

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

RESONANT SYSTEMS, INC.,
Patent Owner

IPR2024-00806 (Patent 9,941,830 B2)
IPR2024-00807 (Patent 8,860,337 B2)

Record of Oral Hearing
Held: July 17, 2025

Before KARL D. EASTHOM, NORMAN H. BEAMER, and BRIAN D.
RANGE, *Administrative Patent Judges*.

IPR2024-00806 (Patent 9,941,830 B2)

IPR2024-00807 (Patent 8,860,337 B2)

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commencing at 10:00., via video teleconference.

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

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3 JUDGE EASTHOM: Good morning. This is Judge Easthom and
4 with me today are Judge Range and Judge Beamer. This hearing involves
5 two *inter partes* reviews, IPR2024-00806 involving US Patent Number
6 9,941,830 B2 and IPR2024-00807 involving Patent Number 8,860,337 B2.
7 Each of these matters are captioned Apple, Inc., Petitioner versus Resonant
8 Systems, Inc., Patent Owner. Let's start by having appearances. Who do we
9 have for Petitioner?

10 MR. ROZYLOWICZ: Yes, Your Honor, this is for Apple and
11 I'm joined today by my colleagues Karl Renner, Craig Deutsch and Sangki
12 Park.

13 JUDGE EASTHOM: Thank you. And will you be presenting
14 today for both cases, Mr. Rozylowicz?

15 MR. ROZYLOWICZ: Yes, Your Honor, I will be.

16 JUDGE EASTHOM: Thank you. Okay. And then who do we
17 have for Patent Owner? Patent Owner, you're muted right now.

18 MR. RUBIN: Thank you. Good morning, Your Honor, this is
19 Neil Rubin of Rust, August & Kabat for the Patent Owner.

20 JUDGE EASTHOM: Welcome, Mr. Rubin. We have the
21 demonstratives. So -- but for the clarity of the record and so we can follow
22 your argument, please identify each of your demonstratives that you're
23 talking about as you argue. Also, please state your name before speaking for
24 clarity of record and to help the court reporter. We issued a new hearing
25 order two days ago on the 15th. Each side will have 60 minutes of argument

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1 time to cover both of their *inter partes* reviews. Petitioner has the burden, so
2 Petitioner will present first and then Patent Owner may respond. The clock
3 behind me shows the time. I hope you can see it. If not, I'll update you the
4 time. I'll try to remind you if you reserve rebuttal time when your rebuttal is
5 approaching, but I don't want to interrupt you. So if you can keep track of
6 time, that would be beneficial to you. Petitioner, how much time would you
7 like to have for rebuttal?

8 MR. ROZYLOWICZ: Your Honor, if I could reserve 20 minutes
9 for rebuttal, please.

10 JUDGE EASTHOM: Okay. And then, Mr. Rubin, you can tell me
11 now or you can wait when you figure out what Petitioner says if you want.
12 But do you have a tentative rebuttal time now?

13 MR. RUBIN: I'll reserve the same.

14 JUDGE EASTHOM: Okay. Perfect. Okay. With that, Petitioner,
15 whenever you're ready, we'll get started.

16 MR. ROZYLOWICZ: Thank you, Your Honor. May it please the
17 Board. My name is Tom Rozylowicz and I'm representing Petitioner Apple.
18 I'm joined today by my colleagues Karl Renner, Craig Deutsch, and Sangki
19 Park. I'll begin, but you may hear from my colleague, Mr. Renner, on
20 certain issues.

21 So while we're prepared to speak to the broader record, we'll focus
22 on three topics today. First, we'll speak to the Gregorio based Grounds in
23 the '830 and '337 Patents and how it renders obvious the control
24 components. Second, while staying with the control component, we'll speak
25 to the Wakuda based Grounds in the '337 Patent. Finally, we'll speak to
26 Ground 2B in the '830 Patent and how it renders obvious the limitation

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1 dealing with the paramagnetic flux paths in the '830 Patent.

2 Your Honor, if we can turn to Slide 23 of the '830 demonstratives,
3 please. And I'll be staying with the '830 demonstratives for a good while.

4 Your Honor, the first issues that we'll be discussing is the control component
5 here shown here in Claim 1. Here we see Element 1F which recites, "A
6 control component that controls supply of power from the power supply to
7 the driving component to cause a moveable component to oscillate at a
8 frequency and an amplitude specified by the one or more stored values."

9 Slide 24, please. Within our consideration of Element 1F, we first
10 acknowledge that we're construing these limitations Means-Plus-Function.
11 We'll then turn to how the combination renders obvious recited amplitude
12 related to output 'p'. Finally, and within this element, we'll turn to how the
13 combination renders obvious the recited frequency that is related to output
14 'd', the direction.

15 Slide 25, please. Now, I'll first acknowledge as is shown in the
16 upper box from the petition that this petition treats control component in
17 Claims 1 and 19 as including one of the switches shown in Figures 5A
18 through 6 and a corresponding description identified here. This is consistent
19 with the parallel proceedings as is shown in the box below.

20 Slide 26, please. In the institution decision, the Board offers two
21 things. First, and I'll call your attention to the first highlighted area in the
22 middle of the page, the ID found that the Claim requires the microprocessor
23 to, and I'll emphasize, flip the polarity of a control value periodically
24 corresponding to a user-selected frequency. Second, and as shown in the
25 second highlighted portion appearing at the bottom, the Board found that the
26 microprocessor is, and I'll quote, "computing an output value corresponding

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1 to a user-selected amplitude of oscillation." Skipping ahead, "so that the
2 power supply outputs an appropriate current amplitude to a coil" with
3 faculties in reverse order.

4 Slide 27, please. Now, the Patent Owner alleges that two things
5 are required and not shown. In the middle section, the Patent Owner alleges
6 that we need to show output 'd' corresponding to the desired direction.
7 Second, and as is shown in the fourth line from the bottom, the Patent
8 Owner alleges that we must show output 'p' which must be provided through
9 the power supply.

10 Slide 28, please. Now, we're next turning to show how the
11 combination renders obvious the recited amplitude 'p'. Now, for the next
12 few slides, I'm really going to deal with both these elements because
13 Gregorio describes both amplitude and frequency as parameters managed on
14 the processor 12 and mostly using the same passages that we'll reference.
15 There's just one aspect dealing with Rossi that is solely focused on direction.

16 Slide 29, please. Here we see Patent Owner's allegations that
17 petition fails to show output 'p' corresponding to the currently selected
18 strength or an output 'p' to the power supply. Slide 30, please. Here we see
19 in the petition from Gregorio on which it relies recites the use of, and I quote
20 from the portion appearing about halfway down, "a frequency (high-level
21 frequency, assumed resonance frequency, or determined resonance
22 frequency) and an amplitude (high level "magnitude," "desired amplitude,"
23 or "present amplitude").

24 Now, I'll note that processor 12 provides these, and I quote, "as
25 high-level parameters that define a particular haptic effect or instructions
26 when executed by processor 12 generally drives signals for LRA 18, stored

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1 in memory 20." Again, the key terms "frequency" and "amplitude" as high-
2 level parameters appeared here. Slide 31, please. Now, we see in the box on
3 the lower left that these high-level parameters further include, and I quote,
4 "magnitude, frequency and duration."

5 Slide 32, please. Now, in the first quoted section shown near the
6 top we see that processor 12 provides, and I quote, "control signals" output
7 from processor 12 to drive circuit 16 and/or the resulting "drive
8 signals"/"drive pulses" is a control output that determines a current supplied
9 by the power supply ("actuator drive circuit 16" or "current generator 422")
10 to the driving component." In the second quoted section shown near the
11 middle, the petition then proceeds to note "the amplitude and duration of the
12 drive signals/pulses determine the amount of current supplied by the power
13 supply to the driving component." The (INDISCERNIBLE) that this
14 confirms that the drive circuit 16 supplies the required electrical current and
15 voltage in response to control signals.

16 Slide 33, please. Next we'll speak to how the combination renders
17 obvious the recited frequency that relates to the directional output 'd'. Slide
18 34. Now, I want to return to what the Board found was required in the
19 institution decision with respect to the required -- the recited frequency as it
20 relates to the output 'd'. In it, it notes that it operates -- I'm reading from the
21 highlighted section here. Operate a timer or its equivalent to flip the polarity
22 of a control value periodically corresponding to a user-selected frequency
23 and input the control value to an H-bridge switch circuit to change the
24 direction of the current through the coil as supplied by the power supply.

25 Slide 35, please. Now, as we just discussed, we see in the box in
26 the lower left that these high-level parameters recited in Gregorio in Column

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1 2, Lines 25 through 30 include, and I quote, "magnitude, frequency and
2 duration." We see that these parameters referenced in Gregorio are in fact
3 used in the figure on your right by processor 12 to provide these parameters
4 for the actuated drive circuit 16. Slide 36, please. The Patent Owner doesn't
5 acknowledge the role that Rossi provides in controlling the direction of the
6 current. As is shown in the highlighted portion, Rossi's H-bridge is
7 implemented as part of Gregorio's actuated drive circuit 16 to switch the
8 direction/polarity of drive signals to the LRA, thereby adjusting the
9 frequency of the haptic effect." Slide --

10 JUDGE EASTHOM: Counsel, could I ask you a question about
11 the claim construction? On your friend's argument, they argue that these
12 two signals 'p' and 'd' have to be separate. So are you conceding that
13 Gregorio itself doesn't disclose that? In other words, you're relying on Rossi
14 or the difference in the two signals?

15 MR. ROZYLOWICZ: Yeah, Your Honor, that's an evolved
16 position that I think manifested itself in the surreply. I'm happy to speak to
17 what we said in the petition that speaks to that concern that they have to be
18 separate steps.

19 JUDGE EASTHOM: Sure, so you're saying -- just to be clear,
20 you're saying that the Patent Owner didn't raise that argument in the Patent
21 Owner response?

22 MR. ROZYLOWICZ: Yes, Your Honor, I -- you see it for the first
23 time in the surreply.

24 JUDGE EASTHOM: Okay.

25 MR. ROZYLOWICZ: Your Honor, let me go ahead and jump
26 ahead to Slides 41. I'll tackle this exact point. Actually, let's go to Slide 40

1 if we may, please, of the '830 demonstratives. As is shown on the left, we
2 see that the Patent Owner alleged in the response that output 'd', that is the
3 direction, and output 'p', power, were required. In a surreply, we see their
4 evolved allegation that the output 'd' and 'p' are required as separate steps.

