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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CANON U.S.A., INC. and CANON INC.,
Petitioner,

v.

SLINGSHOT PRINTING LLC,
Patent Owner.

IPR2023-00312 (Patent 7,484,823 B2)
IPR2023-00313 (Patent 7,594,708 B2)

Record of Oral Hearing
Held Virtually: May 9, 2024

Before JO-ANNE M. KOKOSKI, GARTH D. BAER, and JOHN D. HAMANN, *Administrative Patent Judges*.

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The above-entitled matter came on for hearing on Thursday, May 9, 2024, commencing at 9:00 a.m., via video teleconference.

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

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3 JUDGE KOKOSKI: Good morning. Today we will hear arguments in
4 IPR2023-00312 concerning US Patent number 7,484,823 and IPR2023-
5 00313 concerning US Patent number 7,594,708. I am Judge Kokoski, and
6 I'm joined today by Judge Hamann and Judge Baer. Let's start with
7 appearances, beginning with Petitioner.
8 MR. BREGMAN: Hi, Your Honor. My name is Dion Bregman. I'm
9 joined by Jimmy Kritsas, both for Petitioner Canon.
10 JUDGE KOKOSKI: Thank you. Patent Owner?
11 MR. BORSOS: Mark Borsos, counsel for Slingshot Printing.
12 JUDGE KOKOSKI: Okay, thank you.
13 MR. BORSOS: And with me is Rayiner Hashem. Entered a motion
14 for *pro hac vice* appearance, but that has not yet been disposed of.
15 JUDGE KOKOSKI: Will he be presenting today?
16 MR. BORSOS: He will not be. Well, we can talk about that after this
17 hearing, because the one in the afternoon is a separate matter, but for this
18 hearing, he will not be.
19 JUDGE KOKOSKI: Okay. Thank you. Before we begin, I would
20 like to remind the parties that we each have a copy of the demonstrative
21 exhibits you provided. During your argument, please identify clearly and
22 specifically the demonstrative referenced by slide or screen number so that
23 everyone can follow along, and to ensure clarity and accuracy of the court
24 reporter's transcript. Petitioner, we noticed that you submitted a second set
25 of demonstratives in the 312 proceeding the day after submitting your first.
26 Can you explain why you did this and what the differences are?

1 MR. BREGMAN: Yeah. So the two -- the one that was submitted in
2 the 312 and the one that was submitted in the 313, one of them, the titles,
3 when it was converted to the PDF from a PowerPoint presentation, the titles
4 just didn't print out on some of the slides. It's identical to the other one. The
5 other one, for some or another reason, worked. So the one is perfect. The
6 other one the titles were messed up, so now they both look the same. So
7 nothing new was added over what was in the other deck and the decks, you
8 know, both of them refer to each other, so nothing new was added.
9 JUDGE KOKOSKI: Okay. Great. We just wanted to confirm that.
10 Thank you. We request that you keep your line muted when you're not
11 speaking. Also, please keep in mind that the remote nature of this hearing
12 may result in audio lags, so please pause prior to speaking so as to void to
13 avoid speaking over others. As set forth in our hearing order each party has
14 60 minutes to present their arguments. Petitioner will proceed first and may
15 reserve time for rebuttal. How much time would you like to reserve for your
16 rebuttal?
17 MR. BREGMAN: Ten minutes, Your Honor.
18 JUDGE KOKOSKI: Ten minutes. Okay. Patent Owner will then
19 have 60 minutes to present their case. And may reserve time for sur-
20 rebuttal. How much time would you like to reserve?
21 MR. BORSOS: I'll plan on reserving 15 minutes.
22 JUDGE KOKOSKI: 15 minutes? Okay. Okay, then give me a
23 minute to set the clock, and then I'll let you know, Petitioner, when you can
24 start.
25 MR. BREGMAN: Sure. Jimmy is going to run the slides, so, Jimmy,
26 if you can maybe pull them up.

1 JUDGE KOKOSKI: Okay, you can begin when you're ready,
2 Petitioner.
3 MR. BREGMAN: Great. Thank you, Your Honors. So we're going
4 to be talking about IPR's 312 and 313 today. They relate to two patents that
5 were filed on the same day. And we'll go into a brief overview of those
6 patents in a minute. Jimmy, if you can go to slide two. We're going to be
7 talking just at a high level about the '708 and '823 patents, just not getting
8 into the grounds yet. Then we're going to go into the shared grounds that are
9 common to both the '708 and the '823 patents. Then Jimmy is going to be
10 talking about the grounds that are unique to the '708 patent. And then
11 finally, we'll wrap up with the grounds that are unique to the '823 patent.
12 Jimmy, if you can jump to slide four. So these are the two patents.
13 On the left is the '823. On the right is the '708. They were both filed on the
14 same day. They have the same inventors. The difference, there's a slight
15 difference in titles. The '708 is methods and apparatuses for sensing
16 temperature of multi vias heater chips. And the other one is for regulating
17 the temperature of multi vias heater chips. So, very similar. And as you'll
18 see with the claims, they cover very similar subject matter if we jump to the
19 next slide.
20 So, here is a representative claim on the left from the '708 patents and
21 a representative claim from the '823 patent. Both claims 1, as you can see,
22 on the left claim 1 of the '708 is certainly shorter and broader. We'll go
23 through that just very briefly. So, in the center of the two is a common
24 figure. From both of them, that's figure five, you'll see that there are a
25 number of ink vias. That's the cyan or blue vertical bar that you see is one of
26 the ink vias that carries the ink to the heater arrays for ultimately getting

1 heated and then ejected from the ejection chambers. So you've got cyan and
2 blue. You've got magenta or pink ink via. Then you've got a yellow ink via,
3 and then you've got a black ink via, which is quite common for inkjet
4 printers. The claim, and I'll go through the ’708 patent first. So that's got a
5 plurality of ink vias. Then it's got heater arrays on both sides of the ink.
6 Those are shown in red. So, for example, if you look at the blue or cyan ink
7 via, you'll see a red heater array on the left of it, and you'll see a right heater
8 array on the right of it. Then you have a region between adjacent heater
9 arrays. That's sort of the region that we've colored in here in, with a blue
10 rectangle. So that's between adjacent heater arrays. There is a small plain
11 construction issue here that I think is a non-issue. We'll get to a little bit
12 later when it comes up. The only reason they use that heater array, sorry,
13 that region is so that they can say that they place a single temperature
14 sensing element in that region, and that's shown in green. So, pretty simple.
15 You've got a number of ink vias, you've got heat arrays on both sides, and
16 then between adjacent heater arrays in a region, you've got the temperature
17 sensor.
18 The ’823 patent claims the same thing. It has a few extra pieces to it,
19 but in essence, it claims something very similar here. It claims, in particular,
20 three vias, four heater arrays, two temperature sensors, but it's covering very
21 similar subject matter, just having more detail. And then it adds a couple of
22 extra features, which we'll talk about when we get to those claims. Jimmy,
23 next slide, please. So, this is the two figures in the patents that are the
24 admitted prior art, figure one and figure two. Figure one shows one of the
25 early implementations, according to the patent of a printer chip. You can see
26 it's also got three ink vias, shown in cyan, magenta and yellow. Here, it's

1 only got one heat array on one side of each of those vias. And then it's got a
2 temperature sensing resistor, which sort of snakes around. That's the thing
3 in black or gray that snakes around on the heater chip. The temperature
4 sensors are used to measure the temperature of these chips so that they can
5 control the heater array, so that you can eject ink from them. If we look at
6 the second prior art that's discussed in these patents, that's shown in figure
7 two, what they have here is instead of having that temperature sensing
8 resistor that snakes around the ink vias they have for each of the heater
9 arrays, they have a separate temperature sensor resistor, or TSR, they call it.
10 So each of the vias has a single heater array and a single temperature
11 sensor. As you'll see in a moment, or recalling the figure that we saw a few
12 moments ago, which covers the claims. The only thing missing in this figure
13 in the prior art is a separate heater array on the right side of each of those
14 vias. If you had a separate temperature sensor array on the right side, you
15 would basically have everything that's in the clamp. But Patent Owner's
16 expert has admitted that adding a second heater ray on both sides of the ink
17 vias was well known at the time. We can jump to the next slide. We are
18 now on slide seven. So here we were asking Patent Owner's expert, Mr.
19 Dietl, about his work. He was doing a Kodak in the middle of 2004. That's
20 before these patents were filed. And if you look at the last question here, we
21 said, so one of skill would have known that they could have achieved that,
22 the 1200 dpi printing resolution by adding heater arrays on both sides of the
23 ink via. And he said, yes, everyone knew this. I think there was something
24 that was known in the arts, even when it was 300 dpi printing, to get 600 dpi
25 printing. So if you wanted to increase the print resolution, what you would
26 do is just put another heat array on the other side of the ink via, you offset a

1 little bit, and that way you can double the amount of dots that you are
2 printing on the page and increase your print resolution.
3 So, let's jump into the grounds. So if we go to the next slide, these are
4 the grounds. It looks a little complicated, this table, but rows A and B are
5 common. Those are grounds one and two are common to both of the IPRs
6 that we're talking about. Then grounds three, four and five are separate for
7 the ’823 patent IPR and grounds three to six are separate for the ’708 patent,
8 and we'll break them out accordingly. Next slide, please, Jimmy.
9 So, why don't we jump right into the first ground and we can start that
10 on page on slide number twelve. So, the first two elements of the claims, in
11 essence, are plurality of ink vias and heater arrays on each side of the ink
12 vias. And that is 100% shown in the Benjamin reference, which is shown in
13 one of the representative figures from Benjamin, is shown here in the
14 middle. You can see it's got three yellow, cyan and, sorry, magenta and
15 cyan. And on each side of it it's got heat arrays. Those are shown in red. So
16 no dispute that that is shown in Benjamin. If we jump to the next slide,
17 sorry, jump to the next slide. Slide 14.
18 The next element in the claims is this region that we discussed earlier.
19 And here's where I just want to raise the claim construction issue briefly. So
20 the way that the claim, claim 1 in the ’708 patent, is written is it says that the
21 region is adjacent and between heater arrays. So if you look at the region
22 two, for example, where you see B and C, those are the two heater arrays, b
23 and c, and it says that there's a region that's between or adjacent the heater
24 arrays. But then the claim also says that the region includes the heater
25 arrays. So it's a little bit confusing that the claim both is between the heater
26 arrays and includes the heater arrays. So our claim construction for Your

