

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

EMPIRE TECHNOLOGY DEVELOPMENT LLC,
Patent Owner.

IPR2024-00896
Patent 8,798,120 B2

Record of Oral Hearing
Held: September 17, 2025

Before NABEEL U. KHAN, SHARON FENICK, and
ANDREAS BALTATZIS, *Administrative Patent Judges*.

APPEARANCES:

ON BEHALF OF THE PETITIONER:

BENJAMIN M. HABER, ESQ.
WILLIAM M. FINK, ESQ.
O'Melveny & Myers LLP
400 South Hope Street, Suite 1900
Los Angeles, CA 90071
(213) 430-6000
bhaber@omm.com
tfink@omm.com

ON BEHALF OF THE PATENT OWNER:

NATHANIEL T. BROWAND, ESQ
CHRISTOPHER J. GASPAR, ESQ.
Milbank LLP
55 Hudson Yards
New York, NY 10001
(212) 530-5096
nbrowand@milbank.com
cgaspar@milbank.com

The above-entitled matter came on for hearing on Wednesday, September 17, 2025, at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

P R O C E E D I N G S

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JUDGE BALTATZIS: You may be seated. Thank you. Good morning, everyone. Welcome to Alexandria.

Today we will hear arguments in IPR2024-00896, concerning U.S. Patent Number 8,798,120. I am Judge Baltatzis. I am joined today by Judge Khan and Judge Fenick. Judge Khan is joining from the Dallas Regional Office, and Judge Fenick is joining remotely.

There have been reported delays in the audio coming in from the remote judges, so please be mindful of questions that are coming in remotely.

Let's start with appearances, starting with Petitioner, please.

MR. HABER: Thank you, Your Honors. Benjamin Haber for Petitioner Samsung. With me is my colleague, William Fink, the client representative in the audience, and various other representatives and colleagues on the public line.

JUDGE BALTATZIS: Welcome.

And for Patent Owner?

MR. BROWAND: Good morning, Your Honor. Nathaniel Browand from Milbank LLP on behalf of the Patent Owner, Empire Technology Development. And with me is Christopher Gaspar, also from Milbank.

JUDGE BALTATZIS: Good morning. Welcome.

MR. GASPAR: Good morning. Thank you.

JUDGE BALTATZIS: As set forth in the hearing order, each party has 60 minutes to present their arguments. Petitioner will proceed first

1 and may reserve time for rebuttal.

2 Petitioner, how much time would you like to reserve for rebuttal?

3 MR. HABER: I'd like to reserve 20 minutes, Your Honor.

4 JUDGE BALTATZIS: Okay. And, Patent Owner, you also have
5 60 minutes to present your case. How much time would you like to reserve
6 for surrebuttal?

7 MR. BROWAND: Fifteen minutes, Your Honor.

8 JUDGE BALTATZIS: Okay. So we do have a copy of the
9 demonstratives. During your argument, please identify and clearly specify
10 the demonstrative reference by slide or screen number so that the other
11 judges can follow along and so we can ensure the clarity and accuracy of the
12 Court Reporter's transcript.

13 Petitioner, when you're ready, you may proceed.

14 MR. HABER: Thank you, Your Honor. May it please the Board.
15 Benjamin Haber for Petitioner Samsung. I'm going to be talking about our
16 IPR against the '120 Patent today. I have, on Slide 2, an overview of my
17 presentation. I'll begin with a brief overview of the alleged invention,
18 overview of the relevant prior art. There is a claim construction issue that
19 I'm going to be discussing, and then I will move into the substantive
20 grounds.

21 So first, the alleged invention. So the '120 Patent is related to
22 selection of a MIMO or SIMO based transmission mode based on power
23 consumption characteristics. And as the abstract explains, MIMO stands for
24 Multiple-Input Multiple-Output, and SIMO stands for Single-Input Multiple-
25 Output. And you can see on Slide 3 -- I'm sorry, it's not Slide 3. Slide 5, a
26 kind of depiction of what SIMO and MIMO is based on Patents Figure 4.

1 On the left-hand side, you can see the mobile device. The mobile device has
2 two transmit antennas, and it is communicating with a device that has two
3 receive antennas. And in a SIMO mode, one of those antennas and the
4 associated circuitry is used for sending signals to both antennas of the
5 receive device. And in a MIMO mode, both of the transmit antennas and
6 associated circuitry are used for transmitting the signal to the two receive
7 devices.

8 The '120 Patent explains that selection of the appropriate
9 transmission mode, whether MIMO or SIMO, is based on power
10 consumption of circuitry coupled to the plurality of antennas. And the '120
11 Patent also includes, as its Figure 1 shown in Slide 7, a basic sketch of how
12 this is done. First, you calculate transmission characteristics of the MIMO
13 mode and then SIMO mode. Then you select which is the appropriate mode
14 based on power consumption, energy consumption, that's as recited in Figure
15 1. And then you do the transmission in the appropriate mode.

16 Now, the '120 Patent that is challenged here is -- Claims 25
17 through 29 are the patents that are subject to the challenge. Those claims
18 were amended during Prosecution. And two wherein clauses were added to
19 the end of each of those Claims 25 to 29. And when the examiner allowed
20 these claims, the examiner specifically pointed to these added wherein
21 clauses as the allegedly novel features. But what is set out in the IPR, is that
22 the prior art teaches all aspects of these claims, including these added
23 wherein clauses.

24 So on Slide 10, I'll move to an overview of the prior art. There are
25 five prior art references at issue in this proceeding. All of the grounds
26 include a combination based on Li as a primary and Siam as a secondary.

1 Certain additional claim elements are addressed with some additional
2 secondary references, but all of the combinations rely on Li and Siam. And
3 I'll note just for the record that Claims 26, 27, and 28 are not independently
4 addressed by Patent Owner other than via their dependency on Claim 25.

5 So first, I wanted to start with a brief summary of the Li reference.
6 Li is the primary reference that is used in all of these grounds. Li teaches, as
7 the title explains, techniques to manage multiple receivers. Those multiple
8 receivers, as taught by Li, include multiple antennas. They can operate in a
9 SIMO or MIMO mode. And Li also explains that a lot of this mode
10 switching is done specifically for battery and power concerns. And one
11 thing that I think Li makes very well -- makes plain, is that all of these
12 different modes were known in the art. We have a figure on Slide 12 that
13 includes essentially all of the possible combinations that you can have when
14 you have two antennas talking to two other antennas. And Li discusses all
15 of them. Li discusses the MIMO and SIMO mode. You can see that on the
16 right-hand slide of the -- side of the slide. And Li also mentions a SISO and
17 MISO mode, which is -- these four options are essentially all of the possible
18 configurations that you can have for these sorts of antennas.

19 Next, I want to talk a little bit about the Siam reference. It is
20 entitled Adaptive Multi-antenna Power Control. Siam is specific, again,
21 about all four of these different power modes. And what Siam teaches is
22 specific equations that can be used to calculate total circuit power in any of
23 these four modes, again, for the purpose of minimizing total energy
24 consumption. And so, Siam is brought into the combination and makes
25 plain that, kind of, optimizing between SIMO and MIMO modes based on
26 power characteristics was something, again, that was known in the art and

1 Siam provides a lot of teachings on how to do that.

2 The next reference I want to just mention briefly is the Cui
3 reference. Cui reference is, again, brought into the combination for Ground
4 3. Cui specifically talks about low power modes. Cui has a sleep mode in
5 which the system operates in when there is no activity on the transmitter,
6 when there's nothing transmit. And again, what Cui does is, I think it makes
7 it very plain, that using these low power modes was also well-known in
8 calculating total circuit power and optimizing power characteristics. Cui
9 specifically has equations that are used to account for total energy
10 consumption when we have these lower power modes.

11 I'll skip past Wu and Tirola. I'll address those in the claims when
12 we get there. So the first substantive issue is a claim construction issue.
13 And you can see on Slide 20, the claim term is idle power consumption.
14 And the term idle power consumption appears in the last wherein clause of
15 Claim 25, and that's what's shown on the top of Slide 20. And as relevant to
16 the proceeding here, there are essentially two constructions that have already
17 been issued by this Board in a preliminary construction and by the District
18 Court in a final construction in the associated litigation. And these
19 constructions are also on Slide 20.

20 And the fundamental dispute, I think, between the parties is that
21 Petitioner takes the position that both of these constructions are correct and
22 consistent. And Patent Owner takes the view that neither of these is correct,
23 and they each need to be revised or tweaked. And fundamentally, what
24 Patent Owner is trying to do with its proposals, is take these two
25 independent wherein clauses that are different clauses and mesh them
26 together, and mesh them together in a way that is not consistent with the

1 claim language and is not consistent with the intrinsic record. And just
2 putting a slightly finer point on what the dispute is, Slide 21, Samsung's
3 position is that the Board's preliminary construction is correct and consistent
4 with the District Court's construction. Effectively, the term wherein the
5 control signal is based at least in part on an idle power consumption of the
6 mobile station refers specifically to the mobile station as a whole rather than
7 focusing on whether constituent circuitry such as a first circuit, second
8 circuit transceiver, other components are on or off. The issue is whether or
9 not the mobile station as a whole is operating in an idle power mode.

10 Patent Owner's view, as I'll discuss in further detail, is essentially
11 that the term includes a negative limitation and it's related to transceivers,
12 not a mobile station. Specifically, and this is a quote from their surreply,
13 they argue that, idle power consumption does not include times when the
14 transceiver is off because idling means waiting to send and does not cover a
15 powered-off transceiver. So, there is this negative limitation they want to
16 bring in and they want to change the focus of this claim element.

17 But starting with the actual intrinsic record, the claims and
18 specification, you can see the way these claims are structured. There are
19 kind of two wherein clauses and they each have distinct and separate
20 compartments. The first wherein clause recites that there is a control signal
21 based, at least in part, on a power consumption of first and second circuitry.
22 And when you look at, on Slide 22, an excerpt from the '120 Patent's Figure
23 4, you can see that first and second circuitry as 454 and 460. And that first
24 and second circuitry is the transmission chain of the transceiver that is used
25 to transmit a signal over the antenna. And so, in a SIMO mode, you would
26 only use one of those. In a MIMO mode, you would use both of those, you

1 use both antennas.

2 And then the last clause says, wherein the control signal is also
3 based at least in part on an idle power consumption of the mobile station.
4 And when you look at what the mobile station is, you can look at Figure 4,
5 and the mobile station includes those first and second circuits, those transmit
6 chains. And it also includes other things. It includes a feedback decoder,
7 which is the receive side. It includes a controller. The controller is used to
8 switch between these different circuits. Not shown in this figure are other
9 circuits that would be in the mobile station. For example, a display and
10 other things, processor -- other things that would be part of the mobile
11 station. So, the mobile station includes the first and second circuitry, but it
12 also includes a number of other things.

