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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHENZHEN TUOZHU TECHNOLOGY CO., LTD.,
Petitioner,

v.

STRATASYS, INC.,
Patent Owner.

IPR2025-00311
Patent 8,562,324 B2

Record of Oral Hearing
Held: April 16, 2026

Before MITCHELL G. WEATHERLY, CHRISTOPHER M. KAISER, and LILAN REN, *Administrative Patent Judges.*

APPEARANCES:

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The above-entitled matter came on for hearing on Thursday, April 16, 2026, commencing at 1:00 p.m., via video teleconference.

P R O C E E D I N G S

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JUDGE KAISER: All right. Good afternoon, everybody. This is a hearing in IPR2025-00311. Caption, Shenzhen Tuozhu Technology Co., Ltd. versus Stratasys, Inc., challenging Patent 8,562,324. I am Judge Kaiser and also on the panel are Judges Weatherly and Ren. And let's start with appearances. We'll start with Petitioner, please.

MR. BISENIUS: For Petitioner, my name is Patrick Bisenius. With me is Michael Hawkins, lead counsel, both of Fish and Richardson.

JUDGE KAISER: Okay, thank you. Patent Owner?

MR. OAKS: Good afternoon, Your Honors. Brian Oaks for Patent Owner, Stratasys, Inc. I also wanted to note, missing today is Mr. Aashish Kapadia, who you met yesterday, who apparently came down with some severe (INDISCERNIBLE) presentation for us today, but I'm going to be filling in at the last minute, so please bear with me on that.

JUDGE KAISER: We will. Thank you very much.

JUDGE WEATHERLY: That's why you get paid the big bucks, right?

JUDGE KAISER: All right. So, each side will have 60 minutes today. Petitioner has the burden of proof and is going to go first. Oh, sorry. Did I miss something there?

JUDGE WEATHERLY: No, I was going to ask a question about the -- Mr. Oaks' colleague being absent. I'm hoping it wasn't because of anything I asked yesterday. Get a stomachache from listening to my questions, but -- so, yeah. Judge Kaiser is used to me telling jokes like that, so -- so is Judge Ren. Sorry for the interruption. Go ahead.

JUDGE KAISER: No, you're fine. So, Petitioner has the burden of proof and will go first, and each party can reserve some of its time for rebuttal or surrebuttal, as appropriate. I'll give you the same reminders as yesterday. As noted in the hearing order, this hearing is open to the public. We may have members of the public present in the room or viewing on the public line. I don't think there's any confidential material in the record, so I don't think there's going to be a problem, but please bear that in mind.

The panel has access to the demonstrative exhibits that both parties filed, and all the exhibits in the record, as well as the papers filed. If you're going to refer to something, whether it's a demonstrative, a paper, or an exhibit, please give us a slide number, or a paper number, or an exhibit number, and some reference to where we should be looking within that docket. And just to help those of us who are attending remotely, if you're speaking today, please make sure you speak into a microphone.

So, I think with those preliminaries out of the way, we can get started. Petitioner, if you'd let us know how much time you'd like to reserve for rebuttal, and then whenever you're ready, I think you can begin.

MR. BISENIUS: We'd like to reserve 15 minutes for rebuttal.

MR. HAWKINS: We've got 60 minutes aside today, right?

MR. BISENIUS: Correct.

MR. HAWKINS: Okay.

MR. BISENIUS: Good afternoon, Your Honors. May it please the Board. I'd like to start at Petitioner's slides at Slide 7. Slide 7 shows the two challenged independent claims, and highlighted here are the claim elements in dispute. Looking at Claim 1, it recites, "a processor configured to." "Provide a user interface to a remote user accessing the device through the

network interface. Not that it does not require the user interface to be static or unchanging." And then it goes on to recite, "And to present in the user interface an image with a build volume from the video camera and a two-dimensional projection of the three-dimensional model from the point of view of the video camera."

Claim 19 includes a similar method recitation. And what I'd like to discuss first is the fact that claims do not recite that the presentation of the image of the build volume and the presentation of the two-dimensional projection of the three-dimensional model need to be at the same time or simultaneous, as Patent Owner has asserted.

And so, I'd like to move forward to Slide 10, to discuss that issue. First, I just want to give a brief history of this argument in the petition. We stated plainly, although not required by the claim language, it's not required that these two things be displayed simultaneously, but we did present arguments in the petition that it would've been obvious in the combinations to display them simultaneously anyway. The institution decision preliminarily agreed with that position that there is no requirements for simultaneous display, but invited the parties to expand on this claim construction issue. And so we did in the Petitioner's reply, arguing that the plain language of the claims does not state that the image and the projection are acquired to be displayed simultaneously, only that each is presented in the user interface.

Moving to Slide 11, what I plan to talk about today are the many reasons why this additional limitation should not be read into the claims. First off, the plain meaning of the claims does not require it. Second, there is no claim scope disclaimer or disavowal in the prosecution history. Third,

the specification of the '324 patent does not require it, and actually, arguably does not even provide written description support for simultaneous display. Additionally, dependent claims of the '324 patent indicate that the user interface is dynamic and different information is presented at different times. And finally, the Patent Owner's infringement intentions indicate that prior to the IPR, Patent Owner had a much broader understanding of this claim language.

JUDGE WEATHERLY: This concept of simultaneous display that you're talking about that's not required, in your view, is simultaneous display purely a temporal kind of concept? In other words, could there be two different parts of the user interface? One that displays model and one that displays video of the build as it's going on, like side-by-side, or must there be some sort of overlay relationship?

MR. BISENIUS: We believe all of the --

JUDGE WEATHERLY: Are both of those simultaneous?

MR. BISENIUS: I believe those would both be simultaneous --

JUDGE WEATHERLY: Okay.

MR. BISENIUS: -- if they're temporaneously -- temporally being displayed at the same time.

JUDGE WEATHERLY: Yeah.

MR. BISENIUS: But we believe that would fall within the claims. We also believe sequential presentation would fall within the claims --

JUDGE WEATHERLY: Okay.

MR. BISENIUS: -- because there's no requirement that the presentation be at the same time.

JUDGE WEATHERLY: And is it an aspect of the user interface

that is kind of a capability in your view? In other words --

MR. BISENIUS: So --

JUDGE WEATHERLY: -- just that the user interface must be capable of displaying both of those things?

MR. BISENIUS: So, it depends on which independent claim we're talking about.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: If we go to Slide 12, Claim 1 really only says a processor configured to.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: Present a user interface, and then the user interface presents these different parts of information. And I, like in those two, I just presented Slide 10, then I presented Slide 11, and now --

JUDGE WEATHERLY: Um-hum.

MR. BISENIUS: -- I've presented Slide 12. These have all been presented as part of the user interface here, as part of the slide deck, but not at the same time, but there is no 'at the same time' requirement. Claim 19, it doesn't have this configured to language. It's a method claim, but once again, it says all you're doing is providing the user interface and the user interface presents these two different things. It doesn't say it presents them at the same time.

JUDGE WEATHERLY: No. Really what I'm talking about is -- so for example, Claim 1 is a system --

MR. BISENIUS: Um-hum.

JUDGE WEATHERLY: -- or device claim. A processor configured to. That, to me, reads as, the processor is capable of displaying

an image of the build volume and a two-dimensional projection of three-dimensional model, but it doesn't require -- when I say it's a capability, it's just -- it's merely a capability of the processor. The method, on the other hand, is providing a user interface, wherein the user interface presents an image of the two things. So, arguably, that requires the two things actually do have to be presented in the user --

MR. BISENIUS: And we would agree. The claims require -- in order to show obviousness in these claims, we have to demonstrate that it would've been obvious to combine references that disclose presenting both, the image of the build volume, and the two-dimensional projection. What's not required is presenting them at the same time.

JUDGE WEATHERLY: And I suppose meeting the requirement of the providing step for Claim 19 necessarily demonstrates the processor configured to --

MR. BISENIUS: We believe so.

JUDGE WEATHERLY: -- (CROSSTALK) in Claim 1.

MR. BISENIUS: Although it's not in dispute, we've identified the petition where there actually is a specific processor.

JUDGE WEATHERLY: Right.

MR. BISENIUS: It's a theoretical processor.

JUDGE WEATHERLY: Right, okay.

MR. BISENIUS: So, I'd like to move to, well, Slide 12. As I've already discussed, the claims themselves don't expressly recite that they need to be presented at the same time. Turning to Slide 13, this was Patent Owner's expert under questioning, and we'd asked him about different aspects of a user interface, and if different information were added to a user

interface and other information were removed in a particular user interface, would you consider that to be a different user interface. And he testified, "I'd probably describe that as the same user interface." And so, he's at least in agreement that changing the information in a user interface doesn't make it a completely different user interface. It's still the same user interface presenting that information.

JUDGE WEATHERLY: This simultaneous concept, though, looks to me like it could be different between Claim 1 and Claim 19. I mean, Claim 19 is a method and there's a step of providing a user interface that "presents an image of the build volume and a two-dimensional projection." That, at least facially, reads like simultaneous display, both of those things.

MR. BISENIUS: We don't believe that it does.

JUDGE WEATHERLY: And why is that?

MR. BISENIUS: Because it's a single user interface, it presents the image of the build volume, and then later on, the information changes. Now, it presents a two-dimensional projection. So, it's presenting both of those things. The changing of information --

JUDGE WEATHERLY: Well, it doesn't say a user interface that is capable of presenting. It says a user interface that presents.

MR. BISENIUS: Exactly. And so, I say if it presents them sequentially, it's presenting both of them. It's the same user interface and it's presenting both of them. And it's not just that it's configured to present them. It's actually presenting them. If it's a user interface that's configured, that -- sorry -- if it's a user interface that presents a blue button and presents a red button, if it shows a blue button and then later shows a red button, it's

presented both of those buttons. Here, if --

JUDGE WEATHERLY: I understand that position. I'm sure Patent Owner will have its own take on this whole concept and I'll probably prod them about the distance they'll -- the daylight between these two claims, if any. But in your view, we should be interpreting both of these claims as if they're talking about the same type of user interface.

MR. BISENIUS: That's our position and I don't think either party has argued these differently. There's a distinction --

JUDGE WEATHERLY: Okay.

MR. BISENIUS: -- between the presenting in Claim 1 and the presenting in Claim 19.

JUDGE REN: Counsel, if I understand your position correctly, at least part of your position, one of your reasons that the claims don't require simultaneous display is that the claim doesn't recite so. But I would say that the claim also doesn't recite that these images are displayed sequentially, as you mentioned earlier. And I would actually take Judge Weatherly's point further to say that Claim 19 does require the user image to present the video camera and a two-dimensional projection. So, just grammatically, it seems like it does require both these images.