1 Honors in our petition said, well, we believe that the region should include
2 the heater arrays, because that's what claim 1 of the ’708 patents says. Your
3 Honors, in your wisdom, correctly said that you don't want to construe what
4 a region is. It's not material to the outcome, and you're absolutely correct
5 about that. It's not material to the outcome. Because if that region that's
6 shown with the blue rectangle includes the heater arrays or doesn't include
7 the heater arrays, it makes no difference. The only reason that the region is
8 introduced in the claim is to say that there's a temperature sensing element in
9 that region. And claim 1 of the ’823 patent says that that temperature
10 sensing element needs to be centered between the heater arrays. So it
11 doesn't make a difference whether the region includes the heater arrays or
12 not, as long as there's a temperature sensor basically, between those two
13 heater arrays in the claim. That would anticipate to render obvious the
14 claim.
15 So we are in agreement with Your Honors that no claim construction
16 is actually necessary here, because either way, whether it's our construction
17 or construction that the region is just the region between the heat arrays and
18 doesn't include the heat arrays, it leads you to the exact same result. As you
19 can see here in Benjamin, which is shown in the middle, it clearly has a
20 region between each of the heater arrays, and that's the sort of rectangle.
21 Whether or not it includes the heater arrays is immaterial for the claim, but it
22 clearly has this region. The ’823 patent writes it in a slightly different way.
23 Instead of just saying a region between adjacent heater arrays, it actually
24 calls out the region, and it requires two specific regions, and that would be
25 region two and region three. That is shown here in Benjamin.
26 JUDGE HAMANN: Counsel?

1 MR. BREGMAN: Yes.
2 JUDGE HAMANN: This is Judge Hamann. I want to make part, so I
3 understand better, I think an argument that you just made, and it sort of
4 relates to the claim as a whole, because obviously that's how we're
5 construing and considering the claim in addition to the individual words.
6 And I'm focused on claim 1. For example, the ’708 that you have here,
7 region certainly is claimed. That's stated. But there's also the following
8 element talks about a single temperature sensing element within each region.
9 MR. BREGMAN: Right.
10 JUDGE HAMANN: So I do think it's material that there the regions
11 and where there are TSR’s, for example, region A, as is shown here, and
12 region B, C is a different region. I think this claim would speak to a single
13 temperature sensor being in each of those two regions. Isn't that correct?
14 MR. BREGMAN: It's a little bit confusing, the claim. So if we read
15 the language of the claim, and let me just parse that language out, it says a
16 region disposed adjacent each heater array. So that's pretty clear. Region
17 needs to be in next to the heat array, where only one region is disposed
18 between two adjacent ink vias. Okay, well, the only time you've got two
19 adjacent ink vias are regions two and three here, the one where it says a
20 doesn't have adjacent heat arrays, it's only got it between B and C. But it
21 says where in only one region is disposed between two adjacent ink vias and
22 wherein the region disposed between two adjacent ink vias. Again, that
23 could only be the region where you've got adjacent inference. So that's
24 between B and C and between D and F, includes, and this is the confusing
25 language, that region includes the region. So it's referring to the antecedents
26 of a region that was introduced early in that element, where in the region

1 disposed between two adjacent ink vias includes two heat arrays. So now
2 it's including the heat arrays. It's not just adjacent or between them. It
3 includes the two heat arrays, each heat array being associated with their
4 respective ink via. So when it's talking about the adjacent heat arrays, it's
5 really talking about these two central regions, regions two and three.
6 Your Honor, those are the only two regions where you have adjacent
7 heat arrays, and those are the only two regions that could include two
8 adjacent heater arrays. So back to my point about it really being immaterial
9 as far as this claim is concerned, when it now introduces in the next element
10 a single temperature element disposed within each region, the temperature
11 sensing elements operable to sensor temperature, et cetera. It's really the
12 single temperature sensing elements in that region two and three, because
13 those are the regions two and three that include two adjacent heater arrays.
14 And in that region, it doesn't make a difference whether that region includes
15 the heater arrays or not. A single temperature sensor in either of those
16 regions would still meet the claim, whether it includes the heater arrays or
17 not.
18 JUDGE HAMANN: Mr. Bregman, I'm just trying to understand, I
19 believe what you stated. Obviously, the claim does say, again, focusing on
20 claim 1 of the ’708 patent, you know, where in the region disposed between
21 two adjacent ink vias, that's referring back to the one region of the A region,
22 correct? Or does Petition disagree?
23 MR. BREGMAN: It's actually referring. Yeah, it is referring to the
24 region of, I mean, a means one or more, as we know in a claim. So there's
25 one or more regions. And then it says that the region that has. That's
26 between two adjacent. So that actually could be in this Benjamin figure, that

1 could be region two or three, because region two or three are. Both have
2 two adjacent heater arrays. Does that make sense? So could be region two
3 or three for the region.
4 JUDGE HAMANN: No, I understand that. Mr. Bregman, that aspect
5 of your argument, my question goes, and I'm not certain it's consistent with
6 the argument I heard from you. It seems to me that these limitations,
7 obviously a region, you have A, B, C, D, E and F, you've got two regions in
8 this figure, B, C and D, E, which are the two heater arrays. But you also
9 have regions A and F, which are a region disposed adjacent, each heater
10 array, but aren't necessarily part of the wherein clause because they don't
11 have the two heater arrays. And that's relevant.
12 MR. BREGMAN: Yeah, you're absolutely right that there would be a
13 heater element in each of these regions. But really, just to anticipate or
14 render obvious, we just need one region in the prior art for claim. For the
15 ’708 Patent, we just need two vias, because it's got a plurality of vias, which
16 Benjamin's got. It's got, let's say the yellow via and the pink via. And then
17 it says a heater, heater array disposed adjacent, each of longitudinal sides of
18 that via. So that would be A and B and C and D. And then it says a region
19 which could be one or more regions. So let's say it's one region for
20 anticipation, obviousness purposes, one region, which would be this region
21 two between B and C. And then it's got a single temperature sensing
22 element in that region, which could be between B and C.
23 So as far as anticipation obviousness goes, we obviously, for this
24 claim, only need a single region for claim. For the other claim. For the
25 claim of the ’823 Patent, it's a little bit different, Your Honor, because there
26 it specifically calls out, you know, where the regions are, and that has

1 specific regions. And for that particular claim, it equates to this region two
2 and three. You need two regions. You need region two, and you need
3 region three. But for the '708 Patent, the way that it's written, with its
4 breadth, it only needs two vias. It needs a heat array on each side of those
5 two vias, and it needs one region, really, between adjacent heat arrays. And
6 that, you know, if the prior art has all of those things, it meets the limitations
7 of the claim.
8 JUDGE HAMANN: Okay, well, I understand your argument as it
9 relates to B, C and then D, E, for example, and what the amount of regions.
10 But it does say region disposed adjacent each heater array.
11 MR. BREGMAN: Right.
12 JUDGE HAMANN: So isn't A region disposed at a heater array? Are
13 you saying that's not.
14 MR. BREGMAN: I agree. If the region A is a region disposed
15 adjacent to heat array, and there would be a single temperature sensing
16 element in there as well. Yeah.
17 JUDGE HAMANN: So this claim may, and we read as an entirety as
18 a whole, you may need region A and region B, C to show that the claim is --
19 that's covered by the claim. Is that fair?
20 MR. BREGMAN: Yes. Yeah. Yeah. Good.
21 JUDGE HAMANN: Thank you.
22 MR. BREGMAN: All right, so let's jump to the next. So, really, the
23 claim construction issue there, which is confusing, and I apologize for that,
24 is that this claim 1 of the '708 patent, both has the region adjacent heater
25 arrays and between them, and then also includes the heat array. So it's just

1 the language is imperfect and it's difficult to parse. Okay, why don't we
2 jump to the next claim element? And that's on slide 15.
3 So, Benjamin, and this again, is Benjamin shown in the middle. The
4 claim now requires a single temperature element disposed in each region.
5 As Your Honor just pointed out, Benjamin only discusses a single
6 temperature sensing element. Doesn't tell you where it is, but we know that
7 it's got one. We know that it measures temperature. This temperature
8 sensing element that they use in these chips is often called a TSR, a
9 temperature sensing resistor. And you can see here in the middle of the
10 slide, you've got an input on some flex circuits, you've got the TSR in sort of
11 orange, and you've got the TSR return in blue that connects to the chip. And
12 that if you read the accompanying text to that, it says, a temperature sense
13 resistor contact area, TSR, allows a printer coupled to an inkjet cartridge to
14 determine a temperature of the printhead die based upon the measurement of
15 the resistor. So we know that Benjamin measures the temperature. We
16 know it's got a TSR. We just don't know where it is. And it doesn't say that
17 it's specifically between, you know, in each of the regions as required by the
18 claims.
19 So if we go to the next element. Sorry, in the next slide. Sorry. One
20 up, Jimmy. Yeah. So this is where we introduce Giere673. So this is our
21 secondary reference. Giere673 says that you can have at least one
22 measurement sensor, and then it says what those temperature sensors are.
23 One of them is this TSR 510. We've colored that in green. It's a temperature
24 sense resistor. It's got the wiggly resistor line along vertical next to one of
25 the heater arrays that are shown in red. And then it sort of snakes around
26 and goes up near the other heater array, shown in red. So you've got two

