

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

MANUFACTURING RESOURCES INTERNATIONAL, INC.,
Patent Owner.

IPR2023-00255
Patent 9,629,287 B2

Record Of Oral Hearing
Held: April 24, 2024

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

APPEARANCES:

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The above-entitled matter came on for hearing Wednesday, April 24, 2024, commencing at 1:00 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

1:00 p.m.

JUDGE HUDALLA: Please be seated. Okay. Good afternoon, everyone. This is the oral hearing in IPR2023-00255. I'm Judge Hudalla. I have with me remotely Judge Lee and Judge Kokoski. Why don't we start with appearances? We'll start first with Petitioner, please.

MR. REDDY: Good afternoon, Your Honor. Srikanth Reddy on behalf of the Petitioner, and with me at counsel table is my colleague, Ms. Christine Potkay, who is our lead advocate. In the gallery are my colleagues, Doug Kline, and Sanjeet Dutta. And from Samsung Electronics America, we have with us today Dan Girdwood and Matt Bathon.

JUDGE HUDALLA: Okay. Thank you. Good afternoon. And from Patent Owner, please.

MR. REED: Good afternoon, Your Honor. For Patent Owner MRI, my name is David Reed. I'm joined at counsel table by my colleague, Andie Anderson, who is simply running the demonstratives for us today. I'm also joined by my colleague, Michael Morlock, who will be splitting the argument with me today. We're also joined by my colleague, John Harris and by Mike Brown, who is vice president of mechanical engineering for MRI.

JUDGE HUDALLA: Good afternoon to all of you. Okay. Per our scheduling order, each side is going to have 60 minutes to argue,

1 although we have a LEAP practitioner for Petitioner, so that you might have
2 up to 15 extra minutes of time.

3 Petitioner is going to go first and may reserve some rebuttal
4 time. Patent Owner goes second and may reserve a brief surrebuttal.

5 I want to remind the parties that this hearing is open to the
6 public. I believe we have a public line, a public video line, so please do not
7 reveal any confidential information in this case. Remember, we do have a
8 protective order in the case, so please be careful with that. We've already
9 done that for a couple of hearings already, so we're getting pretty good at
10 that, I think, at this point. And, eventually, of course, a full transcript of this
11 hearing will be made part of the record.

12 I want to remind everyone that we have two judges attending
13 remotely today, so it's very helpful to tell us what slide numbers you're on or
14 what exhibits you're looking at. I think Patent Owner had a little bit of
15 tendency last time to bounce around between exhibits, but, if you can just let
16 us know, it's a lot easier when we review the transcript on the back end of
17 this.

18 So with that, I guess, Mr. Reddy, are you going to be presenting
19 to start?

20 MR. REDDY: Yes, Your Honor.

21 JUDGE HUDALLA: Okay. Would you like to reserve some
22 rebuttal time?

1 MR. REDDY: Yes, Your Honor. So we would like to reserve
2 20 minutes for rebuttal. For the remaining 55 minutes, I'll be splitting the
3 argument with Ms. Potkay here initially.

4 JUDGE HUDALLA: Okay. All right. Let me get all set up
5 here. Okay. And you may begin when you're ready.

6 MR. REDDY: Good afternoon, Your Honors. Today marks
7 the third of three oral arguments that involve patents owned by
8 Manufacturing Resources International, Inc. As you know, these three
9 arguments collectively encompass five different MRI patents, all of which
10 were asserted in ITC Investigation 1331. The challenged claims in all five
11 patents relate to cooling systems used in video displays, and today we
12 discuss U.S. 9,629,287.

13 In addition to the 1331 investigation of the ITC, this patent was
14 also asserted by the Patent Owner in another litigation in Delaware several
15 years ago in a case captioned *MRI v. Civiq Smartscapes*. And from the face
16 of the patent, we know that this is one of six patents that are issued by the
17 PTO with the same specification.

18 On slide 2, we see an overview of the '287 patent. Every
19 challenged claim in the '287 patent includes an electronic display, an open
20 loop of air, and a closed loop of air. The electronic display is coolable by a
21 combination of the closed loop and the open loop. The claims differ in the
22 positioning of the display relative to the open loop and the closed loop. In

1 Claims 1 through 11, the display is outside the closed loop. In Claims 12
2 through 17, the display, the open loop, and the closed loop are in the same
3 housing. In Claims 18 through 20, the display is between the open loop and
4 the closed loop, and in Claims 21 through 23 the display is isolated from a
5 closed loop but contactable by an open loop.

6 Now, on slide 2, we show figures 1 and 2 from the '287 patent.
7 Figure 2 is on the left is one embodiment of the claimed invention. In light
8 blue, we depicted a closed loop of air. Element 80 is an electronic display,
9 and element 140 is a backlight. Figure 1 is on the right. The cassette on the
10 left is placed into an enclosure and fans, which are shown as element 60,
11 blow ambient air through the enclosure. So turning back to figure 2, the
12 open loop of air is literally coming out of the page in the space between the
13 electronic display 80 and the backlight 140 in this particular embodiment.

14 Slide 3 illustrates the grounds on which the claims have been
15 challenged. I'll be focusing today on Grounds 1 through 4, and we'll rest on
16 our papers with respect to Ground 5. I'd also note that only Claim 12 was
17 asserted in the ITC case, and only Ground 1 was presented and adjudicated
18 in the ITC. None of Grounds 2 through 5 were presented in the ITC.

19 Moving ahead to Slide 5, there are two terms for construction,
20 what we call the closed loop phrases and the term open loop of ambient air
21 which passes through the housing and along the backlight. Now, as to the
22 closed loop phrases, there are three phrases in the challenged claims that

1 include the words closed loop: closed loop gas cooling chamber, closed loop
2 of isolated gas, and closed loop of cooling gas. And there are two disputes
3 between the parties. The first is whether those three phrases mean the same
4 thing. The second is what does it mean for a closed loop of gas to be
5 isolated. And the second term requiring construction is open loop of
6 ambient air which passes through the housing and along the backlight. And,
7 again, this phrase appears in just one claim, Claim 12. This phrase does not
8 appear anywhere in the specification.

9 Now, the Patent Owner argues that this phrase should be given
10 its plain and ordinary meaning. It does not explicitly say in this proceeding
11 what the plain and ordinary meaning is. The Petitioner's position is that the
12 plain and ordinary meaning should be construed broadly, consistent with
13 how the term was used during prosecution.

14 Now, turning to issue one with respect to the closed loop
15 limitation, and I'm on slide 6, the first question is, well, do the three phrases
16 mean the same thing. Petitioner's position is that each of the three phrases in
17 the challenged claims that include the words closed loop must be construed
18 identically and that they all incorporate the definition of isolated gas from
19 the specification at column 4, lines 9 through 11. As an initial matter, I note
20 that the phrases closed loop gas cooling chamber and closed loop of cooling
21 gas do not appear in the specification. The phrase closed loop of isolated
22 gas appears only in the abstract.

1 Now, the Petitioner's position mirrors the holding of District
2 Judge Richard Andrews in the *MRI v. Civiq Smartscapes* litigation, and
3 that's Exhibit 1012. Judge Andrews incorporated the definition of isolated
4 gas into the construction of the phrase closed loop, as shown on page 8 of
5 Exhibit 1012.

6 The second issue relates to what does it mean to be a closed
7 loop of isolated gas. Well, as I noted in the previous slide, the '287 patent
8 specification states isolated gas refers to the fact that the gas within the
9 isolated gas cooling chamber is essentially isolated from external air in the
10 housing of the display. So a closed loop of isolated gas does not need to be
11 completely isolated or completely sealed.

12 Now, the Patent Owner argues that there can only be a closed
13 loop of isolated gas if it is placed into an enclosure having an Ingress
14 Protection, or IP, Rating of 5 or higher. This position is based entirely on
15 extrinsic evidence, namely the testimony from Patent Owner's expert, Dr.
16 Pokharna. It's not supported by the intrinsic record. There is no mention of
17 Ingress Protection Ratings anywhere in the intrinsic record. And for at least
18 these reasons, the Patent Owner's position that the closed loop of isolated
19 gas requires an enclosure with an IP Rating of 5 or higher was rejected by
20 the ALJ.

21 Now, turning to the second claim term, open loop of ambient
22 air which passes through the housing and along the backlight --

1 JUDGE HUDALLA: Can I stop you before you get to that
2 second issue?

3 MR. REDDY: Yes, yes.

4 JUDGE HUDALLA: I'm sorry to interrupt. I think there was
5 some contention between the parties as to this IP Rating and, I guess, you
6 put forth in your reply that Patent Owner's expert said something about IP 56
7 being available for an open system with an open, like a hole bringing in air.
8 I think Patent Owner argued that you, I guess, misstated the expert's
9 testimony in that instance. Could you respond to that?

10 MR. REDDY: Certainly, Your Honor. So at the ITC hearing,
11 Dr. Pokharna was asked on cross-examination whether he was aware that
12 open loop systems existed that were rated IP 56, and he responded in the
13 affirmative yes. So we don't think that there can be any confusion on that
14 piece, and I believe it was referenced in the final initial determination, as
15 well, that Dr. Pokharna acknowledged that there were entirely open loop
16 systems that use IP 56. And the discussion that continued was that certain
17 types of filters can be used to achieve an IP 56 rating without having a
18 completely closed system.

19 JUDGE HUDALLA: Understood. So, basically, you're saying
20 in the sur-reply Patent Owner got it wrong then?

21 MR. REDDY: That's absolutely right, Your Honor.

22 JUDGE HUDALLA: Okay. Thank you.

1 JUDGE LEE: So, counsel, it's Judge Lee. If you think Patent
2 Owner's level of isolation is too stringent according to you, then what level
3 would be required by the claim, what level of isolation?

4 MR. REDDY: So I'm turning to slide 6. So the '287 patent at
5 column 4, lines 4 through 15, says isolated gas refers to the fact that the gas
6 is essentially isolated from external air. So the degree of isolation is
7 essentially isolated. And later in the patent, I believe there's a reference to
8 the fact that it's important to prevent dust and dirt from entering the
9 enclosure and causing significant issues. So the degree of essential isolation
10 is the amount of isolation necessary to prevent dirt and dust from interfering
11 with components.

12 JUDGE LEE: That's still kind of a -- if you have a closed
13 casing, that's isolated. It keeps out a lot of dirt and dust. If you simply have
14 a closed casing, is that enough to mean isolated?

15 MR. REDDY: It's enough as long as it prevents dust and dirt
16 from entering. I would perhaps disagree with Your Honor's hypothetical
17 that any closed casing necessarily is an isolated -- I guess the question is,
18 well, how closed it is. You could have a, let's call it a large box in which air
19 is circulating within that box. Air could be moving in a loop. But if it's
20 ingesting ambient air without any filters or anything along those lines, dust
21 and dirt is able to enter, so that would not be a closed loop system or at least
22 not a closed loop of isolated gas.

1 JUDGE LEE: Okay. I have another question about the open
2 loop along the backlight limitation. When you explained your position, it
3 was based on an examiner first rejecting a claim and then the applicant
4 coming back to amend the claim to expressly recite contact with the
5 backlight. So my question is, well, what happened to the claim here? Were
6 they rejected by the examiner? You know, the claim that said along the
7 backlight, they weren't amended to expressly recite contact with the
8 backlight, so what was the situation with these claims? Was there a
9 rejection?

10 MR. REDDY: There was not a rejection based on the along
11 the backlight piece, but there also was no rejection based on the Heady
12 reference which was discussed in the earlier application within the same
13 family.

14 JUDGE LEE: So it seems to me like it's equally consistent both
15 ways, and it's not just consistent in your favor. The Patent Owner can say
16 along the backlight could very well mean just opposed to the backlight, and
17 that wouldn't be inconsistent with what happened during prosecution of this.

18 MR. REDDY: It would not be inconsistent with what
19 happened with respect to the '287 patent. It would be inconsistent with
20 respect to the '079 patent, which is a parent to the '287. And I'm on slide 9.
21 The specific rejection from the examiner in that application was related to
22 the fact that the examiner determined that, in that Heady reference, the

1 airflow was, in fact, along the backlight. And in response to that rejection,
2 the Patent Owner amended the claim language to remove the phrase along
3 the backlight and instead require actual contact.

4 JUDGE LEE: Well, is that really inconsistent, or they could
5 just say, well, I'm not going to argue about it, I'm just going to make it not
6 even questionable. If you do concede that along the backlight -- I don't think
7 there's anything inconsistent. Can you explain why you think it's
8 inconsistent with what happened there?

9 MR. REDDY: Certainly, Your Honor. So the reason it's
10 inconsistent is because, on slide 10, we see the specific language that was
11 amended. By amending the claim language to remove the word along and
12 exchange it for the word contacting, the Patent Owner surrendered claim
13 scope in this particular application to airflow that was simply along the
14 backlight but not contacting it. And our position here is that, well, that same
15 logic, which is to say that if you have airflow, if there's a difference between
16 contacting the backlight and being along the backlight, that the basis for the
17 examiner's rejection, which is that any airflow that's in thermal
18 communication with the backlight is sufficient, that that should apply with
19 respect to Claim 12 in the '287 patent.