MR. BISENIUS: And we would agree that it requires presentation of both the images, and we believe -- and it doesn't recite sequentially, and it's not limited to that. This is a genus. The genus is, here's the information that needs to be presented in the user interface and we've had a list, it's a short list. These two things need to be presented by the user interface, but it -- the species would be --

JUDGE WEATHERLY: If we disagree with your argument about

simultaneous display not being required, is that fatal to your case for either of these claims?

MR. BISENIUS: It is not. We have demonstrated why simultaneous display would be obvious under all the grounds.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: That being said, the language of the claims itself is not the only evidence of record. If we really dig into the record, we will see, not only is there not a requirement for simultaneous display, there really isn't support for simultaneous display in the specification because the specification never expressly says these would be displayed at the same time. It talks about the display of both of them, but never actually says at the same time or simultaneously. As we pointed -- it's not in our slides, but as we pointed out in the Petitioner's reply, other information is described as being done simultaneously or at the same time in the specification, and yet, there's never a description of the image of the build volume and the two-dimensional projection being displayed at the same time. Would it fall under the genus of presenting them? Yes, that would absolutely fall within that genus, but so would sequential presentation. Neither one is actually specified in the specification.

Before we dive into the specification, I want to talk a bit about Patent Owner's disavowal argument, so I'm moving to Slide 15. So, during prosecution, Patent Owner argued that an amendment would provide both, video and model views, from the same point of view in order to prevent side-by-side comparison of model and results by a remote user. And they say, this is clear prosecution, disavowal. We have disavowed subsequent display of these images. They have to be simultaneous, even though this

statement here doesn't say anything about 'at the same time' or 'simultaneous', they say, this is a clear disavowal.

JUDGE WEATHERLY: But it implies it by saying side-by-side comparison, to be fair.

MR. BISENIUS: But a mere implication or implying is not clear enough to meet strict disavowal standard. If we look to Slide 16 of Petitioner's slides, the Federal Circuit has stated in computing, "Thus, where the alleged disavowal is ambiguous or even amenable to multiple reasonable interpretations, we have declined to define a prosecution disclaimer." (INDISCERNIBLE).

JUDGE REN: What other ways would you interpret side-by-side other than simultaneous? How could you not have two images displayed at the same time to have a side-by-side comparison?

MR. BISENIUS: We believe -- so, looking back at Slide 15, this statement taken out of the broader context of the arguments made by the Patent Owner during prosecution is really just giving an example of the utility that's not present in Taminger because Taminger doesn't have both of these images at all.

JUDGE WEATHERLY: Well, that's my next questions. I don't know the record well enough, and I apologize for that, but what does Taminger actually --

MR. BISENIUS: Taminger --

JUDGE WEATHERLY: What does it disclose? Does it disclose a video image and a model view?

MR. BISENIUS: No.

JUDGE WEATHERLY: Okay. What does it disclose?

MR. BISENIUS: Taminger just has the video image and so, this additional two-dimensional projection with a three-dimensional model, that was added in an amendment, which --

JUDGE WEATHERLY: Ah.

MR. BISENIUS: -- got them to allowance. And if we look at Slide 17, these are the actual examiner's reasons for allowance. He doesn't say anything about side-by-side comparison, he doesn't say anything about 'at the same time' or 'simultaneously.' He says, what's missing from Taminger, which is correct, is presenting the user interface and image of the build volume from the video camera, and a two-dimensional projection, with a three-dimensional model from the point of view of the video camera.

So, this wasn't a case of Taminger had both of these views and they just weren't shown at the same time. Taminger didn't have that second view at all. Patent Owner added it in during prosecution, and that's what's distinguished in Taminger, and that's what the examiner recognized here. The examiner's reasons for allowance do not acknowledge that the single mention of 'side-by-side' would somehow mean that they have to be displayed simultaneously.

JUDGE WEATHERLY: Right, but what the examiner's statement does do is the same thing sort of that Claim 19 does, when it talks about presenting a user interface with two images. Presenting the user interface, an image of the build volume from the video camera, and a two-dimensional projection. I know that that doesn't expressly say simultaneously, but when you're talking about presenting an image that has one and two, it is, at least in my view, a reasonable rating of that kind of phrase as referring to a simultaneous display of two things in one interface.

MR. BISENIUS: If mere --

JUDGE WEATHERLY: I understand your position --

MR. BISENIUS: Yes.

JUDGE WEATHERLY: -- also that there's a way to read it more broadly, that is sequential, that like -- an interface that's capable of displaying one, and then capable of displaying two, also. Later, maybe. That's enough, and that's one of the reasons why I sort of asked you that question about how does the interpretation issue dovetail into your showing. Is it fatal, is the way I asked it -- is it fatal to any of your cases. You said it's not on any of your challenges.

MR. BISENIUS: Correct.

JUDGE WEATHERLY: I won't be shocked to see Patent Owner argue otherwise, but I'll let them do that when it's their turn --

MR. BISENIUS: So --

JUDGE WEATHERLY: -- if they want to.

MR. BISENIUS: -- there's additional reasons why this limitation should not be read into the claims. That's because it would make other claims inoperable. If you move with me to Slide 20 --

JUDGE WEATHERLY: That's interesting.

MR. BISENIUS: -- Claim 20 says, transmitting -- so, it -- Claim 19, which Claim 20 depends from, has the limitation we've been discussing. Claim 20 recites, "Transmitting status information over the data network upon completion of the objects." This is after the fabrication. So, this is after we're showing the two-dimensional image of the build volume. So, after fabrication, we're going to provide information over this object. And then 21 says, "Wherein, the status information includes data presented

through the user interface." So, once again, it's using the word 'presented', it's talking about the user interface, which grabs antecedent basis from Claim 19.

So, Claim 21 is saying, this information that is only available to us after completion of the objects is still presented in the user interface and that counts as presented. It doesn't call that a different user interface, it doesn't say that it's subsequently presented in the user interface. It's using the same language -- presented in the user interface. So, if we read the term 'presented' to be so narrow that presenting in the user interface requires everything to be displayed at the same time, Claim 21 doesn't really work because it requires presentation of this information that only occurs after finalization of the process to be presented in the user interface.

JUDGE WEATHERLY: Yeah. I know you might think that's a great argument, but I don't think it is. And the reason I don't think it is is because Claim 20 -- Claims 19 and 20 are in a form sort of adding additional steps, so it doesn't -- I don't see that it's not possible to require that -- in the original method, that the user interface has to present the video image and the two-dimensional projection at the same time, and then only later, there's another step that gets performed after the build is done. Those steps being the ones recited in Claims 20 and 21. In other words, there is a way to read Claim 20 and 21 and preserve what Patent Owner says is presenting a user interface presenting aspect.

MR. BISENIUS: We at least believe it provides evidence that the term presenting with respect to the user interface does not require temporally at the same time.

JUDGE WEATHERLY: Well, you're saying it sort of does. I

mean, you're saying it does -- there's a temporal requirement. Namely, that the object has to finish printing, then the status information is transmitted over the network, and only then can the status information be displayed on the user interface. I mean, that's a different kind of temporal requirement.

MR. BISENIUS: Correct.

JUDGE WEATHERLY: It's a sequential --

MR. BISENIUS: For the --

JUDGE WEATHERLY: -- temporal --

MR. BISENIUS: Yes.

JUDGE WEATHERLY: -- requirement.

MR. BISENIUS: That particular claim -- claim 281 --

JUDGE WEATHERLY: Yeah.

MR. BISENIUS: -- does require that sequential temporal requirement. So, that --

JUDGE WEATHERLY: Yeah.

MR. BISENIUS: -- at least indicates that the use of the term 'presenting' with the term 'the user interface' at least contemplates non-temporal --

JUDGE WEATHERLY: You're arguing as if this concept of presenting -- like there's -- like the presenting of Claim 21 is the same as the presenting of Claim 19, and I'm saying, I don't read it that way. I read it as a second presenting style, if that makes any sense.

MR. BISENIUS: And I think that's why it's important we should turn to the specification.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: Because there's no actual expressed disclosure of

simultaneous display --

JUDGE WEATHERLY: Sure.

MR. BISENIUS: -- in the specification. So, let's start at Petitioner's Slide 18. So, you're talking about the user interface. It says it may include a visualization area 510, that displays a visual representation of the print job. And we see that over on the right side in Figure 5. It's a single box, not multiple boxes. And then it lists a bunch of examples of things that may or may not be displayed in there. This first un-highlighted part is talking about a tool path.

Then it says the visualization area 510 may also or instead show simulated print objects, such as a rendering of a three-dimensional model depicting a current state of completion of an object being fabricated, according to a print job. The visualization area 510 may also instead show an image of a working volume of a three-dimensional printer or other fabrication resource captured during execution of the print job. This may, for example, include a digital still image, which may be updated periodically, or a video image captured from a video camera at the three-dimensional printer. It goes on to list other information that may or may not be presented in the visualization area. So, it says it could be any of these things, but it never says it has to be displayed at the same time or these would be displayed at the same time.

JUDGE WEATHERLY: No, but doesn't -- so, the sentence about the visualization area 510 may also or instead show --

MR. BISENIUS: And we believe --

JUDGE WEATHERLY: I'll paraphrase two things. Doesn't that imply that 510 can contain the video image and the three-dimensional model

at the same time?

MR. BISENIUS: I believe that would fall within the scope of what's said here --

JUDGE WEATHERLY: Um-hum.

MR. BISENIUS: -- but I think that cycling through this information would also fall within the scope of what's said here. That both would fall within that scope, except --

JUDGE WEATHERLY: I agree.

MR. BISENIUS: -- for it's not specifying either of them.

JUDGE WEATHERLY: I agree with you. I mean, you had argued earlier, though, at least -- maybe I misunderstood your argument, but I thought you were arguing that specification doesn't ever describe simultaneous display.

MR. BISENIUS: I would argue this is not a description of simultaneous display. It's just saying, here's a bunch of information that could be shown.

JUDGE WEATHERLY: Um-hum.

MR. BISENIUS: It could show all of these, but it doesn't say it shows all of these simultaneously. It doesn't say --

JUDGE WEATHERLY: No, but I think it says --

MR. BISENIUS: -- it shows all these at the same time.

JUDGE WEATHERLY: I think it's fair to read it as it can display them at the same --

MR. BISENIUS: I think that would fall within the scope of this. I don't think that this is expressly stating that.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: I'd like to turn actually to paper 24, which is Patent Owner's surreply.

JUDGE WEATHERLY: Paper 24?

MR. BISENIUS: Paper 24. I'll give you a few seconds to get there. And I'm at page 11, which is page 15 of the PDF.

JUDGE WEATHERLY: Go ahead, we're there.