5 Slide 41, please. Now, we contend that the response to the
6 surreply argument is belied by what is shown here. On Column 4, Lines 37
7 through 42 of Gregorio, we see that, and I'll quote, "the zero crossing time of
8 the LRA is measured and that the polarity status is latched until the end of
9 the drive pulse." And we make this argument on page 16 of our petition.
10 And I really want to walk through the functionality we're describing here.
11 Here we have an LRA. I like to think of them as a track with a 50-yard line
12 in the middle. And what Gregorio refers to as a zero crossing time. So as
13 our weighted mass crosses this 50-yard line, we measure the zero crossing
14 time and we latch the polarity until the end of the drive pulse. Your Honor,
15 we think that the -- this step is really driven by the position of the mass on
16 the track that is the zero crossing time.

17 JUDGE EASTHOM: What does that mean, latch the polarity? I
18 read that a few times and I didn't understand that.

19 MR. ROZYLOWICZ: Your Honor, I think it means that we
20 maintain the status of the polarity for the duration of the drive pulse. Right?
21 So if it's going one direction within an LRA system, we go back and forth.
22 What we do is, until we -- we know we need to reverse directions, we in fact
23 maintain that until the end of the pulse which would then tell us to reverse
24 directions.

25 JUDGE BEAMER: Counsel --

26 JUDGE EASTHOM: With the zero crossing is -- oh, go ahead.

1 Go ahead, Judge Beamer.

2 JUDGE BEAMER: Yeah, this is Judge Beamer. In relation to this
3 separate output which you -- I'm looking at page 64 of your petition. I don't
4 know whether you have access to that. But it's talking about this
5 combination with Rossi, and it says a POSITA would have found obvious
6 based on the combination that the processor is programmed to provide a
7 controlled output to the H bridge switch for controlling the direction of the
8 drive signal through the coil. And I would have thought that that's another
9 item of evidence that you're offering for a separate signal for the 'd' value as
10 opposed to the signal for the 'p' value.

11 MR. ROZYLOWICZ: Yes, Your Honor, and I would agree with
12 that as well. I think it really amplifies how the LRA systems operate when
13 we're going back and forth between that. I certainly agree with and endorse
14 that, what's shown there in the petition on page 64.

15 JUDGE BEAMER: But the thing is, is that your Slide 41 seems to
16 be just not relying on the combination but just Gregorio alone. Once you've
17 introduced the combination with Rossi, I'm not sure that this implementation
18 detail would still be used. So that kind of confuses me.

19 MR. ROZYLOWICZ: Your Honor, I -- a couple of aspects there.
20 I think what we're really speaking to is -- and maybe if I can back up two
21 slides. Your Honor, I think I'll maybe call your attention to Slides 37 where
22 we really speak to the limited role that Gregorio plays in -- I'm sorry, the
23 limited role that Rossi's H-bridge plays within the broader Gregorio control
24 system. Right? I think we rely on Gregorio -- I'm sorry, we rely on Rossi
25 for the very focused purpose to -- for the purposes of periodic switching of
26 the polarity of the drive signals as it relates to the polarity, the drive signals

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1 that are sent to the electric coil 28 of Gregorio.

2 JUDGE BEAMER: Okay. Thank you.

3 MR. ROZYLOWICZ: Your Honor, if I could then turn your
4 attention to Slide 42 of the '830 demonstratives. And in this, I'll call your
5 attention to the highlighted portion shown here at the end which references
6 Gregorio, Column 2, Lines 32 through 35. This highlighted portion notes
7 that haptic parameters are, and I quote, "generated based on a user's
8 interaction." Put differently, the user interaction triggers invocation of these
9 parameters. And in contrast, the prior functionality of tracking the position
10 of the motor relative to, for example, the 50-yard line or measures where the
11 track is along the weighted path.

12 So, Your Honor, I would contrast these two processes. One of
13 these is really actuator driven as an actuator step and the other one of these is
14 really driven by user interaction. Your Honor, I respectfully submit that user
15 interaction and non-user interaction are separate steps.

16 So, Your Honor, we just tackled the control component as it relates
17 to the '830 Patent which deals with our Gregorio-based grounds. Similar
18 grounds for Gregorio exist in the '337 Patent. We won't touch upon these
19 here.

20 If there's no further questions, we'll turn to consideration of the
21 Wakuda-based grounds in dealing with the control component. And once
22 we speak to the control component limitations, we'll turn to the other
23 limitations that are only present in the '830 Patent. Before we turn to the
24 Wakuda-based grounds in '337, I want to pause and see if there's any
25 questions as it relates to the Gregorio-based '830 grounds?

26 JUDGE EASTHOM: Just real quickly, Counsel, so are you

1 suggesting that the user-based signals there is a separate step from when the
2 oscillator in Gregorio controls -- the oscillator system controls the oscillation
3 to try to keep it in resonance without a user input. But -- so your -- so but in
4 each of those cases, wouldn't the user defined output be controlled by a
5 signal that has both 'p' and 'd' and then the other one would also have the
6 same aspects. So you'd have two 'p' and 'd' signals, if you will. So are you
7 contending that that's enough to satisfy the claim? They're separate sets of
8 two 'p' -- separate sets of 'p' 'd' signals; is that your position? Maybe I wasn't
9 that clear or maybe you can tell me what you meant by focusing on the user
10 versus the non-user.

11 MR. ROZYLOWICZ: Right. Your Honor, I think what we show
12 as it relates to the movement of the mass along the actuator is that that is
13 really -- while those signals can in fact, we know that frequency and the
14 controller frequency can come from the user system as one of those steps.
15 There's also a separate step that this speaks to that's direction based on the
16 movement along the actuator relative to where it needs to be. And that,
17 Your Honor, controls part of the -- is used in part to inform the direction of
18 the polarity signal.

19 Separately, Your Honor, I would call your attention to the fact that
20 these are -- would be interrupt-driven for user. It could be, I think the
21 examples it offers up are user-based control or user-based activity that
22 triggers invocation of these parameters. And as such, that particular user
23 triggered event, pressing a button, would be separate from tracking the
24 progress of the actuator along the LRA.

25 JUDGE EASTHOM: Right, but my point was, pressing the button
26 is going to change both the amplitude and the frequency probably, right?

1 MR. ROZYLOWICZ: Yes, Your Honor.

2 JUDGE EASTHOM: Based on how we -- okay.

3 MR. ROZYLOWICZ: Your Honor, with that, if I can turn to Slide
4 70 of the '337 demonstratives. Your Honor, for your convenience, you see
5 the grounds for rejection that appear in the '337 Patent. I'll only note that in
6 addition to those grounds based on Gregorio, we have a separate set of
7 grounds that are based on Wakuda with Ramsay. Slide 21, please. Here is
8 the claim at issue, and as we see, it is similar to what we previously
9 considered in the context of the '830 Patent. Slide 25, please. Now we'll
10 turn to the Patent Owner's arguments as it relates to Wakuda. Slide 26,
11 please.

12 Your Honor, Patent Owner alleges that Wakuda doesn't show
13 output at value 'p' corresponding to the currently selected strength. We
14 respectfully submit that the Patent Owner disregards the record. And I'll call
15 your attention to '337 petition on page 19 which makes reference to Ramsay,
16 Paragraph 30. On this page of the petition, drawing upon Paragraph 30, it
17 says, and I quote in the first sentence that, "certain parameters or
18 characteristics or haptic track can be created, entered, changed or modified.
19 The modifiable parameters include a frequency of vibration and amplitude
20 of vibration." Slide 27, please.

21 Your Honor, here we see that they allege that Wakuda is directed
22 to a single drive signal, control both the frequency and amplitude of the
23 vibration, of the vibration generation means. Slide 28, please. However,
24 here we see in the lower right, we see nothing that would suggest that the
25 Wakuda-based grounds are so limited. Indeed, we see the position detection
26 cycle, or I'm sorry, the petition detection means 11 is used to inform where

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1 the motor stands in the cycle. That in turn --

2 JUDGE BEAMER: Can you -- I'm sorry, I'm sorry, I lost -- what
3 slide was that?

4 MR. ROZYLOWICZ: That's Slide 28 of the '337 demonstratives.

5 JUDGE BEAMER: Slide 28. Thank you.

6 MR. ROZYLOWICZ: So we were saying, the information from
7 the position detection, means 11, is used to inform where the motor stands in
8 a cycle. That in turn provides the data to the signal generation, means 12, to
9 control the motor. Slide 29, please. However, Your Honors, we see that not
10 only does Ramsay provide power parameters, but we see in the last sentence
11 on the right that the current amplitude can be abruptly increased by
12 increasing the excitation signal A in current quantity speaking to amplitude.
13 Slide 30, please.

14 Now, when looked at Wakuda is similar to Gregorio in driving an
15 LRA in one direction or the other. Here in Wakuda, and as is shown on the
16 left, we see that Wakuda provides for, and I'll quote, "change in the number
17 of and current quantity of the excitation signal A and a reverse excitation
18 signal B and change the number in a current quantity of the inhibition signal
19 C and the reversed inhibition signal C." This appears in Columns 9, Line 40
20 through 48. Quite simply, Wakuda also gives us power settings.

21 Slide 31, please. Finally, we'll turn to the limitation that deals with
22 the recited frequency as it relates to the signal direction. Slide 32, please.
23 Now, I'll call your attention to two portions of the text in a minute. I'll first
24 note that much like Gregorio-Wakuda uses a very similar mechanism to
25 track the progress of the movable body along our track in the casing. The
26 first sentence tells us that in response to detecting that the movable body has,

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1 and I quote, "reach a neutral position shown at Figures 1 and 2, that is a
2 middle point in the reciprocation stroke." And as the highlighted portion
3 tells us, what do we do with this information? We use the signal generation
4 means and switching of in current direction of the drive signal S-1. We rely
5 on this in the petition on page 18.

6 Slide 33, please. And as we see in the first slide, first highlighted
7 section from the Petitioner's reply, here we see that Wakuda has based
8 grounds similar to use Rossi's H-bridge switch to manage the direction of the
9 current. Slide 34, please. And as is shown in the excerpt on the right-hand
10 side, the Patent Owner acknowledges that Wakuda provides the drive signal.
11 The Patent Owner notes that Wakuda teaches a drive signal to the drive
12 means to switch the direction of the current supplied by the power supply to
13 the coil.