13 And when you read the specification, what you can see is that there
14 is, described an idle time during which the mobile station, 410, which is
15 what we pointed to previously, is waiting to send data over the
16 communications channel. So, the mobile station is waiting, that's when it's
17 idle. And it's waiting to send data over the communications channel. That
18 sending data is referring to the transmit chains. And when you also read
19 further in the specification, what is described is that the transceivers may
20 become idle. So the circuits that do the transmitting may become idle,
21 waiting to send transmission. And it also explains that idling transceivers
22 can turn off their transmission chains. And so, you can have the mobile
23 station idling waiting to send data. The transmission chains, the first and
24 second circuitry, may be shut off. It may not be. They may be shut off.
25 And even in the case where they are shut off, the mobile station will still be
26 consuming some power due to leakage current or other effects.

1 And so, leakage current occurs when a circuit is, you know,
2 powered off. Even if it's powered off, there are still going to be some -- a
3 small amount of current that is transmitted through the circuitry. And there
4 could be other effects as well. There could be other things that the -- are
5 being done while the mobile station is waiting to send data. For example, it
6 may be receiving data. It may be receiving data but not sending data. So,
7 the point is that the mobile station in this idle mode kind of exists in this
8 power continuum. The circuitry may be powered on, may be powered off,
9 maybe in a low-power mode. Some of it may be on, some of it may be off.
10 But the point of this wherein clause is that you have to look at what the
11 mobile station is doing in this idle mode, not what any particular circuit is
12 doing.

13 And I think Patent Owner's expert was asked about the circuit
14 that's shown in Figure 4, block 454, whether that's a transmission chain. The
15 Patent Owner's expert was somewhat evasive in his answers, but ultimately
16 he did fundamentally agree that what is shown in 454 is at least an example
17 of a transmission chain, which is consistent with the way that one who was
18 skilled in the art would've uttered these things. A transceiver is a -- the word
19 is a portmanteau of transmit and receive, and so a transceiver has a
20 transmission chain, has a receive chain. And when the patent is talking
21 about the transmission chain, they're specifically talking about the transmit
22 side of the transceiver circuitry.

23 Now, when you get to Slide 25, I think the takeaway from all of
24 this is Samsung's position, which is that the idle power consumption that's
25 referred to in this wherein cause refers to power consumed by the mobile
26 station when waiting to send data, when idling, waiting to send data,

1 regardless of whether transceivers or other constituents circuits are on or off.
2 And I think that is consistent with the Board's preliminary construction.
3 What the Board said is power consumption, whether the transceiver is on or
4 off. And what the Board said, I believe is consistent with the District Court's
5 construction. Because the District Court, I think, again, properly focused on
6 the mobile station. The mobile station has to be powered on and waiting to
7 send.

8 And just on that point, I think the parties are in violent agreement
9 that the mobile station itself has to be powered on. If the mobile station is
10 off, if I have my phone and it's powered off, the battery is drawn, it's not
11 going to be doing anything. But if the mobile station is on, it may be in its
12 idle mode. And the District Court's claim construction further explained the
13 court agrees with that. A fully powered-on mobile station does not have idle
14 power consumption, which I think everyone agrees with. And, nor must the
15 circuitry of the mobile station be turned on for it to be idle.

16 So, the District Court added the same gloss that the Board's
17 preliminary construction added, which is what matters is the mobile station,
18 not the constituent subcircuitry of the -- of -- that's included in the mobile
19 station.

20 JUDGE BALTATZIS: So just to confirm, I guess, so the mobile
21 station I think everyone agrees is on this entire time. But within it, again,
22 you can turn off specific circuitry. That could be a transceiver. And then
23 within the transceiver itself, you have a transmission chain that could also be
24 turned off separate from the -- even if a transceiver as a whole is on?

25 MR. HABER: Correct. That's exactly right. And when you look
26 at the figure, there's potentially much -- multiple transceivers. There's a first

1 circuitry, a second circuitry. Each one of those has a transmit side and a
2 receive side, and any combination of those different components may be on
3 or off at any given time. And that's what the '120 Patent says.

4 Now, when we look at what the Patent Owner is arguing on Slide
5 26, they're arguing that the preliminary construction is wrong and that the
6 District Court's construction actually needs to be understood differently than
7 what the District Court said. And I'll talk about both of those issues. But
8 first, I think it's important to look at what they're doing. All of their focus of
9 their arguments is on a transceiver, but claim 25 does not specifically recite
10 a transceiver. Where they are asking for it, it recites a mobile station. And a
11 mobile station is something broader than a transceiver. It may include a
12 transceiver, but it may include other things. And so essentially, they're
13 asking to rewrite the claim to say transceiver, and then also include this
14 negative limitation to say that once we're looking at the idle power
15 consumption of the transceiver, we can't include cases where the transceiver
16 is powered off. And again, I don't think that's consistent with the intrinsic
17 record because the intrinsic record said specifically that certain portions of
18 the transceiver may be powered off.

19 And then when you look at what the District Court said, the
20 District Court in its final construction essentially agreed that you have to
21 focus on what the claim actually says. And the claim is talking about a
22 mobile device. It is not talking about a transceiver or any subcomponent
23 circuitry. And, you know, in order to support their argument, what Patent
24 Owner does is they really rely very heavily on expert testimony to contradict
25 what the intrinsic record says and read the intrinsic record in a way that I
26 don't think is fairly consistent with the way that one skilled in the art would

1 understand it.

2 And, you know, the Patent Owner's expert was asked several times
3 about what it means when this transmission chain is on. He attempted to
4 take the position that he didn't really understand or have an opinion on what
5 a transmission chain means. Ultimately, his opinion was that the hardware
6 is on and what's off is the sending. That was his conclusion. And I think
7 that is just, frankly, not a consistent read with what the '120 Patent says. The
8 '120 Patent says that these transmission chains can be powered off. And so,
9 the expert was kind of tying himself in knots to try to get around the intrinsic
10 record. And the intrinsic record, I think, makes this very clear.

11 So that's the claim construction issue, so I'm going to shift towards
12 talking about the grounds now. One thing I did want to note --

13 JUDGE BALTATZIS: Just actually one quick question --

14 MR. HABER: Yeah, go ahead.

15 JUDGE BALTATZIS: -- before we move off of it. So, again, the
16 District Court has power consumed by the mobile station when the mobile
17 station is powered on and waiting to send. And that could mean, you know,
18 whether or not -- but the mobile station itself has two -- has a first and
19 second circuitry. You know, one transceiver could be off, one could be on
20 and ready to send.

21 Could both transceivers be off or both circuits be off and the
22 mobile station still be ready to send?

23 MR. HABER: Yes. Yes. Both transceivers could be off. They
24 are still drawing some kind of small amount of power. That's what the
25 patent says. There is a leakage current. They're essentially in a low-power
26 mode and simply waiting to be reactivated to send data. That is kind of how

1 these transceivers work. And so when they are off, you know, they are, you
2 know, put into a low-power state to keep them alive, and they still draw
3 some power. And that contributes to the idle power of the mobile station.

4 JUDGE BALTATZIS: And in that scenario too, could the
5 transceivers be off? Could be in receive mode, but just have their
6 transmission chains off?

7 MR. HABER: Yes, correct. They may be receiving and not
8 transmitting, in which case they can turn on or off different parts of the
9 circuitry.

10 JUDGE BALTATZIS: And I went through the -- your expert's
11 deposition. He indicated that a transceiver in off mode would typically have
12 at least some power. Is that still consistent with the way you see it, if a
13 -- you know, a transceiver could be off but still have some power? Or is that
14 what idle means?

15 MR. HABER: Yes. And so that is consistent with the '120 Patent,
16 frankly. What the '120 Patent says is that some idle power may be
17 consumed due to leakage current or other effects. So even if the transceiver
18 is off and it's not transmitting and it's as low-power state as you could put it,
19 there will still be some power draw to those circuits. And so I think our
20 expert set that out in a way that is, frankly, accurate and consistent with the
21 way a POSITA would understand it and consistent with the '120 Patent.

22 JUDGE BALTATZIS: Thank you.

23 MR. HABER: All right. So I'm going to talk about the grounds.
24 The one thing that I will note, and I think this is an important point, is
25 Ground 1 really I don't think is impacted by this claim construction issue.
26 The claim construction dispute is really about Ground 2 and the disclosures

1 of the Cui reference. And the reason I don't think Ground 1 is affected by
2 this claim construction dispute is that Li specifically talks about
3 consumption of a mobile station when the mobile station is in idle mode.
4 So, it talks about the idea that there is this mobile station that's sitting in an
5 idle mode already, regardless of how that term is understood.

6 What I have on Slide 30 is Claim 25. Claim 25 is on the left-hand
7 side. And the first several elements of Claim 25 are not meaningfully
8 disputed. A through, I think, D. There's first antenna, second antenna, first
9 circuitry, second circuitry, controller, uses different modes. I think all of
10 that is plainly disclosed by Li. You can see Li's Figure 2 with relevant
11 highlights and annotations. I'm disclosing those claim elements here.

12 Okay. So the first wherein clause, wherein the control signal is
13 based at least in part on a power consumption of the first and second
14 circuitry. This feature is specifically taught by the Siam reference, and you
15 can see that on Slide 21 -- 31. Again, Siam includes all of these four
16 different possible modes and Siam teaches a model. Their energy model
17 accounts for both the transmission and circuit power, so Siam teaches you
18 specifically how to calculate circuit powers, including the first and second
19 circuitry on the transmit side of either one of these transmit modes.

20 And so, any of the four models or any of the four modes can be the
21 optimal mode in terms of minimizing the total energy. And so what Siam is
22 teaching you is a way to calculate these circuit powers to pick which one of
23 these would be the best in terms of power efficiency. And then when you
24 get to Li, Li teaches, in idle mode, that may be an inefficient use of energy.
25 A station in idle mode, a mobile station that's sitting in this idle mode, can
26 consume approximately 60 percent of its battery energy in the idle mode

1 when it's not actually, you know, doing meaningful work. And Li also
2 explains that this inefficient usage of energy, this idle mode wastage, can be
3 exacerbated in MIMO devices. And so. Li specifically teaches that there
4 can be inefficiencies that are caused by these idling MIMO devices.

5 And so what Siam tells you to do is that you should calculate the
6 total power consumption based on transmission powers and circuit powers.
7 And on Slide 33, we have an equation, and the equation is used to calculate
8 total power consumption based on the circuits that are used for transmission.
9 And so one skilled in the art would do what Siam said to do and calculate
10 the total power in either one of these modes, and select which one is the
11 most efficient one. And if it turns out that the SIMO mode is the most
12 efficient one, then what Siam says to do is that you should operate in the
13 SIMO mode.