MR. BISENIUS: So, in the Patent Owner's response, they cited to a lot of portions of the specification, which they insisted required reading in simultaneous display. And here they say, okay, but we also cited this part and you didn't address this -- these two specific things that we cited because they're faulting us for not walking through every single one. And they say, "This proves that your required simultaneous display for comparing actual to expected two-dimensional results." And I have two responses for this. First, going back to Petitioner's slides. At Slide 19, we have Dr. Wolfe who reviewed the entire '324 patent specification again in preparation for the responsive testimony. He says, "There's never an expressed disclosure of displaying them both at the same time or that they're displayed simultaneously. There's disclosures that they could both be displayed, but nothing says these are required to be displayed at the same time, or even that they are expressly stated that they display at the same time."

What I think is more compelling is if we go back to those two sections that were cited by the Patent Owner, which are in columns 22 and column 25, and look at the actual statements in the '324 patent. So, I'd like to go to Exhibit 1001 and look at these two portions of the specification. So, starting out, I'm at Column 22 of Exhibit 1001 at lines 35 and 38. They were cited by the Patent Owner. Thirty-five starts in the middle of a sentence, so

I'm going to start the sentence above -- the line above that. It says, "Additionally, this area may include a control or a group of controls for manual operation of a three-dimensional printer by a remote user. Thus, for example, a user may remotely stop fabrication, restart fabrication, cancel fabrication, change fabrication settings, perform a test extrusion, and so forth, as though the user were locally controlling the printer."

So, this really has nothing to do with displaying anything, and certainly not the image of the build volume or the two-dimensional projections. We're not quite sure why that was cited, but what I do really want to talk about is the next citation, which is in column 25, starting at line 45. So, if we look at this sentence alone, it states, "By comparing actual to expected two-dimensional to three-dimensional results, a fabrication process can be expediously aborted and restarted or otherwise addressed without waiting for completion and physical inspection of the constructed object.

So, it does say that there's some comparison between the real and expected results, but what's not said here is what's doing the comparison, but if we read this entire paragraph, it tells us, it's not a human doing this, it's a processor. If we go up to line 35 of column 25, the same paragraph, it says, the processor may be configured to monitor operation of the three-dimensional printer, based upon a comparison of the two-dimensional projection and the image of the build volume. There's nothing about displaying here and the processor doesn't need to display these in order to compare them. It certainly doesn't need to display them simultaneously in order to compare them.

It goes on to state, using this type of image analysis -- so, once again, it's talking about image analysis performed by the processor -- it may

be possible to track actual progress against predicted progress to identify equipment malfunctions or other interference that might cause the physical object to deviate from the model used to fabricate the physical object. And then goes on to give some examples of defects that could occur. The point is, this entire paragraph here is not talking about a side-by-side simultaneous display that allows the user to visualize it and detect these defects. It's the processor that's doing it.

And so, this term "side-by-side comparison", first off, does not appear in this paragraph and this is what they're relying on for that side-by-side statement made in the prosecution history. They're saying, well, we look at this one sentence at line 45, take it out of context, assume it's talking about a human doing the comparing, and so, if a human is doing comparing, well, it has to be displayed simultaneously, even though sequential displaying of the images would suffice for such comparing, but it's not even talking about that. It's not talking about displaying at all. It's saying the processor is performing this comparison.

And as we discussed, there are other portions of the specification, like we just talked about in our slides, that do say this information is displayed in that visualization area 510. There's never an expressed statement that these are displayed at the same time, and there's certainly not a statement in the specification saying these are required to be displayed at the same time or the invention doesn't work. And so it should not be imported into the claim language.

Finally, I'd like to go back to Petitioner's slides and just demonstrate that prior to this IPR proceeding, the Patent Owner had a very different and broader view of the claim scope here and its infringement

contentions in the district court, and we think this is enlightening that the correct reading is, there's no requirement for simultaneous display.

So, we look at Slide 21 of Petitioner's slides. Patent Owner offers two theories of their infringement case, and one of them does have simultaneous display. We see it here. There's the image of the little dinosaur and then they say the two-dimensional projection is that little gray image on the bottom left there. Now, first off, it is very debatable as to whether these are from the same point of view. They don't look like they're the same angle to me, and so, are we taking a very broad interpretation of same point of view.

Patent Owner, probably realizing that was going to be a problem, gave a second theory of the case. They said, well, actually the two-dimensional projection is the actual image shown here because an image in the object is still a two-dimensional projection. And then if we go to Slide 22 --

JUDGE WEATHERLY: Be a little more clear on the record for that. When you say "this."

MR. BISENIUS: If we go up and look at Slide 21 --

JUDGE WEATHERLY: Yes.

MR. BISENIUS: -- they're saying the camera image showing the dinosaur here is the two-dimensional projection.

JUDGE WEATHERLY: That's mentioned in the claim.

MR. BISENIUS: That's mentioned in the claim.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: That's their argument. And then going to Slide 22, they say these other images here, this time lapse image, that's the image

of the build volume, and we see that argument from their infringement contentions up top here. It says, alternatively -- so, this is their second read -- alternatively, a two-dimensional projection of a three-dimensional model is a video from the video camera. That was the video of the dinosaur, as shown above in Bambu studio or Bambu Handy. And an image of the build volume from the video camera is time lapsed, as is shown below. These images from the time lapse are shown later on. They're shown after the build process. The image of the dinosaur happens during the build process. These are always happening at two different times. They're never in the same user interface at the same time. So, Patent Owner's understanding of this claim language is the way it -- was the way it was written and should be properly interpreted, until they had to face this prior art, until they got to this IPR, and then they changed their story. And so, once again, this indicates the plain reading of the languages that we should not be importing a simultaneous display requirement into the claims. Patent Owner didn't even believe that --

JUDGE WEATHERLY: Well --

MR. BISENIUS: -- when asserting the claims.

JUDGE WEATHERLY: -- I mean, we're not importing it. You say it's not even there to be imported.

MR. BISENIUS: Correct. They're trying to import a limitation from a single statement from that -- an ambiguous --

JUDGE WEATHERLY: From the prosecution history.

MR. BISENIUS: -- statement from the prosecution history.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: Correct. It's our position that there is -- if they

were to make that amendment, had they made this amendment and a motion to amend during this proceeding, our first argument would've been 112, lack of written description support, because it's not ever expressly describing displaying those two things at the same time. If there are no further questions on claim construction, I'd like to move on to analogous art.

So, turning to Petitioner's Slide 25, KSR takes a broad view of analogous art, that when a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it either in the same field or a different one. And I want to move down to Slide 28 of Petitioner's slides, and here we have additional case law. Donner Tech says -- and this is with respect to -- rather than field of endeavor, this is with respect to a pertinent problem addressed. It says, "If two references have 'pertinent similarities', such as that Mullen is reasonably pertinent to one or more of the problems to which the '023 patent obtains, then Mullen is analogous art." So, here, we have Donner Tech recognizes there could be multiple problems to which a patent pertains, and that as long as a reference is reasonably pertinent, it's analogous art.

We have the Fed Circuit saying in Netflix that during the same field of endeavor, even if they shared a general field of endeavor, this is supposed to be a very broad category, and the reason is, when something is a printed publication, it is publicly available, it's considered prior art for thousands of other patents filed that same day. If we're going to remove it from the pool of prior art for this one patent, it's got to really be an exception. And here, we see we're not even close to that exception because we really are falling in the field of endeavor.

If we look at Slide 30, I just want to go over the timeline quickly.

In the petition, we cited the portion in the upper left that the invention relates to three-dimensional fabrication, and we said, okay, that's a general statement of the field of endeavor. In the institution decision, the Board initially agreed with that, but invited both parties to elaborate on this argument, so we did in our Petitioner's reply. And we cited to the rest of these, which I'm going to get into in a minute, but I just want to first point out that it was proper for Petitioner to add in these additional citations in our Petitioner's reply. It was not improper. And we know that from Corephotonics.

If we go back to Slide 26, in the highlighted part here, Corephotonics states, "Petitioner was permitted to respond both by bolstering its field of endeavor argument and by adding that its prior art is pertinent to the problem faced by the inventors of the challenged patents." Now, Patent Owner has said they've distinguished Corephotonics, and Corephotonics only applies to situations in which there's an ambiguous indication of the field of endeavor, and it's not clear what the field of endeavor is in the petition. And they say it distinguishes from here because we actually identify a field of endeavor in the petition, so therefore, we're never allowed to make any more statements about analogous art in our Petitioner's reply. But a policy outcome from such an argument would be ridiculous.

It would reward Petitioners for being ambiguous, for not giving the Board this guide in their petition, and instead, being unclear about what the field of endeavor is. And Petitioners that are clear, would be punished because they'd never be able to identify additional portions of the spec that support their field of endeavor. They'd never be able to identify that the

prior art is also pertinent to a problem addressed by the challenged patent. We believe that's just simply not the case. The language in Corephotonics is clear. We are allowed to bolster our argument here.

And so, I'd like to go back to Slide 30. As I mentioned, the portion in the upper left, we did identify that in the petition. The rest of these are portions that we identified to bolster our field of endeavor argument from the '324 patent. The second box on the left here, this was cited by both, Patent Owner and Petitioner. The Patent Owner skips over key parts of it. Patent Owner focuses on that the exemplary embodiments below emphasize fabrications techniques using extrusion. They then skip the next part that says, "The principles of the invention may be adopted to a wide variety of three-dimensional fabrication processes." Once again, indicating that it applies to all three-dimensional fabrication. It then --

JUDGE WEATHERLY: Yeah, but then it goes on to specify additive fabrication processes, and I know that one of the prior art references here is a -- like a machining reference.

MR. BISENIUS: Correct.

JUDGE WEATHERLY: Subtractive -- so-called subtractive process.

MR. BISENIUS: Correct. But I'd like to point out that it says, "in particular."

JUDGE WEATHERLY: Yeah.

MR. BISENIUS: Not “only”. And after that --

JUDGE WEATHERLY: Also, it says “and”.

MR. BISENIUS: Yes. “And in particular.” And then it says, all such variations that can be adapted to use with a network fabrication

resource -- so once again, fabrication resource. The third box on the bottom, we believe goes in broader. It says, "Three-dimensional printers or other fabrication or prototyping devices." So, this is going beyond even rapid fabrication and looking at rapid prototyping devices would fall within the field of endeavor, but we believe it's at least rapid fabrication, not limited to additive manufacturing. Turning to Slide 31, we identified -- our expert identified multiple problems that are addressed by the claims, including one of the primary problems addressed by the '324 patent is monitoring and control of an automated fabrication process. One of the primary problems addressed by the '324 patent is monitoring and control of a remote automative process, so these are two different problems with which the '324 patent is concerned.