20 JUDGE LEE: Okay. Thank you.

21 MR. REDDY: Now, the other point I would just like to add
22 with respect to along the backlight limitation is that, in its briefing, the

1 Patent Owner consistently criticizes the Petitioner's proposed construction
2 without giving an alternative explanation for the scope of the limitation.
3 Now, as I mentioned, in the ITC, the Patent Owner's expert, Dr. Pokharna,
4 opined that, in order for air to flow along the backlight, it must be, quote,
5 right next to the backlight, end quote, and without, quote, significant
6 intervening structures between the ambient air and the backlight, end quote,
7 and that the existence of which must be determined on a case-by-case basis.

8 Now, the reason why we provide that is because we think this
9 explanation provides important context for the ALJ's decision in the 1331
10 investigation. In the ITC, the Patent Owner argued for purposes of
11 infringement that ambient airflow is moving along the backlight, even if
12 there's a heat sink disposed between the backlight and the display. But on
13 invalidity, the Patent Owner argued that Karppanen does not disclose airflow
14 along the backlight, even though the heat sink configuration was structurally
15 similar to the accused products. But as the ALJ found, the Patent Owner
16 could not have it both ways, and, as a result, she found that the accused
17 products did not satisfy the along the backlight limitation but that the claim
18 was not invalid based on Karppanen.

19 Now, it's true that the Petitioner proposed the same claim
20 construction for this term in the ITC and that the ALJ declined to construe
21 the phrase along the backlight in the way we propose here. But the ALJ's
22 interpretation of the plain and ordinary meaning in evaluating the validity of

1 Claim 12 cannot be squared with the intrinsic record where both the
2 examiner and the applicant took a much broader view of what it means for
3 air to flow along the backlight.

4 JUDGE HUDALLA: Just to be clear, do we need to agree with
5 you on your claim construction in order for you to succeed on your
6 invalidity contentions for that limitation?

7 MR. REDDY: So with respect to Ground 1, the answer is no
8 because, as we presented with respect to Ground 1, we have a separate
9 argument where, if airflow is required to specifically contact the backlight,
10 that there is evidence that airflow does contact the backlight, it's just you
11 would have to assume that the first and second heat transfer parts are part of
12 the backlight. So we certainly offer positions with respect to both
13 constructions for this specific term.

14 JUDGE HUDALLA: But just to be clear, your petition doesn't
15 have any basis on along being construed with its plain and ordinary
16 meaning.

17 MR. REDDY: No. Our position is that the plain and ordinary
18 meaning should be construed broadly to include any airflow that's in thermal
19 communication with the backlight.

20 JUDGE HUDALLA: Okay. Thank you.

21 MR. REDDY: So with that, I'd like to move on to Ground 1.
22 Now, with respect to Ground 1, there are four disputes. Two of the disputes

1 are in two of the three challenged independent claims, Claims 12 and Claim
2 18. The other two disputes appear in two dependent claims, Claims 15 and
3 17. The Patent Owner has not offered any defense in their response against
4 Petitioner's argument that Karppanen discloses all of the elements in
5 challenged independent Claim 21. The dispute with respect to along the
6 backlight limitation also has no bearing on Claims 18 through 23. So put
7 another way, if the panel is convinced that Karppanen discloses a closed
8 loop of isolated gas, then there is also no defense as to Claims 18 to 20 and
9 22 and 23.

10 Moving ahead to Claim 14 -- or slide 14. Karppanen discloses
11 a closed loop of isolated gas. The closed loop is created by ducting located
12 around the display. The Patent Owner argues that Karppanen does not teach
13 any particular level of isolation of air inside the display chamber, but
14 Karppanen discloses that there is a closed display casing that is
15 weatherproof, and those disclosures are sufficient to convey to a person
16 skilled in the art that the display casing is sealed. Now, the '287 patent,
17 likewise, does not require any specific type level of isolation, other than the
18 disclosure regarding essentially isolated that I discussed with Judge Lee.
19 And for these reasons, the ALJ, likewise, found that Karppanen discloses a
20 closed loop of isolated gas.

21 Now, a person of skill in the art would also know that the
22 display casing contains a closed loop of isolated gas because of how the

1 reference describes the open loop of ambient air. Karppanen discloses that
2 filters can be used to filter open loop air and prevent dust and dirt from
3 entering the enclosure. If filters are used to clean the ambient air, the
4 absence of such a disclosure regarding the closed loop means that they're not
5 necessary, and that's because the airflow is closed.

6 Now, moving to slide 15, the Patent Owner does not dispute
7 that Karppanen discloses an open loop of ambient air. But it does, of course,
8 dispute that Karppanen's open loop is along the backlight, as recited in
9 Claim 12. As I noted previously, along the backlight, in view of the
10 prosecution history, does not require direct contact with the backlight. The
11 Patent Owner does not dispute that Karppanen's open loop is in thermal
12 communication with the backlight. And to Judge Hudalla's point, even if
13 Patent Owner's plain and ordinary meaning interpretation is adopted,
14 Karppanen still discloses open loop air traveling along the backlight because
15 a person of skill in the art would understand that the first and second heat
16 transfer parts, which are elements 62 and 60, are part of the backlight.

17 Now I'd like to move on to Claim 15 with respect to --

18 JUDGE LEE: Counsel, this is Judge Lee. I had a question
19 along the same line we talked about before. There's a lot of gray area
20 between contacting the backlight and in thermal communication with the
21 backlight. There's a wide gap there. You know, what if we have something
22 in between. It seems to me like along the backlight possibly and reasonably

1 means in the same direction as the backlight, you know, along its periphery,
2 even if it's not contacting the backlight. You know, it may be set a little bit
3 off of the backlight, but the flow still has to be along the contour of the
4 backlight. Your construction doesn't take that into account at all. You just
5 say in thermal communication with the backlight, which completely ignores
6 the contour of the backlight.

7 So I see a lot of gap between in contact with and in thermal
8 communication with, and it seems to me along the backlight kind of falls in
9 between the two extremes.

10 MR. REDDY: Well, I think that that's why we propose the
11 construction that we did, Judge Lee, and that's specifically required that
12 there be some sort of thermal communication. So I think that follows the
13 same logic that you were just discussing with respect to following the
14 contour of the backlight. So by being in thermal communication with the
15 backlight, the open loop can cool the backlight. It can have some
16 contribution to the thermal management of the display.

17 JUDGE LEE: Yes, exactly. But you're saying thermal
18 communication. That doesn't happen along the contour. It could just be a
19 thermal communication in one spot, in one footing. That would be in
20 thermal communication. But that doesn't seem to meet along the backlight if
21 it's just contact in thermal communication at one point.

1 MR. REDDY: Thank you. So, Judge Lee, if I can go back to
2 the reference to the Heady reference, right, because remember in Heady
3 there's a heat exchanger, right, which is element 210. It's located completely
4 outside the display case. This is on slide 10. And the examiner,
5 nonetheless, rejected the claim requiring airflow along the backlight because
6 the examiner suggested that this was disclosing any airflow along the
7 backlight. And so that's the conclusion that was -- so the Petitioner's
8 position is consistent with the position that was taken by the examiner
9 during that prosecution.

10 JUDGE LEE: I see. So the examiner is saying as long as you
11 can take heat away from the backlight, it would be deemed along the
12 backlight.

13 MR. REDDY: That's right. Taking heat away, which is the
14 thermal communication point that the Petitioners have raised.

15 JUDGE LEE: And if you're taking heat away at one point,
16 you're necessarily taking heat away everywhere because, you know, the
17 same unit is heated, and you'd only be cooling in one spot and heat would go
18 away all over the device; is that the idea?

19 MR. REDDY: Not necessarily. So, for example, in the Heady
20 reference, which, again, is slide 10, the external facing part of the display,
21 otherwise known as the screen, right, it's on the right-hand side. The screen
22 is going to absorb heat. I wouldn't necessarily agree that that heat is going to

1 be in thermal communication with the ambient airflow, which is on the other
2 side of the display because, you know, as we talked about with respect to the
3 other proceedings with respect to these patents, there are other techniques
4 that can be used to try to remove the heat that would be on that side of the
5 display.

6 JUDGE LEE: Okay. Let me ask one more. I see what you're
7 saying. I can see your point of view, but a part of me is saying that it is just
8 so far against the plain meaning of along the backlight. Generally, be along
9 simply as meaning not along contours, which is what you're proposing, so, if
10 I have that situation, how am I to resolve it that you might have some
11 reasoning based on prosecution history, but it is so plainly contrary to the
12 plain meaning of the words.

13 MR. REDDY: I would confess, Judge Lee, I think that's what
14 the ALJ in the ITC case struggled with, as well, as how do you resolve the
15 difference between the prosecution history and what certain experts and
16 MRI's experts would consider the plain and ordinary meaning. And the
17 Petitioner's position is that, given the prosecution history, that there can't be
18 any other interpretation but a very broad interpretation, just like the
19 examiner did on that other reference.

20 JUDGE LEE: So you say just go with the prosecution history
21 and just tolerate the apparent inconsistency with its plain and ordinary
22 meaning.

1 MR. REDDY: The answer is yes, Your Honor, and I would
2 say that that's particularly possible in this case where there's no
3 countervailing disclosure in the specification about what airflow along the
4 backlight means. Remember that phrase, along the backlight, does not
5 appear anywhere in the specification. So other than the prosecution history,
6 we're looking entirely at intrinsic evidence. As the panel undoubtedly
7 knows, intrinsic evidence is preferable to extrinsic evidence in these
8 situations.

9 JUDGE LEE: Thank you.

10 MR. REDDY: All right. So moving back to slide 16, which is
11 discussing Claim 15. So with respect to Claim 15, the parties dispute what
12 the rear cooling chamber is. Claim 15 depends solely from Claim 12.
13 There's no antecedent basis for the phrase the rear cooling chamber in Claim
14 12.

15 Now, as the Federal Circuit articulated in the *Intel v. Qualcomm*
16 case, in matters before the Board, the indefiniteness of a limitation precludes
17 a patented-only determination only when the indefiniteness renders it
18 logically impossible for the Board to reach such a decision. And this
19 decision arguably superceded an earlier decision in the *Samsung v. Prisia*
20 Federal Circuit case, which suggested that the Board could simply dismiss
21 an IPR as to a challenged claim if it deemed it indefinite.

1 Here, Petitioner's position is that we do not think it is logically
2 impossible to determine the scope of Claim 15. Instead, the proper course is
3 to change the word the to a, as we suggested in our petition. A different
4 panel took a similar course in IPR2022-00632 when faced with a similar
5 question regarding the antecedent basis for a dependent claim.

6 Moreover, the Board should not MRI's approach of fixing the
7 lack of antecedent basis by changing the dependence from Claim 12 to
8 Claim 14. That's because doing so would fundamentally alter the scope of
9 the claim by introducing new limitations, including all of the limitations in
10 Claim 14. If MRI wanted this result, it should have sought to amend the
11 claim within the time frame contemplated by the procedural schedule.

12 Now, as Mr. Smith-Gillespie explained -- I'm on slide 17 --
13 electronic devices for driving the LCD can include the driving circuitry
14 itself, as well as the power supplies which deliver power to the driving
15 circuitry. Regardless of the scope of Claim 15, Karppanen discloses this
16 limitation. If the rear cooling chamber is any cooling chamber that is rear to
17 the display, then it's disclosed by the electronic components of the device
18 casing, mainly the control unit of the information board, the power supply to
19 control unit, and the power supply for the backlight. A person of skill in the
20 art would understand that there's also driving circuitry in the display casing
21 and that it would be behind the display, which, under Patent Owner's
22 interpretation, is the rear cooling chamber. As Mr. Smith-Gillespie

1 explained, a person skilled in the art would have expected the driver for the
2 backlight to be located in the display casing and in the rear portion of it to
3 avoid obstructing the display image. So regardless of whether the panel
4 adopts the Petitioner's position or the Patent Owner's position, this claim is,
5 nonetheless, satisfied by Karppanen.

6 Now, I'd like to discuss Claim 17, which is the subsequently
7 perpendicular airflow limitation. And I'm on slide 18. The closed loop in
8 the display casing encircles the display. That airflow is along the front and
9 rear surfaces of the display in the vertical direction, which is perpendicular
10 to the horizontal ambient airflow. Now, Karppanen states that while the
11 open loop flow ducts are depicted in a horizontal position, they may also be
12 formed in a vertical or an oblique position. And in this orientation, the
13 closed loop air flowing on the top and the bottom of the display surfaces also
14 satisfies this limitation.

15 Moving on to slide 19, the Patent Owner admits that Karppanen
16 discloses horizontal flow ducts for the open loop, and its expert, Dr.
17 Pokharna, can see that the intended direction of the ambient airflow is
18 horizontal across the cooling space behind the display.

19 Now I'd like to move on to Ground 2, which is the combination
20 of Nagashima and Karppanen. There are three disputes with respect to this
21 combination, and those disputes are shown on slide 21. Now, slide 22
22 depicts two figures from Nagashima. Nagashima discloses a desktop

1 computer electronic display that has both a closed loop and an open loop.
2 The closed loop cooling chamber is formed by a main chassis 3 and a cover
3 12. The main chassis 3 is sealed. Nagashima discloses that the main chassis
4 3 can be a unitary body. The cover, which is element 12, is depicted in
5 figure 1 as having a small gap on the lower right-hand side. Now, this gap
6 does not preclude a finding that there is a closed loop of isolated gas in
7 Nagashima. But to the extent there is, to accept the main chassis includes
8 openings that would prevent it from being a closed loop, it would have been
9 obvious to seal any open holes or at least add a filter to prevent dust and dirt
10 and ambient air from entering the rear cooling chamber which contains
11 electronic components like the CPU and the motherboard.

