

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TEXAS INSTRUMENTS INC.
and NXP USA, INC.,
Petitioners,

v.

PARKERVISION, INC.,
Patent Owner.

IPR2024-00935 (Patent 7,865,177 B2)¹
IPR2024-00936 (Patent 9,118,528 B2)²

Record of Oral Hearing
Held: September 10, 2025

Before MICHAEL R. ZECHER, BART A. GERSTENBLITH, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

¹ NXP USA, Inc., who filed a petition in IPR2024-01066, is joined as petitioner in this proceeding.

² NXP USA, Inc., who filed a petition in IPR2024-01068, is joined as petitioner in this proceeding.

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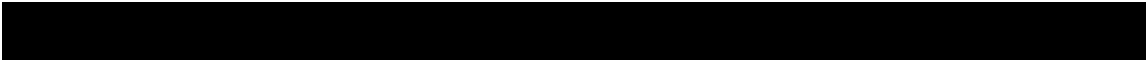
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The above-entitled matter came on for hearing on Wednesday, September 10, 2025, commencing at 10:00AM, at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

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P R O C E E D I N G S

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JUDGE GERSTENBLITH: Hello, everyone. We are here for oral argument in Texas Instruments, Inc. and NXP USA, Inc., versus ParkerVision, Inc., which is case IPR2024-00935, and to which IPR2024-01066 has been joined, and also oral argument in IPR2024-00936, to which IPR2024-01068 has been joined. I am Judge Gerstenblith and appearing with me today are Judges Zecher and Ahmed.

Starting with Petitioner, will Counsel please enter your appearance for the record?

MR. GRISWOLD: Yes, Your Honors. My name is Joshua Griswold and I'm with Fish & Richardson on behalf of Texas Instruments, and I have co-counsel Rishi Gupta and Yao Wang here with me today.

JUDGE GERSTENBLITH: Excellent, thank you very much. And for Patent Owner, please?

MR. CHARKOW: Good morning, Your Honors, this is Jason Charkow, I'm of the Daignault Iyer firm on behalf of ParkerVision, the Patent Owner, and with me today, I have my colleague, Stephanie Mandir.

JUDGE GERSTENBLITH: Excellent. Welcome, everybody, thank you so much for coming today. Give me one second. We set forth initially the procedure for today's oral hearing in our order setting oral argument,

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1 which in each case, 935 and 936, is in the record as Paper 41. In each of
2 those orders, we indicated that each party will have 60, 6-0, minutes of total
3 argument time. We have a court reporter who is creating a transcript of the
4 hearing, and that transcript will constitute the official record of this
5 proceeding for the hearing.

6 Yesterday, after the conclusion of an argument in a different
7 proceeding, we briefly discussed the procedure for today's hearing. As we
8 discussed yesterday, we've decided to have one transcript, although the two
9 cases, 935 and 936, are not consolidated. We agreed to make one transcript
10 because of the overlapping issues in each of the two cases. And we also
11 explained that each of the parties may use two hours of total argument time
12 for all of the argument today for both of the cases and can divide that time as
13 each party sees fit.

14 We also explained that we were going to start with the 935 case, do all
15 of the arguments with the back-and-forth rebuttals, which I'll explain in
16 more detail, and then move to the 936 case. I am expecting that in between
17 the two cases we'll take a one-hour lunch break and that we will also take
18 five-minute breaks after each side's opening argument in at least the 935
19 case and we'll see about the breaks before we get going in the 936 case.

20 When we start, we're going to start with the 935 case, as I just
21 mentioned, and the sequence of the arguments is going to be that Petitioner

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1 will open with its case in chief, Patent Owner can then respond and raise any
2 issues on which it may have a burden. Thereafter, Petitioner will have time
3 for rebuttal, followed by Patent Owner's rebuttal, and lastly, Petitioner will
4 have a short time for a surrebuttal that would solely be responsive to any
5 argument that Patent Owner actually raises on the issue of antedating prior
6 art during Patent Owner's rebuttal time.

7 I want to be really clear about what I just said. So, that allows -- our
8 default system appears to be based on the concept that each side will be
9 allowed to argue each issue twice. Once in the opening and then once in a
10 rebuttal period. So, because we discussed yesterday that it made sense for
11 Patent Owner, although it's Petitioner's choice here, to initially discuss
12 antedating during its first instance of argument, that means that on that topic,
13 Petitioner will not have addressed it during its opening argument, and
14 therefore Petitioner's two opportunities to address it will come in rebuttal
15 time after Patent Owner initially addresses it. If, for any reason, Patent
16 Owner does not address that issue during its rebuttal time, there will be no
17 issue for Petitioner to address in its last argument time. So I want to be
18 really clear about that, because that time is only meant to respond to specific
19 arguments that Patent Owner actually raises.

20 So, in this sequence, which sounds very long and complicated, there
21 will be five segments of argument. Petitioner, Patent Owner, Petitioner,

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1 Patent Owner, Petitioner. Now, I don't want to make things even more
2 complicated, but I said that you would each have two hours, which is 120
3 minutes. I don't know if you can see the timer behind me on the wall, maybe
4 it's better that you don't. I encourage each side to have somebody running a
5 two hour timer for themselves next to you or somewhere near you that you
6 can see.

7 Our timer in the room only goes up to 99 minutes. So, I set it for 60
8 minutes, just so we have some baseline to judge by, and when that 60
9 minutes runs out, what happens with this timer is it starts counting up. So
10 we will know that we went down and then we went back up and we'll add
11 that time to the 60 minutes, assuming that any one party uses more than 60
12 minutes in their 935 case.

13 I've said a lot. I'm going to say a few more things and then I'm going
14 to take any questions that either side has. So we also received an unopposed
15 request to seal the hearing from Patent Owner, because there are documents
16 and arguments on issues that are going to come up that Patent Owner deems
17 to be confidential. There are multiple motions to seal in these cases and also
18 motions for a protective order, which we will address in any final written
19 decision. Because of that, we granted Patent Owner's request via responsive
20 email, and the hearing today is sealed. There should not be a public line
21 open.

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1 What we're going to do is a transcript will be prepared, once we enter
2 it into the record, which we will do as Board and parties only under seal, it
3 will be up to the parties, particularly Patent Owner, and we'll indicate this
4 with an accompanying order, that Patent Owner will review the transcript,
5 propose redactions, and share it with Petitioner. Hopefully there will be an
6 unopposed and agreed upon redacted transcript that then Patent Owner will
7 file as a publicly filed document in each of the proceedings.

8 We have electronic versions of your demonstratives, but this is going
9 to be a long transcript, so please call out the slide number, the exhibit
10 number, and so forth, and if for any reason -- well, we're going to start with
11 the 935 case, but when we get to the 936 case, if for any reason the exhibits
12 have a different number but the same issue, you know, I'm going to ask that
13 you be very clear that we're talking about the exhibits in which case we are
14 in. So, if for some reason there's something in 935 that you talk about that
15 you go to the 936 case for, just make clear that it may be a different exhibit
16 number if that happens.

17 Also, when it is your turn to argue, if you want me to cut you off and
18 say hey, we've reached 45 minutes or 60 minutes or something like that, I
19 will definitely try to do that. But I gave you the caution of having somebody
20 at your side also with a timer because it will be easier for you to monitor

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1 your own time in this type of set up. Okay. All of that being said, any
2 questions from Petitioner's side?

3 MR. GRISWOLD: No, Your Honors.

4 JUDGE GERSTENBLITH: Okay, and any questions from Patent
5 Owner's side?

6 MR. CHARKOW: No, Your Honors.

7 JUDGE GERSTENBLITH: Okay, great. Well, with that, Mr.
8 Griswold, whenever you're ready. Oh, okay, and I apologize, one more
9 reminder. Just because our speaker system here in the hearing room is
10 peaked to the max so we can hear you as clearly as possible, when it's not
11 your turn, please make sure to mute on your end, because it does produce a
12 good amount of feedback over here. Thank you very much, and with that,
13 Mr. Griswold, when you are ready, you can proceed.

14 MR. GRISWOLD: Thank you, Your Honors, may it please the
15 Board. So, I want to start off with some initial observations about the
16 grounds that were presented in the Petition and how they developed
17 throughout the proceeding. And I think it will help the panel prepare its
18 final written decision. It's important to appreciate that there is no dispute
19 that Tayloe or Razavi, the grounds based on each of those references, meet
20 all the limitations of claim 14, the only challenged claim, under TI's
21 construction of matched filtering/correlating module.

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1 And the same applies under the construction recently adopted by the
2 Western District of Texas, which I'll discuss. If you adopt plain meaning,
3 Patent Owner's only remaining argument under TI's construction is their
4 swear-behind of Tayloe. Razavi, they haven't attempted to swear behind.
5 So, with that view of the case, I'd like to move forward and start with claim
6 construction.

7 So, the only term in dispute is the matched filtering/correlating
8 module term. And I think that there's no dispute about what matched
9 filtering or correlating -- note that I refer to them as gerunds, so there's no
10 dispute what matched filtering or correlating are, or that they're well known
11 to a POSITA. Both experts explain that they're a mathematical operation,
12 and it's not a specific circuit or a system architecture, matched filtering or
13 correlating in a gerund context. There is testimony in Dr. Galton's deck at
14 Exhibit 1003, paragraph 22, where he provides an example from a textbook
15 of a matched filtering switch and a correlating switch. And the matched
16 filter in that example is a filter with an impulse response, and that impulse
17 response is tied to the match, to the receive signal. And that's what the
18 matched filtering is. And then correlating, I'm sure you understand
19 correlating. It's the same concept where the receive signal and the reference
20 signal are correlated, and in that instance, in a correlator example, integrated.

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1 And then in the textbook example of matched filter and correlator, they're in
2 the context of a switching system, and so they each include a switch.

3 So, it's from that basis that a POSITA understands what matched
4 filtering and correlating is, and what a POSITA considers the plain meaning
5 of the term. And there's no dispute that matched filtering/correlating module
6 determine the patent was meant to cover these circuits, the various circuits
7 that the '177 patent shows, that approximate this mathematical operation.
8 Some of those embodiments include a switch and an integrator. We'll
9 discuss a little bit more today that some of those add a resistor, either in a
10 source resistor, like in an RC network, or a low impedance load at the
11 output. And the low impedance load is where I think the parties will spend a
12 lot of their discussion. You know that, coming into this.

13 The '177 patent also says that the present invention contained herein,
14 this is a quote, is a unique and specific application of matched filter theory,
15 sampling theory, and frequency domain techniques. And I think there's no
16 dispute that the unique application that the patent is talking about is to apply
17 the matched filtering/correlating, the function, the gerunds, to down convert
18 a signal, rather than in its typical use in signal detection, as a signal detection
19 filter. There's testimony by Dr. Galton, at TI 1003, paragraph 24, where he
20 explains the difference between his textbook example and the examples in
21 the patents. The impulse signal, the reference signal, is related to the down-

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1 converted signal and not the reference that's used in the initial filtering
2 configuration that's described in his textbook. And Ricketts has similar
3 testimony at Exhibit 2024, paragraphs 104 through 105.

4 I think claim 14 of the '177 patent is clearly directed to this aspect of
5 the invention. The claim says down converting is the input signal at a first
6 matched filtering/correlating module, and so it relates to down converting
7 using this matched filtering/correlating module. With this background, it's
8 TI's position that the term is clear on its face. No construction is necessary.
9 Its plain meaning, to reference modules that perform matched filtering or
10 correlating, would be readily recognized and understood by a POSITA. And
11 of course, we know that there's a heavy presumption that claim terms should
12 carry their accustomed meaning in the relevant community at the relevant
13 time. This is the *Azure Network* case that all parties are familiar with,
14 because it was briefed and used by the Special Master in the Western
15 District of Texas, where the parties argued these claim constructions.

16 I think the Patent Owner is also in agreement that the plain meaning
17 should apply, yet the Patent Owner provides a construction that they declare
18 is the plain and ordinary meaning of matched filtering/correlating module.
19 But the construction they offer lacks any description of matched filtering or
20 correlating, the functions that form the basis of the phrase matched
21 filtering/correlating module, and I submit that that's wrong. So, let's go to

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1 Slide 10. And so Dr. Galton explains that matched filtering/correlating at
2 least requires matching or correlating the input signal to a known signal,
3 here, the oscillator signal. This is at TI 1066, paragraph 29. And part and
4 parcel of this matching is the synchrony between the received signal and the
5 known correlating signal, that's the reference signal that I've mentioned
6 before. Patent Owner's construction completely lacks this.

7 I think that, you know, it's also worthwhile noting that the Western
8 District of Texas received briefing from both parties in a slightly different
9 context, because there, the Patent Owner was presenting a construction more
10 akin to the Middle District of Florida construction that was adopted
11 previously. But the Western District issued a claim construction order
12 adopting a plain and ordinary meaning where the module samples input
13 signal at an aliasing rate.

14 The Special Master's reasoning there, adopted by Judge Albright in
15 the Western District, is explained in TI 1042. That's the Special Master's
16 report, and it was subsequently adopted whole cloth by Judge Albright. But
17 there, the Special Master took issue with Patent Owner's construction,
18 because it lacked any notion of matched filtering or correlating. And this is
19 our one fundamental dispute that we have with the Patent Owner's proposed
20 construction.

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1 There's another fundamental dispute, and it's whether the term
2 requires that energy of the input signal is integrated and transferred to a load
3 to form a down-converted signal. And maybe let me make two quick asides.
4 First, which construction you adopt doesn't matter. If you find matched
5 filtering/correlating module requires transferring to a load, we've shown that
6 Tayloe and Razavi both have a load, and it's a low impedance load at that.
7 And then second, the Patent Owner and its Patent Owner's Response at 67
8 says the experts agree that matched filtering/correlating module must include
9 at least a switch and the integrator, open paren, capacitor and a load, open
10 paren, resistor.

11 I want to point this out because it's flat wrong. And I think as I was
12 preparing for this proceeding, I ran across a number of places where Patent
13 Owner has misquoted the record. And I'm not going to call all of them out
14 at this stage, but I want to encourage the Board to, when you see a cite, when
15 you see a statement in the Patent Owner's briefing, look past the statement
16 and look to the cite. I think you might find many of them don't say what
17 they say they say. Here, for example, nowhere does Dr. Galton say that the
18 matched filtering/correlating module requires a load. And in fact, at TI
19 1066, paragraph 22, he takes issue with this misrepresentation head on. The
20 experts don't agree that a matched filtering/correlator requires this.

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1 I'll also say, you know, what's good for the goose is good for the
2 gander. I invite you to look at our use of the record and our citation of the
3 record, because I'm confident that we've cited the record correctly. And so, I
4 know this is the case, because you do it regularly, that you're going to look
5 at the record and the record is really going to drive your final written
6 decision, but I think it's important to point that out here in this instance. Let
7 the record drive your decision.

8 So, Slide 49, please. Turning back to whether a load is needed in the
9 construction of matched filtering/correlating module. The '177 patent has
10 many examples of things identified as performing matched
11 filtering/correlating that do not include a load. Two really good examples
12 are Figure 153 and 173 that show a configuration relevant to our latter
13 discussion about Tayloe that includes an input resistor, a switch, and a
14 capacitor, but there's no load shown in this figure. And Dr. Galton explains
15 that's because the down-converted signal is output without load. This is at
16 1066, paragraphs 5 through 9. Slide 50, please.

17 You'll also see, if you trace through the equations discussing the
18 matched filtering/correlating and the various characteristics that you can
19 glean from the operation of the circuit, the equations describe charge
20 accumulation for Figure 173, using a capacitor to perform integration.
21 These equations do not depend on the load. For example, the '177 patent

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1 describes the charge to be dependent on voltage, V_0 , which is the voltage out
2 of the system, or in a few examples, is the voltage across the capacitor, and
3 without a load, of course, they're the same thing. And so the charge is
4 dependent on that voltage and the capacitance based on the equations we all
5 learned years ago.

6 Slide 53, please. The '177 patent also provides a separate section
7 where it considers the effect of load resistance across the integrating
8 capacitor. And this is at column 147:35 through 149:20 in the '177 patent.
9 It begins with a title, load resistor considerations. And it follows the section
10 that describes the equations I just mentioned above and the discussion of
11 many examples of things that do matched filtering/correlating but that don't
12 show a load in their figures and don't discuss a load in the equations that are
13 said to govern them.

14 This load resistor consideration section, it provides the equations for
15 the V_0 that are a function of the R_L , which is the load resistance. It's the
16 resistor on the output of the capacitor. Dr. Galton explains this, right? Just
17 based on Ohm's law, you can see that the V_0 , as it's affected by the R_L , the
18 load resistor -- he likes to talk in colloquialisms, told me, well, it's just like a
19 leaky path. The load resistor causes the load to leak out in that direction.
20 But the Patent Owner's constructions, if you adopted their proposed
21 construction wholeheartedly, it would exclude the examples that I provided

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1 that don't have a load resistor and would be limited to those that have a load
2 resistor. And of course, you know, it's well established that a construction
3 that excludes embodiments, if there's an opportunity to construe a claim to
4 exclude embodiments or include embodiments, you should construe the
5 claim to include embodiments.

6 JUDGE GERSTENBLITH: Counsel, Counsel.

7 MR. GRISWOLD: Yes.

8 JUDGE GERSTENBLITH: Two questions. The first, I just want to
9 make sure, were you intending to share your slides on the screen, or just
10 have us go to them?

11 MR. GRISWOLD: I'm old school, I like to work up on paper.

12 JUDGE GERSTENBLITH: That's completely fine. That's
13 completely fine, I just wanted to make sure that when you were calling out
14 the numbers, there wasn't somebody there next to you that you were
15 expecting was turning the slides. And then the second thing is -- so does
16 Petitioner actually put forth anything beyond just plain and ordinary
17 meaning for the construction of this term, besides just saying that, you know,
18 there's different examples in the Spec?

19 MR. GRISWOLD: I think the plain and ordinary meaning are
20 instances of circuits that perform match filtering or correlating, and the
21 experts I think agree with what match filtering is and what correlating is.

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1 JUDGE GERSTENBLITH: What about the notion of sampling? So
2 the Western District of Texas had that -- basically seems to have added, if I
3 use that phrase, added the notion of sampling to the plain and ordinary
4 meaning of the term. Does Petitioner agree with the Western District of
5 Texas construction?

6 MR. GRISWOLD: Your Honors, the notion of sampling was added
7 because there was an express statement that says the present invention
8 encompasses or involves or is sampling at an aliasing rate. I think that
9 perhaps the construction of match filtering/correlating module is slightly
10 broader than that, but I wouldn't dispute -- or I wouldn't be disappointed if
11 the construction included the aliasing rate. And I think that there's actually
12 depo testimony from Dr. Galton where he says that he thinks that the match
13 filtering/correlating module in the '177 patent samples at an aliasing rate.
14 And that aliasing rate is important, I think, for energy transfer, which as Mr.
15 Charkow will tell you, is the focus of this patent. And so I don't object to
16 the Western District's construction that involves sampling at an aliasing rate.

17 JUDGE GERSTENBLITH: I see. But the way we get to that
18 concept, it's not that it's included in the plain and ordinary meaning, it's that
19 it's something that was sort of added to it?

20 MR. GRISWOLD: Yes. You're correct, Your Honor.

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1 JUDGE GERSTENBLITH: Okay, and that's, as you said, there's
2 something in the Spec that talks about the present invention. I understand
3 what you were saying there, but that is -- the sampling part is the notion of
4 the down converting is performed by doing the sampling. I'm just looking at
5 claim 14, and particularly the second clause. So down converting the input
6 signal at said first match module, according to the control signal. So, I
7 believe that, you know, it's the control signal, right, that opens and closes the
8 switch that then has the aperture that we've talked about, and then it has a
9 longer period of time for the charge to do certain things, but it's the down
10 converting language and sort of the operation under the control of the
11 control signal that's actually doing the sampling part, not the something
12 that's inherent in the term "matched filtering module." I don't know if I was
13 clear or not, because that was long. I apologize.

14 MR. GRISWOLD: Yeah, so the question was long, and I'm not sure
15 that I fully understood it, but let me talk just briefly to that. As I understand
16 the circuit -- well, let's talk in terms of the circuit that has the RC
17 combination with the switch between. The RC is a filter, and it's also an
18 integrator, and this is, you know, something like either 175 that has the load
19 resistor on it or 173 that's provided with a load resistor. And so the switch
20 samples the signal, and in the patent, it describes that it's focused on the
21 positive portions of the signal, and this is where the aliasing rate comes into

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1 play, because they're not sampling all of the signal, but they're sampling a
2 portion that, if you remember my Slide 10, that shows how the sampling
3 windows are aligned with the positive portion of the signal. And in that
4 sampled signal flows into a capacitor that integrates the signal and basically
5 the down converted signal exists on the capacitor at that point. And then
6 how you get it out is something beyond the matched filtering/correlating
7 module. Does that answer your question, Your Honor?

8 JUDGE GERSTENBLITH: I think it does, but I'll also just say that
9 you can have a matched filtering/correlating module but also not do
10 sampling and down conversion, right?

11 MR. GRISWOLD: Yes. Well, you can do match filtering/correlating
12 and not do down conversion. I think that -- well, maybe I'll take a step back.
13 Module is a nonce word, I don't think it adds much to the construction. You
14 could have a matched filtering/correlating module that didn't do down
15 converting. The claim here requires it to do down converting. So, as long as
16 the module performed match filtering or correlating, it doesn't have to be
17 applied in a down-converting context.

18 JUDGE GERSTENBLITH: Okay, and do you recall where in the
19 Spec the statement that you said about the present invention came from?
20 That the Texas court put into the claim construction of this term?

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1 MR. GRISWOLD: I can get it for you, Your Honor. The Special
2 Master's report, if you haven't read it, is probably worth the read. You
3 know, the patents are quite long and difficult to get through, and for me,
4 getting up to speed reading the ancillary material and then delving into the
5 patent was helpful, because then I knew where in the patent to look. I'll get
6 you the cite though, after our break, for the statement that the present
7 invention is sampling at an aliasing rate.

8 JUDGE GERSTENBLITH: Okay, great. I did look at the Special
9 Master's report and the District Court's adoption of it, and that's why I'm
10 asking these questions, because I'm trying to understand -- and I think you're
11 agreeing with me, but I'll try one last time. Just tell me if I'm totally off here
12 or if I'm on target. I don't think -- the impression I'm getting is that the
13 sampling part and the down conversion part is not coming from the meaning
14 of the correlating module. It's coming from something else in the claim. It's
15 coming because the claim says method for down converting and it's really
16 just the second clause, down converting at the module. So, because it says
17 you're doing it there, it's happening there, but it's not inherent in that every
18 filtering/correlating module is going to do this. So, if the other language in
19 that clause, down converting and then outputting a first down-converted
20 signal, that's telling you that sampling is happening in there, because this is
21 what this step is doing. That's correct, right?

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1 MR. GRISWOLD: So, the patent is premised on their not having
2 invented matched filtering or correlating but applying it in a unique context,
3 and that unique context is down converting. I do -- a matched filter, like the
4 thing that is disclosed in Dr. Galton's textbook that he cites, the matched
5 filter itself doesn't necessarily involve the sampling, and nor does the
6 correlating. Although, I think that there is sampling in that example,
7 because it's referred to as a matched filter sampler, correlating sampler.

8 JUDGE GERSTENBLITH: Okay. I think I get it. I just, the way that
9 I'm looking at the Western District construction when it says wherein the
10 module samples an input signal at an aliasing rate, it feels to me like that
11 language is more akin to the step of down converting said input signal
12 according to a first control and outputting something, as opposed to the
13 module clause in the middle. I hope I'm making sense, but if I'm not, just
14 tell me I'm out in left field.

15 MR. GRISWOLD: No, I understand where you're coming from, and I
16 agree with you, yes.

17 JUDGE GERSTENBLITH: Okay. So, if I'm operating under that
18 context, and we didn't look at the exact language in the Spec, but if the Spec
19 says the present invention, you know, does this, samples an input signal at
20 an aliasing rate, it could just be that it's the other parts of the claim that that
21 language should be understood to include, as opposed to the module itself?

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1 MR. GRISWOLD: Your Honor, you put it into better words than I
2 had before. That's our initial position why simply the plain meaning is
3 appropriate, and the Special Master's -- in fact, we had argued to the Special
4 Master that the plain meaning was appropriate, and the Special Master
5 adopted this additional requirement to the plain meaning. With that said, it
6 doesn't matter for the purposes of this case because there's no dispute that
7 either Tayloe or Razavi operate at an aliasing rate.

8 JUDGE GERSTENBLITH: Okay.

9 MR. GRISWOLD: In the same way that, if you wanted to encompass
10 a switch into the module, and our expert testified at his depo that he thinks
11 that the module includes a switch, it's not an issue, because we have
12 switches in the prior art. So, the real core issue is should the construction
13 encompass matched filtering? Does it have to have some aspect of matched
14 filtering/correlating to it, and does the construction require a load? And if
15 you resolve those two issues, that's the dispute between the parties.

16 JUDGE GERSTENBLITH: Thank you. Sorry for taking you down
17 that rabbit hole. I just, for my own mental sanity, I needed to know the
18 answer to that. Let me ask you another question. In this claim, if there's no
19 load, how do you output the signal at the end, if there's no load?

20 MR. GRISWOLD: That's a good question, Your Honor. We're not
21 saying the claim would exclude a load or couldn't also have a load. The

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1 down-converted signal exists in the capacitor after integration, and we just
2 say that the matched filtering/correlating module itself doesn't need a load.
3 Like, that shouldn't be part of the matched filtering/correlating module, that's
4 part of the components downstream. And if you look at the Patent Owner's
5 construction, it's proceeded by "such that." So, I initially had a moment of
6 concern that it wasn't clear to me whether they had actually intended the
7 load to be part of the matched filtering/correlating module, but they've
8 clarified that in a subsequent briefing that they do. So we wouldn't be
9 opposed to the claim 14 reading on an example that has a load. And, in fact,
10 our prior art has a load, and we identified a load in our Petition, knowing
11 that this might be a concern. But it doesn't need to be part of the matched
12 filtering/correlating module.

13 JUDGE GERSTENBLITH: So, thank you. So, the combining, the
14 step of combining, the last step of claim 14, that step is performed at the
15 capacitor?