1 heater arrays, you've got a region between the two heater arrays, and you've
2 got at least one temperature sensing device, temperature sensing resistor,
3 located in that region between the two heater arrays. And then the bottom
4 highlighted section from Giere says, preferably, it's not located. It's talking
5 about the TSR's, the one or multiple TSR's. Preferably it is not located
6 adjacent to any particular heating element and reflects the temperature of the
7 substrate after heat is moved from the heating element to the TSR. So
8 really, it says it's not associated with any temperature sensor, it's just put it in
9 the region between and measure that temperature that you have between the
10 heater arrays.
11 So if we go to the next slide, this is what the combination would look
12 like. This is slide 17. So if you took Benjamin, that has the multiple ink
13 vias and the multiple heater arrays, and you were to place the single
14 temperature resistor of Giere into that region, you would measure the
15 temperature in that region. Here we show it, including the heat arrays, but it
16 could just as simply be just the region between the two heat arrays. So
17 there's a single temperature resistor in a region adjacent to the two heater
18 arrays. And the admitted prior art and Yabe, as you'll see in our briefs, also
19 tell you why you need a temperature sensor, a separate temperature sensor
20 for each of these regions. And it explains. Actually, let's jump to slide 19,
21 because this really goes to the primary argument that Patent Owners make.
22 So Patent Owners primary argument that they make here is that a
23 person of ordinary skill in the art would have no reason to modify Benjamin
24 to include a single temperature sensor in each of the multiple regions, that
25 you would just add one temperature sensor from Giere673 and you'd be
26 done. You wouldn't want to put it in each of the regions. They go on to say

1 a person of skill in the art would not have been motivated to employ separate
2 regional TSR's for the purpose of monitoring a temperature representative of
3 the entire printhead. So the argument is that you wouldn't have multiple
4 temperature sensors, you would just have one. Well, firstly, that's belied by
5 the Patent Owner's own admitted prior art if we jump to the next slide. So
6 here is the Patent Owner talking about in the background section, talking
7 about figure two, which is the prior art figure. And you'll see here they have
8 a single temperature sensor between each of the ink vias. And why do they
9 do that? Well, they tell us why they do that. They say the ink vias 202, 204
10 and 206 act as a thermal barrier between the colors. So the ink vias don't let
11 heat transfer between regions. They stop the heat from moving. They act as
12 a thermal barrier between the colors. All the thermal heat arrays, 208, 210
13 and 212, are situated on only one side of the respective ink vias.
14 So that's in the prior art, ensuring that there's only a small amount of
15 thermal crosstalk. So in their own admission in the prior art discussion, they
16 say that the ink vias act as thermal barriers, and therefore you need a
17 separate temperature sensor between each of the ink vias. Because if you
18 don't have a single temperature sensor between the ink vias, you cannot
19 measure the temperature accurately because those ink vias act as thermal
20 barriers. That's the exact same thing that is discussed in the Yabe reference.
21 If we can jump Jimmy to slide 22 and Yabe discusses the exact same thing.
22 It says the heat radiating action and the heat conduction of the heat aboard
23 are deteriorated by the presence of a plurality or plural ink supply port. So
24 those are the ink vias. So it says the same thing as the patent, that the ink
25 vias acts as thermal barriers. And therefore, if you want to measure the
26 temperature accurately, as Giere673 wants to do, then what you would have

1 to do is place a temperature sensor between ink vias. Otherwise they will act
2 as thermal barriers and you won't get, you won't get the temperature
3 measured correctly.
4 If we go to slide 23, this was confirmed by an expert, Dr. Pond, who
5 said the following. I mean, it's obvious that if different regions are heated
6 differently and you want to do a better job of temperature measurement
7 management, you need to know the temperature of these different places.
8 That's common sense. So, to conclude, for this ground, if we jump to slide
9 24, you'll see that Giere673 tells a person of ordinary skill in the yard to put
10 a single temperature sensor in the regions adjacent or next to the heater
11 arrays. And a person of ordinary skill in the art would know to do this
12 because they admitted prior art. And Yabe tell us that the ink vias act as
13 thermal barriers. And if you want to measure the temperature in these
14 regions of Giere, you would need to have separate temperature measurement
15 devices.
16 Any questions on ground one, Your Honor, before I jump to ground
17 two? Oh, actually, I'm not finished with ground one yet. Sorry. If we go to
18 slide 28, this is the ’823 adds a couple of extra elements that are not in the
19 ’708, and we should talk about those separately. On the right hand side, it
20 adds this language that we've circled in green. It says we're in the first
21 heater array, and the second heater array are operable to receive heating
22 responsive to the temperature of the region sensed by the temperature
23 sensing element. We talked about what you do with measuring the
24 temperature. Remember, the ’823's title is regulating, not just sensing.
25 Well, what do you do once you measure the temperature? Claim 1 of the
26 ’823 Patent says to us, well, you use that temperature that you've measured

1 to heat up the heater arrays. That's what you use it to do. Giere673
2 expressly says this exact same thing. It says that the measured temperature
3 is used to maintain the temperature of the heater arrays. I don't have it on
4 the slide, but I'll give you the citations to that in the briefing. Your Honor,
5 that is in our petition, the ’823 petition, on page 35. You'll find that in our
6 reply brief on page seven. And you'll actually find the language in
7 Giere673, which is exhibit 1005 in column two, line 66 to column three, line
8 twelve. So that's clearly taught by Giere673.
9 If we look on the left side. What else do they have here? They say
10 that the temperature sensing element is centrally located within the region,
11 so it has to be centrally located within the region if you jump to slide 29.
12 That, of course, is also disclosed in Giere673. If you look at the bottom
13 paragraph that we've highlighted here, it says the TSR 510 can have two legs
14 that are approximately 618 μm inboard. From the center of the columns of
15 ink ejection elements. We've shown that to the right here in the figure, the
16 markup that we've shown. So it's got the equal distance on both sides to the
17 center of the ink ejection elements, the heater arrays. And we therefore
18 know that that is centrally located and also meets the limitation of the claim.
19 So that wraps up ground one.
20 Slide 32 sort of shows the whole thing put together. It shows all of
21 the regions. It shows the temperature sensing elements that are in each of
22 the regions. They need to be in each of the regions because the vias act as
23 thermal barriers and would stop the measurement across that area. I'm going
24 to jump now to ground two, which starts on slide 34. This relates to some
25 additional claims of the patents. Claims 4 and 13 of the ’708 patent, and
26 four and 14 of the ’823 Patent. You can see that on slide 35. This relates to

1 an n-type thermal sensing resistor. If you turn to slide 36, Patent Owner
2 actually don't separately dispute anything about this ground. This is what
3 they say. Therefore, ground two challenge fails for at least the same reasons
4 discussed above relative to ground one. So they rely on the same arguments
5 they make with respect to ground one. And there's nothing new that they
6 add here. We've already addressed those grounds. I'm going to now hand it
7 over to Jimmy, who can talk about the grounds unique to the ’708 patent.
8 MR. KRITSAS: Great. Thank you, Dion, and thank you, Your
9 Honors, for giving us the time to discuss this with you. On slide 37, here's
10 an outline of the grounds that are unique to the ’708 patent. Grounds three
11 through six, you can see all rely on the Giere178 patent as the primary
12 reference. And so I'm going to focus my analysis mostly on that, as well as
13 some other unique issues that are brought up by Patent Owner as well and
14 some of the other grounds. If we go ahead to slide 36. Excuse me, slide 39,
15 you can see here this is what Patent Owner's main challenge is with respect
16 to Giere178 and these grounds for the ’708 patent. And it's specific that
17 Patent Owner alleges that the Giere178 chip doesn't disclose a plurality of
18 ink vias. Rather, they contend that Giere178's teachings are limited to just a
19 single centrally disposed slot in the middle. And you can see this in slide 40,
20 where Patent Owner has taken figure three of the Giere reference which
21 Petitioners rely upon, and they've superimposed on top, a large blue
22 rectangular slot. They've also included some purple ink channels that
23 connect to the four red highlighted regions. Excuse me. That Giere tells us
24 include nozzles as well as heaters for ink injection actuators.
25 As part of going through this process, they've drawn, on top of a
26 number of structural elements that we'll get to in a minute that Dr. Pond

1 testified to and opined on that would not allow this combination to be very
2 efficient or really to work properly. And I'll note on slide 41 that in Your
3 Honor's institution decision, you did find that initially Patent Owner's
4 arguments did have some merit. But respectfully, we feel that Your Honors
5 didn't have the full picture as to what the teachings were of Giere178. And I
6 really wanted to focus in on this block quote here. That's a quote from Giere
7 starting at column three between lines 37 and 47. And what this quote
8 focuses on is really different types of ways of transferring ink from an ink
9 chamber onto the substrate and then eventually onto the paper or the print
10 medium. And it teaches that when you have one type of ink coming from an
11 ink injection chamber, it can either go through an edge fed type of
12 arrangement, and that's where you have your ink channel that actually flows
13 around the edge of the substrate.
14 The other option it discusses is that you can have what it calls a center
15 feed arrangement, and all that means is that the ink will flow through an ink
16 via somewhere within that outer perimeter of the substrate. We disagree that
17 this teaching is limited to just limited Giere's teachings to just one central
18 ink slot. And we'd actually like to point your attention to explicit disclosures
19 in the Giere reference that actually, when read in context, actually further
20 explain that that's not what Giere is limiting this teaching to. So I want to
21 jump slide 42. This is actually just a brief outline of our arguments here
22 with respect to why Patent Owner's interpretation is wrong with the
23 Giere178 reference. But I really want to focus on the explicit disclosures in
24 Giere itself.
25 So if we go to slide 43, this is within the same column that we had just
26 discussed that was discussing the central slot versus the edge or the