14 And so taking that teaching with Li, what one of skill in the art
15 would do would look at Li's device and calculate total circuit power, figure
16 out which one of those is less. And it may be the case, for example, that in a
17 MIMO mode, a number of circuits are idling and consuming some amount
18 of idle power. And that would be more than what is in the SIMO mode
19 because there are less circuits at issue in a SIMO mode. And so what Li
20 teaches is specifically signals that are used to switch out of the MIMO mode,
21 and those signals would be applied to switch from the MIMO mode to the
22 SIMO mode.

23 I think Patent Owner's dispute appears to be that Li doesn't
24 specifically teach going from MIMO to SIMO. It says, switching to and
25 from MIMO mode, and it says that you can go to any of the other modes. It
26 doesn't specifically say that you would go from MIMO to SIMO, but that is

1 what Siam teaches you to do. And what Li teaches is all of the control
2 signals that you would need to do that. And you can see those in Li's
3 Figures 3, 4, or 5.

4 JUDGE BALTATZIS: So just to confirm, I know there's a dispute
5 about where the control signal is coming from, that you're relying on Li for a
6 control signal to switch between modes?

7 MR. HABER: Yes. Yes. And Li teaches a number of very
8 specific implementation details about the control signal and again, I'll direct
9 Your Honors to Figures 4, Figure 5, that there are specific control signals
10 that are used there to make these load transitions.

11 Now in addressing Li, I think the Patent Owner disputes, really,
12 only Claim 25F. The idle power mode. But in doing so, I think they ignore
13 some key teachings of Li and they make the statement that I don't think is
14 accurate. They say that, Li offers no teaching or suggestion about possible
15 use of idle mode. I think that ignores what Li actually says. And they make
16 that statement in their Patent Owner Response. And it's interesting to note
17 that elsewhere in their Patent Owner Response, they acknowledge, as they
18 must, that Li attend -- intends to address the problem of power consumption
19 while in idle mode. And then they say that Li solves that problem. That is
20 one of the solutions that Li provides.

21 And the way that they are, I think, ignoring the teachings of Li is
22 highlighted in their surreply. And I have, on Slide 39, a excerpt from the
23 surreply. They make the argument that it is unrebutted that Li does not
24 disclose three things. And frankly, Li does disclose those things. They
25 argue that Li doesn't disclose how idle mode could be used for power
26 consumption. I think that is not a fair reading of Li. Li teaches that, in this

1 idle mode, you can waste up to 60 percent of power. Li teaches conserving
2 power, and so one of skill in the art would've understood that that wasted
3 power is something that you would want to address. Specifically in an -- in
4 a mobile station operating in the MIMO mode wasting power.

5 And it doesn't say how idle mode could be relevant to mode
6 selection. Again, that is just not a fair reading of what Li says. Li says that
7 this problem is, quote, exacerbated by MIMO devices. They specifically say
8 that the problem is particularly acute in one mode of operating. And now
9 they also argue that Li doesn't disclose how idle mode might be considered
10 with respect to a control signal. And again, I don't think that that is a fair
11 reading of Li.

12 Li teaches switching out of -- or into and out of this MIMO mode.
13 Li teaches the SIMO mode. And Li teaches that you would want to exit a
14 higher power mode into a lower power mode. And now that's what Li
15 teaches, and you combine that with Siam and it tells you how exactly to go
16 from MIMO to SIMO if, in fact, that is a lower power mode. And as I
17 mentioned, Li teaches control signals that are used to make that switch. And
18 that is what Li teaches.

19 Now, I want to talk about Ground 2 a bit, which is adding the Cui
20 reference. And again, you know, I think a fair reading of the Li reference is
21 that Li discloses a mobile device that's sitting in an idle mode. But to the
22 extent that there is additional information that would be needed about one of
23 these idle modes or low power modes, that additional information is
24 provided by the Cui reference.

25 Now, you know, fundamentally, if I just take a step back, it seems
26 like the real dispute that Patent Owner has with the Cui reference is that it

1 doesn't call it low power mode and idle mode. It calls it a sleep mode. But
2 frankly, that's elevating form over substance. That is not the way that you
3 apply claims to the prior art.

4 When you actually look at what Cui does, what it does is almost
5 identical to what is taught by the '120 Patent. But when we get to the
6 dispute, I think it's important to note two things. The first thing is that the
7 Patent Owner's argument against Cui is based entirely on its claim
8 construction position. You can see that in the surreply. Essentially, they
9 argue that the term idle power consumption has to be understood in their
10 narrow way. And based on that narrow understanding, they say that Cui
11 doesn't teach claims.

12 If Your Honors don't agree with that narrow understanding, they
13 really have no meaningful response on this combination under the way that
14 the claim term should be understood. But when you actually get into the
15 meat of Cui and what Cui actually teaches, you see that Cui teaches almost
16 the exact same thing that the '120 Patent teaches. You can see on Slide 42,
17 excerpts from Cui on the left-hand side and excerpts from the '120 Patent on
18 the right-hand side.

19 And you can see what's shown in Cui's Figure 1, transmission
20 circuits. Those are the same components as the transmission circuits in the
21 '120 Patent. These are standard well known transmission circuits that are
22 used in a transceiver. What Cui says is that when a transceiver is done
23 transmitting, actively transmitting, you can put the transceiver into a sleep
24 mode. And sleep mode is one in which the circuits and the signal path are
25 shut down for energy saving. That's what Cui says.

26 And then Cui continues that in that sleep mode, power

1 consumption is dominated by leakage current. And so even when these
2 circuits are powered down, if the mobile device is on and just kind of
3 waiting for the next time it needs to send things, there's some amount of
4 current that is consumed by these circuits even when they're off. And
5 strikingly, that is what the '120 Patent also says.

6 You can have idling transceivers turn off their transmission chains
7 and some idle power may be consumed due to leakage current and other
8 effects. And so what Cui is describing is these various low power states.
9 And these circuits can exist on a power continuum. That is what our expert,
10 Dr. Valenti explained. And they may be on, they may be idling, they may be
11 sleeping, they may be off. And anywhere in this power continuum, they
12 may or may not be consuming some amount of power. It may be large. It
13 may be small. It may be intermediate. And it may be this leakage current
14 that has come -- that comes from these power, the circuits being off.

15 JUDGE BALTATZIS: So just to confirm, your position is that Cui
16 or -- does teach that the mobile station is powered on, but the transceivers in
17 sleep mode are powered off?

18 MR. HABER: Right. And so, what it says here is that the
19 transceivers in sleep mode are shut down for energy savings. So they enter
20 this low power mode. But even in that low power mode, just like the '120
21 Patent explains, they're consuming some small amount of power leakage
22 power. So it is -- it is true that they are powered off in the sleep mode.

23 What Cui also explains is kind of a reality of how these circuits
24 work, is there's an active mode and a sleep mode. And there's also a
25 transient mode. There's basically a power on state where you're moving
26 from sleep mode to actively transmitting. And so in that transient mode,

1 there's some, again, power that is being consumed in the transient state
2 before you get up to full power of transmitting mode.

3 So, Cui, again, I think teaches this whole power continuum that
4 these transceivers could -- can be existing in at any given time. And what
5 Cui says is that because these devices exist in this power continuum and
6 you're trying to account for total power consumed, you should account for
7 the -- whatever power consumption is being drawn in a sleep mode or
8 transient mode or some kind of intermediate mode when you're calculating
9 total circuit power.

10 And so, when you do that, if you plug kind of this transient mode
11 power calculation into the Siam calculation, you'll get kind of the power of
12 all of the active devices, the power of these idle devices. You'll get a whole
13 universe of everything that the circuits are doing when in whatever mode
14 they happen to be in. And then you will select which one of these is most
15 efficient when you're deciding whether to go to MIMO or SIMO mode.

16 Now, Patent Owner makes the argument about Cui, that Cui,
17 essentially, the power consumed in sleep mode is zero or non-existent. I
18 think that is an assumption that Cui makes in some cases. That you can
19 assume when you're doing this calculation, that sleep mode power is zero if
20 it's very small. But Cui also says that the analysis can be easily modified to
21 incorporate a sleep mode power that is not zero.

22 So, if you don't -- if the sleep mode power is not negligible, if
23 there's large leakage current, or if there's some other reason why the sleep
24 mode power is not something that you can ignore from the calculation, what
25 Cui says is that our analysis can be modified to account for that. And so,
26 Cui again is like a teaching calculating all of the circuit powers in such a

1 way that you get a full view of what the energy consumption is for use in
2 Siam's larger calculations. So that when you're switching between these
3 modes, you will maximize -- minimize power consumption.

4 JUDGE BALTATZIS: Just to clarify, too. If we say, okay, it just
5 says it's zero. And, you know, we take that side of it. Does that -- how does
6 that match up with the claim construction? Is it a situation if it -- if the
7 power is zero, the transceiver is off and it's not idle anymore? Is that --

8 MR. HABER: Yeah. So I -- even if Your Honors read Cui to say
9 the power is set to zero and everything is completely cut off, that still doesn't
10 remove Cui from the equation. Because in order for that to work, Your
11 Honors would have to read in a negative limitation into the claims, which is
12 what Patent Owner is asking you to do. The fact of the matter is, properly
13 construed, it just doesn't -- it -- whether or not the station is in idle mode is
14 not resolved by whether any particular circuit is set to zero or in any power
15 state. What matters is the mobile device.

16 And so frankly, even if Your Honors were to agree with the Patent
17 Owner's construction, Cui just factually doesn't say what they want it to say.
18 But I don't think that Your Honors, you know, can accept that position
19 without agreeing that there's some negative limitation in these claims.

20 All right. I think I'm going to skip through these other dependent
21 claims that aren't meaningfully disputed. And I did want to just touch on a
22 couple issues related to motivations to combine. Patent Owner makes a
23 number of arguments about motivations to combine. I just don't think that
24 they are borne out by what the references actually say.

25 If you look at -- we're on Slide 46. Both Li and Siam are teaching
26 the same general principle, which is that if you are inefficiently using

1 energy, that is not a good thing. And you want to make mode switching to
2 extend battery life. That's what Li says. And specifically, Siam is teaching
3 you the same thing, that certain of these modes are going to be less power
4 efficient than others. And here's a way that you can calculate which ones are
5 more efficient, and you want to choose obviously the most power efficient
6 mode. And so the problems that are being solved by Li are -- Li and Siam
7 are substantially identical.

8 And they also argue against the motivation to combine Li, Siam,
9 and Cui. And I think there's a few interesting things to note about this. So,
10 first, Siam is an academic paper. And one of the authors of Siam is the same
11 author as Cui. It is a -- the same individual. And so, these people who are
12 those of skill in the art were actively working together already. And I think
13 -- so that's pretty good evidence that in fact, these issues are related.

