Niwa and Schröder ground. And for the same reasons with respect to the
23 Schröder Niwa ground, a person of ordinary skill in the art would not
24 combine Niwa with Schröder. And the ITC also recently rejected a
25 proposed combination of Niwa and Schröder, based on the same reasoning

1 offered by Petitioner here. Petitioner actually provides no reason why
2 POSITA would modify Niwa's ring to accommodate Schröder's 100-micron
3 inlay when Niwa's components take up a much larger volume, and this
4 touches on the testimony that we cited in response to your question, Judge
5 Valek, from Dr. Mercier.
6 JUDGE VALEK: Isn't that, though, and I don't want to criticize
7 the ITC's reasoning there, but isn't that a bit of a bodily incorporation
8 argument where the ITC is like -- go ahead, I think you understood the
9 question enough to answer it.
10 MR. PLUTA: I did, Your Honor. I don't know, and I'm not going
11 to presume to know what the ITC meant. But as to the issue of bodily
12 incorporation, putting that aside, there has to be a showing that a POSITA
13 could have a reasonable expectation of success where they attempt to do it.
14 And the evidence here in this case, in these proceedings, that Petitioner has
15 -- they've not met their burden in this regard in several respects. And to
16 summarize, all the prior art leading up to 2013 put all the components, the
17 battery, et cetera on top of the ring. Asada, the leading researcher in the area
18 at MIT also did this.
19 Mercier, our expert, started the Center for Wearable Sensors. This
20 was like, his jam. He attempted to do this but found that he would just
21 follow the prior art putting all the electronic components on the top of the
22 ring. And we have testimony from the inventor in this regard, you know,
23 attempting to take, and we can get into the specific testimony. But he
24 essentially testified taking a large battery, a curved battery, for example, in
25 the Mestas example, might work if you had a very, very, very, big ring, I

1 think he only used three verys in his testimony. But it just wasn't in the
2 realm of possibility at the time with respect to the priority date here.
3 And if we look at all this evidence from folks -- and this is, I
4 started off highlighting Petitioner's definition of a person of ordinary skill in
5 the art. And the reason that matters here is because if you look at the
6 definition and then if you look at all the folks who are far beyond ordinary
7 skill in the art as defined in the petition, such as Dr. Asada, Dr. Rhee, Dr.
8 Mercier, the evidence leads to the conclusion that there was no reasonable
9 expectation of success. And again, Dr. Mercier testified at Exhibit 1081,
10 page 123, lines 4 through 10, that if he were to give one of his graduate
11 students a copy of Schröder, that it was his opinion that the graduate student
12 would not be able to come up with a design that fits everything into the
13 recess and the claimed invention of the Oura Patents.
14 Skill in the art does not act as a bridge over gaps in the substantive
15 presentations of an obviousness case, but instead supplies the primary
16 guarantee of objectivity in the process. Here we have a lot of evidence that
17 shows that people far beyond skill in the art did not come up with this.
18 Petitioner's case doesn't show otherwise. And I know I'm running short on
19 time. I want to get to -- certainly get to secondary considerations. Maybe
20 I'll wait until I get back up to do that, if that's okay with the board.
21 JUDGE POWELL: Yeah, I think that's fine. But I guess actually,
22 let me stop the clock for a minute.
23 MR. HABER: Respectfully, Your Honor --
24 JUDGE POWELL: Does Petitioner have a -- that should be
25 -- your sur-rebuttal should be addressing what Petitioner says, so.

1 MR. PLUTA: Well, or understood. So if I can just do it now and
2 then, whatever comes off my rebuttal time --
3 JUDGE POWELL: Yeah. Of course.
4 MR. PLUTA: Yeah, I just was trying to -- yeah.
5 JUDGE POWELL: You can continue and it'll just run from your
6 -- you won't have as much reserved time.
7 MR. PLUTA: That's fine. But I certainly want to address it, and --
8 JUDGE POWELL: Okay. So should we go confidential or --
9 MR. PLUTA: It's probably going to be five minutes before, but --
10 JUDGE POWELL: So I'm confused, are we -- let's go
11 confidential, then.
12 MR. PLUTA: Let's go on the confidential record, then we won't --
13 JUDGE POWELL: Let me let me check to make sure that Charlie
14 can get us that way on the public line.
15 UNIDENTIFIED SPEAKER: The public line has been paused.
16 JUDGE POWELL: Okay. Thank you. All right. And for the
17 court reporter, if you could put a note in the transcript that we're going to go
18 confidential right now.
19 (Whereupon, the above-entitled matter went off the record at 3:16
20 p.m. and resumed at 3:33 p.m.)
21 PARTICIPANT: I'm confirming we have the public line open.
22 JUDGE POWELL: Thank you, Charles. And Petitioner will let
23 me know when you get to the point where you need to talk about
24 confidential information.
25 MR. HABER: Just for the record, I think I may discuss secondary