1 perimeter slots. And what Giere teaches is that you can actually have a
2 variety of different types of ink cartridges that you can use the invention
3 with. And it says here, starting at line 53 of column three, that you can have
4 a printer with four cartridges. And I'm sure Patent Owner is going to raise
5 this with you in their rebuttal case. And each of these print cartridges can
6 contain their own ink. And so, in this situation, yes, I think we would agree
7 that each of these ink cartridges would either have one edge fed slot or one
8 central slot. But Giere goes on to further explain that you can have printers
9 with two cartridges, one cartridge with just a black ink, and the other being a
10 tri-compartment cartridge. And in this situation, you actually have three
11 different types of ink that are within the cartridge. And the issue here is,
12 when you have three different inks within a cartridge, you need to have three
13 different ink slots in order for all of those inks to flow out and to go to the
14 different nozzles and to be ejected from those nozzles. So limiting Giere178
15 to just one central ink slot is actually contrary to the disclosures here.
16 Really, what that section was talking about was, how do you get one type of
17 ink under the substrate and eventually onto the print media? Giere also
18 teaches --
19 JUDGE HAMANN: Counsel, this is Judge Hamann, and I'm trying to
20 make sure I'm following your argument. Obviously, you've already
21 referenced the paragraph in column three, roughly lines 33, starting at 33. I
22 believe that we referenced, maybe it's actually 37, but that we referenced in
23 our decision on institution, and it talks about how ink is fed. And as I
24 understand Petitioner's argument, this paragraph relates to when there's a
25 single ink color. And so where in Giere178, is there an equivalent ink, is
26 how ink is fed when there's not a single color, when it's multi-colored,

1 obviously, there's a paragraph here explaining edge and central and how that
2 works. Where's the equivalent paragraph when there's multiple colors?
3 MR. KRITSAS: Well, Your Honor, I think what you just read is that
4 column 3, 37 to 47, that applies to each individual color within a cartridge.
5 And so what Giere is telling us here on slide 43, further down, lines 51 to 65,
6 is you can also have a cartridge with multiple colors, and it would flow in
7 the same way as if you were just have, for each of those individual colors,
8 each of those individual colors having a central ink slot. And then what we
9 also see is, if we go ahead to slide 44, we also see the disclosure specifically
10 with respect to figure three, where Giere tells us that while it's not
11 specifically shown in the illustration figure three, substrate 300 includes the
12 structures of a typical printhead, such as ink feed slots, plural. So that's
13 again reiterating the fact that there are multiple ink feed slots. And it's
14 Petitioner's position that those feed slots are represented as being included
15 within each of the regions 310, 312, 314, and 308 as well.
16 The other portion that I can point you to, Your Honor, is if we jump
17 ahead to slide 49, Giere178 also incorporates by reference a patent to Axtel
18 within it, and this Axtel reference teaches, similar to the Giere reference, one
19 of these multi-color inkjet chips. You can see that shown in the figure on
20 the left hand side of slide 49. Axtel teaches that the embodiment shown is
21 for a full four color printing module, and therefore there are four sets of
22 inkjet orifice arrays 621 that are employed on the chip 612. So this is just
23 another example of the teachings of Giere178, showing multiple ink feed
24 slots for multiple colors in these combined cartridges that are taught by the
25 Giere178 reference.

1 I wanted to jump back if there are no other questions on this, and go to
2 slide number 50. The other thing I wanted to raise here with respect to
3 Giere178 is that Dr. Pond also provided in his opinions other extrinsic
4 evidence that corroborates the knowledge of a person's skill in the art, and
5 also corroborate Dr. Pond's interpretation of the figure three for Giere178.
6 What he's done is he's collected other extrinsic evidence to show that it was
7 very common at the time and well known in the art to have printer chips in
8 an arrangement just like Giere178's, where there are four ink slots arranged
9 on the heater chip and very similar arrangements as shown on slide number
10 50. If there are no other questions on the multiple ink slots for Giere178, I'll
11 move on to the temperature sensing arrangement.
12 As shown on slide 51, Patent Owner's other argument with respect to
13 the Giere178 reference is that even if we were to, even if Patent Owner
14 accepted our argument about the multiple ink slot arrangements, their
15 argument is that Giere178 does not disclose temperature sensing resistors
16 within each of the separate regions. If we move on to slide 52, however, this
17 is a representation of Giere178. Figure three, identifying each of the specific
18 regions. What we've done here, we've shown each region adjacent to each
19 of those heater arrays, as well as adjacent, excuse me, adjacent to each of the
20 heater arrays. And you can see what we've identified as regions two and
21 regions five. Each of those contain one temperature sense resistor, identified
22 as 312 and 316. So there really isn't any dispute that there's a single
23 temperature sensing resistor within those regions.
24 What Patent Owner really raises as an issue is there is a temperature
25 sensing resistor that 310, for example, that is contained within both region
26 one and region three of the Giere178 reference. But the thing is, the claim

1 only requires a single temperature sensing element, which in this case is the
2 temperature sensor 310 that is disposed within each region. And so it's our
3 position that that is taught by the Giere reference very clearly. The other
4 element that's required in the ’708 patent is that the temperature sensing
5 element is operable to sense a temperature representative of the heater arrays
6 adjacent to the region. Giere gives actually a very robust teaching within the
7 reference of how these different temperature sensors are able to sense
8 temperature in all of these various regions. Patent Owner contends that this
9 temperature sensor could only sense an average of the two regions. And I
10 apologize, I don't have a slide on this, but if you were to look at column nine
11 starting at line 29, Giere gives a long discussion of how its temperature
12 sensing system actually operates.
13 But just to summarize, it operates by firing only specific resistors at
14 specific times and taking temperature measurements in between those
15 firings. And Gere explains that it has a history and a knowledge of when
16 each resistor was fired, and it can determine, based on the change in
17 temperature using either lookup tables or algorithms, what the temperature
18 change is, and assign that temperature change to that specific heater array.
19 And so, it's our position that those disclosures would render obvious, in view
20 of the knowledge of a person's skill in the art, the claims of the ’708 patent.
21 JUDGE HAMANN: Counsel, this is Judge Hamann. I'm trying to
22 understand one of the arguments you've made. And looking at slide 52,
23 obviously, regions three and region six are also shown on this slide. Does
24 Petitioner argued that those regions also contain a TSR?
25 MR. KRITSAS: Yes. Yes, we do, Your Honor. It's what we've
26 identified for regions one and three, is a TSR that number 310 that you can

1 see, it's snakes between region one, and then it also is contained in region
2 three. And then for regions four and six, there is a TSR number 314 that is
3 also contained in both of those regions.
4 JUDGE HAMANN: Is that the same TSR for regions one and three,
5 or there are separate TSR's for regions one and three as Petition argued?
6 MR. KRITSAS: So Giere teaches that there is one TSR that is
7 included in both of those regions. And it's our position that the claim only
8 requires a single TSR that is located in the regions. It doesn't say that you
9 need to have a single TSR within each region, just a single temperature
10 sensing element disposed within the regions. So it's our position that you
11 don't need to have a separate temperature sensor in each of them.
12 JUDGE HAMANN: I'm looking at claim 1 for the '708 Patent. It
13 says a single temperature sensing element disposed within each region.
14 MR. KRITSAS: Yes, and it's our position that by having this single
15 temperature sensor that is disposed within both of the regions, we're
16 disposing one that is, that is disposed within each of the regions as well.
17 JUDGE HAMANN: Thank you.
18 MR. KRITSAS: Jumping ahead to slide number 54, this combination
19 is Giere178 with the Yabe reference. And I can be brief on this if we go to
20 slide number 57. This is a summary of what Patent Owners argument is
21 with respect to the Giere combined with the Yabe reference. It's really based
22 on the concept that Giere178 itself does not disclose multiple ink vias, and
23 rather that Giere and Yabe relate to different substrate designs. However, if
24 we look at slide 58, we're really not proposing making some radical shift to
25 Giere178's combination, really. We're relying on Yabe to supply some,

1 arguably missing elements that show ink vias and the structure of ink vias as
2 associated with two sets of heater arrays.
3 So unless there are any specific questions, the last point I'll raise is
4 with respect to round number five and six, that relies on the Parish reference,
5 and that again, there are no independent arguments raised by Patent Owner
6 with respect to those grounds. So we'll rely on our papers for those grounds.
7 And so at this time, I'll turn over the remaining slides for Mr. Bregman.
8 MR. BREGMAN: Thank you, Jimmy. So why don't we jump to slide
9 66 and I'll try and go through this relatively quickly. We have three
10 remaining grounds that are separate for the ’823, grounds three through five.
11 The first one is Benjamin with Giere178. Benjamin, we already discussed
12 with respect to ground one. It has the ink vias, it has the heater arrays, it has
13 the regions. And we just rely on Giere178 here as a substitute for the
14 Giere673 for the temperature sensing elements. So if you go down to slide
15 number 69, you can see there is a single temperature sensing element. The
16 ’823 patent is a little bit different to the ’708 patent here. It actually
17 specifically talks about two different regions between two pairs of adjacent
18 heater arrays. So for this patent, it is actually only claiming what is shown
19 here as regions two and five in Giere178. So the other arguments about the
20 regions one and three and regions four and five, four and six that we
21 discussed, that Jimmy discussed a moment ago are not material for this
22 claim. It only requires these two specific regions. And these two regions
23 clearly have only a single temperature sensing element or temperature sense
24 resistor in each of these regions. It actually looks very similar to Giere673.
25 If you remember, Giere673 also had these vertical resistors that are
26 joined together, and it's a very similar ground to what was shown for the

1 ground one. If you look at slide 70, that's what the combination looks like.
2 So very similar to ground one. But instead of the temperature resistor
3 coming from Giere673, here are the temperature sensor comes from
4 Giere178. Ground four is Yabe with Giere673. Yabe is very similar to
5 Benjamin. Remember, Benjamin gave us the ink vias, and adjacent heater
6 arrays. The 673 we already discount discussed with ground one. So instead
7 of Benjamin, we have Yabe. If you look at slide 72, you'll see what the
8 combination looks like here. Yabe has the ink vias. It has the adjacent
9 heater arrays. It has the regions between or adjacent to the heater arrays.
10 We have Giere673's temperature sensing resistor that's located in that
11 region. And if you combine those, you end up with the Yabe Giere673
12 combination shown on the right.
13 And then the final ground is just with respect to this n-type thermal
14 sensing resistor. This is ground five. Patent Owner's on slide 75. You'll see
15 they don't raise any additional grounds. They raise the same grounds as
16 ground four, which we've addressed. So with that, we've got, I think, about
17 maybe twelve minutes remaining, and we'll keep that for our rebuttal.
18 JUDGE KOKOSKI: Thank you. Yes, I have you at twelve minutes
19 for the rebuttal. Okay, Patent Owner, you can begin when you're ready.
20 MR. BORSOS: Thank you. Your Honor. I'd like to begin by sharing
21 our demonstratives. All right, first of all, thank you for hearing us out today.
22 And I'd like to begin my discussion with a couple high level points. The
23 entire petition here is built around a reimagining of prior art that
24 fundamentally changes a lot of aspects that are actually described in that
25 prior art. And that reimagining is done only to fit Canon's narrative. On top
26 of that, they're forced to present illogical and unwarranted conclusions as