14 The Cui energy model is a specific, again, problem that is the same
15 problem that Li was trying to account for, which was how you account for
16 total circuit powers. And Patent Owner makes the argument that Siam
17 doesn't reference an idle mode, which again doesn't use the word idle. But
18 Siam does actually reference a sleep mode, which is the particular
19 phraseology that Cui uses. And so, I think these two references, they mesh
20 together. You know, I think they basically have very good correspondence,
21 and they have very good correspondence with again, what Li is trying to do.

22 JUDGE BALTATZIS: Counsel, you're coming up on your time.

23 MR. HABER: Okay.

24 JUDGE BALTATZIS: But you're welcome to go over it to go to
25 your rebuttal.

26 MR. HABER: Yeah, I -- there's one thing that I wanted to point

1 you at -- Your Honors to and just -- let's see if I can pull that up before I rest
2 for rebuttal. And it is, on this point of transmission chains. And so the
3 patent --

4 So, the Patent Owner's expert makes the argument that the term
5 transmission chain is not something that would -- is ordinarily used in the
6 art. And I don't think that that is accurate. I think the transmission chain is
7 the part of the transceiver circuitry that does transmissions. And it's
8 interesting that the Li reference seems to be more focused on the receive
9 side. But in Li paragraph 28, Li reserves -- refers to receive chains. And
10 again, the idea that there are transmission chains and receive chains that
11 correspond to transmission circuitry and receive circuitry is something that I
12 think is well known in the art and is entirely consistent with what Dr. Valenti
13 has explained how these devices operate. So, with that, I think I will reserve
14 the remainder of my time for rebuttal.

15 JUDGE BALTATZIS: Okay.

16 JUDGE FENICK: Can you -- is this argument about Li's
17 paragraph 28 somewhere in the papers?

18 MR. HABER: I believe it is. You can -- in my rebuttal time --

19 JUDGE FENICK: You can get it on the rebuttal. Thank you.

20 MR. HABER: Thank you.

21 JUDGE BALTATZIS: To confirm, Patent Owner, you asked for
22 15 minutes of rebuttal, correct?

23 MR. BROWAND: Yes, Your Honor. Thank you.

24 JUDGE BALTATZIS: Whenever you're ready.

25 MR. BROWAND: Your Honor, good morning. Nathaniel
26 Browand for Patent Owner. I -- I'd like to start by just previewing that -- I'd

1 like to talk about three major issues, at least in the time that I have with you
2 initially. The first is the claim construction issue that was addressed by
3 Counsel, and the other two issues are Grounds 1 and Grounds 2.

4 To start, we believe that the claim construction should be changed
5 from what the Board's preliminary construction was, and I'll explain why.
6 We believe that Grounds 1 and Grounds 2 must fail because there's no
7 motivation to combine, and there's no disclosure of the idle power
8 consumption limitation.

9 Turning first to claim construction, I'd like to start with Slide 4.
10 With all due respect, we believe that the Board's preliminary construction is
11 overbroad because it does not correctly describe idle time or when the
12 transceiver is waiting to send. The problem is that a transceiver cannot be
13 powered off and waiting to send at the same time. This problem is avoided
14 by the District Court's construction. It does not use the term transceiver.
15 The term transceiver is not in the claim language. So we would prefer the
16 District Court's construction because we think it is correct. The Board's
17 construction is correct in the sense that it also uses the term waiting to send,
18 which I think is consistent with the intrinsic record.

19 But we would like to make clear, Patent Owner is not asking for a
20 negative limitation. We are simply responding to the Board's preliminary
21 construction that introduced the term transceiver in its construction. We are
22 asking for waiting to be -- send to be given its plain and ordinary meaning,
23 and to not to be contradicted by later language in the construction, which is
24 what we believe the Board's preliminary construction does, because a
25 transceiver is not waiting to send when it's -- when all of the transceivers are
26 powered off. And that's the problem with the Board's preliminary

1 construction. So, the Board should construe the idle power consumption
2 limitation in accordance with the District Court's final construction or
3 something similar to that. We're not wedded to any particular language, but
4 we think that the concepts of the mobile station being powered on and
5 waiting to send are the two key features.

6 First --

7 JUDGE BALTATZIS: May I -- sorry to interrupt so early in your
8 -- but so if we do adopt the District Court construction, right, the mobile
9 station is powered on and waiting to send, would that include a mobile
10 station with -- you know, if we have two circuits, one transceiver on and one
11 transceiver off, is that waiting to send?

12 MR. BROWAND: That potentially could be waiting to send in a
13 SIMO mode where you have -- where you're only transmitting through one
14 antenna. That would be sufficient, because that could be a circumstance
15 where a mobile station is waiting to send in SIMO mode. But you -- what
16 you cannot have is you cannot have a mobile device that is waiting to send
17 with all transceivers off. And that's the problem that was introduced, I
18 believe, by the Board's preliminary construction, and that is not, we believe,
19 present in the -- our understanding of the District Court's construction.

20 I would like to turn briefly to the District Court's construction on
21 Slide 6 to see exactly how the District Court got to where it did. First, the
22 mobile station has to be powered on. That's a minimum requirement. Then
23 they said, but not all of the circuitry has to be powered on. So that sets the
24 bounds of where -- what we're talking about. Then they looked to the
25 specification, exactly what you should do to show that the idle time is the
26 time in which the device is on and waiting to transmit.

1 And they cite this passage from the specification. If the
2 transmission rate is too slow, a greater number of transceivers may become
3 idle, waiting to send transmissions over the communications channel. That
4 tells us that idle is synonymous with waiting to send. And it can't be that all
5 of the transceivers are off if they're idle and waiting to send.

6 And when we look in more detail at the specification here on Slide
7 7, it becomes even more clear. The specification at column 2, lines 60 to 63,
8 it says, The idle time is a time during which the transceiver may be waiting
9 to send data over the communications channel.

10 What does it mean to be waiting to send? The example describes
11 the situation where the transceiver has data to transmit, but it is not
12 transmitting because it is waiting for a scheduled start time. That's the
13 example in the subsequent sentence. Waiting to send means ready to go. It
14 doesn't mean ready to wake up. It's analogous to the idling car. The car is
15 on, it's ready to go, but it's not moving.

16 We would submit that Petitioner -- you didn't see them cite this
17 passage from the specification in their discussion. And that's because they're
18 trying to read the transceiver may be waiting to send to mean it may or may
19 not be waiting to send, but that's contradictory to the specification. The
20 specification requires the transceiver must be waiting to send. Not all
21 transceivers can be powered off and be waiting to send.

22 If you look at Petitioner's expert, he agreed during his deposition.
23 This is on Slide 12.

24 I asked him, If it is fully powered off, the transceiver is not waiting
25 to send, right?

26 If it is fully powered off, I think that would be fair. And then in

1 the exact same answer, he said, When it is in idle mode, it is not fully
2 powered off.

3 So we have a dichotomy. We cannot have a situation where all of
4 the transceivers are powered off and be -- and the mobile station is waiting
5 to send. To be waiting to send, at least some of the transceivers must be
6 powered. And he didn't just admit this in his deposition. He actually also
7 said it in his own declaration. This is on Slide 13.

8 He had a footnote that said, Idle power consumption means the
9 circuits are powered.

10 I asked him exactly what he meant by that, in his deposition. This
11 is on Slide 14. I said, When you say the circuits are powered, you mean the
12 circuits are powered on, right?

13 And what he said was, What I mean here is that they are not
14 powered off.

15 So again, you cannot be waiting to send if all of the transceiver
16 circuitry is powered off. But he recognized that the institution decision
17 covered that ground and he recognized in Slide 15 that the transceiver could
18 be powered off and still be within the scope of the idle power consumption
19 under the Board's preliminary construction. And he said he thought that
20 would be fair -- a fair reading of what the Board's preliminary construction
21 was.

22 So even Petitioner's expert agrees that the Board's construction
23 should be changed to something more in line with what the District Court's
24 construction is. And we submit that that change is substantial and would be
25 consistent with the intrinsic record. So we're not wedded to any particular
26 construction. We're not asking for a negative limitation, but we do think that

1 the Board's construction should be changed to something akin to the District
2 Court construction.

3 JUDGE BALTATZIS: Just very quickly, it seems still that there is
4 a kind of a distinction between the mobile station waiting to send and then
5 the transceivers waiting to send, right? So does -- is your position that, for a
6 mobile station to be waiting to send, at least one transceiver has to be
7 powered on out of the multiple potential transceivers?

8 MR. BROWAND: Yes. I think if it's waiting to send in MIMO
9 mode, maybe you need both transceivers powered on. If it's waiting to send
10 in SIMO mode, maybe you only need one transceiver powered on. But you
11 can't be waiting to send with all transceivers powered off. The District
12 Court's construction said the mobile station is powered on and waiting to
13 send. So simply having the mobile station powered on does not satisfy the
14 separate requirement of being waiting to send. There has to be something
15 else so -- to convey that the mobile station is ready to transmit, and that's
16 what I mean. Either one circuitry for SIMO, multiple circuitry for MIMO.

17 I'm going to jump ahead now to Ground 1 and Patent Owner
18 believes that Ground 1 fails for two reasons. First, there's a lack of
19 motivation to combine the Li and Siam reference. Second, there's no
20 disclosure in either reference of the idle power consumption limitation. And
21 I'll explain much more in detail on both points.

22 First, here on Slide 20, Petitioner's purported motivation for
23 Ground 1 fails. The purported motivation to combine is optimizing total
24 power consumption, but this is nothing more than a conclusory statement.
25 And they don't -- the Petitioners do not articulate why a POSITA would
26 have been motivated to combine these specific references to come up with

1 both wherein clauses that are recited in claim 25. There is simply no
2 consideration of idle power consumption in selecting a transmission mode in
3 either reference.

4 Optimizing total power consumption is a goal, but it does not
5 provide a motivation for a POSITA to arrive at both wherein clauses. The
6 first wherein clause is the power -- is taking account -- taking into account
7 the power consumption of the circuitry. That's one thing that needs to be
8 added to the control signal. The second wherein clause is this idle power
9 consumption limitation. That's another input that needs to be provided to do
10 -- to -- as -- to the control signal for purposes of the mode selection. So you
11 have to take into account both of these inputs. They're separate inputs and
12 they independently have an effect on when to select MIMO mode and when
13 to select SIMO mode. The problem is there's nothing like that in either Li or
14 Siam.

