

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

MANUFACTURING RESOURCES INTERNATIONAL, INC.,
Patent Owner.

IPR2023-00221 (Patent 11,013,142 B2)
IPR2023-00254 (Patent 10,506,740 B2)

Record of Oral Hearing
Held: March 20, 2024

Before JAMESON LEE, JO-ANNE M. KOKOSKI, and
JOHN A. HUDALLA, *Administrative Patent Judges*.

IPR2023-00221 (Patent 11,013,142 B2)

IPR2023-00254 (Patent 10,506,740 B2)

APPEARANCES:

ON BEHALF OF THE PETITIONER:

SRIKANTH REDDY, ESQ.
Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 02210
sreddy@goodwinlaw.com
(617) 570-1465

ON BEHALF OF THE PATENT OWNER:

MICHAEL T. MORLOCK, ESQ.
DAVID A. REED, ESQ.
Kilpatrick Townsend & Stockton LLP
1100 Peachtree St. NE, Suite 2800
Atlanta, GA 30309
mmorlock@kilpatricktownsend.com
dreed@kilpatricktownsend.com
(404) 815-6003

ANDIE A. ANDERSON, ESQ.
1001 West Fourth Street
Winston-Salem, NC 27101
andie.anderson@ktslaw.com
336-607-7355

The above-entitled matter came on for hearing on Wednesday, March 20, 2024, commencing at 1:08 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

P R O C E E D I N G S

- - - - -

JUDGE LEE: Good afternoon. Please be seated. Give us a minute to wake up our computers. Good afternoon. Welcome to the Board. I'm Judge Jameson Lee. My colleagues on the panel are Judge John Hudalla and Judge Jo-Anne Kokoski. Judge Jo-Anne Kokoski is appearing remote and you can see her on the big screen on the wall. This is the consolidated oral hearing for two inter partes reviews, IPR2023-00221 and IPR2023-00254. The proceedings themselves have not been consolidated, just the oral hearings.

The Petitioner in both proceedings is Samsung Electronics Company, Ltd., and Samsung Electronics America, Inc. The Patent Owner in both proceedings is Manufacturing Resources International, Inc. The involved patent in IPR2023 00221 is Patent 11,013,142 and the involved patent in IPR2023 00254 is Patent 10,506,740. Would counsel for each side please introduce themselves and let us know who will be presenting arguments today, starting with Petitioner?

MR. REDDY: Good afternoon. Srikanth Reddy from Goodwin Procter, on behalf of the Petitioners. I'll be doing the argument for Petitioners today. And with me are my colleagues.

JUDGE LEE: Thank you. And, Patent Owner, please.

MR. MORLOCK: Thank you, Your Honor. Michael Morlock from Kilpatrick Townsend for Patent Owner, Manufacturing Resources International. Also presenting today will be Andie Anderson and David Reed.

JUDGE LEE: Thank you, sir. I want to note that there are

1 confidential information in this case and there is a protective order to protect
2 the confidentiality of such information. And this hearing is open to the
3 public and there is a public access line. So, please be careful when you
4 make your presentation not to reveal any confidential information.

5 Each side has a total of 90 minutes of argument time. The
6 Petitioner will go first, and you may reserve time for rebuttal, and then, the
7 Patent Owner presents and may also reserve time for a surrebuttal. Then, the
8 Petitioner returns to present the rebuttal and the Patent Owner finishes with
9 the surrebuttal. We have the entire record, including the demonstratives.
10 When referring to demonstratives, papers, or exhibits, please do so clearly
11 and explicitly by slide or paper number. And please pause a few seconds
12 after identifying it to provide us time to find it.

13 And please bear in mind, the purpose of the oral hearing is to
14 present your case, based on the arguments and evidence of record. You may
15 not introduce new evidence or arguments.

16 Petitioner, when you're ready, you may begin. But, first, let me
17 know if you want to reserve some time for rebuttal out of your 90 minutes.

18 MR. REDDY: Good afternoon, Your Honors. Again, Srikanth
19 Reddy, on behalf of the Petitioners. I'd like to reserve 30 minutes for
20 rebuttal.

21 JUDGE LEE: Thank you.

22 MR. REDDY: And, Judge Lee, Judge Hudalla, Mr. Court
23 Reporter, we have copies of our slides in paper form, if you would like to
24 have those. If you would like to have those, I'm happy to hand them up, if
25 you would like paper copies.

26 JUDGE LEE: No, we have, we have the papers.

1 MR. REDDY: Once again, good afternoon, Your Honors.
2 Again, my name is Srikanth Reddy from Goodwin, on behalf of the
3 Petitioners. And with me today are my colleagues Sanjeet Dutta, Doug
4 Kline, Naomi Birbach, and Christine Potkay, also from the Goodwin law
5 firm, as well as from Samsung Electronics America, we have with us Dan
6 Girdwood and Matt Bathon.

7 Today marks the first of three requested oral arguments that
8 involve patents owned by Manufacturing Resources International, Inc. These
9 three arguments collectively encompass five different MRI patents, all of
10 which were asserted in ITC Investigation 1331. The challenged claims in all
11 five patents relate to cooling systems in video displays.

12 On slide 2, we'll see the two patents that are at issue today, the
13 '740 patent and the '142 patent. And from the face of those patents, we
14 know that these two patents are part of a large family of at least 20 issued
15 patents, abandoned applications, and provisional applications. The '142
16 patent is a continuation of an application that resulted in the '740 patent, and
17 these two patents share the same specification. The challenged claims and a
18 description of the grounds are set forth on slide 2.

19 As to the '740 patent, Claims 1 and 5 were adjudicated in the
20 1331 ITC investigation. They were found invalid, based on Ground 1, and
21 the Commission was not convinced that these claims were invalid, based on
22 the record presented as to Ground 2.

23 As to the '142 patent, Claims 6 and 10 of the '142 patent were
24 adjudicated in the ITC case, and like the '740 patent, the asserted claims
25 were found invalid, based on Ground 1, but the Commission was not
26 convinced that they were invalid, based on Ground 2.

1 And as a housekeeping matter, as you probably noted, both the
2 Patent Owner and the Petitioner submitted expert declarations in these IPRs.
3 The same experts who authored these declarations, who are Dr. Pokharna in
4 the case of the Patent Owner and Mr. Smith-Gillespie in the case of the
5 Petitioners, also testified at the ITC. The parties agreed not to depose the
6 experts on issues or grounds that were raised at the ITC. Instead, we agreed
7 to submit the testimony from the ITC case here in the PTAB.

8 Slide 3 depicts one example of how the system claimed in many
9 of the challenged claims is implemented. This is Figure 2B from the
10 challenged patents.

11 There's a first cooling path which is a closed loop path, element
12 201, depicted as dotted lines. The air in the closed loop goes over the front
13 surface of the display, enters the heat exchanger, located behind the display,
14 and returns to the front in a loop.

15 There is also a second cooling path which is an open-loop path,
16 depicted as element 211, which are shown as solid lines. The second
17 cooling path draws ambient air through the heat exchanger. The heat
18 exchanger transfers heat from the closed loop to the open loop. The heat
19 exchanger is element 201. And the heat exchanger depicted in Figure 2B is
20 simply a box that's labeled "Heat Exchanger."

21 Now, I'd like to skip ahead to slide 5. Slide 5 contains a brief
22 summary of some of the features claimed in the challenged patents. Every
23 challenged claim in the '740 patent covers cooling systems for electronic
24 displays that use a closed loop, and open loop, and a heat exchanger.

25 The '142 patent also claims cooling systems for electronic
26 displays. Again, every claim requires a closed loop and an open loop. And

1 challenged Claims 3, 6 through 11, and 15 include a heat exchanger. That's
2 why we included the asterisk.

3 Another difference is that every claim in the '142 patent also
4 requires something called a solar energy reduction layer. An example of a
5 solar energy reduction layer, according to the patent, is a polarizing filter.
6 And as Your Honors may be familiar, just as polarized sunglasses can
7 reduce the amount of sunlight that enters your eyes, a polarizing filter on a
8 display can limit the amount of sunlight that warms the display.

9 As we will discuss today, all of these features were in the prior
10 art within the field of electronic displays. And there are three key disputes
11 that, from Petitioners' perspective, Your Honors need to decide: For the
12 challenged claims

13 JUDGE LEE: It's Judge Lee. You may address this later, but
14 missing from your table appears to be another issue that might be important,
15 and that is the feature in Independent Claims 8 and 17 of the '740 patent
16 about this defined space between the rear portion of the electronic image
17 assembly and a substantially planar surface. So, the Patent Owner asserts
18 that that's narrower than just between because of the word "defined." And I
19 looked in your reply. I didn't find any response to that contention. If you
20 didn't have an argument, I don't want you to make a new argument here,
21 but can you verify that you did or did not respond to that contention of the
22 Patent Owner? I didn't see a response from your side.

23 MR. REDDY: So, Your Honor, you're absolutely correct, it's
24 not specifically discussed in our reply. Rather, we endeavor and I would
25 like today to discuss the arguments that were presented in the petition itself
26 regarding this issue, which is relevant not just to Independent Claims 8 and

1 17, but also Dependent Claims 2 and 13 as well.

2 JUDGE LEE: Well, you can do that, but I'm just concerned,
3 and I'm not inviting you to make a new argument here, just because I didn't
4 find it in your reply. But if it's in your petition, you can go ahead and

5 MR. REDDY: Right. We're absolutely cognizant of that, Your
6 Honor, and we intend to stay within the four corners of the petition.

7 JUDGE LEE: Well, you can address it now or later. You
8 know, I'm not going to dictate the order, but that's what's on my mind, one
9 of the items on my mind.

10 MR. REDDY: Thank you, Your Honor. Yes, if it's okay, I'll
11 address that as we get to that point here. So, as I had mentioned, there's
12 really three key disputes from our perspective that really need to be decided
13 today. The first is whether or not there's a heat exchanger within the prior
14 art and whether that's disclosed.

15 Secondly, the Patent Owner disputes whether there is a closed
16 loop under the Petitioner's proposed construction. And as to the '142 patent,
17 there's no dispute that solar energy reduction layers in view of displays were
18 known in the prior art. Instead, the only dispute that needs to be resolved is
19 whether a person skilled in the art would have been motivated to combine
20 the teachings of the references that Petitioner has put forward in Grounds 1
21 and 2.

22 Slide 6 identifies what we understand is the core claim
23 construction disputes. The parties have identified two terms for
24 construction: closed loop and heat exchanger. As to the closed loop term,
25 the Petitioner proposed that this phrase be construed as gas pathway within a
26 display housing containing gas that is essentially isolated from external air.

1 We understand Patent Owner to have adopted and applied the ALJ's
2 construction from the ITC.

3 Now, Petitioner's view is that the challenged claims in the '740
4 patent and the '142 patent are not valid, regardless of which claim
5 construction is applied.

6 We understand Patent Owner disputes that, but what the
7 Karppanen reference disclosed is a closed loop only under the Petitioner's
8 proposed construction. They do not appear to dispute that Karppanen
9 discloses a closed loop under the ITC's construction.

10 Now, as to the heat exchanger term, both the Petitioner and the
11 Patent Owner say that the phrase "heat exchanger" should be given its plain
12 and ordinary meaning. But we have vastly different views as to what the
13 plain and ordinary meaning is.

14 From Petitioner's perspective, the heat exchanger is a device
15 used to transfer heat from the closed loop pathway to the open loop pathway.

16 From Patent Owner's perspective, it's much narrower than that.
17 It's a device that alternating and closed channels or tubes of fluids.

18 Now, while Patent Owner purportedly says it seeks a plain and
19 ordinary meaning construction, the reality is that it seeks to limit the scope
20 of this term to a specific disclosed embodiment that's disclosed in Figures 3
21 and 4 in the challenged patents.

22 And resolution of this dispute matters. The vast majority of the
23 Patent Owner's arguments in its brief are premised on a narrow reading of a
24 heat exchanger.

25 Now, slide 4 summarizes the key evidence regarding the heat
26 exchanger limitation that Petitioner believes are relevant to this dispute.

1 Of course, we start with the claims themselves. This is slide 7.
2 And also, the specification is relevant, as well as the prosecution history.
3 And finally, I'll touch on some of the testimony that's been provided from
4 the Patent Owner's expert Dr. Pokharna that we believe is relevant to this
5 issue.

6 Now, on slide 8, we show an example of an exemplary claim.
7 There's no specific configuration for a heat exchanger claimed in any of the
8 challenged claims. Put another way, the claims say nothing about having
9 alternating tubes or channels being required in the language of the claims
10 themselves.

11 Slide 9 summarizes some examples of where the heat
12 exchanger limitation is discussed in the specification. The specification
13 repeatedly uses the phrase "heat exchanger" without limiting it to any type
14 or class of heat exchangers. The specification also says that, in a preferred
15 embodiment, a cross-flow heat exchanger could be used. And Figures 3 and
16 4 depict heat exchangers with alternating and closed channels or tubes of
17 fluid and they're also cross-flow heat exchangers.

18 Now, the specification specifically says that this type of heat
19 exchanger may be used. It's not compulsory. Rather, the specification says
20 that many types of heat exchangers are known and can be used with any
21 embodiment.

22 The prosecution history is also relevant and slide 10 gives one
23 example where the heat exchanger term was discussed in the prosecution
24 history.

25 The Patent Owner's proposed construction is inconsistent with
26 what the examiner considered to be a heat exchanger during prosecution.

1 Now, during prosecution the examiner rejected the pending claims, based on
2 a reference called Thielemans. The examiner identified the quote, "common
3 heat exchanger," end quote, as element 22 in the Thielemans reference.

4 Now, what's particularly notable here is that the Thielemans
5 reference did not refer to element 22 as a heat exchanger. Rather, the
6 reference referred to element 22 as, quote, "Heat Sink 22 in the form of a
7 heat transporting plate." End quote.

8 Now, as shown in Figure 1A from Thielemans, which is again
9 shown on slide 10, ambient air flows along the heat exchanger removing
10 heat. What this means is that the examiner understood the phrase "heat
11 exchanger" to have a broad meaning.

12 The Patent Owner never disputed this characterization of
13 Thielemans. Instead, it traversed the rejection by successfully convincing
14 the examiner that Thielemans did not disclose a closed loop that circulates
15 about the display. Now, the admission —

16 JUDGE LEE: Mr. Reddy, it's Judge Lee again. I noticed that,
17 on slide 11, their expert said that there are literally hundreds of kinds of heat
18 exchangers, is that correct?

19 MR. REDDY: That's correct.

20 JUDGE LEE: But, as I read the Patent Owner response, they
21 seem to say that Petitioner is saying that a heat exchanger is virtually
22 anything, anything in the world that effects an exchange of heat from one
23 place to another.

24 Now, I read the petition. I'm not sure that I found anywhere
25 that you said that. I want to just confirm, is that really your view? You're
26 contending that a heat exchanger is anything that accomplishes the function

1 of getting heat from one place to the other? Are you claiming that, saying
2 it's that broad? Or are you saying it's just plain and ordinary meaning and a
3 POSITA would just see a structure and know that it is or is not?

4 MR. REDDY: We actually do not take the position that a heat
5 exchanger is anything under the sun. Rather, it's important to view the term
6 "heat exchanger" within the context of the claims. -- It's a common heat
7 exchanger through which a closed loop airflow and an open loop airflow
8 passes. The heat exchanger is a device which facilitates the transfer of heat
9 from the hot side to the cold side. And as the claims note, it's not a passive
10 heat exchanger. The example --

11 JUDGE LEE: Well, I'm sorry, let me interrupt you because it's
12 a little confusing. Because you just said it in a functional way. You just
13 said a heat exchanger is a device that performs -- well, this sounds
14 functional.

15 But, at the same time, you're saying you're not saying a heat
16 exchanger is anything that does it. So, it's a little internally inconsistent.

17 I read the petition and I don't see you're saying it's anything that
18 does this. I read it as you're saying it's structures that are known to a
19 POSITA as heat exchangers. Do you understand what I'm asking?

20 MR. REDDY: Yes, absolutely. I believe so, Your Honor. I
21 think what's important is -- and this is how we approached it in our papers --
22 is to view the term "heat exchanger" within the context of the prior art, and
23 that will inform how those of skill in the art will understand the term within
24 this specific context.

25 As we've noted in our papers, and as I'll discuss, what we know
26 from various references, like the Thielemans reference, like the Williams

1 reference, like the Yare reference, how those skilled in the art at the relevant
2 time understood the term "heat exchanger" and what it meant, what it means.

3 JUDGE LEE: But we don't really need to decide an actual
4 construction for a heat exchanger. All we really need to determine is
5 whether the structure in Yare and the structure in Karppanen is a heat
6 exchanger.

7 MR. REDDY: That's correct, Your Honor.

8 JUDGE LEE: It seems difficult to come up with a definition
9 for a heat exchanger universally.

10 MR. REDDY: Right. And I think that at the Commission the
11 ALJ took a similar approach. We didn't necessarily see her as issuing an
12 explicit definition for what a heat exchanger is. Rather, she reached the
13 conclusion that Your Honor was just positing, which was to say that
14 Karppanen discloses a heat exchanger, and for that reason, the claims are
15 invalid.

16 JUDGE LEE: Thank you.

17 MR. REDDY: Now, in one of his depositions in the ITC case,
18 Dr. Pokharna, as you noted, testified that there are literally hundreds of heat
19 exchangers and that this term is broadly used for exchanging heat from one
20 fluid stream to another fluid stream.

21 Now, separate from Dr. Pokharna's testimony regarding the
22 field of heat exchangers, he's also given his own testimony as to what
23 constitutes a heat exchanger based on the prior art. And I'll discuss heat
24 transfer devices in three exemplary prior art devices and Dr. Pokharna's
25 testimony that each of these devices is a heat exchanger.

26 Slide 12 shows the Williams reference, which is Exhibit 1007.

1 Now, Williams discloses a cooling system used in digital display gambling
2 machines. Dr. Pokharna agreed in the ITC proceeding that Williams
3 discloses a heat exchanger, and the heat exchanger is shown in Figure 1D on
4 slide 12 as element 130.

5 There's a closed loop airflow around the display that passes
6 through one side of the heat exchanger. The closed loop airflow is depicted
7 as solid arrows in Figure 1D. Fan 132 draws ambient air into the heat
8 exchanger and over fins in order to facilitate the transfer of heat out of the
9 system. Ambient airflow is depicted as the dotted arrows. Now, slide 13
10 discusses a different prior reference that Dr. Pokharna agreed --

11 JUDGE LEE: I'm sorry, Mr. Reddy. So, the point of your slide
12 11, or 12, is that there is no enclosed piping or tube in Williams. And yet,
13 it's referring to a heat exchanger.

14 MR. REDDY: That's exactly right, Your Honor. And as we
15 note in our papers, the heat exchanger configuration in Williams is,
16 essentially, identical to Karppanen. There is a closed loop that goes over
17 certain fins that are conductively attached to other fins, which are accessible
18 via an open loop, and that, indisputably, seems to be a heat exchanger. And
19 so, the same logic would apply with respect to Karppanen.

20 JUDGE LEE: Thank you.

21 MR. REDDY: Now, the next example is the Yare reference,
22 which is discussed on slide 13. Yare refers to heat exchanger as element 70.
23 The heat exchanger here is depicted as nothing more than a corrugated metal
24 sheet. Warm closed loop air, which is element 100, passes on one side of
25 the corrugated metal sheet. Open loop air, which is element 110, passes on
26 the other side.