14 Slide 35, please. Now, I will call your attention to Patent Owner's
15 arguments in the surreply shown on the right. They now allege, and I quote,
16 "nowhere does it teach separately outputting 'd' and 'p' signals at separate
17 steps." Yet, let's briefly return to the record on this point, as we saw. In
18 particular, I'll call your attention to Ramsay 1006 which is Exhibit 1006,
19 Paragraph 30, referenced on page 42 of our petition with respect to our
20 discussion of element 1F.

21 Again, Paragraph 30 of Ramsay notes, and I quote, "certain
22 parameters or characteristics of a haptic output or haptic track can be
23 created, entered, changed, modified, et cetera. For example, the modifiable
24 parameters may include a frequency of vibration and amplitude of
25 vibration." Now, much like our Gregorio-based grounds, there are two
26 separate mechanisms in play here. The direction component is tied to

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1 measuring our way to the LRA relative to this 50-yard line and the power
2 settings are informed by user actuation of the event. And, Your Honor, if
3 there's no further questions, I'll return to Slide 43 of the '830 demonstratives.

4 JUDGE EASTHOM: Just one quick question. So you're not
5 conceding that -- in your reply, it seemed every -- it seemed that you relied
6 on the grounds that involve Rossi to show separate signals. Even though I
7 get your point now you're saying the Patent Owner didn't raise that
8 argument, that they had to be different. But I thought on your reply you
9 distinctly relied on Rossi's H circuit to get the different -- get the 'd' signal
10 that's separate from the 'p' signal and pointed to your petition. Let me see if
11 I can find a spot. So, for example, I guess you were just relying on -- you
12 weren't really relying on a separate signal there in the reply; is that right?
13 Or --

14 MR. ROZYLOWICZ: Your Honor --

15 JUDGE EASTHOM: I mean, on page -- go ahead, I'm sorry, like
16 on page 8, for example, of your reply you say direct -- the control
17 component provides two values. Oh, okay. And you're quoting Patent
18 Owner's argument. And then you say Wakuda does disclose both on page 9,
19 'd' and p. And then in the combination H-bridge is implemented as part of
20 that. I guess I understood you to be saying that there were two different
21 signals there, 'p' and d. But maybe I misunderstood you. Is that -- am I
22 overreading what you put in your reply or --

23 MR. ROZYLOWICZ: No, Your Honor. I think that Rossi
24 provides the enabling infrastructure to provide both these signals through the
25 use of the H-bridge.

26 JUDGE EASTHOM: Okay. So you would have the amplitude

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1 signal going up to the top of the H-bridge and then the switching signal
2 would be to the inverter part, to turn on the transistors.

3 MR. ROZYLOWICZ: I think so, Your Honor.

4 JUDGE EASTHOM: Okay. So if we agree with Patent Owner
5 that you need two separate signals, 'p' and d, would you concede that you
6 need Rossi for that?

7 MR. ROZYLOWICZ: No, Your Honor, I would not concede
8 because I think we -- there's multiple measures by which separate -- by
9 which we establish that they're, they in fact are separate signals. You
10 know --

11 JUDGE EASTHOM: Okay.

12 MR. ROZYLOWICZ: -- so first we walked through the control
13 sequence as it relates to measuring the mass along the LRA that latches that
14 signal for duration. Separately, I think the control provisions contemplated
15 by Gregorio and Wakuda, or in Ramsay, in fact, can be interfaced through
16 the Rossi infrastructure to in fact reverse the polarity.

17 JUDGE EASTHOM: Right. You rely on Rossi to reverse the
18 polarity. So that's why I was thinking that you're relying on Rossi for
19 keeping 'd' and 'p' separate. But now you're also saying you can rely solely
20 on Wakuda for separate 'p' and 'd' signals?

21 MR. ROZYLOWICZ: Well, Your Honor, in the Wakuda-based
22 grounds in combination with Ramsay in Paragraph 30 in particular I think
23 specifies that you -- it makes clear that the power settings can be provided
24 from the user interface, for example, to specify the particular user setting or
25 control.

26 JUDGE EASTHOM: Did you cite -- I mean, I know you said you

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1 cited Paragraph 30 in the petition. Did you didn't today tell us that you used
2 that rationale in your petition, did you? Or am I missing it?

3 MR. ROZYLOWICZ: Your Honor, we did. I think it was in our
4 petition page -- is it 19? We relied on Ramsay, Paragraph 30.

5 JUDGE EASTHOM: Okay.

6 MR. ROZYLOWICZ: And that's as it relates to the, you know,
7 that's as it relates to the modifiable parameters included in the frequency of
8 vibration and the amplitude of vibration.

9 JUDGE EASTHOM: Sure. Well, I see what you have there but I
10 guess I'm still confused because it seems even if you have that GUI, that's
11 what you're saying that Ramsay does that and then you can modify the
12 vibration and the amplitude. But that doesn't say that you're going to send a
13 signal. It seems everything in Wakuda, the signal, for example, that's with
14 respect to Wakuda.

15 But both in Wakuda and Gregorio, it seems that the signals, as
16 Patent Owner points out, they have -- they're just the same. They have both
17 frequency and amplitude embedded in the same control signal. I guess that's
18 what -- and now you're saying, well, Ramsay says you could change them
19 both. But how does that change how the operation of Wakuda or Ramsay
20 operates?

21 MR. ROZYLOWICZ: Your Honor, I think both --

22 JUDGE EASTHOM: Wakuda or Gregorio. I'm sorry.

23 MR. ROZYLOWICZ: Yeah.

24 JUDGE EASTHOM: Sorry to be confusing.

25 MR. ROZYLOWICZ: Your Honor, I think both Wakuda and
26 Gregorio describe the -- a tracking mechanism for the -- that the tracks, you

1 know, the position control of -- provides for position control that tracks the
2 position of the motor along the -- along this to detect where it's at. And
3 based on that, it determines when it's reached an indicated point so that it
4 then can generate a signal to reverse the polarity.

5 I mean, in my mind, Your Honor, that is a very similar control in
6 Gregorio as it discusses the zero crossing point. In my mind, the ability for
7 the processor to track where something stands along that axis and thus latch
8 in one direction, I think in the case of Gregorio, I think speaks to providing a
9 separate polarity control.

10 JUDGE EASTHOM: Okay. But if you look at Figure 5 what you
11 guys cited for Gregorio, it doesn't seem -- it seems like -- it seems as if the
12 control output, at least the 504, let's say that that's somehow mimicked by
13 whatever some control input is, that's controlling frequency I can see and it's
14 controlling amplitude but it's the same signal. And that -- and I think that's
15 what your friend's point is. The same signal's controlling both of them, both
16 amplitude and frequency. You put that in your petition. You showed where
17 the -- that signal is controlling frequency and amplitude. You highlighted it
18 in your reply, I mean.

19 MR. ROZYLOWICZ: Right. So, Your Honor, just to be clear, are
20 we speaking to the Wakuda-based grounds? Because I, as I understand, our
21 opposing Counsel, they're making reference to a signal generation means
22 and I think it relates to -- I think you just mentioned the Gregorio-based
23 grounds. I understand that they're -- they've made that argument as it relates
24 to a logical control diagram. I think it's Figure 1 of Gregorio that they allege
25 combines these signals. Which I'd submit isn't consistent with what the
26 disclosure provides, separate parameterization of both magnitude, frequency

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1 and duration which they provide in -- as parameters in -- in both the
2 Ramsay-based grounds as well as the Gregorio-based grounds.

3 JUDGE EASTHOM: Okay. I appreciate that. I'll think about
4 what every -- what you said. Thank you.

5 MR. ROZYLOWICZ: Okay. Thank you, Your Honor.

6 JUDGE BEAMER: So in the Wakuda grounds, what's the
7 processor?

8 MR. ROZYLOWICZ: Your Honor, I believe -- I'll go to this
9 figure. Your Honor, I think the Wakuda, it's the -- it looks like it's the signal
10 generation means at 12 shown in Figures 3, shown in Figure 3.

11 JUDGE EASTHOM: Actually, I think, Counsel, your petition
12 refers to 10 the whole -- I mean, I thought you referred on with respect to
13 Ramsay you combined them to show the processor, the Wakuda/Ramsay
14 combination; isn't that true?

15 MR. ROZYLOWICZ: Yes, Your Honor.

16 JUDGE EASTHOM: And you said that it would be, I guess
17 combined? Just answer Judge --

18 MR. ROZYLOWICZ: Yes, Your Honor. So let me clarify. Right.
19 As it relates specifically to the logical component of Wakuda itself where
20 Ramsay would be integrated, I think the -- that control logic would -- shown
21 in circuit generation means 12 would certainly interface and our petition
22 contemplated that would be the processor from Ramsay to provide that
23 control signal information.

24 JUDGE EASTHOM: That's how I understood it, yeah, thanks.
25 Sorry, Judge Beamer, I just wanted to get --

26 JUDGE BEAMER: No, that helps. Thank you.

1 MR. ROZYLOWICZ: So, Your Honors, if you can turn to Slide
2 43 of the '830 Patent, please. So we can turn to the combination for how the
3 combination (INDISCERNIBLE - TECHNICAL DIFFICULTY) obvious to
4 paramagnetic flux paths. Slide 44, please. Your Honor, here on Slide 44,
5 we see the limitations at issue in Claims 14 and 19. Slide 45, please. Now,
6 we'll first focus on the underlying record in the petition as to why it would
7 have been obvious to include paramagnetic materials as one of the magnetic
8 materials contemplated by Wakuda.

9 Slide 46, please. So in the box on the left, we see the structure of
10 Gregorio with its casing 25. This casing is shown on the upper right. And
11 below it on the right-hand side, we see Wakuda Figure 1A which illustrates
12 a very complementary structure with more visual detail as the structure of
13 the casing 2.

14 Slide 47, please. And I think it's important to walk through the
15 record on Wakuda. And in the first highlighted section, we see, and I quote,
16 "the casing, alone along with the yoke members, correspond to the flux paths
17 because the casing and yoke members are made of magnetic material." In
18 the second highlighted section, we see, and I quote, "it was well known and
19 obvious to shape and position the components of an actuator (or the
20 materials thereof) that define a magnetic path such that the components
21 reduce magnetic reluctance and increase magnetic flux."