15 Even if you assume Petitioner's motivation, this is Slide 21, of
16 reducing total power consumption and switching between modes to
17 minimize power consumption, that does not lead a POSITA to the claimed
18 invention. Li discloses mode selection and Siam considers transmission
19 power and circuit power consumption only while transmitting. There is no
20 input in the Siam equation regarding idle power consumption when it's not
21 transmitting. There is no reason why a POSITA would have been motivated
22 to look to idle power consumption and add that as a consideration to mode
23 selection. Petitioners have only suggested that a POSITA could have made
24 the claimed invention, not that they would have been motivated to arrive at
25 the claim language, and that's the case law, the Belden case.

26 Another way to think about this is you look at the idle mode

1 disclosure in Li. It's only mentioned one time, one paragraph throughout the
2 entire reference. All it does is identify the problem of power consumption in
3 idle mode. That's not enough. The knowledge -- here on Slide 22, the case
4 law is clear. The knowledge of a problem and the motivation to solve it are
5 entirely different from the motivation to combine particular references to
6 reach the claimed invention. That's exactly what we have here.

7 The single mention of idle mode in Li simply recognizes a problem
8 in the art. It doesn't provide a solution or even attempt to solve the problem.
9 There's no disclosure or suggestion in either of reference to consider the
10 power consumed when not transmitting in the mode selection process. All
11 Li does is recognize this problem of idle mode. That is not a motivation to
12 combine particular references to solve -- to use idle mode power
13 consumption in the mode selection process.

14 To be clear, the reason why there's no motivation to combine is
15 neither Li nor Siam considers power consumption when not transmitting. Li
16 simply switches between SIMO and MIMO to save power. It doesn't do it
17 based on idle power consumption. It's blindly switching from MIMO to
18 SIMO mode to reduce power consumption. Yes, if you use less circuitry,
19 you will reduce power consumption, but you're not taking into account the
20 idle power consumption as its own variable, as something separate from the
21 circuit power consumption. These are the two wherein clauses in Claim 25.
22 They're separate inputs into the calculation.

23 So if you considered the circuitry impacting your MIMO and
24 SIMO selection, that's one input. That may set a decision point at a certain
25 -- at a certain energy level. If you also consider the idle power consumption
26 of the device, that may set your MIMO and SIMO selection point at a

1 different power level. There's no suggestion in Li or Siam to take into
2 account both of these points.

3 Here on Slide 26, a POSITA reading Li would not look to Siam's
4 protocol for the purposes of considering total power consumption when both
5 transmitting and not transmitting. Siam only looks at the circumstance
6 where you're transmitting. That's where most power is consumed. Li simply
7 suggests that an access point, which could be a base station, will instruct the
8 device to switch between MIMO or SISO mode to reduce power
9 consumption, but all of the items that the access point considers, none of
10 them are the idle power consumption of the mobile device. That is not what
11 is part of the decision-making process.

12 Here on Slide 27, Patent Owner's expert explains, There's no
13 suggestion in Li or Siam or in the general goal of optimizing power
14 consumption that would lead or suggest a POSITA to consider both the
15 power consumption of the circuitry when transmitting and the idle power
16 consumption of the mobile device when not transmitting. Separate apart
17 -- separate and apart from the lack of a motivation to combine, neither
18 reference discloses idle power consumption for purposes of mode selection
19 as required by the wherein clause.

20 Li's passing mention of idle mode does not offer any teaching or
21 suggestion about incorporating the use of power consumed while idling. Li
22 only mentions idle mode in the context of waiting for incoming signals on
23 the receive side. It doesn't say anything about idle mode in the context of
24 transmission or how to improve transmission power consumption. It's
25 completely different. Even the single reference to idle mode is in a
26 completely different context from the uplink MIMO to SIMO decision. It's

1 talking about downlink, receiving signals, not transmitting signals.

2 Petitioner, in their slides, made comments of less circuits idling in
3 SIMO mode and more circuits idling in MIMO mode. Those references are
4 misleading, and they actually have nothing to do with idle power. Less
5 circuits are also transmitting in SIMO mode when -- during transmission.
6 More circuits would be transmitting in MIMO mode during transmission.
7 It's not specific to the non-transmitting circumstance where you're waiting to
8 send but you're not actually transmitting. There's no discussion in Li about a
9 separate consideration for the circumstance where you're idling, just not
10 considered.

11 When you look at the two references, there's no help in Siam.
12 Petitioner's expert agreed. This is on Slide 29. He admitted Siam doesn't
13 talk about idle power or idle states. When you look at Li, as I mentioned, Li
14 has one discussion of idle mode. This paragraph, paragraph 18, this is the
15 entire discussion upon which Petitioners rely for the whole wherein clause.
16 No POSITA would take this single mention of idle mode as a suggestion to
17 use idle mode to address power consumption. It simply says a station in idle
18 mode waiting for incoming signals may consume approximately 60 percent
19 of its battery energy.

20 So what? No POSITA would read this single mention to mean that
21 the access point should be considering the power consumed by each mobile
22 device when not transmitting as a separate input to determine the MIMO or
23 SIMO selection. The patent, the '120 Patent is simply a major advance from
24 the Li reference. Li simply recognizes power consumption as a problem,
25 and one way to solve that is switching. It doesn't tell you, and it doesn't
26 suggest, you need to use particular inputs to help you determine how to

1 switch and when to switch between SIMO and MIMO.

2 Here on Slide 31, Petitioner's expert agreed that there's only a
3 single mention of idle mode in Li, and he's extrapolating his entire analysis
4 from this single mention. Petitioner's expert confirmed that the extent of Li's
5 consideration of idle mode appears in that previous paragraph that I cited to
6 you. There's nothing else in Li that gets you any further than just the
7 problem of power consumption during idle mode. Patent Owner's expert,
8 and in our papers, we made clear that Li does not disclose or suggest how
9 idle mode could be used for power consumption, how idle mode could be
10 relevant to mode selection, or how idle mode might be considered with
11 respect to a control signal.

12 I would like to go to Petitioner's slide, Slide 39. And here in Slide
13 39, Petitioner made several arguments against Patent Owner's expert, but
14 each of these points are simply incorrect. 60 percent wasted battery power
15 only identifies a problem. It does not suggest how idle mode could be used
16 for power consumption or improving power consumption. Power wasted
17 exacerbated by MIMO does not refer to idle mode. It doesn't talk about the
18 circumstance when the mobile device is not transmitting, because power can
19 be wasted in MIMO mode when it's transmitting in MIMO mode because
20 more circuitry, more antennas are used in MIMO mode. This is not a
21 comment that is specific to idle power consumption.

22 Switching between MIMO and SIMO to extend battery life, yes,
23 that's what Li talks about, but it does so completely without addressing idle
24 power consumption or idle mode. So, again, there could be many reasons
25 why you might want to switch between MIMO and SIMO, none of which
26 have to do with idle power consumption, for example, quality of service,

1 distance to the base station, user traffic. There are many other factors that
2 could be considered that would motivate a reason for the base station or any
3 other device to switch between MIMO to SIMO mode to save power, none
4 of which have to do with idle power consumption. Li is totally silent on this
5 point.

6 And, in fact, Petitioner's expert agreed that Li does not provide any
7 details for any usage of idle power consumption throughout the reference.
8 During his deposition, he acknowledged that there are no inputs in Li to
9 determine when to switch between MIMO or SIMO. Therefore, idle power
10 consumption cannot be one of those inputs. He also agreed here on Slide 34
11 that Li doesn't identify any variables that are used in determining mode
12 switching. Right. It does not explicitly recite the variables. Idle power
13 consumption is simply not disclosed in Li or Siam.

14 Now I would like to turn to Ground 2. Ground 2 also fails for the
15 same reasons as Ground 1 because there is no motivation to combine all
16 three references, and none of the references disclose the idle power
17 consumption limitation and the wherein clause of Claim 25.

18 First, with respect to motivation to combine, a POSITA would not
19 have sought to expand Siam's total energy consumption to include Cui's
20 sleep mode. Cui's sleep mode is the opposite of what is taught in the '120
21 Patent. Cui's sleep mode is a zero-power consumption state, and Cui goes to
22 great extents to then ignore it in its power consumption optimization
23 program.

24 The '120 Patent, by contrast, recognizes that idle power
25 consumption is non-negligible. And, in fact, when you're idling, you are
26 consuming power. So that's something that should be taken into account.

1 Cui does the opposite. Sleep mode, no power consumption, we can ignore it
2 for purposes of optimizing. A POSITA would not read sleep mode to be a
3 power consumption state that should be taken into account because when
4 you look at Cui, it actually says, all -- sleep mode is where all the circuitry in
5 the signal path is shut down, so there is effectively no power consumption in
6 sleep mode. That's why it can be ignored. That's why it's not relevant to
7 optimizing power consumption.

8 JUDGE BALTATZIS: Just to confirm my understanding of Cui,
9 that it does allow for the mobile station to be on. It's just the -- in this case,
10 now we have the transmission circuitry is off, but the mobile station as a
11 whole is still on and not -- you know, that's a difference between a sleep
12 mode and just being completely powered off?

13 MR. BROWAND: I think that's correct. I would also want to be
14 clear on this point that the mobile -- as I understand Cui, all of the circuitry
15 is -- and the transmission is shut down. The mobile device may be on, but it
16 is certainly not waiting to send under that circumstance. And I'll explain
17 why that's clear when we look in more detail at Cui.

18 So back to the motivation to combine, a POSITA would have
19 ignored sleep mode, not looked to sleep mode in the total power
20 consumption, because it is effectively zero. And that's exactly what Cui
21 says. Petitioners try to make a lot out of the phrase, work in sleep mode.
22 There's a line in Cui that says this. But that phrase does not change the fact
23 that sleep mode is a shutdown state with effectively no power consumption.

24 Here, on Slide 37, this is the important passages from Cui. Cui is
25 clear that, Sleep mode is where all the circuits in the signal path are shut
26 down for energy saving. And if you look right before the underlined

1 passage, it says, T_{on} is a parameter to optimize. T_{on} is the time when the Cui
2 device is in active mode. We don't care about the time when it's in sleep
3 mode. We don't need to optimize that, because it's effectively zero. We
4 don't need to take that into account. It's the opposite of the '120 Patent, we
5 -- where we do need to take in -- the idle power time into account, because
6 the idle time is relevant. There's power being consumed. Cui is the
7 opposite, because this -- during sleep mode, all of the circuits in the signal
8 path are shut down for energy saving. No device is waiting to send in that
9 state.

10 And, in fact, Cui confirms it later on, right there in the highlighted
11 sentence, the start-up process from sleep mode to active mode may be slow.
12 It actually takes a lot of time to get from sleep mode to active mode. We're
13 not idling. We're not ready to go. We're not waiting to transmit. We're
14 sleeping. We're saving energy. This is a -- this is the choice that Cui
15 discloses. The '120 Patent is something different. It's talking about idle
16 mode, being ready to transmit, using energy, needing to take that into
17 account. Cui is the opposite. Sleep mode is a low or zero-energy state,
18 similar to being off. Maybe not the entire device, but at least the circuitry
19 that is transmitting. It's not waiting to send. It's not idling.