1 And again, nobody seems to dispute that Yare discloses a heat
2 exchanger. And this is despite the fact that, again, it does not have the
3 channel or tube configuration that Patent Owner contends is required by the
4 claims.

5 Slide 14 shows a third example, which is Nagashima, which is
6 Exhibit 2020. In Nagashima, heat generated by electronic components
7 inside the display is passed to a finned heat sink through conduction. A fan,
8 which is shown on Figure 6B in slide 14, cools the heat sink.

9 Now, during his deposition just a few months ago, Dr.
10 Pokharna referred to this as a heat exchanger. And again, there are not
11 alternating channels or tubes present in Nagashima that the Patent Owner
12 contends are required to constitute a heat exchanger within the scope of the
13 claims.

14 JUDGE LEE: Mr. Reddy, how did this Nagashima come
15 about? It was presented at a deposition or?

16 MR. REDDY: That's correct, Your Honor, it was presented
17 during Dr. Pokharna's deposition with respect to the PTAB --

18 JUDGE LEE: By Petitioner?

19 MR. REDDY: By Petitioner during our questioning, during my
20 questioning of Dr. Pokharna.

21 JUDGE LEE: Thank you.

22 MR. REDDY: And what you may be alluding to, Your Honor,
23 is that this particular reference is relevant in other --

24 JUDGE LEE: Did you follow up in your reply to submit this
25 Nagashima and say, "Here's another example of something that's not a
26 channel."?

1 MR. REDDY: We did. In the '254 proceeding, it's paper 28,
2 pages 6 through 7. And in the '221 proceeding, it's paper 28, page 6.

3 JUDGE LEE: Great. Okay. Thank you.

4 MR. REDDY: Now, on slide 15, we just briefly discuss the law
5 that we think is relevant to determining resolving this dispute. As Your
6 Honors are, no doubt, familiar, the Federal Circuit has repeatedly recognized
7 that claims should not be limited to preferred embodiments or specific
8 examples in the specification.

9 Of course, as we all know, there are certain legal doctrines in
10 which that is permissible, right, things like lexicography or disclaimer or
11 disavowal or prosecution history estoppel, right? Clear or unmistakable
12 language within the specification that indicates that only the preferred
13 embodiment should read on the claim language.

14 None of those doctrines apply here, and the Patent Owner has
15 not suggested otherwise. Obviously, if the Patent Owner wanted to narrow
16 the term to a specific class of a device, they could have chosen to do so
17 during prosecution in the specification or the claims themselves. With that,
18 Your Honors, I'd like to transition to discussing the specific grounds
19 presented by Petitioner.

20 JUDGE LEE: Before you go there, it's Judge Lee again.

21 MR. REDDY: Uh— hum.

22 JUDGE LEE: Playing the devil's advocate a little bit, well, the
23 Patent Owner's argument is not coming out of thin air, though. They have
24 something they cite to in the specification, such as the background talks
25 about heat reduction in the prior art that's using a heat sink, something
26 without piping, without encasing, and that they go the heat reduction there is

1 not good enough and we're solving that problem by having our invention,
2 which is using a heat exchanger. And all the disclosed embodiments have
3 this enclosed piping. So, it's not just coming out of thin air.

4 What's your comeback to their relying on the contrast in the
5 spec to say, "Hey, the prior art has problems because it's just this heat sink
6 with no enclosures, and we solved the problem with these types of structures
7 through that piping and casing."?

8 MR. REDDY: So, I think there's two responses to that, Your
9 Honor. The first is that I believe you're referring to -- there's a portion in the
10 background of the invention which talks about the use of fins, and then,
11 passively allowing air collected by those fins to be passively moved into the
12 environment. That is purely a passive thermal conductor in which air is just
13 simply conductively leaving the heat sink and going out into the
14 environment. That's far different than what a heat exchanger is, which a
15 heat exchanger has -- there's something to actually move the heat not just
16 into the heat sink, but actually get it out of it.

17 JUDGE LEE: So, you mean like the prior art mention doesn't
18 have forced airflow?

19 MR. REDDY: No, it does not have forced airflow, certainly
20 not to remove heat from the fins, as it's discussed.

21 But the second, and perhaps more important, point is that, even
22 if that's discussed as one example, the language surrounding that doesn't rise
23 to the level of disclaimer or disavowal that will be sufficient to limit the
24 claims to simply the single disclosed embodiment.

25 JUDGE LEE: So, you're saying it's not strong enough? It's a
26 little bit in that direction, but you need more than that to overcome all the

1 other evidence which suggests it's a broader term?

2 MR. REDDY: You're absolutely right, Your Honor. And, of
3 course, the Federal Circuit has spoken to this issue repeatedly as well.

4 JUDGE LEE: Okay. Thank you.

5 MR. REDDY: Yes.

6 Now, just to roadmap, I would like to discuss the grounds. I'll
7 start by talking about Ground 1 in the '740 patent, and then, transition to
8 Ground 1 in the '142 patent, because both of those grounds rely on
9 Karppanen. And then, I'd like to discuss Ground 2 in the '740 patent and
10 Ground 2 in the '142 patent, and then, close by briefly discussing alleged
11 secondary considerations.

12 Now, slide 17 gives an overview of one exemplary claim from
13 the '740 patent. And there are really two key disputes regarding the '740
14 patent as it relates to Ground 1. As I mentioned, the first is whether or not
15 Karppanen discloses a closed loop under Petitioner's proposed construction,
16 and the second is whether it discloses a heat exchanger.

17 Now, slide 18 gives a brief summary of the disclosure in
18 Karppanen, and it's an exemplary embodiment, which is Figure 1. An
19 electronic information board includes a frame, a display, and electronic
20 equipment for controlling the display. The information board has a display
21 casing for the display element and a device casing for the electronic
22 equipment needed for controlling the display.

23 The display casing has a closed loop of air that travels around
24 the display. Heat in the closed loop is transferred to cooling elements 32 on
25 the display case, which is element 10. Ambient air passes between the
26 display case and the device case. The air in which the ambient air passes is

1 called the cooling space, which is shown as element 20. Heat in the cooling
2 elements is transferred to the ambient air, and then dissipated into the
3 environment.

4 Slide 19 begins our discussion regarding the closed loop
5 limitation. Karppanen discloses a closed loop with, essentially, isolated gas,
6 as required by Petitioner's proposed construction. Karppanen discloses
7 ducting between the walls of the display case and the display to facilitate the
8 flow of air around the display.

9 There are fans, which are element 64, that are located behind
10 the display. Please note, they're not discussed or shown in Karppanen.
11 Those fans are just constantly recirculating the same air within that display
12 case.

13 Now, there's other evidence within Karppanen itself which tells
14 us that it is, essentially, isolated; that the airflow within that closed loop is,
15 essentially, isolated. Karppanen discloses that the display case is
16 weatherproof. It refers to the display case as a closed display case.

17 JUDGE LEE: I'm sorry, Mr. Reddy, but you just told us that it
18 doesn't matter whether closed loop requires essential isolation. I recall you
19 saying that.

20 MR. REDDY: Well, I meant that in the context, if Petitioner's
21 proposed construction is not adopted, that the closed loop term is satisfied,
22 regardless of which construction is --

23 JUDGE LEE: Right. You actually have the narrower view?

24 MR. REDDY: That is correct.

25 JUDGE LEE: And if we disagree with you, like the
26 administrative law judge of the ITC who didn't agree with you, it really

1 doesn't matter for you. It's a limitation that doesn't need to be met?

2 MR. REDDY: The limitation is certainly the closed loop --

3 JUDGE LEE: I mean the essential isolation is not --

4 MR. REDDY: Yes, absolutely.

5 JUDGE LEE: -- required. So, it sounds like you're trying

6 to persuade us that there is essential isolation in Karppanen.

7 MR. REDDY: That's correct, Your Honor. If the panel were to

8 adopt Petitioner's proposed construction, the claim is invalid because

9 Karppanen also discloses a closed loop that's essentially isolated from

10 external air.

11 JUDGE LEE: Okay. I see. But it's something that doesn't

12 matter, like you say? If it's not required, then you would meet it anyway?

13 MR. REDDY: That's correct. If you do not adopt our proposed

14 construction, then there's no dispute that the claim limitation is satisfied.

15 JUDGE LEE: I'm a little anxious to get to the earlier question

16 that I don't want you to forget --

17 MR. REDDY: Yes.

18 JUDGE LEE: -- which is the defined spacing between the rear

19 of the image assembly and the substantially planar --

20 MR. REDDY: Certainly not, and I can move to that quickly.

21 And maybe if we can move to slide 56? Slide 56 is simply the claim

22 language in the challenged claims of the '740 patent. And I'd like to start

23 with Claim 2.

24 As Your Honor noted, a dispute between the parties is whether

25 Karppanen discloses the substantially planar surface located behind and

26 spaced apart from the rear portion of the electronic image assembly. The

1 Petitioner's position is that, for example, in the Karppanen reference, the
2 interior side of the device casing is the planar surface that satisfies this
3 limitation.

4 The key dispute here seems to relate to whether the planar
5 surface required by these claims must be immediately behind the electronic
6 display with no intervening structures. That's the position that Patent Owner
7 has articulated. Or can this planar surface be anywhere within the display, so
8 long as the claimed features are otherwise satisfied? Now, Petitioner's
9 position is the substantially planar surface need not be directly formed by the
10 rear of the electronic image assembly.

11 Now, Claim 2, the second limitation in Claim 2, is particularly
12 exemplary. It says, "a space defined between the rear portion of the
13 electronic image assembly and the substantially planar surface." So, the
14 language does not say a space that's defined by the rear portion of the
15 electronic image assembly. It's simply a space that's defined between the
16 rear portion of the electronic image and the substantially planar surface.

17 JUDGE LEE: Oh, I see. There is a distinction. It's defined
18 "between" and not "defined by".

19 MR. REDDY: That's exactly right, Your Honor. If the claim
20 had said, "defined by," which I believe is what Patent Owner is suggesting,
21 then their argument perhaps bears more fruit. But their issue is that the
22 relevant area that we had identified is, essentially, the open loop airflow
23 within Karppanen. But, based on Claim 2, that doesn't appear to be
24 required.

25 And we know this, right, because Claim 4, which is not a
26 challenged claim, says -- and I'm sorry, we don't have Claim 4 on the slide --

1 but Claim 4 says that the planar surface is part of the heat exchanger. And
2 so, the closed loop includes the display. That would mean that --

3 JUDGE LEE: I see that, but Claims 8 and 17 don't have that
4 language, though. The language is different in Claim 8 and 17 from that
5 language you referred to in Claim 2.

6 MR. REDDY: Right. So, if we can have the next slide, please?
7 Slide 57 shows the language for Claim 8.

8 And Claim 8 says, "a substantially planar surface located
9 behind and spaced apart from the rear portion of the electronic image
10 assembly, the space between the substantially planar surface and the rear
11 portion of the electronic image assembly defining a rear channel." And
12 again, this does not require the space be -- that the electronic image
13 assembly itself be part of the space. It just defines, again, a space. And so

14 JUDGE LEE: Well, it says, "the space," not "a space."

15 MR. REDDY: It does say, "the space," but it's "the space
16 between". It's not a space that's formed between, right? If it had said the
17 word "formed" before the word "between," well, then, I think it would be
18 perhaps more likely that the electronic image assembly must be part of the
19 space. But, as written, it does not require that.

20 JUDGE LEE: I understand, but since you didn't respond in the
21 reply, I'm hesitant to let you proceed, advance more. I get your point that
22 you're reading "the space" just like it said, "a space".

23 MR. REDDY: Right. And that's our intention was simply to
24 fall back to the position as presented in our petition, which is reflected in
25 what I just said -- that the substantially planar surface need only be located
26 behind the display.

1 JUDGE LEE: Let's take a quick look at the language of Claim
2 17 and see what kind of define it says. It says, "the rear channel defined by
3 a space between" -- I get it. I understand your point.

4 MR. REDDY: And so

5 JUDGE LEE: Thank you.

6 MR. REDDY: Right. All right. If we could move back to
7 slide 20, please?

8 Now, if I could just briefly touch on Petitioner's view as to why
9 Karppanen discloses a heat exchanger. Karppanen's cooling elements 32 are
10 a heat exchanger device that transfers heat between the closed loop and the
11 open loop. In the back wall of Karppanen's display casing are cooling
12 elements 32.

13 There's a first heat transfer part, which is element 60, that
14 extends to the inside of the display casing, and a second heat transfer part,
15 element 62, which extends to the cooling space 20 outside the display
16 casing.

17 As Karppanen writes, quote, "The task of the cooling elements
18 is to transfer excess thermal energy from the display casing to the cooling
19 space." End quote.

20 And here, the cooling elements, No. 32, are fins. Earlier, we
21 discussed the Williams reference and, in particular, the similarities between
22 the Williams reference and the Karppanen reference. In Petitioner's view,
23 these are, essentially, these descriptions are, essentially, one and the same.

24 Now, on slide 23, I just want to briefly note that, if the Patent
25 Owner's construction is adopted, the claim is still invalid because it would
26 have been obvious to modify the cooling elements in Karppanen to have

1 alternating tubes of air, as required by Patent Owner's construction.

2 Heat exchangers with the configurations described in the
3 exemplary embodiments of the '740 patent were known, and they were
4 known for decades, and they were known to improve heat extraction
5 efficiency. The Patent Owner does not claim to have invented a heat
6 exchanger that uses alternating enclosed channels or tubes of fluid.

7 The cooling elements in Karppanen could be modified to use a
8 heat exchanger with alternating channels or tubes of fluid. Such a change
9 was within the knowledge of those skilled in the art, and they would have a
10 reasonable expectation of success, as explained in detail in Mr. Smith-
11 Gillespie's declaration.

12 For example, a plate could be added to encase the fins and
13 create the alternative channels that would be required under the Patent
14 Owner's proposed construction. And a person skilled in the art would have
15 been motivated to make this modification in order to optimize heat
16 exchanger -- or I'm sorry -- optimize heat extraction, and would have a
17 reasonable expectation of success, given that they were well-known.

18 And the final point I would just like to make with respect to
19 Ground 1 is that the Patent Owner also argues that Karppanen does not
20 disclose a fan that moves air through the heat exchanger. Our understanding
21 is that their argument really is premised on their understanding of the heat
22 exchanger, and that if the panel were to adopt Petitioner's proposed
23 construction, that argument would be addressed.

24 Now, I would like to discuss Ground 1 in the '142 patent, which
25 is the Karppanen and Larson combination. Slide 25 shows exemplary Claim
26 6 from the '142 patent.

1 And while I know I said that the '142, there's only one issue to
2 be resolved in '142 with respect to the '142 patent, there actually are three,
3 although two we've already discussed.

4 The first is whether or not the combination discloses the closed
5 loop limitation, and the Petitioner's argument is the same as we discussed
6 with respect to the '740 patent and our arguments apply with equal force
7 here.

8 And the second is that the combination of Karppanen and
9 Larson does not disclose a heat exchanger. And again, their arguments,
10 essentially, mirror the arguments that were made with respect to the '740
11 patent. And the same arguments that we made in response apply with equal
12 force here.

13 So really, the key dispute is whether a person skilled in the art
14 would have been motivated to combine the teachings of Karppanen with
15 Larson.

16 JUDGE LEE: Well, actually, Mr. Reddy, I appreciate what you
17 just said, but, at least for me, another big issue regarding both cases has to
18 do with the disclosure of Yare regarding what is the electronic image
19 assembly. You know, that term is in the independent claims of both cases.

20 And honestly, when I read the petition, I'm a little confused by
21 the petition, and the Patent Owner Response points out what they say is an
22 incorrect understanding of Yare, because -- let me just ask you this: what
23 are you mapping to the claimed electronic image assembly in Yare? Is it the
24 unit 20 or is it an LCD that's within the unit 20? I think that's the best I can
25 put it.

26 MR. REDDY: It's the latter, Your Honor, and you touched on,

1 really, the core dispute with respect to the Yare reference. And this was also
2 discussed at the ITC as well. Is volume 20 a singular electronic display or
3 would a person skilled in the art understand that an electronic display is
4 located within volume 20?

5 And the Petitioner's view is that those skilled in the art, as
6 reflected in Mr. Smith-Gillespie's declaration, would understand that the
7 volume 20 isn't simply just the display; that the display is located
8 somewhere within that volume. And we provided an example of one place
9 where it could be located. And then, of course, alternatively, that is --

10 JUDGE LEE: No, I think we're not on the same page. In Yare,
11 there's a reference for 20, and they use a term "display 20," right? So, we all
12 know that as display 20.

13 Are you mapping display 20, whatever it is, display 20. Are
14 you mapping that to the claimed electronic image assembly? Or are you
15 mapping a component that's located within display 20 to an electronic image
16 assembly?

17 MR. REDDY: It's the latter, Your Honor. As we see on slide
18 32, it's an example of the Figure 4 from Yare. Our position is that there's an
19 electronic image assembly that's located within element 20.

20 JUDGE LEE: But I don't get that at all from your petition.
21 Your petition repeatedly said that what you call LCD 20 is the claimed
22 electronic image assembly. LCD 20, what is LCD 20? Twenty is not an
23 LCD. Twenty is a whole system. LCD is only possibly included within 20.
24 So, when you say, "LCD 20," it confuses me.

25 MR. REDDY: In fact, may I have slide 34, please?

26 Do, slide 34 kind of shows an example of what I was

1 referencing when I said that a person skilled in the art would understand that
2 an electronic image assembly is located within element 20, and that that
3 electronic image assembly is surrounded by a closed loop of isolated gas, as
4 evidenced by the solid arrows in Yare.

5 JUDGE LEE: Yes, it looks like you're mapping the entire
6 element 20 to the electronic display, electronic image assembly. Isn't that
7 true?

8 MR. REDDY: Yes, that's true, but the element, the actual
9 display assembly is not the full, I guess, trapezoidal figure. Rather, element
10 20 is the actual display portion which is located within that trapezoidal
11 figure that's No. 20.

12 JUDGE LEE: I'm not understanding you. Display 20 is what
13 you mapped to the electronic image assembly, whatever 20 is. Element 20 is
14 what you mapped to the electronic image assembly.

15 MR. REDDY: That's correct, element 20 includes both the
16 actual display itself, but it also includes a closed loop that surrounds that
17 display.

18 JUDGE LEE: Right. So, you didn't map -- the LCD is inside
19 20, right? We don't disagree with that?

20 MR. REDDY: That's correct that element 20 is the display that
21 includes the actual -- I think perhaps where the confusion arises is that the
22 word "display 20," in Petitioner's view, includes both the actual display
23 portion itself as well as the closed loop that surrounds it. It's not unlike the
24 Karppanen reference, which Karppanen just refers to the display case as a
25 display case; the display case includes an LCD display within it.

26 JUDGE LEE: You have a display case here, too, 10. The

1 cabinet 10 is just a housing. It's the case.

2 MR. REDDY: Ten is the cabinet as a whole, similar to the
3 electronic information board in Karppanen. Ten is the whole --

4 JUDGE LEE: Twenty is the whole subsystem, like Patent
5 Owner says. You don't disagree with that, right? Twenty is not just an
6 LCD. Twenty is an LCD plus internal cooling fans and whatever else might
7 be in the whole display system.

8 MR. REDDY: That's correct, 20 has to include an LCD plus
9 the closed loop as well. And that's as evidenced by the arrows, which show
10 the airflow.