Turning to Mori, Slide 33, there's no dispute between the parties that Mori is rapid fabrication that removes material rather than adding material. As Judge Weatherly pointed out, it's called machining. Turning to Slide 34, we asked Patent Owner's witness, is machining a type of three-dimensional fabrication, and he agreed that it falls under that umbrella term. And so really, the only argument here is, is the '324 patent limited to only additive manufacturing, rapid fabrication? And from those quotes we showed you on Slide 30 that are cited in the Petitioner's reply, we believe it's not so limited. But Mori is also clearly pertinent to a problem addressed by the '324 patent.

If we go to Slide 35, we see here Dr. Wolfe -- this is only part of his analysis, what we could fit in a slide, but Dr. Wolfe addressed this. He identified the problem, one of the primary problems addressed by the '324 patent is monitoring and control of an automated fabrication process. Patent

Owner complained in their surreply that we needed to identify a problem and compare it to the prior art, and we did not do that in our Petitioner's reply. They say, identify and compare, over and over again, but we clearly did. This is only part of the analysis from Dr. Wolfe, and we included a summarized version of this analysis in the Petitioner's reply at page 8. And Patent Owner did not address this comparison at all. They just said we didn't make the comparison, even though we clearly did. It's in the papers. If there's no questions about Mori being analogous art, I really quickly want to talk about Hanke being analogous art. I'm going to skip field of endeavor, even though we believe it falls under the broader field of endeavor of rapid prototyping.

Moving to Slide 37. Henke is at least pertinent to the problem of remote monitoring and control of an automated process, and we see that these descriptions here, it's all about web-based access and control of these electromechanical models. So, whether or not these electromechanical models are considered fabrication or rapid prototyping, it at least is remote control and monitoring of these electromechanical models and there's a lot of examples here of that remote observation and control.

If we turn to Slide 39, we see that Dr. Wolfe -- once again, this is only part of his analysis. He identified a problem. One of the primary problems addressed by the '324 patent is monitoring and control of a remote automated process, and then he stepped through Henke, and this is only part of his analysis of Henke in paragraph 24, when he stepped through Henke and said, here's all the places that it's relevant to this problem of monitoring and control of a remote automative process. So, at the very least, Henke is pertinent to a problem addressed by the '324 patent and is analogous art.

I'd like to briefly talk about Ground 1A, the Mazumder-Mori combination. Moving to Slide 42, we gave four reasons as motivation to combine. These two references. Patent Owner hasn't disputed all of these. They really only disputed number two and number four. Their dispute of number four was really along the lines of their analogous art argument that said, well, Mori (INDISCERNIBLE) fabrication, so it's not really a known teaching. They argued that -- the second reason here -- monitor the progress of the object, even when the actual view of the object is partially or totally obscured.

They said, well, the obscuring in Mori is because of this coolant and the coolant is not present in Mazumder, and so that wouldn't really apply. But if we go to Slide 43, Dr. Wolfe testified that there's other ways in an additive manufacturing machine, such as Mazumder where there'd be obscuring of the part in some cases, and we see an example on the right where there's a part being fabricated, and this printhead is obscuring it. So, that is the motivation to combine. If we move to Slide 44, here's the disputed elements, again. This is about presentation of the image of the build volume and the two-dimensional projection.

Turn to Slide 45. There's no dispute that Mazumder presents an image of the build volume, and it presents a lot of other data, as well. It says, it sends this information together with the associated temperature, strain, and stress data to the remote computer 95 to be displayed, and it does this in the form of a webpage. It's viewed in a web browser at the remote computer.

And so, Mazumder is starting from the present of, we're going to show you an image of the build volume and all this other information, and it

lists some of it here, and there's other parts of Mazumder that says, hey, we've got optical sensors, we've got sonic sensors. All these different sensors, and we're going to present you all this information in a user interface so that you can monitor this process. And we said, hey, a POSITA would've saw this, recognized that Mazumder wants as much information as possible, and they would've turned to the teachings of Mori. And there's no dispute that Mori discloses displaying both an image of the build volume, and virtual images of the model that are being fabricated. What Patent Owner is arguing is, okay, well, Mori lays them sequentially, and so they're not at the same time.

As we discussed earlier, the claims don't require that and so, even under Patent Owner's theory of the combination, it would still meet the claim language. But even if the claims are interpreted narrowly, if Mori is properly added to Mazumder, it would disclose simultaneous display, and that's because Mazumder says its user interface shows all this information, and so all we're doing is we proposed adding one additional piece of information -- the virtual image of the object of the model, in addition to the actual camera image. And we see that -- we argued this in the petition. This is from Slide 47. This is from Dr. Wolfe's first declaration. He said, a POSITA would've modified Mazumder's system based on Mori's teachings to include actual images being fabricated as captured by one or more cameras in the user interface displayed at Mazumder's remote computer, along with virtual images of the object generated from stored model data shown from the perspective of one or more virtual cameras. It's a --

JUDGE WEATHERLY: This --

MR. BISENIUS: -- very simple modification.

JUDGE WEATHERLY: I know that this slide here, you've cited petition 1011. I could check it, but you tell me. Is the text that's highlighted here from the declaration? Does that appear in the petition or does the petition merely cite this paragraph?

MR. BISENIUS: This is not word for word in the petition, but a paraphrase that would convey the same information is in the petition itself. This is repeated again on Slide 48. Once again, this is from the expert declaration, not from the petition, but this was cited in the petition and paraphrased in the petition that the first reason to apply Mori to Mazumder is to include in the user interface of the remote computer a display of the virtual image of the object being fabricated, along with all the other information Mazumder already displays. And so, this modification is very simple. We're just adding that virtual image that Mori teaches us to Mazumder's display, and that would result in simultaneous display. And the reason it would --

JUDGE WEATHERLY: So, your expert talks about displaying one image along with another one.

MR. BISENIUS: Um-hum.

JUDGE WEATHERLY: Your petition says display one image and another one, and your argument now is that your expert's testimony explicitly describes simultaneous display of the two images because this is --

MR. BISENIUS: No.

JUDGE WEATHERLY: -- along --

MR. BISENIUS: Later testimony does express -- make that expressed and I'm about to get into that.

JUDGE WEATHERLY: Okay. Yeah, but I'm -- you're trying to

make out -- I understand why you're trying to establish that you've made the argument in the petition also, but --

MR. BISENIUS: Well --

JUDGE WEATHERLY: -- I see a subtle difference here between the petition and the testimony. It doesn't really work in your favor very well because of the way you're arguing the claim language --

MR. BISENIUS: So, I mean, I would argue that our description of the combination at least uses the same language that the claims do. The claims don't require --

JUDGE WEATHERLY: No, it does use that same language as the claims --

MR. BISENIUS: Yes.

JUDGE WEATHERLY: -- but now we're having an argument of what the claim language means, whether 'and' means simultaneous, and I could see 'along with' meaning simultaneous. Anyway --

MR. BISENIUS: But we did make this expressed.

JUDGE WEATHERLY: Later. I'm guessing in the reply, you clarified.

MR. BISENIUS: No, we made this expressed in the petition.

JUDGE WEATHERLY: Okay. Where is that?

MR. BISENIUS: So, it's in the petition at page 23. I don't have that in my slides. I do have a part that we cited to on Slide 50, which is -- okay, on page 23 of the petition, we stated furthermore, although not required by the claim language, it would've been obvious to display the actual image and the virtual image of the product simultaneously so as to achieve the advantages articulated above, namely the presentation of both

image types who have beneficially aided the remote user to more easily visually compare the actual image and virtual image to quickly identify any defects or problems with the fabrication process.

JUDGE WEATHERLY: And --

MR. BISENIUS: And this --

JUDGE WEATHERLY: -- I see no citation on those sentences directly, but a citation to paragraph 113 of your expert's declaration.

MR. BISENIUS: Correct, but then later on, we cite to portions of Mazumder --

JUDGE WEATHERLY: Uh-huh.

MR. BISENIUS: -- in the next paragraph, and I want to talk about that portion of Mazumder, which is on Slide 49.

JUDGE WEATHERLY: Is that the column 42 -- 429 to 38 of Mazumder? Is that the citation --

MR. BISENIUS: So, perhaps --

JUDGE WEATHERLY: -- you're talking about?

MR. BISENIUS: -- this is earlier. So, the citation I have here is column 227 to 39 which talks about pages 7 to 8 and 31 of the petition, and also 12 to 13 of Petitioner's reply.

JUDGE WEATHERLY: Oh.

MR. BISENIUS: And this is talking about Mazumder's -- one of its goals, which is the display preferably includes (INDISCERNIBLE) abilities to enable detailed and accurate view from various angles of the product undergoing fabrication --

JUDGE WEATHERLY: You probably need --

MR. BISENIUS: -- and here's why.

JUDGE WEATHERLY: -- to slow down. Slow down a little bit.

MR. BISENIUS: Sorry. Here's why it wants that detailed view. When the designer perceives a defect, an abnormality or some other undesirable characteristic affecting the final quality of the product, they can abort. And so this -- unlike the '324 patent, where the comparison is done of the processor, Mazumder is saying, we're giving you the display of the build volume so that the user can detect defects, and our expert testified of a (INDISCERNIBLE) to recognize what would've made that defect detection easier is looking at the model of what it should look like while looking at the actual image of what is being produced, so that you can visually compare them. And so therefore, it would've been obvious to have that simultaneous display. All you're doing is taking Mori's virtual image, adding it to Mazumder's user interface --

JUDGE WEATHERLY: Okay.

MR. BISENIUS: -- to allow that comparison.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: I see I've gone a minute past my time, and so --

JUDGE WEATHERLY: Which I'm sure is why you were speeding up, but --

MR. BISENIUS: Yeah, sorry. We'll --

JUDGE WEATHERLY: And you have -- I mean, you're free to go into the time --

MR. BISENIUS: We'll save the rest for rebuttal, please.

JUDGE WEATHERLY: Okay, great. So, I've got you 14 minutes remaining for rebuttal then. Mr. Oaks, how much time are you planning to reserve?

MR. OAKS: I'll reserve 10 minutes.

JUDGE WEATHERLY: Okay. And I hope Mr. Kapadia recovers quickly.

MR. OAKS: Yeah, indeed.

JUDGE WEATHERLY: Convey my best wishes to him.

MR. OAKS: Thank you.

JUDGE WEATHERLY: Whenever you're ready, you can proceed.

MR. OAKS: Thank you, Your Honor. So, I'm going to jump right into this claim interpretation issue that (INDISCERNIBLE) require displaying the image from the video camera and the 2D projection at the same time or side-by-side. So, that's a conversation ensued with Mr. Bisenius' presentation. I do believe that and it's Patent Owner's position that the plain meaning of this claim alone in this --

JUDGE WEATHERLY: Is your microphone on?

MR. OAKS: Yeah, it is.

JUDGE WEATHERLY: Okay.

MR. OAKS: Yeah.

JUDGE WEATHERLY: All right. In the virtual world.