20 Petitioner's expert agreed, when I asked him in his deposition here
21 on Slide 38, switching from sleep mode to active mode would require
22 powering up the circuits that were shut down. Yes, they have to be re-
23 powered up. They're not waiting to send.

24 Petitioner's argument simply ignores the disclosure of Cui and tries
25 to turn it into something it's not. It's attempting to convert sleep mode into a
26 power-consuming mode. That's undercut by the teachings of Cui itself. Cui

1 made a decision to use a sleep mode, which is a low-energy state that we
2 don't need to take into account in the energy equations, that should not be
3 added to the Siam energy equation.

4 Here is Slide 40. In Slide 40, we get more detail in Cui and more
5 confirmation that the sleep mode is a state where the power consumption is
6 effectively zero. It is negligible. Cui states that it sets the power
7 consumption in sleep mode to zero because any leaking current is effectively
8 zero when compared with active mode. And this makes perfect sense. In
9 sleep mode, the power is effectively zero, so it can be ignored. We don't
10 have to worry about taking that into account. It would not need to be
11 considered in optimizing power consumption. By -- because it's negligible.
12 By contrast, when idling, the power consumption is non-negligible and it
13 may be substantial. That's what the '120 Patent teaches, and that's why it
14 considers idle power consumption.

15 Petitioner's expert here, on Slide 41, agreed. Idling consumes
16 significant processing and transceiver power. Yeah, there is non-negligible
17 energy consumption when idling. It's not like sleep mode at all. It's not just
18 a difference in amount. It's a difference in kind, and they're solving it in a
19 completely different way than how the '120 Patent takes this extra step into
20 account. A POSITA would not have considered the power expended in
21 sleep mode to be relevant to transmission mode selection because the power
22 consumed in sleep mode is effectively zero. That's what Patent Owner's
23 expert says here on Slide 42.

24 On Slide 43, there's no explanation provided by Petitioner or
25 Petitioner's expert for why considering the power consumption in Cui's sleep
26 mode would improve the Li-Siam system. There's no reason to add this

1 extra variable of sleep power consumption because it's zero. Cui actually
2 says we can ignore that whole part of the equation. There'd be no reason to
3 add it to Siam -- the Siam equation. There's no reason for a POSITA to add
4 consideration of Cui's zero-power state in seeking to optimize power
5 consumption. You either take into account the variables that matter or you
6 eliminate the variables that are negligible. You don't do both.

7 A POSITA simply would not look to Cui's sleep mode in seeking
8 to improve the Li-Siam system. Petitioner makes several points recognizing
9 the problems in Cui. They also say, well, it does contemplate a
10 circumstance where the power consumed in sleep mode could be non-zero.
11 That's a hypothetical. That's not actually a disclosure. No POSITA would
12 then use that teaching. The law is clear on this point. On Slide 44, legal
13 determinations of obviousness should be based on evidence rather than
14 speculation or conjecture. That's what that passage is. It's just conjecture.
15 That's just something that a POSITA would have to go investigate and learn
16 more about. It's not actually a disclosure that can be relied upon.

17 And, in fact, Petitioner's expert, during his deposition, I asked him
18 this. I said, the power consumed in sleep mode is limited to the leaking
19 current.

20 He said, well, it's dominated by the leaking current. And if the
21 circuitry is not properly designed, there could be other sources of power
22 consumption.

23 That's not what Cui's talking about. It's not talking about a poorly
24 designed circuit. He's just speculating about circumstances where there
25 could be idle power consumption, where there could be actually non-
26 negligible power in this sleep mode. That's not what is actually being

1 disclosed in Cui. That's not a disclosure of idle power consumption.

2 Here, on Slide 46, a POSITA would understand that sleep mode
3 and idle mode are completely different states. They're distinct. This is
4 confirmed not only by the fact that the patent only talks about idle mode and
5 Cui only talks about sleep mode, but there's actually references that
6 Petitioners cite that talk about both, and they treat them differently.

7 Here, on Slide 47, this is the Walton reference. It's Exhibit 1031.
8 It talks about a communication state, an idle state, and a sleep state. The idle
9 state, it's awake. The mobile device is actually not sleeping, but it's awake.
10 It's using power. In the sleep state, it says, in paragraph 51, wireless device
11 may shut down as many circuit blocks as possible to conserve power. It's
12 exactly what Cui says. It's the same type of sleep mode, sleep state. All of
13 the circuits are shut down to save power unlike the idle state. The idle state,
14 it's awake. We have power consumption. It's something we might want to
15 consider. It's not a sleep state that can be ignored.

16 So Petitioner made much of the claim construction argument by
17 saying, well, if you keep the current construction, then Patent Owner has no
18 argument with respect to Cui. Untrue. Even if the Board decides to keep the
19 preliminary construction, and we've given reasons why we think it should be
20 changed. But even if the Board keeps the preliminary construction, Ground
21 2 still fails. And the reason why is because Cui's sleep state is not waiting to
22 send. Yes, the transceiver may be off because all of the circuits are shut
23 down. But it's not waiting to send. I showed you the passages in Cui where
24 it said all of the circuits would have to be turned on in order for it to be able
25 to send. That would take time. That's not waiting to send. It's shut down.
26 It's in a shutdown state. It is sleeping. It's not waiting to send. And --

1 JUDGE BALTATZIS: Counsel, are we then reading some
2 additional limitations in the waiting to send? Are we reading in some sort of
3 temporal aspect that, you know, waking it up and then sending later, is that
4 enough -- that's not enough to be waiting to send? There has to be -- I think
5 you said earlier that, you know, the message has to be ready, you know, in
6 the -- programmed in and ready to go.

7 Is that -- do we need to read that type of limitation into waiting to
8 send?

9 MR. BROWAND: I think it's part of the definition of waiting to
10 send. I think it's how a POSITA would understand that term. Waiting to
11 send is not -- I mean, look, we can talk about it as a continuum like they
12 want to talk about. It's not off. It's not shut down. It's not powered down.
13 It has to be in some state of being awake and consuming power that you
14 would have -- that you would want and need to take it into account because
15 it could affect the MIMO to SIMO selection process.

16 So Cui is clearly at the not completely off, but effectively off, and
17 it's not anywhere close to being waiting to send. I recognize waiting to send
18 is not in and of itself a completely well-defined term. But I think there's an
19 understanding of what that would be based on the discussion in the intrinsic
20 record, as amplified by the District Court's construction, and as understood
21 by, kind of, the art more generally. It is an awake state where it is ready to
22 transmit. Maybe it's waiting for a scheduled time. It has data to send, as the
23 example in the specification describes, but it's not in a state where a bunch
24 of processes are going to have to happen for it to be in a position where it
25 can actually transmit.

26 I would also like to raise another reason why Ground 2 fails, and

1 this is on Slide 49. The problem for Petitioners is that the disclosure in Cui
2 2003 was present in a separate Cui reference called Cui 2005 during the
3 original Prosecution. It was the exact same disclosure and you saw the
4 reasons for allowance. The original '120 Patent was that there was no
5 references that disclosed idle mode. And we are presumed that the PTO
6 examiner did his job when -- during the original examination and considered
7 Cui's sleep mode and found the idle power limitation to be patentable over
8 that disclosure.

9 So this is the case, Ultra-Tex Surfaces. And just to confirm, on
10 Slide 50 on the left is the disclosure in Cui 2003, that Petitioners are citing.
11 On the right, is the disclosure in Cui 2005 that was before the PTO
12 examiner. It's the exact same disclosure. And you can go passage by
13 passage through each disclosure that they're relying upon in Cui 2003. All
14 of that was also in Cui 2005. All of that was before the PTO examiner
15 during the original Prosecution; all of that was presumptively considered and
16 found not a reason to withhold patentability of Claim 25.

17 Here as a reminder, on Slide 51, the examiner in the statements for
18 allowance, stated that, the prior art of record, presumably the Cui sleep mode
19 disclosure inclusive, fails to anticipate or render obvious the limitations
20 regarding the consideration of power during idle periods in the mode
21 selection processing.

22 So unless there are any further questions, I will reserve the balance
23 of my time.

24 JUDGE BALTATZIS: Very good. None for me.

25 MR. HABER: All right. May I proceed, Your Honors?

26 JUDGE BALTATZIS: Please.

1 MR. HABER: Thank you. So I want to address a few points. The
2 first point I want to address is Patent Owner's analogy to an idling car. That
3 analogy really, I don't think, holds water. And if anything, it demonstrates
4 why Petitioner's view is correct. Patent Owner makes the argument that, you
5 know, when a car is idling, the engine is running and it's just waiting to drive
6 again. There's a few problems with that.

7 First, they're focusing on the engine, not the car. The car is
8 waiting to drive. And second, as many of you are likely aware, the engine
9 can be entirely shut off, and modern cars, these days, shut off the engine to
10 conserve gas and the car is still waiting to go. You take your foot off the gas
11 and the engine starts back up and you go. And so whether or not the engine
12 is on, or in some low fuel consumption state, or off, that doesn't change the
13 fact that an idling car, waiting at a red light, for example, is waiting to drive.

14 You just take your foot off the gas and it starts up and you drive.
15 And I think this brings up a point that, Judge Baltatzis, you asked Patent
16 Owner. Not only are they asking for a negative limitation. They're
17 attempting to read in a requirement that the circuits can't be off. They're
18 attempting to read in a temporal requirement. And that just isn't in the
19 claim. There is nothing in the claim that talks about how long it may take
20 for a mobile device to transition from an idle mode to a sending mode. That
21 just isn't a claimed requirement.

22 I want to go to a couple of Patent Owner slides. Patent Owner
23 does a lot to try to, I think, use the extrinsic evidence to contradict what the
24 intrinsic record, I think, is, frankly, very clear on, with regard to what the
25 claim says and what the patent says. And they point to various testimony of
26 our expert, Dr. Valenti. And Slide 12 is an excerpt of some of that

1 testimony. And I think it's interesting to note a couple things about this
2 testimony. And, fundamentally, Patent Owner's taking this testimony
3 entirely out of context, and I would invite Your Honors to read the
4 questioning that was asked of Dr. Valenti.

5 And even in this question, it's not clear. And I think Patent Owner
6 does this intentionally. They try to mesh a mobile device with a transceiver.
7 The fact of the matter is, those are different things. And the question, this
8 question on the screen, if it is fully powered off, the transceiver is not
9 waiting to send, right?

10 What is it? What are we talking about? Are we talking about the
11 transceiver, or are we talking about the mobile device? And the answer, If it
12 is fully powered off, I think that would be fair.