11 JUDGE LEE: So, how have you mapped the LCD component
12 within 20 to the electronic image assembly? It looks -- everywhere in your
13 petition you're mapping the element 20 to it.

14 MR. REDDY: The electronic image assembly is -- so, our
15 intention was for -- the electronic image assembly is the display portion
16 that's located within volume 20. The way we mapped it is to say that the
17 electronic image assembly is the electronic image that's inside volume 20,
18 not unlike Karppanen.

19 JUDGE LEE: I'm sorry, but when you account for element 1A,
20 you say it all over the place. You say Yare's LCD 20 is an electronic image
21 assembly. You also say an exemplary LCD 20 is an electronic image
22 assembly. But there is no LCD 20. Like you just admitted that LCD is
23 inside 20. There's no such thing as an LCD 20. So, that's why I'm confused.

24 MR. REDDY: Well, the intention was that the element 20
25 includes an LCD. So, when we say, "LCD 20," we are referring to the LCD
26 that is inside element 20.

1 JUDGE LEE: Okay. That's fair. So, that's your clarification.
2 Whenever you say, "LCD 20," you meant to refer to the LCD component
3 that's contained within 20?

4 MR. REDDY: That's correct, and that's as reflected in Mr.
5 Smith-Gillespie's declaration, that's how a person skilled in the art would
6 understand the Yare reference.

7 We understand that Patent Owner disputes that and
8 understood --

9 JUDGE LEE: No, they agreed it might be an LCD inside 20.
10 There's no dispute, and that's what it is. But the limitation is your airflow
11 has to go in a circle, I think, encircle the LCD here, as the electronic image
12 assembly. That's the limitation.

13 So, the LCD is completely inside an enclosure inside this 20.
14 How can this external airflow be around and encircling a component that's
15 sealed 20? So, that leads to my question here.

16 You clarify that you meant a component within 20, is what you
17 referred to. Well, that leads to a problem. The airflow that's outside of all
18 this blue item is not encircling the LCD that's inside 20, because that's
19 completely isolated from the outside airflow.

20 MR. REDDY: So, it is. So, there's a sealed zone, right?
21 Sealed zone 30 refers to, just going from left to right in slide 34, it's the
22 trapezoidal figure, and then, kind of the first rung, if you will, around that,
23 the first ring around that. That's all the sealed zone, and then, it moves into
24 the heat exchanger --

25 JUDGE LEE: Yes, but that air is not touching the LCD at all.

26 MR. REDDY: So, the arrows on the left side, it's Petitioner's

1 position that the arrows on the left side, which are shown a corner,
2 essentially, but they move to the left, and then, up, that that -- the reason
3 why Yare depicts the arrows that way is to evidence flow of air across the
4 bottom of the display and over the front surface; that that's how a person
5 skilled in the art would understand --

6 JUDGE LEE: We're not communicating. The air that's outside
7 of display 20 is not, as argued by you, is not touching the LCD that's inside
8 20.

9 MR. REDDY: It is, Your Honor. And if I misspoke, I'm sorry.
10 So, the air outside of the LCD is the arrows that are shown in Figure 4 from
11 Yare, in particular, the figures on the leftmost side.

12 JUDGE LEE: How could that be? The LCD is a component
13 within 20, and 20 has a casing, right?

14 MR. REDDY: Right.

15 JUDGE LEE: The LCD is held inside this casing. So, when
16 you have airflow outside of that casing, how is it even touching the LCD?

17 MR. REDDY: So, as a person skilled in the art would
18 understand, essentially, there's a gap; that the leftmost portion of Figure 4 is
19 cover glass. And in between the cover glass and the LCD is a gap, and
20 there's air that flows through that gap -- again, not unlike Karppanen, where
21 there's this space between the cover, the cover glass, and the LCD itself, and
22 that the air in Yare is flowing around that display in the sealed zone, which
23 is element 30.

24 JUDGE LEE: Yes, I'm sorry, I'm trying, but I don't understand.
25 The arrow is outside of unit 20, and you're telling me that arrow shows air
26 that's inside 20?

1 MR. REDDY: That's correct. Because element 10 is the
2 cabinet, right? Everything is surrounded by a cabinet. Element 10 is the
3 cabinet. The air is flowing inside the cabinet, and it's flowing in between
4 where we've depicted the LCD and the outermost portion of the cabinet. So,
5 it's closed loop air that's going between the cover glass of the cabinet and the
6 LCD, and it's encircling the LCD and into the heat exchanger.

7 JUDGE LEE: Doesn't display 20 have a cover of some sort? In
8 other words, the LCD is not exposed?

9 MR. REDDY: That is the petition's position; the LCD is not
10 exposed. Rather, it is formed -- it exists somewhere within the trapezoidal
11 that is element 20.

12 JUDGE LEE: Right. So, it's not exposed. Then, air is not
13 touching the LCD. You know, this arrow you're showing that's outside of
14 display 20 is not encircling the LCD component inside display 20.

15 MR. REDDY: So, the Petitioner's position is that it absolutely
16 is. This closed loop, which is  and I don't think there's a dispute that
17 Yare discloses a closed loop, right? The closed loop, as shown in the solid
18 lines, right -- the solid lines within Figure 4 is what's the closed loop. The
19 dotted lines are the open loop. But the solid lines are entirely within the
20 cabinet 10. So, there is a closed loop within

21 JUDGE LEE: I understand, but that's not touching the LCD, as
22 far as I can -- can you just show me how air is encircling the LCD if it's
23 inside element 20?

24 MR. REDDY: Right. So, our intention was to show that the
25 display, which, again, we've colored in as the blue box here, it is depicting
26 the -- it's nested within the sealed zone, which on slide 40 we've colored in

1 green.

2 That entire area that's green on slide 40 is a sealed zone. The
3 display is located within that sealed zone and closed loop air surrounds that
4 display.

5 JUDGE LEE: So, I don't know; where's the airflow that's
6 touching the LCD?

7 MR. REDDY: So, a person skilled in the art would understand
8 that that airflow -- that there's no gap between the airflow that's depicted by
9 the solid arrows and the LCD that's located within volume 20.

10 The claim itself -- I'm sorry -- the disclosure in Yare references
11 the fact, as evidenced by the arrows on the leftmost side, that air is moving
12 up across the front of the display. And there's no intervening structure
13 between that airflow and what we've shown as the blue box, which is the
14 LCD within Yare.

15 JUDGE LEE: But you just told me there's a cover. Element 20
16 is enclosed.

17 MR. REDDY: Element 20 is the LCD, right? It's the front
18 surface. It's just like

19 JUDGE LEE: No, see, that's inconsistent. You told me the
20 LCD is not 20. The LCD is a component within 20. And now, you just
21 flipped, went back to something different.

22 MR. REDDY: So, when I use the term "LCD," I'm referring to
23 the display element, the portion of a display that actually generates the
24 images.

25 JUDGE LEE: Right, and it's inside 20.

26 MR. REDDY: That's absolutely right, just like in Karppanen,

1 right, where Karppanen has it --

2 JUDGE LEE: And 20 has an enclosure.

3 MR. REDDY: An enclosure around 20, that's correct, and that
4 the LCD is located within it, much like in Karppanen.

5 JUDGE LEE: Right. So, the air is not going, is not encircling
6 the LCD inside it. At most, it's just encircling outside of it --

7 MR. REDDY: Right, that --

8 JUDGE LEE: -- outside element 20.

9 MR. REDDY: Right, as in -- so, in Karppanen, there's a
10 display case, right? Inside the display case is a display element, and the
11 closed loop air encircles that display element. And the analysis is similar --

12 JUDGE LEE: But the petition, I didn't read anything in the
13 petition that describes how air flows inside display 20. I think that's the
14 problem.

15 MR. REDDY: I believe --

16 JUDGE LEE: And the Patent Owner points that out. Like you
17 don't describe at all what's happening inside display 20, where the LCD is
18 located; whether there's a cover glass in there; whether there's spacing
19 between the LCD and the cover glass. It's completely unknown --

20 MR. REDDY: So, the relevant --

21 JUDGE LEE: -- what's inside element 20.

22 MR. REDDY: And the relevant paragraphs from Mr. Smith-
23 Gillespie's declaration that are intended to discuss this are paragraphs 278
24 and 286, which is in Exhibit 1002. And that Petitioner's argument is
25 reflected in -- or its analysis is reflected in those paragraphs. And again, I
26 want to be mindful of that, attempting to raise any new arguments that aren't

1 reflected in those paragraphs.

2 JUDGE LEE: Okay, thank you. But I've got one lingering
3 question that is, you clarified today for us that, when you say, "LCD 20,"
4 you actually mean not 20; you mean the LCD component that's inside 20.

5 MR. REDDY: That's correct. And so

6 JUDGE LEE: Now, you explained it, but how would Patent
7 Owner know that when they prepare their Patent Owner response? So, if
8 you're confusing in your presentation, and they don't know what you're
9 talking about, how can they reasonably respond to something that wasn't
10 clear from the petition? I mean, they can't write a Patent Owner response
11 now, hearing your clarification.

12 MR. REDDY: So, we understand this to be a hotly contested
13 issue from Patent Owner's paper. So, the image that's shown on Exhibit 40,
14 this is from our original petition, right? This is paper 9 in IPR '254, pages 73
15 to 76, right?

16 This is our position, that the electronic image assembly is
17 within element 20 was disclosed within the petition itself. We understand
18 Patent Owner's argument to be that a person skilled in the art -- that we got
19 this wrong, right? Their position is that a person skilled in the art would not
20 understand that Yare discloses a display within volume 20, but that, instead,
21 all of volume 20 is the display. That's the dispute that the panel, we believe,
22 needs to resolve.

23 And that's really where their closed loop argument comes from,
24 which is that, if they're right, well, then, there is no closed loop because on
25 the lefthand side there is no airflow, right? That's just the front surface.
26 You're outside the cabinet at that point in time.

1 But if we're right that a person skilled in the art would
2 understand the display to be somewhere within the volume, well, then, the
3 air that's encircling the cabinet in the sealed zone is surrounding that display.

4 JUDGE LEE: Thank you. That's a lot of questions. I give
5 your time back to you and finish whatever you want to present.

6 MR. REDDY: All right. Well, thank you, Your Honor.
7 There's just a few points I want to close up on Karppanen. And really, if we
8 can go back to slide 30?

9 Slide 30, I just want to make sure I touch on the fact that a
10 person skilled in the art would be motivated to combine the teachings of the
11 Karppanen reference with Larson. As discussed in paragraphs 126 to 38
12 from Mr. Smith-Gillespie's declaration, there are several reasons why a
13 person skilled in the art would be motivated to combine these teachings and
14 would have a reasonable expectation of success in doing so.

15 Both Karppanen and Larson are directed to the same field of
16 art, which is electronic displays. Karppanen discloses an electronic
17 information board that can be placed outside. The benefits of using solar
18 energy reduction layers were widely known, including that they would
19 improve the contrast in the display, as disclosed in Larson.

20 Now, Larson also recognized the difficulties of having strong
21 contrast in outdoor displays. So, a person skilled in the art would be
22 motivated to modify Karppanen to add the anti-reflective film in the
23 polarizing. It would not be beyond the level of skill of those skilled in the
24 art to make this modification.

25 Here, Karppanen discloses that there is a gap between the
26 display and the front cover glass, which is an optimal place to add the film

1 disclosed in Larson. Larson teaches that this gap is a place where it's
2 particularly important to add anti-reflective film coatings in order to reduce
3 glare. The polarizer in Larson solves this problem by reducing the
4 reflectance.

5 And finally, I'll just note there's no teaching away or any other
6 discussion in Larson that a person skilled in the art would understand or
7 prevent -- or suggest that this combination would not be successful.

8 Now, just moving on to the Yare combination, which is Ground
9 2 in the '740 patent, if we can have slide 32, please?

10 So, Yare recognizes that a display generates a lot of heat and
11 that an efficient cooling system is necessary. Now, to address this cooling,
12 Yare discloses this cabinet that has the sealed zone 30, which is sealed from
13 the external environment, and that contains a display. Air flows in the
14 sealed and atmospheric air zones is not mixed and it is inside -- and instead,
15 that air flows inside the heat exchanger, which transfers the heat. If we
16 could have slide 35, please?

17 Now, even if the closed loop is not disclosed by Yare, it would
18 have been obvious in view of the knowledge of those skilled in the art to add
19 a gap in front of the display in order to create the closed loop. And there are
20 three different prior art references of record that disclose the benefits of
21 spacing a display from the front cover glass.

22 Slide 35 discusses the Larson reference, which is Exhibit 1010.
23 Larson discloses that a configuration in which the front cover is spaced apart
24 from the LCD, and describes this configuration as conventional and the
25 spacing as typical. As I mentioned when discussing Ground 2, Larson
26 specifically notes that the display should be spaced from the cover glass and

1 that there are advantages to having that gap.

2 Slide 36 discusses a second example, which is Pandolfi, which
3 is Exhibit 1012. Pandolfi discloses a display module that has a flat panel
4 display 10, such as an LCD. And it further discloses the benefits and the
5 need to have an air gap, which is element 53, between the front surface of
6 the display and the rear surface of the touch screen. The third example is --

7 JUDGE LEE: Mr. Reddy, I see what you're saying, but, based
8 on your answers to my earlier questions, what does it matter, spacing all of
9 20 back from the cabinet glass? Because that's not the air you're talking
10 about, right? That air is still separated from the LCD that's inside 20.

11 What you really should have talked about is the air that's going
12 through display 20 that might be swirling around inside 20, and that might
13 be passing by the LCD that's inside 20. The reference Yare does talk about
14 that, and the ALJ and the ITC says, well, because the air goes through
15 display 20, it's not going around it.

16 And you're saying placing display 20 back from the cabinet
17 glass somehow has something to do with your closed loop flow. I don't get
18 that. Because that air that's outside of 20 is not going inside 20.

19 MR. REDDY: So, Your Honor's to the ALJ's decision is
20 exactly correct, right? So, the question is, where is the LCD within element
21 20?

22 The ALJ, I believe, found that we had failed to prove that the
23 display was not, basically, co-extensive with that trapezoidal feature. And
24 because that, that air you're referencing, the dotted line air, was flowing, at
25 most, through the LCD itself.

26 Our position is that's not how the air flows, and a person skilled

1 in the art wouldn't read it that way. Instead, that the LCD is located within
2 that trapezoidal figure, element 20, and that those solid lines are flowing
3 around that display element.

4 JUDGE LEE: You're saying air -- but the reference says there
5 is an inlet into display 20. There are internal fans in 20 which draws air in
6 from the inlet. It seems to me like there is air flowing through display 20.

7 MR. REDDY: That's exactly our point, and that, within
8 element 20, that the LCD doesn't encompass all of element 20. Rather, the
9 LCD is located within that --

10 JUDGE LEE: Yes, but the airflow you're pointing us to is not
11 the air that's going through 20. You're pointing to these right-angle arrows
12 that are outside of display 20.

13 MR. REDDY: So, if we could have slide 34, please?

14 JUDGE LEE: So, spacing 20 back from the cabinet glass, that
15 doesn't have anything to do with air going through 20. That's, at most, it has
16 something to do with air that's going outside of element 20.

17 MR. REDDY: Right, the air -- so, it's shown in slide 34.
18 Under our interpretation, air moves across the front surface of the LCD and
19 before the cover -- and between the cover glass at the cabinet, which is
20 element 10, and the front glass -- oh, I'm sorry -- the front portion of the
21 LCD, that that's the relevant closed loop, that that air is flowing --

22 JUDGE LEE: How can you refer to the LCD when the LCD is
23 in an enclosure? You admitted earlier that 20 has a casing.

24 MR. REDDY: That's correct, that there's a casing around 20 as
25 a whole, which is, essentially, the outermost portion of the cabinet, which is
26 element 10.

1 JUDGE LEE: So, this airflow, that's between 20 and the
2 cabinet glass, that air flow is not touching the LCD that's inside 20.

3 MR. REDDY: We believe it is, and that a person of skill in the
4 art would understand it that way because --

5 JUDGE LEE: How do you have that? The air is outside of 20,
6 and how would it be also inside 20?

7 MR. REDDY: So, our understanding is that those skilled in the
8 art would understand -- so, those arrows which show the right angles are
9 located within the overall box of element 20. And so, you'll note that what
10 we did actually in the -- if we go back to

11 JUDGE LEE: Oh, I see. I'm starting to understand. So, it's not
12 just one arrow. One would look at that one arrow like all of these little
13 arrows going up inside the sealed zone, and it's going through display 20?

14 MR. REDDY: Right. If I could have slide 32, please? You'll
15 see that, in the Yare reference, Figure 4, element 20 is the line is pointing to
16 volume as a whole. What we did in slide 34, which I think is perhaps
17 causing some of the confusion, is that we extended that line from

18 JUDGE LEE: You extended it farther out.

19 MR. REDDY: Exactly.

20 JUDGE LEE: You actually meant it's horizontal -- in the whole
21 zone, it's going up?

22 MR. REDDY: That's correct, within the entire volume of
23 element 20. That's exactly right.

24 JUDGE LEE: And therefore, it's going through element 20?

25 MR. REDDY: It's going -- right, but not through the LCD,
26 right? The LCD is -- --

1 JUDGE LEE: Not through the LCD, but in front of

2 MR. REDDY: Through element 20.

3 JUDGE LEE: -- in front of the LCD.

4 MR. REDDY: That is exactly right.

5 JUDGE LEE: -- and the cover glass of the LCD?

6 MR. REDDY: That's exactly right, Your Honor. And, yes,
7 that's exactly

8 JUDGE LEE: Because there's an inlet to

9 MR. REDDY: Yes, and the inlet is shown at the bottom of
10 Figure 4 from Yare, where the air is coming through, and then, coming out --

11 JUDGE LEE: I see. So, you're not using the external flow as
12 meeting the limitation. You're actually using the internal flow --

13 MR. REDDY: That is absolutely right. The ambient air
14 certainly would not satisfy, right -- the claim requires the closed loop of air
15 which is isolated there.

16 JUDGE LEE: I mean, the airflow inside 20 --

17 MR. REDDY: Yes.

18 JUDGE LEE: -- to meet this limitation?

19 MR. REDDY: Absolutely right.

20 JUDGE LEE: They were saying you didn't show anything
21 about the inside, but you're saying you actually did?

22 MR. REDDY: That's correct, and I referenced the specific
23 paragraphs from Mr. Smith-Gillespie's declaration, as well as from our
24 petition that were intended to discuss this issue. And as we said, we think
25 that is --

26 JUDGE LEE: They showed there's air going through and not

1 around and --

2 MR. REDDY: Right.

3 JUDGE LEE: Well, we don't need to go there.

4 MR. REDDY: Okay.

5 JUDGE LEE: So, thank you.

6 MR. REDDY: Got it. All right. Thank you, Your Honor. If I

7 may just --

8 JUDGE LEE: Oh, yes, you have used up your 60 minutes.

9 You're welcome to use up your reserved 30 minutes, or a little bit of it, if

10 you would like.

11 MR. REDDY: Your Honor, I would just like to close with

12 maybe two quick points before reserving the balance of my time. If we can

13 go to slide 43, please? Slide 43, it was just the transition to discussing

14 Ground 2 from the '142 patent, which is the combination of Yare and

15 Larson. If we can move to slide 48, please? Slide 48 summarizes some of

16 the key arguments regarding why a person of skill in the art would be

17 motivated to combine the teachings from Yare with Larson.