1 their motivations to combine. This really does not comport at all with a
2 proper obviousness analysis. I'll discuss particular examples of that when
3 we get to the combinations that they've presented. But first, I want to look at
4 a little bit of the invention that's described in each of the two patents. I
5 know we've gone over some of this in detail, but just at a very high level,
6 we've got two patents that both relate to measuring temperature on a region
7 by region basis, where the regions are defined by ink vias that each have two
8 columns of heaters.
9 So it's fundamentally different than each of the prior art references
10 that are used in various combinations for at least that reason. The ’708
11 patent, as you've seen, particularly claims a single temperature sensor that's
12 disposed in each region. And the ’823 patent has a temperature sensor that's
13 centrally disposed and is operable to. Sorry. The heaters are operable to
14 receive heating based on what that central temperature sensor actually
15 detects. Now, both of those inventions are fundamentally different from the
16 prior art. If we look at figure one, which is of the ’708 patent, or the ’823
17 patent, which is on slide two of our demonstratives, you'll see the prior art
18 design that the ’708 and ’823 patents were intended to distinguish. Here
19 you've got multiple ink vias on a single chip, and the temperature is detected
20 with a serpentine sensor that goes all the way around the perimeter of the
21 chip, rather than between the ink vias. And that's done to assess the average
22 temperature of the die or the printhead as a whole. And that's all that the
23 prior art that Petitioners have presented actually does. And they've tried to
24 characterize it in different ways to back into the inventions of the patents,
25 but it just doesn't make sense for various reasons.

1 So the key takeaways here, figure one, measures temperature for the
2 entire die, and it puts the sensor at the edge rather than between the vias.
3 Now, let's take a very quick look at the individual prior art references. So,
4 there's three undisputed things about the Benjamin reference. It measures
5 the temperature of the entire die. And Petitioners point that out as being an
6 important aspect and in their motivations to combine, actually bold and
7 underline that fact, because their combinations are aimed at getting to that
8 average of the entire die, rather than a regional basis. It's also undisputed
9 that Benjamin 113 only shows a single sensor for the whole chip. This is the
10 best figure in Benjamin 113 for discussing the temperature sensor, and it
11 doesn't even show the chip, but it does show that there's one temperature
12 sensor input and one return. So that means that it's only connected to a
13 single temperature sensor for the entire die. It does not show at all where the
14 temperature sensor is placed on the die.
15 Now, Giere673 is completely different, and they want to draw
16 attention to certain similarities, but the key difference here is that ink is fed
17 from the edges. It doesn't have a via at all. So not only does it not have
18 multiple vias, but it doesn't have any via. The temperature sensor that
19 they're relying on is 510, which is described as the TSR. And it's one of
20 multiple temperature sensors. So the temperature sensor that they're relying
21 on is actually as close to the edges as it can be in this type of design, because
22 the nozzles and the heaters are located along the edges, because ink is fed
23 from the edges. So you can't place the temperature sensor at the very edge
24 of the chip, as in figure one that we looked at before. So instead, they have a
25 wide U shape that's between the two rows of heaters. But it teaches zero

1 about a multiple via chip and being able to detect an average temperature of
2 a multiple via chip.
3 Another key part of this is that there are numerous other sensors
4 shown on Giere673. So there's a digital temperature sensor that's a more
5 regional sensor. There's temperature recorders that can record and detect
6 temperature. And the overall description of Giere673 is of a very
7 complicated design that uses multiple inputs and predictions on future
8 heating based on past performance in order to, quote, unquote, optimize
9 printing. Now, Petitioners have just snipped out the soundbite about
10 optimization and suggested that TSR 510 achieves that optimization. It
11 doesn't. It's one component of a whole. But the important thing is that the
12 function of TSR 510 is the exact same thing as the function of Benjamin's
13 temperature sensor, which is an average of the entire die. So the suggestion
14 that you would modify Giere673 and import it into Benjamin doesn't make
15 sense from the get go, because they're measuring the same thing. And
16 Petitioners have even pointed that out in their motivations to combine. One
17 of the motivations is allegedly that they're measuring the same thing. And
18 so the specific combinations and modifications that they have suggested
19 don't make sense in that context.
20 And on this slide, we get a better view of this edge feed system. Just
21 so you have some context. Ink is fed underneath the nozzle plate and
22 directly into the chambers that have the ejector. So there's no ink via, which
23 is undisputably a hole that goes through the substrate, which is 410 here.
24 Now, Giere178 is something that's been heavily mischaracterized, and I
25 want to address a number of issues with that. But first, I'm going to very
26 quickly describe what the reference actually shows. Later on, I'll describe

1 why Petitioners are wrong in their interpretation so, Giere178 does show
2 multiple cartridges for different colors of ink, and this is one printhead die
3 from one of those cartridges. The only thing that this says about these
4 rectangular regions here is that each of the four, 302, 304, 306, and 308
5 include an array of nozzles and associated firing resistors. Says nothing
6 about ink vias. The only description of the ink via is a center feed system,
7 but also, as an alternative, discloses an edge feed, which is a distinct
8 embodiment. But the center feed clearly describes a hole through the center
9 of the chip that then has channels, which we've illustrated in purple, leading
10 to the heater arrays, which are in red. Now, there's absolutely no evidence
11 that the red regions actually contain ink via. And the Petitioners cannot
12 rewrite this reference by pointing to unrelated prior art, by having their
13 expert make statements that aren't connected to the evidence. And they've
14 suggested that this drawing, which admittedly shows some features that are
15 not in the figure itself, but they're representative what is described. The
16 Petitioners have indicated that this is somehow a combination. It's not. This
17 is an illustration of what Giere178 discloses on its own. Finally –
18 JUDGE KOKOSKI: Counsel, excuse me. Before you move on, can
19 you go back to the Giere178, how do you respond to Petitioner's argument
20 that Giere discloses a cartridge with different colors and therefore would
21 have a different slot for each array or each ink injection chamber?
22 MR. BORSOS: Yeah, I understand the question, and I'm glad you
23 asked, because if you look at the language that they've relied on, it's pretty
24 interesting. So it talks about a tri compartment cartridge containing the base
25 color cyan, magenta, and yellow, or, alternatively, to dual compartment
26 cartridges. So, first of all, it never suggests four colors. It's just talking

1 about the storage of ink in a compartment as part of the cartridge. When it
2 comes to the printhead, there is absolutely no indication that there are
3 printheads that have multiple vias in them. So you could have a separate
4 chip for each of the ink compartments, and they're all combined on one
5 cartridge. So you plug it in as a monolithic structure, but it has individual
6 reservoirs for ink that are each fed to a different chip. And that's the only
7 thing that's implied by this language. Do you have any further questions on
8 that language?
9 JUDGE KOKOSKI: Well, I do want to pick up on something you
10 kind of just alluded to there. You said that it doesn't talk about four colors.
11 Why does it matter if Giere178 discloses four colors?
12 MR. BORSOS: So this is just in connection with the overall
13 interpretation that Petitioners has advanced, which is that Giere178 here
14 somehow discloses a four quadrant design within a different ink via in each
15 quadrant. There's nothing that supports that. And so, the combination
16 cartridge language that they rely on is consistent with a cartridge that has
17 three separate chips. It does not at all imply that there would be one chip
18 with multiple vias for the entire cartridge. So they're making a leap that's
19 just simply unwarranted. But more importantly, it doesn't support the four
20 quadrant view of Giere178. And the reason that that's critical here is
21 because they're relying on the placement of these temperature sensors
22 relative to this exact design, their argued design with four quadrant based ink
23 vias.
24 And if you actually look at what Giere actually discloses, which is
25 two heater arrays, each one is bisected, right? So you've got an upper and a
26 lower portion to the left column and an upper and lower portion to the right

1 column. If you're looking at it with that context, these temperature sensors
2 aren't measuring regions between ink vias. They're measuring the left and
3 right side of each heater array. And it's separated into the top and bottom
4 portions of the heater array. So you've got actually four different
5 temperature sensors. And one's responsible for the outside sides of the
6 heater arrays. One is responsible for the inside track of the upper portions of
7 the heater arrays, as shown on slide 13 here of our demonstratives. And then
8 likewise on the bottom, you have a TSR that wraps around the exterior of the
9 heater arrays and then one that goes through the interior of the heater arrays.
10 So Petitioners are relying on a misreading of the reference and then
11 suggesting that the ink vias would be in a place that they aren't, or that one
12 of ordinary skill in the art would modify this design to put ink vias in a place
13 that they're not intended to be, but keeping the temperature sensors in the
14 same place. And there's no rational basis for that. You're fundamentally
15 changing the purpose and design of Giere178 if you do that and you're
16 measuring something it was never intended to measure. And so, they're
17 relying on that convoluted and just incorrect logic in order to back into what
18 is claimed in the ’708 patents and the ’823 patents. And that's not how one
19 of ordinary skill in the art would actually analyze any of these references.
20 JUDGE KOKOSKI: Thank you.
21 MR. BORSOS: So, bottom line with respect to Giere178, any way
22 you slice the arguments that are presented, and they have shifted over time,
23 as you'll notice in the briefing, any way you slice it, Dr. Pond was wrong.
24 Yabe is the final reference. And this is a really important reference to pay
25 attention to, because this is the only reference that shows multiple ink vias
26 and the placement of the temperature sensor. And what does it teach? It