1 considerations, but I don't think I'll be discussing or showing any
2 confidential information.
3 JUDGE POWELL: Okay.
4 MR. HABER: Just discuss at a high level. But if that changes I
5 will let you know.
6 JUDGE POWELL: Yeah, if it does come up, just let us know.
7 MR. HABER: Alright, so I do just have a few quick points if I
8 may proceed.
9 JUDGE POWELL: Sure.
10 MR. HABER: So I want to just start with, a couple of comments
11 that were made about Schröder, because I think they are important. And one
12 of the things that Patent Owner does a lot with regard to Schröder is kind of
13 ignore and minimize the teachings that Schröder actually has. And so, Your
14 Honor Judge Horner asked about Schröder's Figure 7 and the description of
15 Schröder's Figure 7 at column 12, line 40. And, column 12, line 40. Figure
16 7 accordingly shows two U-shaped components 16 and 18 housed between
17 inlay 12 -- housed -- between which inlay 12 is housed.
18 So that's what Schröder is describing with its construction variant
19 in Figure 7. And that U-shaped component is important and it is referenced
20 again later in Schröder when we're talking -- when Schröder is talking about
21 how the inlay is fit between the inner and outer components. And what
22 Schröder mentions at column 14, starting around line 20.
23 This is again, we have the flat blank that has all of these
24 components on it. The ring blank can be round around a core ring. The core
25 ring is the inner housing and the core ring has the form e.g. of finger ring

1 two, so it's formed like the finger ring. And the core ring has, for example,
2 a U-shaped cross sectional profile. And so when Schröder is talking about
3 Figure 7 and its U-shaped cross sectional profile, it's Schröder that is telling
4 us what it looks like. Schröder says that there is a core ring that goes around
5 the inside, around which the inlay is wrapped, and then the outer ring is on
6 the outside. And that is exactly the way that we expected our Figure Five
7 prime. So that's again, it's not expert testimony. That is what Schröder is
8 telling us.
9 Now, Patent Owner, also makes an argument about Schröder's
10 disclosure of a battery. And that battery disclosure is at column 11 of the
11 patent. And there's a paragraph spanning from column 11 line 45 through
12 65, 67, actually. And Patent Owner makes the argument that Schröder's
13 discussion of the battery is limited to this RF application. That is not
14 correct. If you actually read this paragraph Schröder does talk about using
15 the battery to power an RF application and various security features.
16 Schröder also teaches at line 60, further the energy storage device, that's the
17 battery can be employed for operating electric components such as display
18 units or display elements and supplying them with power and, granted, a low
19 power RF antenna doesn't take a lot of power, but a display unit with LEDs
20 that is displaying features to a user certainly does, that takes more power,
21 and that's what Schröder is teaching, a battery that powers all of these
22 electronic components.
23 And then when we get to column 13, which starting around lines
24 22 through 45 is describing process of making this inlay, opposing counsel
25 makes the statement that again, I think it's just not a correct description for

1 Schröder. They say that Schröder is silent as to the other devices that are on
2 the inlay, that is not accurate. If you read what it says, column 13, line 22,
3 there are applied to a carrier foil, at least one chip module 10, at least one
4 antenna coil 8, and optionally further electronic devices such as a further
5 antenna coil or a display.
6 So there are basically all of these electronic components including,
7 for example, a power-hungry display are on the inlay. And Schröder says
8 that the battery can power the chip, the display, the antenna, basically any of
9 these components and all of the components are on Schröder's inlay. Again,
10 it is not expert gap filling, this is just what Schröder is telling us.
11 JUDGE POWELL: But it never specifically says that those
12 optional electronic devices would also be a battery.
13 MR. HABER: It does not say that. It says that, there are optional
14 electronic devices. I asked their expert if a battery would be included as an
15 electronic device. He admitted, of course, yes, the battery is an electronic
16 device. Schröder teaches that the battery is connected to the chip, connected
17 to the display. Essentially it's there to power these optional electronic
18 devices and so it would naturally be placed on the inlay.
19 Patent Owner, when pressed, admitted that there is what he framed
20 as a tension between their arguments about, the curved battery and is
21 disclosed in the patent. The fact of the matter is, their argument just doesn't
22 hold water, it is not supported by the evidence of record. They rely a lot on
23 this work that was done in 2003 by an academic engineer who was doing
24 some proof of concept work, trying to integrate sensors onto a device. This
25 wasn't a product that he was trying to sell. This was really a proof of