18 The reasons, essentially, are very similar to what we discussed

19 with respect to the Karppanen and Larson combination. They're directed to

20 the same field. The benefits of solar energy reduction layer were widely

21 known, and it's not beyond the skill of those skilled in the art to create a

22 polarizer within the Yare cabinet.

23 And then, I just want to briefly mention the secondary

24 considerations. If we can have slide 50, please?

25 Now, it's Petitioner's position that the evidence of secondary

26 considerations is very weak. All of the evidence and arguments of alleged

1 secondary considerations that are cited by the Patent Owner here were
2 presented, evaluated, and rejected in the ITC case.

3 Both the ALJ and the Commission determined that the evidence
4 of alleged secondary considerations could not overcome the evidence of
5 obviousness based on the prior art. This is because the Patent Owner
6 consistently failed to show that there is any nexus between the alleged
7 secondary considerations and the claimed invention.

8 And there's no reason why the Patent Owner should be entitled
9 to a different result here. Importantly, all of this evidence that's presented by
10 Patent Owner, at most, generally discusses the fact that heat dissipation is
11 important in digital displays, but, as we know from the prior art, the need for
12 heat dissipation systems in digital displays was widely known, and the prior
13 art presented solutions to address that problem.

14 In addition, none of the evidence presented by Patent Owner
15 raised any specific connection to the claimed systems in the '740 patent and
16 the '142 patent. With that, Your Honors, I'll reserve the balance of my time
17 for rebuttal.

18 JUDGE LEE: Yes, thank you. I finally did, I think, understand
19 your argument, but only half, though. Because if I understand you, you're
20 saying all the air is going up and some of it is going inside 20, going in front
21 of the LCD and the cover glass. I can see that, but if the limitation is to
22 encircle the image assembly, it's got to come back around the back of it, too.
23 It can't just go up in front. It's got to circle back. So, where is that shown?

24 MR. REDDY: It does. If I could have slide 34 again, please?
25 So, we follow -- it's really follow the solid arrows, right? The solid arrows,
26 according to Yare, depict the flow of air --

1 JUDGE LEE: Yes, I see that, but the solid arrows are outside
2 of display 20.

3 MR. REDDY: But this entire portion is the sealed zone, right?
4 A person skilled in the art would not understand the borders between the
5 trapezoidal figure of zone 20 and the rest of the green-shaded portion in slide
6 40 to be barriers, right? In fact, the air moves between those, as shown on
7 the

8 JUDGE LEE: So, where is the air that's circling back on the
9 back side of the LCD then?

10 MR. REDDY: So, it's shown on -- it's annotated in slide 40,
11 which is Figure 4 from Yare. The solid arrows go behind the display
12 through the hot side of the heat exchanger, and then, back through the fan,
13 which I believe is element 80.

14 JUDGE LEE: Yes, but the LCD is inside the blue area.

15 MR. REDDY: That's

16 JUDGE LEE: Within the casing.

17 MR. REDDY: The blue area is the LCD, that's correct. And
18 so, the closed loop, the solid arrows, the solid, red arrows are encircling that
19 blue LCD.

20 JUDGE LEE: The air that's coming back down is not going
21 through the display 20. Or are you saying that's also going through display
22 20?

23 MR. REDDY: It is. Because, see, when it comes through the
24 hot side of the heat exchanger, right, heat is being removed. That's what the
25 heat exchanger does. And then, that same air is constantly being
26 recirculated through that sealed zone 30. And that's

1 JUDGE LEE: So, you're saying the circular flow happens
2 outside of 20? It also happens inside 20?

3 MR. REDDY: It happens, yes, absolutely, it happens -- it goes
4 through 20, right, which is, essentially, the solid lines, right? We don't
5 contend that there's any airflow that's inconsistent with what's shown in the
6 solid lines in Yare.

7 Really, the question for the panel is, where is the LCD portion
8 relative to the cover glass in the cabinet?

9 JUDGE LEE: Well, we know the LCD is inside the blue unit.
10 So, this circular flow you're contending happens inside the blue?

11 MR. REDDY: No, the circular flow takes place outside the
12 blue, right? Our position is that the blue is the LCD and that the air is
13 flowing around it.

14 JUDGE LEE: No. See, you're confusing me again. I thought
15 we clarified the 20 just contains the LCD. And now, you're saying the blue
16 is the LCD.

17 MR. REDDY: Twenty is not just the blue part, right? Twenty
18 is the whole trapezoidal volume. But that the display element 20 -- oh, I'm
19 sorry -- that the entire display case, if you will, in Yare is that entire
20 trapezoidal figure.

21 JUDGE LEE: What does that "20" point to in your slide?

22 MR. REDDY: That is --

23 JUDGE LEE: It seems to me that is pointing to the blue, the
24 blue stuff.

25 MR. REDDY: Yes, that's pointing to the electronic image
26 assembly.

1 JUDGE LEE: But it's not. According to the Yare reference, 20
2 is the whole display system.

3 MR. REDDY: It is a display 20 -- that's correct, 20 is an entire
4 display system that includes the LCD --

5 JUDGE LEE: So, how do you get to just arbitrarily saying,
6 "Well, it's now just the LCD."?

7 MR. REDDY: Well, element 20 is the LCD plus the closed
8 loop that surrounds the display.

9 JUDGE LEE: No, but it's got to have the internal cooling fans
10 and whatever else is in the system.

11 MR. REDDY: Right, but the fans are shown, right? The fans
12 are depicted -- and again, this is Figure 4, as shown in slide 40. The fans are
13 shown within that trapezoidal figure, right? It's blowing the air from that
14 trapezoidal figure element 20 and into the heat exchanger.

15 JUDGE LEE: I don't want to take up too much of your time.
16 So, the one last question is, you're saying -- you don't deny that, to meet the
17 encircle limitation, there's got to be air coming back on the back side of the
18 LCD?

19 MR. REDDY: Correct, we do not dispute that.

20 JUDGE LEE: And you're saying this is met by whatever you're
21 showing here --

22 MR. REDDY: Right.

23 JUDGE LEE: -- in this colored figure?

24 MR. REDDY: Correct. It doesn't necessarily need to contact
25 the LCD, but, certainly, a closed loop needs to be formed that encircles the
26 display.

1 JUDGE LEE: All right. Thank you.

2 MR. REDDY: All right. Thank you, Your Honor -- Your
3 Honors.

4 JUDGE LEE: Okay. You'll have just 21 minutes left.

5 MR. MORLOCK: Sorry, Your Honor, we're just getting our
6 AV set up.

7 JUDGE LEE: Yes, just let me know when you're ready.

8 MR. MORLOCK: Your Honor, we're ready when you're ready.

9 JUDGE LEE: All right, sir. Would you like to reserve some of
10 your 90 minutes?

11 MR. MORLOCK: Yes, Your Honor. I expect we'll take about
12 60 minutes. So, if we could reserve the balance, the other 30?

13 JUDGE LEE: Reserving 30?

14 MR. MORLOCK: Yes, please.

15 JUDGE LEE: Okay. Thank you.

16 MR. MORLOCK: All right. Thank you, Your Honor. Once
17 again, Michael Morlock from Kilpatrick Townsend for Patent Owner
18 Manufacturing Resources International.

19 JUDGE LEE: Yes, if you can speak more directly into the
20 microphone, that would be so much better.

21 MR. MORLOCK: Is this better? I might be too tall. Let's see
22 what I can do. Just a housekeeping matter, Your Honor. There are two
23 proceedings here. Many of the exhibits are the same across the two, although
24 not all of them. We'll largely be using exhibits from the '142 patent IPR.
25 That's the 221 proceeding, just for clarity.

26 Here, the prior art fails to disclose key elements under the

1 proper Phillips claim construction and there's strong evidence of secondary
2 considerations which the panel must consider. And those secondary
3 considerations confirm the patentability of these claims.

4 I'm, first, going to talk about the two primary references, the
5 Karppanen and Yare references. My colleague Ms. Anderson, who's
6 appearing for the first time in front of the PTAB today, is, then, going to
7 address the Larson reference, which is used only for the '142 patent, and
8 then, Mr. Reed will address the secondary considerations for these patents.
9 If we could go to slide 2, please, Ms. Gray?

10 And also, so I don't forget, the heart and soul of our team is Ms.
11 Nita Gray, who has the hardest job here running the hot seat.

12 So, this case is about outdoor displays. We have an example of
13 one of these shown on slide No. 2. This is taken from Exhibit 2054.

14 Manufacturing Resources International produces these displays
15 at its facility in Alpharetta, Georgia. There in Alpharetta, they employ about
16 170 people -- 40 engineers, 130 employees. They've got a quarter-million-
17 square-foot facility that produces these outdoor displays. And with us today
18 is Mr. Mike Brown, the VP of Engineering at MRI.

19 MRI has deployed about 25,000 of these displays in its history.
20 And we don't claim to have been the inventors of an LCD display. What
21 MRI has invented is a cooling system that enables these displays to be
22 placed outside in the elements -- anywhere from Phoenix, Arizona in the
23 summer to Minneapolis, Minnesota in the winter.

24 Obviously, there's a lot of constraints associated with having a
25 high solar load from being in a very hot environment, a very humid
26 environment, or a very cold environment. And the heat exchangers, open

1 loops, closed loops that Your Honor is, clearly, very familiar with is what
2 enables these devices to work. If we could go to slide 3, please, Ms. Gray?

3 It's that cooling technology that is claimed in these patents that
4 enabled this market to be created. You've probably noticed that you've
5 started to see a whole lot more outdoor displays of this type over the past
6 couple of years. It's, obviously, something that's becoming very popular.

7 Now, the way they work is an open loop of outside air that,
8 then, interacts via a heat exchanger with a closed loop that circulates air
9 within the display only. If we could go to slide 4?

10 This is Figure 2B of the patents. You can see slide 4 shows
11 clearly where, moving left to right, you have the closed loop air; moving top
12 to bottom, you have the open loop air, and the box 201 is that heat
13 exchanger.

14 And to give Your Honors some context as to what this looks
15 like, Ms. Gray, could we pull up Exhibit 2054 and go to page 2?

16 And, Your Honor, what we're seeing here is the inside of one of
17 these outdoor displays at MRI's manufacturing facility in Alpharetta.

18 If we zoom in -- thank you, Ms. Gray -- this is a box; this is one
19 of these displays with the rear cover removed. To give you some context,
20 this box that you're looking at is about 8-feet tall. These are very large
21 devices. The silver enclosure on the left side that takes up, essentially, half
22 of the entire interior, that's the heat exchanger.

23 If you look on the bottom, you see gaps. You know, those are
24 where fans sit that pull outside air, the open loop air, to blow air into the
25 bottom side of the heat exchanger.

26 The black circles on the right side of the silver box, the right

1 side of the heat exchanger, are the fans that circulate closed loop air through
2 the heat exchanger. And you see that air goes to the heat exchanger at a
3 right angle to the open loop air, and heat is transferred, and then, taken away
4 outside of the display.

5 This is how these devices are able to, both using a very high-
6 powered backlight, so that you can see in bright situations, and also, sitting
7 in a high thermal load area -- for example, Arizona in the summer sun -- are
8 able to move all the heat that would go into the display out without exposing
9 the components to the harsh elements, you know, dust, other contaminants
10 that would damage them.

11 There is a specific cutaway of this, if we go to slide or page 7 of
12 the same document, Exhibit 2054. This is a top view of what the device
13 looks like. So, if I'm looking down from a cutaway, you see an electronic
14 display at the front; you see air circulating in the closed loop around the
15 front of the display, passing through the heat exchanger -- the box on the
16 back -- being cooled, and then, continuing to be recirculated. The blue lines
17 within the heat exchanger show open loop air that is blown top to bottom
18 through that heat exchanger.

19 We have examples of this, also, in the two challenged patents.
20 Both patents share a common specification. They're in the same priority
21 chain. Both of them claim priority to Provisional Application 61/138,736.
22 That's Exhibit 2010 -- if we could pull that up, Ms. Gray?

23 This is the first priority application or the first provisional
24 application to describe the heat exchanger. And you can see the title of this
25 is "Heat Exchanger for an Electronic Display". And there are specific
26 images of what the interior of that heat exchanger would look like, if we

1 were to cut it open.

2 If we go to page 21? See, this is the closed loop inlet. Now,
3 this is an actual picture. Obviously, it's not a technical drawing. This is an
4 actual picture of the prototype for the heat exchanger.

5 And at page 22, we have the inlet for the open loop. That's
6 what that heat exchanger looks like. That's how heat is moved through these
7 devices, and that's what's actually recited by these claims.

8 If we could go to slide 7, please, Ms. Gray?

9 I'd like to take a minute to address Petitioner's individual
10 grounds because some of what the Petitioner presented in their presentation I
11 think looks away from what's actually in these petitions, what grounds are
12 actually raised.

13 These are all obviousness grounds, and the only three prior art
14 references that are used in a ground are Karppanen, Yare, and Larson.
15 Petitioner talked about the Williams reference and, also, talked about the
16 Nagashima reference. Williams isn't even in the record in the proceeding for
17 the '142 patent. It's not even an exhibit for the '221 IPR. So, I don't know
18 how that's relevant at all for this presentation, because it's not part of a
19 ground, but it's certainly not relevant with respect to the '142 patent.

20 Now, I'd like to turn to the specific ground now with respect to
21 Karppanen on slide 8.

22 Now, Karppanen doesn't disclose a heat exchanger. I think that
23 we've made that very clear in our papers, and there is a competing
24 construction associated with heat exchanger that does not encompass the two
25 heat sinks that are shown in the Karppanen reference. If we could go to our
26 slide 9, please, Ms. Gray?

1 So, slide 9 shows the parties' competing constructions. And
2 both parties agree this is a plain and ordinary meaning; they just dispute
3 what the plain and ordinary meaning is.

4 Patent Owner proposes a construction that gives full meaning to
5 the claim language, the specification, the prosecution history, and even the
6 extrinsic evidence from what the experts, both experts, seem to agree is
7 meant by the physical structure that is a heat exchanger.

8 What you see in Petitioner's construction -- and what I have
9 here, to be clear, this is a direct quote out of Petitioner's reply. And they say
10 that a heat exchanger means "a device used to transfer heat from the closed
11 loop pathway, i.e., the circulating gas, to the open loop pathway, i.e., the
12 ambient gas, which includes finned heat sinks as disclosed by Karppanen."

13 This is simply an overbroad construction. If you were to
14 construe heat exchanger to be this construction, first, it would be a
15 construction that includes the prior art; I mean, expressly, the Karppanen
16 references included in the construction.

17 Second, a device used to transfer heat from a closed loop
18 pathway to an open loop pathway reads out the claimed element of a heat
19 exchanger entirely. Because it's common thermodynamics, if there's one
20 pathway that is hot and one pathway that is cool, heat will move between
21 those two pathways. That's just thermodynamics. Heat exchanger means
22 something, and Patent Owner's construction gives meaning to that claim
23 term.

24 JUDGE HUDALLA: Counsel, this is something I've really
25 struggled with from your papers. You know, I read "heat exchanger," and
26 that's a well-known, broad term. I mean, obviously, when this thing went

1 through prosecution, you wanted some pretty broad claim scope.

2 You've shown us an example that's a very specific tubes and,
3 you know, channels, and they cross each other, but that's not what the claim
4 says. And so, I'm really struggling with how you're trying to -- you know,
5 we have a construction of the plain and ordinary meaning, to me, which is
6 kind of crazy in the first instance, because it seems like you really want more
7 of just a plain, old construction, not just -- or an actual construction, not just
8 plain and ordinary meaning.

9 So help me to understand that. Because I see "heat exchanger,"
10 and heat sinks, to me, that's a heat exchanger. I don't understand why it
11 wouldn't be.

12 MR. MORLOCK: Thank you, Your Honor. Let me see if I can
13 answer that by going directly to the claim language. Ms. Gray, could we
14 pull up Exhibit 1001? That's the '142 patent. And go to page 16. And let's
15 zoom in on the bottom of column 10 on heat exchanger claim element in the
16 '142 patent, Claim 6.

17 So, the claim element actually recites that the heat exchanger
18 forms a part of the said open loop airflow pathway, and it forms a part of the
19 closed loop pathway. So, that's what we mean by including these
20 interlocking tubes, the channels.

21 If you have a heat exchanger that forms a part of the pathway,
22 to form a part of the pathway, it has to have tubes or channels that are
23 interconnected. You couldn't crisscross open loop and closed loop air
24 without having these channels, without having them enclosed like that.

25 JUDGE HUDALLA: So, in Karppanen, we've got, you know,
26 fins on either side, the hot side and the cold side. Why isn't that forming part

1 of the channel?

2 MR. MORLOCK: So, in Karppanen, what you see is a heat
3 sink, and that heat sink is just placed in an airflow path. It doesn't form a
4 part of the pathway; it's just an object sitting in the pathway.

5 JUDGE HUDALLA: Sure, it does. It has a back wall that's in,
6 you know, that area that connects the two pathways.

7 MR. MORLOCK: Well, that back wall doesn't form a part of
8 the pathway, though. I mean, any object that would have a base would be in
9 a pathway, but it doesn't form the pathway, because it doesn't form an
10 enclosure. The whole pathway doesn't go through the heat sink in
11 Karppanen. Air is not forced through it. It can go around it. Some of it may
12 go through; some of it may go over it. But it doesn't form part of that
13 pathway.

14 JUDGE HUDALLA: I don't know. I mean, that's part of my
15 problem here, because I do think that it -- even if we go to this language of
16 forming the pathway, I think the back wall or the common wall of a heat
17 sink would necessarily form some of the channel.

18 MR. MORLOCK: So, Your Honor, I think the issue with that
19 forming part of the channel is, to form the channel, it actually has to form
20 the whole channel. That's just a small piece. It's just the bottom, I guess
21 would be to look at it. That's not forming the channel.

22 JUDGE HUDALLA: It has to form the entire channel, is what
23 you're saying then?

24 MR. MORLOCK: Well, I mean, because it says it forms part
25 of the closed loop circulation pathway. If you form the whole pathway, the
26 pathway goes through.

1 JUDGE HUDALLA: I guess the part, though, that kind of
2 undermines what you just said, though, is it only has to be part of the
3 channel.

4 I didn't mean to derail you, sir. Go ahead and I'll keep listening,
5 but that's what I'm concerned about right now.

6 MR. MORLOCK: And I think I understand the issue you're
7 raising, Your Honor. I mean, if forming part of the pathway met the
8 definition that we're describing in Karppanen with respect to just back-to-
9 back, I mean, any two objects that exchanged heat would, then, still be a
10 heat exchanger. It would take away a meaning of the term "heat exchanger"
11 because it would just be, well, there's these two things that abut each other.
12 Okay, that means that's a heat exchanger. That's not forming part of the
13 pathway.

14 JUDGE HUDALLA: I think what concerns me about that kind
15 of argument, though, is the person of ordinary skill in the art would look at
16 the fins on a heat sink and certainly think of it as a heat exchanger. I mean, I
17 think there's record evidence that would tell us that. I think even your expert
18 at least said, "maybe that's not the first thing I might think about," but, you
19 know, it certainly didn't -- you actually didn't exclude that from the idea of a
20 heat exchanger.

21 MR. MORLOCK: So, let's actually jump into that, Your
22 Honor. I think that's a great point.

23 JUDGE HUDALLA: I didn't mean to derail your argument.
24 So, I'll keep listening. Please go ahead.

25 MR. MORLOCK: No, please derail my argument, Your
26 Honor. I'm here to address your questions, not hear myself speak.

1 JUDGE HUDALLA: Okay.

2 MR. MORLOCK: So, I want to talk to what you want to hear,
3 and I think I can address your question by going straight to the patent
4 specification, and then, addressing some of the testimony.