12 Now, the reason why Karppanen provides important
13 information, Karppanen discloses that there's a closed device casing that
14 contains the electronics. So a person skilled in the art would be motivated to
15 ensure that those types of dust and other contaminants do not come in
16 contact with the electronics. And as we highlighted on slide 23, there's
17 several distinct reasons why there would be a motivation to combine the
18 teachings of Nagashima with Karppanen. Nagashima recognizes that
19 ambient air may contain contaminants, which could damage the electronic
20 components, and, as discussed in Ground 1, Karppanen discloses a closed
21 loop of isolated air that cools the electronic components.

1 Now, Patent Owner argues that combining Karppanen and
2 Nagashima is hindsight, but both concern the same field, which is electronic
3 displays, and the combination includes using known techniques according to
4 known methods to obtain predictable results.

5 Nagashima also discloses that an LCD that is coolable by a
6 combination of an open loop and a closed loop, but there's no dispute that
7 the open loop cools the LCD. The issue is whether the LCD is also coolable
8 by what we contend is the closed loop. Figure 4 shows an embodiment
9 where the tube of fluid is connected to heat-generating electronic
10 components, including a CPU and a motherboard. The heat is transferred
11 from the CPU and the motherboard to the liquid that's inside the tubes.
12 Ambient air flows through a chimney between the LCD panel 5 and the
13 main chassis 3, as shown in figure 10. The ambient air cools the liquid --
14 sorry. When the fan of figure 10 is applied to figure 4, the ambient air cools
15 the liquid in the tubes. That liquid can then absorb the heat absorbed from
16 the display is either then removed convectively by the ambient air fan or it's
17 transferred back into the heat-receiving head or is dissipated by the fan and
18 conducted through the cover.

19 Now, Dr. Pokharna can see that when the open loop fan is
20 added to the chimney, ambient air is then flowing over the tube that is
21 connected between the LCD and the main chassis, and that testimony is
22 shown on slide 25. Thus, by circulating air and cooling the liquid in the

1 tubes, Nagashima's closed loop also cools the display. Likewise, heat from
2 the LCD can also be transferred to the liquid in the tubes and then radiated
3 by the fan and the fins on the heat-receiving head.

4 Nagashima also discloses the limitations of Claim 17 requiring
5 subsequently perpendicular airflow. Again, at his deposition, as shown on
6 slide 26, Dr. Pokharna can see that in figure 10 in Nagashima it's teaching
7 that the ambient airflow located between the LCD display and the main
8 chassis moves in a vertical direction and that, to a person skilled in the art,
9 this was the intended direction taught by Nagashima.

10 Now, the closed loop airflow in Nagashima also flows
11 subsequently in a horizontal direction as a result of the fan that's located on
12 the heat-receiving head, regardless of whether the fan is forcing air into or
13 drawing air out of the fin. We depicted how the airflow may operate as a
14 result of that fan in slide 27. Thus, Nagashima's open loop vertical airflow is
15 subsequently perpendicular to the closed loop airflow.

16 Now I'd like to move on to Ground 3, which is the combination
17 of Ohta and Marumoto. I'd like to skip ahead to slide 32 first and begin by
18 speaking about the disclosures in Ohta and Marumoto. Both Ohta and
19 Marumoto disclose electronic displays and systems for cooling displays.
20 Ohta is on the left. It discloses a closed loop cooling system for a plasma
21 display, which is depicted as element 1. The closed loop is filled with fluid
22 that transfers heat from the display to the closed loop. Heat is transferred

1 from the closed loop to a heat sink, which is element 5. Ohta discloses that
2 the heat sink can be forcibly air cooled, and a person skilled in the art would
3 understand this to mean that the heat sinks are cooled by ambient air
4 blowing fans, by fans that are blowing ambient air onto the heat sink. But
5 Ohta does not disclose the location for the fans that are used to forcibly cool
6 the heat sink.

7 Now, the Marumoto reference is on the right. Marumoto
8 discloses a closed loop cooling system for an LCD display. The closed loop
9 is cooling the rear of the display, and Marumoto teaches that the cooling
10 medium can be air or it can be gas.

11 Now, moving back to slide 29, there's a total of seven disputes
12 between the parties regarding the combination of Ohta and Marumoto. Once
13 again, I'm going to speak through each of them in turn.

14 Now, slide 30 relates to the question of whether Ohta and
15 Marumoto renders obvious a housing. Now, there isn't any dispute that Ohta
16 discloses a housing that would satisfy the claim limitation in its embodiment
17 number five. A person skilled in the art would have been motivated to
18 contain Ohta's display and its cooling system in a single housing in order to
19 protect it from the environment during outdoor use and to facilitate physical
20 transfer of the display.

21 Now, the Patent Owner argues that the embodiments of Ohta's
22 examples three and five would not function as needed if combined, but the

1 Petitioner is not proposing a physical combination. We're simply noting that
2 a person of skill in the art would understand that the display and the cooling
3 system in Ohta can be contained within a housing.

4 Moving to slide 31, Ohta and Marumoto render obvious an
5 LCD that's positioned within the housing and having a backlight. As
6 explained by Mr. Smith-Gillespie, a person skilled in the art would have
7 been motivated to replace the plasma display in Ohta with an LCD, given
8 that plasma displays suffer from poor contrast due to reflection of external
9 light onto the display. Replacing the plasma display with an LCD would
10 also eliminate them. The difference in the closed loop locations that Ohta
11 and Marumoto would not dissuade a person skilled in the art from replacing
12 the plasma display with an LCD. That's because a person skilled in the art
13 would have recognized the need to cool both the front of an LCD and back
14 of the LCD. The front of the LCD must be cooled to protect it from solar
15 load when the display is placed outdoors.

16 Moving to slide 32, Ohta and Marumoto render obvious a
17 closed loop of isolated gas. As I mentioned, both Ohta and Marumoto
18 disclose a closed loop for cooling a display. Marumoto advantageously
19 suggests that isolated air can be used to produce the desired cooling effect.
20 So a person skilled in the art would have been motivated to replace the
21 liquid cooling medium in Ohta with gas, as taught by Marumoto, and there's
22 at least three reasons for that, as explained by Mr. Smith-Gillespie, Exhibit

1 1002, paragraph 306. It would reduce maintenance costs, it would prevent
2 leakage of liquid cooling fluid, and it would reduce energy costs.

3 Now moving to slide 33, the combination of Ohta and
4 Marumoto also renders obvious an open loop of ambient air traveling along
5 the backlight. In Ohta, as modified by Marumoto, the backlight in the LCD
6 is located between the electronic display and the heat sink 5. As I
7 mentioned, Ohta discloses that the heat sink may be forcibly air cooled, and,
8 as Mr. Smith-Gillespie opined, a person skilled in the art would understand
9 that this means that the heat sink is cooled with ambient air moved by a fan,
10 but it does not disclose the location of the fan which forcibly air cools the
11 heat sink. A person skilled in the art would have considered various places
12 to locate the fan depending on which heat-generating components could be
13 cooled by it. It would have been obvious to modify the open loop of
14 ambient air directed to a heat sink in Ohta to direct the air through the
15 housing, the heat sink 5, and the rear surface of the LCD display, which
16 contains backlight. That's because just like the heat sink, which is element
17 5, the backlight generates heat. And Marumoto discloses that a backlight in
18 a liquid crystal panel should be cooled, and that disclosure would motivate a
19 person skilled in the art to do so.

20 Now, moving to slide 34, the combination of Ohta and
21 Marumoto also renders obvious a limitation requiring that the display be
22 coolable by a combination of a closed loop and an open loop. Ohta discloses

1 that the display is coolable by the closed loop cooling chamber. It also
2 discloses that the heat sink 5 is cooled using an open loop ambient air
3 pathway. And as explained by Mr. Smith-Gillespie, it would have been
4 obvious to position an open loop fan in a direction that cools both a heat sink
5 and the rear surface of the LCD display containing a backlight in Ohta, as
6 modified by Marumoto.

7 Moving to slide 35, the combination of Ohta and Marumoto
8 also renders obvious the electronic components for driving the LCD position
9 within the rear cooling chamber. Ohta teaches that the forced circulation fan
10 8 is located within the closed loop cooling chamber. Ohta explains that the
11 forced circulation fan 8 is furnished with an external power supply, which
12 may be shared with a driver circuit of the plasma display panel to drive the
13 fan. So a person skilled in the art would understand that the power supply
14 shared with the driver circuit for the display is an electronic device for
15 operating the display.

16 Moving to slide 36, Ohta and Marumoto also render obvious
17 the limitation requires subsequently perpendicular airflow in Claims 5 and
18 17. As shown in Ohta figure 3, while air within the closed loop gas cooling
19 chamber in Ohta, as modified by Marumoto, moves in both vertical and
20 horizontal directions, it moves predominantly in a vertical direction. Yet, as
21 shown as Ohta's figure 3, as we've annotated it on slide 36, while air moves
22 within the closed loop gas cooling chamber in Ohta, as modified by

1 Marumoto, it moves both vertically and horizontally, but it moves
2 predominantly in a vertical direction.

3 Now, as we've discussed, Ohta discloses forcibly air cooling the
4 heat sink using fans. A person skilled in the art would have understood that
5 the fan which cools the heat sinks could be located in multiple different
6 areas to optimize thermal performance.

7 Now, the last point I would just like to make with respect to the
8 combination of Ohta and Marumoto is discussed in Ground 4. To the extent
9 that Ohta and Marumoto do not disclose or suggest a housing, it would have
10 been obvious to include a housing. Slide 39 depicts the Yare reference,
11 which was discussed in our earlier proceedings. Now, to the extent that
12 Ohta and Marumoto do not disclose or suggest a housing, it would have
13 been obvious to include a housing. Yare discloses a cabinet for mounting a
14 display system that includes a cooling system, which can be used with
15 several types of displays, including plasma displays and LCDs. Yare also
16 includes both open loop and closed loop cooling systems that leverage the
17 use of a heat sink, as in Ohta. Yare discloses a variety of benefits derived
18 from having a cooling system located within a housing, including that the
19 display and cooling system will be much easier to clean, it will reduce
20 downtime, it will reduce maintenance costs, and that, if a fire occurs inside
21 the unit, any smoke would be contained and the fire would burn out quickly.

1 So combining known prior art elements, in this case employing
2 a common housing technique for an LCD panel that leverages both closed
3 loop and open loop cooling techniques to improve a similar apparatus, as
4 Yare describes, would yield predictable results that I could ascribe to both.
5 A person of skill in the art would have, thus, understood that these
6 predictable beneficial results can be obtained without requiring substantial
7 modifications not any of Ohta, Marumoto, or Yare's systems.

8 JUDGE HUDALLA: So I guess we have to agree with you on
9 the placement of the fan in this combination of Ohta and Marumoto that it
10 not only cools the heat sink but it also, I guess, blows on the electronic
11 components and it also goes in a certain direction. Is that all based on expert
12 testimony? Is that what you're basing it on?

13 MR. REDDY: It is, Your Honor. So there is no disclosure in
14 the references as to where the fan is located. The Petitioner's position that a
15 person skilled in the art would recognize there's limited locations to place
16 this fan and that a person skilled in the art would be motivated to place the
17 fan in a way that most advantageously cools the most number of heat-
18 generating components within the display. And so in this situation, there's
19 two major sources of heat. There's the backlight and then the heat sink
20 which is collecting heat from the front side of the display. And so according
21 to Mr. Smith-Gillespie, among the places that you would choose to locate

1 that fan is a location where you can cool both the backlight and the heat
2 that's collected from the front surface of the display through the closed loop.

3 JUDGE HUDALLA: Okay. I guess we'll have to consider that
4 testimony a little more closely. It just seems like a lot of building on top of
5 the reference to me.

6 MR. REDDY: We don't dispute that, Your Honor. I would
7 note that when you have, where there's no disclosure as to where the fan is
8 located, there are very limited locations to put it. It does say that the fan
9 cools the heat sink. Well, if the fan is cooling the heat sink, based on the
10 disclosure, you wouldn't locate that fan in a way that you're at the front of
11 the display because you already have the closed loop that's cooling the
12 display. So we have a limited number of locations to place it, and a person
13 of skill in the art would view one of those locations as being the area
14 between the heat sink and the backlight for the reasons that I mentioned and
15 the advantages that would result from it.

16 JUDGE HUDALLA: I understand your position. Thank you.

17 MR. REDDY: Thank you. So with that, Your Honors, I'll
18 transition to my colleague, Ms. Potkay, for the rest of the argument.

19 JUDGE HUDALLA: Okay. Thank you. And you may begin
20 whenever you're ready, Ms. Potkay.

21 MS. POTKAY: Thank you. Good afternoon. My name is
22 Christine Potkay for Petitioners. I am going to address Patent Owner's

1 alleged secondary considerations of non-obviousness. As Your Honors are
2 aware, some information regarding the alleged secondary considerations is
3 in a sealed record, so I may refer at times to certain exhibits but will not
4 discuss any confidential information today.