13 Again, what is it? What it is that we're talking about, and you can
14 see this at the beginning of this questioning around page 42, lines 9 through
15 15. The question was originally asked, you know, if the mobile device is
16 powered off, it's not transmitted.

17 If the mobile device is fully powered off, then the mobile device is
18 not waiting to stand. And those are the answers that Dr. Valenti gave. And
19 those are the answers that are consistent with the record. If the mobile
20 device is powered off, it's obviously not waiting to do anything. But if the
21 mobile device is on and the transceivers are powered off, they exist in some
22 power continuum, then the mobile device may well be waiting to send. And
23 all it has to do is put the -- the transmitters back into its transmit state, and
24 then they will proceed to send.

25 And, again, the amount -- any amount of time it might take to do
26 that is not relevant to these claims because these claims just don't have a

1 temporal requirement. And, again, I'll direct Your Honors to several other
2 passages where Dr. Valenti said exactly this. Page 58, around line 17, these
3 were answering questions about the mobile device. If the mobile device is
4 powered off, it is certainly not going to be doing anything. But if the
5 subsidiary components are powered off, the mobile device may, in fact, be
6 ready and waiting to send.

7 And, again, there's a citation to page 60, around line 5, where Dr.
8 Valenti explained specifically that transceivers could be off and waiting to
9 send. And the issue is that they are powered down into this low power state
10 and they're simply waiting to be woken back up by the mobile device
11 because the mobile device, as a whole, is waiting to get a signal that it needs
12 to send, and then it will activate the appropriate circuitry to do that.

13 Next, I wanted to mention Patent Owner's Slide 13. I think this is
14 an interesting quote that they bring here. This is footnote 5 to the
15 declaration that was offered by Dr. Valenti. And footnote 5 is not a claim
16 construction footnote. This is in the description of the Li reference. This is
17 describing Li's idle mode. And I think this is an accurate description of Li's
18 idle mode. It is describing that in an idle mode, one of skill in the art would
19 understand that power consumption means that circuits are powered and
20 have nothing to transmit or receive.

21 And, again, the circuits are all of the circuits in the mobile device.
22 There are some that will be on; there will be some that will be off. They will
23 have power from -- coming from the mobile device, and the mobile device
24 itself will be idling. And so this is not -- it's kind of an attempt to define the
25 claim construction issue. This is really a description, frankly, an accurate
26 description of what Li's teaching is. And I do want to go back to Li because

1 I -- again, I think that the Patent Owner is just not giving Li a fair read. And
2 if you go to our slide -- if you go to our Slide 32, I think this is a -- is -- they
3 say that this is a short reference to idle mode in Li. That's fair. I think it is a
4 short reference because this is a very simple issue. They are trying to make
5 this much more complicated than it actually is. And Li is very explicit. Li
6 does teach that you can have a mobile station in idle mode.

7 So we have the mobile station as a whole sitting in idle mode. You
8 waste power. Li teaches this inefficient usage of energy. So what inefficient
9 usage of energy are we talking to -- about? The inefficient usage of energy
10 that is referenced in the immediate prior sentence, which is the mobile
11 station sitting in idle mode. And they specifically say, This inefficient usage
12 of energy may be exacerbated by MIMO devices. And so it is just not a fair
13 reading of Li's very plain disclosure of the problems that exist in idle mode
14 and what specific transmit modes those relate to, to say that Li doesn't have
15 this teaching because it plainly does.

16 Now, in talking about the Cui reference, they make an argument
17 that, again, it's just not a fair reading of the reference. And so on Slide 43,
18 we have an expert from Cui. And Cui says, specifically, Our analysis can be
19 easily modified to incorporate P_{sp} , that's sleep power, equal to zero.

20 They suggest that that statement, that plain statement is
21 speculation. That is not speculation. That is the inventors. That is these
22 people of skill in the art saying we have an equation here and that equation is
23 Cui's equation that is Figure 1 or equation 1, that specifically has P_{sp} in it.
24 And you can use this equation, this map, this objective set of variables to do
25 a calculation. And the calculation that Cui is telling you to do is that you
26 can do it where P_{sp} is not equal to zero, where it's not negligible, where you

1 want to account for all of these things. Cui is telling you exactly what to do.
2 That is not a speculation. That is a express disclosure of the reference
3 themselves.

4 Now, when you listen to Patent Owner's argument, they do the
5 same sort of thing in -- at oral argument that they were doing with Dr.
6 Valenti. They confuse the issues between the mobile device and the circuits
7 that are inside the mobile device. And it is certainly true that you can have
8 circuits that are powered off. That's what the '120 Patent says. And there is
9 nothing that -- in the '120 Patent says that you can't have circuits that are
10 powered off while the mobile device is idling because that is what the claims
11 say. The claims say the mobile device is idling. And when you look at what
12 Cui says, this is, again, I think a very important disclosure of Cui. We have
13 this equation, right? The equation has to do with power when the device is
14 on, power when the device is in the sleep mode, and power when the device
15 is in a transient mode.

16 And so all of these modes, all of these things that you're trying to
17 account for when calculating total circuit power, are described by Cui and
18 included in Cui's calculations and would have been used by one of skill in
19 the art that is trying to account for all of these low power modes when
20 calculating total circuit power. And total circuit power is what Siam is
21 referencing. And I think that it is just not a fair read of the references to say
22 that Li discusses an idle mode. Siam discusses how to calculate total circuit
23 power.

24 One of skill in the art, when they were trying to calculate total
25 circuit power, would obviously want to understand all of that power. Li says
26 there's this idle mode so they would know that you would account for that in

1 Siam. But to the extent that with any express teaching that was actually
2 needed on that point, Cui has it specifically. They have exactly the
3 calculation that you should use when you're calculating idle power, transient
4 power, any sort of low power mode in the calculation that Siam teaches.

5 And I did want to highlight, again, this term that a Patent Owner is
6 focusing on. This term waiting to send, right? This term waiting to send
7 doesn't appear in the claims. It doesn't appear, you know, in the actual claim
8 language, and that term is doing a very, very large amount of work for them.
9 It's bringing in the negative limitation of, in their view, if a circuit is off, it's
10 not waiting to send, and it's bringing in some sort of a timing requirement.
11 You have to be ready to go and available to send instantaneously. That is
12 just not what the reference is. That's not what the intrinsic record says, one.
13 And, two, even if that was what the claims say, that is taught by Cui. Cui
14 teaches a mode where you're transmitting power and then you go into a sleep
15 state, and then you go back into an awake state when you want to continue.

16 I did want to bring up another set of slides. I think -- all right.
17 There are a number of arguments that Patent Owner makes that I think are
18 just not borne out by the law. And the first one is related to the Cui
19 reference, and they seem to be asking for some sort of a heightened burden
20 or standard or burden of proof when there is a reference that is arguably
21 related to another reference that was handled during Prosecution. Just as a
22 factual matter, I think their argument fails. The Li reference. The Li
23 reference was not before the examiner. The Li reference specifically talks
24 about idle mode. The Li reference would be combined with Cui. That
25 disclosure was never considered by the examiner, and so just factually it
26 doesn't work.

1 The other thing that I would point to is this case Ultra-Tex that
2 they're identifying. It's a case from 2000. It is not an IPR case. This is a
3 District Court case. There is a presumption of validity that applies in
4 District Court that doesn't apply in an IPR, obviously. And this issue was
5 substantially addressed by the Supreme Court in the Microsoft v. i4i case.
6 And what the Supreme Court said is there's no different standard of proof
7 based on whether or not a reference was before the examiner or not, and so
8 the -- this argument just doesn't work factually, and it doesn't work legally.

9 I did -- Judge Fenick, you asked me about paragraph 28 of Li. I
10 did go back and look through the papers, and I did not see that citation
11 specifically right away, but it was provided in response to some questions
12 that I was asked about receive side and transmit side and transmit chains
13 versus power chains. And generally, to get to the point that those are kind of
14 well understood features of transceivers.

15 Now, I think what I want to do is just go back in my last few
16 minutes, if I can get this back up, is to really focus on the claims because
17 we've been saying a lot of things about terms and words that aren't found in
18 the claims, whether they're transceivers, whether they're waiting to send, all
19 of these issues, and the claims don't have any of those requirements. And
20 the idle power consumption of the mobile station is exactly what is recited
21 here in this claim. It is an idle power consumption. It is an amount of power
22 that is being consumed by the mobile station when it is sitting in some idle
23 mode. And what the '120 Patent says specifically is that there are some parts
24 of the circuit that can be powered off when in that idle power mode, and it
25 would be an error to exclude those examples from the construction of this
26 term.

1 And, you know, once you have that in mind, I think the references
2 Li and Siam specifically teach all of these claim elements, and the
3 motivation to combine arguments are really about focusing on minute details
4 about these references individually rather than what the combination actually
5 is. And it's very, very important to keep in mind what the combination is
6 because all of these references work together. And that's the way that one of
7 skill in the art would look at these things.

8 They would look at the idle power mode that's referenced in Li.
9 They would look at the teaching to switch between SIMO -- or between
10 MIMO and other modes. They would want additional information perhaps
11 about how to calculate circuit powers. They would get that information
12 from Siam. They would use that information, according to Li, to transition
13 from a higher power mode to a lower power mode, and that arrives at the
14 claim convention. And to the extent that there is any additional teaching that
15 is required about these low power states, that specifically comes from Cui
16 and one of skill in the art, which is combine all of these things together and
17 do what Li teaches them to do, which is conserve battery power as
18 appropriate.

19 With that, Your Honors, I don't think I have any further comments
20 unless you have questions.

21 JUDGE BALTATZIS: None from me. Judge Khan, Fenick?

22 All right. Thank you.

23 MR. BROWAND: Thank you, Your Honor. I would like to first
24 start with Petitioner's expert's testimony again, because we did not misquote
25 it. We did not miscite it. We did not give you the -- an incomplete context.
26 If you look at page 60 and page 61, the testimony is very clear. Petitioner's

1 counsel now referred you back to page 40, 20 pages earlier in his transcript,
2 to help you provide -- to help supposedly provide context to the question
3 that's on the screen on Slide 48, that what is the "it" referring to? The "it" is
4 clearly referring to the transceiver. You don't have to go back to page 40.
5 All you have to go back to is the previous question on page 60.

6 It says, But is there a circumstance where the transceiver is waiting
7 to send and fully powered off?

8 Answer, Fully powered off? I don't know. I don't know if I really
9 have an opinion there. I don't know, unless you want to rephrase the
10 question.