22 Wakuda doesn't just give us the casing as to the required
23 mechanical structure. Wakuda goes further, provides us with this
24 architecture that uses magnetic materials to reduce the reluctance of the
25 magnetic path. Wakuda tells us that we should account for the flux path in
26 determining the structure of the casing. Slide 48, please. Here we see the

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1 language from Wakuda itself. In the first highlighted section beginning with
2 the first sentence before the highlight, we see that, and I quote, "the vibration
3 generating means comprises a cylindrical shaped casing 2 made up of a
4 magnetic substance." It isn't just happenstance that the casing reduces
5 reluctance. Instead, we see the magnetic substance in the casing both
6 provide support. In the second highlighted --

7 JUDGE EASTHOM: You're now into your rebuttal time, but that's
8 fine.

9 MR. ROZYLOWICZ: Thank you, Your Honor. The second
10 highlighted paragraph, we see that the yoke members are made from a
11 magnetic material. And, again, the use of magnetic materials was a
12 conscious design choice. Finally, in the lower paragraph, we see that the
13 magnetic flux forms a flux path. Further, the magnetic flux form a magnetic
14 path along which the flux path inside the casing 2 made of a magnetic
15 substance.

16 Slide 49, please. Now, let's go back and review the record in the
17 petition. First, we note that there are only a few categorical options for
18 magnetic materials. Exhibit 1032 tells us that there are four types of
19 magnetic materials. And, Your Honor, I'm afraid that there's been a great
20 deal of discussion over the role of aluminum and its impact as a
21 paramagnetic material. I'd like to remind you about what the petition
22 specifically argued on page 32 of our petition.

23 I'll call your attention on Page 32 to the paragraph that begins with
24 the word "Additionally". "Additionally," and I'm quote, reading, "a POSITA
25 would have understood and found obvious that a paramagnetic material
26 would be beneficially used for Wakuda's magnetic material for the casing

1 and the yoke members of the Gregorio's Wakuda act -- Gregorio-Wakuda's
2 actuator". It then notes, "paramagnetic materials are one of a few categorical
3 options for magnetic materials." Next, I'll call your attention to page 33 of
4 the petition and the paragraph that begins with "Several reasons." It notes,
5 "Several reasons would have motivated a POSITA to implement the casing
6 of Gregorio-Wakuda's LRA using a paramagnetic material. As described
7 above, Wakuda describes that the casing in the Gregorio-Wakuda
8 combination is made of a magnetic substance. Therefore, a POSITA would
9 have investigated example magnetic materials for the casing such that the
10 casing defines part of the magnetic flux, as taught by Wakuda. As described
11 above, a paramagnetic material was a well-known type of magnetic
12 substance mentioned in Wakuda and provided adequate permeability to
13 define the magnetic flux as identified in Wakuda."

14 I'll turn to page 34 of the petition. Here the petition demonstrates
15 that KSR establishes the obviousness of paramagnetic materials when
16 considering the disclosure of Wakuda. In the paragraph that begins "lastly",
17 I'll read it to say, "Lastly, the implementation of Gregorio-Wakuda's actuator
18 to use paramagnetic materials would have been predictable because doing so
19 was the application of known techniques (known materials for actuator
20 elements) to a known device (Gregorio-Wakuda's actuator) ready for
21 improvement to yield predictable results." Finally, page 35 tells us that it
22 would have been obvious as a matter of design choice. In the middle of the
23 first paragraph that begins with "a POSITA", I'll call your attention to the
24 citation which notes that, "it would be an obvious as a matter of design
25 choice within the skill of the art."

26 Similarly, at the end of the paragraph, we see that citation to In re

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1 Chu which notes that design choice is appropriate where the applicant fails
2 to set forth any reasons why the differences between the claimed invention
3 and the prior art would result in a different function. In this case, Wakuda
4 tells you to reduce the reluctance of the '830 patent.

5 Slide 50, please. Now, here we see three different exhibits with
6 different corroborating evidence that tells us that there are only several
7 categories of magnetic materials. And Wakuda tells us that we should
8 reduce the reluctance of a circuit. That leaves us with only two options. A
9 POSITA could consider ferromagnetic material or paramagnetic material.

10 And we understand that Patent Owner's argument is that
11 ferromagnetic materials reduce the reluctance to a greater degree. But as
12 we'll see, paramagnetic materials similarly reduce reluctance but merely to a
13 different degree. Slide 51, please. On Slide 51, we see that the language
14 from Brooks notes that the materials can be paramagnetic. Slide 52. In this
15 next portion of the presentation, we'll briefly step through and refute a
16 variety of the arguments advanced by the Patent Owner regarding the
17 paramagnetic limitation.

18 On Slide 53, I'll briefly characterize Patent Owner's arguments is
19 only focusing on the use of paramagnetic materials highlighted in blue. I
20 will respectfully submit that the highlighted portion in yellow is not in
21 dispute. Slide 54, please. Now, on the left-hand side, we see that Patent
22 Owner's arguments characterizing paramagnetic materials as, and I quote,
23 "So weakly magnetic" that they allege they are "considered to be non-
24 magnetic." Yet, as is shown in the upper right-hand side, we see that this
25 position is indeed contradicted by the benefits seen in their own claim which
26 tells us that paramagnetic materials, in fact, reduce the reluctance of the one

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1 or more magnetic circuits. Their own specification tells us as much
2 revealing that paramagnetic materials provide a lower resistance path for
3 magnetic flux. Quite simply, Your Honor, they cannot ignore their own
4 record. All that is required is the reluctance to be reduced.

5 JUDGE RANGE: This is Judge Range. Is there evidence outside
6 of their patent that a person of ordinary skill in the art would have
7 understood that paramagnetic materials could serve this purpose?

8 MR. ROZYLOWICZ: Yes, Your Honor. I think that all that is
9 required is that paramagnetic materials simply have to reduce the magnetic
10 flux. And I think among other things, I think their expert notes that different
11 paramagnetic materials such as aluminum, it may reduce the current. We
12 reduce the reluctance modestly, but it would still reduce the reluctance for
13 materials such as aluminum, for example.

14 JUDGE RANGE: But what's of evidence in the record that says
15 that it was known to a person of ordinary skill in the art that paramagnetic
16 materials would reduce reluctance in this way?

17 MR. ROZYLOWICZ: Your Honor, for example, I, you know,
18 their -- I think their definition, I'd say, as offered up in the '830 patent shown
19 here on Slide '830, I think they tell you that paramagnetic materials provide
20 a lower resistance path for magnetic flux.

21 JUDGE RANGE: Okay. Thank you.

22 JUDGE EASTHOM: Basically, you're saying anything that's
23 magnetic reduces the flux compared to something that's not magnetic; is that
24 what you're saying?

25 MR. ROZYLOWICZ: Your Honor, in this record, there are two
26 types of materials. The limited number of types of magnetic materials that

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1 would reduce the magnetic flux. There is ferromagnetic materials which
2 greatly reduce the reluctance of the circuit and there's paramagnetic
3 materials which modestly reduced the reluctance of the circuit.

4 JUDGE EASTHOM: Right, and that's what I'm -- I think your --
5 when you say it reduces a flux if you use paramagnetic, one of the two,
6 you're comparing that to something that's --

7 JUDGE BEAMER: Just for the record --

8 JUDGE EASTHOM: Go ahead. It's not magnetic?

9 JUDGE BEAMER: -- it's not reducing the --

10 JUDGE EASTHOM: Yeah, go ahead.

11 JUDGE BEAMER: -- it's not reducing the flux, it's reducing the
12 reluctance.

13 JUDGE EASTHOM: The --

14 JUDGE BEAMER: Increasing the flux.

15 JUDGE EASTHOM: Yeah, right, it's not reducing -- thank you,
16 it's reducing the -- whatever the -- like the impedance. Not the impedance
17 but the magnetic -- what's that called?

18 MR. ROZYLOWICZ: Yes, Your Honor, forgive me. It would
19 reduce the reluctance, magnetic resistance.

20 JUDGE EASTHOM: Thank you, yeah.

21 JUDGE RANGE: So this is Judge Range again. So I understand,
22 Counsel, that it's a factual matter. It may be the case that paramagnetic
23 material would reduce reluctance. But the thing that's weighing on me is
24 trying to figure out if a person of ordinary skill in the art at the time the
25 Patent was filed would have recognized that or not.

26 MR. ROZYLOWICZ: Your Honor, if I may return to that point

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1 and search through relevant parts of the record for that on my rebuttal time,
2 I'd like to be able to have the opportunity to return to that.

3 JUDGE RANGE: That'd be terrific. Thank you.

4 MR. ROZYLOWICZ: Your Honor, I call your attention to Slide
5 55 of the '830 demonstratives. And I note that their own expert contradicts
6 their own argument. When asked, "Do you agree, according to Claim 14,
7 that paramagnetic material has sufficient permeability so as to provide a
8 lower resistance path for the magnetic circuit, the vibration module, and thus
9 improve the efficiency of the magnetic field," Dr. Goossen responds, "I
10 mean, a paramagnetic material has generally very low permeability, but
11 sufficient to cause the flux paths to concentrate in them to some extent." He
12 was then asked, "So they provide a lower resistance path for the magnetic
13 circuit?" He answered yes.

14 Now, nobody is suggesting that paramagnetic materials reduce
15 reluctance as much as other materials. But that is not the limitation. Instead,
16 even their own expert agrees that the use of paramagnetic materials would
17 reduce the reluctance as required by the claim. And, Your Honor, I'll pause
18 to see if there's any further questions. If not, I'll reserve the balance of my
19 time for rebuttal.

20 JUDGE EASTHOM: Thank you. You have let's call it 11
21 minutes.

22 MR. ROZYLOWICZ: Thank you, Your Honor.

23 JUDGE EASTHOM: And give me one second, Mr. Rubin, and we
24 will set your time. Okay. Mr. Rubin, please introduce yourself for the
25 record and you may begin when you are ready.

26 MR. RUBIN: Good morning, Your Honors, Neil Rubin for the

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1 Patent Owner Resonant Systems. May it please the Board. You should be
2 able to see the slides that I'm sharing on your screens.