5 JUDGE HUDALLA: Okay. Thank you.

6 MR. MORLOCK: Let's go to Exhibit 1001, still on the '142
7 patent, and let's go to column 12. I'm sorry, page 12, column 2.

8 So, the patent specification, looking at the '142 patent -- an
9 again, the two patents have a common specification. So, '142 is just I'm sort
10 of using that as a short form here.

11 It describes prior art systems, those prior art systems using a fan
12 to force convection and forcing air over fins. It doesn't use the word "heat
13 sink," but I think this is something a person of ordinary skill in the art would
14 recognize is describing what would be known as a heat sink. You've got a
15 fan blowing air over fins.

16 And when I look at Karppanen, I think of a processor, like
17 when I was a kid and I'd take apart a computer, you would see a Pentium
18 with a fan sitting on it, and that fan would be blowing air over a regular heat
19 sink. That's what you see in Karppanen, and that's exactly what the patent
20 here tries to distinguish and explain. That's what was known, but that didn't
21 work. When you did that, you couldn't put a display outside because there
22 would be too much heat.

23 JUDGE HUDALLA: So, do you contend that this background
24 section you're pointing to now on the screen, which I guess is at column 2 of
25 the '740 patent, is it here?

26 MR. MORLOCK: It's column 2, lines, I believe, 3 through 7 of

1 the '142 patent, Exhibit 1001.

2 JUDGE HUDALLA: Okay. Sorry.

3 So, you're saying that that actually limits the scope of a heat
4 exchanger in the claims?

5 MR. MORLOCK: Well, this is what describes the background,
6 and then, the rest of the specification describes the improvement over this
7 heat sink. And that's where --

8 JUDGE HUDALLA: But does this language limit the scope of
9 heat exchanger in the claims? Is that what you're saying?

10 MR. MORLOCK: I think a person of ordinary skill in the art
11 would read this claim language and understand this to show what the prior
12 art was, and the claims claim the improvement over this prior art system.

13 So, yes, Your Honor, it's we're not saying that it is a
14 lexicography. We're saying that, if you read the claims as you have to in
15 view of the patent specification, that specification shows what the
16 improvement is that the claims are intended to cover. And that's what's
17 captured by the use of the term "heat exchanger."

18 JUDGE HUDALLA: Okay. I think I understand your position.

19 MR. MORLOCK: Thank you, Your Honor. Where you see
20 this improvement I described is, if we go to page 13 of the '142 patent, take a
21 look at column 4, lines 26 through 31.

22 You see specific examples described of the heat exchanger.
23 And this is the heat exchanger, describing the improvement that enables the
24 improvement that is actually captured by the claims. There's an additional
25 description of the heat exchanger at column 4, 55 through 59.

26 If we could go to column 55 -- or I'm sorry -- column 4, lines

1 55, Ms. Gray? Yes. I mean, additional description of heat exchangers. This
2 describes almost exactly the plain and ordinary meaning construction that
3 Patent Owner has proposed.

4 JUDGE HUDALLA: Is this a disavowal of the claim scope for
5 heat exchangers, I guess what we've been calling heat sink heat exchangers?
6 Does it rise to that level in your estimation?

7 MR. MORLOCK: Your Honor, I think yes. What I'm trying to
8 say, maybe the correct answer is no. We do not contend the claims cover a
9 heat sink. A heat sink is not covered by these claims.

10 JUDGE HUDALLA: Okay. But I'd like you to answer my
11 question, though, which is, are these sections where you're talking about that
12 are -- you know, you talk about the background section; how it kind of
13 distinguishes mere fin-type heat exchangers, which we've been calling heat
14 sinks. Is that a disavowal in your -- is that your position?

15 MR. MORLOCK: Yes.

16 JUDGE HUDALLA: And this is all in the claim scope?

17 MR. MORLOCK: Yes, Your Honor, we don't contend that this
18 claim covers those fin-style heat sinks. It covers a heat exchanger, and a
19 heat exchanger with a specific plain and ordinary meaning that we've given.

20 JUDGE HUDALLA: Okay. Thank you.

21 JUDGE LEE: Counsel, can I ask you a question? I understand
22 what you just said, but when discussing the background and all the problems
23 that exist with the preexisting devices, it includes not passing airflow to the
24 front of the LCD or electronic image display. Like you're saying it's saying
25 there's a lot of heat in the front. So, it's not enough to just cool the back side,
26 like the prior art does. And your invention, actually, not only has that heat

1 exchanger, pipes, and channels, it also has the feature of a front channel
2 going through the front.

3 So, given that there are these multiple differences, how can we
4 just say that, yes, definitively, a heat exchanger has to mean an enclosed
5 state? Because you define an advantage over the art, also, by passing
6 airflow, cooling airflow through the front, and that would be a distinction.
7 So, if that's the distinction, then the other one about an enclosed channel and
8 piping is not critical, because, you know, you're doing both. You're passing
9 it through the front and you're doing it through an enclosed channel. So, the
10 disavowal doesn't match the fact that there are these multiple solutions you
11 can make to improve the prior art.

12 MR. MORLOCK: But, Your Honor, the claim covers both a
13 closed loop that requires that circulation of airflow, including around the
14 front of the display, and it also covers a heat exchanger that, then, takes the
15 heat that is captured in the closed loop and transfers the heat to the open
16 loop. So, I think when we're talking about having an enclosed space within
17 the heat exchanger having --

18 JUDGE LEE: Right.

19 MR. MORLOCK: Going back to our specific construction --

20 JUDGE LEE: What I'm saying is the preexisting art can still be
21 a heat exchanger. There would be no inconsistency. Because you have
22 another distinction, which is passing the airflow through the front. Because
23 you're, basically, telling us it would be an inconsistent reading to treat the
24 prior art structure as a heat exchanger because that's your improvement over
25 the art, using a heat exchanger.

26 And I'm suggesting that I also see another feature here that

1 improves over the art, which is passing the airflow through the front. And
2 because of that, we can't just say that, oh, yes, the solution is to use a heat
3 exchanger, which is what you're saying.

4 MR. MORLOCK: Well

5 JUDGE LEE: Because there's this other improvement, I don't
6 think we can attribute all the distinctions to the fact that, oh, you use a heat
7 exchanger and the art doesn't use a heat exchanger.

8 MR. MORLOCK: Well, Your Honor, I agree there's multiple
9 improvements claimed or described and claimed. The distinction here that I
10 think you're drawing is that we can't tie the heat exchanger to an
11 improvement over the heat sink. But the claim expressly recites a heat
12 exchanger, and the intent here in the claim and the specification, and the
13 prosecution history, was never to describe a heat sink. Heat sink is not used
14 in the specification. We don't. That's not something that is attempted to be
15 captured here. The improvement is the heat exchanger that has the specific
16 claim structure that forms part of the airflow pathway.

17 JUDGE LEE: Okay. Thank you.

18 MR. MORLOCK: So, with respect to some of these patent
19 specification cites, I'd like to briefly touch on some of the issues with what
20 Petitioner presented.

21 If we could pull up Petitioner's slide 15, please, Ms. Gray? So,
22 Petitioner has identified this as identifying one preferred embodiment of heat
23 exchanger, and then, pointed out many types of heat exchangers are known
24 and can be used with many of the embodiments herein.

25 What they don't tell you, pointing to this, is that the next
26 sentence in this cite within the patent specification expressly identifies the

1 three types of heat exchangers.

2 If we could go back to Exhibit 1001 at page 13, looking at
3 column 4, lines 25 through 27, it, then, says -- it identifies those three types.
4 "The heat exchanger...may be cross-flow, parallel flow, or counter-flow."
5 This isn't just saying, oh, a preferred embodiment. It's saying this is the
6 embodiment; it's a heat exchanger. Here's these three types of heat
7 exchangers that it can be.

8 JUDGE HUDALLA: But it says, "may be"; it doesn't say it has
9 to be.

10 MR. MORLOCK: Well, maybe one of these three. I mean, it
11 says the heat exchanger may be one of those three heat exchangers.

12 JUDGE HUDALLA: So again, your contention is this is
13 limiting language on the claims?

14 MR. MORLOCK: Well, it's limiting to a person of ordinary
15 skill in the art reading the patent specification in view of the claim language
16 that says: this is a heat exchanger; this is what a heat exchanger is.

17 JUDGE HUDALLA: Okay.

18 JUDGE LEE: Can I interrupt you? Because I think that the
19 weakest part or what's keeping me from going along with what you're
20 suggesting is that your own expert testifies that, yes, sometimes a POSITA
21 would refer to structures without a casing, structures without a piping or a
22 channel, as a heat exchanger. He said that. But, then, he goes: but there is
23 an additional understanding, a narrower meaning as well.

24 So, he recognizes there are multiple meanings. But how can
25 that help you, if a POSITA recognizes multiple meanings? Even if 90
26 percent of the time, yes, it refers to structures with enclosed casing or piping,

1 but even with 10 percent of the time they also refer to, you know, open
2 structures as a heat exchanger. That doesn't help your argument. Because a
3 POSITA recognizes both as heat exchangers.

4 MR. MORLOCK: Thank you, Judge Lee.

5 And the issue that Dr. Pokharna is discussing is with respect to
6 when you describe a heat exchanger in the context of what it does versus
7 what it is. So, Dr. Pokharna has testified consistently what heat exchanger
8 is. It's a specific structure. He's also testified as to what it does, and what it
9 does has a broader meaning.

10 Let's pull up Petitioner's slide 14. Actually, let's go to slide 11,
11 please. I think that can clarify this.

12 What Dr. Pokharna testifies -- and this is one of the slides that,
13 obviously, Petitioner took issue with -- he testifies that, with respect to a heat
14 exchanger, "to define it broadly is not possible in a deposition, but it's
15 broadly used for exchanging heat from one fluid stream to [the] other fluid
16 stream."

17 And what's missing here from this slide is the actual question he
18 was asked. Dr. Pokharna was not asked, "What is a heat exchanger?" He
19 was asked, "What does a heat exchanger do?" And that's what he testified
20 to.

21 Ms. Gray, could we pull up Exhibit 1031 at 3, so I can show
22 Judge Lee that? So, if we look at Exhibit 1031, page 3, lines 12 through
23 13 -- go up to 12. There we are. Thank you, Ms. Gray.

24 What he was actually asked was, question: "And what is the
25 purpose of a heat exchanger?"

26 So, I mean, he was asked that question. His testimony was

1 generally used for, broadly used for exchanging heat from one fluid stream
2 to the other fluid stream. He's not providing a functional definition for a
3 structure. What he is saying is: well, how does this thing you call a heat
4 sink, how does it work? What does it do?

5 And he answered that question. That's not providing some sort
6 of broad definition for the physical structure that is a heat exchanger.

7 JUDGE LEE: This is Judge Lee. Can I read from your Patent
8 Owner Response? You say, "As explained by Dr. Pokharna, a skilled artisan
9 may colloquially refer to an object that is exchanging heat as a heat
10 exchanger." It's right out of your own response. So, that is saying a
11 POSITA would, at least sometimes, refer to a structure that's exchanging
12 heat as a heat exchanger, and it doesn't require a channel or piping.

13 MR. MORLOCK: Yes, Your Honor, I think, colloquially --
14 "colloquially," sorry about that -- you can describe a heat exchanger in the
15 context of what it does. But when we're talking about claims like what are
16 recited here, we're talking about system claims, and there is a claim element
17 that is a specific heat exchanger. Defining that heat exchanger functionally,
18 this is not an argument that at least I've seen Petitioner to propose, that this
19 claim should be a means-plus-function term and it should be defined to have
20 a specific function of just moving heat --

21 JUDGE LEE: Yes, I understand that, but at least you've
22 acknowledged that there are other structures that might do this. And if a
23 POSITA sees another structure that does this, he may recognize it as a heat
24 exchanger. Like, in Yare itself, it doesn't have channel or piping. And yet,
25 you don't dispute that Yare shows a heat exchanger, and Yare calls itself as
26 including heat exchanger.

1 MR. MORLOCK: So, Yare expressly uses the phrase "heat
2 exchanger." But that's correct, Your Honor. That's why we don't dispute
3 that it is --

4 JUDGE LEE: But that's not the type you disclose in your spec.
5 And yet, it's referred to as a heat exchanger.

6 MR. MORLOCK: Well, Yare doesn't include the specific
7 structural description of what a heat exchanger looks like, but it does say it's
8 a heat exchanger.

9 JUDGE LEE: It's a corrugated sheet that's open. It doesn't
10 have the enclosure.

11 MR. MORLOCK: Well, the description I don't believe in Yare
12 says that the heat exchanger is a corrugated sheet. I mean, it just includes a
13 figure and says, "This is a heat exchanger."

14 JUDGE LEE: And then, the other, the Williams reference is
15 also not enclosed and it's referred to as a heat exchanger.

16 MR. MORLOCK: So, Your Honor raises a good point in
17 Williams. First, Williams is not actually even a -- first, it's not a reference in
18 either proceeding. Second, it's not even an exhibit in the '142.

19 JUDGE LEE: But what does that have to do with anything?
20 They're not using it as a prior reference. They're using it to show the
21 meaning of "heat exchanger." You're saying heat exchanger means it has
22 got to be a pipe, a channel. And they're saying, no, because look at these
23 publications in the field. And that's one of them.

24 MR. MORLOCK: Well, with respect to Williams, in particular,
25 let's actually -- we could pull up, let's pull up Petitioner's -- So, with respect
26 to Williams, it actually uses the phrase "heat exchanger," but the actual

1 Williams reference says, "heat sink/heat exchanger." It uses the words "heat
2 exchanger."

3 JUDGE LEE: I know. That's what they're saying. So, it
4 refutes your position that heat exchanges can only be enclosed channels and
5 pipes.

6 MR. MORLOCK: Well, Your Honor, that's not something
7 they've analyzed. They've just pointed at a figure and said, "Oh, well, this
8 figure doesn't" -- in their mind, it doesn't meet our construction, but there's
9 no analysis of what that figure is, nor could there be in the '142 proceeding,
10 where Williams isn't even an exhibit of record.

11 JUDGE LEE: Okay. Thank you.

12 MR. MORLOCK: So, if we could go back to -- well, let's take
13 a look at -- well, let's go to our slide 10.

14 JUDGE LEE: At sometime can you touch upon your argument
15 on the level of ordinary skill in the art? Because you're arguing that
16 Petitioner's definition is incorrect because they include industrial design.
17 What difference does that make in this case? Are you saying that, if we
18 applied your definition, the outcome would be different?

19 MR. MORLOCK: Yes, Your Honor, I think it would be
20 different because, when you look at industrial design, we're not talking about
21 heat transfer. What this is actually about is not, what is the exterior structure
22 of the display components? The claim is all about moving heat from the
23 inside of the display to the outside of the display.

24 And when you look at it from the perspective of a person of
25 ordinary skill in the art who has that higher-level understanding of a heat
26 exchanger, in view of the specification, in view of the claim language, to

1 have the specific structure that we're describing, it's not a functional claim
2 element in that --

3 JUDGE LEE: I understand, but none of the other fields have
4 specifically to do with heat reduction, either. I forgot some of the other
5 fields that may be some kind of engineering, but it doesn't mean they've
6 learned about heat reduction. And in any event, their definition includes two
7 to three years, or how many number of years, of working in heat reduction.
8 So, you know, with that number of years working in the field of heat
9 reduction, then what difference is there on the formal education of industrial
10 design versus some other kind of engineering? Because they have already
11 got two to three, or however number of years, working in that field of
12 reducing heat.

13 MR. MORLOCK: Well, what the Petitioner actually said was
14 that a POSITA could have generalized knowledge in product design issues
15 and failure modes associated with electronic displays. And that wouldn't
16 encompass the sorts of heat transfer issues that are resolved by the claims
17 that we're talking about here, Your Honor.

18 JUDGE LEE: Okay. So, to summarize, you're saying it makes
19 a difference because, unless you're working in heat reduction, you wouldn't
20 exactly know what a POSITA would know as a heat exchanger? Is that your
21 point?

22 MR. MORLOCK: Well, would know what a heat exchanger is
23 and recognize the difficulty of what we're talking about here. And again,
24 this is not about just taking an LCD display and putting it outside.

25 It's creating an outdoor display that runs for a longer period of
26 time, for a measurable period of time, that can be a salable product. Because

1 if you just take an LCD display of the sort that are hanging throughout this
2 room and put them outside, very quickly, in the sun in the summer, they're
3 either, one, not going to be visible just because of glare issues, and two,
4 they're going to fail due to the heat. Three, the first time it rains, they're
5 going to stop working.

6 So, those are the sorts of design constraints that a person of
7 ordinary skill in the art has to have the familiarity with, in order to address --

8 JUDGE LEE: Yes, well, that brings, then, my follow-up
9 question. Since they have multiple fields -- and one of them is product
10 design, right? So, their expert is assuming their state and level of ordinary
11 skill. How do we know in the mind of their declarant -- is it the guy with
12 just the product design degree or is it a guy with the appropriate degree? I
13 mean, if you have one degree, you would know. But if you have the other
14 degree, you wouldn't know. So, how do we parse that?

15 MR. MORLOCK: Your Honor, I think that's the ultimate issue
16 that is the problem with Petitioner's level of ordinary skill in the art. They're
17 proposing something that would include people that don't have the
18 appropriate level. So, that's why it's incorrect. It has to be somebody with a
19 more narrow, higher-level skill in the art, experienced in the appropriate
20 areas, education in the appropriate field, in order to recognize the actual
21 problems that are at issue.

22 And I think that's where you run into some of the issues Your
23 Honor was addressing with respect to the Yare reference. You don't have a
24 recognition of what the problems are. You don't look at a reference like that
25 and see what's actually drawn. You don't see the modifications that they are
26 making.

1 JUDGE LEE: Thank you.

2 You're talking about Yare, and I do have a lot of questions
3 about Yare. When you get there, please do address, in particular, what did
4 you understand as Petitioner's argument on Yare? Are they talking about the
5 airflow that's outside of unit 20? But opposing counsel seems to say they're
6 relying on airflow that's inside 20.

7 Frankly, I am confused by Petitioner's presentation. If you can
8 clarify in any way, I would appreciate that.

9 MR. MORLOCK: Thank you, Your Honor, and I will just
10 close briefly on Karppanen.

11 Under what Patent Owner contends is the correct construction,
12 what you see in Karppanen is two heat sinks. There's no heat exchanger
13 here, and even if there were a heat exchanger, what is shown in Karppanen
14 does not form a part of the airflow pathway. It's just a heat sink that sticks
15 out into that pathway. And that's not a heat exchanger, as required by the
16 claims here.

17 Now, Your Honor addressed -- we've been calling it "Yair"
18 (PHONETIC); you call it "Yaree" (PHONETIC). I actually find that kind of
19 funny. I'm not sure which is correct. So, I'll try to go with "Yaree"
20 (PHONETIC). If we go to our slide 11, please?

21 Yare also fails. And the reason Yare fails is because the actual
22 figure that the Petitioner, who carries the burden here, whose argument is
23 defined by the scope of their petition, what you see on our slide 11 is Yare
24 Figure 4, and that's what Petitioner bases their petition on and that's what
25 they modify.