MR. OAKS: Okay, all right. So, as I was saying, there's many reasons that the claims require side-by-side or simultaneous display, but one of which is clearly just the plain meaning. As was discussed earlier, the claims require a user interface that has an image of the build volume from the video camera, and a two-dimensional projection of the three-dimensional model. Both claims have similar language in that regard, so the fact that there's an interface that has one and two means they're both there at the same

time under the plain English meaning of that. I'd also note that --

JUDGE WEATHERLY: So, in your view, there is an (INDISCERNIBLE) on this point?

MR. OAKS: I don't --

JUDGE WEATHERLY: I'm sure you heard the questions I was putting to Mr. Bisenius.

MR. OAKS: Yeah. I think the difference between the two is that obviously, Claim 19 does require the presentation. It's a method claim. The presentation of this user interface, which would have the two things in it at the same time. Claim 1, as pointed out as the system claim, so what would effectively need to be shown there is that this processor is configured to provide that user interface that displays the images at the same time. So, we know that a processor is configured to present a user interface with software, right? And so, this would have to be --

JUDGE WEATHERLY: Well --

MR. OAKS: -- shown to be a software program that --

JUDGE WEATHERLY: -- let me see if I can make my question simpler. Claim 1 is a device configured to present A and B. I know your position is that that means A and B are simultaneously presented. Claim 19 is a method that requires a user interface that "presents A and B." My initial reading of it, sort of cold, is that presenting A and B, presents A and B, is different from configured to present A and B.

MR. OAKS: So, what claim -- I'm on Slide 8, by the way, of --

JUDGE WEATHERLY: Yeah.

MR. OAKS: -- Exhibit 2014. So, what the claim says is that the process is configured to provide a user interface and to present in the user

interface, and those -- A and B. And so, what it must be configured to do is -- and again, with a processor, we know that's executing software, right? That the software provides the user interface, and the user interface -- the software would have to have inputs that grab both, that video camera image and the 2D projection, and put them together and present them on the display.

JUDGE WEATHERLY: Hmm. See, I don't see the "put them together and present them simultaneously" aspect that you're talking about for Claim 1. Arguably, I can see it in Claim 19 where you have a method, where the user interface is presented -- presents an image of the build volume, and a two-dimensional projection presents A and B, rather than "configure to present A and B". Maybe it's too subtle of a point. It sounds like the parties haven't really addressed that aspect or seen that as an aspect, and that both parties are treating both claims as if they mean the same thing on this point.

MR. OAKS: I would agree with that. That's how the briefing is played out.

JUDGE WEATHERLY: Okay, all right. That'll be for us to either figure out how to untangle or just select from one party's petition or the other.

JUDGE KAISER: Before you move on, can I ask a question here?

MR. OAKS: Yes, Your Honor.

JUDGE KAISER: I'd like to know what about the word "and" that suggests a necessity for simultaneity. In particular, Mr. Bisenius said I presented Slide 10, and then I presented Slide 11, and then I presented Slide 12, and therefore, I can be said to have presented Slides 10, 11, and 12, even

though they weren't presented simultaneously. So, what's wrong with that statement?

MR. OAKS: Well, I believe that -- so, we have a user interface. The user interface is required to have A and B, so if you have a user interface that, at one point in time, is displaying A and then you have a different display later of B, that's not a user interface that has A and B. I would also note that there's obviously further discussion of this in the prosecution history, but there's also this language that we haven't discussed yet. The requirement from the point of view of the video camera, and I think that is a hook that obviously was discussed in prosecution about what is the whole point of this. That you have -- from the point of view that they're the same point of view, basically. I'm paraphrasing, but I think that's agreed upon by the parties that you have to have the same point of view. Well, the whole point of that is because you want to compare the two, and that's what the applicant got into in the prosecution history.

So, I think that having the same point of view language in the claim, as well as the A and B language in the claim together, the plain meaning of that is that they're presented at the same time for comparison purposes. I would also note that when we have the method claim -- sorry, the flowchart in Figure 7 has the same thing. It talks about presenting both of them -- A and B -- but that's very much like the claim language, so maybe it's not as probative, or at least has the same explanation as we just talked about with the claim language, but again, here's the language with -- we've kind of gone over this already with Petitioner's presentation, but there is this language about comparing the actual result, and that's the whole point of the same point of view.

And I would note that Petitioner pointed out that we had -- we pointed out that they didn't respond to certain passages, and Mr. Bisenius tried to go through those, and one of the passages, or actually two of them -- those two that he pointed out -- both talk about the user being able to control the build and to stop the build or abandon the build, and that's right around the area where it's talking about this display of the two images. And then you have the discussion of the comparison of the images.

So, I think it certainly is disclosing that the user has the ability -- it would be the user or it could be the -- it could be automated, it could be the processor, and we do see some dependent claims where the processor is automating this comparison, but we also have discussion of the user viewing it. That's the whole point of a user interface, of course, is presenting to a user and the user has control and can stop the build if it sees something -- if they see something going wrong.

Moving to Slide 12. Again, this has been discussed, but I just want to emphasize, because it's an extremely clear statement in the prosecution that I think both is legally -- it's disavowal or disclaimer, but it's also just showing what the plain meaning means -- certainly what the applicant meant, and what they thought the plain meaning of this language was, as well as the examiner when he agreed to allow the claims as presented. So, it's really very clear. Like I said, it says, nothing in this general suggestion that's talking about this Taminger reference specifically leads to the applicant's claimed user interface, which provides both video and model views from the same point of view in order to permit side-by-side comparison of model and results. So, a very clear statement.

Also repeated on Slide 13. They make the same sort of statement

that the reason you have this is it's used to monitor progress of fabrication, and this -- I'm reading the highlighted language. There's a lot of emphasis on this slide, but it says, monitor progress of fabrication in a meaningful way. The three-dimensional model is rendered in the user interface from the perspective of the video camera that provides the image, thus advantageously permitting side-by-side comparison by a remote user of the model and the resulting object. And then they tie that specifically -- this goes with respect to the Claim 1 question you had about the interpretation of Claim 1, but they say, the feature is expressly claimed as a processor configured to present in the user interface, and it recites the language of Claim 1.

JUDGE WEATHERLY: But --

MR. OAKS: So, their time at --

JUDGE WEATHERLY: -- Petitioner characterizes Taminger's shortcomings in prosecution as not describing ever displaying a three-dimensional model. Is that an accurate characterization of Taminger?

MR. OAKS: I'm not sure, Your Honor, but I think that the point was in the prosecution, the statement is being made that -- what the claim means. It's sort of relevant --

JUDGE WEATHERLY: Well, expect that the statements in the prosecution suffer the same sort of ambiguity that the claim language itself suffers. You're hanging an awful lot of import on the meaning of "and" in the context of the claim, and in the context of this prosecution statement.

MR. OAKS: But --

JUDGE WEATHERLY: Although, the prosecution statement also includes this concept of side-by-side comparison.

MR. OAKS: Yes, Your Honor. That's what I was going to point out. I think that is the key. They're explaining that "and" language -- A and B means A and B are side-by-side for comparison.

JUDGE WEATHERLY: Well, except that Taminger, because it didn't ever disclose B or display B, that's enough to distinguish the claim. Even the broader claim would distinguish over Taminger, right?

MR. OAKS: I don't know whether that would've been enough, but the point is the applicant didn't think that was enough. The applicant thought they had to explain that the claim required side-by-side.

JUDGE WEATHERLY: Um-hum.

MR. OAKS: Maybe that would be important if we were trying to interpret --

JUDGE WEATHERLY: Yeah.

MR. OAKS: -- what the examiner thought when he allowed the claim, but what the examiner thought actually isn't important. It's a statement by the examiner -- I mean, sorry, by the applicant that's showing what the applicant meant and disclaiming anything else that might have been meant by the claim. Now, the examiner did go in to agree with it, but I don't think that that's required to show the disavowal and -- or nor is it required to show what the applicant thought the plain meaning of this claim language was.

JUDGE WEATHERLY: Okay. Well, I mean, a disavowal is something that has to be clear and unambiguous also. So --

MR. OAKS: Well, I think it is unambiguous on the part of applicant, and that's all that's required.

JUDGE WEATHERLY: I would expect that you do think it is, but

I don't know that I agree with you.

MR. OAKS: Okay. And then, of course, is the examiner's statement, but we already discussed that. I also -- moving to Slide 15 -- just note that there are instances in this patent -- it's not related to the display of images, but it does talk about -- or the applicant was able to talk about things that are sequentially done or subsequently done in time, and that was not the sort of language used in the claim or used in the description with respect to the images. A lot was said by Petitioner about they're not being support for simultaneous or side-by-side display. I think that's wrong because it says you can display A and B, or B instead of A. I think that's clearly showing simultaneous display, but what it clearly doesn't show, it never says anything about sequential. It doesn't say display A, then B. It never says that, so I think that -- I don't think that's -- that would not be supported if we tried to put that into the claim. I think A and B, which is displaying both, is supported. So, it says you can display A -- let me see if I can find that language.

Moving to Slide 17, it says, this visualization area 510 may also or instead show the simulated printed object, so that's saying -- and then it goes on to say, also or instead can show the image from the video camera. So, it's saying like these are -- it never says you can do these sequentially. It says you can sort of build these together and show one or more of them together or you can just show one of them, but it never says you can show one, then the next, then the next.

JUDGE WEATHERLY: So, in your view, this word "instead" means that the visualization area may display A or B, but not both of them.

MR. OAKS: That's what "instead" means. Instead means not

both.

JUDGE KAISER: So, are we eliminating the temporal ability of display completely? I mean, that seems improper. I mean, I guess my reading of instead means, I'm seeing one of them right now, and that has nothing to do with what I might see later.

MR. OAKS: Well, I mean, what's important is the claim language, which requires that you see A and B. Now, I agree the claim is a comprising claim. It could later show C, but it requires presenting A and B.

JUDGE KAISER: I guess let me phrase it this way. Let's assume that we disagree with you that the claim language itself in a vacuum is clear, and we think it's ambiguous, and we're trying to figure out what meaning to give it, and that meaning is either a very narrow meaning, as you suggest, both images have to be displayed at the same time, or it's a broader meaning, as Petitioner suggests, where it could be both images displayed at the same time, but it could also be one image displayed and then the other image displayed. What is it about the use of "also" or "instead" that precludes Petitioner's meaning?

MR. OAKS: I mean, I think it was how I was trying to explain it before. Maybe I wasn't convincing, but I don't think "also" and "instead" means -- if you say you can present A and then also or instead, you can present B, I think the plain meaning of that is you either present both of them or you present B instead of A. It doesn't say you present A and then present B, so I think --

JUDGE KAISER: Yeah. I guess what I'm saying is if you -- if we go with your reading of also or instead there, or your reading of instead there, I guess, we could show A or we could show B, but we can't, in any

way, show both. Not only not together, but never. Once we show one, we're never allowed to show the other one. That's what "instead" means, you're saying. And I guess how does that satisfy A and B in the claim?