3 So briefly, I'd like to start with -- well, I guess to outline the
4 argument, I'll be going through the arguments that we have against all of the
5 grounds that I understand are still asserted in each of the IPRs, the
6 arguments that we have based on the control component limitation and then
7 at the end I'll turn to the argument based on Claim 14 and the magnetic -- or
8 the paramagnetic material in the '830 Patent.

9 So for the control component arguments here on Slide 6 of our
10 presentation, we've got District Court constructions in the two patents which
11 are very similar. There's one step that's not material to the IPR that's omitted
12 from the '830 construction. But in each case, the steps from Figures 7A
13 through 7C of the patents is invoked. And in the institution decisions, the
14 Board adopted a construction that it leads to then be consistent with the
15 constructions from the District Court. And this is also consistent with the
16 construction position that was taken in the petitions. I haven't heard the
17 Petitioner argue for any other construction today.

18 In particular, if we look at the figures that are invoked as the
19 corresponding structure, we see the requirement of a separate output of 'd',
20 the directional signal, and 'p', the output to the power supply at different --
21 actually, as shown in the figures during different iterations of the control.
22 But at the very least at different steps. Moving ahead to Slide 11, I'll just
23 note that it seems that the Petitioner has abandoned Grounds 1A through 1F
24 of the IPR against the '830 patent. We didn't hear any argument about them
25 today. And those indeed are not advanced in the petition under a
26 construction consistent with the construction the Board has adopted.

1 Moving to Slide 13, now I'll address Grounds 2A through 2C of
2 the IPR on the '830 patent. Slide 14, these are purportedly based on Apple's
3 construction of control component but the petition failed to provide a step-
4 by-step mapping that included both steps 708, the output of the directional
5 signal 'd' and 762, the output of signal 'b' -- I'm sorry, 'p' in the contest of the
6 full algorithm. Now, in the replies Petitioner points for the first time to
7 Gregorio's drive signal 504. Now we're on Slide 15. And this is Figure 5
8 from Gregorio. And the highlighted signal, the highlighting provided by
9 Petitioner allegedly is supplying both signal 'd' and signal 'p'. I think this is
10 an untimely argument that is a meaningfully distinct contention under the
11 case law that's cited here on Slide 16, it shouldn't be considered.

12 By turning to Slide 17, even if it were considered, the drive signal
13 504 is a signal and importantly it's outputted in one step. You don't have a
14 signal 'd' being outputted at one time as signal 'p' at a separate time as
15 required by the Means-Plus-Function construction in the algorithm in the
16 figures in the patents.

17 JUDGE BEAMER: I'm sorry, this is Judge Beamer. I understand
18 that that 504 signal is the input to the linear resident actuator 18, not the
19 output of the processor. It's what the actuator drive circuit generates after
20 having received inputs from the processor. So I don't see how this relates to
21 the issue of whether the 'd' and the 'p' outputs are present or whether they're
22 separate or not separate.

23 MR. RUBIN: Your Honor, as I read the reply, this is what they're
24 pointing to as the signals.

25 JUDGE BEAMER: I kind of understood them to be saying that
26 this shows that there is a variation in frequency and a variation in amplitude

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1 that is somehow generated. But I certainly don't understand the 504 to be
2 the signals that are called out by the claim.

3 MR. RUBIN: Well, then I guess there's -- it's not clear what the
4 signals are that -- in the prior art references that are being pointed to. We
5 heard argument this morning about the, you know, pointing to the frequency
6 as one of the parameters that the processor 12 in Gregorio utilizes. And so
7 that doesn't demonstrate that the processor, I mean, the fact that the
8 processor is making use of a frequency. It doesn't demonstrate that the
9 processor is outputting a directional signal to the switch.

10 JUDGE BEAMER: Well, they're relying on the combination with
11 the H-bridge to that.

12 MR. RUBIN: Right, so it doesn't necessarily follow that the output
13 to the H -- or the signal being used by the H-bridge is coming directly from
14 the processor. The evidence that they pointed to on Slides 41 and 42, and
15 this is from their demonstratives for the '830 patent, talking about the
16 measuring the pack EMF at the zero crossing time. I mean, that also
17 doesn't --

18 JUDGE BEAMER: What about the 42 where they talk about the
19 dynamic input of the user controlling these haptic effects?

20 MR. RUBIN: Well, I think that that is just pointing to the same
21 high-level parameters like magnitude and frequency and duration.

22 JUDGE BEAMER: So you agree that the processor controls those
23 but your contention is that it just doesn't follow that, it sends a signal that
24 switches based on the frequency. Is that a good way to summarize your
25 argument?

26 MR. RUBIN: Yes.

1 JUDGE BEAMER: Okay. Thank you.

2 MR. RUBIN: Turning to the control component related issues for
3 the '337 patent. Slide 27. Here Ground 1 doesn't seem to be advanced at
4 this point because of the claim construction adopted in the institution.
5 Turning to Ground 2, in reply the petitioner identifies the Wakuda drive
6 signal S1 as both the directional output 'd' to the H-bridge and the output to
7 the power supply. Here on Slide 29, we see the figure from Wakuda
8 showing the drive signal S1 going from signal generation means 12 to the
9 drive means 13.

10 Slide 30 in the reply they point to statements that the drive signal
11 may have a wave form such as a triangular wave or the like as evidence that
12 the drive signal can have a varying amplitude. Slide 31, even assuming that
13 the drive signal S1 could control both the H-bridge and power supply,
14 Wakuda does not teach separately outputting the 'd' and 'p' signals as
15 separate steps of the control component algorithm as required by the Board's
16 constructions.

17 Turning to Grounds 3A and B and 4A and B, once again, 3A and B
18 are based on constructions for control component that don't seem to be
19 advanced further in this proceeding. And so those grounds could be
20 rejected. I'm referring to Slide 34. Slide 35, Grounds 4A and B are
21 purportedly based on Apple's construction. But the Petitioner failed to
22 provide a step by step mapping of the Gregorio combination at all. So there
23 was just a statement here that given the similarity -- this is a paragraph from
24 the petition.

25 I apologize, I don't have a citation to this specific paragraph but it's
26 in pages cited at the bottom, where for the control component limitations,

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1 they just point to the similarity between the Ground 4A and B combination
2 and the Ground 2 combination and say that the evidence similarly applies for
3 this ground. So there's no, you know, just as there was no evidence in the
4 petition separate signals 'd' and 'p' at different steps in the algorithm, there
5 likewise is a failure to show that, at least -- or for this combination at least as
6 to the '337 patent.

7 JUDGE EASTHOM: Well, if we --

8 MR. RUBIN: Sorry, Your Honor.

9 JUDGE EASTHOM: Oh, go ahead. I was just saying, if we look
10 at the combination based on Ground 2 on Rossi, it does seem sort of similar.
11 Gregorio just sort of replaces Wakuda. They seem very kind of similar.
12 They're showing they have a processor and they both sort of suggest that
13 there are processor signals coming out of there to control frequency and
14 amplitude. And they're saying, well, why not send a signal to an H-bridge?
15 It's a pretty well-known circuit for controlling power to a coil. What's your
16 general response to that? I guess it's the same as you argue with respect to
17 Ground 2, right?

18 MR. RUBIN: That's right, Your Honor.

19 JUDGE EASTHOM: Okay.

20 MR. RUBIN: So I can turn now to the Claim 14 that's used for the
21 '830 patent. I'll go back to Slide 18 in our slide deck for that. So as we saw
22 from my friend this morning, the theories for Claim 14 in all three grounds
23 where it's challenged are based on the teachings of Wakuda making use of a
24 casing 2 made of a magnetic substance. And in the petition, they point to a
25 person of skill in the art being motivated to use aluminum, a paramagnetic
26 substance as the casing.

1 Now, I'll just note here that Wakuda itself recognizes that there are
2 both magnetic and nonmagnetic substances. So the statement here that the
3 casing is a magnetic substance must have meant more to a POSITA than that
4 it had -- the material had some sort of interaction with magnetic fields of the
5 sort that all substances do or else there wouldn't be a distinction from
6 nonmagnetic substances.

7 Turning to Slide 20, the role of aluminum in the petition is -- it's
8 pointed to repeatedly as the paramagnetic material that would be used and is
9 pointed to as the -- as providing the properties that would have motivated the
10 person of skill in the art to choose the material. So here on Slide 20, we
11 have several quotes where the petition points to the light weight of
12 aluminum, the resistance to rust and corrosion, the electrical and heat
13 conduction properties. If you take away aluminum, all of those motivations
14 that a POSITA purportedly would have had go away.

15 And going back to Slide 19 in the figure in Wakuda as was
16 annotated in the petition with the colors shown here. Wakuda shows the --
17 illustrates the effect of the casing material on the flux lines and shows,
18 although it's surely an idealization to some extent, shows the flux lines
19 entirely contained within the casing material and very strongly bent as they
20 enter and leave the casing material. Turning to Slide 21, we have our
21 experts opinion that this drawing showing strong bending of the magnetic
22 field lines into the casing is clearly indicating to a POSITA the use of
23 ferromagnetic material.

24 So although -- I forget which of Your Honors was asking the
25 question. But I would agree that there isn't a clear -- there isn't evidence in
26 the petition that a POSITA would have recognized the ability of a

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1 paramagnetic material to satisfy the portion of the limitation of reducing the
2 reluctance of one or more magnetic circuits. I don't think there's any
3 evidence in the petition of that outside of the teachings of the patent itself.

4 JUDGE EASTHOM: Well, wait a minute --

5 MR. RUBIN: As it were --

6 JUDGE EASTHOM: -- Counsel --

7 MR. RUBIN: Yeah?

8 JUDGE EASTHOM: Counsel, can I ask a question? It seems to
9 be, the way I understand it is that anything that's magnetic compared to
10 something that's nonmagnetic will reduce the reluctance. It's like saying a
11 conductor will reduce the resistance compared to something that's
12 nonconductive. It's not quite that strong, but the analogy sort of is there.

13 MR. RUBIN: I think, Your Honor, I think my friend was making a
14 point that -- I think my friend argued that it would only be ferromagnetic and
15 paramagnetic materials that -- I'm not sure -- I don't agree with that point.
16 But I think the point being made was that whether the reluctance is reduced
17 is going to depend on the sign of the -- it's going to depend on whether the
18 relevant permeability is greater than one or less than one. It's going to
19 depend on the sign of the polarization, the magnetic polarization of the
20 material relative to the applied magnetic field. So that -- I don't know the
21 diamagnetic materials would reduce the reluctance. But paramagnetic
22 materials would, I believe, ferromagnetic materials is another example
23 mentioned in the record.