16 MR. GRISWOLD: In step 14, it's combining the --

17 JUDGE GERSTENBLITH: The second and the first down-converted
18 signals.

19 MR. GRISWOLD: I believe that that is the combining of the in-phase
20 and quadrature signal.

21 JUDGE GERSTENBLITH: Right, so where does that happen?

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1 MR. GRISWOLD: In subsequent circuitry, outside of the matched
2 filtering/correlating module.

3 JUDGE GERSTENBLITH: Okay, but I mean in general where,
4 because it's part of the claim, right? So we need to address that clause also.

5 MR. GRISWOLD: Well, in Tayloe, I can tell you that it happens in
6 the summing amplifier, right?

7 JUDGE GERSTENBLITH: Well, what about in the patent, what
8 about in the '117 patent, where does that happen? Let's start there.

9 MR. GRISWOLD: I'd have to sort through the many, many figures to
10 find you an example that shows the combining step. I hadn't focused on
11 that, because it's uncontroversial. The patent creates an in-phase and a
12 quadrature signal, and those are typically combined.

13 JUDGE GERSTENBLITH: Okay, so then let's pick one of those two.
14 So, the second clause of claim 14, back where we were talking about before,
15 down converting at said first matched module, and then outputting a first
16 down-converted signal. So, in that step, is that where you're saying there's a
17 capacitor that's integrating what's being received in order to output that first
18 down-converted signal? Is that what you were talking about when you said
19 a capacitor integrating?

20 MR. GRISWOLD: The capacitor integrating is a part of like a
21 correlating module. If you go back to Dr. Galton's example of the correlator

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1 sampler, it has a multiplier that multiplies the inputs, the received signal and
2 the reference signal, and the two are integrated in a subsequent step.

3 JUDGE GERSTENBLITH: Okay, so in order to output that -- to have
4 something that's output from there, you're saying that you don't need to have
5 a load in order to output that signal? So, once the capacitor integrates it, that
6 signal then exists on that capacitor, even before it is output. Is that kind of
7 the understanding?

8 MR. GRISWOLD: Yes, Your Honor. So, the down-converted signal
9 exists as a voltage across the capacitor. You have to have something
10 downstream of that capacitor to output the signal. It's a load, whether it's
11 low impedance or high impedance, but that's not part of the matched
12 filtering/correlating module.

13 JUDGE GERSTENBLITH: Understood, but you can't do that step,
14 the second step of claim 14, you can't end up outputting the signal unless
15 you have some load downstream, that's what you're saying?

16 MR. GRISWOLD: Agreed, yes.

17 JUDGE GERSTENBLITH: Okay. All right, thank you. Sorry for
18 that diversion. Thank you.

19 MR. GRISWOLD: Sure. I expect it. This is thin subject matter. I
20 have the citation for the present invention statement, if you'd like it. It's
21 column 26, lines 22 through 34.

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1 JUDGE GERSTENBLITH: Thank you very much.

2 JUDGE AHMED: So, Mr. Griswold, sounds like you don't disagree
3 with Patent Owner's argument that a POSITA would understand figures like,
4 for example, Figure 173 to include a load, because you need the discharge of
5 the energy that's stored in the capacitor. Is that right?

6 MR. GRISWOLD: The argument is a little bit loaded, right? So, I
7 wouldn't debate that 173 is eventually connected to a load. The 173 is used
8 to describe matched filtering and correlating, and it shows specific
9 components that make up the matched filter/correlator in these examples.
10 So, it doesn't have a load, it's not part of the matched filter/correlator. Off-
11 screen, off the edge of the page, there's a load that then uses -- I mean, you
12 wouldn't perform the matched filter and correlating to create a base band
13 signal and then just leave it on the capacitor indefinitely. You'd want to take
14 it off.

15 JUDGE AHMED: Okay. And then how do you respond to Patent
16 Owner's argument that some of these figures are higher level and therefore
17 they don't specifically show the load, but when you get into the details, there
18 is a load?

19 MR. GRISWOLD: I think you have to go back and read the sections
20 and come to your own conclusion. My conclusion is that especially because
21 of the example equations that don't account for R_L provided in these

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1 sections, it really contemplated the matched filter/correlator not connected to
2 a -- the charge across the capacitor. The equation that they provide doesn't
3 have the load resistor in it. And in 175 and the equations that govern it, that
4 does have the load resistor, their equations expressly take account of the load
5 resistor. So, I'm not saying that a matched filter/correlator module cannot
6 include a load. It could potentially include a load. It's just not a requirement
7 of the plain meaning of that term.

8 JUDGE AHMED: Okay. Thank you.

9 MR. GRISWOLD: Certainly. There's another quote that has come up
10 in the briefing, and I think it's really helpful for me, because I'm a lawyer
11 and I'm into semantics, right? At TI 1001, so that's the '177 patent, column
12 74, 16 through 18, it says, in other words, the non-negligible amounts of
13 transferred energy ensure that, even for low impedance loads, the storage
14 capacitance accepts and maintains sufficient energy or charge to drive the
15 load. And I think what that sentence is saying is, regardless of the load,
16 whether it's high impedance or low impedance on the circuit, the capacitors
17 charge. It works even for low impedance loads. And so, I think even if you
18 think that the matched filter/correlator, if you agree with Mr. Charkow that
19 matched filter/correlator module requires a load, which it doesn't, it certainly
20 doesn't require a low impedance load.

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1 And it might be worthwhile for you guys to have the cite of Dr.
2 Galton's expert report 1066, paragraph 25, where he explains that the voltage
3 across the capacitor is the down-converted signal. It's also confirmed by
4 Tayloe itself. I think if you go to Figure 5 in Tayloe, it doesn't have a load,
5 but the output from those capacitors is referenced as the baseband signal,
6 which is the down-converted signal in the context of Tayloe.

7 And then, just briefly, on Slide 46, there's a lot of discussion in the
8 patent about -- or excuse me, by the Patent Owner about energy transfer and
9 what energy transfer is. The briefing goes into more detail on this, but I
10 think if you trace through the context of the patent, the energy transfer is the
11 energy transfer from the receive signal to the capacitor. So this is relevant to
12 the Patent Owner's distinction between an under sampling system and an
13 energy transfer system. And the difference between those two as described
14 by the patent is, one, has a negligible aperture, and the other one has a non-
15 negligible aperture. But regardless the energy transfer that results, the
16 difference between these systems is how much energy they take onto their
17 capacitor. And Slide 46 has some discussion and a citation in the '177
18 patent, if you choose to read into it. That's all I have on claim construction,
19 are there any questions that I can answer?

20 JUDGE GERSTENBLITH: No more, thank you.

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1 MR. GRISWOLD: Okay. So, quickly, before I get into Tayloe and
2 then TI datasheet mucks, as I had said at the outset, regardless of how you
3 come out on the claim construction, we've shown both constructions, all
4 constructions, as there are competing constructions, are met. So I think Mr.
5 Charkow might object to our assertion that Tayloe has a low impedance
6 load, but I'll get into that, and hopefully you'll agree with me when we get
7 done with this.

8 So, I think really the core dispute of Tayloe is the operation of its
9 summing amplifiers 50 and 52. And let's look at Slide 19. And Slide 19 is
10 textbook, shows how the feedback amplifier circuit in Tayloe operates, and
11 how it is something that's well known. I looked back and I found it in my
12 circuits textbook. It's in a Sedra/Smith textbook that was on Dr. Galton's
13 shelf, and if you go back and you read your textbook, you'll find the same
14 thing. I think that there's really no dispute that the plus and the minus
15 terminals of the op-amp itself have a high impedance. And particularly in an
16 ideal op-amp, that impedance is very high, near infinite, all right?

17 The dispute, though, is looking into the summing amplifiers, the
18 dotted boxes in Tayloe, what does the impedance look like there? And Dr.
19 Galton explains, and Sedra/Smith, the textbook that he cites to shows, that
20 the terminal one in this view, that node one is a virtual ground. And so, the
21 impedance, looking into the box around summing amplifier 50 and 52 on the

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1 negative terminal is the resistance, R_1 . And the feedback loop is what causes
2 that virtual ground. I think Patent Owner takes issue with the fact that
3 Sedra/Smith's textbook shows the op-amp in a configuration with a ground
4 on the plus terminal, but Dr. Galton addresses that. The plus terminal in
5 Tayloe is connected to a capacitor, and that capacitor is, for most of the
6 cycle, is a constant voltage. And so in the node one and in Tayloe, it's just
7 driven to the constant voltage that's received on the plus terminal. This
8 discussion is -- the Sedra textbook, by the way, is TI 1047, and Dr. Galton's
9 discussion of this is TI 1066, paragraphs 29 through 33.

10 JUDGE GERSTENBLITH: I think the textbook is 1046, right? Not
11 47, I think.

12 MR. GRISWOLD: Oh, I'm sorry, yes. 1046, I'm sorry.

13 JUDGE GERSTENBLITH: Now, how does the, whether it's a low or
14 high load, how does that get into this mix when, as you showed on your
15 slide that had all the claim constructions, it doesn't even appear, at least in
16 that construction, that Patent Owner's construction says anything about low
17 or high load. So, how do we even get to have to decide that point? Because
18 under the direct construction, integrated and transferred to a load to form a
19 down converted signal, if there's a load that resistor in Tayloe shows the
20 load, then what else is there to do?

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1 MR. GRISWOLD: Well, so I think it's Patent Owner's position that
2 there is no load that is output from the capacitor if the impedance
3 downstream is too high.

4 JUDGE GERSTENBLITH: I see.

5 MR. GRISWOLD: So, the load has to be low enough that some of the
6 base band signal or down convert signal leaves the capacitor. And I point
7 out that the express language of the claim requires the output, that's
8 performed by something else. That isn't the matched filtering/correlating
9 module's job, to output the signal from the capacitor. Does that answer your
10 question, Your Honor?

11 JUDGE GERSTENBLITH: It does. And a question that I have is, so
12 if you are sampling with a non-negligible aperture, and so there's a lot of
13 energy accumulating on the capacitor -- and I apologize if I'm using some
14 terms slightly off, but please correct me as I do this -- and you have a very
15 high load. Even though you used a really non-negligible aperture, so a very
16 large aperture, so one would think that there would be a lot of charge
17 accumulating on the capacitor, is there a fundamental disagreement between
18 Patent Owner and Petitioner as to whether that accumulation can discharge
19 into a signal, regardless of what size load there is? For example, is
20 Petitioner saying it can still discharge, regardless of the size of load, and

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1 Patent Owner is saying no, no, no, if the load is really high, it doesn't matter
2 what aperture size you have, that thing's not going anywhere?

3 MR. GRISWOLD: But also, I think the Patent Owner's position, and
4 I'll tell you more about this later, is that there is no energy from the capacitor
5 that is discharged, it's simply the voltage from the capacitor is seen by
6 something downstream if you have a very high impedance load.

7 JUDGE GERSTENBLITH: And when you say seen by something
8 downstream, can you elaborate a little bit on that?

9 MR. GRISWOLD: There's many, many pages about how the non-
10 sampling systems in the prior art work. I have a hard time getting my head
11 around it. In essence, there's something that samples the voltage. Well,
12 maybe a good example is Tayloe's plus terminal. Tayloe's plus terminal
13 goes to a high impedance terminal of the op-amp, and so very little energy is
14 passed out of the capacitor that's connected to the plus terminal. And so, the
15 op-amp amplifies that voltage and acts as an ideal voltage source, I think, on
16 the other side of the op-amp, and that's how you see the base band signal.
17 The base band signal, of course, exists prior, to get into the op-amp.

18 JUDGE GERSTENBLITH: Okay, thank you.

19 MR. GRISWOLD: All right, so just a couple more things, to beat a
20 dead horse about how the feedback loop on the off amp works. I think that
21 there is -- well, I would point out that Dr. Galton has plenty of corroborated,

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1 textbook corroborated testimony on how the amplifier in Tayloe works. Mr.
2 Ricketts, Dr. Ricketts, his bald assertions one way or another, and his bald
3 assertions are inconsistent with the textbook. And among those bald
4 assertions, he says that looking into the terminals of Tayloe's summing
5 amplifier, you'd see high impedance on both the plus and the minus side, and
6 so those resistors upstream of the op-amp, inside of Tayloe's summing
7 amplifier box, would have to be high impedance, and would have to be
8 matched. And I can tell you just looking at Sedra/Smith, it's asymmetric, in
9 the same way that the Tayloe is asymmetric. So, is Dr. Ricketts correct?

10 Finally, we have an example of a summing amplifier implementation.
11 And maybe there's a dispute over whether this example is actually in
12 Tayloe's example. It's a NorCal NC230 transceiver user manual, Exhibit TI
13 1047. I have a picture of it on Slide 63, so you don't have to pull it up.
14 Regardless of whether it is Tayloe's actual implementation, you can see that
15 the, it has a feedback -- an amplifier with a feedback arrangement, and the
16 input terminals to the amplifier both have 100 Ohm inputs, which are not
17 high impedance at all. And Dr. Galton explains that the configuration in this
18 drawing is slightly different than the configuration in Sedra/Smith and in
19 Tayloe, because the feedback resistor, the 10k resistor right there -- my
20 version is very small, so I apologize, maybe it's 100k. It's 10k. The 10k
21 resistor on the feedback loop is in parallel with the capacitor. But that

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1 capacitor and the resistor just form additional filtering, as you appreciate the
2 capacitor is -- impedance of capacitor is frequency dependent, and it either
3 drives the current through the 10k resistor, or through both paths. Now, Dr.
4 Galton, by the way, explains this at TI 1066, paragraph 40 through 42.

5 So, after I explained Tayloe to you, I think it's evident that even if you
6 were to require a low impedance load in the matched filtering/correlating
7 module, Tayloe meets that limitation. So, it works for TI's construction, it
8 works for the Western District construction, it works for ParkerVision's
9 constructions, it works for the Florida District Court construction. Our
10 showing of Tayloe works for all. If you're ready, I can move on to Razavi.

11 JUDGE GERSTENBLITH: Sure, thank you.

12 MR. GRISWOLD: So, Slide 78 is where I begin talking about
13 Razavi. And so, a lot of the Razavi dispute revolves around real current and
14 conventional current, which we all learned years ago and then promptly
15 ignored, because we were, just pushed into the equations and did the math.
16 But, you know that real current is the direction the electrons flow, and the
17 conventional current is -- Dr. Galton talks about it as Benjamin Franklin's
18 misunderstanding of how current flows. All the math that we did in our
19 circuits classes revolve around conventional current, but the actual real
20 physics of it is real current. It's the direction of the electron flows, because
21 they're the charged characters, right?

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1 So, one of Patent Owner's complaints about Razavi is that the signal
2 must pass, physically pass through a switching element in a way that breaks
3 the continuous signal into discrete time samples. This is from the Patent
4 Owner's response at page 101. But, as they describe, our signal cannot
5 physically reach the transistors M5 and M6 in Razavi, because it doesn't go
6 that direction, more or less. And this is an argument of conventional current.
7 They're saying basically, VDD is high potential, and there's a ground at the
8 bottom of that figure, and so current flows down -- conventional current.
9 Maybe that's true under conventional current, but under actual current, the
10 real physics of what's going on, Dr. Galton explains at 1066, paragraph 67,
11 that in real life, current flows upwards towards VDD, that's the high
12 potential.

13 And there's a better description of it at 1066, 89, which describes in a
14 little bit more detail about how the flow goes up through the switches,
15 charges the capacitor, and then reaches the out. And Dr. Galton, of course
16 again, is corroborated by references that he provides in his declaration. And
17 of course we all know real current, you learned it as a very young electrical
18 engineer. And so, when you analyze Razavi in the way that he's actually
19 working, and you don't force this conventional current onto Razavi, it
20 switches, it meets the requirements of the claims. So with that, I'm going to
21 stop and ask if there's any questions. I do intend to address the swear-

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1 behind, but I'll address it in response to Mr. Charkow's explanation of the
2 swear-behind.

3 JUDGE GERSTENBLITH: I do have one more question. So, and
4 take this with a grain of salt, I'm just curious as to your response. Up until
5 this moment of talking about everything that we've talked about, and I won't
6 even get into any other cases that we've had with this technology, have we
7 been talking about conventional current, or actual current, up until this
8 moment of this question of which current we're talking about?

9 MR. GRISWOLD: I think that there has been a little bit of both, Your
10 Honor.

11 JUDGE GERSTENBLITH: Okay, that's a fair answer. Not
12 necessarily the one I wanted to hear, but a fair answer nonetheless. So,
13 ultimately, you know, when I see two experts giving diametrically opposite
14 opinions on something, there has to be a reason, and usually the reason
15 comes down to claim construction. But here, do you know, does Dr.
16 Ricketts agree that he is using conventional current in his understanding, and
17 that that is why there's a difference between their opinions?

18 MR. GRISWOLD: He does, and the Patent Owner argues it
19 vehemently that it is the right way to interpret the circuit, because that's how
20 the mathematics work. And of course, mathematics be damned, it's how
21 does it work in real life.

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1 JUDGE GERSTENBLITH: I see. So, what you're saying is -- I'm
2 sorry, go ahead. I cut you off. What was the end of what you said?

3 MR. GRISWOLD: Real current is what matters. It's the physics.

4 JUDGE GERSTENBLITH: Understood. Okay, thank you very
5 much.

6 MR. GRISWOLD: Thank you, Your Honors.

7 JUDGE GERSTENBLITH: Okay, so I'm just going to say that we
8 have basically four minutes left on my original 60 minutes timer. I
9 understand that we're going to take a five minute break and we're going to
10 come back with Patent Owner's opening. Is that right Ms. -- I apologize.
11 Mr. Griswold, you did want to pause here, is that right, with your opening?

12 MR. GRISWOLD: Yes, Your Honor. I'll take the swear behind in
13 rebuttal.

14 JUDGE GERSTENBLITH: Okay, perfect. Okay, so we're going to
15 go off the record and have a five minute recess, and we will see you at
16 11:14.

17 (Whereupon, the above-entitled matter went off the record at 11:09 a.m. and
18 resumed at 11:14 a.m.)

19 JUDGE GERSTENBLITH: Okay. Let me make sure we have folks
20 from Petitioner still on.

21 MR. GRISWOLD: Yes, Your Honor, we're still here.

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1 JUDGE GERSTENBLITH: Okay, great. And I see Mr. Charkow.
2 And, Mr. Charkow, when you're ready -- you can proceed whenever you're
3 ready.

4 MR. CHARKOW: Thank you, Your Honor. So, I'm going to start
5 with conception/reduction to practice and the swear behind.

6 So, conception, for the record, we're saying it's at least as early as
7 January 20th, 1998, and reduction to practice is at least as early as April
8 29th, 1998.

9 So, the one thing I want to do -- Your Honors are very familiar with
10 the declaration that Mr. Sorrells prepared. And he explained, you know, he
11 did what he needed to do to explain what he was doing at the time. He put
12 all sorts of corroborating documents to corroborate what he was saying, and
13 then he also provided information about authenticity of the documents and
14 where they came from.

15 And, later on, I think you'll see -- and I want to point this out now
16 -- that Petitioner cherry-picks testimony that Mr. Sorrells had during his
17 deposition. So, I'm going to start there, so you could see what happened and
18 to show that he did an investigation. He is the person in the world with the
19 most knowledge of these documents and how they were created, and how
20 over time they went to different databases. And so, he is the person that is
21 the appropriate person, if I were to have a trial, he's the person that would be

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1 on the stand to authenticate all of these documents and to make sure that
2 they are admissible and provide testimony about them.

3 So, I would like to share my screen and begin with Mr. Sorrells'
4 testimony, so we could see what he actually did. Because, like I said, in
5 Petitioner's slides, they're going to talk about -- they're going to cherry-pick
6 his testimony and not show this testimony.

7 So, let's see. If you could let me know if you could see my screen
8 now?

9 JUDGE GERSTENBLITH: Yes, we can.

10 MR. CHARKOW: Okay. So, I'm going to start -- it's going to skip
11 around a little bit because the questions were asked a little
12 bit out of order at the deposition. So, this is Exhibit 1068, which is Mr.
13 Sorrells' deposition.

14 And so the question becomes, what did Mr. Sorrells do to figure out
15 where these documents came from, what they are? And so, if we start on
16 page 25, line 16, he first said -- if you see this screen -- "Question: So, do
17 you know where these files were stored when they were stored by
18 ParkerVision?" And this is referring to all the files and documents that he
19 was looking at in his declaration.

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1 And he said, "Answer: Yes. We had an IT Department, an in-house IT
2 Department, and I believe it was determined that we needed an external IT
3 department to help contain these databases."

4 The next thing he talks about was -- so now, we know it's all the documents
5 started at ParkerVision. So, what happened next?

6 If we go to column 24, line 19, and then it says -- so he talked, in his
7 declaration, he talks about a database, a relativity database, where all the
8 documents currently exist.

9 And he was asked a question. This is page 24, line 19. "Do you know
10 how the files from ParkerVision into relativity?" Question.

11 "The answer is I don't know specifically. I just know that, since the
12 initial lawsuit we were involved in with Qualcomm, that the database has
13 been treated, you know, by us and the attorneys as a repository."

14 So, what he's saying on page 24, line 19, through 25, line 3, is that it
15 went from ParkerVision, and then the database was housed by attorneys.
16 And it's now in a relativity database. So, we basically have a chain of
17 custody.

18 The next thing that he did -- so this is all, this is all testimony that he
19 provided. And this testimony is basically, I guess, cross testimony or direct
20 testimony in this proceeding. The next thing he said on page 25, line 5
21 -- and then he was asked, "When did this happen? When did this change

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1 over from the ParkerVision database, and it got put into another database, a
2 relativity or lawyers' databases?"

3 And he said, "The question was the suit with Qualcomm that you're
4 referring to is in the 2014 timeframe." So, he says, answer, "Do you know
5 that?" He says, "Yes, sir. It was -- I think it -- I think it was -- I believe, if
6 memory serves, it was at the end of 2013, but I think somewhere around
7 2011 or 2012 is when we filed the complaint, and that's when the litigation
8 hold started. So that's when the documents were transferred." And again,
9 that's page 25 of this deposition, lines 5 through 12.

10 Then if we go to page 26 of his deposition, he also talks more about
11 the litigation hold and how the documents got to this relativity -- ultimately,
12 got to the relativity database.

13 On page 26, line 17, to 27, line 4, he said, "There's no litigation hold
14 between when this work was done in the first lawsuit, meaning that we still
15 had our files." And then he says, "This was all just, as a result, backed up on
16 our hard drive." So, what he's saying is, at the time, before the litigation
17 hold, before it got moved to a database for the lawyers, it was, it was in their
18 hard drives.

19 And so, "It was captured, I assume" -- meaning all the documents
20 -- "in 2001. Sorry, it's 2011 or 2012, when the attorneys came through and

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1 did it. And by the way, they pulled everything. They went through our
2 servers, our laptop. It was very thorough document capture."

3 So, he's basically saying everything got pulled. It was a thorough
4 document capture. I know where the documents went.

5 Then, if we go to page 18 of his deposition, on page 18, he was asked
6 -- so this is page 18, line 13. He said, "You said the attorneys have all the
7 documents. Can you explain that?" And this is page 18, line 13, to page 19,
8 line 8.

9 And part of his answer, he says, "So ParkerVision worked with our IT
10 Department and the attorneys of record. At the time, I believe it was Nicole
11 Smith. And they came in and they basically made copies of everything and
12 put it in the database -- all the emails, all the technical, a lot of documents
13 that you see in this one that we're, that were referring -- my declaration, you
14 know, I really haven't seen it since the late '90s, but they were in the
15 database."

16 And then he goes on to say, "So that's what I mean by I believe they're
17 a very accurate and in-depth preservation of documents."

18 So again, he's saying that everything went to the attorneys. Now, the
19 database switched over from ParkerVision to attorneys. He goes on, on
20 page 20 of his deposition, page 20, line 11, to page 21, line 10, he was asked
21 the question, "ParkerVision files related to the design" -- and so, whoever

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1 was deposing him asked about a paragraph to his deposition which said,
2 "ParkerVision files related to the design, development, testing, and/or
3 evaluation of the Eddie chip and circuit board discussed above are
4 maintained in a relativity database, correct?" To which he answered, "Yes,
5 sir."

6 And then the next question was, "And what is the relativity database?"
7 And he said -- and again, he did his research. He was involved in the
8 process and he did an investigation. "Well, the way I understand it and the
9 way I answer -- the way I understand it, and the way I used it in this
10 document was, is -- it's a searchable database." But what -- meaning that he
11 actually did searches.

12 But what was particularly important here was having the metadata
13 available. You can pull the metadata when the files were created, when they
14 were last modified, that type of thing. He's explaining what was in the
15 relativity database that he investigated. So, you can search by name, but it
16 also has additional information that's not apparent just looking at the file
17 itself.

18 He goes on -- he was asked the question, "And is it fair to say that the
19 relativity database is stored on a hard drive or a server someplace?" He said,
20 "I don't know where it's stored" -- and nor does he authenticate because he
21 doesn't need to. It's irrelevant whether he knows where it's stored in

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1 California on a server or in New York on a server. It doesn't make a
2 difference. But what he did say is, "I will tell you that it was readily
3 available when I was looking at it with the attorneys." So, he testified that
4 he did the investigation into this.

5 If we go to page 22 of his deposition, line 15, to 23, line 3, he was
6 asked -- in his declaration, he said a search of the database was run and he
7 was asked to confirm that. "Yes." "Did you perform that search?" And he
8 said, "I did with attorneys." So, he was involved in the search of the
9 relativity database, learning about the relativity database to authenticate all
10 the documents.

11 And he said, "I was present and we decided what files that we would
12 ask for, you know, the file extensions that we would ask the relativity to fork
13 over. And then I did translation for people, like, what is in ERR file?"
14 Because he picks certain files. "And that's a design rule check error for PC
15 boards. This is -- this was the result of that search."

16 Finally, on page 23 of his deposition, line 19, to page 24 of his
17 deposition, line 6, he was asked, "Do you know that the metadata that is
18 reflected in the databases is current?"