MR. OAKS: Well, I'm not saying -- I mean, that would be importing this example into the claim. I'm not trying to do that. I'm just trying to -- I was making the point that I don't think there's actually a description of sequential, as Petitioner wants to interpret this claim. I think what's important -- like I said, I think both, the plain language of the claim, presenting A and B, is enough, but it was a very clear statement -- two statements, at least -- in the prosecution history that we're relying on to say, this is what the applicant meant. They made it clear. And so, that constrains the claim.

JUDGE WEATHERLY: I'm reading this entire paragraph that's in this box on the upper left of your Slide 17, and the first sentence talks about the visualization area may display a current tool path at the printer. That's something -- that's C in this A, B, C construct, isn't it?

MR. OAKS: Yeah, it is.

JUDGE WEATHERLY: So, when I read the whole paragraph collectively, this, to me, is simply trying to describe a system that's as flexible and as broadly defined as possible. We can display A, we can display B, we can display C, we can display them together, we can display them sequentially. I need to focus --

MR. OAKS: I just don't see the sequential.

JUDGE WEATHERLY: -- on -- the focus, in a very narrow sense, on one word or "also" or "instead", in one of these three main sentences in this paragraph, I think. It sort of loses the forest for a tree. Honestly, I think

your strongest argument is based on the prosecution history and --

MR. OAKS: I agree with you, and I mean, I'm not -- like I said, I'm not using this -- or we're not using the specification to import any of this into the claim. I'm just trying to present the fact that --

JUDGE WEATHERLY: Well --

MR. OAKS: -- there is -- like the Petitioner wants to say that this is clearly -- could be sequential. Sorry.

JUDGE WEATHERLY: Our job really, though, as you understand, is to really look at the whole record. So, the whole intrinsic record, and we're obligated to interpret the claims in a way that's consistent with the specification, not just look at what you say is a clear disavowal in the prosecution history. There's some question in my mind about whether it's clear enough and unambiguous enough, and we can get at that after I stare until I'm cross-eyed at the prosecution record when the time comes, but do you agree, though, that this paragraph three -- I mean, am I reading the paragraph as a whole incorrectly by interpreting it broadly?

MR. OAKS: The only thing that I would disagree about what you stated is I don't see any discussion of sequential. I view it as yes, it's flexible, and the number of things that it can put into the visualization area, so you can have one, two, or three things together, but I don't ever see it saying or suggesting that you could have one and then two, and then three.

JUDGE WEATHERLY: I mean, "instead" could mean I'm going to display A, then I'm going to take A off, and I'm going to now display B. In other words, one at a time. Not one to the exclusion of the other, as you want us to read "instead".

MR. OAKS: Yeah. I mean, the --

JUDGE WEATHERLY: I mean, Judge Kaiser has already pointed out that that would probably result in a pretty strained reading of the claim. It would also be a problem for you from an infringement perspective to be able to display A, but never B.

MR. OAKS: Well, and again, I'm not trying to limit the claim with this. I was just responding to the argument that there wasn't support for the claim and I didn't --

JUDGE WEATHERLY: Yeah, but you want us to limit the claim in a different way.

MR. OAKS: Yeah. Well, I want you to limit the claim based on this plain meaning and based on the prosecution --

JUDGE WEATHERLY: Yeah.

MR. OAKS: -- of statement.

JUDGE WEATHERLY: I understand your --

MR. OAKS: Yeah.

JUDGE WEATHERLY: -- position.

MR. OAKS: Yeah. Okay. I think we've discussed that enough, unless you had any other questions.

JUDGE WEATHERLY: I think the horse is dead.

MR. OAKS: All right. So, I'm going to get to the analogous art issues, starting with Mori from Ground 1. Let me go straight to -- so, I want to move to Slide 20. So, one of the arguments, at least, the only argument that was made in the petition, at least, was that Mori is in the same field as the '324 patent. And as Your Honors know from reading the briefing, you can show analogous art through being in the same field or being reasonably pertinent. And so, the petition presented a same field theory of the case, but

I wanted to point out this in re Clay case, which is one of the seminal cases on analogous art, and I think it's very instructive, so we do cite to it and have it in our slides a few times.

JUDGE WEATHERLY: Can you pause for just a moment?

MR. OAKS: Yes, Your Honor.

JUDGE WEATHERLY: Okay. Judge Ren had frozen on the screen and I didn't know if that meant that we had lost her, but now I see her moving again.

JUDGE REN: I'm here.

JUDGE WEATHERLY: Okay, good. Sorry. Go ahead.

JUDGE REN: Thank you.

JUDGE WEATHERLY: In the in re Clay case -- again, I'm on Slide 20 -- it was a case in which both of these references that were being compared -- the invention and the prior art -- were in the same industry. They both are related to the petroleum industry, but what the Federal Circuit said was that Sydansk cannot be considered to be within Clay's field of endeavor, merely because they're both related to the petroleum industry, and that's the sort of argument that's being made. The Petitioner says, well, they're both related to the three-dimensional fabrication industry, so the '324 patent is related to the three-dimensional fabrication industry and so is Mori, but three-dimensional fabrication industry, that's extremely broad. I mean, that's basically any manufacturing. Everything in the world is three-dimensional that's fabricated, and so that's an extremely broad category, even bigger than perhaps the petroleum industry in re Clay. So, we think that that is -- if you're expanding the field that broadly to make the comparison, it goes against in re Clay. In particular, further case -- the

Airbus case -- I'm on Slide 21, talks --

JUDGE WEATHERLY: So, are you saying that like 3D printing is akin to storage of refined hydrocarbons, but machining is akin to extraction of crude? I mean, that's the distinction that was in play in the Clay case.

MR. OAKS: What I'm saying is --

JUDGE WEATHERLY: That seems like a much broader distinction to me than either make a part with 3D printing or with CAD control or computer-controlled machining.

MR. OAKS: Well, I mean, the question is it's the definition of the field of endeavor, right? And what --

JUDGE WEATHERLY: Yeah, I know, but you're saying that Clay is the same kind of case and I'm disagreeing with you because of the distinct -- the two different -- the facts in Clay. They don't seem to line up very well with the facts that are in front of us. I mean, just because Clay says some words that you think announce a principle that you can take advantage of doesn't mean that we -- that that concept controls this situation. It's got to be a closer link than that.

MR. OAKS: I mean, I personally think it's similar because they're saying, well they're both related to manufacturing, to creating objects, fabricating objects, but --

JUDGE WEATHERLY: Um-hum.

MR. OAKS: -- that's very broad, just like the petroleum industry, and the petroleum industry has different fields.

JUDGE WEATHERLY: Yeah, but I mean, you've seen the print -- I know you've seen the printheads on 3D printers move, and I'm sure

you've seen -- maybe you haven't -- seen like an end mill move in a computer-controlled machining process. From 10 feet away, they look like the same process, except that you start with a solid chunk of metal in one and you start with air in the other. But the tools move a very similar way, they have similar kinds of constraints. I don't see -- to me, they are closely related. I'm challenging you on this notion of how Clay applies, and unless you can convince me more on the analogy between the two kinds of technology at issue in Clay, I think you're in trouble on that particular point -- with me, at least.

MR. OAKS: Yeah. Well, let me go through it a little bit, because the case law does dig in a little further and talk about, well, how do we figure out -- how do we define the scope of the field to compare. And so, what it says is you need to look at the embodiments that are disclosed and the function, and the structure, so let's look at that. So, again, we believe Mori has a different structure than the '324 patent. Your Honor just described it. It is, of course, a factual question as to do you think that's different, but in the '324 patent, of course we have additive manufacturing, additive fabrication, 3D printing. Like Your Honor said, you're extruding material into a blank space and creating something, whereas Mori is the opposite. It's destructive manufacturing. You start with a cube of metal or some other material and you cut into it, sort of like a sculptor. So, they're opposite structures.

JUDGE WEATHERLY: Well, a sculptor. It's interesting you use that word because sculptors also cover, in my view, the way an artist starts with clay and builds a three-dimensional object out of clay. People refer to that as sculptor also. Not just removing material from a block of marble, for

example. Right?

MR. OAKS: I mean, I would -- I think those are different art fields, but --

JUDGE WEATHERLY: But they're both sculptor, aren't they?

MR. OAKS: I don't know if I've heard of like the modeling, like pottery as sculpting, but --

JUDGE WEATHERLY: I'm not talking about pottery per se. I'm talking about literally like making an object -- a three-dimensional object out of clay -- forming it with your hands. I think people refer to that as a sculptor, but anyway, I mean, I'm not a person of skill, so I don't get to testify in the case and I'm not going to.

MR. OAKS: Okay, Your Honor.

JUDGE WEATHERLY: You're on Slide 22, right?

MR. OAKS: Yeah. I'm going to fast forward a little bit because we have a lot of repetition and things that you and I just discussed. I would also point out the functionality here. Again, and this goes back to the claim language, which of course we were discussing earlier, but the function of the '324 patent is ultimately to provide this -- it is additive manufacturing, but it is a very specific application in this claim, which is providing this user interface to a remote user, so that remote -- I'm sorry -- that user interface shows an image of the build volume and it also shows a two-dimensional projection of the 3D model from the same point of view as the image. And of course, as we discussed earlier, that's so that the user can see both and compare actual to expected results.

Mori's function is different. It does provide a user interface with some images of the -- of what's going on with the machine, but it's trying to

solve the problem of sometimes, the actual image from the camera is obstructed and you can't see it, so it has to replace it with a different kind of image -- a virtual image. And so, it has a different purpose, a different function when you look at exactly what's going on, and so you can't just look at this broad field that they're both in the same -- you don't just look at the field of endeavor, but you have to dig in and see, well, what is the function that the claims are actually directed to in that field.

So, I'm going to skip -- given the time -- to Henke, unless Your Honors have any more questions on the Mori issue. So, I'm on Slide 45 now. So, Henke is a patent that discusses solutions for -- or sorry, not patent, but an article -- that discusses solutions for students. They use simulation tools, so you can see there, on the top of slide -- top right of Slide 45 -- this simulation tool, to test particular control algorithms on existing hardware. And you can see on the bottom, you have this existing experimental setup.

So, this is not anything to do with creating something. You already have the model created and you're simply sharing that amongst a bunch of remote students that can run different control algorithms on that model. So, it's very far afield from manufacturing at all, like we talked about earlier. But in the Petitioner's reply -- I'm on Slide 46 -- they present two different fields of endeavor for comparison for analogous art, and they're different, which is where we think the problem started with, but one of them is -- the field of endeavor they say is rapid prototyping from computer models, and the other is web-based access to control electromechanical prototyping devices.