24 JUDGE EASTHOM: Right. I mean, so that -- there's no dispute --
25 that's -- there's no dispute that those two reduce reluctance I guess. I mean,
26 there's no real dispute. I think every one of skill knows that. Right?

1 MR. RUBIN: I agree. Well, certainly -- well, I guess I don't want
2 to get sidetracked on this because the point that I was making is that even if
3 we grant that, even if we grant that a person skilled in the art would have
4 known that there were materials other than ferromagnetic materials that
5 would reduce the reluctance, a person skilled in the art looking at the figure
6 from Wakuda here shown on Slide 19 is depicting a magnetic flux that
7 would not be a magnetic flux from a paramagnetic casing material and
8 certainly not from an aluminum casing material.

9 I had a person skilled in the art looking at Wakuda and looking at
10 how the magnetic flux is depicted would choose a material that would
11 produce a magnetic flux like what's depicted, not some other magnetic flux
12 that would look quite different.

13 JUDGE RANGE: This is Judge Range. I think Petitioner was
14 citing to the '830 specification as some evidence that paramagnetic materials
15 could have this reluctance function. And I wanted to ask if you think
16 anything in the specification is a statement as to what was known in the art
17 prior to the '830 specification or statement as to, you know, what's admitted,
18 you know, knowledge of the person of ordinary skill in the art in this regard.

19 MR. RUBIN: Before I answer that question, I do want to look
20 again at exactly what from the '830 patent Petitioner was pointing to.

21 JUDGE RANGE: Yeah, I apologize. I was trying to find that, too,
22 and I was having a little trouble.

23 MR. RUBIN: It looks like it's maybe Slide 54. So looking at Slide
24 54, the box in the lower right hand corner, I do think that a POSITA would
25 have recognized that paramagnetic materials provide a lower resistance path
26 for magnetic flux and it would have recognized that a paramagnetic material

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1 will tend maybe only to a very small degree but will tend to provide a lower
2 resistance path for magnetic flux. I mean, that's just a matter of physics and
3 electromagnetism.

4 Now, I wouldn't concede that a person skilled in the art -- I mean,
5 that same slide also quotes Claim 14 itself of the '830 patent. And I'm not
6 going to concede that a person skilled in the art would have known to apply
7 that fact about flux and paramagnetic materials to the claimed invention.
8 Does that answer your question?

9 JUDGE RANGE: Yeah, I think that makes sense. So in other
10 words, a person of ordinary skill in the art, your position is would -- may not
11 have known that paramagnetic materials could sufficiently be used for this
12 kind of function and this kind of, you know, for this purpose here.

13 MR. RUBIN: Yes.

14 JUDGE BEAMER: Your expert flatly testifies that Wakuda would
15 not work if you used paramagnetic. Does Petitioner's expert offer something
16 to contradict that? I don't recall and I guess Petitioner can answer that also.
17 But what is your understanding of that?

18 MR. RUBIN: I'll confess, Your Honor, that I -- well, Your Honor,
19 I'd like to look back at the reply declaration.

20 JUDGE BEAMER: We'll actually let Petitioner answer that
21 question.

22 MR. RUBIN: Yeah, I mean, maybe Petitioner should respond to
23 that. But I -- and I'm looking back at the reply declaration. So I guess, Your
24 Honor, I'm not sure that our petition -- our position is that Wakuda
25 wouldn't -- would entirely fail to function if the material were paramagnetic
26 or were aluminum specifically. But --

1 JUDGE BEAMER: Is that what Slide 21 says?

2 MR. RUBIN: Well, it wouldn't work in the same way. Right?

3 The -- it wouldn't function to contain the magnetic field lines and so that -- I
4 mean, it would affect the magnetic fields that are experienced by the, for
5 example, the moving mass would result in, you know, undesirable likely
6 magnetic fields outside of the device. But I guess I don't think it's our
7 position and I don't think our expert meant to say that it wouldn't work in the
8 sense that there wouldn't be any vibrations. But what I don't see in the reply
9 is a -- or in the declaration that Petitioner's expert provided in reply, I don't
10 see any dispute that the magnetic field lines wouldn't look like what
11 Wakuda's figure shows.

12 I turn to Slide 22. There's some math that our expert did. It's a
13 little complicated because there are some different sets of units that are used
14 in different references to describe these magnetic properties. But on Slide
15 23, we see our expert's calculation and that's not disputed that the relative
16 permeability of solid aluminum is -- differs from one only by 0.002 percent.
17 And by contrast, a ferromagnetic material would typically have a relative
18 permeability in the thousands. And so with aluminum, the magnetic field
19 that's induced in the aluminum that is just this tiny fraction of the externally
20 applied magnetic field.

21 The effect that that can have on the path of the magnetic flux is
22 quite small, much less than what's shown in Wakuda. And so as our expert
23 explains, and this is Paragraph 145 of his declaration, a POSITA seeking to
24 apply the teachings of Wakuda Figure 1B would not be motivated to use a
25 paramagnetic material such as aluminum in place of the magnetic material
26 by Wakuda.

1 JUDGE RANGE: This is Judge Range again. Is it fair to say that
2 aluminum -- among paramagnetic materials, aluminum's the weaker end?

3 MR. RUBIN: Your Honor, I -- sitting here right now, I don't
4 actually know the answer to that. There are -- I think there's -- there may be
5 some evidence in the record on permeabilities of other materials in the CRC
6 handbook that we cite to. Sitting here right now I'm afraid I don't know the
7 answer.

8 JUDGE RANGE: Right, but I guess the point -- I guess the point
9 of this slide is just that its magnetic abilities in this regard are just weak --

10 MR. RUBIN: That's right.

11 JUDGE RANGE: -- in general. Okay. Thank you.

12 MR. RUBIN: And now on Slide 24, we have some of the evidence
13 that Apple itself cited which I think undermines their position that a person
14 skilled in the art looking at Wakuda referring to a magnetic material and for
15 the casing and the non-magnetic materials for other purposes would consider
16 a paramagnetic material to be within the class that's being referred to. So
17 here the evidence they cite to that paramagnetic materials are considered
18 magnetic actually says that all materials are magnetic in the sense that they
19 react to magnetic fields. But it also says that most applications of magnetic
20 materials call for ferromagnetic materials.

21 Turning to Slide 25, here we've got another exhibit that they
22 pointed to, Exhibit 1037 which states that with the exception of
23 ferromagnetic and ferrimagnetic materials, the other categories are so
24 weakly magnetic that they're usually thought of as nonmagnetic. Again, this
25 is evidence that Apple itself cited to for the proposition that Wakuda's
26 magnetic material would be aluminum. The document itself says that -- I'm

1 sorry, Your Honor?

2 JUDGE EASTHOM: Counsel, how did your inventors get around
3 this problem with paramagnetic materials? I understand that this reluctance
4 is also, or permeability, is related to the thickness.

5 MR. RUBIN: Uh-huh.

6 JUDGE EASTHOM: And then in one of the slides it says that you
7 do have to consider the thickness. So did they just put a thicker piece of
8 paramagnetic material on the body so that they could get this thing to work
9 the way they wanted it to?

10 MR. RUBIN: Thank you, Your Honor.

11 JUDGE EASTHOM: And what's the big -- why -- I know you
12 seem to be saying nobody would want to use paramagnetic materials and yet
13 your inventors used it. So I'm just wondering how did they use it? How is it
14 that they're being able to use it?

15 MR. RUBIN: Sure. So the teaching of the patent is that you need
16 to have adequate permeability and size to avoid saturation. And that you
17 need to choose a paramagnetic material of appropriate permeability. There's
18 not a lot of detail beyond that in the specification about how you solve the
19 problem. If the question is how this was solved in practice in actual
20 embodiments of the invention, I'm afraid I don't know the answer to that.

21 JUDGE EASTHOM: Okay. Thank you. Appreciate that.

22 MR. RUBIN: Yeah.

23 JUDGE EASTHOM: You're getting into 20 minutes --

24 MR. RUBIN: Okay.

25 JUDGE EASTHOM: -- for your rebuttal.

26 MR. RUBIN: Good timing because I think this is the last slide I'm

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1 going to do just to address another piece of evidence that they cite for this,
2 the Brooks patent which Counsel used this slide earlier today. So here, I
3 think if you actually read the highlighted and surrounding text, Brooks is
4 saying that you can choose a nonmagnetic material which, if you want to use
5 a paramagnetic material as your nonmagnetic material, you can use a
6 paramagnetic material. And it gives aluminum as an example of the suitable
7 material meeting these requirements. In other words, the requirement of a
8 nonmagnetic material.

9 So it's -- again, this is the evidence that they point to in the petition
10 that a person rating Wakuda and its reference to a magnetic material would
11 have chosen aluminum. I think the evidence they point to, if anything,
12 suggests that a person skilled in the art would not have recognized
13 aluminum, this material to use for that purpose. And with that, unless there
14 are further questions, I'll reserve the rest of my time.

15 JUDGE EASTHOM: I don't think we have any questions, so I'll
16 put you at 19 minutes roughly. Hang on one second, please. Then we'll hear
17 from Petitioner.

18 MR. ROZYLOWICZ: Your Honors, could I respectfully request
19 that we take five minutes for a brief --

20 JUDGE EASTHOM: Yeah, that's fine. Yeah, that's fine. Why
21 don't we meet -- that's a good suggestion, actually. We'll meet at 11:55. Is
22 that okay?

23 MR. ROZYLOWICZ: Yes, Your Honor.

24 JUDGE EASTHOM: Okay. See you back then. We're off the
25 record.

26 (Whereupon, the above-entitled matter went off the record at 11:49

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1 a.m. and resumed at 11:55 a.m.)