11 So I did. If it is fully powered off, the transceiver is not waiting to
12 send, right?

13 And that's where he said, If it, meaning the transceiver, is fully
14 powered off, I think that would be fair.

15 I think the testimony is very clear. I was responding to exact -- I
16 rephrased the question in response to his request. He answered the question.
17 It was about the transceiver, not something else, not something 20 pages
18 earlier in the transcript.

19 The Petitioner also made a point about this disclosure that they
20 cited in Cui on Petitioner's Slide 43. And they highlighted this sentence
21 about, Our analysis can easily be modified to incorporate sleep power not
22 equal to zero, but remember, this is the energy equation that Cui provides. E
23 equals P on times T_{on} plus sleep power, sleep time plus transmit -- transient
24 power and transient time.

25 And when you read what Cui is talking about earlier on, as I
26 mentioned, what we're trying to optimize, according to Cui, is T_{on} . That's

1 what matters. What he ends up doing is actually crossing out those other
2 two parts of the equation because they're negligible. They don't matter. The
3 thing that we're trying to optimize is T_{on} and P_{on} . That's how you -- that's
4 how you maximize energy consumption -- reducing power, energy
5 consumption and reducing power consumption. You don't need to worry
6 about the time spent in sleep mode or the power spent in sleep mode because
7 it's set to zero. That's what the technology in Cui says. That's what the
8 disclosure in Cui says. That's the only fair way to read Cui. There's nothing
9 else beyond that. The speculation about things could be different is not
10 really a fair reading of Cui. A POSITA would not go beyond what's actually
11 written in this text.

12 Petitioner also makes several arguments what it believes to be
13 based on the claim language and draws, as shown here on Slide 23, a
14 distinction. What it believes is a complete dichotomy between the first and
15 second circuitry in the mobile station. It highlights the first and second
16 circuitry in green. It highlights the mobile station in yellow as if they're two
17 completely different objects. The first and second circuitry is undoubtedly
18 part of the mobile station.

19 The first wherein clause, wherein the control signal is based on the
20 power consumption of the first and second circuitry, that's the circuit power
21 that's being used for transmission purposes. That's going to be a lot, power
22 is on. It's transmitting a lot of power to keep track of. The second wherein
23 clause, it's -- the control signal is based, at least in part, on the idle power
24 consumption of the entire mobile station when it's not transmitting. This is a
25 smaller amount of power. It's idle power that the circuitry, part of it may be
26 on, part of it may be off. That's why we want to keep -- take into account

1 the -- the idle power consumption of the entire mobile station. It's a smaller
2 number, but we do want to keep track of it because it may impact the MIMO
3 and SIMO decision point.

4 That's why we look at the entire mobile station, not because we're
5 not looking at the first and second circuitry. Yes, we're looking at that too,
6 but it's -- we're talking about the time when it's not transmitting. So the
7 overall power consumption is going to be a lot less. So we look at the entire
8 device. That's what the patent teaches. Those two separate inputs are what
9 inform the MIMO. Are two -- there could be other inputs, but the two
10 claimed inputs in Claim 25 are these two points, one, the circuit power
11 consumption during transmission; two, the idle power consumption of the
12 entire mobile device when it's not transmitting, when it's idling, when it's
13 waiting to send.

14 I also wanted to talk a little bit more about Cui. This is Petitioner's
15 Slide 42, and they tried to analogize Cui with what's happening in the '120
16 Patent. But the problem here is the language in Cui. It doesn't help
17 Petitioners. It says, where T_{on} is a parameter to optimize and then returns to
18 sleep mode where all the circuits in the signal path are shut down for energy
19 saving. So this is what I was referring earlier. You simplify the equation
20 because you've chosen to move into sleep mode that can be ignored. And
21 the only parameter that you really need to control for is T_{on} . So let's
22 minimize the time when we're active. That's how we can save power. Let's
23 not just take into account -- let's not take into account the times when we're
24 sleeping. All we need to focus on is when we're active. Let's minimize that
25 time. That's a way to reduce power consumption without regard to idling,
26 without regard to the time spent in idle mode, without regard to what the

1 '120 Patent teaches. Idling consumes power. That is something that the '120
2 Patent says needs to be taken into account if you're going to be idling. Cui's
3 talking about something very different.

4 It says here that the deadline is T . That's the amount of time that
5 matters. And T_{on} is less than the entire time. T_{on} is the amount that you're
6 trying to control for. So if you can minimize the active time, then your T is
7 smaller and your power is smaller. And that's what a POSITA would read
8 from Cui. Nothing about taking into account sleep mode. Sleep mode is
9 what can be ignored because it's time -- the sleep time is basically when all
10 the circuits in the signal path are shut down for energy saving, not for when
11 there's actual energy being consumed that we need to take into account. The
12 solutions provided by the '120 Patent are very different than what is
13 discussed in the Cui reference.

14 Li is no better. You heard Petitioners try to expand upon what this
15 single paragraph in Li, try to extrapolate that somehow a single mention of
16 idle mode in Li when it's talking about reception of a signal to be used in the
17 exact opposite circumstance, transmission of the signal. But there's no
18 suggestion in Li about how or when or variables or what inputs you might
19 consider in how to switch between MIMO and SIMO mode. As these
20 modes came online, people understood MIMO mode uses more power,
21 SIMO mode uses less power. But there's benefits with MIMO mode. You
22 get perhaps better transmission, better reception. This is a cost and benefit
23 analysis that was understood. But there was no teaching in Li about taking
24 into account the idle power consumption. It just says you can switch and
25 save power. That's all a POSITA would understand from Li, nothing more,
26 nothing more about what are the variables, what are the factors, why might I

1 want to switch? It just says if you switch, you can save power. That's true
2 under circumstances irrelevant to idle power consumption.

3 The '120 Patent goes further. It talks about two inputs that should
4 be considered in the mode selection process, power consumption of the
5 circuitry and idle power consumption. Those are two inputs that should be
6 considered. And Claim 29 talks about yet a third input, number of users.
7 These are all inputs that help determine when to switch between MIMO and
8 SIMO mode. If you only took into account the circuit power, that would
9 lead to switching at a certain amount. If you take into account both the
10 circuit power and the idle power, that may change when you would switch
11 from MIMO to SIMO mode. That is what the '120 Patent teaches. None of
12 the references would lead a POSITA to take into account those two
13 variables. None of them are disclosed or even suggested by Li, Siam, or
14 Cui.

15 Finally, I would like to submit and inform the Board that we
16 believe, from Patent Owner's perspective, we should not even be here, and
17 I'll explain why. This case has already gone to trial in the District Court.
18 Samsung has already been found to infringe Claim 25. The jury has already
19 awarded damages of eight figures against Samsung for infringing this claim.
20 Final judgment has already been entered by the District Court. Post-trial
21 briefing has already been completed by the District Court.

22 Under these circumstances, the Board should not have instituted
23 this case. And we believe that this case, regardless of the determination, will
24 not beat the District Court decision and any appeal that will become binding
25 on Samsung.

26 So we believe that, with all due respect, that this proceeding under

1 current procedures would not have been instituted, would not have been
2 -- we would not be in the position that we are now in, and we believe that
3 should be taken into account in addition to the merits arguments that we've
4 already made. We believe that Samsung has made a decision to pursue
5 invalidity only here. That was their decision, and they should not benefit
6 from what is now a no longer continued policy by this government agency.

7 So thank you. Thank you for considering that, and I'm happy to
8 take any further questions.

9 JUDGE BALTATZIS: All right. No questions from me.

10 MR. HABER: Respectfully, Your Honors, I object to that entire
11 last part of the statement. That was not briefed in any of the papers. That
12 was not raised in any of our arguments or their arguments. I don't think
13 that's properly before the Board. If it is something that you're going to
14 consider, I would like an opportunity to respond because I don't think that
15 what Patent Owner's counsel has described is entirely accurate.

16 JUDGE BALTATZIS: Yeah. Counsel, I'll give you the chance to
17 respond and make your objection.

18 MR. HABER: Thank you. As I noted, we object to this entire
19 position. This is not something that was raised in the papers. And I think
20 the very important point is that this is not an issue where there is duplication
21 between the District Court and the IPR proceeding. The District Court
22 decision did not address invalidity at all. Invalidity was not argued before
23 the Court. It was not decided by the Court. The invalidity issue is being
24 resolved here at the Patent Office, which I think is the exact intent of the
25 AIA to provide an alternative forum that provides a faster, better, cheaper
26 response to invalidity issues.

1 The invalidity issue -- this is not a case where there is some
2 amount of overlap because the District Court did not decide invalidity. The
3 invalidity issue was not presented. The invalidity issue is not going to be
4 resolved on appeal to the Federal Circuit. The only forum that is addressing
5 invalidity of these patents is this tribunal addressing the issues here. And so
6 I don't think that the Patent Owner's position is well taken, and I do believe it
7 is also untimely as well.

8 JUDGE BALTATZIS: Good. Your objection is noted. Thank
9 you.

10 Counsel, you can respond.

11 MR. BROWAND: Yeah, just briefly, Your Honor. Thank you.
12 We're not objecting on the basis of duplication of proceedings. We
13 understand that there's been changes to the analysis and other factors that
14 -- since this case was instituted.

15 What we're suggesting is that we should not be here. If that
16 analysis were applied now, yes, we should not be here. But secondarily, and
17 perhaps more importantly, Samsung is going to be liable for -- absent
18 changes in the District Court, Samsung is going to be liable for infringement
19 regardless of what happens in this proceeding because we believe that the
20 District Court case will come to finality at the District Court and at the
21 Federal Circuit before this proceeding will ever become final at the -- here at
22 the Board and at the Federal Circuit.

23 So based on Federal Circuit precedent, Samsung will be found to
24 be an infringer that will be liable for the judgment that is entered regardless
25 of Your Honors' finding in this case. And we believe the invalidity case is
26 -- very much favors the Patent Owner. So I say this not because, you know,

1 we have any reservations about our position. In fact, we think it's very
2 strong, and we look forward to a full decision on the merits, but we
3 nevertheless want to make the Board aware that we believe that this decision
4 will not impact Samsung's infringement and liability therefore. Thank you.

5 JUDGE BALTAZIS: Good. Okay. This case is submitted to the
6 panel for determination for preparation of the final written decision. We are
7 adjourned.

8 (Whereupon, the above-entitled matter went off the record at 11:04
9 a.m.)

PETITIONER:

William Fink
Brian Cook
Nick Whilt
Ben Haber
Caitlin Hogan
Marc Pensabene
Laura Bayne
O'MELVENY & MYERS LLP
tfink@omm.com
bcook@omm.com
nwhilt@omm.com
bhaber@omm.com
chogan@omm.com
mpensabene@omm.com
lbayne@omm.com

PATENT OWNER:

Nathaniel Browand
Christopher Gaspar
MILBANK LLP
nbrowand@milbank.com
cgaspar@milbank.com