1 teaches avoiding the areas that are between ink vias. It doesn't suggest at all
2 what the Petitioners have argued would be the motivation to modify various
3 references. So they keep pointing to Yabe to suggest that based on an
4 understanding that ink vias insulate the regions from one another, that one of
5 ordinary skill in the art would be prompted to place a temperature sensor in
6 each region to measure the average of the entire die. And that just doesn't
7 make sense, because Yabe itself shows the solution for the insulating
8 properties of the vias. You put the temperature sensors in the periphery, just
9 like we saw in figure one of the ’708 patent, just like Benjamin would show.
10 And really Giere, even though it doesn't show a via in its chip, Giere
11 suggests that you put the temperature sensor close to the edges so that you
12 can get a reading of the entire die on the whole. So this really disproves and
13 teaches away from the arguments that the Petitioners raised in each of the
14 grounds that they've asserted.
15 Before we address the specific grounds, I just want to recap that there
16 is no reference that they've relied on that shows a temperature sensor in the
17 middle of two vias. And there's no reference that they relied on that shows
18 the claimed type of region by regional sensing, which is, you know, looking
19 at regions that are defined by ink vias, that each have their associated heater
20 resistors. So turning to the ’708 patents and grounds one and two that have
21 been asserted, the combination is Benjamin and Giere673. Now, Benjamin,
22 as I said, only shows a single temperature sensor for the entire chip,
23 undisputed. Giere673 shows a complex system. And when you look at the
24 combination of whole, there's multiple problems with the logic. Neither of
25 these references suggest monitoring of temperatures between ink vias. Both
26 of them use a TSR to monitor temperature of the entire printhead die. The

1 alleged motivation to combine just ignores the fundamental principles of the
2 prior art. So Giere673 shows a fairly wide U-shaped temperature sensor,
3 510.
4 Now you'll see in the various drawings that Petitioners have presented
5 that they always shrink that and make it centralized. And their logic for
6 doing that is shown at tab or slide 18 of their demonstratives. And it's
7 completely misguided. So they're showing a greater than 680 micron
8 distance from the heaters to the temperature sensor. And that's based on
9 Giere673 alone, because the disclosure of that spacing is shown by
10 Giere673, which actually shows this wide U shape. So there's no other
11 context presented in Giere. It doesn't say how wide the die is. It doesn't
12 give you any ratios of any measurements that you can work off of. All it
13 says is, number one, preferred to have the 680 micron spacing. And number
14 two, it shows this drawing that's representative of their invention. So the
15 reasonable implication is that this already incorporates that spacing. And
16 then the Petitioners have made the additional unwarranted leap to place that
17 sensor inside of Benjamin's heater arrays. And even though there's no
18 information about the dimensions of the area here that they've shown in
19 Benjamin, they've said that you would create this narrow sensor by moving
20 the legs of the sensor 680 microns away from the heater array.
21 Well, we don't really know what that looks like, but there's no reason
22 to think that this drawing is representative of what Giere's describing, given
23 Giere's own figure five. So, there's also a problem with this combination in
24 that the TSR is one element of a more complicated system, as I said before.
25 And they cherry picked that sensor 510 and said that you would place it into
26 Benjamin, and there's no reason for doing that. The Petitioners repeatedly

1 talk about Giere673's optimization of printing. But as I said, that
2 optimization is the result of various inputs and a very complicated system.
3 When you pluck 510 out, you're only taking an average temperature of the
4 entire die, and that's exactly what Benjamin already does. So the Petitioner's
5 logic is that you would replace the single temperature sensor of Benjamin
6 with multiple temperature sensors, as in Giere673, not as in Giere673, but
7 multiple temperature sensors of Giere673, even though Giere does not show
8 that multiple TSR's would be placed in multiple regions, because it doesn't
9 even have the multiple regions that are defined by our claims.
10 So you would duplicate Giere673, import the duplicated elements into
11 Benjamin, then realize that that doesn't achieve what the TSR of Giere673 or
12 the TSR of Benjamin wants to achieve, which is an average temperature of
13 the entire printhead die. So then they suggest averaging all those multiple
14 elements together, and so they're undoing the very modifications that they
15 just said that they would do. They're adding cost, they're adding parts,
16 taking more space on the printhead and deriving zero benefit. That's not
17 something that one of ordinary skill in the art would have done. And
18 another important point is they're relying on these multiple Giere sensors
19 being placed one in each region, because they point out that Yabe and
20 possibly other references recognize that the ink vias are insulating, and they
21 would insulate one region to another. We already looked at what Yabe tells
22 you is the takeaway from that information, which is don't monitor the
23 temperature between the ink vias.
24 So grounds three and five are based on Giere178 alone. I think I've
25 addressed most of the points that I want to make here because the reading of
26 Giere is just fundamentally misguided. Giere does not suggest monitoring

1 temperature between multiple ink vias. It suggests a central ink via. Now,
2 that ink via may be bisected, but so that the wires can run across and so
3 forth. Our expert addressed that, but it doesn't at all suggest that you would
4 have multiple ink vias that are defining different regions. And even if you
5 did, you wouldn't be maintaining the temperature sensing regime that the
6 Petitioners are pointing to, because it has to be modified along with any
7 modifications to the placement of the ink via. So ultimately, the Petitioner's
8 whole theory on Giere178 doesn't align with the claim language at all.
9 And there's one other point that I'd like to point out here, that the
10 Petitioners raised on slide 42 of their demonstratives, they listed five reasons
11 that Giere178 allegedly shows multiple ink vias. The first one is that there's
12 an S at the end of ink feed slots in specification, that that's just reading way
13 too much into one letter. There's no reason to think that the reference to ink
14 feed slots refers to a single substrate, a single chip. They're just generally
15 talking about in feed slots and other parts of these, you know, printing chips,
16 which there could be multiple of. So the other reasons don't support their
17 reading at all either. So they've said that the interpretation that we put forth
18 is not commercially feasible. Well, we're just looking at what Giere178
19 actually says, and our expert testified as to what it said. And their expert is
20 presenting a fundamental misreading that they really realized was
21 problematic and then spent a lot of time trying to backfill with other
22 information in their reply. And that's just not a proper way to analyze a
23 reference, you can't change what Giere178 says by reference to external
24 references. Unrelated prior art, conclusory testimony of an expert. None of
25 that changes what Giere178 says.

1 So again, a POSITA would also understand the rectangles include ink
2 vias. Well, that's just saying that an ink via is rectangular, and there's
3 rectangles in the picture of Giere178. So a POSITA would make an
4 association between the two. That's nonsense. That's just cloud gazing,
5 squinting, and trying to see something in the prior art that's not there. Now,
6 four points to the Axtel reference and said that it has multiple ink vias.
7 Well, Axtel looks totally different. Axtel is four side by side ink vias, not a
8 four quadrant design. So it doesn't support the Petitioner's interpretation of
9 Giere178 at all. And finally, five, the extrinsic evidence corroborates this
10 interpretation. Well, Dr. Pond saying, well, my reading might have been
11 wrong, but this other prior art shows something kind of similar. I didn't cite
12 it in my petition, but it shows why it was reasonable in erroneously reading
13 Giere178. It doesn't support their obviousness theory. So there's really
14 nothing about the Giere reference or its. It's combinations that supports any
15 of the petitioning arguments.
16 JUDGE KOKOSKI: So let me interrupt you before you move on. In
17 the 312 case, my understanding is that Petitioner is relying on Benjamin with
18 respect to the four vias, not Giere178. Then what is the significance of
19 whether Giere178 has four vias? Are not considering that's not what
20 Petitioner is relying on it for?
21 MR. BORSOS: Okay, so just to be clear, you were talking about the
22 ’823 patent?
23 JUDGE KOKOSKI: Yes. Yeah, the 312 case. The ’823 patent.
24 MR. BORSOS: And can you tell me which ground you're referring
25 to?
26 JUDGE KOKOSKI: I believe it's ground three.

1 MR. BORSOS: Three. So the primary reference is Benjamin. But as
2 I've already stated, Benjamin only has one temperature sensor, and it's
3 measuring the temperature of the entire printhead as a whole. So Giere
4 doesn't help, because they're relying, again, on their misreading of Giere, to
5 say that you would have a temperature sensor between two ink vias, which it
6 doesn't have. If you actually look at what Giere's describing, it's having the
7 temperature sensors on both the left and right of each column of ink vias.
8 And so, what you would result in if you were to actually combine those two
9 things is shown at slide 27 of our demonstratives. I'm sorry, this is a little bit
10 different. But you would continue to measure the temperature along each
11 side of the heaters, even if you had multiple vias. So the only difference
12 between this image and what Benjamin would show is that you would take
13 the two vias on the bottom and move them up so that they're in line with the
14 top ones, but you still have multiple TSR's in each region, because the
15 detection scheme of Giere is fundamentally different than anything than
16 what we've claimed and what any of the other prior references show.
17 JUDGE KOKOSKI: All right, thank you.
18 MR. BORSOS: Another thing that I'd like to point out is that in
19 region one and region three of Giere178, the same temperature sensor
20 extends across both regions. And so, there's some discussion earlier about
21 whether or not this sensor would be operable to detect a temperature of one
22 region or the other, and it's just incapable of doing so. You're taking an
23 average temperature of region one and region three, which is representative
24 of neither. Now, Petitioners raise an argument that only the heaters in one
25 region or the other would be active at any given time. I think that's referring
26 to a test condition is not necessarily normal operation, but it really doesn't

1 matter, because that only exacerbates the problem. If region one is cold and
2 region three is hot, then this temperature sensor that extends through both is
3 going to take an average, and it's only, you know, creating a greater
4 dichotomy between the two. And so, the average is less representative of the
5 two regions than if both were firing at the same time. So the Petitioner's
6 argument on that point makes no sense. Giere173 just -- or Giere178 just
7 shows a completely different scheme for detecting temperature, and it's
8 really not relevant to any of the other references at all.
9 So, finally, we have grounds four and six in the ’708 patents, and
10 that's a combination of Giere178 and Yabe. And here, the only thing that
11 Petitioners are suggesting is to take the dual heater columns of Yabe's ink
12 vias and import them into the rectangular areas of Giere178. Well, that
13 doesn't make sense, for all the reasons we've already discussed. It's based on
14 an erroneous reading of Giere178. Neither references discloses a single
15 temperature sensor in every region that's separated by ink vias. Yabe avoids
16 the area between the ink vias altogether. And even if you make that
17 combination, the Petitioner's theory doesn't align with the claim language,
18 because, as pointed out before, you would end up with this, where you've got
19 temperature sensors along each side of each heater array and an ink via in
20 the middle of each red region of Giere178. So now you've got at least two
21 temperature sensors in each region between heater arrays here. And it's just.
22 It doesn't result in the claimed inventions. It also wouldn't result in a
23 centrally located temperature sensor as required by the ’823. And it says
24 nothing about supplying power to heaters in response to the detected
25 temperature, which is also required by the ’823.