5 Turning to slide 41, Your Honors will be very familiar with the
6 alleged evidence of secondary considerations relied on by Patent Owner in
7 this proceeding. Patent Owner presented these same arguments in
8 connection with four other patents addressed that the hearings last month.
9 Patent Owner has failed to explain how the evidence it relies on is connected
10 to any specific claim across these five patents. It is Patent Owner's burden
11 to prove a nexus of any alleged evidence of non-obviousness to the claims.
12 Next, this requires a legally and factually-sufficient connection between the
13 evidence and the patented invention and whether patentee has met its burden
14 of demonstrating that nexus requires consideration of the correspondence
15 between the alleged evidence and the claim scope. As relevant in this
16 proceeding, Patent Owner has not established a connection between any
17 evidence in any claim of the '287 patent.

18 Patent Owner also made the same arguments regarding
19 secondary considerations before the ITC. There, the ALJ found that Patent
20 Owner failed to establish that a nexus exists. Likewise, Patent Owner has
21 not proven it in this case.

1 Turning to slide 42. Patent Owner argues that there was a long-
2 felt but unmet need for effective cooling for outdoor displays, but there's no
3 evidence in this record that the alleged inventions of the '287 patent met any
4 such need. Patent Owner relies on a 2015 Samsung white paper, which is at
5 Exhibit 2025, but that paper does not provide evidence that Patent Owner
6 solved any alleged unmet need. Patent Owner does not even respond to the
7 point that the -- I'm sorry. Patent Owner does not even argue that the
8 outdoor display products that are discussed in Samsung's white paper at
9 Exhibit 2025 practice any claim of the '287 patent, and prior art cited in this
10 proceeding, such as Karppanen and Yare, also demonstrate that there already
11 existed outdoor displays with cooling systems.

12 There's, likewise, no evidence that Samsung failed to develop
13 an outdoor display. Patent Owner admits that Samsung released the line of
14 outdoor display products in 2010 but does not accuse of practicing any
15 claim, and there's no evidence that that line of products failed to ineffective
16 cooling, yet alone because they lacked features recited in any claim of the
17 '287 patent. Likewise, there's no evidence that any alleged issues with
18 Samsung's OHD series, which MRI contends in its papers was released
19 sometime between 2013 and 2016, had any connection to the products
20 lacking claimed features.

21 Moving on to Patent Owner's allegations of copying and turning
22 to slide 43. Patent Owner's allegations of copying come down to its

1 arguments that Samsung's products practiced the claims. The law is clear
2 that infringement is not copying and, even if it were, Patent Owner has not
3 established infringement here. As Petitioner's understand the record, the
4 majority of Patent Owner's arguments are focused on Claim 12 of the '287
5 patent. For instance, Patent Owner only appears to argue that Samsung's
6 mid products are allegedly co-extensive with Claim 12. It's interesting that
7 Patent Owner has focused on Claim 12 because that was the claim
8 adjudicated in ITC, and the ALJ found there that the mid-sized products
9 accused again here of practicing Claim 12 do not infringe Claim 12 for three
10 separate reasons.

11 But even had Patent Owner established that the mid-sized
12 products practiced Claim 12, Patent Owner's allegations of copying would
13 still fail. Patent Owner relies on two documents, Exhibit 2042, which relates
14 to a tear down of larger products, and Exhibit 2043, which it contends relates
15 to a tear down of smaller products. But Patent Owner's response merely
16 cited to the existence of those documents, it did not identify any allegedly
17 copied feature from any product. In addition, Patent Owner did not specify
18 the products that it alleges were copied or whether those products practiced
19 the claims.

20 Patent Owner's sur-reply, again, does not identify any feature in
21 the large products included within Exhibit 2042 that was allegedly copied.
22 But in sur-reply, for the first time, attempts to point to a feature allegedly

1 copied from a product shown in Exhibit 2043. This is a new argument from
2 Patent Owner, but, regardless, it's vague assertion in this paper that Samsung
3 Incorporated had opened a new pathway that runs along the backlight or
4 electronics within a closed loop pathway does not establish similarity, let
5 alone a level of similarity sufficient to suggest that Samsung replicated any
6 feature of any of the products shown in Exhibit 2043.

7 JUDGE LEE: Counsel, it's Judge Lee. I just want to ask are
8 you saying that Petitioner doesn't see that there's any replicated features
9 between MRI's product and Samsung's product?

10 MS. POTKAY: That's correct.

11 JUDGE LEE: That between the two products that actually look
12 alike, like a replica; is that what you're saying?

13 MS. POTKAY: That's correct. I don't believe that Patent
14 Owner has pointed to evidence that there is any specific feature that
15 resembles a feature copied from a product that practices the claims.

16 JUDGE LEE: Okay. And then what about the one they
17 allegedly belatedly showed in the sur-reply? Can you put up that slide, and
18 let's just see how close they are.

19 MS. POTKAY: I believe the exhibits that they point to is under
20 seal, Your Honor.

1 JUDGE LEE: Oh, I see. All right. All right. Well, let's not do
2 that then. But you're saying if we go there and we can still see that, it's not a
3 glaring replica?

4 MS. POTKAY: That's correct, Your Honor. I reviewed the
5 pages they cite one to three at Exhibit 2043, and then they cite to a
6 schematic of Samsung's product at Exhibit 2039. I cannot understand the
7 argument to make out a case that anything was replicated from those --

8 JUDGE LEE: Okay. Thank you.

9 MS. POTKAY: -- from the Exhibit 2043. Turning to slide 44,
10 into Patent Owner's arguments concerning commercial success, Patent
11 Owner has not met its burden of proving alleged commercial success of
12 either MRI's or Samsung's products that bear a nexus to Claim 12 of the '287
13 patent. Addressing Samsung's products first, Patent Owner only alleges that
14 Samsung's mid-sized products are co-extensive with Claim 12, but, as
15 previously discussed, the ALJ found that these products do not infringe
16 Claim 12. It remains Patent Owner's burden to establish that Samsung's
17 products practiced the claim before we even consider the issue of whether
18 their products are co-extensive with the claim.

19 Even assuming that Patent Owner had made a showing that
20 Samsung's products practiced Claim 12, that is not sufficient to entitle Patent
21 Owner to a presumption of nexus here. Patent Owner relies on *PPC*
22 *Broadband* to suggest that a showing that the products practiced the claims

1 is sufficient for a presumption of nexus, but neither *PPC Broadband*, nor
2 later Federal Circuit case law, supports that conclusion. The Federal Circuit
3 in *Fox Factory* confirmed that the presumption of nexus requires a finding
4 that a product is co-extensive, which, in turn, require determining the
5 significance of any unclaimed features.

6 Petitioners have pointed to evidence of significant unclaimed
7 features in Samsung's mid-sized products. As you can see, for example, in
8 Exhibit 2038, at page seven, which is on slide 44, some of these features,
9 amongst others, include Magic Glass, a slim design, high contrast ratio,
10 brightness greater than 3500 nits, and remote management. Patent Owner's
11 sur-reply, I believe for the first time, attempts to tie some of these but not all
12 of these features to the '287 patent's alleged invention. I don't think that
13 conclusory statement establishes that these features or the many others that
14 are evident in the record evidence are tied to Claim 12 of the '287 patent.

15 JUDGE HUDALLA: Ms. Potkay, I just want to remind you,
16 you're at the end of your time, but you can continue into your rebuttal time.

17 MS. POTKAY: I'll continue for a few more minutes. Thank
18 you.

19 JUDGE HUDALLA: Sure.

20 MS. POTKAY: Even Samsung's thermal management system
21 in its mid-sized products includes additional features that are not recited in
22 Claim 12 of the '287 patent. Information concerning the details of these

1 features is in the sealed record and can be seen in the confidential version of
2 Exhibit 2038 at page 18. But I'll just comment that, while Claim 12 is
3 directed to the use of an open loop and closed loop cooling system, for
4 convective heat transfer, the mid-sized products use other types of thermal
5 control that are not conductive heat transfer, as can be seen in Exhibit 2038.

6 Turning to MRI's products, Patent Owner is not entitled to
7 presumption of nexus for its own products for similar reasons, that it has
8 failed to establish that the products are co-extensive with Claim 12. Patent
9 Owner's market materials similarly highlight significant features that are not
10 recited in Claim 12, and, as Patent Owner's CEO testified in a prior
11 deposition, which is at Exhibit 1049, there are numerous features apart from
12 the cooling system that are significant.

13 Unless there are any additional questions at this point, I will
14 leave the remaining time for rebuttal.

15 JUDGE HUDALLA: Okay. Thank you, Ms. Potkay. I have
16 Petitioner at 19 minutes for rebuttal. Mr. Reed, I guess you'll be arguing.

17 MR. REED: Yes, Your Honor, I'll be starting.

18 JUDGE HUDALLA: Okay.

19 MR. REED: I'll be splitting my argument with Mr. Morlock.

20 JUDGE HUDALLA: Okay. And would you like to reserve
21 some surrebuttal time?

1 MR. REED: Yes, Your Honor. I'd like to reserve 15 minutes
2 for surrebuttal, and we're going to take just a moment to get the electronics -
3 -

4 JUDGE HUDALLA: Take your time.

5 MR. REED: May I proceed, Your Honors?

6 JUDGE HUDALLA: Yes.

7 MR. REED: Good afternoon, Your Honors. Again, David
8 Reed for the Patent Owner, MRI. I will be addressing the secondary
9 considerations today, including the nexus between the secondary
10 considerations in the challenged claims. My colleague, Mr. Morlock, will be
11 addressing the prior art claim construction issue and substantive grounds that
12 are proposed by the Petitioner in this proceeding.

13 I mentioned I'm joined by my colleagues, Andie Anderson and
14 John Harris. I'm also joined by Mike Brown, who is the vice president of
15 mechanical engineering for MRI. He's not a lawyer. He spends his days
16 working on the design of MRI's BoldVu outdoor displays.

17 If we could go to slide 2, let's take a look at those outdoor
18 displays. This is the technology that is at issue in this case. You've
19 probably seen these in drive-thrus or perhaps along the streets of
20 Washington, D.C. MRI was founded by Mr. Bill Dunn in 2004. Its sole
21 business is making these outdoor displays, and MRI has a history of
22 advancing outdoor display technology and build the company on his

1 innovations. He designs, develops, builds these products at this facility in
2 Alpharetta, Georgia, which is in the Atlanta area, which employs 170
3 people, including Mr. Brown. It's a quarter million square foot facility. It's
4 vertically integrated. It's where all of the BoldVu displays are made,
5 assembled, and manufactured.

6 If you could turn to slide 3, you can't just take a TV and put it
7 outside. The outdoor environment is very harsh. These are excerpts from a
8 couple of Samsung documents. They explain that ambient temperatures can
9 rise as high as 120 degrees and maybe in the desert southwest, definitely 100
10 degrees regularly in Georgia. Also, the sun poses a big issue. Solar
11 radiation on the front surface can rise to 700 watts per meter squared, which
12 is enough to power a small house. Putting displays into this extreme
13 environment is not easy to do. The displays, the LCDs, can overheat. They
14 can form black spots due to this overheating.

15 Samsung explains this in their white paper. They explain that
16 the biggest obstacle is heat from the inside, that's heat from the really bright
17 backlights needed to make these displays visible outdoors, and from the sun.
18 It took innovation to make this possible, and guess who figured out how to
19 do it? It was Mr. Dunn.

20 Slide 4, this is the '287 patent that is at issue today. Bill Dunn
21 is the sole inventor on this patent. It's assigned to MRI. And the prior art
22 dates back to 2008.

1 Looking at slide 5, we have a couple of figures that show an
2 example of MRI's invention. This invention keeps displays cool using an
3 open and a closed loop, which avoids the need for bulky air conditioners or
4 other devices to keep these displays cool. It allows these devices to be slim,
5 to be thin.

6 We see in the right side of figure 3A and 3B an example of an
7 open loop. Those are the dotted arrows, which are outside air, ambient air,
8 passing along the backlight, which is labeled with number 140. This allows
9 the backlight to be bright, to be visible to compete with the sunlight, but still
10 stay cool.

11 Now, looking at figure 2 on the left, we see an example of a
12 closed loop of isolated gas. That's the dotted arrow showing the airflow in
13 sort of an oval shape. And that closed loop is what protects the electronics
14 from water, from dust, from the rain. It allows these devices to have an IP
15 56 certification, which is the industry's certification against dust and
16 moisture intrusion.

17 So turn to slide 6. During the prior hearings, there was a
18 question about which secondary consideration's evidence relates to which
19 patents. And I'd just like to orient the Board. All five of the patents that are
20 at issue across these cases are related; they're in the same family. Samsung
21 has two families of products, the mid-sized and the large-sized products.
22 The mid-sized products relate to the '287 patent, the '595 patent, and the

1 '322 patent. All in the same family. They all recite this concept of an open
2 loop of ambient air that passes behind the display through a channel along
3 the backlight. So that's a shared concept across these patents, and those are
4 inventions practiced by the mid-sized products.