1 concept work done ten years before these patents were issued. And the fact
2 of the matter is market forces made these things smaller. And to the extent
3 there were smaller components available, one of skill in the art would have
4 known how to place them and package them in the devices as the patents of
5 record actually teach.
6 Another kind of, I think it was a misstatement by the Patent
7 Owner, but I did want to point this out. They made the argument that,
8 Kapton is an insulating material. And that's true, Kapton is an insulating
9 material that is used to build up layers of a PCB. You need to have a
10 conductive material in order to have conductive traces, for example, on PCB
11 and again, turning to what Schröder teaches, column 13 line 25, the antenna
12 coil can, for example, be printed on the carrier foil by means of a conductive
13 paste. So there really is nothing missing from Schröder as to how to develop
14 conductive traces. You know, you can print them, you can etch them, you
15 can laser them. All of this stuff is taught by Schröder, and it's just not an
16 accurate representation of Schröder, to say that it isn't.
17 Patent Owner highlighted an issue that I think is particular to
18 some of, their claims and they frame it as a problem of our expert in
19 explaining what is going on. The reality is, these claims are simple, and they
20 are drawn to things that those of skilled in the art would have known how to
21 accomplish. And so a key example are claims two and three of the '178
22 patent. And so Claim 1 requires carrier foil with particular components on
23 it. Claim 2 says that those components should be overlapping the inlay.
24 Claim 3 says that they should be not overlapping the inlay. So essentially
25 claims two and three, describe the entire universe of possibilities for where

1 these things could be placed. And so what our expert explained is that one
2 of the skill in the art, looking at these finite positions where you could place
3 these particular, components, would have found reasons to do either one of
4 these things.
5 You might want to place them overlapping, for example, to
6 minimize, length of electrical wires to prevent shorts. You may want to
7 place them further apart to minimize thermal issues. For example, a power-
8 hungry battery might admit infrared light and an infrared sensor might be
9 sensitive to that. So there are any number of reasons why you would want to
10 do either one of these options.
11 The point is where there are a finite number of predictable
12 options, it is well within the level of one of skill in the art to do any one of
13 them. And our expert specifically explained why either one of those would
14 be done. And so, again this isn't expert gap filling. This is canonical
15 obviousness law, that there's only so many ways to do this. And our expert
16 explained why you might do one over the other in any given situation.
17 Now, I did want to mention a couple points about Niwa and the
18 ITC. And what we have in the record is Exhibit 2116, which is, the public
19 version of the ITC decision. We have 46 pages, it is several hundred pages
20 long. We don't know what we don't know. But what we do know is that, the
21 arguments that were accepted by the judge and the ITC in our view are not
22 correct. And so as just one example, Patent Owner admitted, during his
23 argument, that figure four of the '178 patent discloses a unitary construction,
24 there is an embodiment in the patent, disclosed by the patent, that is a
25 unitary construction. There are embodiments in the patent that have

1 separable constructions. Those features are all in the patent. And what the
2 ITC judge did was construe the claims to exclude the embodiments of a
3 unitary construction. And respectfully, that is not a correct application of
4 Philips to the intrinsic record here.
5 JUDGE HORNER: Can we go over that one more time? I'm
6 looking at Figure 4 of the '178 patent. And I see there's a housing and it
7 looks like it's a single unitary housing with an inner and outer layer. I
8 assume it's closed, sealed on that open end with some sort of material.
9 MR. HABER: Correct.
10 JUDGE HORNER: How are those two coupled to each other in
11 the Figure 4 embodiment?
12 MR. HABER: Well so as Patent Owner characterized it, they are a
13 single unitary structure, they are either built that way, injection molded,
14 however, it is a single unitary structure that the components are then inserted
15 into and then I imagine sealed on the outside, which, you know, to the extent
16 that, the claims were construed to exclude a unitary construction, that simply
17 is not consistent with the intrinsic record.
18 And, as Judge Valek noted the, the arguments that were
19 presented and accepted were really bodily incorporation arguments. The
20 ITC had problems with Niwa and, at every opportunity where one of skill in
21 the art would kind of look at the teachings of Niwa. That is not what the
22 judge says. The judge basically looked at the specific implementation
23 details of Niwa and said, well Niwa's battery is on top of this component
24 which is on top of this component which is on top of this component and
25 that just could never fit in Schröder. And that is a bodily incorporation