1 So when we go to the specific grounds that have been presented with
2 regard to the ’823 patent, ground one and two rely on a combination of
3 Benjamin and Giere673. And I think I've covered all this in the other
4 grounds. This combination fails for all the reasons that the ’708
5 combinations do. Ground three is a combination of Benjamin and Giere.
6 And so the suggestion is that even though Benjamin has a single temperature
7 sensor, you would import the temperature sensing scheme of Giere178 into
8 the multi via inline design of Benjamin. And again, Giere178 is measuring
9 something different. So you would be measuring both sides of heaters if you
10 were actually implementing Giere178’s temperature sensing scheme. And
11 for that reason alone, combination fails. You don't end up with the claimed
12 inventions. And in grounds four and five, on the ’823 patent, the Petitioner
13 suggests starting with Yabe, then importing a duplicated version of
14 Giere673’s temperature sensors. And again, same logic applies. There's all
15 the same problems with this combination as there were with the earlier ones.
16 Yabe actually shows not only the temperature sensors in the
17 periphery, but it relies on sub heaters, which are these red rectangles 101 to
18 actually supply heat to the chip. And so, one of the elements of the ’823
19 patent is supplying heat to the heater arrays based on the detected
20 temperature. Well, Yabe has a different way of doing it. It supplies heat to
21 the sub heaters. There's nothing about Giere673 that suggests change. And
22 in addition, the notion that you would duplicate Giere673 and implement
23 those various duplicated versions of the sensor, the isolated sensor, cherry-
24 picked sensor of Giere673 into each region of Yabe, only to undo all of that
25 by averaging the results, just doesn't make sense when Yabe already teaches

1 how to handle the multiple vias and the insulating nature of those vias, you
2 just detect the temperature in the periphery.
3 JUDGE HAMANN: Counsel?
4 MR. BORSOS: Yes.
5 JUDGE HAMANN: This is Judge Hamann. I'm trying to understand
6 these arguments as to Yabe and the teachings you just mentioned and how
7 that relates to the case law from the Federal Circuit that deals with, you
8 know, one of the embodiments. One of skill in the art doesn't necessarily
9 have to take all of a reference's teachings when combining it within an
10 analysis for obviousness. It seems like that's the focus of those arguments,
11 as opposed to why there wouldn't be motivation to do that or whatnot. And
12 so, I'm just trying to understand how do those, your arguments now for
13 Patent Owner are consistent with that, you know, so with that mindset?
14 MR. BORSOS: Sure. So the first point I'd like to make is that we
15 have to address the grounds that are raised in the petition. Right. So the
16 Petitioners have suggested very specific combinations with specific
17 reasoning, and that's the basis for the proceeding. They could have argued
18 things in a different way, but they didn't. Secondly, Yabe is very clear in
19 that it's the only reference that shows multiple ink vias and the location of
20 the temperature sensor. And it puts it in the periphery, just like figure one of
21 the '708 patent, which is illustrating prior art shows. So it doesn't advance
22 things beyond that figure one of the '708 patent. Giere doesn't teach
23 anything about monitoring temperature in multiple via constructs. It's
24 talking about a system where there are no ink vias. And so the notion that
25 you would take the sensor in Giere and put it in each region of Yabe just has

1 no basis in the evidence. Shall I move on? I'm happy to address any follow
2 up questions.
3 JUDGE HAMANN: I have no follow up questions, thank you.
4 MR. BORSOS: So I just want to address a couple more of the
5 Petitioner slides, because I've already indicated there's . . . there's a lot of
6 sleight of hand going on here, and we have to be careful about what the
7 references actually teach, rather than what they suggest teach. But the other
8 thing that I want to draw your attention to is, you know, hand waving.
9 Again, we have to look at what was presented in the petition. And this slide
10 here from Dr. Pond just says, I mean, it's obvious that if different regions are
11 heated differently and you want to do a better job of temperature
12 management, you need to know the temperature in different places. That's
13 common sense. Well, it's easy to say something is common sense, but what
14 Dr. Pond is suggesting here is the opposite of common sense, because he's
15 trying to support an argument that to average the temperature of the entire
16 die, which is done by Yabe in the periphery and done by Benjamin, with one
17 temperature sensor, you would modify Benjamin or Yabe to incorporate
18 multiple versions of the cherry pick sensor from Giere173. And then
19 average them all together. And again, increase the cost, increase the space
20 that all the components take up, and you get no benefit. You're just undoing
21 all of the modifications that you've suggested to do in order to arrive at what
22 Benjamin already does or what Yabe already does. That's not common
23 sense. And actually, with that, I'd like to reserve the remainder of my time
24 for sur-rebuttal.
25 JUDGE KOKOSKI: Okay, I've got you with about five minutes left
26 of your original time, so that gives you 20 minutes for your rebuttal.

1 MR. BORSOS: Thank you.
2 JUDGE KOKOSKI: Petitioner. You have twelve minutes, and you
3 can begin when you're ready.
4 MR. BREGMAN: Thank you, Your Honor. James, can you pull up
5 Patent Owner on a slide? Slide three for me first. Thanks. So I'd just like to
6 walk through some of Patent Owner's slides. As you can see here, this is
7 figure two of the prior art. It has everything in the admitted prior art other
8 than a second heat array on the right side of each of the ink vias. If you put
9 a second heat array on the right side of each ink via, you would have
10 everything that's in the claim and that's admitted prior art. So the only thing
11 that's missing is having a heat array on both sides of the ink via. Benjamin
12 has that. Yabe has that. Numerous of the other backup references have that
13 as well. There was nothing new about putting a second heater array on sort
14 of the right side of each ink via. Even their own expert admitted at the time,
15 in 2004, when he was working at Kodak, it was common to have a second
16 heat array on the other side of the via. So there's absolutely nothing new.
17 The only possible thing that could be new is that the temperature
18 sensor that's shown in figure two is not centrally located. That's the only
19 possible thing. And centrally located we know in Giere673 is described. If
20 we jump to slide four, this is one of their slides. That's just completely
21 wrong. They say add another temperature sensor and another heat array.
22 But if you look at this, there are now two temperature sensors in the region.
23 That's not what the claim says. It says a single temperature sensor. So this,
24 the slide's just completely wrong. That is not what the invention is. There's
25 not two temperature sensors in each region. There's just one. If we then
26 jump to slide number eight, this is them discussing Giere673. And now

1 you'll hear them characterized throughout their briefing and in the discussion
2 that they just had, that everything is about placing a single temperature
3 sensor between two ink vias. That is not what the claims say. The claims
4 don't ever mention the ink vias when it's talking about the region. The
5 region is between two heater arrays. Why do they raise this? Why do they
6 keep saying, none of the references have a single temperature sensor
7 between two ink vias? Because they want to say, in Giere673, it's an edge
8 feed system. There are not two ink vias. And that's why the temperature
9 sensor isn't between two ink vias.
10 The claim simply says a single temperature sensor in a region between
11 heater arrays. Well, this, of course, has heater arrays. It even calls them, I
12 believe, heater arrays. So it's got two heater arrays and it's got a single
13 temperature sensor between the two. They then go to great lengths. We just
14 heard saying, well, Giere673 talks about multiple temperature sensors.
15 That's true. It does talk about multiple temperature sensors, but it also says
16 that you only need to have one temperature sensor. It says one or more in
17 two different places. And I invite you to go look at exhibit 1005. That's the
18 Giere673 reference at column four, lines 49 to 60 in at least two separate
19 instances it says, you only need one temperature sensor for this system to
20 work. So it's a total red herring that there has to be more than one
21 temperature sensor in Giere673.
22 The next thing I'd like to address is on slide number 16 when they're
23 talking about Yabe. Yes, Yabe does have multiple temperature sensors
24 located, as shown in this figure. We're not relying on the multiple
25 temperature sensors from this figure. We're relying on the temperature
26 sensors from the other secondary references. So it's immaterial what Yabe

1 does. They say Yabe teaches away from having temperature sensors in the
2 regions because it has temperature sensors located, as shown on the slide.
3 That's not what a teaching away is. There's always room for improvement.
4 The room for improvement is discussed how you improve printer quality.
5 You improve printer life by placing a single temperature sensor in the
6 regions between heat arrays. They also point to this 101, the red blocks
7 here. And they say, oh, that's heating up some other region. No, that's
8 heating up the substrate. And by heating up the hot substrate, you're heating
9 up the heater arrays. The whole purpose is you want the heater arrays to be
10 at a base temperature, because remember, how these heater arrays work is
11 you are heating up a little resistor that causes a bubble of ink, and then that
12 bubble of ink bursts and fires out of the nozzle. And that's how inkjets work
13 well. Temperature is very important on these. Keeping the temperature
14 maintained at what you want it to be is very important. So heating up the
15 substrate is heating up the temperature arrays, and that is described in Yabe.
16 So that's. That's all I have. Jimmy, do you want to jump in?
17 MR. KRITSAS: Yep. Thanks, Dion. So I'd like to next turn to some
18 arguments that were raised with respect to Giere178 for the ’708 patent. I'm
19 going to switch back over to our slides. So this is Petitioner slide number
20 43, because Patent Owners, they spent a lot of time talking about this, and I
21 really want to clarify a few things that were said. I believe I heard Mr.
22 Borso state that he seemed to acknowledge that, yes, Giere178 discloses
23 cartridges that have multiple inks, but he said that was limited to just three
24 colors of ink and certainly wouldn't support a four color ink cartridge. Well,
25 if we look at the bottom of the quote here, Giere is explicit that other
26 combinations can be employed depending on the number of different base