5 It is proper to apply secondary considerations evidence across
6 multiple related patents where they recite the same essential features. The
7 *PPC Broadband* case states that. We've discussed that previously. It's cited
8 in our briefing. I'd also point the Board to the *Vicor v. SynQor* case, 869
9 F.3d at 1309, which applied similar evidence of secondary considerations
10 across multiple related patents.

11 The *Fox Factory* case also collects cases that do the same.

12 So turning to slide 7, let's talk about how these mid-sized
13 products came into existence. Samsung was trying to develop outdoor
14 displays in 2005, and the record shows that they had a team of people
15 working on this, but they didn't release a product for years. You can't just
16 put a TV outside. It's a hard problem to contend with the harsh outdoor
17 environment. It's a problem without an obvious solution. And Samsung
18 tried to solve this problem, but they couldn't do it. They didn't have the
19 technology. Who came up with a solution? It was Bill Dunn who came up
20 with the solution, and he filed his patent applications in 2008.

21 Now, recall three years before, back in 2005, Samsung was
22 already working on the problem. They finally came up with an outdoor

1 product in 2010, and what did they try first? They tried air conditioning.
2 That didn't work. It was a failure. Customers didn't want it. They
3 abandoned that product. No dispute here. That product wasn't sold past
4 2012.

5 So what did they try next? In 2013, they tried air cooling, but
6 they didn't use MRI's approach. They tried their own approach, and what
7 happened to that product, to the OHD product? It overheated. It was a
8 failure.

9 So let's recap. 2005 they started. Now we're ten years later.
10 They've had multiple failed efforts. They still don't have a successful
11 product, so what did they do? They said we better find out what another
12 company is doing whose products actually do work, and they performed
13 product tear-downs. Now, for whatever reason, it's redacted here, you see,
14 on slide 7. For whatever reason, they don't want the public to know whose
15 products they tore down, but we all know. And after the tear-downs, they
16 released their OHF product. This is a product that uses MRI's invention and,
17 lo and behold, it proves successful. It works, and it proves to be a
18 tremendous, tremendous commercial success with very large sales, which I
19 can't discuss the numbers but they're in the record.

20 Then Samsung recognizes that it was MRI that enabled this
21 success. Samsung praised MRI, but just saying that they praised MRI
22 doesn't do it justice. Let's take a look at what Samsung said, turning to slide

1 8. This is a 2020 email from Samsung to MRI. It's an email from Romulus
2 Sala Stoain who is the director of innovation for Samsung for DOOH. He's
3 the DOOH leader, which is the industry term for outdoor displays. It stands
4 for digital out of home.

5 Samsung is emailing Bill Dunn, again the inventor and the
6 founder of MRI, and these are Samsung's words. Samsung says what
7 you've done at MRI, it's impressive and unique. Impressive and unique. He
8 says I bet it wasn't easy entering into a virgin space and then, shortly after,
9 being able to pioneer a new business model. Samsung knows that Bill Dunn
10 was first, that he entered into the virgin space, outdoor displays, that he was
11 the pioneer. Samsung says it in their own words.

12 Samsung goes on to say that I see loads of opportunity for
13 collaboration in the outdoor space. That outdoor space, that's the virgin
14 space that Bill Dunn pioneered, and Samsung wants to embrace the MRI
15 technology. And that's exactly what they did. They copied MRI after
16 repeated failures of their own.

17 So what does this tell us? Samsung tells us that Mr. Dunn's
18 technology is impressive, that it's unique, and that he was a pioneer, in
19 Samsung's own words. Now that we're locked in litigation, Samsung's
20 lawyers tell you that this innovation was obvious, but these are Samsung's
21 own words before the litigation.

1 JUDGE HUDALLA: And the copying of this you're referring
2 to, it's the ITC infringement contention? Is that essentially what we're
3 talking about?

4 MR. REED: I'm sorry. I'm not sure if I understand your
5 question, Your Honor.

6 JUDGE HUDALLA: Okay. Let me rephrase. Can you just
7 state what the evidence of copying is? Because you've mentioned copying,
8 and I think we've had some argument from Petitioner that requires more than
9 just showing infringement. So maybe you could reorient us on how you've
10 gone beyond just showing infringement. For instance, was there an effort to
11 replicate a specific product? Is there evidence of that in the record?
12 Because I'm not aware of that.

13 MR. REED: Your Honor, it's sealed, but I have an exhibit
14 number for you, which is Exhibit 2043, which Samsung's counsel mentioned
15 was the smaller-sized tear down. So the Federal Circuit has explained, and
16 I'll point you to the *Medtronic v. Teleflex* case, which is 70 F.4th 1331 at
17 page 1340. The Federal Circuit says evidence of access and substantial
18 similarity is evidence of copying, and they say that photos of disassembly of
19 products is not necessary, but we have that evidence here. So it's not
20 disputed there were tear-downs that were done, and photos were taken.
21 Those are in the record.

1 The court also says the products don't have to be identical if the
2 concept is copied. We're not saying that the products are replicas in the
3 sense that they look exactly the same, but we are saying they're replicas in
4 that they adopt the same concepts, the open loop of ambient air along the
5 backlight, the closed loop of isolated gas where the electronics are located.
6 They copied those concepts. And in *Medtronic*, that case involved a catheter
7 and a push wire, and the catheter and push wire had different shapes, but
8 there was still substantial similarity, and that's what we contend here.

9 JUDGE HUDALLA: So suffice it to say, we have a
10 circumstantial case of copying, as opposed to direct evidence of replication
11 or something like that.

12 MR. REED: Your Honor, I would push back on that
13 respectfully. We have direct evidence of tear-downs. We have direct
14 evidence of access, and we have direct evidence of substantial similarity,
15 and they haven't disputed that their products, they haven't presented any
16 evidence here that their products don't practice the claims.

17 JUDGE HUDALLA: I think I understand. Thank you.

18 JUDGE LEE: It's Judge Lee. What's the evidence of
19 substantial similarity? Are you just saying that they infringe? Because I see
20 your claim charts that say here's all these limitations, they're all met on the
21 product, is that the evidence of substantial similarity, or do you have part-to-
22 part comparison between products?

1 MR. REED: Your Honor, it is the adoption of the concepts.
2 The approach, the same approach for cooling -- I'm a little bit limited in
3 what I can say because we're on the public record, but we have tear-downs
4 of a company's product, and then we have, after that, introduction of a
5 product that uses the same approaches to cooling, including those that are
6 recited in the claims of the '287 patent. So, yes, the products practice the
7 claims, but the time line is such that there were a number of failures over a
8 decade, then there are tear-downs that are being performed, and then the
9 approach is changed and the cooling approach of the '287 patent is adopted.
10 So that's, in our view, and we think it's supported by, for instance, the
11 *Medtronic* case I mentioned, that's evidence of copying.

12 JUDGE LEE: I see. Thank you. But I seem to recall they
13 showed evidence they already had the product before the tear-down time.
14 Do you disagree with that?

15 MR. REED: They did not produce evidence of that, Your
16 Honor. They assert that based on photographs that appear to show a lab at
17 Samsung, and there are numerous products shown in those figures of that
18 very same room, but there's no relative timing shown. They didn't show, for
19 instance, they didn't put in their own development documents showing when
20 they had their design. So they never established that time line. We only
21 have what's been produced to us, and that shows, in the very same lab they

1 had their tear-down and the products that they were working on, and then,
2 subsequent to that, they introduced those products into the market.

3 JUDGE LEE: Thank you.

4 MR. REED: So if we could go to slide 9. So what Samsung is
5 disputing next, so the dispute here is a narrow one. I mentioned this a
6 moment ago, but Samsung's mid-sized products practice the '287 patent.
7 They don't put any evidence in, any argument, any expert testimony as to
8 why they contend that it doesn't practice the '287 patent. They pointed at
9 the ITC decision, but that was a different record on different burdens. It's
10 not final, and it's not binding in any way here. They can't just rely upon the
11 ITC finding. They didn't actually create a record as to put it in dispute that
12 their products practice the '287 patent.

13 The same is true for the MRI products. There's no dispute that
14 they practiced the '287 patent. There's also no dispute that the products have
15 been commercial successes for both Samsung and MRI. The only argument
16 relates to nexus, and that argument fails. I'd like to walk through a little bit
17 of the nexus evidence.

18 JUDGE HUDALLA: Before we get there, though, I just want
19 to ask you, I think in the opening argument we heard Petitioner say that you
20 really only even began to flesh out these arguments in the sur-reply. So how
21 would you respond to that?

1 MR. REED: I would disagree, Your Honor. I didn't understand
2 exactly what was alleged to have been a new argument in the sur-reply, but
3 all of our arguments in the sur-reply were directly responsive to the
4 arguments, the limited arguments, quite frankly, that were presented in the
5 reply. It's only about four pages of argument in the reply that we responded
6 to point by point.

7 JUDGE HUDALLA: Okay. I'll keep listening. Thank you.

8 MR. REED: So we heard argument about nexus, but the
9 argument related only to whether there should be a presumption of nexus or
10 not. But I want to be clear, we have actual nexus evidence in the record
11 here. We're not just relying upon a presumption. We certainly think we're
12 entitled to one, and I'll get to that. But I want to talk about the direct
13 evidence that ties the success to the cooling system, and I'll start with sworn
14 testimony from John Palmer. Now, who is John Palmer? He's a product
15 integrator for outdoor displays, including Samsung's outdoor displays. He
16 works with customers. He has firsthand knowledge of why customers buy
17 outdoor products, and he knows that it's hard to put displays outdoors. He
18 explains they sit outside in sometimes a very difficult environment, bright
19 sun, very hot. I think we all know that at this point. It's hard to do. And he
20 asked about the feedback he's gotten from customers. Why do customers
21 buy outdoor products from Samsung, and the answer is cooling. The

1 feedback he got is that some of the other displays don't work well, we want
2 Samsung.

3 Turning to slide 11, he explains that Samsung's displays prevent
4 black-spotting of liquid crystals. I mentioned this earlier. When monitors,
5 when displays get hot, they develop black spots. They can develop if they
6 overheat black spots, large irregular-shaped blotches on the display. That's
7 what happens when the crystals overheat. And why do customers prefer
8 Samsung? Because it's better at preventing that problem, that failure of the
9 LCD, than others. So, again, the question for nexus is why were these
10 products successful? We know they were successful. Why? We have Mr.
11 Palmer testifying it's because of the cooling.

12 If we turn to slide 12, that's not all. We have a Samsung
13 marketing presentation to its biggest customer, and the cooling system is the
14 main focus of Samsung's marketing. It's a 65-page presentation. Through
15 page 27, the focus is on cooling. That's over a third presentation. The first
16 third of the presentation is about the thermal management system.

17 Now, a lot of it is redacted, but this page is page 11 from the
18 presentation. It is not redacted, so we have it on the slide to look at.
19 Samsung calls this thermal management system, this thermal cooling
20 system, a challenging target. They're explaining how hard it is to design an
21 IP 56 enclosure, which would be needed to put a product outside in the rain
22 and the dust and the contaminants, how hard it is to design such an enclosure

1 to work with a high heat load from the system, and that's referring to the
2 bright backlight that's needed to make these displays visible, and the high
3 heat load from the environment. That's the heat load from the sun.

4 And Samsung says you need an advanced thermal scheme.
5 This isn't annotated. These are Samsung's own words. And then, after this,
6 it's redacted, but over a dozen pages Samsung spends touting it's cooling
7 system, which shows that the cooling system matters. This is what they're
8 marketing to their customers. It matters to their success.

9 Indeed, the cooling system is the feature that distinguishes an
10 outdoor display from other ordinary LCDs. If you don't have an effective
11 cooling system, you cannot have a successful outdoor display.

12 If we turn to slide 13, we'll also see the value of the cooling
13 system to these products and the importance of the cooling system. Again,
14 you don't have a market for outdoor displays at all unless you have a cooling
15 system that works. And this system drives the value of the display. This is
16 from the white paper, this image. Samsung puts indoor and outdoor displays
17 side by side, and they say the pricing for outdoor displays is many multiples
18 of their indoor cousins. Why is that? Well, it's the need for a cooling
19 system to enable it to work in the sun and with that bright backlight that's an
20 order of magnitude brighter than an indoor display.

21 So to recap, Samsung wanted to get into the market in 2005.
22 Their products came into the market after their earlier attempts failed, after

1 product tear-downs, after copying, and then proved successful. And this
2 evidence ties that success to the cooling system.

3 Turning to 14, slide 14, Samsung's argument is only about the
4 presumption. They say there's other features of these products, but, as we
5 saw, we had actual evidence of nexus, so we don't need the presumption.
6 We're entitled to it, however. Samsung's argument about the presumption is
7 wrong for at least three reasons. First of all, the presence of additional
8 unclaimed features alone doesn't rebut a presumption of nexus. That's the
9 holding of the *PPC Broadband* case. Second, Samsung doesn't present any
10 evidence that any of its other alleged features caused its commercial success
11 or that its commercial success was due to these other features, and that's its
12 burden.