1 argument and that is not, you know, the argument that we are presenting
2 here. One of skill in the art would have constructed this device in a way that
3 made sense in view of Schröder. And Schröder's teaching to use these ring
4 halves and so that various components don't extend beyond them.
5 So, I stated this before, but I do want to say it again for the
6 record, we object to Patent Owners' new argument that is not based on any
7 evidence in the record that certain other products practice these claims.
8 Their expert did not offer that testimony, there is no evidence other than the
9 attorney who was taking that position here. We never took the position that
10 those products don't practice the claims, we don't know one way or the other.
11 There's no evidence in the record and it is their burden to show. What we do
12 know is there are some pictures of those devices in the record. There are
13 certain flat spots on the side of the outer ring housing. They make a big
14 issue about the shape of the outer ring housing. It's unclear whether or not
15 they believe those devices practice or not, but the evidence doesn't
16 demonstrate it.
17 The other thing that I did want to note, and we note this, in our
18 reply, Your Honor, Judge Horner identified a feature of the '702 patent,
19 which is a battery, which is not claimed in the '178 patent. There are
20 similarly the features of the '178 patent that are not claimed in the '702
21 patent. They claim that these claims are directed to the same invention.
22 Frankly, there are features that are not the same. They are similar
23 inventions, related inventions, but they're not the same. And our argument
24 really isn't that the problem is that these products are practiced by multiple
25 related patents. The problem is that there are critical, essential features that

1 they rely on to show commercial success. For example, the app, the form
2 factor, the materials. All of these things are critical, in their own words,
3 they're critical, they're essential and they are claimed by completely
4 different patents. And that is the issue in *Fox Factory*. And that is why
5 nexus cannot be presumed here. Alright, unless Your Honors have any
6 additional questions, I will give you back 15 minutes of your day.
7 JUDGE POWELL: Thank you.
8 MR. PLUTA: We'll see if I can do this without my slides, but if I
9 need to resort --
10 JUDGE POWELL: Do we need any technical assistance to get
11 your slides?
12 MR. PLUTA: No, no, I think I've just got a couple points that I
13 want to make. Okay. First, we never argued that the '178 and the '708 are
14 the same invention. In the context of secondary considerations we said they
15 are essentially the same invention and therefore we can look to that
16 evidence. Counsel was referencing the section in Schröder that talks about
17 the inlay, and various things that can go on, including the conductive paste.
18 Well, conductive paste is different than a printed circuit board. And he
19 suggested that Schröder can power a display.
20 Okay. Where would that display go? Would that go in the ring?
21 No, it wouldn't. And would it presumably go on module 10 or somewhere
22 thereabouts on the top of the ring? Like most things that have displays like a
23 watch? Yes. Where would the battery go that is needed to power that
24 display, according to Schröder? Well, we don't know because Schröder
25 doesn't say anything about it. But presumably, a battery, and I don't want to

1 put words in his mouth, but I think that would require quite a bit more power
2 to power a display. That type of battery is not going to fit in the inlay of
3 Schröder. It's going to be on the top of the ring, just like in Figure 3 of
4 Schröder, just like in Niwa. Niwa's power requirements, for example are
5 taking PPG sensing. That requires more power than RFID and NFC, so yes.
6 Schröder does discuss that it can have a display. But that display's
7 not going to go into the cavity of the housing. There would be no point to
8 having a display in the cavity of the housing. Petitioner is -- all their
9 arguments kind of come down to, well everybody would have thought this is
10 all obvious. But if you look at the way Oura designed and claimed and
11 achieved these patents, there were probably three or four or more forks in
12 the road they had to decide. A ring form factor. How to design the internal
13 and external housing. What kind of battery to use. Where is that battery
14 going to go? What kind of circuits are included? What kind of functions are
15 included in the ring?
16 All those forks led to the claimed inventions here. If you look at
17 the prior art, as we've discussed at length, no one before claimed the ring
18 form factor, no one before claimed the limitations that are set forth in the
19 '178 and the '702 Patent. If there are no further questions, I think I am done.
20 JUDGE POWELL: None for me. Looks like we're good. Well,
21 thanks to both parties for your presentations today. That was a lot of hard
22 work on your part. We got to sit here and pepper you with questions and we
23 appreciate the answers to those. We will go off the record.
24 (Whereupon, the above-entitled matter went off the record at 3:53
25 p.m.)

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