19 And so, again, he researched this and he, well -- and he said, "Well, I
20 have certainly assumed it to be. Everything kind of lines up." So, based on
21 his knowledge of what was in the files in '97 and '98, and what he saw then,

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1 he says it lines up. And he said, "Just so you know, it was our conversation
2 that we -- that we would typically mark a schematic and design with a date
3 on it the day that it was created. So, the few that are in here" -- meaning in
4 his declaration -- "the dates line up with what's physically written on the file
5 and what relativity database showed -- came out with."

6 So, in other words, he did his investigation. He did everything he was
7 supposed to do to authenticate the documents. So, you know, Petitioner's
8 position that, you know, they're going to show you a slide -- or maybe they
9 won't now -- that he didn't know what server it was on, where it was
10 physically located, irrelevant; it doesn't make a difference. He did the
11 investigation; where it's located doesn't make a difference, or where a server
12 is located.

13 The fact that ParkerVision doesn't own the relativity database, or
14 doesn't have the relativity database, or never used the relativity database, it's
15 irrelevant. It doesn't make a difference that they switched databases. It
16 doesn't make a difference whether a third party runs ParkerVision's
17 databases. It doesn't make a difference.

18 But what he did testify to was that, after the initial lawsuit with
19 Qualcomm, all the materials from the '97-98 timeframe went over into
20 lawyer databases. And that became where ParkerVision stored its stuff.
21 And he explained how it was moved around.

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1 So, the other thing which Mr. Sorrells did -- if we go to his
2 declaration, his declaration is Exhibit 2016 to his, to this case, and I think it's
3 the same for the other case, but we'll get to that later.

4 So, what did he do? In addition to doing the research that he did in
5 the investigation on the relativity database, in his declaration, in paragraph
6 27, he set forth all the standards for admissibility and business records to
7 deal with the hearsay exception.

8 And so, in paragraph 27, he said, "I'm familiar with the files set forth."
9 And then he goes on and recites all the things that are necessary that -- based
10 on his knowledge under oath; that these are business records, the business
11 records of ParkerVision, not his own records, not his own documents, but
12 business records of ParkerVision. And, and he explains all of these, the
13 records, for conception and reduction to practice in paragraph 27.

14 In paragraph 31 of his declaration, he does everything you need to do
15 to establish authenticity and business record exception with regards to
16 diligence documents.

17 So, if we look up here, we see, on page 14 of his declaration, we see
18 just a snippet of Exhibit 2029 to this case. And, basically, there are
19 -- showing every single day, multiple times a day, or most days, there was
20 continuous work on the Eddie chip that he discussed in his declaration. And
21 he explained that these files are related to the design and development of the

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1 Eddie chip -- again, not his files. They're the company's files. And he
2 explained -- during his deposition, as you heard, he gave one example of
3 what an .err file is. So, right.

4 And then, so, in Exhibit 2029 is a list of all the files that he pulled in
5 this, in this case, to show that there was continuous work on the project, to
6 corroborate his statement that he and his team -- he was a CTO at the time
7 -- he and his team worked continuously on reducing the Eddie chip and
8 board -- or we'll call it "the Eddie device" -- to practice from at least as early
9 as -- it was actually earlier than the date I said, but at least as early as
10 January 20th, 1998, through April 29th, 1998, and even further, to the filing
11 of the '177, the priority patent to the '177 patent, which is the '551 patent.
12 And we'll get into that later, as to why he only had to go to that date, not to
13 the date of the '177 patent --

14 JUDGE ZECHER: This is Judge Zecher. Do you have any evidence
15 to direct us to, other than the deposition testimony of Mr. Sorrells and his
16 declaration, indicating that the exhibits or the files in 2025 are actually from
17 the relativity database? And did anybody else possibly authenticate them
18 other than Mr. Sorrells? Is it just his testimony here and the deposition
19 transcript, or do you have anything else?

20 MR. CHARKOW: It's his testimony in the deposition transcript.
21 And again, Mr. Sorrells, if we were going to trial, because he has personal

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1 knowledge, and he's the only person in the world that can talk about what
2 happened in 1987 to 1998 through present, he is the one -- and recognize the
3 files -- he is the one that I -- we would put at trial to, to authenticate
4 documents. So, there is nobody else that we would put up and we haven't
5 put anybody else in this case.

6 And I'm going to get to a point, because I think you may be hitting
7 Petitioner's case law where they say you can't use inventors. And I can tell
8 you that's why they're wrong.

9 And maybe this will answer maybe a question you have in your head,
10 based on what you just asked -- is that the case law that they cite, I think it's
11 the *Apator* case, 887 at F.3d 1293, at 1293. It does not stand for the position
12 that an inventor can never provide authenticity for documents and to provide
13 the admissibility information for documents. That case stands for a specific
14 proposition, that it's the inventor's own documents, you can't have them, you
15 can't have them authenticate, or whatever.

16 In this case, the assumption that Petitioners were making was that
17 these were his own documents. They're not. They're the company's
18 documents. He is a corporate witness testifying on behalf of the company,
19 as the corporate records, not his own personal records. And that's the
20 distinction. So, the mistake that --

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1 JUDGE ZECHER: Well, Mr. Charkow, isn't that the problem, though,
2 because they aren't his documents? Don't we need somebody else to
3 authenticate them? Because how can he authenticate them if they're not his
4 own documents?

5 MR. CHARKOW: Because he was responsible for the -- he was
6 responsible for those documents. Somebody would have to -- you couldn't
7 go into -- there is, you know, dozens of people working on these documents.
8 Under that, you would have to have every person that worked on their
9 documents, the individual documents. But that's why you have corporate
10 representatives to authenticate all documents. They do their research and
11 they figure out based -- and again, he had knowledge; he was the one
12 running these teams. He had knowledge at the time of these documents.
13 And under the rules of evidence, he's -- that's he's a proper witness to
14 authenticate it.

15 Otherwise, under that logic, for every document that somebody
16 created -- maybe there's dozens of people -- you have to have that person
17 come and authenticate every -- a different person authenticate every single
18 document. You have to have, you know, dozens of potential declarations.

19 And that's not -- the Federal Rules of Evidence provides that you can
20 have a corporate witness to do an investigation who has knowledge, personal

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1 knowledge, of what was going on at the time, knowledge of generally the
2 documents, even though are not his documents, and you can authenticate it.

3 And that's what you do a trial. I don't have to bring, you know,
4 dozens of people to trial to authenticate documents. I bring a corporate
5 witness who has knowledge of what was going on at the time of the
6 documents, who -- he was the CTO. He has knowledge of the documents
7 and he can testify on behalf of the corporation.

8 Did that answer your question?

9 JUDGE ZECHER: I understand what you're saying. Thank you.

10 MR. CHARKOW: Right. So, there has to be a way to -- there is a
11 way through the Federal Rules of Evidence to authenticate documents that
12 don't involve bringing in, you know, dozens of witnesses to authenticate
13 their own documents. The corporate witness can investigate, and as long as
14 they have knowledge of those, personal knowledge of that, those documents,
15 at the time that were being created, they can authenticate those documents.

16 So, going back to the point of this, Petitioner's, assumption that they
17 -- apparent assumption -- that these were Mr. Sorrells' documents, they
18 weren't his documents. And therefore, the *Apator* case is not applicable
19 here, and the and the under the Federal Rules of Evidence, he's a perfectly
20 fine corporate witness to testify on behalf of the company.

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1 And he did his investigation, and again, in paragraphs 27 and 31 of
2 this declaration, it matches up exactly with what the requirements are that
3 need to be met for authenticity and authentication, and -- and for business
4 records exceptions. He said all of the statements that he needed to make
5 under oath, and they never crossed him and tried to, you know, show that he
6 lacked credibility to make those statements or what he said was incorrect.

7 And so, again, so going back to whether this is -- sorry -- talking
8 about whether this information is hearsay, the documents themselves are
9 hearsay, they're not hearsay. They're going to raise that it's hearsay. It falls
10 under the business record exception.

11 He explained in paragraphs 27 and 31 of his declaration, he, Mr.
12 Sorrells, explained exactly what you need to explain to form the business
13 record exceptions on all documents that he provided.

14 And then the other argument they, the other side makes is that
15 metadata is hearsay. Well, metadata is not hearsay. And this, this -- the
16 PTAB in the *Google* case, IPR2022-01545, paper 76 at 35, specifically held
17 that metadata, because it's machine-generated, is not -- is not hearsay. It
18 can't be hearsay.

19 So, with that, I want to turn to the presentation and start talking about
20 what he actually did.

[REDACTED]

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1 All right, so if we go -- so now, I've opened up the presentation and
2 the demonstratives. I'm on Slide 3 of the demonstratives.

3 And so, what did Mr. Sorrells do? Mr. Sorrells put it in his
4 declaration, and basically, for everything he said, he had backup, or Dr.
5 Ricketts independently confirmed things. So, everything he said, which is
6 -- he corroborated everything. He told the story. He had documents to
7 corroborate them, and they're authenticated. They fall within the hearsay
8 exception. They should all be considered and part of the record.

9 So, he said that -- he testified that ParkerVision designed the Eddie
10 chip in early 1999. We're on Slide 3, and this is Paragraph 5 from his -- oh,
11 sorry. No, actually, I meant to say '97, instead of 1999. I made a mistake.

12 He talked about, in paragraphs 5, 6, and 7, about ParkerVision's
13 design of the Eddie chip in the early -- in early 1997. He then went to show
14 the files and explained, based on his knowledge of those files, which he has
15 personal knowledge of -- again, he has personal knowledge of all these
16 documents because he was the CTO and overseeing all these documents.

17 He explained one document, in particular, and that document is shown
18 on Slide 4. On Slide 4, we see -- this is the layout of the Eddie chip itself.
19 And we can see the metadata from the relativity database, which he
20 investigated with the lawyers. We can see the metadata is [REDACTED]
21 and we see the filename.

[REDACTED]

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1 And the one thing I want to point out in the filename is that it matches
2 up to the face of what's on the left. We see [REDACTED] and then at the end of the
3 filename [REDACTED]. And you can see the same -- on the face of the layout, it
4 says, [REDACTED] the same, the same consistent usage of terms. Then he also
5 -- and I pointed out here you could see, [REDACTED] on Slide 5, and then [REDACTED] the
6 same as the filename.

7 So, he also -- on Slide 6 now -- he also went further and talked about
8 that, by 19 -- January of '98, ParkerVision designed the final schematics of
9 the circuit board for mounting the Eddie chip. So, the Eddie device was the
10 Eddie chip, which I just showed you the layout for. That was mounted on
11 the circuit board.

12 And he talks about where the schematic of the circuit board was
13 found, and he provides the schematic of the circuit board. And we could see
14 -- and then on Slide 7, we talk more about the circuit board.

15 And then, finally, on Slide 8, we get to the circuit board that the Eddie
16 chip was mounted to. We can see from here that it's dated on the face of the
17 document as [REDACTED]. It has a filename, and it talks -- and it's a
18 schematic. And we can see the date is -- this is the last save date was
19 [REDACTED], according to the metadata.

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1 So again, he's corroborating that this schematic, which is the Eddie
2 chip, the board that the Eddie chip was put on, was around the early 1998
3 timeframe.

4 The next slide, Slide 9, he talks about a -- other work that was being
5 done in Slides 9 and 10; even earlier in the '97 timeframe, earlier versions.

6 And in addition, Slide 11, he says the layout of the circuit board was
7 created in 1997, which he corroborates with -- you know, they started
8 designing it in, you know, at least as early as '97. I think he testified it
9 started in the summer of '96.

10 And by -- as we see in Slide 8, by 1998, early '98, that they had the
11 final schematic that, ultimately, they would give to [REDACTED] to test.

12 If we go to -- so, how do we know that the --how do we know that,
13 you know, the layout -- how do we know that the Eddie chip that I showed
14 in the first diagram, the layout was the thing that was put on the circuit
15 board? Well, a couple of things.

16 We see, on the left side, we see the layout of the circuit board, [REDACTED].
17 On the right side, you see the schematic of the circuit board, [REDACTED], and
18 [REDACTED] -- so, you have the whole circuit board layout, is, again, on the
19 lefthand side on Slide 12, [REDACTED]. On the right side, you see the schematic
20 and it says, [REDACTED]

[REDACTED]

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1 Then what he did is he -- if you go to Slide 13, this is page
2 -- paragraph 26 of his declaration. He matched up all the pins of [REDACTED] to
3 the Eddie chip itself, to show that the Eddie chip, every single pin, every
4 single connection that's shown in the schematic on the right on page 14,
5 demonstrative page 14, matches up with the Eddie layout, that it's all
6 consistent with what is in the -- meaning that that's the evidence that the
7 layout of the Eddie, shown on the left, was put into the circuit board that's
8 shown on the schematic that's shown on the right.

9 Mr. Sorrells also testified -- this is Slide 15 -- that the Eddie chip
10 implements a [REDACTED]

11 [REDACTED]

12 They, Petitioner complained that he said, well, there's no -- nothing
13 that corroborates that. Well, they're wrong, because Dr. Ricketts -- and this
14 is shown on Slide 16 and the cites are there -- Dr. Ricketts performs his own
15 analysis, that pink box you see on the right on Slide 16, and on the left, that
16 is LO. That's the LO generator, and that LO generator he determined was a
17 50 percent duty cycle. Further, with regards to the fact that it's every seven
18 cycles.

19 For instance, again, corroborating evidence, page 17 of this, Slide 17,
20 we can see this is from, this material is from the Boeing report. And in the
21 Boeing report, again, the Boeing report [REDACTED], and we see that the

[REDACTED]

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1 [REDACTED], on the left. On the top, we see [REDACTED]
2 [REDACTED]
3 [REDACTED]. And again, you see that on the right from the Boeing report
4 as well, [REDACTED]
5 [REDACTED]. So again, corroborating evidence of what Dr. -- of what
6 Mr. Sorrells was saying.

7 And furthermore, in the patent, the patent which is the priority patent
8 to the '177 patent, it specifically talks about using 50 percent duty cycle,
9 further corroborating that at the early -- that the patent was filed October
10 1998, and further corroborating that, certainly, before that patent, they had
11 the idea of 50 percent duty cycle for corroborating what Mr. Sorrells said,
12 corroborating what Mr. -- or Dr. Ricketts was saying. And so, there is
13 corroborating evidence for that.

14 On Slide 19, Mr. Sorrells specifically -- we see Mr. Sorrells
15 specifically talking about the TriQuint agreement, and that's the foundry that
16 built the chip. And we have the -- and that's paragraphs 17 and 18 of his
17 declaration. And we have the document to show -- this is a document to
18 show -- you know, dated March 4th, 1997. This is the company that built
19 the Eddie Chip for ParkerVision.

20 The next slide, Slide 21, talks about, ParkerVision's press release.
21 Again, this is paragraphs 20 and 21 of Sorrells' declaration. It talks about

[REDACTED]

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1 the press releases, and the press releases, again, it's at the time in 1997,
2 December 1997 and March 3rd, 1998.

3 Slides 22 and 23 specifically identify the Eddie chip as the chip that
4 ParkerVision was working on at the time.

5 And you could see that -- we could see the date on the top of
6 December 10th, 1997, on Slide 22, of the press release. And the Eddie chip
7 on the bottom. We could see the press release on March 3rd, 1998, was
8 talking about Eddie chip -- confirming that ParkerVision was working on the
9 Eddie chip, just as Mr. Sorrells testified to, corroborating his testimony.

10 Slide 24 talks about ParkerVision taking the Eddie chip and the board,
11 the Eddie device, and giving it to Boeing to test.

12 Slide 25 shows the actual Boeing -- the contract with Boeing, dated
13 [REDACTED], showing that Boeing was going to do testing on
14 ParkerVision's Eddie chip.

15 Slide 26 shows the Eddie -- the testing, Boeing's testing report on the
16 Eddie chip, again corroborating all the testimony that Mr. Sorrells gave, that
17 this is the time he was working and this is the time him and the people that
18 worked for him were working on the Eddie chip. Again, on the face of the
19 Boeing report, it says, [REDACTED]

20 He explains that the test report was dated in [REDACTED], well before
21 Tayloe, and he said the test results confirmed the performance of the Eddie

[REDACTED]

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1 chip and the circuit board. And we know that it down-converted -- and we'll
2 talk about it later -- as their own expert agreed, Dr. Dickens, that Eddie
3 -- that the Eddie chip that was tested, in fact, did down-convert. So, it means
4 it was successful. It actually worked for what it was meant to do.

5 So, how do we know that, you know, the Eddie schematics, other than
6 Mr. Sorrells' testimony, that the layout and the schematic were what was
7 tested by Boeing or given to Boeing? Because we have in the Eddie
8 schematic itself, it talks about [REDACTED]

9 [REDACTED]

10 And in the Boeing report, it also says the same thing. It talks about a
11 [REDACTED]. This is Slide 28. It talks about a [REDACTED]. It
12 says, [REDACTED]. And it refers to that and says
13 that is the Eddie chip. So that ties all the stuff that Mr. Sorrells was saying,
14 that this is the Eddie chip, and the press release that's saying: this is what
15 we were working on; this was the Eddie chip. It ties that to what was done
16 in the Boeing report.

17 Not to mention that Mr. Sorrells in his deposition also testified that
18 -- I think he said 90 to 95 percent of his time, or some -- almost all of his
19 time at that time was dedicated to working on the Eddie chip and the
20 schematics, and to get it to, you know, essentially, to Boeing or somebody to
21 test.

[REDACTED]

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1 So, going into whether it works, on Slide 30, we see Dr. Dickens'
2 admission. I put in front of him the Boeing report, and I asked him
3 questions about it. And we see on the left is this deposition.

4 His deposition, this is Exhibit 2041, page 54, lines 2-3. I asked him,
5 "Does the -- you know, the Boeing report shows that the Eddie device being
6 tested performs down-conversion, which it works for its intended purpose?"
7 And he said yes.

8 And on the right side, we see excerpts from the Boeing report. We
9 see what they were they working at? They started with [REDACTED]
10 [REDACTED]
11 [REDACTED]. So, we have their witness admitting
12 that it worked for its intended purpose, and we have -- we also have the
13 Boeing report which shows that [REDACTED]
14 [REDACTED]. The Sorrells testimony about the -- now, so that was
15 conception/reduction to practice.

16 Now, in terms of diligence, Mr. Sorrells testified that, basically, he
17 was working, him and his team were working on the design of this Eddie
18 chip and board consistently from at least January 20th, 1998, through
19 October 21st, 1998. And that's the date of filing of the '551 patent, and we'll
20 discuss that. And this is page 31 of the demonstratives. And he also said

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1 -- sorry, I -- yeah. So, I'm sorry. So, I should have started at the beginning
2 of paragraph 28 of Mr. Sorrells' declaration.

3 He said, "From at least March 6th, 1997, through the filing of the '551
4 patent on October 21st, ParkerVision employees worked consistently on the
5 design, development, testing, and/or evaluation of the Eddie chip."

6 And then he said, "From at least January 20th, 1998, through October
7 21st, they worked consistently on the design/development of the Eddie chip
8 and the circuit board into which the Eddie chip was incorporated." So, he
9 provides -- and then he said where all this information was retained. It was
10 retained in the relativity database, which we saw through his testimony he
11 investigated.

12 And then, this is Slide 32 and it's paragraph 30 of his declaration. He
13 specifically said that we took the results of the search for the various
14 documents related to Eddie and developed, designed and development under
15 the time. And then it was exported as an Excel spreadsheet, and that became
16 -- it's a figure, but it's Exhibit 2029 to his declaration into this, into this case.
17 And he said the files and the spreadsheet reflects the continuous work of
18 ParkerVision from January 1997 through at least October of 1997 related to
19 the design and development of the Eddie chip.

20 He provided the corroborating evidence. He provided the image from
21 the relativity database. He provided the output from the relativity date, as a

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1 corporate representative. He explained that all of the -- all of these files, the
2 .sch files, schematic files, .bak files, netlist files -- PCB is printed circuit
3 board files -- all of these files pertain to the company's design and
4 development of the chip. And this is evidence of that corroborating
5 evidence, and we could see all the dates starting with January 2nd of 1997.
6 And you could see that there are multiple entries, almost every single day,
7 between January 2nd, 1997 and the filing of the '551 patent in October of
8 1998. And that's on Slide 33.

9 On Slide 34, we put this in here because they had every opportunity to
10 depose Mr. Sorrells and they had every opportunity to ask him questions and
11 to poke holes and to show he's not credible, or to show he didn't do what he
12 needed to do, or to show that the material that he put forth is, you know, he
13 didn't cooperate, or whatever they wanted to do.

14 And what did they do? They took -- they had seven hours with them.
15 They took -- they could barely muster 30 minutes of questioning for him.
16 They could have asked him questions. They could ask him, "Are these your
17 documents. Are these not your documents?" You know, so you fall within
18 the one case I mentioned before -- I lost the case -- the *Apator* case. They
19 didn't ask him those questions. And so, they squandered their opportunity to
20 show that he was not a credible witness.

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1 They quibble about little things, about files, different versions of the
2 files having different dates. Well, one would expect that. So, to me, these
3 are just minor quibbles. Of course, we have plenty of documents showing
4 early dates. Different versions of documents are going to have different
5 dates, different names. That's not unexpected.

6 Okay. So now, going back to -- so now, we're on slide -- we were on
7 Slide 35, but now we're on Slide 36. On Slide 36, so, Petitioner complained
8 that, listen, you need to show beyond the '551 patent because the '551 patent
9 doesn't disclose all of the elements of the '177 patent. So, meaning you have
10 to do due diligence all the way to the filing of the '177 patent.

11 And as we see on Slide 36, and as we showed in our in our filings, in
12 our briefs, that, you know, with regards to synchronization, that Dr. Galton
13 said was a critical feature or an important feature or a required feature of
14 matched filtering and correlating, we see that claim 123 of the '551 patent
15 specifically deals with synchronization, as well as the patent, column 94,
16 line 26 to 33, of the '551 patent deals with synchronization, saying that the
17 RF signals and the aliasing rate of the LO signal are the same,
18 synchronization.

19 In terms of the requirements of two matched filtering and correlating
20 modules, the '551 patent provides for two matched filtering and correlating
21 modules. We're on Slide 37. We see on the righthand side Figure 110

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1 shows an RF switch integrator, two RF switch integrators, which as Mr.
2 Griswold indicated, the matched filtering and correlating modules have
3 switches and they're integrators.

4 And we could see on the lefthand side what's in those boxes. We see
5 a switch, we see a storage capacitor, and we also see a load. So, the '551
6 patent, claim 14 is entitled to the priority date of the '551 patent, and has all
7 of the things that Petitioner said were missing, that will require us to show
8 additional diligence further out. We certainly showed diligence through the
9 date of the Boeing report and all the way through the date of the '551 patent.

10 The one thing that I thought was interesting on Slide 38, and I pointed
11 it out, Petitioners tried to use an interrogatory response from another case
12 against us, and they tried to take the position that we took the position that
13 March 9th, 2000, was the priority date. And you can see that -- and they
14 deleted out all the stuff that I have -- the top stuff that I have highlighted,
15 where we said in that earlier case -- and I'm not even sure this was the final
16 interrogatory response -- we said it was no later than the date. We said at
17 least as early as March 9th, 2000, meaning they didn't do a final analysis of
18 it. But at that point, the analysis that they did was March 9th, 2000. But to
19 say that that is the date, and they -- that's Petitioner trying to argue that the
20 date is just, you know, it's sort of inappropriate to redact out all the top stuff

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1 that says, "at least as early as/no later than" and just show the March 9th date
2 without the context.

3 So, Dr. Ricketts provided significant evidence of the -- starting on
4 slide -- so, sorry, we were just on Slide 38. Going to Slide 40 -- I'm not
5 going to go through this in detail, but this is just to show Slides 40, 41.

6 Let me just go through this. Dr. Ricketts did a detailed analysis. I
7 think this was Exhibits 2015 and 2024. He did a detailed analysis going
8 through the Eddie layout and the board, the schematics of the board, to show
9 how each claim limitation was met. That's Slides 40 through 45. And he
10 did a very detailed analysis.

11 So, then what happens? Petitioner files their response, the reply brief,
12 and they hire a different expert. So, Dr. Galton was their original expert,
13 and they hired a different expert, Dr. Dickens.

14 And when I deposed both Dr. Dickens and Dr. Galton, neither of them
15 knew what the other had done. Neither of them had read the other's report,
16 and I'm not even sure if either of them -- I'm not even sure if either of them
17 knew the other's name or knew who they were. I think Galton said he may
18 know or something, but the bottom line is they used two experts, so they
19 could take two inconsistent positions. And we'll see how they took broader
20 positions that way and positions similar to what Dr. Ricketts -- sorry. They
21 took narrower positions when it came to the conception/reduction to practice

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1 and looking at what that showed. And then they took broader positions
2 when it came to actually showing what the prior art showed.

3 So, we're now on Slide 47, and this is from Dr. Galton. This is -- the
4 left, I think we drew that to explain what's shown on Dr. Galton's statements
5 on the right. And basically, for the Razavi reference, Dr. Galton said -- you
6 can see on the lefthand side, you see on the bottom left is the mixture, and
7 on the top right is the amplifier, Razavi. There's two green arrows coming
8 into the input of the amplifier of Razavi, and there's two purple arrows
9 coming out.

10 And what Dr. Galton said, he said that, essentially, the two green
11 signals are combined and form each one of those purple ones. So, there's a
12 combination, we see, on the bottom. On the top, he said each of the
13 baseband amplifiers feed out output signals, contains an amplified version of
14 the difference between the baseband amplifier's two inputs.

15 And then he goes on to say, each of the V_{out} signals is a combined
16 version of the first and second down-converted signal. So, each of those
17 purple lines is a combined -- a combination of the two green ones.

18 Dr. Ricketts did the same thing. There's two outputs coming in, two
19 down-converted signals coming into the red box, which is the differential
20 amplifier circuit, and those purple lines, each of those purple lines is a

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1 combined signal. So, each one of those purple lines is a combination of the
2 two green arrows, just like Dr. Galton did.

3 And Ricketts had some conversation about that, shown on Slide 49.
4 This is from his Exhibit 2024, paragraph 165, and from his claim chart that
5 he did, which is Exhibit 2015, page 30. He explained that the -- he explains
6 that the Eddie chip combines this, the top green and the bottom green arrow,
7 and outputs first down to where it signals each of those purple arrows.