13 I'll point the Board to the *Polaris v. Arctic Cat* decision, 882
14 F.3d 1056 and specifically to page 1072 of that case. It's Samsung's burden
15 to show that other features led to the commercial success to the exclusion of
16 the cooling system. They haven't done that. They just point to this and say
17 there are other features, but when you look at the actual features that they're
18 pointing to, many of those are actually features of MRI's invention. They
19 point to the slim design, but MRI's invention avoided the need for air
20 conditioning. It allowed for this slim design.

21 JUDGE HUDALLA: Surely you wouldn't say that your claims
22 are directed to a slim design, would you?

1 MR. REED: Your Honor, the claims don't recite a slim design,
2 but the cooling system that enables the products to be cooled effectively
3 without the need for air conditioners, which was what was conventional in
4 the art, and, thus, enables an effective outdoor display without the need for
5 that bulky unit on the back.

6 JUDGE HUDALLA: It just seems a bit of a bridge too far to
7 me. I understand your position.

8 MR. REED: They also point to water and dust resistance. The
9 closed loop of isolated gas enables these products to work outdoors to keep
10 those electronics free of water and dust and enables its products to achieve
11 that IP 56 certification. They point to brightness greater than 3500 nits. In
12 the open loop along the backlight keeps that backlight cool and lets that
13 backlight be really bright to compete with the sun and still stay cool. And
14 then, finally, they point to extreme outdoor durability. That's the entire point
15 of MRI's invention is to enable these products to work outdoors in full sun in
16 the elements for year after year.

17 JUDGE LEE: Can I ask you a question, Mr. Reed? It has to do
18 with nexus. So earlier you mentioned MRI has multiple patents that cover
19 the Samsung products, which you say have been copied from you, from
20 MRI. So do all of your patents, do they share a common claimed feature
21 that's present in these copied products? I'm asking this so we can talk about,
22 like, one feature. You're arguing as though there's just one feature, but there

1 are multiple patents. But maybe you're just saying, although I have multiple
2 patents, they all claim this one feature in common and that's what making
3 their products a success.

4 MR. REED: We're discussing the '287 patent today. We
5 previously discussed the '595 and '322 patents. Those are all related. They
6 all recite similar concepts, specifically the open loop of ambient air, the
7 ambient airflow path that passes behind the display through a channel along
8 the backlight. Certainly, the claims are recited in different ways, but they
9 are very similar in that regard. I don't dispute the '287 patent recites a
10 closed loop that isn't recited in the '595 and '322 patents, so we're not saying
11 the claims are identical, but the case law doesn't require that. The *PPC*
12 *Broadband* case says that it's correct and appropriate to apply secondary
13 considerations evidence across claims of multiple related patents where they
14 recite the same essential features, and the *Vicor* case I mentioned, the *Fox*
15 *Factory* case, it collects a number of cases where the claims of multiple
16 patents cover similar inventions and share the presumption of nexus. That
17 was specifically talked about --

18 JUDGE LEE: Okay. Do your briefs here in this case
19 demonstrate that? I mean, compare the claims in your other patents and say
20 here, Board, here's why there are similar concepts here among these three
21 patents of mine. Are you just telling us that now, or is that actually argued
22 and presented and explained in the Patent Owner response?

1 MR. REED: Well, because of the nature of IPRs, they're all
2 individual cases, so we have mapped the claims to the Samsung products
3 and explained the relationship with the evidence in each individual
4 proceeding. Here, at oral argument, you know, this has been an issue that's
5 raised. We have specifically addressed the claim of each patent in each
6 proceeding where those claims are at issue. We haven't to brief these
7 together and had an opportunity to compare those claims one to one.

8 JUDGE LEE: Right. That's what I was concerned about. So
9 you, essentially, want us to now go back and just look at the record in the
10 other case and come to a conclusion that, hey, these look like similar
11 concepts, so we should apply the case law that Patent Owner's counsel asked
12 us to apply. So you really didn't put these three things together in your
13 briefing. You're just telling us to do that now.

14 MR. REED: Well, I don't think that's something the Board has
15 to, that's not necessarily an analysis that needs to happen. The evidence
16 should be considered and weighed for its own value in each case. And in the
17 *Vicor* case, the Federal Circuit found the error where similar evidence of
18 secondary considerations wasn't applied consistently across multiple patents,
19 so we think it's not only appropriate, it's required to apply the secondary
20 considerations evidence across those patents.

21 And these inventions are all in the same family. They all work
22 together to allow these displays to achieve adequate cooling. I mean, we're

1 not arguing the 124 patents today. Those claims are a little bit different.
2 They recite a heat exchanger, and we've mapped those claims to the large-
3 format displays. So are the proceedings.

4 JUDGE LEE: Yes. But what's in the record there may not be
5 in the record here. I may not be on the panel over there. So I'm not sure
6 what you're asking of, in this view, if you haven't put things together in the
7 record of this case for us to look at and analyze. I feel like you've given us
8 homework to do outside of the record of this case.

9 MR. REED: Your Honor, we believe we've put the evidence of
10 secondary considerations in the record. We've shown how the products that
11 Samsung has in the market, that they're successful, the OHF series of
12 products, how they practice these claims. We've showed the success of
13 those products, we've showed the long-felt need for products that meet that
14 need that these successful products now meet. All of that evidence has to be
15 weighed. And just because there may be another case pending that has, for
16 example, the large-format displays being mapped to the '741 and '142
17 patents, I don't think that requires anymore homework. It just requires that
18 record and the evidence of record there to be weighed, just like the evidence
19 of record here has to be weighed, because the cases aren't consolidated.

20 JUDGE LEE: Yes, it's a tough concept because there are other
21 features claimed, and you say, well, nevertheless, it's one common main
22 feature, but I don't really know that until I go to the record of the other case.

1 MR. REED: Well, the patents are all closely related. They
2 recite very similar features, this open loop cooling concept along the back of
3 the display, along the backlight in this claim. So that's a feature that is
4 shared across these patents. We've mapped the same open loop cooling in
5 Samsung's mid-sized --

6 JUDGE LEE: Like you say, these cases are different. We don't
7 have one common record for three cases. This case has its own record,
8 another case has its own, but you're speaking almost like there's one huge
9 case and the record is the combined record of all three cases. I don't know
10 how I'm going to do that.

11 MR. REED: Well, the evidence that is relevant and that we're
12 relying upon for secondary considerations is in the record for each of these
13 cases. I guess that's my point is that we have filed the pertinent evidence of
14 secondary considerations as appropriate in each of the cases, and we've
15 explained the claims and how they apply in each of those cases, which is
16 different across the cases.

17 JUDGE LEE: Thank you.

18 MR. REED: With that, Your Honor, we submit that the
19 evidence of secondary considerations is strong here. With this context from
20 secondary considerations, I'll turn the podium over to Mr. Morlock to
21 address the prior art grounds.

1 JUDGE HUDALLA: You can begin when you're ready, Mr.
2 Morlock.

3 MR. MORLOCK: Thank you, Your Honor. And, Your Honor,
4 I am on slide 15, and I'd like to start off just by highlighting some of the
5 claim elements here within Claim 15 to sort of ground some context of what
6 we're talking about.

7 What these claims are directed to is an LCD display, and I'm
8 sort of going to mime an LCD display for you, with a backlight. That LCD
9 display with a backlight is sitting in a housing. Then that LCD display is
10 cooled by a combination of a closed loop of isolated gas that circulates in the
11 housing and also by an open loop of ambient air that passes through the
12 housing and along the backlight. That's what we're ultimately talking about
13 is a structure with those features. Claim 15 adds to that where there's
14 driving circuitry, and that driving circuitry is sitting within the closed loop.

15 If we could go to slide 16, please. Petitioner summarized the
16 four grounds here, and I won't go through them again. We'll just address
17 those in that order and skip Ground 5 since Petitioner also skipped Ground
18 5.

19 I'll start with the Karppanen reference. This is addressed in
20 Ground 1, and Karppanen is a single reference obviousness argument
21 presented by Petitioner. We talked about the Karppanen reference in some
22 prior hearings. Ultimately, Karppanen fails because it does not disclose

1 ambient air traveling along the backlight, and it fails with respect to Claim
2 15 because Karppanen is expressed with where control electronics are
3 positioned, and it's not within what Petitioners have labeled as a closed loop.

4 Now, let's talk about claim construction. Now, in order to read
5 Karppanen on these claims, the Petitioner has had to come up with a new
6 definition of the word along. Now, along is a positional word. It's talking
7 about a specific place. Petitioners replace that with functional language of in
8 thermal communication with, and that's problematic because it rewrites the
9 claims and it's also problematic because, if we just talk about thermal
10 communication, that's a function that is necessarily accomplished by
11 anything within a housing. It's just thermodynamics. If one thing is hot and
12 another thing is cool, it's going to transfer heat to it. That's thermal
13 communication. I'm, at some level, in thermal communication with
14 opposing counsel here. We're radiating heat to each other. That's just
15 thermodynamics.

16 So this construction just broadens the claim to where it
17 essentially officiates the term along so it's no longer in the claim at all and
18 certainly isn't positional.

19 JUDGE HUDALLA: And your position is, basically, that we,
20 A, should not adopt their construction but, B, that even under a plain and
21 ordinary meaning of along, that they haven't shown that it's along the
22 backlight.

1 MR. MORLOCK: Exactly right, Your Honor. Exactly right.
2 And let's show they haven't shown along. Taking a look at Karppanen, these
3 are Petitioner's own modified figures from the petition shown at petition 29
4 and petition 30. This is our slide 19, for the record. On the left side, you see
5 the blue component that Petitioner has labeled as a display, and they have
6 that display surrounded by a closed loop in green. Now, then on the right
7 side, Petitioner has what they call the open loop in pink. You can see that
8 open loop is not interacting in any way with the closed loop.

9 Now, what we're talking about here, to ground ourselves back
10 in the claim language, is a backlight. If we look at the petition 29 on slide
11 19, the display shown here, there's no backlight shown at all. There's no
12 backlight. Now, the Petitioners asked the Board to assume that this is an
13 LCD display and then to assume that that LCD display has a backlight. And
14 if we make that assumption, for that backlight to perform its operation, it
15 would have to be sitting in the closed loop. It's the only place it could be.
16 Otherwise, you've got barriers of material that prevent the light from actually
17 shining on the display.

18 So what this describes here is a backlight, if we make several
19 assumptions, sitting within the closed loop. There is no interaction between
20 the open loop air and that backlight. It's just not shown. What, in fact, there
21 is is multiple different layers, at least three or four components, the heat
22 sinks labeled cooling elements, that there's a first heat transfer part 60,

1 second heat transfer part 62, labeled as cooling elements 32. All that sits
2 between whatever would be called a backlight on the display element and
3 the open loop air. That is not within the plain meaning of along. It's simply
4 not shown within the Karppanen prior art reference.

5 Now, turning to slide 20 --

6 JUDGE HUDALLA: Before we go on to that, they made an
7 argument, Petitioner made an argument that we have to look to the parent
8 application's prosecution history. How would you respond to that?

9 MR. MORLOCK: Certainly, Your Honor. And I won't have
10 Ms. Anderson pull it up, but I can go straight to Petitioner's slide because I
11 think that highlights it reasonably well. I'm looking at Petitioner's
12 demonstratives slide number 10 where they have Claim 17. It's the '079
13 patent file history, Exhibit 1020.

14 The claim element or the claim that Petitioner is attempting to
15 address there says something different. It is not the claim element we have
16 here. Oh, thank you, Ms. Anderson.

17 This is the prior language pre-amendment: an open loop of
18 cooling air traveling along the rear surface of the LED backlight where the
19 cooling air is not permitted to mix with the circulating gas. That's what the
20 claim recited before the amendment. That is a different claim element than
21 what is addressed here. Further, as I understand Petitioner's argument,
22 they're essentially saying that by amending a different patent application to

1 amend a different claim term that was traveling along to be contacting, we
2 have given up broader constructions. But then Petitioner proposes as their
3 construction a very broad construction. I don't understand how that squares
4 where, if our amendment indeed limits the claim, well, then why is their
5 construction broadening the claim.

6 JUDGE HUDALLA: Let me ask about the first part of your
7 argument here. You just said the claim limitation is different. I mean, you
8 would agree that it says along the rear surface of the backlight. I mean,
9 that's pretty close to along the backlight, right?

10 MR. MORLOCK: So it's traveling along the rear surface of the
11 LED backlight. Again, we're talking about a specific positional limitation
12 with respect to where airflow is traveling and, again, a specific positional
13 limitation with respect to where the airflow is traveling with respect to the
14 LED backlight. So, I mean, I agree with you some of the words are the
15 same, but it is, ultimately, a very different claim element with very different
16 positional limitations.

17 JUDGE HUDALLA: Because of traveling? Is that --

18 MR. MORLOCK: Well, it's traveling along and also the rear
19 surface of the LED backlight. The rear surface of the backlight is not
20 required within Claim 12 of the '287 patent that we're talking about.

21 JUDGE HUDALLA: Okay.

1 JUDGE LEE: It's Judge Lee. If you travel along the rear
2 surface of the backlight, wouldn't you necessarily be contacting that
3 backlight? So what's the difference between the language that was rejected
4 by the examiner and the language that was amended to?