So, I'm going to talk about those. So, first of all, let's talk about the

'324 patent. As we discussed with respect to Mori, the '324 patent is in the field of three-dimensional printing or additive manufacturing. So, the structure there is a three-dimensional printer, they added a fabrication device. The function, again, like I described is providing that user interface that shows both the video image from the build area, and the projection of the model of what's supposed to be built. So, the subject matter is certainly narrower than just generally rapid prototyping from computer models, and it's different than web-based access to control electromechanical prototyping devices. That's not what's going on in the '324 patent.

Moving to Slide 48, looking at Henke, again, like I said, Henke is in the field of simulating and testing control algorithms. So, in that case, you have the structure of a control algorithm needing to be tested -- and this particular is a control algorithm that controls a water level control with a control unit -- a water level control unit. And the function of that is that -- of the Henke art is, well, you want to provide these tools to the students to simulate tests and verify the functionality of their control algorithms. And so, they have this test bed that's already been created that they can run different control algorithms on it remotely.

First, moving to Slide 49, I mean, I think it's quite obvious, but Henke is not about three-dimensional printing for sure and it doesn’t explain anything about using and testing a control algorithm on a three-dimensional printer, for example. And also, with respect to the '324 patent, there's nothing in the '324 patent about simulating and testing control algorithms, as there is in Henke, so they're just two very different references. The Petitioner says that they're both related to rapid prototyping, but this isn't -- there are entirely different types of rapid prototyping, if you even believe

that they are both directed to rapid prototyping. The rapid prototyping, if any, of Henke is students are rapidly prototyping control algorithms. That's what's changing. And Henke is they change this control algorithm and they run it on the test bed. In the context of the '324 patent, what you're rapid prototyping is potentially the objects that you're printing, so you're creating things over and over and you're testing the creation of these things. It's very different than Henke.

One of the other -- like I said, that's related to the field of endeavor. Petitioner could also attempt to show that Henke is reasonably pertinent to the problem of the '324 patent to show analogous art, but to do so, they were required to identify the problems in Henke and the problem in the '324 patent and perform a comparison, but they didn't do that. And so, they should have a failure of proof to start off with.

Again, I'm moving to Slide 52. The problem in Henke was concerned with reducing travel and improving education by removing "the obstacles of cost, time, inefficient use of facilities, inadequate technical support, and limited access to laboratories", for the students that I mentioned that are trying to test their control algorithms. It was also concerned with undetected failure of controlled algorithms when you only perform a simulation and you don't actually run them on a test bed. And so, the solution to that was to share that test bed between students that could run their control algorithms remotely.

Moving to Slide 54. So, what was the '324 about? He was concerned with -- the inventor of that patent was concerned with enabling the remote users to control and monitor three-dimensional printers that are fabricating three-dimensional objects. So, specifically solving the problem

of being able to remotely compare what is actually being printed to what was intending to be printing, so they could stop the build or take other actions if something is going wrong. It's a very different problem to which it's related. Again --

JUDGE KAISER: Isn't that maybe defining the problem a little bit too narrowly? It seems to me like Henke and the '324 patent might be reasonably described as both relating to the problem of monitoring some sort of remote process. And I agree that would be way too broad, if we're talking about field of endeavor, but for a problem to be solved within that field of endeavor, that might be a reasonable description. Why isn't it?

MR. OAKS: Well, I don't -- first of all, I don't think Henke -- and I can talk about this in a minute, but I don't think it even enables the student, the remote user, to watch, to be able to see what's going on in the test bed as control algorithms being run, because the pictures don't evidence that you can actually see what's happening in the control bed. So, you can test your control algorithm to see if it worked or not, but that's not monitoring while you're creating something. So, I think that's -- it isn't even monitoring. It's just a remote use of a test bed.

So, I'm going to now move -- if Your Honors don't have any further questions on Henke as analogous art, I'm going to move to the Ground 1 arguments. So, I'm on Slide 60 now. So, Petitioner has three theories that we think are flawed that I'd like to address today. Just want to quickly go through those table set. The first is that Mazumder's video satisfies both the image and projection, under Petitioner's interpretation of the infringement contention. So, basically, they're saying, our infringement contentions took this interpretation that you could have both the image -- I'm

sorry -- the video and the -- sorry -- both, the video and an image being both the claim projection and the claim video, and I think they're really stretching to try to come up with something out of our contentions that's just not there. So, we just disagree with that. We've said that they're wrong about that. We haven't provided -- there's no additional arguments.

So, this case is near going to trial. There's nothing else they can point to from this case where we've made these theories that they claim we've made in the contentions that just aren't there. Petitioner's second theory is that this Mazumder-Mori combination teaches presenting the video camera image and the virtual image, the 2D projection, at different times. And of course, that's not our construction of the claim, but I'll talk about why that's incorrect.

And finally, they have a very short argument that if you accept our interpretation of the claim requiring simultaneous display, that they have this theory on why the combination of Mazumder and Mori meets that, and I'll address that. So, I'm going to move to Slide 62. So, this is Petitioner's second theory that I'm addressing, which is their assumption that the claim doesn't require simultaneous or side-by-side display. And so, I think that it fails for that reason. Of course, Your Honors get to decide the meaning of the claim, but if Your Honors decide that it requires that, then this whole theory and almost all of their argument on this ground falls away because it doesn't teach presenting an actual image and some virtual image at the same time.

So, I'll go into detail here, but I'm on Slide 63. So, what Mori shows, you do have these different types of images. You have actual images, so actual video feeds, and then you have these other two types

(INDISCERNIBLE) of images called sectional images and virtual images, and it has a tool that's not hidden. So, in other words, when you don't have -- I think it's actually when the part is not hidden, but the tool is not blocking things, and so you can show the actual image and see what's happening. And when there is obstruction, then you display the sectional images, but those were displayed sequentially and not at the same time. On Slide 64, you can see Mori's second embodiment, which is shown in detail in Figure 9.

JUDGE WEATHERLY: If they're not displayed at the same time, so Mori discloses a section of what's being laid down, if the tool is obscuring the actual part being manufactured.

MR. OAKS: Right, it shows the --

JUDGE WEATHERLY: And all it shows is the partial -- that partial section?

MR. OAKS: Yeah, it's --

JUDGE WEATHERLY: Like the video feed disappears?

MR. OAKS: No, it shows -- in place of the actual video, it shows the sectional image. And this is shown also in Figure 9, because Figure 9, that embodiment --

JUDGE WEATHERLY: And a sectional image isn't like overlaid on the video?

MR. OAKS: I don't believe so, no.

JUDGE WEATHERLY: Okay, all right.

MR. OAKS: And so, basically, it's recognizing that between like tool obstruction and also, the coolant, which also can obscure things, so you spray --

JUDGE WEATHERLY: Um-hum.

MR. OAKS: -- coolant and also that causes problems. And so, you're replacing the actual images with these -- either the virtual images or the sectional images.

JUDGE WEATHERLY: Okay.

MR. OAKS: So, moving on to -- well, let me move on to the third theory that I want to address, which is on Slide 67 and that's if Your Honors do accept our proposed construction of Claim 1, then Petitioner must show display of the actual and virtual images at the same time. And if you look at their petition, it's very a quite short argument they provide on this, and it really is just this hindsight argument that it would be obvious to do this so that you could compare the images side-by-side, but that's hindsight, having looked at the '324 patent. Dr. Wolfe's testimony is very similar, just kind of mirrors the petition. So, there's really not much there at all and it's driven entirely by hindsight. And it's also contrary to what Mori actually says, which is you're replacing one image with the other. You're not showing up at the same time and it wouldn't make any sense to display Mori's images at the same time because it's agreeing or it's recognizing that the actual images were not useful at certain times.

So, why would you display the actual images when you had obstruction or coolant in the way. So, that combination just doesn't -- the modification of Mori just doesn't really make sense, and Mazumder doesn't disclose that either. I'm going to jump to -- if you have any questions on the dependent claims, I'm happy to answer, but otherwise, I'll rest on the briefing on this --

JUDGE WEATHERLY: Okay.

MR. OAKS: -- and move to Slide 81. Moving to Ground 2, or Grounds 2A through 2G. So, this is the Kritchman, Tay, and Henke combination. So, first of all, so Petitioner -- I'm on Slide 81. You can see the images of Tay here, which they rely upon heavily. Tay does not show that these -- so, again, we have these different disjoint user interfaces and pictures that are kind of put together, but this isn't like a user interface -- one user interface. This is images and user interfaces from different points in time, so these are distinct steps. It certainly doesn't show performing all these things at once. This is someone, after the fact, having grabbed the screenshot and grabbed a photograph, and just putting them together for the purpose of an article.

So, moving to Slide 82. Tay fails to teach that two views are from the same point of view. So, what they ultimately need to show is steps A and C are from the same point of view, and from Slide 82, that's the view shown in the user interface to the left and then comparing that with the user interface with the video in the middle, which is C. So, you do have this on the right side of this image, or sorry, this slide. You have the picture of the completed object, but this is not from the manufacturing process. As you can see, it's sitting on a table. So, that's not what we need to be comparing. We need to be comparing the user interfaces. And so, if you look at the two user interfaces, there's no evidence that the thing that's on the left, which is step A, is from the same point of view of the video, which is there in the middle of step C. You can't really see what's going on and there's no --

JUDGE WEATHERLY: How precise does same need to be?

MR. OAKS: It has to be the same so that a person can compare two things and see if the build is on track. So, it doesn't have to be precisely

down to the tenth of a degree of X, Y, and Z coordinates, or however you want to define a viewpoint. It just needs to be the same viewpoint that allows for the comparison that's described in the patent. But here, we have no idea. We can't really even see what's going on. I mean --

JUDGE WEATHERLY: I'm sorry to laugh, but this -- and this is not just at you. I'm just so used to -- what you just did, to me, is -- you all just can't resist overstating a position, and this isn't really directed just at you. I mean, everybody who comes in front of us does this. I'll grant you that it's difficult to see with perfect precision what's in this view C from Tay, but to my old eyes, it certainly does look like I can tell that the progress that's depicted graphically on the left-hand side in view A of the dark process, I assume is what's been printed, that does look an awful lot like what's been printed in the view C to me. In other words, my guess, maybe 25 percent of the height of the object has been printed. Whether it's the same perspective or not, it's a similar perspective. And if the standard is similar enough to be able to do the comparison, it looks pretty good to me.

MR. OAKS: Well, Your Honor, that's a factual question, but yeah, I don't --

JUDGE WEATHERLY: Tell me where the flaws are in C. What's so bad about C? Is it the tool being in the way that prevents --

MR. OAKS: See if I can --

JUDGE WEATHERLY: -- comparison? What's --

MR. OAKS: I --

JUDGE WEATHERLY: -- getting in the way of a comparison?