8 Dr. Dickens took a different position than Dr. Galton. Dr. Galton said
9 the two signals are -- he said that they're not combinations. He said that the
10 two signals are directed to two different circuits that share similar
11 characteristics and both signals are separately output to downstream
12 circuitry.

13 Well, that's exactly -- that same argument applies to what Dr. Galton
14 did. So, what they did by separating the experts is they allowed experts to
15 take inconsistent positions. That position is inconsistent with what Dr.
16 Galton said.

17 But the one thing that he didn't deny, that Dr. Dickens did deny, is that
18 what we were looking at in that red box that I showed you on -- this is now
19 Slide 51 -- in the bottom righthand corner of the schematic, it talks about
20 that [REDACTED], that it, in fact, does have [REDACTED]. So, what I
21 showed in the red box in the schematic was, in fact, [REDACTED], a

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1 [REDACTED], which outputs exactly how I said it works, as Dr.
2 Ricketts says.

3 So, we could see a side-by-side comparison of what Dr. Galton said
4 on the left and what Dr. Ricketts did on the right. And we can see they're the
5 same. But Dr. Dickens, when he came in, not knowing about what Dr.
6 Galton did, he took a different position than both Galton and Ricketts. So,
7 here's another instance of inconsistency.

8 So, this is another issue they pointed out as to what's missing from the
9 Eddie chip. We have -- Galton takes the position that a single control signal
10 V_{LO} makes up a first and second input -- the first and second control signal,
11 you can see on the left and the right.

12 This is Slide 53. This is Razavi. This is from Galton's declaration.
13 He puts V_{LO} on both sides. You can see -- and he points to one V_{LO} , the
14 same V_{LO} , and he points to a first control signal on the bottom to show that
15 Razavi has that element, and he points to a second control signal on the top
16 to show Razavi a second control -- again, from same V_{LO} .

17 Dr. Ricketts did this -- and just to be clear, they go to different gates
18 of different transistors. And because they're at different gates at different
19 transistors, Dr. Galton viewed that as being separate control signals, even
20 though they come from a common source, common node, whatever you
21 want to call it.

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1 If you look at Slide 54, which is Dr. Ricketts' analysis, he did the
2 same thing. The pink is, it's a common, just as Dr. Galton did, it's a common
3 signal, but because it's going to different gates, just like Dr. Galton said, it is
4 a first and second signal. On the left, we see [REDACTED] from the
5 Eddie chip, and we see a pink signal coming in there to that gate. And then,
6 on the right side, we see [REDACTED], and we see
7 the second pink signal coming into that gate.

8 Now, how do I know that that's the correct analysis? Well, I could
9 look into the patent specification itself, Slide 55. The patent specification
10 provides a very clear picture of where you have -- you can see on the
11 lefthand side -- this is Figure 112, and it says aliasing signal -- single
12 aliasing signal, and then it gates out to 11226 and 11224.

13 And you could see, in the right side, it says, "two complementary
14 aliasing signals." So, those are both input to the gates of those two
15 transistors that we see in the Figure 112. And we could see that they are,
16 even though they come from the same common aliasing signal 11220, they
17 are still considered two separate signals, two separate control signals,
18 because they go to two separate gates.

19 Further, in Slide 56, again from the '177 patent, if you look at Figure
20 218C, you see a single composite control signal made up of I-plus and I-
21 minus. And on the left, you see Figure 218B, which shows that from one

[REDACTED]

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1 composite signal, control signal, comes two separate control signals -- again,
2 consistent with what Dr. Galton said and what Dr. Ricketts was saying.

3 And then you have -- Dr. Dickens comes along. Dr. Dickens, not
4 having any knowledge of what Dr. Galton has done, took an inconsistent
5 position. He said, well, since you have common gate nodes, since you have
6 a common control signal, you can't have two signals, the first and second
7 signal. Well, Dr. Galton doesn't agree with that because that's how he tried to
8 invalidate Razavi.

9 And so, again, this just goes to the fact that they're using two different
10 experts, taking two different positions, and these are the these are the bases
11 for what this -- these are the base, the only base or the main basis as to what
12 is missing from the Eddie chip, as to why it doesn't meet all the claim
13 limitations. And you could see that these are just flat-out inconsistent
14 positions.

15 Another issue Dr. Galton identified -- on Slide 58 -- Dr. Galton,
16 another inconsistent position, Dr. Galton identified the V_{LO} as a differential
17 signal, a differential input signal, and it has two -- it has two -- even though
18 there's two dots there, it's still considered -- it's still considered one
19 differential signal.

20 And then Ricketts, the same thing. In the Eddie -- Slide 59 -- in the
21 Eddie chip, [REDACTED]. Ricketts, Dr. Ricketts explained that that's

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1 [REDACTED]. It's considered one signal. And they argued -- and then
2 you will see what Dr. Dickens does.

3 So, Dr. -- again, Slide 58. Dr. Galton talks about a differential signal
4 being one signal.

5 In Slide 59, Dr. Ricketts says, when you have a differential signal, it's
6 one signal. And then, how do I know that it's one signal? Because, again,
7 it's supported by the specification.

8 Slide 60, the specification discusses Figure 218A. It shows an RF-
9 plus in blue and an RF-minus in blue. And it says that's an example of a
10 differential input -- singular, "input," not "inputs." So again, the patent
11 recognizes, just like Dr. Galton and Dr. Ricketts, that two dots on a diagram
12 is, it means -- it can mean -- it is in this case a differential input signal.

13 So, what did Dr. Dickens -- Dr. Dickens, he didn't have Dr. Galton's
14 report, so he took it into an inconsistent position. What did he say? Well,
15 the two dots there represent a first and second input signal. Well, that's it's
16 in -- it's a differential signal. According to Dr. Galton, that is a single signal,
17 which is what the claims of the '177 have. And so, Dr. Dickens takes a
18 different position. He says it's a first and second input signal.

19 Well, that's not what Dr. Galton says. Dr. Ricketts agrees with Dr.
20 Galton on that point. And the patent shows that a differential signal is a
21 single signal. He didn't consider that. He didn't consider the specification,

[REDACTED]

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1 Dr. Dickens didn't, nor did he consider what Dr. Galton said, because he
2 didn't even know what was going on with Dr. Galton.

3 And again, they can't have it both ways. They can't take the position
4 that the '177 patent doesn't meet elements, and then at the same time say that
5 they're using some logic to say that the Razavi limitations matter, the prior
6 art is met. You can't take inconsistent positions to say the Razavi elements
7 are met, but, then, take a different position to show that, you know, the
8 Eddie chip doesn't have those limitations. It's one way or the other.

9 So, either Razavi, for instance, is not a piece, a valid piece of prior art,
10 and it doesn't have all the limitations, or, you know, somebody's wrong.

11 And so, how do I also know -- how do I corroborate that what's done
12 in the Eddie chip is a differential signal? Because -- on Slide 62 -- we have
13 from the Boeing report and the Boeing notes that were submitted in this case
14 -- on the top, we see that [REDACTED], it says on the right
15 [REDACTED] and on the bottom, we say [REDACTED]. So, we
16 know what was coming in is a differential signal. We're not just saying that;
17 it's corroborated by contemporaneous documents.

18 Dr. Dickens also had an issue. He talked about capacitors and the
19 requirement that capacitors are charging and discharging at the wrong times,
20 or something like that. And so, what did he do?

[REDACTED]

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1 His analysis focused on [REDACTED]. That's in blue on Slide 63.
2 [REDACTED] that Dr. Ricketts pointed out as being the
3 energy storage elements. Dr. Ricketts pointed out to [REDACTED]
4 [REDACTED], which is in red, as being the energy storage elements. Dr. Dickens
5 analyzed the wrong elements when trying to show that the Eddie chip was
6 missing things.

7 And so, how do we know? And one other thing that Dr. Dickens said
8 is that, you know, the Eddie chip just does not work, based on the
9 schematics that he saw, and he made a lot of assumptions with regard to his
10 analysis of those schematics, but we know from the testimony of Mr.
11 Sorrells, the contemporaneous corroborating documents, that what was
12 given to the schematics and the Eddie board and the Eddie chip that was
13 given to Boeing worked.

14 And even Dr. Dickens ultimately had to admit, on page 64 from his
15 deposition, that the Eddie device being tested performed down-conversion
16 correct. "Yes."

17 So, one of the things that Dr. Dickens also did is that he took the
18 position that, on Slide 65, that, basically, the way the values in the capacitors
19 and in the circuit, and the way the circuit is set up, is that all those blue
20 signals go directly to ground, and the thing would never work. It's basically

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1 all the -- all of the input signal, basically, is dumped immediately to ground,
2 and all the rest of the circuitry is basically irrelevant.

3 Well, he's wrong, number one. And the reason he's wrong is because
4 he made assumptions, incorrect assumptions. So, he didn't do anything
5 -- Slide 66 -- in his deposition, he said he didn't do anything to confirm the
6 Eddie device being tested, used any certain capacitor values. He said, "I
7 didn't do any of that."

8 On the righthand side, he also didn't consider that the schematic itself
9 said not loaded. Well, not loaded indicates that certain values, certain
10 components are not loaded into the system, meaning they're not being used.
11 So, what we know is that he did not consider that things were not loaded,
12 you know, so that certain values and certain components were not being
13 used.

14 But the only thing we do know is we know that, based on Mr. Sorrells'
15 un rebutted testimony, and through contemporaneous documents, what was
16 given to Boeing, and what Boeing did, and that it worked for -- it actually
17 worked, inconsistent with what Dr. Dickens said.

18 Dr. Dickens, one big assumption that Dr. Dickens made with regards
19 to saying everything is dumped out, all of the signals that come in are
20 dumped out immediately to ground, is he made the assumption that -- this is
21 Slide 68. If you look at the blue highlights, [REDACTED], which [REDACTED]

[REDACTED]

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1 [REDACTED] the Eddie chip, he made the assumption that they exhibit
2 significantly large input impedance. Right?

3 So, given the choice to go towards [REDACTED], or to go towards a
4 very -- you know, to ground, he said, well, they would go to ground. But the
5 problem is he didn't -- he has no evidence that [REDACTED] are significantly
6 large input impedance. He has no evidence. He just said -- no support, no
7 nothing, not calculations, no nothing. That's Slide 68.

8 And again, ultimately, he had to admit that what was provided to
9 Boeing -- on Slide 69, this is from his deposition. It performed down-
10 conversion. On the lefthand side is his deposition and on the righthand side,
11 we see that the Boeing report shows [REDACTED]
12 [REDACTED].

13 So, I am going to now turn to claim construction.

14 JUDGE GERSTENBLITH: Counsel, just a couple questions for you.

15 MR. CHARKOW: Sure.

16 JUDGE GERSTENBLITH: So, first, what evidence is there
17 corroborating Mr. Sorrells' testimony that the schematics that he was relying
18 on are the same thing as the Eddie chip or that went on to the Eddie?

19 MR. CHARKOW: Sure. So, I showed that to you early on. I know
20 there's a lot of stuff in here. So, okay.

[REDACTED]

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1 So here, Slide 28. Slide 28 shows the Eddie -- so, the top is from the
2 Eddie schematic. I forget which number it is, but it's from the Eddie
3 schematic that I showed, this schematic that I showed you. And it shows, in
4 the body of the schematic, it shows -- let me see if I can show you a larger
5 view. I'm sorry, bear with me. Okay, here. So, this is the -- that I showed
6 you, Your Honors, on Slide 8, okay. So, on Slide 26, we blew up this area
7 here where I'm circling. I'm sorry, I can't really say -- for the record, it's
8 kind of to the left-hand side. Do you see what I'm circling, Your Honor?

9 JUDGE GERSTENBLITH: Yes.

10 MR. CHARKOW: Okay. So, if you go to Slide 26, that's a blowup
11 of what that is. And again, that's the schematic itself. So, it's the schematic.
12 It's not his testimony. This is what the schematic shows.

13 So, if we go to Slide 26 -- I'm sorry, it's not 26. Sorry. It's 22?

14 JUDGE GERSTENBLITH: Twenty-eight?

15 MR. CHARKOW: I'm sorry, 28, yeah.

16 So, we see the blowup on the top of the Eddie schematic. It says a
17 [REDACTED]. And then, if you look at the Boeing
18 report, what they were doing, it talks about a similar or same thing, using a
19 [REDACTED], and says that's the
20 Eddie chip.

[REDACTED]

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1 So, that's corroboration evidence outside of Mr. Sorrells from a
2 document from 1990 -- I guess it was 1998. The face of the document itself
3 shows exactly -- and the Boeing document, those corroborate what Mr.
4 Sorrells was saying.

5 JUDGE GERSTENBLITH: And so, just to be clear, you're talking
6 about the [REDACTED]? That's the piece that you're pointing to?

7 MR. CHARKOW: And the [REDACTED] Right.

8 So, sorry, where it says, [REDACTED] it says, [REDACTED]

9 [REDACTED]
10 Right? So, it's also that, a [REDACTED] So, the [REDACTED], and
11 then the Boeing report talks about a [REDACTED]

12 [REDACTED]
13 JUDGE GERSTENBLITH: So, is a [REDACTED] not a common
14 thing? Is that somehow unique, or in other words, is that unique or special
15 for some reason?

16 MR. CHARKOW: Well, I think a [REDACTED]
17 [REDACTED] is a unique testing configuration. That is a unique testing
18 configuration.

19 JUDGE GERSTENBLITH: And what makes it unique?

20 MR. CHARKOW: Because you don't have to use [REDACTED]
21 [REDACTED]. You could choose

[REDACTED]

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1 any -- you could do a [REDACTED] and you do it at, you know, 5
2 gigahertz. You could do it at 2 megahertz. You could do it at whatever you
3 want.

4 So, out of all the numbers in the world to choose, it's of all the
5 configurations they could have chose, they have a [REDACTED]

6 [REDACTED]

7 JUDGE GERSTENBLITH: Okay.

8 MR. CHARKOW: They could have chosen anything they wanted.
9 So, that's an indication -- that specific configuration is discussed in the
10 Boeing report itself. Just the [REDACTED] alone would probably do it,
11 because you could choose any megahertz you want, and it's the same exact
12 megahertz that they had on the face of the schematic and they also talk about
13 doing the matching network.

14 JUDGE GERSTENBLITH: I understand.

15 So, second question is --

16 MR. CHARKOW: Sure.

17 JUDGE GERSTENBLITH: -- what is the evidence? And I know
18 you mentioned this. I just want to make sure that I understand all of it, that
19 there's a 50 percent duty cycle.

20 MR. CHARKOW: Yeah.

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1 JUDGE GERSTENBLITH: The corroborating evidence to Sorrells'
2 testimony is what I'm talking about.

3 MR. CHARKOW: Yes. Yes, Your Honor. Just give me one minute.
4 Just bear with me. I'll try to find it. I apologize, I'm just trying to scan
5 through this. It's a lot of slides, as you saw.

6 So, number one is Ricketts himself looked at the [REDACTED] of the
7 Eddie chip, and we see that on Slide 16 on the righthand side. So, this was
8 in his -- this analysis was in his report and the claim chart that he prepared.

9 And in addition, we have the '551 patent, which was filed October
10 1998, provides further corroborating evidence of this -- sorry, I just got the
11 slide down. It's still Slide 16 I just talked about.

12 And then, Slide 18, which is from the '551 patent, filed October of
13 1998, clearly puts stuff -- we prepared that more than just the day that it's
14 filed. And this was in the patent. So, this was further corroborating
15 evidence of the 50 percent duty cycle. One-half of the period is 50 percent.

16 JUDGE GERSTENBLITH: So, okay. So, put aside the patent itself.
17 You're talking about -- so, putting that aside, the corroborating evidence is
18 slide -- noted on Slide 16, that Dr. Ricketts tested, somehow ran tests on this
19 schematic and determined that this was a 50 percent duty cycle? That's what
20 you're saying?

21 MR. CHARKOW: He just looked at the configuration.

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1 JUDGE GERSTENBLITH: Okay.

2 MR. CHARKOW: It's you can tell by the last -- whatever, the
3 various resistors, capacitors, latches, whatever is there, he's able to
4 determine that.

5 JUDGE GERSTENBLITH: Understood. Understood.
6 And now, what are we to make of the difference of filenames from Mr.
7 Sorrells' testimony? It appears that he doesn't recognize, at least in his
8 testimony, that there's a different filename, that I don't know if it's indicating
9 a different date, because it's ■ instead of ■ But also, it's not just the
10 version that seems to be changed; it's also the digits that come after that
11 indication. So, what are we to make of this?

12 MR. CHARKOW: Different filenames have different dates. So,
13 different files, they were -- say multiple same files have different dates, but
14 we know what we pulled. Like, for instance, in Slide 4, we know that this
15 filename has -- just on the lefthand side, that's the Eddie layout -- has that
16 filename and it was on that date. That was his testimony. There may be
17 other filenames, various versions. There may be other versions of that, but
18 that's the version that he said was the -- that's the version that was -- you
19 know, we pointed to. And the other versions are just further evidence that
20 they were working on at -- much earlier than Tayloe.

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1 You can expect different file names and different file dates. That's
2 typical. You know, I see files all the time, different names, different dates.
3 It just happens all the time.

4 JUDGE GERSTENBLITH: I understand. I understand that. But
5 take a look at Exhibit 2016, which is Sorrells' declaration, paragraph 9. And
6 he's talking -- it seems to me that he's -- he points to this filename [REDACTED],
7 but, then, what he's -- going to that in the properties, the first picture that we
8 have, the properties, it's showing a different filename. It's not just the
9 version that's different. It's version [REDACTED] --

10 MR. CHARKOW: It's just, yeah, it's just -- yeah, it's another file. It's
11 a different file with the same date, different file, different name, right,
12 different filename, the same date, but the version that he pulled was the one
13 on the bottom right.

14 JUDGE GERSTENBLITH: The bottom -- when you say, bottom
15 right, you mean -- so, these are three different figures put into the same page,
16 it looks like. Right? Three different images?

17 MR. CHARKOW: Yeah. Correct. So, we can go to on paragraph 9
18 of his declaration. We could see the file entitled, [REDACTED] has a date
19 [REDACTED]. And we could also see, looking at it a different way,
20 [REDACTED] has the same file date, and then, there was a different file with
21 a different filename around that same date. So, I mean, maybe he should

[REDACTED]

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1 have said, you know, a different filename, different file date, whatever, but
2 where he pulled from was the file shown on the right, which is [REDACTED].
3 He specifically said that's where he pulled it from, and that has the date
4 shown, [REDACTED]

5 JUDGE GERSTENBLITH: Okay. All right. Thank you.

6 MR. CHARKOW: Sure. So now, I'm going to go into claim
7 construction. So, on the claim construction issue, so I want to talk about
8 this. So, the one thing that Mr. Griswold, that I didn't hear him say was, you
9 know, he complained that we didn't accurately represent what was said,
10 which I disagree with, and I'll explain why.

11 But I don't think there's a disagreement, and I heard Mr. Griswold say
12 numerous times the "matched filtering correlator," putting aside "module,"
13 requires a switch and an integrator. Like the parties don't disagree. There's
14 no disagreement.

15 The question on load I'll get to, but I can tell you that, you know, Dr.
16 Galton in the original petition under his version of the view of a matched
17 filtering/correlating module, before we put any, you know, claim
18 construction in or anything, he showed the matched filtering/correlating
19 modules that he pointed to in Tayloe and Razavi as having loads. So, I take
20 issue with Mr. Griswold's statement that we're misrepresenting the record.

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1 And I would encourage Your Honors to look at all the cites that we
2 put in there because, you know, they accurately reflect what was stated.

3 So, going back to -- Your Honors can still see my slides, right?

4 JUDGE GERSTENBLITH: Yes, we can.

5 JUDGE ZECHER: Yeah.

6 MR. CHARKOW: Okay. So, going back to the slides -- I'm sorry.
7 Hold on. I'm having trouble. All right.

8 So, if we go to Slide 71, Slide 71, we propose a construction. And
9 there was a lot of discussion about how stuff worked, and I'm not sure that
10 Petitioner properly explained how all this works. So, I'm going to do my
11 best to try to clear things up.

12 So, first of all, we have a construction and they say, "plain and
13 ordinary meaning." Under *02 Micro*, that can't stand. You can't have
14 somebody that says, "plain and ordinary meaning," and it is whatever you
15 want it to be, and then, somebody else that has a different construction. So,
16 that's just, under *02 Micro*, there is a requirement that, you know, some sort
17 of construction occur.

18 I think, really, where the rubber meets the road on this issue is, you
19 know, the load issue. I don't think there's a dispute that, you know, I think,
20 you know, there's aliasing, sample, circuitry that samples an input signal,
21 and aliasing rate, which was a construction of the Texas Court, and then, we

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1 have also had using a switch, such that energy in the input signal is
2 integrated. I don't think there's a dispute that there's a switch and an
3 integrator, and even that's a "plain and ordinary meaning." And then, where
4 I think the issue is, it's transferred to a load to form a down-converted signal.

5 The one thing I want to point out is what I don't think Petitioner's
6 counsel fully stated. He said that the decision in the District Court only had,
7 you know, this additional limitation of aliasing rate, you know, sampling and
8 an aliasing rate. That's not correct.

9 If you go into Exhibit 2034 of the Special Master's Report adopted by
10 the Court, on page 39, the Court which adopted it specifically says, at
11 column 130, line 49, to 132, line 17, are specifically meant to be -- all the
12 figures and discussions are meant to be specifically included. And there's a
13 lot of discussion in there. So, it's not as simple as Petitioner's counsel was
14 saying with regards to what the District Court did in Texas.

15 The one thing I want to talk about, Your Honors, is -- and this is
16 where I think things are starting to get confusing for me -- is a matched
17 filtering/correlating, okay, that is different than a matched
18 filtering/correlating module. A matched filtering/correlating module is a
19 specific term used by the patent to connote a very specific thing. It's to
20 connote, if you look at the specification and the claims, it connotes -- and
21 we'll go through that -- it's not just, you know, a matched filtering correlator.

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1 It's a matched filtering/correlating module. And the concept of sampling
2 that's part of -- and switches and integrators and loads are all part of the
3 concept of the matched filtering/correlating module. You have to read the
4 term in light of the specification, and we'll see that's what the specification
5 talks about.

6 Okay. So, then, the next issue that -- I want to go to the claim
7 language real quick, because I know we were talking about -- I know we
8 were talking about this claim language. Oh, where is it? Okay.

9 So, you can see on my screen this is claim 14. And we see it says,
10 "the down-converting input signal," that's that first matched
11 filtering/correlating module, "and outputting a first down-converted signal."
12 The next thing that happened -- and that happens twice. The next thing that
13 happens is combining. There is no -- nothing else discloses in between the
14 matched filtering/correlating module that has to output a first down-
15 converting signal and the combiner -- meaning that, and as Your Honors
16 were saying, in order to output something from the integrator, which is part
17 of the matched filtering/correlating module, you have to discharge it. That's
18 the only way you could do it.

19 And the only way you could discharge it is having a load, and the only
20 place that load can be is in the matched filtering/correlating module, because
21 the very next thing says, after the outputs, you combine. There's no other

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1 circuit; there's nothing else left in the system to output it to. So, whenever
2 that output is occurring, it has to be to a load because you can't output
3 without a load, and that load, because the combining step happens
4 immediately after the down-converting signal, that load has to be part of the
5 matched filtering/correlating module.

6 Going back to the slides, so on Slide 73, we see again matched
7 filtering/correlating module has a switch and an integrator. And again, I
8 don't think there's a dispute that it has to, that module has a switch and an
9 integrator.

10 Slide 151 on page 74, the same thing. On page 153 -- sorry -- on page
11 75, Figure 153, again, it shows a switch and it shows the integrator now as a
12 capacitor. On Slide 76, again, Figures 171, 172, switch/integrator; 173 on
13 page -- Slide 77, again, all show a switch and integrator.

14 So, for now, I want to get into loading, right? So, I don't think switch
15 and integrator and sampling has to -- again, sampling has to occur, and
16 there's no other place that the sampling occurs other than in the matched
17 filtering/correlating module. That's where it happens because that's where
18 the switch is. That's where the sampling occurs. It's not some other part of
19 the claim.

20 So now, from the patent, on Slide 78, it says, "The result of each
21 matched filtering/correlating process" -- which is happening in the matched

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1 filtering/correlating module -- "are accumulated, for example using a
2 capacitive storage device and used to form a down-converted version of the
3 electromagnetic signal." So, they're saying the process of the matched -- the
4 thing that's occurring inside of the matched filtering/correlating module is
5 used to form a down-converted signal.

6 Well, the only reason that you -- the only way you could form a
7 down-converted signal is by outputting to a load. You can't -- it just doesn't
8 accumulate, and then something magically happens downstream. As Your
9 Honors recognized during the opening arguments from Petitioner, it's that it
10 has to down-convert. It has to accumulate. It outputs.

11 And this -- on Slide 80 -- this is Petitioner's annotation which says
12 output of accumulated is down-converted, too -- meaning that the
13 accumulation -- to get from accumulation to a down-converted signal, there
14 has to be an output. That's their language, not ours. And that output, the
15 only way that output could occur -- and I think Petitioner agreed -- is there
16 has to be a load. And the only place that load can exist, because of the way
17 the claims are written, that load has to exist somewhere, and the only way it
18 could exist, because the output immediately becomes combined, it has to
19 exist in the matched filtering/correlating module.

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1 Now, this is where I take issue with what Mr. Griswold said, where
2 we said that they stated that there's no concept of a load; that the load is not
3 in the matched filtering/correlating module. Okay?

4 Well, Slide 81, this is from the petition, the original petition that they
5 filed. This was under their view of what the term "matched
6 filtering/correlating module," not our view, their view. And when they
7 -- they said all the stuff in blue is a matched filtering/correlating module.
8 That's their words, not ours.

9 And if you look in the pink circle, there's a resistor. That's a load. So,
10 they identify -- they, themselves, when they were identifying what a
11 matched filtering/correlating module is, before we argued anything, in the
12 petition, they highlighted in blue a switch, an integrator, and a resistor. They
13 didn't stop at the switch or resistor; they highlighted the resistor. That is a
14 load. That was their argument, not ours.