5 MR. MORLOCK: That's a great question, Judge Lee. So when
6 you talk about along, again, it's a positional limitation. I think along would
7 encompass the concept of direct contact, but I don't think it requires direct
8 contact. You could envision a scenario where a backlight has a film or
9 something like that on it where is that direct contact? Well, it may not be
10 direct contact, but it's still traveling along, and that's Petitioner's point in
11 some testimony of Dr. Pokharna. That's exactly what Dr. Pokharna testifies
12 with respect to the meaning of along.

13 JUDGE LEE: Okay. So if we agree with you on this point,
14 where would we be? They say you still lose because they had an alternative
15 theory.

16 MR. MORLOCK: So, Your Honor, that's a great question,
17 Your Honor. Going back to slide 19, Petitioner's alternative theory, which I
18 don't believe is addressed in Petitioner's petition -- I believe it was presented
19 in reply for the first time -- is that these heat transfer parts 60 and 32 are
20 themselves the backlight, that those are the backlight. So, first, there's no
21 description whatsoever within Karppanen of a backlight at all, much less
22 that the heat transfer part itself is the backlight. Further, I still don't agree

1 that that would be airflow along the backlight because the backlight isn't
2 going to extend through the multiple different barriers that are shown within
3 the figures of Pokharna. That's just not how a backlight would work. It
4 needs to be lighting up an LCD display in order to provide the light you need
5 to see the display.

6 JUDGE LEE: Okay. If this is not in their petition, why are we
7 even considering it? They raised it in their reply; is that what it is?

8 MR. MORLOCK: That's my understanding, Your Honor. That
9 was something Petitioner addressed in argument, and I'm responding to the
10 question you asked. But I believe this is a new argument.

11 JUDGE LEE: Did you, in your sur-reply, say, no, that's a new
12 argument, that shouldn't be considered?

13 MR. MORLOCK: I don't know whether we said there was a
14 new argument or not, Your Honor, but responding to it now.

15 JUDGE LEE: Well, if you're responding to it now, that doesn't
16 seem fair because then -- how would that be fair for you to just come up
17 with a new response that they've never heard?

18 MR. MORLOCK: Well, I'm not sure I understand, Your
19 Honor. If it's a new argument, you're asking questions about it. I want to
20 address the record fully so that we can respond to the arguments they raise.

21 JUDGE LEE: Okay. But, you know, what I'm really getting at
22 is they never had this in their petition. They're the master of their own

1 petition. If they didn't have it in their petition, we shouldn't entertain it.
2 That's what you're telling us that they never had this theory in their petition.
3 If that's true, then we shouldn't hear about it.

4 But the next question is did you complain? Did you say that's a
5 new argument that we shouldn't consider, and I think you said you probably
6 didn't.

7 MR. MORLOCK: I don't recall whether we complained in our
8 sur-reply that that was a new argument, Your Honor. I don't believe --

9 JUDGE LEE: But you're saying now that it is? You're saying
10 now that it is?

11 MR. MORLOCK: I believe it is a new argument. I do believe
12 it is a new argument that wasn't presented in their petition.

13 JUDGE LEE: Okay. Well, we'll check it out. Thank you.

14 MR. MORLOCK: Thank you, Your Honor.

15 JUDGE HUDALLA: Mr. Morlock, I'm sure you've seen,
16 you're into your rebuttal time, but you can continue.

17 MR. MORLOCK: Okay. I will go very quickly, Your Honor.
18 Thank you for that reminder.

19 Ms. Anderson, could we jump to -- yes, let's talk about the
20 Nagashima ground very briefly. So Nagashima is an all-in-one computer
21 that's presented or intended to be presented in combination with Karppanen.
22 What Nagashima is, if we go to slide 22, is an all-in-one computer. We saw

1 these in dorm rooms a lot when I was in college. You know, essentially, the
2 concept is an iMac. You've got the whole computer and the display all in
3 one box. These are designed for indoor use. They're not designed for
4 outdoor use. Nobody was setting these up outside, and you can see the holes
5 in the top of this iMac here in this Exhibit 2055. And if we go to slide 23,
6 you see the exact same holes within figure 1 and other figures within
7 Nagashima. It expressly discloses that that cooling for the housing within
8 Nagashima is done via ventilation. It's not a closed loop. There's no closed
9 loop disclosed within Nagashima. And what Petitioner has argued in order
10 to attempt to create a sort of modification is that, like, well, you can seal up
11 those holes and then that would be a closed loop, but that's still not
12 consistent with what the claims here require or the very concept that is
13 recited by these claims.

14 If we go to slide 24. Because what Nagashima actually
15 describes within its specification is, one, the primary source of heat is not
16 sunlight. It's not a very hot backlight. Remember, these are indoor devices.
17 You don't need a high-powered backlight in order to see them in the bright
18 outdoor sun. The heat is coming from the processor, from the CPU, and you
19 see that in elements 8 and 9 that what's actually happening here is heat is
20 being transferred from what the Petitioner has called the closed loop which,
21 again, has holes in it, so it's not a closed loop, is being transferred from there
22 directly to the LCD panel. So this doesn't cool the LCD. It doesn't cool a

1 backlight. It heats the backlight, it heats the LCD. Nagashima is designed
2 to take heat from inside the housing and push that heat out via the front face
3 of the LCD display. That's completely different than the concepts recited by
4 the claims, and it doesn't disclose the cooling limitation or the closed loop
5 limitation required by these claims.

6 Could we jump to slide 25, please, Ms. Anderson. So I'd like to
7 finally, since I realize my time is running very short, briefly address the Ohta
8 reference. I heard opposing counsel here acknowledge that there's no
9 disclosure in Marumoto or Ohta of replacement of a fan, that that's just not
10 disclosed in these references. And we agree, and Ohta, frankly, is it's just
11 entirely different design that really isn't applicable here. What you see in
12 figure 3, talking about an embodiment within Ohta, is a forced-circulation
13 fan that moves cooling fluid, it actually specifically describes, I believe, as
14 ethylene glycol, across the front face of a plasma screen, and there's no
15 description within Ohta of an LCD display. Plasma screens don't have
16 backlights. There's no description of doing any of the cooling required by
17 these claims.

18 Further, I'd like to address the positioning of a fan because this
19 embodiment of Ohta is describing heat sinks. You see them in figure 3 of
20 Ohta. I've got that shown on slide 25 and 26. Those heat sinks are where
21 heat would be transferred out of that coolant fluid. And if Ms. Anderson
22 picks slide 26, what Petitioner proposes is, well, you could just put a fan,

1 there's a clip art fan they placed here, that would blow air across those heat
2 sinks. Well, in order to meet the claim, you would then have to, one, replace
3 this plasma screen with an LCD display; two, have airflow across the back
4 of that LCD display on the backlight; and then you would be blowing air
5 from these heat sinks, because you've done a lot of work to move heat out of
6 the display via this liquid cooling system and then moving air via heat sink,
7 and then you're blowing air across that and then blowing that hot air that
8 you've heated with the heat sinks right back across the back of the display.
9 There's just no basis to do that. This is entirely an expert speculating on a
10 way you can take a, frankly, inapplicable reference and apply it to the
11 claims.

12 If we go to slide 27, Marumoto doesn't help that. The
13 modification appears to be partially based on Marumoto, but what
14 Marumoto has is a pipe 6 that then it goes along the back of the LCD panel,
15 you know, again, where the backlight would have to be to be a backlight, so
16 there's no open loop airflow across that backlight within Marumoto. And
17 one of this is cured by the citation to the Yare reference because Yare, it
18 does describe a closed loop, but it's a closed loop encasing that an entire
19 display module is placed in. Again, there's never going to be open loop
20 airflow across the back of that display panel, never going to be airflow along
21 the backlight. This combination simply isn't applicable to the claims here.

1 And with that, unless there are questions, Your Honor, reserve
2 our last couple of minutes for rebuttal, or surrebuttal rather.

3 JUDGE HUDALLA: Okay. Thank you. I have you at seven
4 minutes.

5 MR. MORLOCK: Thank you, Your Honor.

6 JUDGE HUDALLA: We'll turn back to Mr. Reddy here, who,
7 I believe, has 19 minutes.

8 MR. REDDY: Thank you, Your Honor. We'll just transfer the
9 presentation equipment again. Okay. May I proceed?

10 JUDGE HUDALLA: Yes.

11 MR. REDDY: Thank you, Your Honors. Once again,
12 Srikanth Reddy for the Petitioners. I'll be speaking for a few minutes, and
13 then I'll pass the baton back to Ms. Potkay.

14 The first point I would like to discuss relates to along the
15 backlight limitation with respect to Ground 1. By saying that Karppanen
16 fails with respect to the along the backlight limitation -- or I'm sorry --
17 Ground 1 fails because Karppanen does not disclose the along the backlight
18 limitation. Just to be clear, challenged Claims 18 through 23 do not require
19 that limitation. And as we pointed out, there's independent grounds for
20 finding each of those claims invalid.

21 Now, fundamentally, the question with respect to the along the
22 backlight limitation from our perspective is what is the plain and ordinary

1 meaning. There's been two specific definitions put forth. The first is, of
2 course, is Petitioner's position, which is that the plain and ordinary meaning
3 is broad and that it needs to encompass ambient airflow that's in thermal
4 communication with the backlight. The second is that we have Dr.
5 Pokharna's interpretation from the ITC case, but we don't have a third
6 differing position from the Patent Owner here in the ITC. So really the
7 fundamental question and, as I believe Judge Lee has alluded to several
8 times, how do you know that something is along the backlight? Does it need
9 to be contacting? And if it's not contacting, is there somewhere in between
10 thermal communication and contacting that makes sense? My response to
11 those questions is that Claim 12 itself provides the important context to
12 ground the nature of the thermal communication because Claim 12 requires
13 that the electronic display be coolable by the closed loop and the open loop,
14 which travels along the backlight. So the open loop itself needs to be
15 sufficiently in thermal communication with the backlight such that it is
16 cooling the display.

17 So Mr. Morlock offered the hypothetical that are he and I
18 sitting next to each in thermal communication with each other. Well, sure,
19 perhaps metaphysically we would be in thermal communication, but I would
20 think there would need to be more evidence that he's either cooling me or
21 warming me up, which is, when you view this requirement in the context of
22 Claim 12, is what would be required.

1 And, moreover, in Dr. Pokharna's interpretation from the ITC
2 case, he essentially found, well, you'll know something is along the
3 backlight when you see it, and that simply is not sufficient given the
4 prosecution history. And I just want to be clear that Petitioner's position is
5 that contacting and traveling along mean different things, and we know that
6 because there would be no reason for the Patent Owner to amend the claim
7 in view of the Heady reference if they did, in fact, mean the same thing.
8 They overcame the rejection by amending the claims in the specific way that
9 the Patent Owner did during prosecution.

10 Now, really, the key point is that the only way for there to be a
11 finding that Karppanen does not disclose the along the backlight limitation
12 in Claim 12 is that the Board finds that the airflow does not move along the
13 backlight if there are heat transfer elements between the backlight and the
14 open loop of ambient air. That's really the key question for the Board, and
15 the Board needs to evaluate that question. And if it turns out that, in the
16 Board's view, airflow that does not move along the backlight because there
17 are heat transfer elements between the backlight and the open loop air, well,
18 then that would be the basis for rejecting Ground 1 as to Claim 12 and its
19 dependent claims.

20 I would just briefly comment on the point as to whether there's
21 a substantive difference between traveling along a rear surface and passing
22 through a housing and along the backlight. Petitioner's position is that there

1 is no substantive difference between those two concepts. In the existing
2 claim in this application, the airflow was moving, it was an open loop of
3 cooling air that travels along the rear surface of the LED backlight. In an
4 LCD, an LCD, by definition, has an LED backlight, so there is no
5 substantive difference between those two positions.

6 I also want to be sure, just as a housekeeping matter, to
7 comment on the point as to whether or not the alternative position regarding
8 whether Karppanen satisfies the along the backlight limitation under a
9 narrow claim construction was addressed in our petition. I point the Board
10 to pages 31 and 32 in our petition, as well as from Mr. Smith-Gillespie's
11 declaration, which is Exhibit 1002, paragraphs 119 to 123 and paragraph
12 184. Those paragraphs discuss this specific limitation.

13 And I'd also note that we did present this argument at the ITC.
14 The ALJ found that this particular alternative argument was not sufficient,
15 and the primary reason that was given was that there wasn't sufficient
16 evidence as to the location of the backlight in Karppanen. We would submit
17 that there is sufficient evidence as the location of the backlight within
18 Karppanen, as Karppanen discloses that the heat transfer parts are located,
19 are intended to be in contact with the heat source. And a person of skill in
20 the art would understand that the heat source in an LCD is in the backlight,
21 and the backlight, of course, because it has the word back in it, is located to
22 the back of the display and that there is sufficient disclosure in Karppanen

1 for the concept that the actual backlight itself is located to the right-most
2 portion of the display element, which I believe is element 26.

3 JUDGE HUDALLA: This whole line of argument you've just
4 stated, could you give us a citation to where that is in the papers?

5 MR. REDDY: Yes, absolutely. That was --

6 JUDGE HUDALLA: I don't know if your colleagues want to
7 do that while you're still arguing. I just --

8 MR. REDDY: No, that's right. I intended to do that. I'm
9 sorry. So it's in the petition at pages 31 to 32, and it's in the declaration of
10 Mr. Smith-Gillespie, which is Exhibit 1002 at paragraphs 119 to 123 and
11 paragraph 184.