26 If we could go to Patent Owner's slide 12? And, Ms. Gray,

1 could we zoom in on -- so, this is just a comparison of Figure 4 from Yare
2 by comparison to Figure 4 of Yare as modified by Petitioner. We've taken
3 this straight out of the petition at page 69. This is their modification.

4 The big thing that you see that jumps straight out to anybody
5 looking at this is the blue box that we've been talking about is not in Yare.
6 It's not described in Yare. It's not shown in Figure 4.

7 And even more confusing about this, if we zoom in on element
8 20, that we've obviously talked a lot about that, that's described as a display
9 system in Yare. And do you see where the line ends? It just goes sort of
10 into this enclosed space, this box.

11 If we go to Petitioner's modification and zoom in on the exact
12 same thing, Ms. Gray, Petitioner extended the line 20 to make it go further,
13 and then, they drew a blue box. And they said, "Oh, well, this is a display."
14 But there's nothing in Yare that says there's that whatever they're calling the
15 blue box sitting there.

16 And what Yare, in fact, describes with respect to 20 is that it's, I
17 mean, it's a housing within sealed zone 30. There's no description here of
18 what Petitioner has drawn as their modification. They've just sort of pulled
19 this out of thin air and said, oh, well, instead of being this whole space that
20 has the airflow channels that Your Honor identified, "what it actually is, it's
21 this rectangle here that we've drawn in blue, and that's what the Court should
22 look at" versus the actual description in Yare.

23 JUDGE HUDALLA: You don't dispute that there's an LCD or
24 an LED, something inside of there, though, right, inside 20?

25 MR. MORLOCK: So, what I think, no, we don't dispute that
26 there is something inside 20 that displays something, but what is described

1 in Yare with respect to 20 is a whole housing that is a display system. It's a
2 complete system. And the placement of where Petitioner has placed an LCD
3 display, first, what they're drawn as 20, that's just not correct within the
4 reference. That's not what it is described as. Twenty is a whole lot.

5 There could be, there is something that generates an image
6 inside the box 20, but there is no indication of where that is, and there's
7 certainly no indication that there's airflow going around something that
8 generates an image. That's just something that Petitioner has added and they
9 have pointed at arrows and said, oh, well, because those arrows are there,
10 we're going to put our -- we're going to draw an LCD display and we're
11 going to extend line 20 and say that's what the LCD display is.

12 JUDGE HUDALLA: So, you're saying there's no airflow?
13 You deny that there's airflow within 20? Is that what --

14 MR. MORLOCK: No, there is airflow within 20 as a whole --

15 JUDGE HUDALLA: Okay.

16 MR. MORLOCK: -- but there is no indication that there is
17 airflow across the front face of an LCD display in 20.

18 And if you were to go with the modification that Petitioner
19 seems to propose, first, where they would move 20, there would, then, be no
20 airflow across the front of the display that was inside 20, just as Judge Lee
21 was noting.

22 JUDGE LEE: Counsel, but I remember Petitioner presented a
23 typical LCD structure and it shows a cover glass with a gap, and then, the
24 image pixels. So, I think they're relying on the typical structure of an LCD
25 to say, well, there is a channel between the cover glass of an LCD and the
26 image-generating part. And that's inside the blue part, and if there's air

1 going through it, then there would be air passing between the LCD and a
2 cover glass. What's your response?

3 MR. MORLOCK: Your Honor, with respect to Yare, the blue
4 box in Figure 4, as shown on page 69 of the petition, is something that
5 Petitioner just added. There is no indication that there is airflow around that
6 blue box because it's not in the figure.

7 Now, if there is an LCD display within element 20 with that
8 enclosure, there is no indication of where it is placed and no indication that it
9 would be placed such that there would be airflow across its front face.

10 And instead, as Dr. Pokharna testifies, you wouldn't set that
11 LCD display back from the screen because that creates more opportunity for
12 distortion, more opportunity for fog, condensation, what have you, that
13 would interfere with the image of that display.

14 And that's why, aside from not being described in Yare at all --
15 and this figure, it's just incorrect and does not show what Yare shows -- you
16 wouldn't modify it, even in a way that would resemble what Petitioner has
17 proposed here. It's just --

18 JUDGE LEE: Yes, but the fogging issue, the parties are
19 completely at odds, right? Because they say they want to move the display
20 20 back from the cover of the cabinet because that will reduce fogging. And
21 you're saying, no, if you move it back, it will actually increase fogging. Is
22 that --

23 MR. MORLOCK: Yes, Your Honor, there is more risk of fog
24 because there's more space for the fog to form. You're going to have a
25 greater area for temperature differential between the front face of the LCD
26 and whatever the exterior display is. And that's going to create --

1 JUDGE LEE: How do we resolve that? They say that moving
2 it back actually cures fogging, and you're saying, no, moving it back causes
3 fogging. And, you know, we're not technical experts.

4 MR. MORLOCK: So, it is competing expert testimony from
5 Dr. Pokharna, who explains at Exhibit 2024, paragraphs -- I believe it's
6 paragraph 135 where he explains that. So, we have expert testimony.

7 Further, Your Honor, this is Petitioner's burden. It's not Patent
8 Owner's burden here. The Petitioner has the burden of establishing that the
9 claims would be obvious, and they're attempting to do so with a
10 modification that is not supported by the prior art, based on graphics that
11 they drew themselves with no indication that those drawings are even there.
12 They've just pulled them and placed them, and they've placed them where
13 they view --

14 JUDGE LEE: Yes, this is important. What difference does it
15 make whether you move 20 back from being an abutment with the cabinet
16 glass? What difference does that make if 20 is not itself the LCD? You
17 know, the LCD is inside. And so, it doesn't matter where you move it, the
18 LCD is still inside it. So, it seems to make no difference.

19 MR. MORLOCK: So, if you move the whole display system
20 20, as described by Yare, back, it does absolutely nothing with respect to the
21 claim. That would not meet the claim because what is required is airflow
22 across the front of the display element. So --

23 JUDGE LEE: Yes, that's where I'm confused. It seems to have
24 nothing to do with anything if the LCD is inside the display. That's why I
25 asked Petitioner at the very beginning, "What are you relying on to meet the
26 electronic image assembly?" I thought they were going to say they rely on

1 20, but they didn't. They say they're relying on the LCD which is inside 20.

2 Well, if that's the case, then I don't see the relevance of where
3 you put 20. Because the LCD is inside 20. If you move it back, it's still
4 inside 20. If you don't move it, it's still inside 20. It seems to have nothing
5 to do with anything.

6 MR. MORLOCK: And I agree, Your Honor, and I think part of
7 the issue here is, looking at the figure we still have on the display, the arrow
8 that is extended in 20 is attempting to ignore that what Yare describes as the
9 display system 20 is a whole large trapezoidal area, and instead, say that
10 what 20 is actually talking about is this rectangle that they drew within the
11 case that is actually referred to in Yare as 20.

12 That's why it's so confusing, and that's why it can't carry
13 Petitioner's burden here. Because I'm not sure what they're trying to show,
14 and they've certainly moved their argument from what's in the petition now.
15 That's not enough to carry their burden.

16 MR. MORLOCK: I see. Let's assume, giving them the benefit
17 of the doubt, hypothetically, okay, there's air going through device 20, and
18 that inside device 20 there is an LCD and a cover glass, and there's space
19 separating it.

20 So, if all the air is going from bottom to up, then there's
21 certainly some air traveling up between the LCD and the cover glass. Let's
22 say, hypothetically, we give them that.

23 But the claims require about or encircle; the air's got to come
24 back down. I don't get the other half, where the air comes back down to
25 encircle the LCD that's inside 20. I tried to ask, but I don't think I
26 understand the answer. I would like to hear your part of it. Where is there

1 any air that's coming back down to form a circle, to encircle the LCD that's
2 inside element 20?

3 MR. MORLOCK: Okay. There isn't any, Your Honor. I think
4 that's the answer. I see nothing in the figures, in the argument that is
5 presented in the petition, that suggests there is air that encircles any display
6 element. Because, again, the only thing that Petitioner has argued is the
7 display element is 20 itself, and then, they've added an arrow extending to a
8 blue rectangle and said, "Oh, well, that's 20."

9 JUDGE LEE: Okay. I think it's important that -- we don't like
10 parties to switch positions. That's not fair to the other party. So, tell us
11 where they were not consistent. Like did you understand them to be always
12 arguing 20 is the electronic image assembly, and suddenly, today you hear
13 that, oh, no, they're relying on something that's inside of it? Is there
14 inconsistency in their arguments, in their presentation?

15 MR. MORLOCK: Yes, Your Honor. And I think it's the new
16 argument that you're describing, this new image assembly inside this.
17 Because what we see here is they've labeled 20 as an LCD display, the
18 electronic image assembly, and drawn an arrow. But what's actually 20 in
19 the figure is a display system that is described completely differently.

20 For example, it's on page 10 and it's the second full paragraph
21 that describes a display 20 for displaying information, and it's sealed within
22 a cabinet in sealed zone 30. So, what's actually described in Yare is
23 different from what they've ever argued, and they're now moving to a new
24 argument that suggests there's some enclosed thing within Yare.

25 JUDGE LEE: Did your Patent Owner response express any
26 confusion or inconsistency in that regard?

1 MR. MORLOCK: Well, the movement on Yare I don't think
2 changed until they saw our Patent Owner response, Your Honor. And part
3 of that is because these exact same arguments were what were rejected by
4 the ITC.

5 JUDGE LEE: So, are you saying -- you're not confused by
6 their petition?

7 MR. MORLOCK: I mean, we are confused by their petition,
8 but we're confused by the argument that they're switching to today. And as
9 we've addressed in briefing, what argument is in the petition is different than
10 what they're attempting to

11 JUDGE LEE: Oh, I see. So, you are saying they focused on
12 flow for outside of 20, and today you're hearing that they're relying on flow
13 that's inside 20?

14 MR. MORLOCK: Yes, Your Honor.

15 JUDGE LEE: Okay. Thank you.

16 MR. MORLOCK: And, Your Honor, I'd just conclude that
17 Ground 2 fails because of what assembly was not disclosed by Yare and the
18 modification that the Petitioner proposes. With that, I'd like to turn it over
19 briefly to Ms. Anderson to address the combination with Larson, and then,
20 Mr. Reed will address secondary considerations, and we'll reserve the
21 remainder of our time after they present that.

22 MS. ANDERSON: Good afternoon, Your Honors. My name is
23 Andie Anderson, and I'm going to talk to you guys about Petitioner's
24 proposed modification of Karppanen and Yare with Larson.

25 One of the inventive features of the claims of the '142 patent
26 was the recognition that you could use the front cover glass itself. The thing

1 that is normally transporting massive amounts of energy into the system is
2 part of the cooling system. By applying certain kinds of coatings, you can
3 prevent energy from entering the system and increase the overall efficiency.

4 Petitioners have to rely on Larson to reach the claims of the
5 '142 patent, because Karppanen and Yare are silent as to the nature of the
6 glass and its functionality within any cooling. All that Karppanen and Yare
7 describe are a system of cooling a display by pulling the heat that's inside
8 out through various airflows.

9 But a person of ordinary skill in the art would not be motivated
10 to combine Larson with Karppanen and Yare because, first, Larson
11 addresses optical phenomena of internal reflectances. It doesn't discuss
12 cooling. And even where it does discuss their solutions for optical
13 phenomena, it indicates that, to a person of ordinary skill in the art, that their
14 solution is keeping heat inside of the system, which would entirely frustrate
15 the goal of both Karppanen and Yare, which attempt to create a system that's
16 pulling heat out and not trying to keep heat in, not adding things to increase
17 the thermal load. So, let's look directly at what Larson has to say on the
18 matter. Ms. Gray, can you please pull up Exhibit 1005, and go to page 6?

19 So, Larson describes on the inside of its front cover glass is
20 what it calls an auxiliary polarizer, an extra polarizer, auxiliary polarizer 20.
21 And it consistently refers to this auxiliary polarizer 20 as an absorbing
22 polarizer.

23 For more detail on what that means, if we go down on the same
24 column to column 3, lines 59 through 61, of Exhibit 1005, it goes on to say
25 that this polarizer is configured to prevent solar energy -- or sorry -- this
26 polarizer prevents light from leaving the system. It's absorbed and not

1 transmitted to the user. It keeps it in there, and light is this form of energy.

2 So, to a person of ordinary skill in the art, they would read this
3 disclosure and they would conclude that this auxiliary polarizer 20 is
4 keeping heat in, which would frustrate the purpose of person of ordinary
5 skill in the art and Yare, which are trying to pull heat out, not add heat in.

6 Petitioner themselves continuously acknowledge Larson's
7 description of this polarizer and even note themselves a person of ordinary
8 skill in the art would conclude that polarizer is holding solar energy inside of
9 the system.

10 Paper 9, which is the petition, on page 35 of the petition, page
11 43 overall of the PDF, Petitioner states, "Larson discloses a polarizer as an
12 'absorbing layer' that can absorb ambient light," not just light coming from
13 the LCD and back by itself, but light coming from outside of the system,
14 heat coming from the sun.

15 And Petitioner's expert, Mr. Smith-Gillespie, goes on and gives
16 further detail to this. And his declaration, which is Exhibit 1002 here, on
17 page 47, paragraph 71, he says, "Note that polarizers naturally absorb at
18 least some [sun]light. Larson's proposed absorbing polarizer would absorb
19 at least some sunlight when used in an outdoor environment."

20 So, even Smith-Gillespie recognizes that a POSITA would read
21 this description inside of Larson and conclude that heat kept in, being kept in
22 at that layer, auxiliary polarizer 20, which is inside the front surface of the
23 cover glass, facing whatever is in between it and the front surface of the
24 LCD, in contact with whatever is there.

25 And Dr. Pokharna went on to explain that this teaches away to a
26 person of ordinary skill in the art to use Larson and Karppanen and Yare's

1 system. So, looking at his declaration, which is Exhibit 2024, on page 93 of
2 the exhibit, paragraphs 171 and 172, starting on 171, Dr. Pokharna states,
3 "Larson...even describes its technology as 'absorbing' solar energy." So, to
4 a person of ordinary skill, "rather than deflecting and preventing energy
5 from entering the system," it would absorb and keep heat in.

6 And the last sentence on 172, he concludes, "Larson's teaching
7 of 'absorbing' solar energy would teach away from combining it" from
8 systems like Karppanen or Yare that expressly teach their purpose is to
9 remove heat, not keep heat in.

10 This teaching away of combining the two, the Karppanen/Yare,
11 with Larson underscores the non-obviousness of the claims of the '142
12 patent. And that non-obviousness is only further highlighted by the strong
13 evidence of secondary considerations in this case, which my colleague, Mr.
14 Reed, will now talk about.

15 MR. REED: Ms. Gray, could you pull up slide 14, please?
16 Good afternoon, Your Honors. David Reed, for the Patent Owner MRI, and
17 I'll be discussing secondary considerations. It looks like I'll be extending
18 into our surrebuttal time, but that's okay. I want to take the time to discuss
19 these secondary considerations, which are really important in this case,
20 which are extraordinarily strong.

21 And it's a real-world story, a real-story of the development of
22 outdoor displays by Samsung and by MRI, which shows that MRI's
23 inventions were not obvious at the time of MRI's invention.

24 Now, MRI's invention, the patent applications date back to
25 2008. And before 2008, companies wanted to use their displays outdoors,
26 but there were not effective solutions for doing so. And the problem was the

1 heat. We've heard about this. Outdoor displays need to be very bright to be
2 visible. Those backlights and the other electronics generate a lot of heat.
3 An even greater source of heat is the sun. And all of that heat would quickly
4 destroy an LCD if there's not an effective cooling system that can remove
5 that heat from the system. But again, there were no effective solutions back
6 at the time of MRI's invention. And this was not for lack of trying.

7 Many companies were trying to develop outdoor displays, ways
8 of keeping these displays cool. There was a 13-page-long list of prior art
9 that was presented in that ITC. That's Exhibit 2027 in these proceedings.

10 Samsung is one of the companies on much of this prior art. But
11 Samsung did not solve the problem. It was MRI's invention that solved the
12 problem.

13 We'll see that Samsung itself failed to come up with a
14 successful outdoor LCD display for over a decade. They started the research
15 at least by 2005. They had no outdoor product until 2010. At that point,
16 they resorted to refrigeration for cooling.

17 They kept working; came out with their first fan-cooled display
18 in 2013 to 2015. Didn't practice the patents. It failed. Ultimately, Samsung
19 finally resorted to copying MRI. That's how they achieved, finally achieved
20 success.

21 Not only that, the record shows that Samsung performed
22 product teardowns during its development. It's undisputed that Samsung's
23 OH – F and subsequent products practiced the claims.

24 JUDGE HUDALLA: But again, the idea that there was
25 copying because of the teardowns, isn't there a timing issue? I think the
26 Petitioner said there that they didn't tear down stuff until after their products

1 were on the market. Isn't that -- because you can't just have infringement to
2 show copying for secondary considerations. You would agree with that,
3 right?

4 MR. REED: I agree that the Iron Barbell, I believe, case states
5 that, but we cited the PPC Broadband case that says that, where the evidence
6 shows that a product is the invention disclosed and claimed in the patent --
7 I'm sorry.

8 It was the Institute Pasteur case, where the party, the product,
9 that was developing the product duplicated the features of the patentee's
10 work and had access to that work. That equals copying. So, access during
11 development, plus duplication of features, is copying.

12 JUDGE HUDALLA: Well, what about if they're saying the
13 access happened after the development was already over -- is what I think
14 they were saying.

15 MR. REED: The record doesn't show that. It shows that the
16 teardowns occurred during the development process. The products weren't
17 on the market until after -- and there's no evidence to the contrary.

18 JUDGE HUDALLA: Okay. As you're going forward, too, I'd
19 like to hear a lot more about nexus. I think that's the big issue here, too.

20 MR. REED: Yes, Your Honor, and let's walk through some of
21 the evidence, starting with long-felt need with a focus on the nexus. Let's go
22 to slide 15.

23 Now, this is an excerpt from a white paper that Samsung
24 published. During my colleague's opening, he stated that all of the evidence
25 here was presented in the ITC. That's incorrect. This document was not
26 before the ITC. It establishes a very clear nexus between the long-felt need,

1 the unmet need, the failure of others to the cooling systems that are at issue
2 here.

3 JUDGE HUDALLA: On 15 here, what is the evidence of
4 nexus in this demonstrative?

5 MR. REED: So here, companies wanted to put their message
6 outdoors. So, that's what this document states. This is in Samsung's own
7 words. Companies wanted their message outdoors, but that was a challenge.
8 They wanted to do it. It's disputed whether there was a long-felt need. So,
9 let me cover that part first before it's unmet.

10 The long-felt need is that companies wanted their high-impact
11 digital, dynamic messaging outdoors. They wanted their advertising to get
12 noticed. They wanted a moving content and a dynamic content. That's stated
13 here.

14 What also stated here is that, this way, companies were
15 challenged by a variety of issues during the early years. This need was
16 unmet. And as it states in the highlight, "The biggest obstacle was heat --
17 from inside and [from] the sun."

18 And the solution that was conventional at the time is stated
19 here. It's highlighted on the right. Where temperatures were an issue, this
20 document -- again, Samsung's own words -- states that the solution at the
21 time was to build "air conditioned, sealed enclosures."

22 So, that tells us that, in the real world, what was the solution
23 that others considered obvious. It was air conditioning, sealed enclosures.
24 That was the only solution that had been found to be effective. Fan cooling,
25 there was no solution that it was effective. It was out there.