15 And they didn't just do this once. They did this -- that's Slide 81.
16 Slide 82, they did this for the lower part of the differential amplifier circuit.
17 The same thing, they highlighted in yellow and said that's the second
18 matched filtering/correlating module. Again, they included a switch, a
19 capacitor, and a resistor. This is not in response to anything we said or any
20 definitions we gave. We hadn't answered at this point.

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1 What did they do with regard -- that was for Tayloe -- what did they
2 did do with regard to Razavi? The same thing, orange, that's the matched
3 filtering/correlating module. What did they point to? They pointed to a
4 capacitor and a resistor. That's their position, not our position. And I
5 believe they also pointed to a switch, but they highlighted in orange.

6 In blue, again, what did they point to? A capacitor and a resistor, a
7 load. These are their -- so, this is Slide 81 through 84. These are their
8 markups. These are not our annotations. All we did was put the pink circle
9 around to identify what they were pointing to, but all the marks about load,
10 that's all them.

11 So, to say that they didn't take the position or agree that a matched
12 filtering/correlating module had a load is not correct.

13 And then, if we go through Figure 65 and 68G, they say, look, it
14 doesn't show a load here. Yes, but what they didn't -- this is Slide 85 -- but
15 what they didn't do is actually read the specification. The specification
16 specifically talks about 65 and 68G and says that it works according to the
17 timing diagram shown in Figure 83. What's 83B? Charging and
18 discharging. Well, okay, charging and discharging only happens in the
19 presence of a load.

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1 How do I know that? Because Dr. Galton said it. At page 87, he said,
2 "Charging and discharging indicates the presence of a load, correct?"
3 "Generally, yes." Okay.

4 And he also mentioned, on the righthand side, that the matched
5 filtering/correlating requires integration. So, we're not making this up that a
6 load is required. Again, they pointed to these figures. They said, on Slide
7 85, Figure 65 and 68G, "no load" and they said, "zero load." Not shown.
8 But they didn't read the specification which talks about that those -- that
9 down-converted signal shows charging and discharging. And Dr. Galton's
10 admission that charging and discharging indicates the presence of load.

11 And Slide 68, again, Slide 68 -- sorry -- Slide 88 and 89 is still Figure
12 82, which shows a load. It's tied to Figure 65 and 68 because 65 and 68
13 specifically -- and 82, which shows a load -- they all refer to the same timing
14 diagram which shows charge and discharge.

15 So, basically, 88 is a lower -- is a higher-level view. Slide 88 shows a
16 higher-level view, where Slide 89 shows the actual implementation of that,
17 the red box that they put in there is a load in Figure 82A, and that's what
18 would be in, you know, where the down-converted signal would occur for
19 Slide 65 and -- Figure 65 and 68G.

20 And then, with regards to Slide 91, Figure 175A, they say, look, here's
21 a resistor. So, there's embodiments without a load. But, as I explained with

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1 the claims, as I explained, you know, how -- what Dr. Galton did and all this
2 other stuff, that the fact that there's a resistor there, all that's doing -- it's not
3 an alternative embodiment. It's just saying, in one embodiment of a load
4 -- because there could be different ways to do a load -- this is how things
5 work. That's all it's doing. It's not saying this is an alternative embodiment
6 and this has a load as opposed to the other ones. It's just explaining how the
7 capacitors would discharge; how that accumulated energy would be output,
8 and it's showing an example of a load.

9 So, then, if we turn to the actual argument on Tayloe --

10 JUDGE GERSTENBLITH: Mr. Charkow, let me ask you a quick
11 question, and I don't mean to go sideways here. But my understanding from
12 the petition is that, on claim construction, it was raised by *Qualcomm*, I
13 guess, in the Middle District of Florida, that claim 14 was indefinite. I don't
14 know if you recall this discussion.

15 If you look at the petition on page 8, this is discussed. And if you're
16 not familiar with this, then I'll let you speak to it when you come back up.

17 But I'm just curious to know what the situation was there and if
18 anything happened after that time.

19 MR. CHARKOW: I'm not sure that this is the patent. I think this is
20 '528 which is in the 936 case.

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1 JUDGE GERSTENBLITH: Okay. Well, I'll just tell you, I'm
2 looking at the brief from the petition from this case, talking about claim 14
3 on page 8. But you can look at it later and let me know.

4 MR. CHARKOW: Yeah, I don't -- we don't have that in front of me
5 right now. But I'm not sure, I mean, did they invalidate it for indefiniteness?
6 I don't --

7 JUDGE GERSTENBLITH: I can only -- I can only see what's
8 written here in the petition; that it talks about the Court granting
9 Qualcomm's Motion for Summary Judgment, but not articulating a specific
10 basis for that decision.

11 MR. CHARKOW: Yeah, the Court did not -- I mean, that I recall,
12 the Court didn't say it was based on indefiniteness. There's no -- they didn't
13 articulate anything. They -- literally, the Court didn't articulate. They just
14 said it's whatever they said.

15 JUDGE GERSTENBLITH: Okay. So, there's no subsequent history
16 from that case that would be useful?

17 MR. CHARKOW: I'll check during a break, but I'm not aware.

18 JUDGE GERSTENBLITH: Okay. Thank you.

19 MR. CHARKOW: Okay. So, on Tayloe, if a load is required, which
20 we believe it is, there is no discharging to a load. So, on Tayloe, we see on
21 Slide 94, Tayloe -- sorry. Okay.

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1 So, Slide 95. So, on Tayloe, I'm zooming-in on the circuit. So, what
2 we heard, which I was surprised, we heard Mr. Griswold say, is that for -- I
3 think he said a significant period of time, the capacitors hold the charge.
4 Well, the only way to -- or I think he said, "hold a charge." The only way
5 you could -- oh, sorry.

6 The only way -- it's a consistent voltage for a majority of the cycle.
7 Well, the only way you can have a consistent voltage on the majority of the
8 cycle is you have a high-impedance load, because that's the only way you
9 could hold energy and charge in the capacitor. So, you basically admitted
10 that it's high impedance by saying that a majority of the time it's, you know,
11 it's held.

12 Now, you cannot -- you can't flip and flop between high impedance
13 and low impedance. Either high impedance or not high impedance, which
14 means high impedance.

15 The other thing he said was the positive input, shown on Slide 95, the
16 positive in the red triangle, he said that going into that was high impedance.
17 I was surprised he said that.

18 So, he recognizes that plus is high impedance. And Dr. Galton
19 recognized that, and the reason why is because, when you have an input
20 signal into the gate of a FET, which is what's shown there, it's high
21 impedance. Okay?

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1 On the top is -- so, Dr. Ricketts explained there has to be matching
2 going on. Sorry. To the right, I'm sorry, this is Dr. Galton's testimony. I
3 said, "The gates of the MOSFETs had very, very high resistance?" And he
4 said, "Yes, high resistance, high impedance."

5 So, on the lefthand side, you have the blue and the yellow. Those are
6 inputs to the differential amplifier circuit. The yellow has to be high
7 impedance because it's going to the gate and the FET. There's no question
8 about that. The blue has to be matched to that.

9 You can't have -- so, what Mr. Griswold said earlier doesn't make any
10 sense. He said that there's essentially high impedance to the bottom, which
11 means that there would be no discharge. And yet, to the top, it's low
12 impedance. There would be discharge.

13 You can't have a system where one, you know, a combiner has one
14 signal that there is a discharge coming to it and another signal where there's
15 nothing coming to it. Because it's combining, so it has to -- it has to either
16 be a voltage sampler and, you know, combine the voltages or it has to be an
17 energy sampler and combine the energy. You can't have a combination of
18 the two.

19 So, what he, what he -- when he said it's high impedance, and then, he
20 said the other one it discharges to, you can't have the yellow where it's not
21 discharging to and the blue where it's charging to -- discharging to. That is

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1 not how systems work. You cannot have one side of the circuit charging,
2 discharging, that gets a discharge, and then the other side doesn't. It
3 wouldn't work, especially if you've got to combine the signals. The only
4 way you can combine the signals is if they're both either voltages or they're
5 both either getting energy.

6 And then, on Slide 96, that is not the configuration of Razavi. That's
7 not the configuration of -- sorry -- that's not the configuration of Tayloe.
8 Tayloe doesn't go to ground. Tayloe only has one signal coming in through
9 the top. There is no second signal. Razavi -- sorry -- Tayloe has two signals
10 coming in, one to the positive and one to the negative.

11 Sedra is not applicable. And so, you can see on Slide 97 Sedra's
12 completely irrelevant, you know. Okay.

13 So, then, with regards to Razavi, so on Razavi, we believe that the
14 claims require a sample. And I think Your Honors recognize that there's
15 some concept of sampling in somewhere, and the only place that it is, is in
16 the matched filtering/correlating module. That's what the District Court
17 said.

18 And the District Court wasn't adding anything to the construction.
19 What the District Court was saying is that, in the context of the patent, the
20 matched filtering and correlating module, right, which is not just a matched

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1 filtering correlator. It's a special module that's used for down-conversion
2 samples.

3 And so, Razavi does not sample. A sampler requires converting a
4 continuous time signal to a discrete time signal, the RF signal. And
5 specifically, the claims require that the sampling, that the sample and input
6 signal have an analyzing. Razavi doesn't do that.

7 And so, specifically, Razavi says, at Slide 102, that M5 and M6 must
8 remain in saturation. And Dr. Galton testified that, in saturation, the NMOS
9 conducts, conducts current, conventional current, from drained source
10 -- meaning it conducts it down, not up, not up to, you know, not up, down.
11 Which means that any RF signal coming into M5 and M6 would be coming
12 from the bottom, will not be able to go up. It's like a barricade. It doesn't
13 -- the conventional current, it doesn't go up.

14 So, there's no sampling. There's no energy being transferred to a load,
15 to the extent the Board determines that a load is applicable. But the one
16 thing that I want to talk about is whether conventional current is the
17 appropriate way or looking at electron flow.

18 Now, our position is that conventional current is the way you look at
19 it. And the reason why is because, even as Dr. Galton admits, when you're
20 talking about things like charging and discharging and ParkerVision patents,
21 Slide 104, "ParkerVision patents refers to conventional current, you know,

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1 when you're talking about charging," I asked him, and he said, "You have to
2 look at the specific cases, but that's probably true."

3 And we also asked him about the letter I, and that's the big letter I is
4 for conventional current and that's the formulas that are used to calculate
5 stuff. Again, "I" refers to conventional current.

6 And so, we have the patent, that their own witness admits that deals
7 with conventional current. We know that the patent talks about charging and
8 discharging. You have to look at that from the point of view of conventional
9 current if you don't look at it from the point of electrons.

10 And so, conventional current is the correct way to look at it. And
11 matter of fact, on Slide 104, we have Dr. Galton's own textbooks, and these
12 are textbooks that he put into the record. And they all show conventional
13 -- like the way you look at circuits is conventional current. Everything, all
14 you see, all the arrows for the transistors, which are in blue; all of the
15 current, which is in purple, all shows down. The arrows are down, going
16 from the source, the energy source, going down, you know, to ground or
17 whatever. It's not going up. You can't go in the opposite direction of the
18 arrows.

19 And therefore, because no input signal can pass resistors -- sorry
20 -- transistors M5 and M6 in Razavi. They can't go up; they can't be sampled.
21 If they don't pass through M5 and M6, you can't sample them. They can't go

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1 from continuous to discrete. They can't even go through them. There's no
2 sampling at all. Nothing goes up. It all -- all this stuff comes down.

3 VDD is the source, and conventional current goes down. It goes
4 down to ground and it would go in the direction of those red arrows shown
5 on Slide 102.

6 So, I think I'm going to reserve the rest of my time.

7 JUDGE GERSTENBLITH: Okay. Let me just ask you one question
8 before we pause here.

9 Why does it matter if Tayloe has a higher low load if --

10 MR. CHARKOW: Oh, yes, sorry.

11 JUDGE GERSTENBLITH: -- if it's taking enough of the charge onto
12 the capacitor from the signal?

13 MR. CHARKOW: Correct. So, in order to -- the claims require that
14 you created, output a down-converted signal. Right?

15 JUDGE GERSTENBLITH: Right.

16 MR. CHARKOW: That's what the claims require. In order to output
17 a down-converted signal from Tayloe, it's a high-impedance load; it won't
18 output. It just stays in the capacitor. It doesn't output to the right, to make
19 a down-converted signal.

20 So, that's why high impedance -- low impedance, it will discharge to
21 the right. If it's high impedance, which we argue it is, it won't discharge

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1 -- meaning it won't meet the limitation of outputting a down-converted
2 signal to -- whatever the claim language is.

3 Does that make sense?

4 So, the capacitor could either discharge or not discharge, right? If
5 there's a high-impedance load in Tayloe, it's not going to discharge. If
6 there's a low-impedance load, it's going to discharge.

7 And the claims talk about outputting a first and second down-
8 converted signal. And in order to output that signal, you have to have a low-
9 impedance load. And if Tayloe does, in fact, have a high-impedance load, it
10 means that it's a voltage-sampling system and it means that it's holding the
11 charge on the capacitor, and the capacitor won't discharge and it won't
12 meet the limitations of the claims. It won't output a first and second down-
13 converted signal, as required by the claim language.

14 JUDGE GERSTENBLITH: And that's totally separate from and
15 independent from the aperture that's allowing -- the size of the aperture. In
16 other words, the non-negligible versus negligible aperture?

17 MR. CHARKOW: Correct. Correct. So, what happens -- I'll just
18 say it quickly. So, Slide 94, you see the switch that's in green or yellow on
19 the left?

20 JUDGE GERSTENBLITH: Yes.

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1 MR. CHARKOW: So, that is what you'll have a signal coming into.
2 That switch will open and close, let's say, right? And so, energy, when it's
3 -- when the switch is closed, energy will -- energy will flow into the
4 capacitor. You see, I think it's C1, CF, and you see that in blue?

5 JUDGE GERSTENBLITH: Yes.

6 MR. CHARKOW: And that energy -- our position, because of the
7 high-impedance load, that will be held there. So, when the switch opens
8 again, it's -- sorry. In order to read a voltage -- so, in this case, because of no
9 discharge, you have a multi-sampling system. You're reading the voltage,
10 and you want to hold the energy on that capacitor, so you could take an
11 accurate reading of the voltage.

12 If it was an energy transfer system and you had a low-impedance load,
13 that capacitor would discharge. So, the aperture has nothing to do -- the
14 aperture just deals with the amount -- how long the switch stays closed and
15 how much energy gets into the capacitor. That's all the aperture is.

16 JUDGE GERSTENBLITH: So, is there -- and this may convey just
17 an unusual style question -- but is there ever a case where you could have so
18 much energy on that capacitor from having the aperture open for so long,
19 that it could move forward to discharge, even with a high-impedance load?

20 MR. CHARKOW: No, because --

21 JUDGE GERSTENBLITH: It can't ever overcome that?

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1 MR. CHARKOW: That's the whole point of the high-impedance
2 load. The whole point of the high-impedance load is to hold this. Because if
3 you let -- if energy discharges when you're trying to read, right, and it goes
4 to the right, what's going to happen -- you know, what would happen is you
5 couldn't get an accurate reading of voltage, right?

6 And that's the whole point of, like, a high-impedance load in a
7 voltage-sampling system; you try to hold -- you hold it on the capacitor, so
8 you could read the level of the voltage in the capacitor. And the only time it
9 discharges, it will discharge to the left, not to the right. It discharges back to
10 the -- through the input signal. It will never go to the right because, given a
11 choice between a higher-impedance load on the right and a low, like lower,
12 lower resistance on the left, it will go left. So, it won't be output to create
13 the -- to form the down-converted signal or output to the first and second
14 down-converted signal, which would be occurring on the right.

15 So, if you have an option between going from a high-impedance load
16 which is sitting on the right and the input way to the left, what's going to
17 happen is it's going to discharge to the left. So, it's not going to meet the
18 claim limitation. Even if it discharges at some point, it's going to go to the
19 left, not to the right -- and meaning it's not going to -- that energy that's in
20 the capacitor is not going to be output to the down-converted signal, as
21 required by the claims.

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1 JUDGE GERSTENBLITH: Okay. So --

2 MR. CHARKOW: Does that make sense?

3 JUDGE GERSTENBLITH: It does. So, which part of the claim
4 requires a low-impedance load?

5 MR. CHARKOW: Well, we're saying that the load -- we said that the
6 definition of a matched filtering/correlating module requires -- well, I think
7 the claims talk about outputting to a -- well, outputting a signal.

8 The concept of outputting a first signal by itself, that signal -- yeah, so
9 the matched filtering/correlating module is where there's a capacitor, and
10 then it talks about outputting the signal. That outputting the down-converted
11 signal means that there has to be some sort of discharge. And if you're
12 outputting, there has to be -- you're discharging, which means there has to be
13 some sort of load, and the only load that will actually output is a low-
14 impedance load.

15 JUDGE GERSTENBLITH: But --

16 MR. CHARKOW: And we said that matched filtering/correlating
17 module includes the concept of a load, that you can discharge them.

18 JUDGE GERSTENBLITH: So, I'm just -- I'm looking to Patent Owner's
19 proposed construction, right?

20 MR. CHARKOW: Yeah.

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1 JUDGE GERSTENBLITH: And that concept is not in the definition
2 of the module, right? Am I missing --

3 MR. CHARKOW: It is because --

4 JUDGE GERSTENBLITH: Maybe I'm missing something.

5 MR. CHARKOW: Yeah. I'm sorry, I was trying to get to the
6 definition. Bear with me for a second.

7 Yeah, so our construction is -- I'm sorry, I've got to get to our
8 construction.

9 Okay. Our construction is, right, it says, "transferring to a load to
10 form a down-converted signal." You can't transfer to a high-impedance load
11 to form a down-converted signal. You can't transfer energy. So, that's
12 where the concept of, essentially, transferring to a load -- you can't transfer
13 to a high-impedance load to form a down-converted signal. You can't do it.

14 Because only -- if it's a high-impedance load, it basically blocks it and
15 keeps it in the capacitor. If it's a low-impedance load, it allows the energy to
16 flow -- it allows the energy to flow to it.

17 JUDGE GERSTENBLITH: So, would you --

18 MR. CHARKOW: So that's --

19 JUDGE GERSTENBLITH: Does Patent Owner -- I don't think that
20 you ever say this, but I'm just curious. Do you think that the plain and

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1 ordinary meaning of matched filtering/correlating module is what your full
2 construction is there? Is that -- are you saying that that's the --

3 MR. CHARKOW: Absolutely.

4 JUDGE GERSTENBLITH: Go ahead. Sorry.

5 MR. CHARKOW: Yeah. Absolutely. Yes, absolutely.

6 JUDGE GERSTENBLITH: That that is the plain and ordinary --

7 MR. CHARKOW: And I explained --

8 JUDGE GERSTENBLITH: That is the plain and ordinary meaning?

9 MR. CHARKOW: I don't think it's -- I don't think plain and ordinary
10 meaning is the right word to use. I think that it's that -- it's not that -- again,
11 it doesn't -- matched filtering and correlating module, as even Petitioner
12 acknowledged, that's not a thing. A matched filtering correlator is a thing.
13 A module is not a thing. That's a very specific thing to the patent. You have
14 to look at the patent.

15 And even when the Court said plain -- even when the District Court
16 said plain and ordinary meaning, they added the concept of a switch, you
17 know, that samples at the aliasing rate -- and in addition, they made that
18 statement that I made, which is Exhibit 2035, page 38. They said, listen, it
19 also encompasses all the things that are disclosed and discussed in column
20 130, line 49, to 132, line 17.

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1 So, when the Court -- when the Court said, "plain and ordinary
2 meaning," in addition to, you know, sampling at an aliasing rate, and in
3 addition to all this stuff disclosed in all these columns -- so, you know, you
4 know, the Court even expanded on -- even if you say it's plain and ordinary
5 meaning, which is the matched filtering and correlating module, which I
6 think everybody agrees would at least have a switch and a capacitor -- that's
7 just the plain and ordinary meaning -- there is also other stuff. When you
8 put in the word "module," that makes you have to go to the specification and
9 look at what it actually says what that module is and does.

10 JUDGE GERSTENBLITH: Okay. So, you're saying that you've
11 done a full analysis of where the specification says all of this?

12 MR. CHARKOW: Yes.

13 JUDGE GERSTENBLITH: And that's how you got to this
14 construction?

15 MR. CHARKOW: Yeah. Because, again, yes, because we will
16 -- again, matched filtering correlation gets you so far in terms of plain and
17 ordinary meaning, but then you have to supplement that with the fact that
18 you're dealing with a module which is used in some way that's not how a
19 matched filtering/correlating module is used, as Petitioner said. Even
20 Petitioner said this is not a usual way for a filtering correlator. The module

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1 is different. It's in a down-converter. It samples and has switches, and, you
2 know, it's used in a different way.

3 So, you have to look at the specification. When you look at the
4 specification, our position is that all this -- all this language is appropriate.

5 JUDGE GERSTENBLITH: Okay. Thank --

6 MR. CHARKOW: So, we think that -- hopefully, that answers your
7 question, but we also think that Tayloe is just not prior art. And so, that ends
8 the inquiry on Tayloe.

9 JUDGE GERSTENBLITH: Okay. That does answer my question.

10 I'm going to pause right here. So, I just want to sum-out the times
11 before we take another five-minute break.

12 So, our timer had gone through the 60 minutes and started counting
13 back up to 35 minutes with some change. So, that's 95 minutes, Mr.
14 Charkow, that you just used out of the 120 for the entire thing, including the
15 936 case. So, I just want you to know where you stand there, which gives
16 you 25 more minutes left.

17 MR. CHARKOW: Yeah. I appreciate that. I think we did a lot of
18 the heavy lifting on the conception/reduction to practice. I think that's pretty
19 much done for the next case.

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1 JUDGE GERSTENBLITH: Okay. And I think where we left it for
2 Petitioner, Petitioner had used 56 minutes of its total time. So, Petitioner has
3 64 minutes left, and Patent Owner has 25 minutes left.

4 So, we'll take a five-minute break. It's 12:51. We'll be back at 12:56.
5 Thank you.

6 (Whereupon, the above-entitled matter went off the record at 12:51
7 p.m. and resumed at 12:56 p.m.)

8 JUDGE GERSTENBLITH: Hi. This is Judge Gerstenblith.

9 I just want to make sure, is Mr. Grisham still on for Petitioner?
10 Griswold? I apologize.

11 MR. GRISWOLD: You're the right age to have seen the Vacation
12 movies.

13 MR. GRISWOLD: And you'll be laughing at me when we're offline.

14 JUDGE GERSTENBLITH: I apologize.

15 MR. GRISWOLD: You should totally remember my name.

16 JUDGE GERSTENBLITH: I apologize. I apologize.

17 And I do see Mr. Charkow now.

18 When we were taking that break, I realized that we are three hours in
19 and more than halfway through the argument time. So, I actually think that,
20 unless either side objects to this, that we should take our hour lunch break
21 now, and then, come back and resume and move through the rest of the case,

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1 and we can see if there's a need for a break during that time or not. Is there
2 any objection to that?

3 MR. GRISWOLD: I'm quite hungry. I would -- I'd take a break.

4 JUDGE GERSTENBLITH: Mr. Charkow, is that okay with Patent
5 Owner's side?

6 MR. CHARKOW: Yeah, that's fine with me. I'm sure the court
7 reporter would love a break.

8 JUDGE GERSTENBLITH: Okay. So, let's do that. So, it's 12:57.
9 So, let's all come back at 1:57 with the intention of restarting at 2:00.

10 Okay. I would suggest, like before, just stay connected, but you can
11 stop sharing and go on mute and everything, and all that, but please stay
12 connected to the Webex line.

13 MR. CHARKOW: Good. Yes, Your Honors.

14 JUDGE GERSTENBLITH: Okay. Thank you. So, we're adjourned
15 until two o'clock.

16 (Whereupon, the above-entitled matter went off the record at 12:57
17 p.m. and resumed at 2:00 p.m.)

18 JUDGE GERSTENBLITH: Okay. Hi, everybody. This is Judge
19 Gerstenblith. Let me go back through the roll call and make sure we have
20 Mr. Griswold for Petitioner on.

21 MR. GRISWOLD: Yes, Your Honors, I'm here.

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1 JUDGE GERSTENBLITH: Okay, great.

2 And I see, Mr. Charkow, your team is on. Excellent.

3 MR. CHARKOW: I can hear you, as long as you can hear me.

4 JUDGE GERSTENBLITH: I can. So, where we left off, we were
5 going to continue with Petitioner's rebuttal time.

6 And, Petitioner, you have 64 minutes remaining. And I think we
7 discussed, Patent Owner, you have 25 minutes remaining.

8 And, Mr. Griswold, whenever you're ready, you can proceed.

9 MR. GRISWOLD: Your Honors, before we go back on the record,
10 so my plan is to do rebuttal on the "swear behind" and the discussion of the
11 '177 that we just heard, and then, I'm going to stop and wait for questions,
12 and then, I'm going to go into our case-in-chief on the '528. Does that make
13 sense or should I do it differently?

14 JUDGE GERSTENBLITH: So, what I would suggest is you do your
15 rebuttal on the '177, like you said, and taking any questions, and then we're
16 going to stop and let Patent Owner go for its rebuttal on that same case. And
17 then, if there's anything else that you want to add to the antedating
18 discussion, you can do that, and then, turn to the next case.

19 MR. GRISWOLD: Yes, Your Honors, that makes sense.

20 JUDGE GERSTENBLITH: Okay. Mr. Charkow, did you have any
21 questions about that sequence before we start back up?

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1 MR. CHARKOW: No. Just to be clear, if I don't say anything or I
2 do say anything -- well, if I do say something on my last talk about
3 conception/reduction to practice, he can address that, but that's it?

4 JUDGE GERSTENBLITH: Correct.

5 MR. CHARKOW: So, if I don't say anything about
6 conception/reduction to practice, he has nothing to say?

7 JUDGE GERSTENBLITH: For that, for the last argument on the
8 935 case, yes.

9 MR. CHARKOW: Oh, that's great. I've got it. I have no questions.

10 JUDGE GERSTENBLITH: Okay.

11 MR. CHARKOW: No further question.

12 JUDGE GERSTENBLITH: Okay. And, Mr. Griswold, that didn't
13 change anything that you understood before, right?

14 MR. GRISWOLD: No, Your Honors, I understand.

15 JUDGE GERSTENBLITH: Okay. Okay, perfect. So, whenever
16 you're ready, you can proceed.

17 MR. GRISWOLD: Okay. Thank you, Your Honors. May it please
18 the Board.

19 So, I want to make a handful of points about the matched filtering and
20 correlating module. First of all, it's not in the specification. The patent

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1 doesn't define it. I think a POSITA is going to have to look at that term and
2 decide what he or she thinks it means to themselves or for themselves.