12 JUDGE HUDALLA: And that addresses the backlight being at
13 the rear-most portion? That's what you've just stated?

14 MR. REDDY: Oh, sorry. The portion with respect to the
15 backlight is, I believe that's paragraph 113 in Exhibit 1002.

16 JUDGE HUDALLA: So in the declaration but not in your
17 papers then?

18 MR. REDDY: Give me one moment. I believe that's
19 correct, Your Honor. It's written at, the relevant portion is paragraph 113 in
20 Mr. Smith-Gillespie's declaration, and then pages 31 and 32 of the petition.

21 JUDGE HUDALLA: Okay. Thank you.

1 MR. REDDY: Now, briefly, I would like to discuss the
2 Nagashima reference. Now, the Patent Owner contended that the heat in a
3 Nagashima display only comes from the electronic components because the
4 display, which is a desktop computer, is not placed outside. We would
5 submit that a person of skill in the art wouldn't view it that way. There's
6 multiple sources of heat in a display and even in a desktop computer.
7 There's, of course, the electronic components, but then there's the backlight
8 in the display itself, and Nagashima recognizes that. That's absolutely
9 discussed within the context of the open loop of ambient air. You would not
10 need the open loop to travel along the backlight if it was not a source for
11 heat generation.

12 And, finally, I just want to comment on the Ohta and Marumoto
13 references.

14 JUDGE HUDALLA: Sorry. Can I ask you a question? You
15 just made a point about Nagashima. I was looking at their slide 24, and their
16 idea was that the heat is going in kind of the opposite direction of what
17 you're, I guess, intending in this compatibility ground. It's on slide 24. They
18 have the heat of a cooling medium liquid and the two can be transferred
19 effectively onto the back surface of the LCD panel. You're essentially
20 assessing it in the opposite direction; is that right?

21 MR. REDDY: Well, so the specific discussion that's
22 referenced in Patent Owner's slide 24, that relates to one embodiment of the

1 invention where there's no, where the heat is being transferred, as they
2 characterize, which is from the electronic to the display. But our point is
3 that there's different disclosures where there's an ambient air fan that's
4 blowing air through those tubes that contain the liquid, and, as Mr. Smith-
5 Gillespie opined, when the fan is blowing air across those tubes, the heat that
6 was generated by those heat-generating components in the rear portion gets
7 dissipated. And in that scenario, heat from the backlight is then going in the
8 opposite direction because the heat that was previously in the tube has been
9 removed through the convective heat transfer and, instead, the heat rising
10 from the backlight would then have the opportunity to move in the opposite
11 direction.

12 JUDGE HUDALLA: Okay. Thank you.

13 MR. REDDY: Now, as the Ohta-Marumoto combination,
14 there's been some discussion, and, Judge Hudalla, you referenced this, as
15 well, as to what is the evidence as to where the fan would be located. And,
16 again, I have the complete cites on this. I would urge you to look at Exhibit
17 1002, paragraphs 313, 323, 324, and 365 for Petitioner's position as to why
18 there's a limited number of locations to place the fan and why a person of
19 skill in the art would be motivated to place it in the location as we've
20 suggested.

21 Now, the last point I just wanted to address related to a question
22 that was asked earlier in my presentation, which is Dr. Pokharna's testimony

1 regarding whether open loop systems had IP 56 ratings. There just seems to
2 be a fundamental dispute between Petitioners and the Patent Owner
3 regarding what Dr. Pokharna's, the literal words of Dr. Pokharna's testimony
4 say. Petitioner's position is that he was clearly acknowledging that he had
5 heard that there were companies on the market selling entirely open loop
6 systems that had IP 56 ratings. Now, there was additional context for this in
7 the preceding page of the transcript. That was inadvertently omitted from
8 the exhibit itself, but we would urge the panel to look at portions of the final
9 initial determination that discussed this. This is Exhibit 1047, pages 126 and
10 131, note 55, discuss Dr. Pokharna's testimony, acknowledging that there are
11 open loop systems with IP 56 ratings. Oh, I'm sorry. Exhibit 1042. I'm
12 sorry. I misspoke regarding that.

13 So with that, Your Honors, I'll cede the podium once again to
14 Ms. Potkay.

15 MS. POTKAY: Briefly, if I may, on that nexus, the Federal Circuit
16 made clear that nexus cannot be presumed to be attributable to two different
17 combinations of features. And this is in *Fox Factory* at 1378.

18 There are, undoubtedly, different features that are recited in the claims
19 across the patents at issue in these different proceedings. Just as an example,
20 the claims of the '287 patent recite a combination of the closed and open
21 loop; whereas, claims of the '595 patent, for instance, recite a constricted
22 convection plate feature that's not recited in any claim of the '287 patent.

1 To the extent that Patent Owner relies on Mr. Palmer's testimony,
2 Petitioner submits that Patent Owner's characterization of this testimony is
3 off-base. The ALJ found similarly when she considered this testimony, and
4 that analysis from the ALJ is in Exhibit 1042 at page 298.

5 On copying, I would just note, as Petitioner did not reply, that there is
6 evidence in Exhibit 2042, which is under seal, that Samsung had designed its
7 cooling scheme for the mid-sized products at the time of the competitive
8 analysis. And again, this is at Exhibit 2042 at page 65, which is discussed at
9 page 24 of Petitioner's reply.

10 Finally, I would just point out that missing from the time line at slide
11 7 of Patent Owner's demonstratives is Samsung's 2015 white paper, which I
12 think illustrates a point with respect to the extent Patent Owner relies on it to
13 establish nexus here. Patent Owner had pointed out in sur-reply that that
14 was a piece of evidence not considered, as far as I could see.

15 Unless there are any further questions as to Patent Owner's alleged
16 secondary considerations of non-obviousness, I don't have anything further.

17 JUDGE HUDALLA: Thank you, Ms. Potkay.

18 MS. POTKAY: Thank you.

19 JUDGE HUDALLA: You can begin whenever you're ready, Mr.
20 Reed.

21 SURREBUTTAL ON BEHALF OF PATENT OWNER

22 MR. REED: Okay. Thank you, Your Honors.

1 I would, first, like to address the question of whether a new argument
2 was raised. It was a new argument and this relates to the heat transfer part,
3 allegedly, being part of the back light that's a new argument at oral
4 argument. That's not found anywhere in their briefing. They cited to pages
5 31 to 32 of the was that the petition? of the petition. And that argument
6 simply isn't there. They never asserted that the first and second heat transfer
7 parts are part of the back light, and thus, the open loop is going along the
8 back light, under that understanding of the back light.

9 JUDGE HUDALLA: And just for reference, we're talking about the
10 Karppanen reference, the way it's presented.

11 MR. REED: Correct.

12 JUDGE HUDALLA: Okay.

13 MR. REED: Another argument they've never made is they've never
14 taken any issue with similar secondary considerations evidence applying
15 across a family of related patents. That's not an issue that was ever raised in
16 any briefing.

17 And there's nothing wrong with similar secondary considerations
18 evidence applying across related claims, whether be it in the same patent; be
19 it in multiple related patents.

20 JUDGE HUDALLA: Well, I think I brought that up in the last
21 hearing myself, actually. You know, I think the issue is, we hear much the
22 same evidence being presented, but, then, it's ascribed to this set of claims,

1 and then, it's ascribed to another set of claims, and then, another set of
2 claims.

3 And the way that at least what I'm seeing is, you kind of abstract
4 everything up to, hey, we're cooling LCDs and we know that that's kind of
5 the nexus evidence here. So, that's what I think Judge Lee was asking about.
6 Maybe I'm putting words in his mouth from earlier, but I think that's what he
7 was asking. That's what I was asking about in the previous hearing.

8 MR. REED: And we certainly don't intend to abstract it to the level of
9 we're cooling LCDs. It's very specific. It's cooling using an open loop along
10 the back light. In the '595 and '322 patents, that open loop of ambient air,
11 it's formed by a constricted convection plate, but it's the same approach to
12 cooling. It's using outside air and putting that air along a back light, along
13 the back of the display, which was never done in the prior art for an outdoor
14 display.

15 And the objective evidence, it's important to remember what
16 secondary considerations are. It's objective, real-world evidence that what is
17 alleged to have been obvious was not, in fact, obvious.

18 Here, we have this long-felt need that was unmet. We have Samsung
19 trying to develop a product. We have Samsung failing time and again, not
20 coming up with the approach that's in any of these claims.

21 I would just note for the record Samsung's counsel conceded during
22 argument that they were doing competitive analysis here. That's exactly

1 what they were doing; they were looking at competitor products that were
2 successful and trying to figure out how to make these products work,
3 because they hadn't done it on their own. That's objective evidence that
4 what they are saying was obvious was not, in fact, obvious. It wasn't
5 obvious to Samsung certainly.

6 If we could pull up Samsung's slide 42?

7 Samsung says there's no evidence that the invention met any long-felt
8 need. And here, they're saying that the white paper identified other
9 companies that for years were designing and building screens built to run
10 and last outdoors.

11 And they're pointing to the middle column on page 2 of that white
12 paper. But if we could pull up that middle column?

13 If you look at the bottom this is a 2015 paper if you look at the
14 bottom sentence in that same column, it says that's a big change, even from
15 five years ago. This ability to put screens outdoors, that's a big change from
16 the 2010 timeframe, a couple of years after MRI's patents were filed.

17 That's right, it was an unmet need before MRI. And now, Samsung is
18 saying, "Now we can put screens outdoors." That is not, that argument does
19 not rebut the fact that there was a long-felt need in the art.

20 They point to Karppanen and Yare as disclosing cooling systems, but,
21 Your Honors, those products, those patents didn't solve the problem. They
22 haven't pointed to any product, based on those references or any other

1 references, that solve this unmet need that they, themselves, in their own
2 words are describing in their white paper.

3 They also say there's no evidence that Samsung failed. Again, that's
4 absolutely false, absolutely incorrect. We have testimony from Samsung's
5 lead engineer, Sung Ki Kim, who detailed these failures, and he specifically
6 explained that the OHD product, 2013, it failed due to overheating.

7 If we can turn to slide 44 with the time I have remaining

8 Samsung says that there's no evidence that the claimed features of the
9 cooling system drive sales. Actually, here there's no evidence that any
10 unclaimed features drive sales. There is evidence that the claimed features
11 drive sales.

12 They have an excerpt from a slide here from a customer presentation
13 on, I believe it's page 17; it might be page 18. They are specifically showing
14 the features from the claims of the '287 patent, the '595 patent, the '322
15 patent, that are achieving this cooling. And they are not only showing it,
16 they are showing it to a customer. This commercial success would not exist
17 if it weren't for that cooling system. There was no industry.

18 We have the email from Samsung in 2020 that we went through in
19 detail. Samsung recognized that MRI was the pioneer; that Mr. Dunn
20 entered a virgin space, the outdoor space. It didn't exist. And all of a
21 sudden, after MRI comes up with this technology that enables these products
22 to be put outdoors, you have huge sales. That is clear, clear evidence of

1 commercial success, of nexus, and suggests it strongly shows the
2 non-obviousness of the claims.

3 JUDGE LEE: But, Mr. Reed, it's Judge Lee.

4 But none of these claims have cited anything about an outdoor
5 requirement. What does that do to the nexus argument?

6 MR. REED: Your Honor, the outdoor requirement is the long-felt
7 need. There are challenging thermal factors, thermal loads, when you put a
8 display outdoors.

9 The claims recite the solution. I would point you to the *Volvo Penta*
10 case just as an example. There, the long-felt need was for safer wake surfing
11 behind a boat with the propeller, with the drive. It would be dangerous if
12 you fell off of a wakeboard.

13 So, the solution was the claimed invention of a reversed drive for the
14 boat. It didn't say anything about safer wake surfing, but the Federal Circuit
15 found error for not considering the invention that satisfied that long-felt
16 need.

17 Certainly, these displays, these patents, when you read them, they're
18 directed at outdoor displays. They could be used in other situations where
19 there's a thermal challenge, like a really hot factory, or something like that,
20 sure, but the long-felt need they're satisfying, and the solution that they
21 provide, is solving that long-felt need for outdoor displays.

1 JUDGE LEE: But what about the other objective evidence factors? It
2 seems like it's a great invention only because it's solving an outdoor display
3 problem, but the claims aren't directed to outdoor displays. So, is that a
4 problem of any kind to you?

5 MR. REED: I would disagree that the claims aren't directed to
6 outdoor displays. They're directed toward display assemblies that have
7 LCDs and housing and cooling systems that enable these displays to be used
8 outdoors. There's no requirement that it say, "outdoor display." That's what
9 these products are and that's the need they satisfy. That's what drove this
10 invention. That's what Samsung copied and adopted for its outdoor displays.
11 There's no dispute that's ever been raised that these claims aren't, you know,
12 aren't covering outdoor displays. They do.

13 Thank you, Your Honors.

14 JUDGE LEE: Okay. Thank you.

15 JUDGE HUDALLA: Thank you.

16 With that, the hearing is concluded. The cases are now submitted.

17 And we are adjourned. So, thank you.

18 (Whereupon, the above-entitled matter went off the record at 3:19
19 p.m.)

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