26 On the next slide, 16, Samsung called conquering this an

1 "enormous engineering challenge," conquering what Mother Nature threw at
2 these displays.

3 So, I mean, they explained it. "Many early adopters...saw
4 [their] screens and systems fail because" of the engineering and the
5 components weren't up to snuff. They "weren't up to the task of working in
6 [the] heat and [the] blazing sun."

7 And Samsung tried to solve this problem. And the nexus is,
8 what did Samsung consider to be obvious? What did their team of
9 engineers, what solutions did they land on at the time? That tells us the real
10 story of what individuals trying to solve this problem would have considered
11 to be obvious.

12 If we turn to slide 17 -- oh, let's turn to slide 18 actually. This
13 is testimony that's in the record from Mr. Sung Ki Kim, who is one of
14 Samsung's engineers for outdoor LCD displays.

15 He began working on the project in 2005. So, that's a few years
16 before the date of the invention here. And he testified, no, Samsung did not
17 have any actual outdoor display product on the market at that time.

18 So, if we turn to slide 19, Samsung was working hard during
19 this relevant time period, between 2005 leading up to that 2008 MRI date.
20 And Samsung's development efforts were reflected in its patent filings. And
21 during this time period, Samsung filed numerous patent applications on
22 cooling apparatuses in outdoor displays. At the same time, MRI, halfway
23 around the world, was working in Alpharetta, Georgia, on the same
24 problem. Notably, none of these references are cited as prior art in this
25 proceeding or these two proceedings.

26 So, what did Samsung actually do? Let's turn to slide 20.

1 Samsung finally introduced an outdoor product in the 2010-through-2012
2 timeframe. How did that product work? It worked through air conditioning,
3 through refrigeration. Again, Samsung had all these resources, all of this
4 investment in R&D. They didn't come up with the heat exchanger approach.
5 What did they come up with? They came up with just using the air
6 conditioning, the conventional approach. Let's turn to slide 21.

7 JUDGE LEE: May I remind you that you're already five
8 minutes into your rebuttal time?

9 MR. REED: Thank you, Your Honor.

10 JUDGE LEE: You reserved 30. So now, you already used up
11 five of 30.

12 MR. REED: Five of the rebuttal time. Thank you. I'll
13 continue. A few years later, Samsung introduced a new outdoor product.
14 This was the OH D product, what they called the OH D product. Now, Mr.
15 Kim's testimony, this product failed, and Mr. Kim's testimony on that is
16 redacted. So, I'm not going to discuss the details here, so we can keep the
17 courtroom open to the public.

18 But what's not redacted in the parties' briefing is that the
19 generated heat was not being taken out well, resulting in a rise in
20 temperature. That's in paper 33 at 57.

21 So, Samsung's first effort in a non-refrigerated product failed.
22 They still hadn't come up with the heat exchanger approach that they now
23 contend is obvious.

24 To turn to slide 22, we now reach the 2016-2017 timeframe.
25 It's over a decade after 2005, when Mr. Kim started trying to develop an
26 outdoor product. And Samsung finally creates the OH F product. That's the

1 product that infringes. That's the product that finally proves successful.

2 And it took a decade to do this. That's not obvious.

3 So, let's turn to slide 23 briefly. The picture here on the left is
4 Samsung's 75 or 85-inch -- they're configured the same -- OH products that
5 practice the patents. It's undisputed that they practice the patents. So, I'm
6 not going to spend a lot of time on this.

7 Suffice it to say they use a closed loop and an open loop with a
8 heat exchanger in the pathway of the open and closed loops to transfer heat
9 from that closed loop to that open loop. And the ITC found that these
10 products infringe. Again, that's not disputed here.

11 Let's turn briefly to slide 25 as well. It's also undisputed that
12 MRI's products practice the patents. They work. They're very similar to
13 Samsung's products. The ITC again found that MRI's products practice the
14 patents. That's not disputed here.

15 Turning to the next slide, 26, to touch back on the nexus point,
16 it's undisputed here that these products of Samsung's OH F and subsequent
17 products have achieved commercial success, based on their very large sales.
18 They're in the record. They're not -- they're redacted, sealed. So, I won't
19 talk about the numbers, but that's there for the Board to look at. It's also
20 undisputed that MRI's products have been commercially successful.

21 Now, Samsung only argues nexus, but nexus is presumed here.
22 First of all, the products practice the claims. The products are undisputably
23 commercially successful. That commercial success is attributable to the
24 cooling system. Without a cooling system, there are no outdoor displays.
25 You heard Mr. Morlock explain that the displays on the wall of the
26 courtroom here, they don't need a cooling system. They sit inside. They're

1 not exposed to the elements.

2 It is the cooling system that makes an outdoor display an
3 outdoor display. And in the PPC Broadband case that we've cited in our
4 briefing, where the evidence shows that a product is the invention disclosed
5 and claimed in the patent, we presume that any commercial success of the
6 products is due to the patented invention. This is true even, the case says,
7 this is true even when the product has additional unclaimed features. It's on
8 Petitioner in an IPR that has the means to rebut the patentee's evidence.

9 Now, Samsung has pointed to other features, alleged other
10 features. Some of those are listed in this excerpt here from Patent Owner's
11 response -- surreply. I'm sorry. Surreply.

12 Samsung hasn't, first of all, produced any evidence that any of
13 these features drove sales. And they could have done that; they haven't.

14 And moreover, many of these features are actually aspects of
15 MRI's claimed invention. They point to the "magic glass". That's the solar
16 energy reduction layer. That's a recited element of the claims of the '142
17 patent.

18 They point to water- and dust-resistance, the IP56 certification.
19 That's a closed loop under the patents. That's part of the claims.

20 They point to excellent visibility. These claims enable products
21 to be used with really bright backlights that are visible and to still remove
22 the heat from those backlights from the system. That's what this invention
23 enables.

24 They point to extreme outdoor durability. That's the entire
25 point of the invention here -- to provide that ability to use these displays in
26 the harsh elements.

1 And I would also say, regardless of the presumption of nexus,
2 the secondary considerations evidence is directly tied to the cooling system.
3 If you look at Samsung's own marketing materials, you'll see the evidence of
4 the importance of cooling.

5 I can't pull it up on the screen, but, at Exhibit 2038, there's a
6 customer presentation for a big Samsung customer. And if you look at
7 pages 8 to 27, the first dozens of pages, you'll see that thermal management
8 was important to the marketing and sale of Samsung's displays -- critically
9 important.

10 Now, Samsung's biggest competitor is LG, main competitor in
11 the display market. Others have recognized MRI's innovations and licensed
12 MRI's patents. LG is one of those companies that willingly licensed MRI's
13 patents. Not only that, they entered a joint venture with MRI. Others have
14 also licensed. This is exhibits 2049 through 2052. That's just additional
15 evidence of the recognition in the industry of the validity of MRI's patents.

16 Now, I also want to talk about copying on slide 27. There's also
17 evidence of copying here. This is an excerpt from the Patent Owner
18 response, the public version.

19 It says that -- and I'll just read from it -- "A team of Samsung
20 engineers obtained and tore down two of" blank company's "products: a
21 large format product and a mid-sized product." Now, Samsung wanted this
22 redacted. You've reviewed the briefing. You probably know whose
23 products these are. If you would like to look behind the redactions, it's paper
24 17 at pages 60 to 61. So, I won't mention the company's name here.

25 But if you review this evidence and review Exhibit 2042, you'll
26 see that these teardowns were extremely, extraordinarily detailed. They

1 dispute the timing of when during the development they occurred, but they
2 were done during the product development. And that's access. The access
3 during the development, coupled with the replication of the patented
4 features, is copying under the Institute Pasteur case I talked about earlier.
5 This copying is strong evidence of obviousness, particularly when you
6 couple this evidence with the preceding decade of failure to have a
7 successful outdoor product that led up to this development.

8 Finally, I'd like to turn to slide 28 and look at what Samsung
9 was saying about MRI in private. Samsung recognized that MRI was the
10 pioneer in this field. This is an email that Samsung sent to Mr. Dunn, the
11 inventor, in which Samsung is proposing that it embrace the MRI
12 technology. It called MRI's technology "impressive and unique."

13 It states that MRI entered a "virgin space." And that's true;
14 MRI created the market for outdoor displays. Without these cooling systems
15 that are effective, you don't have a market. So, this is a virgin space; said he
16 pioneered this space for DOOH, which stands for digital out-of-home, the
17 industry name for the digital outdoor advertising market.

18 This is not the type of email that one company sends to another
19 when they think their patent is invalid.

20 So, to conclude, turning to slide 29, even if Samsung had
21 presented a strong obviousness case, the secondary considerations would
22 have overcome it. They have to be considered en route to a determination
23 on that question.

24 But this is not a strong obviousness case, as we've heard from
25 Mr. Morlock and Ms. Anderson. Samsung didn't find any reference that
26 teaches MRI's claims. They've only presented obviousness grounds here.

1 The real-world evidence is that Samsung itself, nor any others, found MRI's
2 invention to be obvious back in 2008. It took them a decade to come out
3 with a successful product -- success they only achieved after copying MRI's
4 invention.

5 So, we'll reserve the remainder of our time for surrebuttal,
6 unless there are any other questions.

7 JUDGE LEE: No, we don't. Let's see, 20, 40. You have used
8 up 15. So, you'll have 15 minutes left for your surrebuttal.

9 MR. REDDY: Your Honor, may I proceed?

10 JUDGE LEE: Anytime you're ready, please, sir.

11 MR. REDDY: Once again, Your Honors, Srikanth Reddy, on
12 behalf of the Petitioners.

13 I'd like to start with slide 60 from our presentation, which is to
14 respond to the comment that was made regarding Claim 6 in the '142 patent
15 as it relates to the meaning of heat exchanger.

16 Now, the argument that was presented, essentially, illustrates
17 our exact point. Claim 6, the heat exchanger limitation, as explained by
18 Patent Owner, stated that the heat exchanger is located rearward of the
19 electronic image assembly, where the first portion of the heat exchanger
20 forms a part of said open loop airflow pathway and where a second portion
21 of said heat exchanger forms part of the closed loop gas circulation pathway.

22 Now, if the Patent Owner's interpretation of what heat
23 exchanger means -- then all of that language I just read would be
24 superfluous. Because the heat exchanger would always form part of the
25 open loop pathway and the closed loop pathway, essentially, the point that
26 they are trying to make. There would be no need for any of that language if

1 the term "heat exchanger" meant what Patent Owner claims that it means.

2 Now, I would like to just briefly touch on the points about
3 disavowal and lexicography that were raised in Patent Owner's presentation.

4 Now, as I believe Your Honors were all familiar with, the briefing here
5 never used the word "disavowal," never discussed lexicography. And they
6 didn't suggest that those doctrines applied here. And as I mentioned, they
7 simply don't.

8 When we talk through the background of the invention, the
9 language that's discussed, you know, perhaps criticizing even some different
10 types of prior art systems, doesn't rise to the level of expressed disavowal.

11 I think the poster child, if you will, part of the background that
12 was relied on by the Patent Owner discusses the use of fins. And it says that
13 air from -- heat from inside a display could be transferred to fins. But, as I
14 alluded to in my opening presentation, there's no discussion there about heat
15 exchange. Nothing talked about getting the heat out of the fins necessarily.
16 And that's just one reason why this doesn't rise to the level of disavowal for
17 any heat exchanger like those discussed within Karppanen.

18 JUDGE LEE: Mr. Reddy, it's Judge Lee.

19 All those textbook references Patent Owner identified, though,
20 when you go through the chapters identified by the Patent Owner, they do
21 have a separate chapter on heat exchanger, and then, they have a separate
22 chapter on something else, right?

23 So, what's your response? Does that mean whatever is not in
24 the heat exchanger chapter would not be a heat exchanger? Or is that too far
25 astray?

26 MR. REDDY: Absolutely not, Your Honor. In fact, those, the

1 references, those secondary references that Dr. Pokharna raised, we would
2 submit that those merely illustrate our point. It's a broad term and that
3 there's plenty of different devices that are considered heat exchangers. The
4 Patent Owner chose those for a reason, right? Those aren't the definitive,
5 guiding references for what constitute a heat exchanger.

6 And as we've shown, the prior art considered many different
7 types of devices to be heat exchangers. In fact, even Dr. Pokharna agrees
8 that those devices are, in fact, types of heat exchangers. Now. I would like
9 to move on, briefly, to discuss the level of ordinary skill. If we can go to
10 slide 4, please?

11 Now, on slide 4, we identified what our position is regarding
12 the level of ordinary skill. There has been some discussion about whether or
13 not a person skilled in the art would understand design issues and the like,
14 but there's no dispute between the parties that seems to turn on the level of
15 ordinary skill. The level of ordinary skill, as we've defined it, is set forth in
16 our papers and it's reflected on slide 4.

17 JUDGE LEE: Mr. Reddy, it's Judge Lee. What do you mean
18 there's no dispute? I seem to have read their argument that they disagree
19 with your statement of the level.

20 MR. REDDY: So, as we understand their position, they
21 disagree -- during the deposition of Mr. Smith-Gillespie, they asked him
22 some questions about different experiences that may be relevant to a
23 person's skill in the art. And something came about regarding whether an
24 industrial designer per se would have the level of ordinary skill in the art.
25 That's not our position, that an industrial designer alone would be sufficient
26 to satisfy this limitation.

1 JUDGE LEE: Well, is the word "industrial design" or "product
2 design"? I get them confused.

3 MR. REDDY: Well, so the Petitioner's proposed definition of
4 the level of ordinary skill simply says that the POSA would have an
5 understanding of product design issues. They don't have to be a product
6 designer or an industrial designer.

7 JUDGE LEE: So, you don't have the reply, the response in
8 your reply. So, I'm wondering what the response is. Are you telling us that
9 you don't actually mean a POSITA necessarily would have a degree of some
10 sort in product design?

11 MR. REDDY: Well, they do not need to have a degree in
12 product design. Our position regarding the level of ordinary skill has been
13 consistent. It's reflected on side 4, as well as in our papers.

14 JUDGE LEE: Well, if that's true, then there's no dispute.

15 MR. REDDY: Correct. That's how we understand it, and that's
16 why -- and more importantly, there's no merits dispute that appears to turn
17 on the definition of the level of ordinary skill in the art.

18 Now, I'd like to move on to the Yare reference. There was
19 quite a bit of discussion regarding whether or not Petitioner has been
20 consistent in its position with respect to Yare. If I could have slide 34,
21 please?

22 Now, to note for the record, so pages 67 through 70 from the
23 petition describe in detail Petitioner's position as to what the display is
24 within Yare, as well as what constitutes the closed loop, as well as how the
25 closed loop airflow flows behind the display.

26 And just so it's clear for the record, just to highlight a few

1 instances, on page 67, the petition states that "Solid arrows show the
2 movement of air within the sealed zone."

3 On page 68, we wrote, "As annotated in Figure 4 above" --
4 which is substantively identical to what's being shown on the screen -- "the
5 display 20 is highlighted blue, but it's not actually illustrated in Figure 4.
6 However, a POSITA would understand that this is the most logical location
7 for the display."

8 In addition, on page 69, we, likewise, wrote, "The L shaped
9 arrows show that the air flows in front of the display in the space between
10 the transparent outer surface of the cabinet 10 and the front of where display
11 20 would be located. Thus, the flow of air within the sealed zone 30
12 encircles the display 20."

13 That's the position that was presented in the petition and it's still
14 the position that we present today. The Patent Owner has been aware of this
15 issue. They have been aware of this dispute. It was hotly contested and
16 litigated before the ITC. And their response to this argument is certainly
17 reflected in their papers.

18 So, I just wanted to make sure that I explained in detail how it
19 is that we believe we've been consistent in our position throughout the
20 course of the proceedings.

21 Now, I'd like to move on to -- or I'm sorry. I would like to go
22 back to slide 21 now. I'm sorry, one further point on Karppanen.

23 We heard a lot from Patent Owner about the importance of the
24 heat exchanger forming part of the open loop and the closed loop. Well,
25 Karppanen, the heat exchanger in Karppanen does, in fact, form part of the
26 open loop, as well as the closed loop.

1 As you can see, the fins, which are part of the first heat transfer
2 part, and the fins on the second heat transfer part, which is element 62,
3 they're connected. And they're connected to each other, and heat is
4 transferred from the first heat transfer part to the second heat transfer part.
5 In between them is a barrier which forms the open loop and the closed loop.
6 So, even the heat exchanger in Karppanen is forming portions of the open
7 loop and the closed loop.

8 The second point I just wanted to make sure was clear is that, in
9 Karppanen, at least the second heat transfer part, it's not operating as a heat
10 sink. In fact, it's doing the opposite. It's releasing heat. Remember, ambient
11 air flows over the second heat transfer part, transfers the heat that has been
12 put there by the first transfer part, and exits it into the environment. It's not
13 simply a heat sink, as Patent Owner's counsel stated on several occasions.
14 Now, I would like to discuss

15 JUDGE LEE: Mr. Reddy, it's Judge Lee.

16 I'm looking at your slide 4, which you refer to about the level of
17 skill. I don't think that answers their question. Yes, true, you don't have to
18 have a degree in product design to be a POSITA, but it looks like, according
19 to your definition, if you do have a degree in product design, that qualifies
20 you as a POSITA. And that's what they don't like about it.

21 They're saying, a product designer, what is that? You know,
22 you don't know enough about heat reduction to know what is the heat
23 exchanger.

24 MR. REDDY: The degree could be sufficient, but the next
25 sentence, of course, says the person must have relevant experience working
26 in the field. So, it's really a combination of those two things. Having a

1 degree in product design is certainly not necessary to have the level of
2 ordinary skill, but it could be sufficient if combined with relevant experience
3 in the field.

4 JUDGE LEE: So, what is product design? I'm not sure. I
5 mean, in some countries, that might be ornamental designs of a product.

6 MR. REDDY: Right.

7 JUDGE LEE: So, I don't understand. What is it?

8 MR. REDDY: Sure. So, part of where that comes from is the
9 history of these outdoor displays, right? For a long time, subway stations,
10 they would have things that were commonly referred to as "street furniture."
11 And industrial designers were the ones who designed those products. And a
12 lot of this industry was born from that, like this notion of putting these
13 pieces of street furniture out in the market. And as technology evolved,
14 those that they could, then, replace, static posters and things like that, were
15 the LCD displays.

16 So, when we refer to product design, we're referring to the
17 industrial designers who kind of pioneered the field through their use and
18 through their work in those environments.

19 JUDGE LEE: So, not ornamentation?

20 MR. REDDY: Well, certainly not somebody who, you know,
21 makes it look appealing, aesthetically pleasing for the public, right?

22 JUDGE LEE: Well, I mean, a better-looking product.

23 MR. REDDY: Right. Right. No, it's really born out of the
24 history, as I described it, which happens to be how this industry itself came
25 to be.

26 JUDGE LEE: I'm looking at mechanical engineering. That

1 doesn't really tell me a degree in mechanical engineering would teach the
2 person about heat reduction in any specific products.

3 MR. REDDY: Well, and that's why the experience is so
4 important, right? That the degree alone is not sufficient; that the experience
5 is also important. And having a degree in mechanical engineering, that
6 would certainly help you understand how to make the sheet metal, for
7 example, like that engineer, the actual product itself. That's certainly the
8 aspects that a mechanical engineer would -- the degree in medical (sic)
9 engineering would certainly be helpful, too, but, again, that's not sufficient,
10 right? You still need to have the experience in order to have the requisite
11 level of skill.