3 Mr. Charkow referred to the claim of the '177 patent and presented
4 what I think is a new argument, where he looked at the down-conversion
5 step and the receiving step and pointed out the down-conversion step leads
6 into the receiving step, and then, the outputting is part of the receiving step,
7 and therefore, is part of something the matched filtering correlator does. I
8 think that's a new argument. It's the first time we've heard that.

9 In light of that argument, though, I would note that outputting isn't
10 done by a load. A load is why the outputting happens. And so, it's neither
11 here nor there, right? The matched filtering correlator outputs because there
12 is something downstream that receives the load.

13 Patent Owner's Slide 80, I think I heard Mr. Charkow say that that
14 was our own animation, our own drawing, our own markups. I'd point out
15 that the green on that Slide 80 isn't ours; that was theirs.

16 The Petitioner -- or excuse me -- Patent Owner's Slides 80 through 84,
17 where Patent Owner points to our having identified a load in the circuit
18 when we were identifying matched filter correlator, that's because the
19 petition responds to all the constructions that were afloat at the time, and at
20 that point in time there was Middle District of Florida construction which
21 required a load.

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1 And so, we said, if you're going to map a matched filter correlator to
2 the Middle District of Florida construction, here is the load that's necessary
3 for that construction. Our position is not that a matched filter correlator
4 cannot include a load. It's that a matched filter correlator -- or excuse me
5 -- a matched filter correlator module cannot include load; it's that it's not
6 required of the construction.

7 I think, Judge Gerstenblith, you had asked about the *Qualcomm* case
8 and what went down there. The Court had adopted that construction, the
9 Middle District of Florida construction.

10 But, Your Honors, I've lost the view of the Court. Okay, you're back.
11 You can still hear me?

12 JUDGE GERSTENBLITH: Yes, yes.

13 JUDGE ZECHER: Yeah, we can still hear you.

14 MR. GRISWOLD: Okay. With the *Qualcomm* case, the Court had
15 adopted the Middle District of Florida construction and Qualcomm moved
16 for summary judgment of non-liability. And they said that the claim was not
17 infringed.

18 I've lost the video of the Court again .

19 JUDGE ZECHER: We can still hear you.

20 MR. GRISWOLD: Okay.

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1 JUDGE ZECHER: I think we're having some video issues, but your
2 audio is coming through clear.

3 MR. GRISWOLD: Okay, good. Qualcomm had moved for summary
4 judgment of non-liability that included non-infringement and invalidity
5 based on indefiniteness. And the indefiniteness was due to the construction,
6 the reference to non-negligible energy transfer, I believe, and there was a
7 question about substantially linear circuitry.

8 The Court gave a directed order, basically, yes, there is no liability
9 and they didn't articulate the basis for the no-liability and the -- I think,
10 thereafter, the '177 was settled. And so, it didn't reach a final decision, and I
11 don't think that that construction of the Middle District of Florida is binding
12 on our provision. And Mr. Charkow can correct me if I'm wrong. I think he
13 may be closer to the issue than we are. This is what I took from reading the
14 briefing.

15 JUDGE ZECHER: Mr. Griswold, this is Judge Zecher.

16 MR. GRISWOLD: Yes.

17 JUDGE ZECHER: I think I just want to revisit a point you made first
18 in your rebuttal presentation here.

19 MR. GRISWOLD: Yes?

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1 JUDGE ZECHER: Were you saying that the term "matched
2 filtering/correlating module" does not appear in the specification outside the
3 claims? Is that what you -- I heard you say?

4 MR. GRISWOLD: That's correct. Their discussion of matched
5 filtering and correlating, I don't think that there is the term "matched
6 filtering/correlating module."

7 JUDGE ZECHER: So, I guess I understand you to argue that, really,
8 the specification hasn't ascribed any special meaning?

9 MR. GRISWOLD: That is correct, Your Honor.

10 JUDGE ZECHER: Okay. Thank you.

11 MR. GRISWOLD: And I would also point out that Patent Owner in
12 its briefing has called its construction the plain meaning. So, I think the
13 parties are in agreement that the plain meaning should apply. And really
14 maybe the dispute is, what is the plain meaning? And their plain meaning
15 shoehorns in limitations that are just not in the plain meaning of those
16 words. I think in the olden days, when we worked under BRI, there would
17 be less of a question.

18 With respect to Sedra and its relevance to the circuit of Tayloe, I'd
19 point out that, you know, Mr. Charkow says that it's totally different and it
20 doesn't apply. The only expert testimony in the record is Dr. Galton's.

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1 Ricketts didn't apply, didn't talk about Sedra. And so, he hasn't explained
2 why he thinks Sedra doesn't apply. Galton's is the only testimony on that.

3 In Slide 104, Patent Owner's Slide 104, he, Mr. Charkow, basically,
4 said that Dr. Galton agreed with them that the one sentence of the patent
5 talks in terms of conventional current. The response, as you see on their
6 slide, says we have to look at specific cases. That's not an agreement. That's
7 -- yeah, I don't know; I have to look. So, I think that that is a
8 misrepresentation of Dr. Galton's testimony.

9 I think there were some questions about when and how it happens.
10 And this kind of goes back to the point about the claim and the step of
11 outputting. I think there's no dispute that Tayloe down-converts to
12 baseband. You can see in Tayloe's Figure 3, it has the FO on the lefthand
13 side and baseband on the righthand side.

14 So, there is a down-conversion, and the down-convert signal is
15 passing Tayloe's -- so, somehow this signal was getting out, and I can tell
16 you that the claims in the '177 patent don't say that the down-converted
17 signal is energy. They don't say the down-converted signal is a current.
18 They don't say the down-converted signal is a voltage. So, it could be any of
19 those.

20 And the supposed plain meaning construction that Patent Owner is
21 advancing is trying to shoehorn energy into the construction, and that's the

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1 whole issue with the requirement of load in the matched filtering/correlating
2 module.

3 But, nonetheless, I think it's clear that Tayloe reads the down-
4 converted signal out of the capacitor. And I posit that there are two ways it
5 reads, right? One is the low-impedance load around the feedback loop, and
6 the other is the high-impedance path through the op amp. And you can
7 imagine the capacitor that's connected to the high-impedance load is
8 presenting a voltage. That voltage is the same all the way to the terminal op
9 amp. The op amp amplifies that voltage to the output terminal of the op
10 amp, right? So, you still have outputting a signal.

11 On the construction of the matched filtering/correlating module, I
12 think everybody agrees that match filtering and correlating are known
13 concepts. And I think everybody agrees that the embodiments in the
14 specification are all covered. We're not trying to exclude embodiments with
15 at least the Petitioner's construction.

16 So, I mean, if you're looking for a plain meaning, the plain meaning is
17 a thing that does matched filtering and correlating, because POSITAs know
18 what that is. And the module is, it's the thing, right? So, it's an embodiment
19 of something that does not matched filtering and correlating. Many
20 examples of that are provided throughout the specification.

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1 I think that's why the Western District of Texas Special Master
2 explained his construction in that way. It doesn't have to be the matched
3 filter that was shown in Dr. Galton's textbook or the correlator that was
4 shown in Dr. Galton's textbook, although those are mathematical
5 representations of the systems.

6 It can be things that perform matched filtering and correlating, or an
7 approximation thereof. Because the patent I think clearly contemplates that
8 there are things that get pretty close to it that may not be a traditional
9 implementation of a matched filter correlator.

10 That's all that I have in rebuttal to the technology issues. Do you guys
11 have questions?

12 I have plenty to go on the "swear behind."

13 JUDGE GERSTENBLITH: Okay. I think we're good. Thank you.

14 MR. GRISWOLD: Okay. I'm trying not to eat into my '528 time.
15 So, let me take this really quickly.

16 I think that, well, a lot of Sorrells' depo testimony that we saw today, I
17 don't think that's -- well, I'm sure that's not cited in the Sur-reply, and I didn't
18 find a lot of it cited in the Motion to Exclude briefing. Even if it was cited in
19 the Motion to Exclude briefing, I think we need to be careful about how it
20 was used in this proceeding and ensure that it's not used in a way that's
21 inconsistent with how it was previously advanced.

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1 And I would invite Mr. Charkow to explain where all that stuff that he
2 shows is cited in the record. And to the extent he can't show that, I object to
3 that as all new argument.

4 I think he harangued me for having a 30-minute depo of Mr. Sorrells
5 and wanted me to ask him all of these questions about things that they
6 should have proved and things that they should have put into their
7 declaration and didn't. And there's no need for us to do that. We don't have
8 to prove the case. We were looking for problems with even the scant
9 information that Sorrells provided. And so, we can't be faulted for that.

10 Sorrells, he testified that the docs are what they are and to the contents
11 of these docs. That's the only person who testifies to the content of those
12 docs. And he's the only person who testified whose documents they are, and
13 I don't think he ever says that one way or another, that they aren't his.

14 Sorrells is the only testimony that ParkerVision can rely on to show
15 that these are business records. Sorrells is the only testimony that explains
16 how the documents were kept, and it's there's just not much evidence,
17 outside of testimony, that we can look to, not much evidence that is -- that
18 isn't -- that is corroborated.

19 I think we also heard some blurring of the lines between the Eddie
20 chip and the circuit board. I think I understand the Eddie chip to be the

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1 GDSII layout, and then, there's a circuit board that goes along with it. And
2 that introduces all sorts of other issues, right?

3 They've given us -- the filenames in Sorrells' deck show us that there
4 are multiple filenames that correspond to the GDSII layout, and we don't
5 know which one was tested by Boeing, if any of them. And the only
6 testimony as to the one that we were given as being the Eddie chip is
7 Sorrells'.

8 And it was -- I don't even know if I need to go into this. There is
9 some complaint that Dr. Galton didn't analyze the circuits, and we had a
10 separate expert for it. That's because Dr. Galton was friends with Razavi,
11 and Razavi was the expert in the *Qualcomm* case. And based on his
12 conversations with Razavi, Dr. Galton didn't want to be exposed to
13 ParkerVision's confidential information. He just didn't want any part of that.

14 I have two more points.

15 Patent Owner's Slide 52, they point to Galton's testimony on Razavi
16 and Dickens' testimony on Patent Owner's circuit diagram and say, oh,
17 they're being inconsistent. Your Honors, those are two very different
18 circuits. There's no testimony in the record about how they're similar.
19 Ricketts didn't compare Razavi to the circuit that Mr. Sorrells provided.
20 And we don't even know if they operated in the way that Patent Owner is
21 asserting.

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1 And also, with Slide 53, again, Mr. Charkow tries to say, oh, you
2 know, TI's experts are being inconsistent because Razavi has a first and
3 second signal and Eddie has a first and second signal; it's the same thing.

4 But I invite you to go back and look at those figures. Razavi's first
5 and second signal are the VO-positive and the VO-negative. Those are
6 separate signals coming into that drawing.

7 And if you look at Slide 57, the signal going into the Eddie is [REDACTED]
8 [REDACTED] So, it's, again, [REDACTED] and
9 there's some expert testimony on the similarities of those circuits.

10 Actually, one last bit. I think it was with respect to Slide 28, Mr.
11 Charkow was asked if there's anything special to a matching network
12 operating at 915 megahertz. You've got to turn the argument back to that.
13 There's nothing in the record that they can point to that explains why a
14 matching network at 915 megahertz is special in any way. And I can tell
15 you, I'd be surprised if -- well, I'm not going to go that way.

16 So, I've got some points I want to make, also, on the "swear behind."
17 And I think that, if we'll go to Slide 23 of my slide deck?

18 So, there are kind of four main categories of things that we think are
19 fatal to Patent Owner's "swear behind." And that is that all testimony about
20 the prior conception/reduction to practice is in their -- Sorrells'. All the docs

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1 are offered, authenticated, and explained by Mr. Sorrells, and Mr. Sorrells is
2 the only person who's provided testimony that the docs are what they are.

3 Ricketts relies solely on point facts. He's not able to provide any other
4 facts. He's certainly providing his opinions, his expert analysis of those
5 documents, but he's relying entirely on information that Sorrells has given
6 him.

7 Even if the documents, like the Boeing test result, are for third-party
8 documents, Sorrells is the one that says what those third-party documents
9 are and their relevance to the case, and that they're authentic, and that they
10 should qualify as business records, and the like. We don't have any
11 testimony from another person.

12 The Boeing report, which is kind of critical to the "swear behind"
13 case, because it's the thing that shows that the invention worked, the only
14 way it's linked to the docs that Mr. Sorrells gave us is Mr. Sorrells' testimony
15 and a handful of really not-that-convincing similarities. So, I'll go into those
16 in a second.

17 And then, I think that the most damning thing to the Patent Owner's
18 truth case is they admitted that the schematics they provided, the circuit
19 diagram that they provided doesn't work.

20 They harangued, or maybe they admitted that the circuit diagram that
21 they provided is not what Boeing tested. They harangued our expert, Dr.

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1 Dickens, because he analyzed the circuit as it was displayed on that circuit
2 diagram. He used the circuit values and determined that it didn't work.

3 And then, you heard Mr. Charkow talk about how, well, the circuit
4 was not loaded, and that just means that we didn't use some of the circuit
5 components that were on there. Well, what was used, and certainly, the
6 thing that they provided to us doesn't work -- so, how do -- you know, we're
7 not supposed to -- we don't have to go back and figure out what was used.

8 Their proof case is to show that the stuff that they gave us meets the
9 limitations of the claims. And I would point out that that circuit diagram, it's
10 necessary for them to show what meets the limitations of the claims, and
11 they have -- they basically gave us the circuit that isn't exactly what was
12 tested and said, "Well, trust us. This is the circuit that was tested."

13 I'd also go into the case law really for a second. So, Patent Owner
14 cites this *Medichem v. Rolabo* case. And we had also cited it as well,
15 because we both think it's relevant. It's the 437 F.3d 1157 case.

16 And we cited it for the proposition that you still have to corroborate
17 even under the Rule of Reason Standard. And the Patent Owner cited it
18 because they've got this quote that says: the law does not impose an
19 impossible standard of independence on corroborative evidence, requiring
20 that every point of a reduction to practice be corroborated -- which is
21 absolutely true.

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1 I think, though, if you were to dig down on that case law, you'd find
2 that, still, corroboration is important, and the little points that you didn't need
3 corroboration on is -- you know, when you see a document signed by an
4 inventor, it would be, well, he can say, "Yeah, I did sign that." You know,
5 it's not consequential things like we have here.

6 And, in fact, the case, what happened in that case is the inventors
7 offered a request for some testing analysis and the testing analysis itself.
8 And that request for the testing analysis came from the inventor and went to
9 another inventor. And the results came back through that other inventor.
10 And so, the only testimony about those test results was the inventors.

11 And then, he offered a lab notebook from another employee who was
12 not an inventor, and that other employee didn't testify to the authenticity of
13 the lab notebook or anything about the lab notebook. The only person who
14 testified about the lab notebook was the inventor.

15 And I'm reading a quote from the case. It says, "Where a laboratory
16 notebook authored by a non-inventor is offered into evidence, pursuant to
17 authentication by an inventor, where the author of the notebook has not
18 testified at trial, or otherwise attested to its authenticity, and where the
19 notebook has not been signed or witnessed or maintained in a reasonable
20 accordance with good laboratory practices, the corroboratory value of the
21 notebook is minimal."

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1 And so, the GDSII layout and the circuit diagram I think are now -- it
2 gets to the first category. These are documents that were offered by Sorrells,
3 and the only evidence that we have that they came from Sorrells, or that they
4 came from ParkerVision, and it wasn't Sorrells' document; it's Sorrells'
5 testimony. It doesn't say -- it's not signed by anybody. It's not attributed to
6 anybody. It's not metadata that someone else made this document. We don't
7 know where it came from.

8 At best, the Boeing test report is in the second category. You know,
9 clearly, I would admit that Boeing was involved in that test. I don't think
10 that the Patent Owner is going to falsify a Boeing test result. But we don't
11 have any testimony from somebody related to Boeing, for example, that can
12 say what they tested; that it was -- that the Eddie circuit, which is just a very
13 generic name, was the thing that was tested. Which particular board was
14 tested? You know, they provided us two circuit boards.

15 And as I said, there are multiple files that they've pointed to for the
16 GDSII chip layout that all have very similar filenames. Remember Mr.
17 Charkow talking about the filenames and all that how they were essentially
18 the same thing because the file notation was the same?

19 We don't have any of those. We have one file with a filename, and we
20 know that there's multiples out there. We don't know what exactly Boeing
21 tested. And none of the files are labeled as "Eddie." We're reliant entirely

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1 on Mr. Sorrells to tell us that they're the Eddie chip, and tell us which circuit
2 board it was, it was attached to when it was tested. So, there's a lot of stuff
3 out there, a lot of information that we're reliant only on Mr. Sorrells to
4 provide us.

5 And Mr. Charkow went through a handful of similarities that he says
6 corroborate the testimony of Mr. Sorrells. And, you know, the things are
7 like, well, Eddie was 95 percent of Sorrells' focus. Well, what about the
8 other 5 percent?

9 ParkerVision's work was focused -- you can tell by the press releases
10 the Boeing report was focused on the Eddie. Well, we don't have any
11 testimony that that spattering of press releases was the entirety of
12 ParkerVision's press releases on all of their products at the time. I mean, it's
13 merely incidental that ParkerVision put a lot of effort into whatever they
14 were developing, but we don't know that those circuits are the one that they
15 were developing or those circuits, or that chip is the one that they were
16 developing, or that it was even the one that made it to Boeing to be tested.
17 There's just a big gap there.

18 Mr. Charkow points to 915 megahertz. You guys all know that 915 is
19 the unregulated ISM band. My garage door opener operates on 915. All my
20 home automation stuff operates on 915. Your car key FOB works on 915.
21 Car or home alarms work on 915. That's a super, super common frequency.

[REDACTED]

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1 I bet, if you'd just drop into Google, you'd find a bunch of things that operate
2 in that frequency band.

3 Other things, like the pins on the GDSII layout, correlating to the pins
4 on the circuit board, the pin identification is provided solely by Sorrells. So,
5 we can't match up the pins on the chip to the pins on the board without
6 having to rely on Sorrells.

7 So, just those coincidences are just not consequential. I don't want
8 this point to get away.

9 Again, the whole issue of not loaded, they have admitted in their Sur-
10 reply, pages 15 and 16, that the diagram that they showed us is not the
11 diagram -- with all the values on it, and they said Mr. -- or Dr. Dickens
12 assumed what the circuit looked like. No, he read the circuit values off of
13 the -- off of the diagram.

14 And they say, well, he doesn't give any testimony on how he
15 calculated the values of the impedance at [REDACTED]. But I'd say that that
16 is false. Dr. Dickens has, like, three paragraphs in his declaration that follow
17 that explain how the circuit works. Those are TI 1067, paragraphs 14
18 through 16.

19 He analyzed what was downstream of the circuit board that he said
20 doesn't work. And he explains how the [REDACTED]
21 [REDACTED]. So, the

[REDACTED]

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1 [REDACTED]
2 [REDACTED], and which way is the electricity going to go, right? It's
3 going throughout.

4 So, Your Honors, that's all I have to say about the "swear behind." Do
5 you have any questions?

6 JUDGE AHMED: Mr. Griswold, on the authentication aspect, Patent
7 Owner argues that Mr. Sorrells is authenticating the documents as a
8 corporate representative, not as an inventor. He had firsthand knowledge
9 about these documents, where they're stored; how they're moved to
10 relativity, and he's testified about all of that.

11 Why shouldn't he be allowed to do that in that role as a corporate
12 representative?

13 MR. GRISWOLD: I think, if you read the cases on corroboration by
14 inventors, you'll not find an exception for an inventor acting as the corporate
15 representative. The question is whether the inventor's recollection of the
16 occurrences can be objective because they have a stake in the patent. And
17 that's where this case law comes out that the inventor's testimony needs to be
18 corroborated.

19 And the case, the *Medichem v. Rolabo*, I mean, this inventor worked
20 with the other inventor on the lab notebook, the third -- excuse me. The
21 inventor in that case worked with the non-inventor party whose lab notebook

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1 it was, and there's testimony that he actually reviewed it and dealt with it.
2 And so, he had personal knowledge of this other inventor's lab notebook,
3 and they found that that was not sufficient. He needed to have testimony
4 from the -- somebody other than himself, other than the inventor; perhaps
5 the author of the lab notebook is what the quote suggests.

6 JUDGE AHMED: Okay. Thank you.

7 JUDGE GERSTENBLITH: Counsel, what's your take -- I just want
8 to make sure that you don't have a different opinion. So, on your Slide 35,
9 3-5. I believe that Mr. Charkow said that Dr. Ricketts was about to
10 determine that there's a 50 percent duty cycle from the purple, boxed-in
11 schematic, just by looking at it, without having to actually run any testing.
12 Is that your understanding also?

13 MR. GRISWOLD: So, that's what he testified. I'd point out that the
14 testimony there is conclusory and, regardless, I think it's neither here nor
15 there, right?

16 The content of that circuit diagram is testified to by Sorrells, right?
17 We got it from inventor Sorrells. So, if -- we don't know the authenticity of
18 it. We don't know that that is the Eddie chip. We don't know whether that is
19 the specific Eddie chip that was tested. You know, there's a lot of holes in
20 that story.

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1 JUDGE GERSTENBLITH: Okay. And then, can you just tell me,
2 what is the significance of the circuit board aspect of this? Because you
3 mentioned that there were two different circuit boards, and I saw this
4 concept come up in your slides. I don't remember this being a focus of the
5 briefing, but I may have missed it. What's the impact of -- what should we
6 take away from that point?

7 MR. GRISWOLD: So, the portion -- the mixer portion of the Eddie
8 chip and its circuit board is within the integrated circuit and the amplifier,
9 and as Mr. Charkow pointed out, the capacitors that do the -- that have to be
10 part of the matched filter correlator module, are off-chip, and they exist on
11 the board. So, the Eddie chip is a misnomer, or they want us to ignore the
12 circuit board that it was tested on. And I think really more perhaps it's a
13 misnomer.

14 The chip, I mean, based on my understanding from Dr. Dickens, all it
15 does is switch, is the series of switches that you see on my Slide 31.

16 And Slide 31 has the capacitors. It shows the important part of the
17 figure, of the circuit diagram that have the capacitors. The chip in the image
18 on my Slide 32, which is 2011, is the underlying exhibit. [REDACTED]
19 [REDACTED], are connected to the chip.

20 JUDGE GERSTENBLITH: Okay, okay. I'm just thinking if there's
21 anything else. Okay. Thank you.

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1 MR. GRISWOLD: That's all I have for now, Your Honors.

2 JUDGE GERSTENBLITH: Okay, great. So, we're going to stop
3 your clock right there, and we are going to -- you have 32 minutes and
4 change remaining.

5 And we're going to come back over to Mr. Charkow to pick up
6 whatever he wants that's left of the 935 case.

7 And, Mr. Charkow, you have 25 minutes, and when you're ready, just
8 come off of mute, and then, you can proceed.

9 MR. CHARKOW: All right. Can you hear me?

10 JUDGE GERSTENBLITH: We can. Thank you.

11 MR. CHARKOW: All right. Just real quickly, with regards to Sedra,
12 that was raised for the first time in Reply. They said Ricketts didn't discuss
13 it; he had no opportunity to discuss it; it shouldn't even be considered.

14 With regard to the Slide 80, they accused us of, like, adding an
15 annotation that's not there. All we did in the Reply on page 27, we took
16 Slide 80 right from there. We just highlighted output of the accumulated
17 signal. That's all their language, other than the highlights, which changed it
18 to green. So, it didn't do anything other than highlight.

19 The module used in the claim, you'd still have to interpret that, what
20 that means in the context of the specification. And that's what we were
21 arguing.

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1 The Sorrells' deposition testimony --

2 JUDGE ZECHER: Mr. Charkow, this is Judge Zecher. Can I circle
3 back on that last point? I think we're talking to Mr. Griswold about it.

4 And this whole notion of -- I just want to make sure I have the
5 language exactly right. "Matched filtering and correlation module," does
6 that term appear in the specification outside the claims? And if so, can you
7 point us to exactly where it's kind of ascribed some sort of unique definition
8 or unique meaning?

9 MR. CHARKOW: There's no lexicography for it. It's not discussed
10 specifically. But, again, you have to do the specification in view of the
11 claim -- the claims in view of the specification. And there's plenty
12 discussion of what such a module would be.

13 JUDGE ZECHER: So, are we supposed to be looking at the matched
14 filtering and correlation process that is described in the specification? Or
15 what, what exactly should we be looking at?

16 MR. CHARKOW: The process and embodiments, the ones that I
17 showed you in our brief.

18 JUDGE ZECHER: But the term "module" has no kind of important
19 meaning in this context? Is that correct?

20 MR. CHARKOW: The term "module" has -- the term "module" has
21 a meaning in the context of the claims, and it doesn't -- I wouldn't say it has

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1 no important meaning, but it has -- it has some meaning, and the claims have
2 to be read in light of the specification. So, I guess the whole meaning --

3 JUDGE ZECHER: Let me rephrase. What does the term "module"
4 add to "matched filtering and correlating"?

5 MR. CHARKOW: It adds what's in the specification that discusses
6 how a matched filtering correlator is used specifically for down-conversion,
7 which, as the opposing counsel stated, it's unusual. That's not how they're
8 usually used.

9 JUDGE ZECHER: So, is it the term "module" that kind of brings in
10 this whole notion of having the load to output?

11 MR. CHARKOW: It's the module -- yeah, the module brings in other
12 concepts, because match filtering/correlating has certain connotations.
13 When you say it's in the context of the module that used for down-
14 conversion, that changes the meaning of what matched filtering and
15 correlating is, because that's not how it tends to be used.

16 JUDGE ZECHER: So, we need to look at kind of the specification
17 and how matched filtering and correlating is used as a process, and then,
18 separately, how the module kind of adds onto that. Is that what you're
19 saying?