1 color inks to be used. So Giere actually leaves open the possibility of having
2 a four ink cartridge.
3 And also, I also wanted to point out, if we go to the next slide, slide
4 44, we believe figure three is explicit about this point. It actually states that
5 there are ink feed slots located in here. I know Mr. Borso has tried to
6 minimize that as some sort of typo, and actually, he's really referring to just
7 a single slot, but that's not what the reference states. And also, if we take a
8 look at slide 49, the Axtel reference also supports the fact that you can have
9 a multi ink cartridge with four colors within it. Again, the Axtel reference is
10 incorporated by reference into Giere178. And this actually raises another
11 thing that Mr. Borsos raised in his statement earlier, seeming to
12 acknowledge, again that, okay, you can have multiple inks in a cartridge, but
13 all that Giere teaches us is that you have separate ink slots on separate chips
14 on that cartridge. Well, I don't actually know where he's finding any support
15 for that theory, but looking at Axtel right here, we have again an example of
16 a multi ink cartridge. Four inks with four ink slots shown on a single chip,
17 612. And this is clearly, I mean, this is how a person skilled in the art would
18 look at Giere178. The figure on the right is having these four different
19 colors being utilized on a single chip using these four ink slots here.
20 The next thing I wanted to point to. Bear with me one second. The
21 other thing I wanted to address is also, if we go to Patent Owner's slide
22 number 15, they've also introduced this concept, acknowledging, okay, well,
23 maybe. Maybe there's a problem with one central ink slot, so maybe we can
24 change our argument to having two ink slots. So I just want to point out that
25 they seem to acknowledge that there can be multiple ink slots on these chips.
26 Further, you know, belaying that argument that they have. And one other

1 thing I wanted to get to is there's also an issue that they raised about the
2 concept of Giere178 having only taken an average temperature of the two
3 separate regions that we had identified, the side regions. Again, I don't have
4 time to raise and bring this quote up from the Giere reference, but I want to
5 point Your Honor's attention to column nine. Starting at line 29 and ending
6 at line 50, there's a robust discussion of Giere choosing to fire resistors
7 individually or specific resistors individually and measuring temperature
8 before and after and using that information based on timing to determine the
9 temperature of each of the specific regions.
10 The last thing I have a time to address is this is a comparison of our
11 slide number 58, as well as Patent Owner's slide 27 side by side. And this
12 relates to the combination of Giere178 with Yabe. And if you look at the
13 right, they've -- I'm not actually quite sure exactly what it is that the
14 argument is. They seem to have concocted an arrangement with multiple
15 temperature sensors and a rearrangement of ink vias. That's not what our
16 ground is. That's not what we're proposing. We maintain that Giere178
17 discloses ink vias in each of the regions that we had identified, in that, a
18 person of skill in the art would look to Yabe to understand how to arrange
19 the ink vias along with the two arrays of heater arrays. That's it. They'd still
20 utilize the same temperature sensing arrangement. It's a very simple
21 incorporation, and it's not this entire reconfiguration that Patent Owner is
22 trying to convince you otherwise of. So unless there are any specific
23 questions, those I think, at this time, we will cede the rest of our time.
24 JUDGE KOKOSKI: Okay, thank you very much. Patent Owner, you
25 have 20 minutes, and you can begin when you're ready.

1 MR. BORSOS: Thank you. I'd just like to briefly address each of the
2 points that Petitioners have raised in their rebuttal. And I want to point out
3 that these don't really address the arguments that I raised head on. Instead,
4 they're working around them, calling your attention to other things, or, in
5 some cases, misconstruing the arguments and trying to say that they relate to
6 something that they really don't. So first of all, slide four of our
7 demonstratives shows a modification of prior art, figure two. So the
8 admitted prior art was detecting temperature on a per color basis, which Mr.
9 Bregman pointed to in his opening remarks. This modification, we were
10 very clear in our briefing, is not just a combination or something made up.
11 This is a visual depiction of what's actually described in ’708, because they
12 point out another thing that they want to avoid, which is when you put heater
13 arrays on both sides of the ink vias, which was known, we're not arguing that
14 having an ink via with heater rays on both sides was something new in the
15 ’708 patent, it's all about the temperature sensing regime, and in going from
16 a single array of heaters to a multiple array of heater design for each ink via,
17 the ’708 patent points out that if you're trying to control on a color by color
18 basis, you run into problems.
19 And so, the solution is to eliminate having two temperature sensors in
20 a region between two ink vias, and instead have a centralized ink sensor that
21 then functions in a specific way. You have to look at the remaining
22 limitations of the claim. It's not that simple. You have to operate the heaters
23 in response to the detected temperature. Or in the ’708 patent, you have to
24 have only a single sensor in each region. And the suggestion here, which is
25 explicit in the language of the ’708 patent, even though it's not visually
26 depicted, is that if you have a temperature sensor with each heater array,

1 then you wind up with multiple sensors per region. And that's something
2 that's avoided by the claims. So that is the only reason why this is in the
3 deck. I didn't even address it in our opening arguments, but I want to make
4 sure that there's no misunderstanding based on the comments that Mr.
5 Bregman made. Second, Mr. Bregman said that we're running afoul of the
6 claim language because we talk about a region between two ink vias, not
7 between two heater arrays. And that's a distinction without a difference,
8 because he already pointed out with his arguments to the meaning of
9 adjacent that is not material. Whether you're looking at the heaters being in
10 the region or not, it's set up in the claims that each of two different ink vias
11 has its own heater arrays, and there's a region defined between those heater
12 arrays in which a temperature sensor is located. So the temperature sensor is
13 located both between ink vias and between their associated heater arrays.
14 It's very clear, and I don't know why he's criticized us for referring as a
15 shortcut to the region between two ink vias when it's very clear from the
16 claim language, it's a distinction without a difference.
17 Now, with regard to Giere178 and the issue of how many ink vias
18 there are, I want to make very clear that our argument is not that you could
19 not have multiple ink vias on a single cartridge, or that Giere is limited to
20 three ink vias or something like that. No, the problem is that their
21 interpretation of Giere having a four quadrant design is essential for each of
22 the grounds in which Giere178 is presented, because everything crumbles
23 without that four quadrant design. They're relying on the specific placement
24 of temperature sensors with respect to ink vias that aren't actually in the
25 locations that they're alleging they are. If you appropriately read Giere178,
26 it has temperature sensors aligned on both sides of each column of heater

1 resistors. So the three versus four inks argument is a red herring. You could
2 have an ink container that has 82 different reservoirs and each dispenses ink,
3 but it doesn't suggest this four quadrant design. And that's the fundamental
4 problem with not only the Petitioner's interpretation of their references and
5 their arguments, but also the combinations don't work without importing a
6 misguided temperature sensing scheme from Giere178. If you look at the
7 teachings of the temperature sensors in Giere178, they don't support the
8 combinations and arguments that Petitioners have raised.
9 They suggested that the ink vias, the plurality of ink vias, is something
10 that we argued is a typo. I'm not saying it's a typo. I'm saying it is not
11 supportive of that four quadrant structure. We pointed out that not only
12 could you have a single central ink via, but if you wanted to, you could
13 bisect that central ink via, just like the heater arrays are bisected into upper
14 and lower portions. And that's not something that is back pedaling or that
15 we've tried to adjust our argument. This was raised in our initial response,
16 and we only added a drawing because the in our survey reply, because the
17 Petitioners made much ado of the argument, and the declaration of our
18 expert and our initial response brief both point to this possibility. You can
19 divide that central ink slot into as many portions as you want. It doesn't
20 change the fact that Giere178 does not show a four quadrant design.
21 And finally, when pointing to the ’708 patent and grounds four and
22 six. I want to make clear, again that the confusion that Petitioners are
23 attempting to raise is unwarranted. We're not representing that this figure
24 appears anywhere in the prior art. Of course we're not. We're showing what
25 the actual result would be if you pay attention to Giere's temperature sensing
26 scheme, that it actually shows. So Mr. Kritsas argued that their combination

1 is very simple. You take Yabe, which has a ink via, with two heater arrays,
2 one on each side, and import them into the rectangular regions of Giere178.
3 Well, that's the fundamental problem, because there's no impetus for doing
4 that. The red regions here in Giere178 are not containing ink vias. I mean, I
5 don't know how I could stress that more. It's just a fundamental misreading
6 of that. And even if you plucked the ink vias with two sets of heater arrays
7 out of Yabe and put them in four quadrants, you would result in something
8 like this. Unless you fundamentally change Giere's temperature sensing
9 structure, because Giere teaches that you're detecting the temperature on
10 both sides of the heater arrays that are on either side of the central ink via.
11 So if you wanted to create a four quadrant design, you would modify
12 the temperature sensors accordingly, and you wind up with something that
13 looks like this, that has a lot of temperature sensors. So there's eight here,
14 and you've got two temperature sensors between any given ink via. So if
15 you really follow what Giere178 is teaching, their combination doesn't even
16 read on the claims. And Mr. Kritsas has admitted that this doesn't read on
17 the claims. And so, the fundamental problem that he's dealing with is that
18 this is the natural result of the teachings of the references that he's relying
19 on. And if you don't take things out of context, like Petitioners have, you
20 don't arrive at the claimed invention. So unless there are any further
21 questions, I'll rest at this point.
22 JUDGE KOKOSKI: Okay. Thank you very much. I'd like to thank
23 the parties for their appearances here today and their arguments. The cases
24 are now submitted to the panel for determination and preparation of the final
25 written decisions. And we are adjourned. Let's go off the record.
26 (Whereupon, the proceedings at 10:54 a.m. were concluded.)

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