12 JUDGE LEE: You didn't answer in your reply about their
13 saying, if you move element 20 further back, it actually creates fogging. So,
14 you have two experts saying opposite things.

15 MR. REDDY: Right. And so, moving on to that Yare
16 reference, so really, you recall there were three references that we discussed
17 with respect to an alternative obviousness argument on creating that gap,
18 right? It was Pandolfi. It was Pandolfi and -- sorry -- the other two were
19 Heti, and the third is $\neg$ and the third is, oh, I'm sorry, the Larson reference,
20 right? Each of those three references discussed the importance of having a
21 gap and how $\neg$ and the advantages that would happen from having that gap,
22 including solving the fog issue, right? In fact, it would be, as we noted in
23 our papers, the opposite would be true. Putting the display directly next to
24 the cover glass would itself cause some of that fogging to occur.

25 JUDGE LEE: Directly next, you mean with no space?

26 MR. REDDY: With no space in between, right. That's one of

1 the advantages of the air gap. Using the air gap, you equalize the
2 temperature between the outer surface and the display, and thereby, reduce
3 fogging.

4 JUDGE LEE: And if there's no space, there's fogging, is your
5 point?

6 MR. REDDY: That's right. If you put a space in there, you
7 equilibrate the temperature from the outside to the front of the display, and
8 that prevents the fogging. That's why this is done.

9 All right. Now, I'd like to move on to secondary
10 considerations. And really, let's start with slide 52, which is the discussion
11 regarding failure of others.

12 Now, the Patent Owner discussed Exhibit 2025, and this
13 document really specifically illustrates the lack of nexus that's present here.
14 So, that particular document, which, again, was discussed in Patent Owner's
15 presentation, it talks about -- it gives a generalized discussion about the need
16 for advanced cooling systems in displays. It talks about how that in the past
17 it was difficult to design these cooling systems.

18 And then, it says that Samsung has new products that address
19 those cooling systems. Well, what are the products that are discussed in that
20 product? It's a 46-inch display. The 46-inch display was never accused of
21 infringement in the ITC case, and there's no adjudication that the 46-inch
22 product infringes the '740 patent or the '142 patent.

23 JUDGE HUDALLA: So, you're saying that the air
24 conditioning -- I think it was an air conditioning product, is that right?

25 MR. REDDY: That's not an air conditioning product. Frankly,
26 it's another Samsung product that uses a different cooling system. That's not

1 at all relevant to what was -- you know, it was not accused of infringing
2 either of these products. And really, that illustrates why this evidence is
3 purely generalized and not specifically tied to any specific features. And if
4 we can go to -- I'm sorry. One moment.

5 JUDGE HUDALLA: Could you talk about the timeframe of
6 the alleged copying? I think that was an issue that came up.

7 MR. REDDY: Sure. If I can have slide 53, please?

8 So, with respect to the timing, right, the issue, which, again, is
9 reflected in the confidential record, as discussed in our papers, really relates
10 to a date that's on the front page of a document versus the evidence that's
11 discussed further in that document.

12 There's evidence in that document which demonstrates that the
13 accused product was actually made, that there was nothing -- there was no
14 further design work that needed to be done, and that evidence, like I said, is
15 cited in our papers, and was, of course, reflected in the information that's
16 shown in the actual photographs in that relevant document.

17 But, more importantly, there isn't any evidence that any specific
18 feature was copied. We haven't seen anything about the product that was
19 allegedly torn down and a feature that it had, and a mapping of that product
20 to the accused products, much less an explanation for how that shows or
21 how that specific component is relevant to the challenged claims.

22 And the Patent Owner knows this, right? This exact issue was
23 presented in the ITC. We litigated the issue at the ITC. None of the facts
24 have changed on this copying issue.

25 JUDGE HUDALLA: How do you respond to their PPC
26 Broadband argument then?

1 MR. REDDY: Well, here, that at least in PPC Broadband, there
2 has to be some actual evidence tied to the actual claims themselves, right,
3 that there's no -- that there's no specific instance where, like I said, where
4 they have actually matched any specific copying to the accused product,
5 right? At best, as we noted in our papers, from our standpoint, from
6 Petitioner's standpoint, this wasn't -- this was competitive analysis, right?
7 Companies analyze what their competitors are doing all the time, and that's
8 not what PPC Broadband is intended to discuss. Now, I'd like to also -- if
9 we can go back to slide 52, please?

10 Now, the Patent Owner contends that Samsung tried to develop
11 digital displays with improved cooling systems but failed over a period of
12 many years. It's supposed evidence -- well, and to do that, they cite
13 testimony from a former Samsung engineer named Sung Ki Kim, who
14 testified that Samsung began developing digital displays in 2005, and then,
15 launched the first product that uses its current cooling system around 2016.

16 And then, it cites general statements, like I said, about
17 designing cooling system. And from there, it makes this inferential leap that
18 Samsung tried and failed to develop an advanced cooling system over this
19 course of many years. But there's no evidence of an actual failure to design
20 a cooling system.

21 For example, there's no testimony or evidence that Samsung
22 designed some alternative or some prototype, and that it failed because of
23 the cooling system. Rather, the timeline is more indicative of the natural
24 evolution of product design and bringing products to market.

25 But what's most relevant really is that there is no evidence
26 actually indicating that there was a failure to design a specific cooling

1 system. It's just taking the dates from the beginning of the process to the end
2 and making this leap that there must have been failures in order to get there.

3 Now, next, I'd like to have slide 54, please. Let's briefly discuss
4 commercial success.

5 The Patent Owner isn't entitled to a presumption of nexus
6 because it has not shown that the product, that its products or Samsung's
7 products are coextensive with the claims. Specifically, it has not made any
8 analysis comparing the claimed and the unclaimed features of its products or
9 Samsung's products. So, because MRI's products are not coextensive with
10 the claims, it must show an actual nexus.

11 And we talked about some of the different features. I'm sorry,
12 Patent Owner talked about some of the different features that are touted in
13 their marketing materials, but some of the ones that they didn't discuss were
14 things like the software that's used in the products; that they used remote
15 management or internet-of-things architecture; that these types of issues are
16 things that would help -- that help drive sales of the product.

17 And Patent Owner seemed to suggest that it's our burden to
18 show that people buy products for those reasons, but that's not our burden,
19 right? It's their burden to show an actual nexus between the sales and the
20 claimed invention. It's not our burden to show that the sales are due to
21 something else.

22 Now, finally, just to respond on the industry praise argument,
23 we saw an email cited by or from an individual who worked at a Samsung
24 subsidiary touting, saying, essentially, nice things about MIR as a company.
25 There was no specific discussion about the cooling systems. There was no
26 praise for, much less any specific connection between, any praise and the

1 inventions, the alleged inventions that are claimed in the '740 and the '142
2 patents.

3 And so, at best, that's the similar type of generalized disclosure
4 that simply talks about the benefits of the cooling system, but none of those
5 are specifically tied to the inventions that are -- oh, sorry -- that apply to the
6 systems that are at issue here today. One moment, Your Honors. With that,
7 Your Honors, I'll conclude my presentation. Thank you.

8 JUDGE LEE: Thank you. The Patent Owner will have 15
9 more minutes for a short rebuttal, a surrebuttal.

10 MR. MORLOCK: Just a second to set back up, Your Honor.
11 Are you ready, Your Honor?

12 JUDGE LEE: Yes, you may begin. Thank you.

13 MR. MORLOCK: Thank you, Your Honor.

14 MR. MORLOCK: Just to quickly address a couple of points. I
15 will, then, turn it over to Mr. Reed to provide more rebuttal on secondary
16 considerations.

17 I, first, note with respect to claim construction and heat
18 exchanger, Mr. Reddy just acknowledged that the extrinsic evidence -- or the
19 intrinsic evidence here, the background of the '740 and '142 patents,
20 criticized fins, criticized the heat exchanger.

21 And then, in addressing what I believe was Petitioner's
22 Demonstrative No. 21, he said that what you have in Karppanen is not two
23 heat sinks because the heat sink that is on the outside isn't sinking heat. And
24 I just, frankly, don't understand where that comes from. Because the
25 description in Karppanen is that there is one thing that is pulling heat out of
26 one side of the air, and then, the other is taking heat from that and releasing

1 it. So, it's two heat sinks --

2 JUDGE HUDALLA: I didn't understand his argument to say
3 that. I understood his argument to say that maybe there was only -- like I
4 think his argument was there's just not one side of fins; there's two sides of
5 the fins. I think that was kind of what he was going for there. At least that
6 was my interpretation of it.

7 MR. MORLOCK: Well, Your Honor, there are two separate
8 components. One is 60 on the inside; the other 62 on the outside.

9 JUDGE HUDALLA: So, you're suggesting a person of
10 ordinary skill wouldn't consider them together to be a heat exchanger?

11 MR. MORLOCK: No, they would not. It's two separate heat
12 sinks that are just abutting each other, Your Honor.

13 JUDGE HUDALLA: And is there evidence in the record that
14 tells us that? That sounds like a bit of a stretch to me.

15 MR. MORLOCK: That's the numerals within Figure 2 of
16 Karppanen describing the two heat sinks

17 JUDGE HUDALLA: Just because they have separate
18 numerals, is what your position is?

19 MR. MORLOCK: Yes, Your Honor.

20 JUDGE HUDALLA: Okay.

21 MR. MORLOCK: Yes.

22 So, with respect to the level of skill in the art and product
23 design, where this comes from is Petitioner's own expert disavowed his
24 statement of the level of ordinary skill in the art. That's his testimony at
25 Exhibit 2022. It's page 73 of the transcript, 3 through 7. It's page 10 of
26 Exhibit 2022.

1 But that's why this whole issue arises, is the level of skill in the
2 art given by Petitioner includes product design, and then, Petitioner's expert
3 says, "Oh, wait. No, it doesn't."

4 Further, with respect to Mr. Reddy's statement that, well,
5 somebody with a mechanical engineering background wouldn't understand
6 the heat transfer associated with this, I guess I can't speak to every
7 engineering program in the country, but, certainly, the engineering program I
8 took -- I was an electrical engineer -- required a class in thermodynamics,
9 and mechanical engineers had multiple classes in thermodynamics. That's a
10 requirement for a degree in engineering. And that's a big distinction
11 between a degree in mechanical engineering or another engineering field and
12 product design. And that's why Petitioner's expert disavowed that level of
13 skill in the art.

14 Finally, with respect to the Yare reference and this issue with
15 fogging, Dr. Pokharna testifies at paragraph 135 that the fogging is created
16 by spacing. And I didn't hear any evidence presented by

17 Petitioner beyond saying, "Well, no, it's not." Dr. Pokharna cites
18 references that indicate that's the case. He cites Exhibit 2018 at paragraph
19 33, which specifically says the fogging issue is created by spacing between
20 the front of the display.

21 JUDGE LEE: Right. This is Judge Lee.

22 They didn't come back with another declaration in the reply to
23 address your expert, right? I don't think there is a reply declarant, is there?

24 MR. MORLOCK: There is not a reply declaration, Your
25 Honor. And that testimony stands un rebutted. That's testimony supported
26 by evidence.

1 And further, this whole issue we're talking about, about where
2 that display would be placed, that's their burden. That is Petitioner's burden
3 to establish that the claims are obvious and their burden to establish that you
4 would modify the Yare reference, which, as we've discussed in some detail,
5 just isn't shown in the way Petitioner has presented it.

6 JUDGE LEE: Right. And that also goes back to my other
7 question. It doesn't seem to matter where it is because now they're saying
8 they're relying on something inside it, and that doesn't change wherever you
9 put the overall unit.

10 MR. MORLOCK: If you move that unit 20, the whole unit 20,
11 if you move that, then there's no airflow in the front of unit 20.

12 And with that, Your Honor, I will turn it over to Mr. Reed.

13 JUDGE LEE: If you move it back, then there's airflow in front
14 of it?

15 MR. MORLOCK: What Petitioner has mapped as the closed
16 loop appears to be what is inside 20.

17 JUDGE LEE: Right. That's what I'm saying. So, it doesn't
18 matter where you move it.

19 MR. MORLOCK: So, there would be none in front of it.

20 JUDGE LEE: It's the same you end up with the same thing?

21 MR. MORLOCK: Correct, Your Honor. It wouldn't meet --
22 there would be no

23 JUDGE LEE: Which they didn't seem to address.

24 MR. MORLOCK: I'm sorry?

25 JUDGE LEE: The inside of it, which they didn't seem to --
26 well, you were saying they switched their argument.

1 MR. MORLOCK: Exactly, Your Honor.

2 And with that, I will turn it over to Mr. Reed to address
3 secondary considerations with our remaining time.

4 Thank you.

5 MR. REED: Ms. Gray, if you could pull up Petitioner's slide
6 52, please?

7 Your Honors, I'll just briefly address Samsung's arguments on
8 secondary considerations.

9 Now, earlier in my presentation, I described the real-world facts
10 that show non-obviousness. And respectfully, Samsung is ignoring those
11 facts.

12 They say on this slide that there's no evidence of Samsung's
13 failure. Mr. Reddy said that we're making a leap. But engineers try to solve
14 problems. Engineers try to meet needs.

15 Here, the need wasn't addressed, but it's stated in Samsung's
16 white paper: customers wanted to put their displays outside. The barrier to
17 that was the sun and the heat from the backlight. That heat needed to be
18 removed. That was the problem.

19 I showed you Samsung's engineer's testimony going through
20 their efforts to meet that need. That started in 2005. They didn't actually
21 bring a product to market that was successful until the 2016-2017 timeframe.

22 There's no leap. That is a failure. There was an effort to
23 develop a product, and then, there was no successful product brought to
24 market. That's failure, and that's failure by a leader in the display industry.
25 That is evidence of non-obviousness.

26 JUDGE HUDALLA: What's your evidence that they didn't

1 have a success, a successful product? You're premising it on that --

2 MR. REED: Well, I would -- it's Mr. Kim's testimony. Some
3 of it is redacted, but there is a statement that's not redacted in paper 33 at
4 page 57 that explains that the OH D product -- that was the product that
5 preceded the ones that practice the claims -- that it used a fan or set of fans.
6 In that product, the heat was not being removed well. It didn't satisfy the
7 need. It didn't work to remove heat sufficiently to avoid the LCD failing.
8 And it didn't meet the need for the outdoor -- that long-felt need that
9 Samsung has described in its white paper.

10 And again, the record is different here than the ITC. That white
11 paper, that evidence of long-felt need, that wasn't before the ALJ in the ITC.
12 So, a new analysis is needed here that's not binding in any way on the Board.

13 Let's turn to slide 53 of Petitioner's slides, please, on copying.

14 Now, there is, again, there is a statement here that Samsung did
15 not do any competitive analysis until its products had already been
16 developed. Again, these teardowns, they say that this was just "competitive
17 analysis." They did teardowns of a product during their development before
18 that product was launched. That product replicated the features, including
19 the heat exchanger, the open loop, the closed loop, the features of the claims
20 that are at issue here. Under the Institute Pasteur case, that's copying. That's
21 the law that applies here.

22 It's true that infringement is not necessarily copying. They've
23 cited the Iron Grip Barbell case. But here, we had the actual evidence of
24 copying in Exhibit 2042.

25 Let's turn to slide 54, please, on commercial success.

26 Again, they stated, Samsung stated that a presumption of nexus

1 does not apply here; that coextensiveness requires more than a showing that
2 a claim covers a product that practices the patent. But, again, if it weren't for
3 the cooling system, there are not outdoor products. The OH D product, the
4 cooling system wasn't sufficient. That product failed. It was not successful.

5 So, if it weren't -- I mean, this cooling system is critical. It's
6 fundamental to Samsung's sales. This excerpt on this slide is an excerpt
7 from a Samsung sales presentation to a big customer. It's redacted, but it's a
8 big customer. Take a look at it, pages 8 to 27.

9 It is undisputable the thermal management system is critical to
10 the Samsung sales efforts. We made that showing. We presented that
11 evidence here.

12 Under the PPC Broadband case, it's on them to point to other
13 features and to show that there's some other feature that drives the sales. I
14 heard something about IOT or something. I mean, this product, the cooling
15 system is fundamental. It is the focus of the marketing efforts, and Samsung
16 can't be heard now to say that cooling systems had nothing to do with the
17 success of these products.

18 JUDGE HUDALLA: So, I guess their complaint here is there's
19 no coextensiveness and analysis in the record. And you're saying you're
20 basing it on PPC and other evidence in the record. Are you suggesting that
21 you've met your burden production, and now, it's just back to Petitioner?

22 MR. REED: That is an aspect on the coextensiveness; that
23 they're going to point to other features as being relevant here, they need to
24 make that showing. They need to put the evidence in that there's some other
25 feature that's driving the sales. They haven't done that.

26 But we also have tied the actual evidence, their actual

1 marketing documents -- and again, under the Volvo Penta case, you know,
2 marketing people, they don't read patents. You know, they don't use magic
3 words. There's no requirement that magic words be used. It just says that
4 the claimed invention needs to address the need. And the evidence here
5 shows that it was the cooling system that was critical to that. It was critical
6 to Samsung's sales efforts. And there's been no showing that there are other
7 features that were driving those sales.

8 But even if there were, even if coextensiveness, even if there's
9 not a presumption, the evidence is directly tied. They are marketing these
10 features in their marketing materials. That is nexus. That's a direct tie
11 between the commercial success and the patented features.

12 There's also, I'll just briefly mention, Exhibit 2032. It's
13 testimony from John Palmer, who is a Samsung integrator of their displays
14 and, you know, integrates them and sells them downstream to end-users.
15 And he offers testimony about why customers desire Samsung's products.
16 And why is it? Because of their thermal management, and that's reflected in
17 his testimony as well. That's additional direct evidence tying the
18 commercial success to the features of the invention -- the invention, again,
19 that Samsung developed when they were copying, through their copying in
20 2016-2017.

21 And they didn't invent during that 10-year period, much less
22 during that critical period 2005 to 2008, when they were trying. They were
23 filing a lot of patents. They didn't come up with the heat exchanger and the
24 other features that are cited in MRI's claims.

25 So, this invention, that's objective evidence, real-world
26 evidence that these inventions were not, in fact, obvious to persons of

1 ordinary skill in the art. They weren't obvious to Samsung, who touts its
2 expertise and leadership in the field. So, if there are no further questions,
3 that will conclude my presentation.

4 JUDGE LEE: Okay. Thank you all for attending the hearing,
5 and we thank each counsel for answering all of our questions. We
6 appreciate it. And the two cases are submitted. We are adjourned.

7 (Whereupon, the above-entitled matter went off the record at at
8 4:17 p.m.)

IPR2023-00221 (Patent 11,013,142 B2)

IPR2023-00254 (Patent 10,506,740 B2)

PETITIONER:

Sanjeet Dutta

Douglas Kline

Naomi Birbach

GOODWIN PROCTOR LLP

sdutta@goodwinlaw.com

dkline@goodwinlaw.com

nbirbach@goodwinlaw.com

PATENT OWNER:

John Alemanni

Carl Sanders

Michael Morlock

Courtney Dabbieri

David Reed

KILPATRICK TOWNSEND & STOCKTON LLP

jalemanni@kilpatricktownsend.com

csanders@kilpatricktownsend.com

mmorlock@kilpatricktownsend.com

cdabbieri@kilpatricktownsend.com

dreed@kilpatricktownsend.com