2 JUDGE EASTHOM: Go ahead, Mr. Rozylowicz, whenever you're
3 ready. Thank you.

4 MR. ROZYLOWICZ: Thank you, Your Honors. If I can respond
5 to a few of the earlier questions as well as some of the points raised by
6 Patent Owner, I'd like to touch upon those now. So briefly, Your Honor, I
7 think I heard our friend suggest that Grounds 1A through 1F were
8 abandoned by the Petitioner. They were not. Instead, if you look at a
9 structure of how we raised Grounds 2A and 2B, in fact, it built upon the
10 earlier analysis but only further expanded upon it to account for the different
11 claim construction under 112F. So those grounds are sustained but only
12 relevant if different constructions were ultimately raised which they were in
13 this case.

14 Second, Your Honor, I'd like to respond to some of the earlier
15 questions as to the separate --

16 JUDGE EASTHOM: Wait, can I can I clarify that? You -- when
17 you say alternative construction, you mean if the 'p' and 'd' have to be
18 separate? They are not relevant anymore; is that what you meant?

19 MR. ROZYLOWICZ: No, Your Honor, far broader than that. I
20 think there was a concern that we no longer were relying on Figures 1A and
21 1F. and --

22 JUDGE EASTHOM: Grounds 1A and 1F?

23 MR. ROZYLOWICZ: Yeah.

24 JUDGE EASTHOM: Or, no, I'm sorry.

25 MR. ROZYLOWICZ: For Grounds 1A and 1F. And I just want to
26 clarify our position and we note that for Grounds 2A and 2B, we build upon

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1 Grounds 1A through 1F which occurred earlier.

2 JUDGE EASTHOM: I'm sorry, wait. We have Grounds 1 and we
3 have Ground 2 and then we have Ground 3A, 3B, 4A and 4B. And I think I
4 know what you meant. You -- oh, 1F you mean the separate claim within
5 those grounds?

6 MR. ROZYLOWICZ: Yeah, that is the narrative that appeared
7 earlier in the petition was built upon --

8 JUDGE EASTHOM: Okay.

9 MR. ROZYLOWICZ: -- this.

10 JUDGE EASTHOM: Okay. Appreciate that. Thank you.

11 MR. ROZYLOWICZ: Your Honors, I wanted to return to the
12 discussion and consideration of separate signals. To be clear, we think that
13 there's three independent bases in the record to address this point. Each of
14 these show separate signals. First, Gregorio alone with both the directional
15 and amplitude controls is found in light of the discretion or frequency and
16 amplitude that is the high level parameters provides us in two different
17 contexts. First, we talked about the zero crossing point and second of all we
18 talked about user interaction. These are both -- we believe these are both
19 separate outputs as well as separate steps.

20 And, again, Your Honor, I'd call and speak to similar functionality
21 as resident in Wakuda which aligns very much with the functionality that
22 was resident in Gregorio. The choice in terms in Wakuda spoke to I think it
23 was the neutral position as well as some of the Ramsay-based grounds for
24 amplitude. I just wanted to be clear that we had two other bases to speak to
25 separate signals.

26 Finally, Your Honor, we have the Rossi-based grounds, and this is

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1 really to implement Gregorio and Rossi's directional control that is value 'd'
2 as part of the specific H-bridge switch.

3 JUDGE EASTHOM: Can I just clarify, Wakuda is -- you said that
4 you have the neutral position and also the user input; is that what you said?

5 MR. ROZYLOWICZ: Yes, Your Honor, for the Wakuda-based
6 grounds, we rely upon Ramsay for the I think among, I think the choice of
7 language it uses is the user interface controls that make reference to where
8 you specify those parameters.

9 JUDGE EASTHOM: Okay. Thank you.

10 MR. ROZYLOWICZ: Your Honors, to be clear, Gregorio, Figure
11 5, shows that drive signal 504 that is outputted from the actuated drive
12 circuit to the actuator or the LRA, this drive signal shows that both the
13 direction and amplitude and vary over time.

14 JUDGE EASTHOM: Wait. The drive signal 504, as my colleague
15 pointed out, that's output from the -- that's not coming from the processor,
16 right?

17 MR. ROZYLOWICZ: Your Honor, I think what Figure 5 shows is
18 that it actually shows that parameterization of the signals that are specified
19 by the processor 12.

20 JUDGE EASTHOM: I don't understand that. Can you -- in other
21 words, we're looking for signals coming out of the processor and then Figure
22 5 shows signals coming out of the driver, I think. Right?

23 MR. ROZYLOWICZ: It is, Your Honor, and I agree that Figure 5,
24 what it actually shows is, is how we're actually driving the motor. But I
25 think the parameters that are specified by the processor 12 in fact manifests
26 themselves in what we see in Figure 5.

1 JUDGE EASTHOM: Oh, I see what you're saying.

2 MR. ROZYLOWICZ: It processes with those different variations.

3 JUDGE EASTHOM: Okay. I understand your position. Thank
4 you.

5 MR. ROZYLOWICZ: Okay. Next, Your Honor, I wanted to
6 speak to the notion that paramagnetic capability would not destroy the
7 functionality of Wakuda. Judge Beamer, as to your question as to -- under
8 whether the use of paramagnetic materials would destroy the operation of
9 Wakuda, we agree with the Patent Owner, Counsel, that it would not. And I
10 don't believe they contended as much. Rather, they contended that the
11 aspects of Figure 1B from Wakuda used to show the directionality of the
12 flux lines in Wakuda would have been interpreted as reflecting magnetic
13 flux lines.

14 And somehow that these rectangular shaped attributes associated
15 with Figure 1B would have led a POSITA to think that the paramagnetic
16 material was not being advanced by Wakuda. Respectfully, this is flawed.
17 The aspect of Figure 1B that we should take away is that a POSITA would
18 see that in fact the casing material, number one, includes flux lines and
19 second of all that it shows a direction to the magnetic flux lines.

20 As such, the rectangular nature of the drawings would not be
21 thought of a POSITA to actually inform the underlying choice of available
22 magnetic materials from among the different classes such as ferromagnetic,
23 paramagnetic or other criteria. We know this is the case because the
24 drawing shows corners where it's drawing the magnetic flux paths. And a
25 POSITA would understand that magnetic flux lines don't have corners.

26 Indeed, I think that the McLyman reference throughout shows any

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1 number of figures with flux lines that all show that there is no such thing as
2 a -- a right angle in managing magnetic flux lines. And therefore, they
3 would not interpret this drawing as they contend by the Patent Owner to
4 reflect the shape of the magnetic flux lines. Rather, and again, it simply
5 shows the directionality of the flux lines and also the ability to use the casing
6 material to guide the magnetic flux lines.

7 JUDGE EASTHOM: Counsel, is this right-angle argument in the
8 record?

9 MR. ROZYLOWICZ: Your Honor, let me -- let me follow up on
10 that point briefly if I can in the time remaining.

11 JUDGE BEAMER: So your position -- I'm sorry, your position is
12 that Wakuda would work with a paramagnetic material?

13 MR. ROZYLOWICZ: Absolutely, Your Honor.

14 JUDGE BEAMER: Maybe not as effectively but it would work?

15 MR. ROZYLOWICZ: Right. And, Your Honor, what is in the
16 record is the McLyman shows you that there is no such thing as a right angle
17 flux line that -- that Patent Owner contends would require the use of a
18 ferromagnetic material. Instead, I think the McLyman reference which I
19 think we rely and reference both in our petition as well as our reply
20 demonstrates that flux lines, depending on the particular strength that you're
21 measuring have varying degrees of curvature depending on the threshold
22 strength that you measure. That I think is present throughout the McLyman
23 reference.

24 JUDGE BEAMER: What reference?

25 MR. ROZYLOWICZ: Your Honor, the McLyman reference.
26 That's Exhibit 1012 -- I'm sorry, 1012.

1 JUDGE BEAMER: Okay.

2 MR. ROZYLOWICZ: Finally, Your Honor, I want to speak to
3 some of the questions about Judge Range asked about the -- where in the
4 record establishes that paramagnetic materials would reduce the reluctance.
5 First, Your Honor, I think that Slide -- I'm sorry, Slide 55 from the '830
6 demonstratives demonstrate the permeability of different materials which I
7 think establishes their reduced -- I'm sorry, the reduced reluctance for the
8 magnetic circuit. I think that's certainly something in the record that speaks
9 to the impact of paramagnetic materials.

10 But, again, Your Honor, at the critical date, magnetic materials
11 were known to reduce the magnetic reluctance. There are only a few type of
12 known categories of magnetic materials. Nothing in this record suggests
13 that a POSITA would have doubted their utility in serving these. And to
14 some extent, purposes attributed to the magnetic materials. And in the
15 spectrum of different design constraints for what we're considering, certainly
16 magnetic flux is one of the criteria on how we manage that. But there's other
17 properties that we consider such as resistant to the -- resistance to the
18 elements, strength, heat transfer probabilities and a flux path would be one
19 of several materials that might be considered by a POSITA.

20 Further, Your Honor, we know that --

21 JUDGE RANGE: Counsel, did you say it was Slide 55? This is
22 Judge Range.

23 MR. ROZYLOWICZ: Yes, Your Honor, I think it was Slide 55.

24 JUDGE RANGE: Okay. Thanks.

25 MR. ROZYLOWICZ: Your Honor, we see here in Slide -- I'm
26 sorry, I said Slide 55. I meant to say Slide -- Exhibit 1054, Slide 73 which

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1 just shows the relative permeability of different materials.

2 JUDGE RANGE: Ah, thanks. That probably makes more sense.

3 MR. ROZYLOWICZ: That's my error there, Your Honor.

4 JUDGE RANGE: No problem.

5 MR. ROZYLOWICZ: And, Your Honor, nothing in the record
6 offered up by my friend would preclude the use of paramagnetic materials
7 among these design criteria in considering how a POSITA would consider
8 materials to build a casing for their LRA. Your Honor, I'll pause to see if
9 there is any questions.

10 JUDGE EASTHOM: No, I don't see any questions.

11 MR. ROZYLOWICZ: Okay. Your Honor, really in the 30
12 seconds I have available, I'd just like to flag one other thing. And really the
13 question I think is one of a matter of degree for reluctance. Right?
14 Certainly if high efficiency was sought for whatever reasons, we imagine
15 that ferromagnetic materials might be used. But, again, in the spectrum,
16 again, to a matter of degree, we think that paramagnetic materials wouldn't
17 be responsive to the recited requirement that the materials be paramagnetic.

18 JUDGE EASTHOM: Thank you, Counsel. Appreciate the -- any
19 other questions? Oh, go ahead. I think we have a question. Okay. Why
20 don't we hear from Patent Owner. One second, please. Let me reset the
21 clock. You may begin whenever you're ready, Mr. Rubin.