20 MR. CHARKOW: Correct.

21 JUDGE ZECHER: Okay.

[REDACTED]

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1 MR. CHARKOW: Sorrells' testimony that I cited at the beginning,
2 his deposition testimony is just for the Motion to Exclude, nothing else.

3 Sorrells is a corporate representative, and under every rule of evidence
4 I'm aware of, he can testify, inventor or no inventor.

5 It's a business record and it's not his own documents. There's no
6 evidence that it's his own documents. His name's not on any documents.
7 They didn't elicit any testimony of his own documents. And he specifically
8 said those are corporate records, the ParkerVision business records.

9 There is no indication, while they try to create some confusion, there's
10 no indication that there was any other Eddie chip or any other schematic
11 certainly that was tested by Boeing.

12 They haven't elicited any testimony. Mr. Sorrells has his testimony.
13 We showed the corroboration and everything.

14 [REDACTED] is merely for corroboration. Opposing counsel's
15 position on [REDACTED] about where else it could be used is only
16 arguments. Never heard those arguments before.

17 In terms of the pins, he said, well, if you look at the pins, you can't
18 look at -- the only thing we have to look at this figure, that the pins match up
19 with what's on the board, is Mr. Sorrells' testimony. Your Honors can look
20 at it yourself. And Ricketts talks about it. You could use your own eyes and
21 see it. You don't need his testimony to see what's there.

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1 And we didn't -- we didn't say that the Eddie chip that was in the
2 schematic -- so, the Eddie chip was put on the board. That's an Eddie
3 device. That's the thing that was tested by Boeing, just to be clear. We
4 didn't say that that's the schematics or that's what's used by Boeing. We just
5 said what Dr. Dickens did was an improper analysis, not to mention that his
6 analysis was not -- the level of his analysis was not contained in the Reply
7 itself, and therefore, should not be considered.

8 And let's see. Oh, and on the 50 percent duty cycle, the 50 percent
9 duty cycle, I feel like we're talking a lot about it. But the reality is we don't
10 need 50 percent duty cycle or Sorrells' testimony. That was additional
11 testimony that Ricketts was using to support that they were sampling under
12 claim construction that we were using.

13 Dr. Ricketts has his own view of why they're sampling without Mr.
14 Sorrells' testimony. So, regardless of whether the Board finds that the 50
15 percent duty cycle is corroborated or not corroborated -- we think it's
16 corroborated -- it doesn't make a difference, because there's no requirement
17 of 50 percent duty cycle. The claim language as construed only requires
18 sampling, and Dr. Ricketts independently identified that the 50 percent
19 discussion with Sorrells was just an additional thing.

20 And I'll reserve the rest of my time.

21 JUDGE GERSTENBLITH: Okay. Thank you very much.

[REDACTED]

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1 We're going to go back to Mr. Griswold, if you have anything that you want
2 to say on the antedating issue, as we close out 935.

3 MR. GRISWOLD: I would just point out that, our Slide 29, there are
4 multiple filenames that are some variation of [REDACTED]
5 [REDACTED] these are all represented to be the Eddie chip, but there's multiple of
6 them. And that just goes to show you that there was more than one version
7 of the Eddie chip abound, and we're relying entirely on Sorrells again that
8 the chip is the Eddie chip, but also, that the one that's shown is the one Eddie
9 chip that made it to Boeing. And we don't, of course, know that.

10 That's all I have, Your Honors.

11 JUDGE GERSTENBLITH: Okay. Thank you very much.

12 So, right now, we have Petitioner with just over 31 minutes; Patent
13 Owner with just over 19 minutes.

14 We're going to take a five-minute break, which will be our last break,
15 unless something unexpected happens.

16 And we will go to Petitioner to start its case-in-chief about the 936
17 case, and then proceed through the same sequence of arguments, with
18 Petitioner starting, Patent Owner, Petitioner, Patent Owner, Petitioner. And
19 particularly, if there's anything, you know, unique to this case, please try to
20 note that for us and for the record.

21 So, with that, it's 2:42. We will resume at 2:47. Thank you.

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1 (Whereupon, the above-entitled matter went off the record at 2:42
2 p.m. and resumed at 2:47 p.m.)

3 JUDGE GERSTENBLITH: Okay. Thanks, everybody.

4 So, we're going to go back to Mr. Griswold. You're going to pick up
5 with the 936 case. You have just over 31 minutes, and you can start
6 whenever you're ready.

7 MR. GRISWOLD: Okay. Thank you, Your Honors. May it please
8 the Board.

9 Before we go on, I want to make just one quick point about the "swear
10 behind" as it relates to the '528, because I don't think that I'm going to
11 address it further.

12 The '528 "swear behind" doesn't reach all the claims. So, bear that in
13 mind when you, when you dig into it.

14 Let me jump to my Slide 39. So, Petitioner's Slide 39. I'm going to
15 discuss claim construction.

16 And the only construction that's in dispute between the parties, there
17 are some constructions that I think everybody's in agreement with those
18 other constructions.

19 The only construction that's in dispute is the energy storage element.
20 And the difference between our constructions is the storage element was
21 previously construed and affirmed by the Federal Circuit. And

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1 ParkerVision, Patent Owner, speaks to additional aspects to the phrase
2 "energy storage element"; specifically, that it is an element of an energy
3 transfer system.

4 And the concern with that, or the reason for that, Your Honors, is they
5 want to be able to argue the energy transfer concept that we discussed with
6 respect to the matched filter correlating module that relates to the low-
7 impedance load.

8 But I'd point out that the claims, particularly, use the word "energy
9 storage element" and "storage element" interchangeably. I give some
10 examples on Slide 44 at claim 18, which depends from claim 1, that refers to
11 "storage elements," not "energy storage elements." We do the same thing in
12 claim 9 and, additionally, claim 8 uses both terms interchangeably in the
13 same claim.

14 I don't think that the term "energy storage element" appears in any
15 meaningful way in a patent. It appears once in connection with a discussion
16 of an energy transfer system, but so does the term "storage element," and it
17 appears multiple times in connection with an energy transfer system. So, the
18 spec even uses them interchangeably.

19 So, Your Honors, I think the word "energy" doesn't add anything to
20 the claim. And if Patent Owner puts forward an argument that, well, if you

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1 read the word "energy" out -- I think I actually don't even really get their
2 argument.

3 They're arguing that energy is redundant because of the -- or if you
4 read the word "energy" out, it becomes redundant because of the reference to
5 non-negligible amounts of energy. But the same logic applies to the word
6 "storage" because the claim also refers to storage.

7 I think you should ask Mr. Charkow to explain that construction, or at
8 least that argument, if you think it has any merit. Again, I think it's pretty
9 clear the patent uses the words interchangeably.

10 I'm going to go to the Tayloe ground first. And all the disputes here
11 are going to the independent claim. But, other than that, there's no real
12 dispute about the dependent claims. And there's no dispute over the
13 combination of Cahn, which is in Ground 1B and 2B. So, really, we're
14 going to talk about whether it makes sense -- it does make sense -- to
15 combine Tayloe with the TI Datasheet MUX and Macnally.

16 And so, let me just jump back to Slide 7 that describes Tayloe because
17 it's a good launching point for the Tayloe discussion. That's just the front
18 page of Tayloe.

19 So, Tayloe describes what it calls a "direct conversion receiver." And
20 a direct conversion receiver has a product detector. And this is Figure 3 of
21 Tayloe on this Slide 7.

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1 And Figure 3 shows the direct conversion receiver. It's, basically,
2 everything you see on that diagram -- the resistor, the bias network, the
3 commutating switch, the capacitors, the summing amplifiers, the phase
4 delay, and summing amplifier 60, which is actually not shown in that view.
5 So, it's kind of a whole system. It's the receiver.

6 The product detector is described as -- and this is a quote from Tayloe
7 at TI-1004, column 3, lines 1 through 3 -- "The combination of a resistor,
8 commutating switch 38, and capacitors 72 to 78 form a portion of a
9 preferred embodiment product detector." So, that's like the core of Figure 3
10 that you see right there.

11 Structurally, if you look at the brief description of the drawings,
12 which are in column 1, lines 55 through 61, Tayloe describes Figures 5
13 through 7, and Figures 5 through 7 show -- this is a quote showing "product
14 detector in accordance with a preferred embodiment." And there's other
15 ones that describe an alternate embodiment of the present invention.

16 So, the structure of Tayloe is it describes the direct conversion
17 receiver with respect to Figure 3 and an embodiment of the product detector
18 in that, and then, Figures 5, 6, and 7, each show product detectors, that I
19 think it's pretty clear from the context of Tayloe, are used in place of the
20 product detector that's described with respect to Figure 3.

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1 And the combination of Ground 1A and 1B is based on Tayloe's
2 Figure 3, direct conversion receiver, which is said to be able to be used with
3 the TI Datasheet MUX, and that's what Figure 7 shows.

4 And the Ground, further, uses the alternate product detector from
5 Figure 6 input into that configuration with Macnally's biquad topology
6 amplifier.

7 So, Tayloe provides an express relationship between Figure 3 and
8 Figure 6, and Tayloe provides an express relationship between Figure 3 and
9 the TI Datasheet MUX. And so, our combination is based on Tayloe's two
10 direct relationships saying, instead of a commutator, you can use the TI
11 Datasheet MUX, and instead of the product detector of Figure 3, you'd use
12 the product detector of Figure 6.

13 And the difference between the two is the product detector of Figure 3
14 has an input resistor in front of the commutator, and Figure 6, each has a
15 -- each of the lines, each of the paths, signal paths, has a resistor. And they
16 functionally work the same way and makes an RC filter and the mesh filter
17 correlator and does the down-conversion that we've discussed all along.

18 So, I don't have a slide for this, but I want you to look at the Patent
19 Owner's Response on page 79. I'll give you a second to get that up.
20 Actually, let me talk through while you get that up.

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1 So, Patent Owner tries really hard to sow confusion around Tayloe's
2 embodiments. And in Patent Owner's Response, that figure with the
3 different color boxes, they explain in connection with that, that, well, we've
4 pieced together our own version of the -- it's like a "best of Tayloe," right?
5 We're picking here and we're picking there, and we're picking there -- in
6 hindsight, targeted specifically at the claims of the patent, and I don't think
7 that's -- I don't think that's correct.

8 And, in fact, I think that Patent Owner doubles-down on this
9 argument. In their Sur-reply on page 30, they reiterate the argument saying,
10 "Petitioner attempts to tie Figure 6 to Figure 3, asserting Tayloe describes
11 Figure 6 as an embodiment of Figure 3." This is more of their quote. "This
12 is a misrepresentation."

13 So, let's go back to the Patent Owner's Response at page 63. In this, I
14 think you should take the time to open up and look at. They are providing
15 their overview of Tayloe. And at page 63, they provide a figure of what
16 Figure 6 might look like if it was put into Figure 3 and they say, "A POSITA
17 would understand Figure 6 would be connected to amplifiers 52 and 50, just
18 like the product detector 53." And their figure shows exactly that, right?

19 And they even cite to Dr. Ricketts, who also provides that figure, and
20 who also says, "As shown above" -- referring to that figure -- "A POSITA

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1 would understand that Figure 6 would be connected to the summing
2 amplifier 50-52, just like the product detector of Figure 3."

3 So, we responded to the argument in the POR, and then they rebirthed
4 this argument and, in fact, said that we were misrepresenting the record.
5 And, in reality, however, they're just talking out of both sides of their mouth,
6 right? But they're internally inconsistent.

7 I think Patent Owner also makes the argument that TI only disclosed
8 the -- or excuse me -- that Tayloe only disclosed the TI Datasheet MUX with
9 respect to Figures 3 and 7. And this argument blissfully ignores that they
10 said that Figure 6 could be substituted for the product detector of Figure 3.
11 That's the same position that we have.

12 Regardless, we went through the analysis and we provided motivation
13 to reasonable expectation for each of the modifications that get to the final
14 combination of Tayloe, MUX, and Macnally that we apply against the
15 claims. And so, regardless of whether you agree Tayloe expressly discloses
16 the configuration, we've addressed it under obviousness.

17 Slide 59. There's a complaint that Figure 6 introduces practical
18 implications if you were to introduce -- if you applied it in an IC context.
19 Right? That one of the motivations for using the Macnally differential
20 amplifier is you would put the whole Tayloe as a single chip configuration,
21 and I'll get to that in a second. And when your active components, like your

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1 amplifier, are on a chip, they're better configured as a differential amplifier.
2 And Tayloe was differential in a single output. So, it doesn't fully benefit
3 from a fully differential amplifier like Macnally, and Macnally is a biquad
4 anti-aliasing filter as well. So, it adds filtering. And so, there are examples
5 of why you would use the whole combination together.

6 The complications with respect to an IC, if you look at Ricketts'
7 testimony here, it's just a bare statement that there is difficulties in matching,
8 and the remainder of the passage is explaining why mismatching is bad. But
9 he only has one statement, no corroboration, no explanation that
10 mismatching, that matching is difficult.

11 And you compare that to Dr. Galton's testimony where he says, well,
12 not only is it my experience that matching isn't a problem; it's standard
13 practice. But he also cites a corroborating document, this Wittman IEEE
14 paper that is about matching resistors on a circuit; basically, saying that it's
15 standard practice.

16 So, we have explained corroborated testimony versus one statement
17 that matching would have been a problem.

18 Slide 60. Patent Owner complains that 6 runs counter to
19 implementation on an IC because it introduced this great component count
20 complexity, routing, routing complexity, and cost. You know, again, I
21 would point out that, what's the difference between Figure 3 and Figure 6?

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1 Well, it's three whole resistors. And does that really add substantively to the
2 cost? Does that really add substantively to the component count? It has the
3 same number of paths between the blocks and the amplifiers. Does that
4 really add to the complexity of the signal routing? Dr. Galton didn't think
5 so.

6 And indeed, at 1066, 88 through 89, he says what matters in an
7 integrated circuit are the amount of area, the amount of power consumed.
8 And you can't just eyeball it and get a feel for how much area of power it's
9 going to consume.

10 And he also observes that, using a fully differential amplifier, I think
11 Macnally's, generally reduces power and area. So, he thought that the
12 tradeoffs made sense.

13 There's a big kind of sideshow about what it means to be single chip.
14 The Petition said a POSITA would be motivated to construct the
15 Tayloe/MUX/Macnally combination because he would want to make a
16 single-chip circuit.

17 In response, Ricketts says -- and this is on Slide 64 -- Ricketts says,
18 well, a POSITA would not want to put everything integrated into one chip,
19 but he doesn't opine on what "single chip" means.

20 And so, first, let me point out that Ricketts' argument is bodily
21 incorporation. He's just saying, well, you take this example of Tayloe that

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1 has this really large capacitor, and you couldn't fit it on a chip. So, that
2 teaches away from putting it all into one chip.

3 I think, if you take a step back, Figures 3 and 6, and the remaining
4 disclosure, they don't include circuit values because Tayloe himself
5 acknowledges a person of ordinary skill in the art would not be an
6 automaton. They would have ordinary creativity. They know how to size
7 the circuit to do what they want.

8 And this experimental result at the very end of Tayloe is just one
9 example of an implementation of the circuit. And the claims, the proposed
10 combination, Tayloe itself, none of them are limited to a specific size of
11 capacitor that Dr. Ricketts based all of his testimony on.

12 And then, finally, Dr. Galton testifies that a "single-chip" -- a single
13 chip -- is a term of art and explains what it means to a POSITA. And its
14 Sur-reply, the Patent Owner, after taking Dr. Galton's depo, cited or quoted a
15 small portion of the depo testimony on this part, but they ignored the whole
16 of the depo testimony that didn't fit with their narrative.

17 In it, they -- in the depo testimony, and the depo testimony is 2024,
18 53, 18 through -- excuse me -- 2024, page 53, line 18, through page 54, line
19 10: Galton explaining that a single chip is defined as "a system that could be
20 implemented as a single chip on a board with essential functionality of the
21 system on a chip and supportive passes on the board."

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1 Thus, even if one were to implement Tayloe's example prototype
2 -- this is the example with the very large capacitors off-chip -- it would meet
3 the POSITA's definition of a single chip. And Patent Owner, in its Sur-
4 reply, just flat ignored the remainder of this testimony, but misquoting the
5 record.

6 Slide 65. He was asked about this, by the way, because Dr. Galton
7 previously said in his declaration at TI-1066, paragraph 64, what it means to
8 be a "single-chip," a single chip. And not only did he explain consistently
9 with his depo testimony, Galton cited the Beatty reference. The Beatty
10 reference is TI-1059. It's cited in paragraph 63 of TI-1066. And Beatty is
11 an example of single chip having off-chip capacitors.

12 And as an aside, I point out Macnally, which we're all very, very
13 familiar with, as it's entitled, "Single Chip CMOS Direct Conversion
14 Transceiver," and it shows off-chip capacitors and other off-chip
15 components. I have it. I have just the front page of Macnally on Slide 12, if
16 you want to see the off-chip capacitors and the thing that Macnally refers to
17 as being a single chip.

18 So, we have not only got Galton's testimony, but two corroborating
19 pieces of evidence that Galton is right. And the only thing that we have
20 counter in the record is Ricketts, who doesn't define "single chip," who just

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1 says, well, you wouldn't want to put everything into the same IC. And that's
2 not what was proposed.

3 I'm starting to run into the end of my time.

4 There's some complaints about how Tayloe doesn't work with higher
5 frequencies. Again, the claims are not limited to a specific frequency. The
6 proposed combination -- this is my Slide 66 -- the proposed combination
7 wasn't advancing a specific frequency.

8 And Dr. Galton, at 1066, paragraphs 61 to 62, explains a POSITA
9 would know how to make Tayloe to address different frequencies. And the
10 example in Tayloe was given at 7 megahertz. Dr. Ricketts opined that you
11 couldn't make Tayloe at 700 megahertz. Well, there's a lot of frequency in
12 between 7 and 700 megahertz, and actually, potentially, 2.5 gigahertz.
13 Dr. Ricketts is referring to cellular and Wi-Fi, which, you know, covers a
14 pretty broad spectrum. But, regardless, I mean, a POSITA can implement
15 Tayloe in however he or she wants to implement it.

16 Starting at Slide 69, there's a whole bunch of potshots that Patent
17 Owner takes against the combination. I'll hit them very, very quickly, just
18 because I think we need to.

19 They say Tayloe provides gain. Dr. Galton explains, well, there's lots
20 of reasons why you would want to provide -- use Macnally beyond just
21 already having gain. It minimizes even-order harmonic distortions,

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1 improves linearity, minimizes supply and substrate noise coupling to the
2 lines.

3 The Rauch biquad topology of Macnally is known for reducing the
4 number of operational amplifiers on an IC, lowering power, reducing
5 noise/distortion contributors. The low-pass filtering function of Macnally's
6 differential amplifier is beneficial in Tayloe's circuits as low-pass filtering of
7 these baseband signals. These are all discussed in TI-1003, paragraphs 141
8 to 143. That's Galton's original declaration.

9 Slide 70. Galton observed that, from working from Tayloe's baseline,
10 which is a single-ended amp, Macnally's biquad anti-aliasing differential
11 amplifier quadruples the signal power and only doubles the noise. So, your
12 signal/noise ratio goes up. This is Galton at 1066, paragraph 78.

13 Slide 71, 1066, paragraph 81. Galton says that, even though Tayloe
14 already performs anti-aliasing, a little bit more is always better. He points
15 out two examples, Chang and Razavi itself. Chang is TI-1064 and Razavi is
16 TI-1017.

17 Things that provided single-pole, low-pass filters, just like Tayloe
18 does, having an additional supplemental filter on top of it to corroborate the
19 need for additional filtering.

20 Slide 72. Patent Owner argues Tayloe already addresses noise, as you
21 could expect. In 1066, 86, Galton says, well, addressing some noise doesn't

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1 mean that you don't want to address yet more noise. Reducing noise is
2 always beneficial.

3 Slide 73. Patent Owner argues Macnally's amplifier has introduced
4 more components than Tayloe's amps require, additional subsequent
5 differential circuitry. TI-1066, Galton says there's lots of benefits to
6 Macnally's amplifiers. And I've said above, it's really power consumption
7 and the area, not the number of components.

8 So, Slide 75. Patent Owner admits that Macnally is low impedance. I
9 think we agree with that. In Patent Owner's Response at page 93 -- I've
10 discussed previously with respect to the '177 that Tayloe's closed-loop
11 converting amplifiers, the upper path is low impedance. And so, the same
12 evidence, the same Sedra/Smith, the same Tayloe manual, the very same
13 testimony exists in the record by Dr. Galton for the '528. So, I think you
14 should come to the same conclusion on the '528.

15 And Dr. Galton explains that replacing Tayloe's amplifiers 50/52 with
16 fully differential amplifiers like Macnally -- this is 1066, paragraph 96
17 -- impedance is comparable to the top inputs of the amplifiers 50 and 52
18 -- would not significantly alter the behavior of Tayloe's circuit with respect
19 to the zero and 90-degree paths.

20 And Patent Owner argues, well, we don't know that MacNally's
21 impedances are comparable. Well, of course, this is bodily incorporation

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1 and ignores the POSITA's ordinary creativity and basic knowledge of circuit
2 design to match a low-impedance amplifier to a low-impedance amplifier.
3 Just basically swap out Tayloe's system with one that aligns to the
4 impedance that Tayloe is expecting to see.

5 And what's more is Tayloe has a plus terminal and a minus terminal.
6 And we talked about how the plus terminal is high impedance and the minus
7 terminal is low impedance. This shows us that Tayloe knows how to work
8 with high impedance and low impedance connected to the same circuit. And
9 so, Tayloe knows how to make Macnally work. And there's proof that
10 Tayloe would work with something like Macnally, beyond Dr. Galton's
11 conclusion of that.

12 Slide 84. There's some argument in the record about reasonable
13 expectation of success. The reasonable-expectation-of-success arguments
14 are largely a rehash of those motivation-to-combine arguments.

15 I think there's a great paragraph by Dr. Galton where he was quite fed
16 up with the arguments that TI-1066, paragraph 99. He says, "Anytime a
17 circuit is developed, the design process must occur. The design process is
18 not experimentation, as Dr. Ricketts puts it. It's a reasoned, systematic
19 process by which differential circuit topologies for implementing circuit
20 blocks are evaluated; circuit component values are optimized. These tasks
21 are done by a POSITA, the combination of hand analysis and computer

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1 simulation. Nevertheless, the fact that circuit blocks cannot just be cut and
2 pasted from one environment to another does not mean a POSITA would
3 have no reasonable expectation of success when implementing Tayloe's
4 invention as an integrated circuit. Moreover, I provided success stories."
5 And he cites to things in his original TI-1003, at paragraph 143, where he
6 showed similar success stories.

7 So, taking a step back, I think it's our position it's pretty clear that
8 Tayloe teaches the TI Datasheet, the Figure 6 combination in the product
9 -- excuse me -- in the direct receiver of Tayloe, and even if it doesn't, we
10 have motivations and reasonable expectations for all the modifications.
11 Substituting Macnally's biquad anti-aliasing differential amplifier brings lots
12 of advantages that would benefit Tayloe's implemented configuration on a
13 single chip, as would be understood by a POSITA, whether or not it has on-
14 chip capacitors or not -- which, again, would depend on how the POSITA
15 chose to configure Tayloe and not be bound to the specific one example in
16 Tayloe.

17 I'm going to move on to Razavi really quick, unless you guys have
18 questions. I have five-and-a-half minutes, it looks like.

19 JUDGE GERSTENBLITH: That's right. So, just out of curiosity, do
20 we need the Cahn ground?

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1 MR. GRISWOLD: I think we do need the Cahn ground to hit all of
2 the claims, yes, Your Honors.

3 JUDGE GERSTENBLITH: Okay.

4 MR. GRISWOLD: But the Cahn ground isn't contested. So, Razavi,
5 we discussed a little bit this morning about Razavi and the application of
6 conventional versus real current. I think the same applies here.

7 Slide 89. The Patent Owner argues that capacitors that don't store
8 energy transferred from the received signal. It's, again, applying
9 conventional current as opposed to real current.

10 They make similar arguments that they made with respect to Tayloe
11 about Razavi, about it already having filtering and already having an amp.
12 But Dr. Galton addresses those at TI-166, paragraphs 159 to 163.

13 There's this kind of side issue -- "sideshow" maybe is a better
14 descriptor. Patent Owner tries to shoehorn the Razavi-Macnally
15 combination into Razavi's Figure 4A. There was a typo in the Petition
16 where it might just cite to Figures 4A to 4C, but the "4C" got left off. But I
17 think that there's no doubt that Macnally, right, it's that anti-aliasing filter
18 amplifier. So, Macnally doesn't actually fit the Figure 4A configuration or
19 the Figure 4B configuration in Razavi, and therefore, all of Patent Owner's
20 arguments about Figure 4A are just irrelevant.

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1 Dr. Galton, at 1066, paragraphs 162 to 163, says, "The combination is
2 most appropriate to realize, as Figure 4C, an anti-aliasing filter is always
3 required before an ADC. The signal component of the Razavi circuit is
4 relatively small. So, amplification is required prior to the ADC, and the
5 anti-aliasing filter relaxes the requirements of the channel-select filter after
6 the ADC."

7 There's some argument, on Slide 67, there's some argument by Patent
8 Owner that Razavi and Macnally are incompatible because the mixer is
9 intended to connect to the gates of transistors. In Razavi's example,
10 amplifiers which are high impedance, Dr. Galton calculates the values of R1
11 and R2 in Razavi, determines that the Razavi circuit impedance is 1.25
12 kilohms, and opines in 1066, 165, that Macnally could easily be
13 impedance-matched to 1.25 kilohms. And so, it fits nicely with Razavi.
14 Regardless of whether Razavi's example amplifier is high impedance, it
15 works, and Dr. Galton says so.

16 So, I think that's all I have about Razavi. I'm glad to answer any
17 questions you may have. I know I went through stuff very quickly. I
18 apologize, especially to the court reporter who's got to keep up with me.

19 JUDGE GERSTENBLITH: No problem. I don't think we have any
20 further questions right now.

21 MR. GRISWOLD: All right. Thank you, Your Honors.

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1 JUDGE GERSTENBLITH: Okay. I got you with about a minute
2 and a half remaining.

3 We're going to turn it over to Mr. Charkow. And, Mr. Charkow, you
4 have almost 20 minutes, just under 20 minutes.

5 MR. CHARKOW: Sorry, Your Honors. So, the first thing I want to
6 say on conception/reduction to practice, it's the same arguments that we've
7 been through in 935, and any differences is where we're resting on our
8 briefs.

9 So, I'm going to go right into the lack of motivation to combine
10 Tayloe and Macnally. So, the whole position in motivation to combine, their
11 sole basis is that a POSITA -- this is Slide 90 -- a POSITA would have been
12 motivated to adapt Tayloe's systems with single chip; i.e., integrated circuit
13 known as an IC. That was their whole motivation to combine.

14 And the reason they needed to combine is because Tayloe without
15 Macnally does not disclose all the elements. So, if the Board finds that
16 Tayloe should not be combined with Macnally, for whatever reason, their
17 Tayloe argument is done. It's done. And the same thing with Razavi.

18 So, what's going on here? So, what happened during this process is
19 that, basically, to get to a single-chip IC -- well, I take that back.

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1 So, what did we do? In our Reply brief, we referenced the concept
2 that, you know, these capacitors were -- well, actually, I'm going to step
3 back in a second.

4 So, on Slide 91, I want to address this because counsel addressed this.
5 We have Galton's deposition. And the reason why we cut it off where we
6 cut it off, we said, what is meant by a single-chip IC? And he said, what is
7 meant is to put, you know, essential functionalities of Tayloe's system on a
8 single IC. Right?

9 So, all we care about is the fact that he said, "essential functionality of
10 Tayloe's system on a single IC." The reason we focused on that -- because
11 what is more essential than the capacitors? The system does not work
12 without -- if you take the capacitors as it's set forth, the system is not
13 designed -- as designed, it's only designed to work with those capacitors. If
14 you take -- that's how the system of Tayloe is designed.

15 And so, what happened is we told them, we said, listen, the capacitors
16 are too large. In our paragraph -- sorry -- Slide 93, Taylor discloses that the
17 capacitors are .3 microfarads.

18 Slide 94. Dr. Ricketts, in his declaration, said, listen, .3 microfarads is
19 3,000 times larger than what is considered feasible for an IC. Dr. Ricketts
20 doesn't need to define a single-chip IC. It's a single-chip IC means exactly
21 what it says. It's everything that, as Dr. Galton said, everything that's

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1 essential on a single chip. You can't take essential features and put it off the
2 chip. So, that's why we cited what we cited.

3 And Dr. Galton admits that. On Slide 95, I asked him, "Are .3
4 microfarad capacitors too large for feasible integration into an integrated
5 circuit?" "Yes." And he said, combined with -- Tayloe-Macnally doesn't
6 solve that problem. You still have the problem.

7 So, what did he do when presented with this problem? He changed
8 his position. All of a sudden, a single-chip IC, all of a sudden, you don't
9 have to put capacitors on it. Originally, everything that was relevant, all the
10 essential functionality, which capacitors is essential functionality, he said
11 you don't have to put capacitors -- well, capacitors could be off-chip or
12 partially off-chip. He completely changed his position, including at his
13 deposition. And you could read his deposition.

14 So now, we take -- he started with a position, single-chip IC. He
15 didn't realize, apparently, when he was doing his report, he didn't appreciate
16 that .3 microfarads was way too big for a single-chip IC. When we pointed
17 it out, he changed positions.

18 And that, Your Honor, respectfully, is not credible. You can't change
19 positions and say all essential functionality has to be on the same chip, and
20 then you point -- you're shown that you're wrong, and you say, "Oh, well,
21 the capacitors" -- and literally, in his deposition, he said, he pointed -- I said,

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1 "What's on that? What's on the circuit?" Oh, all these things could be on the
2 circuit, and the main thing that he left out was the capacitor. "Oh, that could
3 be off-circuit." Well, that wasn't his position in his original declaration, and
4 that should just be ignored.

5 Now, to get to a single-chip IC, okay, to get the capacitors to be in a
6 single-chip IC, you have to reduce the size of the capacitors. How do you
7 reduce the size of the capacitors? And I think this is where opposing
8 counsel is a little confused.

9 The way you reduce the size of the capacitor is by increasing the
10 frequency of the signal that you're dealing with. And the TI Datasheet -- this
11 is a very important point -- the TI Datasheet, the switches that they
12 combined in the TI Datasheet, if you wanted to go and change it to get to a
13 point where you could make the capacitors small enough to fit on a circuit,
14 the TI Datasheet cannot -- the switches in there cannot switch fast enough.
15 And that's in Exhibit 2024, which is Ricketts' declaration, paragraphs 307,
16 308, 312 through 313.

17 They cannot -- so, the switches that they combined with Tayloe and
18 Macnally cannot operate fast enough to put the -- did I get a small enough
19 capacitor so you could put it on the same circuit? So, that is a huge problem,
20 a fatal flaw in their position.

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1 The other thing is that -- we mentioned this in our POPR -- the TI
2 Datasheet is already a single-chip IC, and I think the Board noted that, that
3 that's an interesting point. And it contradicts the motivation to combine
4 because you already have the TI Datasheet as a single-chip IC. And the
5 problem is to say you can't combine it with Tayloe to make a new single-
6 chip IC, because, again, in order to do that, you've got to reduce the size of
7 the capacitors. And in order to do that, you have to get a point where the TI
8 Datasheet cannot operate -- sorry -- the switches in the TI Datasheet cannot
9 operate.

10 And then, on their Slide 12, I want to point out, in terms of the single-
11 chip IC, TI Slide 12, he put it up there really quickly. I encourage the Board
12 to go back there. Macnally has a single-chip IC. Look at how many
13 components are in there. Ninety-nine percent of the components, maybe
14 99.9 percent of the components, of the transceiver and the receiver are all on
15 a single chip. There's some, like, ancillary, little components here and there
16 -- I think not essential components -- that are kind of hanging off that are not
17 on the single-chip IC.

18 So, to say that, oh, you know, anything could be a single-chip IC, I
19 mean, there's no balance to what's a single-chip IC, because they'll just say,
20 "Oh, you can put stuff off and it's still a single-chip IC." Respectfully, that
21 is not a single-chip IC.

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1 If we go to Slide 97, we see that this is their Reply. They made this
2 statement: "Replacing Tayloe's boxes 50-52 with a fully differential
3 amplifier by having comparable input impedance would not significantly
4 alter the behavior of Tayloe's circuit."

5 But the problem is they put Macnally. It's not a comparable input
6 impedance. As counsel has very clearly said many times -- and it's shown in
7 the slide below -- only two of the four capacitors are connected to low-
8 impedance loads. As he said, one of, according to him -- this is according to
9 him, not our position -- that one of the inputs, the positive -- sorry -- the
10 negative input is a low-impedance load, and the positive input is a high-
11 impedance load.

12 But Macnally, both of the inputs are low impedance. So, under their
13 own theory of comparability, they put something that was not comparable.
14 Tayloe, a differential amplifier circuit is comparable to Macnally, by their
15 own admissions, including what it says here: the fact, it says, on 97, the fact
16 that two of Tayloe's four capacitors are already coupled to a low-impedance
17 load. We don't agree that it is a low-impedance load, but they have admitted
18 that it's not comparable, and it's not comparable, and it's not comparable
19 today. It could significantly alter the behavior of Tayloe, which, again, there
20 would not be a motivation to combine.

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1 The other thing I want to point out is with regards to how this affects
2 Tayloe. So, separately, how it affects Tayloe. It is that Tayloe -- again,
3 opposing counsel has said this multiple times at this point, and you could -- I
4 encourage you to go back in the record, because, to me, it's fatal to their
5 position. He has taken the position three or four times at this point that the
6 plus is high impedance, shown on the left. So, this is 98, Slide 98. The plus
7 is high impedance and the minus is low impedance.

8 That cannot happen. As I said before, that is impossible. That
9 summing amplifier has to sum two signals. It can't get, you know, read a
10 voltage on one, on the negative, which doesn't -- which is -- sorry. It can't
11 read a voltage on, you know, for the plus side and it gets energy on the
12 negative side somehow. So, you cannot have, you know, you cannot have
13 that. You can't have one that's high and one that's low. They both have to
14 be the same.

15 And logically, when you think about it, it makes sense. And he said
16 multiple times that there's a high impedance and low impedance. The
17 bottom is high; the top is low, which means the body wouldn't -- the
18 capacitor couldn't -- the bottom wouldn't discharge because it's a gates of
19 FETs, and the top one, apparently, would discharge to that. It can't happen.
20 It wouldn't work. That's not how these things work. Because it's a
21 combiner. It has to combine the same, similar stuff.

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1 Macnally, on the other hand -- and they made a big point of this -- is
2 low-impedance load. The reason why they chose Macnally is because it
3 allows for discharge for all those capacitors and it balances them -- meaning
4 that each capacitor that they connected to it, both discharges to Macnally to
5 their low-impedance load. That's why they included Macnally. But again,
6 Macnally, there's no reason to combine them.

7 And Dr. Galton admitted multiple times in his deposition, Exhibit
8 2035, page 72, line 14, to 73, line 6, and 85, lines 1 to 7. And this is our
9 POR 60. He admitted multiple times that that plus is high impedance. And
10 you can't have a high impedance and a low impedance. And some
11 capacitors charge going into the same circuit, and some capacitors don't
12 -- some capacitors discharge; some don't discharge. It just doesn't work. It
13 doesn't even -- it's completely illogical.

14 So, with regards to Petitioner's representations on Razavi, on Razavi,
15 motivation to combine. Again, you have a situation where Razavi has
16 -- right. So, Razavi talks about a couple of things.

17 So, Razavi, Slide 113. Razavi gives three embodiments that they talk
18 about. Razavi specifically says -- and this is shown on this slide -- do not
19 use -- A, do not use first one. Do not use that. It puts it there specifically to
20 say do not use it; use the other ones.

1 "You could put an amplifier after my circuit," and he identifies the
2 very specific amplifier that he uses, very carefully designed to meet certain
3 criteria. And he says: do not put anything that's a filter after it.

4 Macnally is a filter. It performs as a filter. Combining a filter with
5 -- you can't just ignore Razavi's teaching. And he says: don't do it. That's
6 the only reason he has Figure 4A in there, is to say: don't do it. And you
7 can read that in Slide 113, on the right side, why you don't have a filter
8 there. Regards to whether Macnally is a filter or not, it doesn't make a
9 difference; it's still a filter. And there's reasons why he said: don't put that
10 there. So, you can't -- you know, the expert can't just decide to ignore the
11 express teachings of Razavi.

12 In terms of Razavi, Slide 114, Razavi shows a mixer connected to a
13 very specific amplifier circuit. And I encourage the Board to read why that
14 amplifier circuit is there. It's a very carefully designed amplifier circuit, and
15 that amplifier circuit, the orange and the blue lines from the mixer are
16 connected to that amplifier, and those are gates of FETs. As I said before,
17 Dr. Galton admitted gates of FETs are high impedance -- very, very high
18 impedance, very high impedance, which there's no low impedance.

19 So, the fact that he -- my opposing counsel talks about R1 and R2 on
20 the top of the page, on the left side of the mixer. It's irrelevant what their
21 impedances are, completely irrelevant. The question is -- because where

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1 Macnally is being changed is at the right side. It's being swapped out for the
2 amplifier circuit of Razavi.

3 Razavi, specifically, put this circuit in there, the amplifier circuit on
4 the right, because, as you see on the left, it says, " V_{out} ." It's a voltage out and
5 a " V_{in} ." So, it's trying hold -- it's trying to prevent current from coming out,
6 so that voltage can be read. That's why it says, " V_{in} " and " V_{out} ." And that's
7 why it's very, very high impedance, because of the gates of the FETs, and
8 Dr. Galton has recognized it.

9 So, what do you have? As Slide 115 shows on the left side, you have
10 Razavi, which teaches high impedance. That blue R1 and R2 is completely
11 irrelevant. It doesn't make a difference. It's totally irrelevant because, at the
12 end of the day, the only thing that matters is that the V_{out} from the left side
13 of the mixer, the mixer of Razavi goes into the gates of FETs. It's high
14 impedance, and there's nobody that can debate that. And Dr. Galton agrees
15 that that is high impedance.

16 So, the fact, it's just a red herring to calculate R1 and R2 and say, oh,
17 look, these are lower impedance or not that high impedance. It doesn't make
18 a difference, because what's actually shown in the amplifier circuit is it's a
19 very, very high impedance.

20 And they replaced it on the left side with what? Macnally, low
21 impedance. No person -- and it doesn't work anymore, and that's what Dr.

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1 Ricketts said. If you replace Macnally with -- in place of the -- it's a very
2 carefully designed circuit of, amplifier circuit of Razavi. Basically, you're
3 not -- that voltage out is no longer a voltage out. There's current voltage
4 -- completely different circuit. So, you've completely changed what Razavi
5 did. There's absolutely no motivation to combine. It completely alters
6 Razavi's signal behavior.

7 With regards to how Macnally actually works -- I'm sorry. Without
8 Razavi, the combination of Razavi and Macnally in terms of Razavi and
9 what it discloses, it does not disclose transferring energy from a modulated
10 carrier signal, which is an element of the claim.

11 As you see in Slide 117, on the top right, it says, "M5" and "M6,"
12 must remain in saturation. And then, Dr. Ricketts -- not Dr. Ricketts -- Dr.
13 Galton said, in saturation, transistors conducts current, conventional current
14 from drain to source. Yes, down, meaning that, when you're looking at the
15 diagram on the left, conventional current goes down, and you could see that
16 by the red arrows. It goes down, in, and down. You know, you can't see it
17 anymore.

18 So, the bottom line is conventional current flows V_{DD} down past M_5 -
19 M_6 and down off the page. And that's how -- that's how Razavi works.

20 So, the modulated carrier signal is coming up to M_5 and M_6 , but it
21 stops at M_5 and M_6 . So, there's no transfer of energy up from the modulated

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1 carrier signal out towards the capacitors or towards R_1 and R_2 . It can't work
2 that way. It's conventional current.

3 And as I said previously today, conventional current is the right way
4 to work with this. When you're talking about all the other claim elements
5 and charging and discharging, it's always in the context of conventional
6 current. It's not in the context of moving of electrons, because it would go in
7 the wrong direction.

8 So, it's always in the context of conventional current, which one of
9 Your Honors asked before, "How is it relevant?" or "Are there other claim
10 elements?" It's very relevant.

11 And the fact that, as we've seen before, Dr. Galton has admitted that
12 you -- that when you're talking about charging and discharging,
13 ParkerVision is talking -- the patent is talking about conventional current.
14 He may have put some caveat around it, but he said, "Generally, you're
15 correct."

16 So, the other thing is, again, on Slide 118 -- so, that was Slide 117.
17 On Slide 118, we start -- oh, here it's a quote: "ParkerVision's patents refer
18 to conventional current when you're talking about charging and discharging.
19 And that was my question." "Correct." And "Answer: We'd have to look at
20 the specific case, but that's probably true." So, he did say, "specific case,"

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1 but he just said, listen, it's probably true. Yes, I understand he said, "specific
2 case," but he admitted it's probably true.

3 And then, on the righthand side, it talks about the letter I. "And 'I'
4 stands for current?" He says, "Often, yes." I don't know what he's talking
5 about; "I" does stand for conventional -- it is current and "I" is conventional
6 current. "It often does." He was being coy, for whatever reason.

7 So, when we look at 119, which is Galton's own references, there is
8 nowhere where it talks about flow of electrons and how electrons move.
9 That was all made up. Like it may have even been made up in the Reply,
10 Your Honors, I'm not sure, but you should take a look if this was a new
11 argument raised for the first time in the Reply.

12 But we can see from all his own textbooks that he cited, everything
13 goes down. The blue are the transistors. The arrows go down. The I's are
14 purple. They're all down. Those are conventional current. These are from
15 fundamental textbooks that they cited, not us.

16 So, conventional current is the way to look at it. The patent looks at it
17 from the point of view of conventional current. Galton admits the patent
18 deals with conventional current for charge/discharge. It's not the flow of
19 electrons. And if that's the case, current is flowing down. That modulated
20 carrier signal, which would be coming up, cannot get through those

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1 transistors. They cannot be sampled. They cannot -- energy can't get from
2 up through the transistors.

3 If we look at Slide 117, they can't up through M_5 - M_6 towards those
4 capacitors. They can't -- no energy is stored. None of that. No energy is
5 transferred. No energy is stored. No signals -- no signals transferred.
6 Nothing.

7 I'm going to reserve the rest of my time.

8 JUDGE GERSTENBLITH: Okay. That's a minute and 40 seconds
9 left, and almost exactly the same time that Petitioner has left.

10 Mr. Griswold, we'll go back to you.

11 MR. GRISWOLD: Can you hear me?

12 JUDGE GERSTENBLITH: We can. Whenever you're ready, you
13 can go; you can start it.

14 MR. GRISWOLD: Okay. So, on the point about essential
15 functionality, if Your Honor were having a conversation and I told you
16 something, would you walk away in the middle of the conversation? That's,
17 essentially, what they've done in their citation on Slide 91. The additional
18 testimony that we provided follows immediately in that conversation, where
19 Dr. Galton explains what he means by "essential functionality."

20 Exhibit 2024, 307 through 313, where Ricketts explains the TI data
21 locks can't handle high frequency, he analyzes 915. He doesn't analyze

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1 anything in between. The 7 megahertz and the 915 megahertz, that's a pretty
2 widespread. There's a lot of gap in there.

3 There is an assertion about Razavi outputting the voltage, because it
4 was intending to output a voltage to the specific amplifier it had. These
5 things output in voltage. If you look at the '528 patent, Figure 175A, what
6 do you see on the righthand side that's coming out of the system? It's a
7 voltage.

8 And then, my last point is charge carriers are electrons. That's what
9 charges the capacitors. That's why you look at real current.

10 So, with that, Your Honors, do you have any questions? I have 20
11 seconds left.

12 JUDGE GERSTENBLITH: I think I may have asked you this: that
13 the patents themselves, particularly this patent, uses conventional -- the
14 figures are based on conventional current, right?

15 MR. GRISWOLD: I think that's right. The equations and figure are
16 based on conventional current, but that's because it doesn't matter in each of
17 those instances.

18 If you could analyze each one of those figures, also, in terms of real
19 current, and you could do all the equations in terms of real current, the size
20 would just cancel out.

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1 JUDGE GERSTENBLITH: And so, how do we go about deciding
2 who is correct in terms of the application of this issue to the prior art
3 reference?

4 MR. GRISWOLD: The question is, does the capacitor in Razavi
5 charge with the energy that's coming from the received RF signal? And to
6 answer that question, you have to look at the real-world physics of it, and
7 that's the real current. It's, where are the electrons going?

8 JUDGE GERSTENBLITH: Okay. Thank you very much. I don't
9 think we have any other questions.

10 MR. GRISWOLD: Thank you, Your Honors.

11 JUDGE GERSTENBLITH: Thank you.

12 Mr. Charkow, when you come up with the minute 40, I'm going to ask
13 you the same question that I just asked about how do we decide this
14 question.

15 MR. CHARKOW: Sure. I think counsel admitted it. He said that
16 the patent talks about, you know, conventional current. You have to go with
17 what the patent -- I mean, we put in our brief the case law. You have to go
18 with the patent looks at things.

19 Just from that point alone, he admitted that. He said it's conventional
20 current. He didn't say -- well, he said all the formulas are conventional
21 current; you know, everything's conventional current. I think that ends the

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1 inquiry, period. Not to mention that all the textbooks that they put in,
2 conventional current. Everything's conventional current.

3 The only person that says not conventional current is their expert,
4 who's been changing positions continuously to get to -- just adjust to
5 whatever he needs. You know, a single-chip IC is no longer -- you know,
6 now capacitors don't have to be there.

7 So, I think that when you look at the patent itself, that's really
8 controlling at the end of the day.

9 JUDGE GERSTENBLITH: So, it doesn't matter that, in the
10 reference, if you're talking about charging the capacitor, like what was just
11 said, that the electrons would need to go there; that that's not the inquiry?

12 MR. CHARKOW: No, that's not the inquiry. Again, you've got to
13 look at the patent and you've got to look at each -- yeah, charge is
14 conventional current. Like you could look, again, you could look at it for
15 -- a charge, convention current charging and discharging is going to occur.
16 They keep saying it's electrons. It's not electrons. There's nowhere that it
17 says it's electrons. They're saying, well, that's how it really happens. That's
18 not how anybody looks at it.

19 Look at textbooks; they didn't say one textbook that shows anything
20 different. The patent, they admitted that the patent, that's what the patent
21 shows. Like it doesn't get any more clear when you say the patent deals with

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1 -- it talks about it in terms of conventional current. The patent claims have
2 to be construed from the point of view of what the patent says, not what
3 some expert says, who keeps -- who changes his opinions when he finds out
4 he's wrong.

5 JUDGE GERSTENBLITH: Thank you.

6 MR. CHARKOW: And then, the last point on -- you know, they said
7 that Ricketts didn't do a lot of testing on all of our -- do all the various
8 -- show that for the various frequencies, that you couldn't fit a capacitor on a
9 single-chip IC. He says in his declaration -- and I've already cited it -- he
10 says that, in order to fit a chip on a single IC, the frequencies that you would
11 have to use to shrink down those capacitors, the TI Datasheet, the switches
12 couldn't keep up with it. So, he says that. I cited it already. I gave you the
13 cites. He says that.

14 So, to counsel saying that it's, you know, that he didn't do all these
15 different frequencies and it's a broader range, it -- that really doesn't address
16 the point that Ricketts made, which Dr. Ricketts made, which is, listen, for
17 the frequencies that you would need, that you would need to reduce the size
18 of the chip, it wouldn't, the TI Datasheet wouldn't work at all, period. That's
19 it.

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1 JUDGE GERSTENBLITH: Okay. I think there was about 10
2 seconds left. I don't think -- Petitioner, you were not planning to say
3 anything else about the antedating, correct?

4 MR. GRISWOLD: I have nothing else to say, Your Honors.

5 JUDGE GERSTENBLITH: Okay, great. I just want to ask two
6 housekeeping things.

7 The first is -- and I'm probably catching everybody off-guard with
8 this, but if you look at the institution decision in the 936 case, there's a
9 footnote 1 that is clarifying which claims are being challenged in that case.
10 And I didn't see anybody disagree with that footnote in any of the
11 subsequent briefing. So, I just want to make sure that our interpretation is
12 correct, that Petitioner intended to challenge Claim 29 and not 28. And so,
13 in each instance, that there's some other -- and also, not -- before I say the
14 wrong thing --

15 MR. GRISWOLD: That's correct.

16 JUDGE GERSTENBLITH: That's correct, I think I'm hearing?

17 MR. GRISWOLD: Yes, I can tell you that the institution decision
18 correction of the claims that were challenged is correct, yes.

19 JUDGE GERSTENBLITH: Okay. And that's the same -- that flows
20 -- the reasoning there and everything flows through. So, for example, on
21 page 56, 5-6, of the petition, where it's under a heading that says, "28, 30,

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1 31, 32," and then, in the body says, "Claim 18," that should actually be
2 Claim 29? So, all of that --

3 MR. GRISWOLD: Correct.

4 JUDGE GERSTENBLITH: -- was correct? Okay.

5 MR. GRISWOLD: Yes.

6 JUDGE GERSTENBLITH: And then -- okay, great.

7 MR. GRISWOLD: And the actual language of the claims is
8 addressed, and I think with the headings, and there was a few typos in that,
9 in headings and elsewhere.

10 JUDGE GERSTENBLITH: Okay. And I think, Mr. Charkow,
11 Patent Owner, understood that to be the case also, right, from what I could
12 tell?

13 MR. CHARKOW: Yeah. I mean, I would have to look at it. Your
14 Honor, I am a little -- I wasn't prepared for that question. So, I didn't look at
15 that issue. I would have to look at it, but I -- you know, if everybody is
16 saying that's what it is, I guess that's what it is. I just haven't considered that
17 issue.

18 JUDGE GERSTENBLITH: Okay. The other thing is that there was
19 a Motion for Pro Hac Vice for Taylor Lepore, and that motion was
20 conditionally granted, giving a 10-day window to update the power of
21 attorney. The power of attorney was not updated within that 10-day

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1 window, but I noted that I think it was before being listed on different
2 documents, and so forth. So, we're going to extend that 10 days. So, I think,
3 hopefully, Patent Owner can just file the updated power of attorney and
4 mandatory notice, making that change, and then, we're all good. That's for
5 both cases.

6 It may, it may also, not to be mixing cases and records, but it may also
7 apply to some of the -- to one or more of the other cases, Mr. Charkow. Just
8 double-check that, if you don't mind.

9 MR. CHARKOW: I'll check all the cases. Yes, I'll check all the
10 cases that we've dealt with in the last few days.

11 JUDGE GERSTENBLITH: Okay. That may come in handy at some
12 future point if Taylor Lepore is trying to say that they were accepted Pro
13 Hac Vice for some reason. So, we just want to make sure that that's cleaned
14 up.

15 MR. CHARKOW: Yeah, I appreciate it. Thank you. I'll check.

16 JUDGE GERSTENBLITH: Okay, great. So, thank you all very
17 much for coming. This was a long day. We appreciate the arguments. They
18 were very thorough and detailed. Obviously, the briefing is very well-
19 written and you got a lot in there.

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1 Please stay for a few minutes. I'm not sure if the court reporter has
2 any questions about the transcripts or spellings. Let me just double-check.
3 Oh, nope, she's okay. So, you don't need to stay.

4 I hope everybody has a great -- I don't know if I can say -- I guess it's
5 still technically summer. So, have a great rest of the summer. We have a
6 couple of weeks left.

7 And the case is submitted, and we are adjourned. Thank you very
8 much.

9 (Whereupon, the above-entitled matter went off the record at 3:46
10 p.m.)

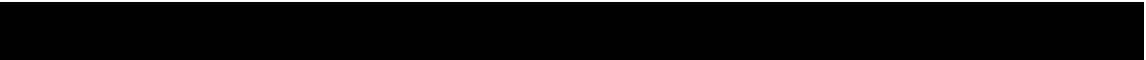
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