22 MR. RUBIN: Thank you, Your Honor. First to address the
23 various combinations with respect to the control component limitation. So
24 my friend's arguments in rebuttal on this were rather fast, but there were
25 references to certain disclosures in Gregorio and Wakuda and Rossi. And in
26 none of these do we have the two separate signals corresponding to 'd' and 'p'

1 disclosed. In Gregorio's teaching about user interaction, Wakuda's teaching
2 about user interaction, none of that actually discloses a directional signal
3 going to a switch.

4 I think we've heard a lot of arguments today about these
5 limitations, references to evidence that maybe -- that was cited in the petition
6 but for a different purpose or in some long string cite of paragraphs from the
7 reference. Arguments that had not even appeared in the papers previously.
8 And I think this points to a problem that, with respect to these signals and
9 with respect to the corresponding steps that are required even under Apple
10 own construction, the petition doesn't clearly identify the -- what they're
11 pointing to in the prior references or in the purported combination to satisfy
12 these two steps as required by the algorithms. Turning to the Claim 14
13 issue --

14 JUDGE EASTHOM: Counsel, let me just have a question about
15 that. I notice in your surreply you argue that none of the steps in the
16 algorithm, all the steps in the algorithm aren't shown. In your Patent Owner
17 response, you focused on 'p' and 'd' it seems. I just want to clarify whether
18 or not you agree with the claim construction we summarized in the DI or if
19 you -- you're urging for a stricter construction?

20 MR. RUBIN: Well, yeah, I guess maybe it's surprising this issue
21 only comes up at the very end of the argument. I'll confess I'm not quite
22 sure how to read what the Board said about the claim construction. On the
23 one hand, it points to the District Court's construction and says -- I don't
24 want to mischaracterize what the Board said. Yeah, I -- so in the language
25 from the institution decision I think it's Page 13, the Board says a reading of
26 the patent is in accord with the District Court's construction that we adopted

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1 for the purposes of the decision.

2 But then there is a later summary that calls out just the two
3 particular steps as what the corresponding structure further requires. And so
4 I don't know, and I guess I won't presume to tell the Board what it meant,
5 whether in that summary statement the Board is saying that that summary
6 actually describes the full corresponding algorithm that's required in the
7 construction or if it's just calling out two specific steps that were most
8 relevant to the issues being decided in the institution decision.

9 What I would say is that I understand the construction and
10 certainly the District Court construction and the construction advanced by
11 Apple in the petition to require all of the steps. We've focused our
12 arguments on 'd' and 'p' specifically. In the Patent Owner response, we
13 focused on 'p' framing the argument as, you know, the failure to show two
14 separate steps meant there was no second step, P. I think you could fairly
15 say that we did call out both of the steps as at issue. And what they say 'd'
16 dismissing 'p' dismissing both they're missing. I think that's that argument is
17 fairly called out in the -- in the Patent Owner response. Two -- what's that,
18 Your Honor?

19 JUDGE BEAMER: For the record, in our DI we said, "As
20 elaborated below, our reading is in accord with the District Court's
21 construction." And then in the elaboration for the frequency we called out
22 steps 706 and 708. And for the power, we called out steps 762 and 760.
23 And then we summarized it at the end. So I think our construction was
24 pretty clear.

25 MR. RUBIN: All right. Thank you, Your Honor.

26 JUDGE EASTHOM: I mean, are -- would you want more claim

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1 construction briefing and ask for a narrower construction or are you happy
2 with the construction as we set forth?

3 MR. RUBIN: I'm not asking for more claim construction briefing.
4 And I guess what I would say is that the Board can and should decide the --
5 on the construction that it's adopted.

6 JUDGE EASTHOM: And that would be the one that we
7 summarized, in other words, as Judge Beamer just laid out. That's from my
8 perspective. Are you urging something else?

9 MR. RUBIN: No, Your Honor.

10 JUDGE EASTHOM: Okay. I appreciate that. Thank you.

11 MR. RUBIN: But, again, we do think that the Board should
12 carefully consider whether that construction was satisfied by the mapping
13 provided in the petition itself.

14 JUDGE EASTHOM: Okay. Thank you.

15 MR. RUBIN: Moving on to the paramagnetic materials issue and
16 this -- this question of whether there are ever right angles and flux lines.
17 And I mean, I suppose you could ask whether there's ever a right angle at
18 any physical device. If you looked with a microscope, you know, maybe
19 everything, every corner is actually rounded at a microscopic level. But I
20 think that for one skilled in the art, the rectangle in Wakuda does show a
21 dramatic bend in the flux lines as they enter the casing material and it does
22 show those flux lines being contained within the material.

23 So while it may be simplified, it does clearly indicate to one skilled
24 in the art the magnetic -- the magnetic circuit, the substantial fact that the
25 magnetic material the casing's having on those magnetic field lines. And
26 there was discussion of McLyman by my friend and I just direct the Board to

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1 Figure 1-11 from McLyman. This is Exhibit 112 -- I'm sorry, 1012 at page
2 27 and it's cited in our Patent Owner response at page 25. I mean, this does
3 show magnetic flux. It's labeled in the figure magnetic flux is contained
4 within core. And the magnetic core is rectangular with slightly rounded
5 corners. And the magnetic flux is rectangular, again, with --

6 JUDGE BEAMER: What page?

7 MR. RUBIN: -- the rounding. I'm sorry, Your Honor?

8 JUDGE BEAMER: What page?

9 MR. RUBIN: So this is page 27 I believe of Exhibit 1012, yes, at
10 the bottom of page 27. It's also in page 25 of our Patent Owner response.

11 So as our expert testified, a person of skill in the art looking at Wakuda
12 would understand that this is a -- a high magnetic permeability material like
13 a ferromagnetic and not a much lower permeability material like aluminum.

14 JUDGE EASTHOM: Can you address, at least seems that your
15 friend is implying that there's a tradeoff here. Aluminum is not very good as
16 a magnetic material but it's certainly a good material for other things like
17 corrosiveness or whatever you have. How does that -- how do you address
18 that?

19 MR. RUBIN: Well, I mean, at some point a difference in degree is
20 a -- a difference in kind. So here we're talking about, I mean, our expert
21 indicates that a ferromagnet would have a relative permeability in the, at
22 least in the thousands. And I think that the actual evidence in the record
23 gives permeabilities for things like iron that are hundreds of thousands. You
24 know, and that's on the one hand.

25 JUDGE EASTHOM: Let's --

26 MR. RUBIN: I know the aluminum -- sorry, Your Honor.

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1 JUDGE EASTHOM: No, I'm sorry, go ahead. I thought --

2 MR. RUBIN: Yeah, so on aluminum, it's the effect of the
3 aluminum on the magnetic field is 0.002 percent. So we've got eight orders
4 of magnitude, something like that. So I'd say that's the difference in kind,
5 not merely degree.

6 JUDGE EASTHOM: And -- okay, thank you.

7 MR. RUBIN: And we're -- yeah, you know, to the extent that it's
8 providing any beneficial effect on the magnetic field, it's trivial.

9 JUDGE EASTHOM: But your claim covers aluminum, right?

10 MR. RUBIN: It -- sorry, bear with me. I mean, the claim requires
11 a paramagnetic material. Aluminum is a paramagnetic material. It further
12 requires that it be shaped in position to reduce the reluctance. So it could
13 cover an embodiment that utilized aluminum, yes.

14 JUDGE EASTHOM: And then there's no real description in your
15 spec about a special way to handle something like that. So I'm just
16 wondering, how do we deal with it? It does seem to be we're substituting
17 one known material for another known material. And the Federal Circuit
18 has told us a lot of times that that's -- even if it's inferior, even if it's teaching
19 a way, that's okay. A skilled artisan would know that there's tradeoffs. You
20 know, if you would have, you know, laid out -- I think your friend argued
21 that there were no special benefits pointed to with the paramagnetic in your
22 spec or anywhere in the briefing. So that's sort of another consideration.

23 MR. RUBIN: So I guess focusing on the, you know, replacing one
24 known material with another known material, I mean, I guess there are -- if
25 we're focusing on aluminum as the material, I mean, there are innumerably,
26 not literally innumerable. But, you know, many, many possible materials

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1 you could build a casing out of. Many metals and alloys and other materials
2 all together. So I think there's got to be some motivation to choose
3 aluminum as the material or -- or else, you know, any claim that requires a
4 particular material you could just --

5 JUDGE EASTHOM: Right, their motivation was --

6 MR. RUBIN: -- choose a different one.

7 JUDGE EASTHOM: -- you know, right, their motivation was all
8 those benefits we talked about.

9 MR. RUBIN: I think the choice still needs to make sense in the
10 context of the combination that's being proposed. I don't know. If you have
11 prior art for a, you know, the frame of a skyscraper and you say, well, this
12 makes it -- this makes a claim obvious to use balsa wood to -- it's not just --
13 shows it's a little bit inferior. I mean, it's --

14 JUDGE EASTHOM: Right, no, I --

15 MR. RUBIN: -- completely going to --

16 JUDGE EASTHOM: -- that's a good --

17 MR. RUBIN: -- conceive the goal, right?

18 JUDGE EASTHOM: -- that's a good point. I, again, I just
19 appreciate your response. That's what we try to do is you're helping us
20 figure out what way we're going to go, so --

21 MR. RUBIN: Right. All right.

22 JUDGE EASTHOM: I don't have any other questions. Sorry I
23 interrupted you.

24 MR. RUBIN: Not at all. Unless any of the other members of the
25 panel have questions, I'll rest and ask that the Board nod in our favor on
26 these.

IPR2024-00806 (Patent 9,941,830 B2)

IPR2024-00807 (Patent 8,860,337 B2)

1 JUDGE EASTHOM: Thank you very much. Appreciate -- does
2 anybody have a question? No, I don't see anything. Well, thank you both.
3 We appreciate the input. As I said, that was very helpful for us to help
4 decide what we're going to do. And with this, we're adjourned. Thank you.

5 MR. RUBIN: Thank you.

6 (Whereupon, the above-entitled matter went off the record at 12:26
7 p.m.)

IPR2024-00806 (Patent 9,941,830 B2)

IPR2024-00807 (Patent 8,860,337 B2)

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