MR. OAKS: I've zoomed in. I know the remote judges can't see, but I don't see how I know anything about the orientation of the head in that.

JUDGE WEATHERLY: Anything?

MR. OAKS: Like I can't tell if that's the front, the back, the side.

JUDGE WEATHERLY: Okay.

MR. OAKS: It's an extremely blurry picture that I just can't tell. I don't think -- and --

JUDGE WEATHERLY: All right.

MR. OAKS: And I would also point out -- oh, no, okay.

JUDGE WEATHERLY: That's an example of an overstatement of a position in my view, but that's okay. It's everybody's job is to tell --

MR. OAKS: And like I said --

JUDGE WEATHERLY: -- the story from their client's perspective.

MR. OAKS: Also, like I pointed out on the previous slide, we don't have presentation at the same time either. Again, these different steps are not shown in a single user interface.

JUDGE WEATHERLY: I agree with you there.

MR. OAKS: Also, again, and this kind of relates to the analogous art issue with respect to Henke, but it is a different standard, which is there's just no motivation to put this process from Henke, this control algorithm, modeling on a remote test bed or test -- to combine that with Kritchman or Tay. It's certainly not a three-dimensional printer or any kind of fabrication process like that. And also, like Henke doesn't -- so, because of that, it doesn't have a two-dimensional projection of a 3D model that's fabricated by a 3D printer. And it's not even -- even notwithstanding that we're not talking about 3D printing. There's not even a 2D projection of what is shown in Henke's hardware view. So, like in other words, I would say that the

bottom picture is not a 2D projection of the top picture.

JUDGE WEATHERLY: Now it's just a schematic representation.

MR. OAKS: Right. It doesn't have all the details. And also, as Dr. Cormier, our expert, testified, and if you look in detail at the -- what's going on in that test bed, in this interface, it's not -- it isn't consistent with what's below. They're not showing the running of the experiment. It would appear to be just a static picture of the test bed, not showing it --

JUDGE WEATHERLY: Maybe --

MR. OAKS: -- being up --

JUDGE WEATHERLY: Maybe even just a portion of the apparatus that's shown up above in the --

MR. OAKS: Perhaps.

JUDGE WEATHERLY: -- video image. I can't even tell. Might just be modeling a valve between two containers among many in that --

MR. OAKS: Yes.

JUDGE WEATHERLY: -- test bed.

MR. OAKS: I would agree, Your Honor. That's the point I was going to make on Slide 84, but you've made it for me. So, I think that's -- we're just getting to the dependent claims, but again, I'll rest on the briefing, unless you have any questions with those, and reserve the rest of my time.

JUDGE WEATHERLY: I don't have any further questions.

MR. OAKS: Thank you, Your Honors.

JUDGE WEATHERLY: I've got you with 13 minutes remaining.

MR. OAKS: I got more than my five seconds back from yesterday.

JUDGE WEATHERLY: You did. You did. And Mr. Bisenius, I've got you with 14 minutes remaining in your presentation.

MR. BISENIUS: Thank you. Oh, there we go. All right. I believe I'm ready.

JUDGE WEATHERLY: Go ahead.

MR. BISENIUS: I'm going to start by discussing Ground 2A arguments from Patent Owner. I'm going to start off with answering a question from Judge Weatherly of how precise does the language from the point of view need to be. Well, we have Patent Owner's answer from the district court litigation because one of their two theories of the infringement case is that this image of the build volume of the dinosaur and this image down on the lower left are from the point of view.

They say that image on the lower left is from the point of view of the camera, and we see it's not precisely the same angle. It's roughly in the same area, but definitely not precisely the same angle. And we would argue that the perspective in Tay is much closer than the perspective between these two. So, if we looked at Tay, Petitioner does not dispute that this image here at the top of the model and the image of the build volume are never expressly disclosed as being displayed at the same time in Tay. It's kind of ambiguous --

JUDGE WEATHERLY: But they are both disclosed in user interface, correct?

MR. BISENIUS: They are both disclosed -- being presented in the user interface. It just never expressly says that these are appearing in the user interface at the same time.

JUDGE WEATHERLY: And the completed object on this slide

really is just a photograph after the fact. That's never --

MR. BISENIUS: It would appear to be so, but the image of the build volume on the lower right and this image on the upper left, those both appear in the user interface at least at different times. Tay is unclear as if they're the same or different times.

JUDGE WEATHERLY: Okay.

MR. BISENIUS: Turning to Slide 74 of Petitioner's slides.

JUDGE WEATHERLY: Yeah, this is what I --

MR. BISENIUS: We've zoomed in on these images.

JUDGE WEATHERLY: -- was seeing.

MR. BISENIUS: And so, we believe here, it's showing -- is it the exact same angle? No.

JUDGE WEATHERLY: No.

MR. BISENIUS: We believe that it is showing, from the point of view, at least under Patent Owner's definition of it in the district court that this is showing the nose to the right, pointing down, roughly the same point of view. Is it the exact same angle? It's not, but we believe that this satisfies from the point of view language under Patent Owner's read.

JUDGE WEATHERLY: Enough to make a comparison between the actual progress and the model.

MR. BISENIUS: Correct.

JUDGE WEATHERLY: Yeah.

MR. BISENIUS: But to the extent that that language is interpreted narrowly, or to the extent that the claims are read to require simultaneous display, that's when we went to Henke. If the claims are read broadly, Henke isn't even required in this combination and we can ignore the

analogous art discussion of Henke, but we put Henke into this combination with Kritchman and Tay in case that very narrow reading in either case was required.

And so, we show Slide 75 of Petitioner's slides. We're taking this pertinent teaching of Henke. We're not trying to bodily incorporate. We admit Henke is not a rapid fabrication device. It's not showing additive manufacturing or machining manufacturing, but what it is showing is there's a simulation of a model. So, in the bottom here and then there's the real world testing of that model, and you're comparing them. It's not just this image of Henke that tells us that.

If we go to Slide 78, we have Henke saying in this last bullet point, watch the laboratory procedure by supervising the model and environmental variables inside the input/output monitor, or by observing the hardware model directly via a webcam. So, it's allowing you to reserve both, the simulation and the webcam at the same time, so you can compare them together. And all we're doing is we're taking that suggestion from Henke and applying it to Tay's teachings, which says, hey, we are going to show you the model -- the two-dimensional projection of the model -- and we're going to show you an image of the build volume. Hey, Henke's suggestion, maybe we should just show these at the same time because that'll allow you to better supervise, better observe how things are going with the simulation and the actual real world implementation. That's the teaching we're taking, not bodily incorporation of Henke's teachings.

Turning to Slide 79. This is another disclosure of Henke where it says, properties for step-by-step and parallel execution of these prototypes. So, when it's talking about observing one or the other and it expressly says,

it's showing them both in the same user interface -- we showed you that image -- it's saying it's parallel execution. So, it's parallel execution of the real world prototype and the simulator prototype, that model. And that's the teaching that we're taking from Henke and importing on to Tay, which already has the model and already has the real world observation through a camera. If there are no questions on Ground 2A, I'd like to talk about Ground 1A.

I'm going to move to Petitioner's Slide 51. So, Patent Owner had said that there's no indication in their district court infringement contentions that two different images from the camera would satisfy the claim language, but that's exactly what they're alleging. If you look at Slide 51, they have stated a two-dimensional projection of the three-dimensional model is a video image from the video camera and they identified this video image. So, they're ignoring that little dinosaur on the lower left for this read. They're saying, that video image is the two-dimensional projection.

Then we go to the next slide, Slide 52. This is the same paragraph up top. I've just highlighted a different part and they say, an image of the build volume from the video camera is a time lapse as is shown below. These are images from the same camera and not only are they not displayed at the same time. They're just images from different points in time from the same camera. The time lapse is the video of the actual build process and then they time lapse it. They take out a certain number of frames so it's quicker, but these are just different images from the same camera displayed at different points in time, and Patent Owner insists in the district court that this infringes the claims. And they say, well, we said that maybe at the beginning, there's been a lot of procedures since then, we haven't said

anything like that since then, but they have.

If we look at Slide 53, they continue to insist that the two-dimensional projection -- so, not the image of the build volume, but the claimed two-dimensional projection may be obtained for a three-dimensional scanner or other data acquisition device, such as a video camera. They're saying images from the video camera -- because it has to be from the same point of view as the user --

JUDGE WEATHERLY: So any --

MR. BISENIUS: -- of the build volume --

JUDGE WEATHERLY: -- video capture of the build volume that includes part of the object meets both of the things that need to be presented in the user interface at the same time.

MR. BISENIUS: That's Patent Owner's broad district court interpretation, and so if we're going to hold them to that, Mazumder hits that alone.

JUDGE WEATHERLY: Anything that shows a video image of the part being built.

MR. BISENIUS: So, one subtle argument they've made is that it can't just be the video running. It can't be sequential video images. It has to be two different types of images, but we have, at least that disclosure, in Mazumder. If we go to Slide 55, Mazumder says that the remote host computer is going to show image and video observation of the laser-aided direct material deposition process. So, here it's saying images and video. There's only one camera in Mazumder, and so the images and video --

JUDGE WEATHERLY: What's the difference between images and video?

MR. BISENIUS: And that's the parsing that I'm trying to make from Patent Owner's broad district court interpretation. Their interpretation is you show two different images from the same camera at different times, and that infringes the claim, and then they've run to Your Honors here and said, no, actually they have to be at the same time and they can't just be two different images. They're talking out of both sides of their mouth.

JUDGE WEATHERLY: My instinct is to want to ask you what we're supposed to make of that. I mean, I will tell you that it generally is irritating to me when parties come in front of me and complain to me what their opposing party is saying in another forum.

MR. BISENIUS: We merely believe that if Patent Owner is going to be -- their interpretation of the claim, if they're going to be able to assert it under that interpretation, they should be held to that same level for invalidity. But once again, we don't need to even get there because this Mazumder-Mori combination discloses -- there's no dispute that it discloses at least displaying the virtual image and the real image at different times. The only dispute is, would the combination display them at the same time?

And if we go back to Slide 45 of Petitioner's slides, the user interface in Mazumder is displaying a large collection of information. It's not just the video image. It's temperature information -- strain and stress data. Other portions of Mazumder talk about optical sensors, audio sensors. It's displaying all of that -- it's presenting all of that information in the user interface. When we add one more additional piece of information to virtual display, why would we suddenly only display that alternative to everything else? The combination makes the most sense by just, hey, Mazumder says all this information is useful, so add one more piece of data that's a known

piece of data -- the virtual image.

Patent Owner is asking for bodily incorporation of Mori into Mazumder because Mori describes alternating between the two, but we're not taking all of Mori's teachings. We're taking a suggestion of hey, wouldn't it be useful -- this additional piece of information, we're going to show you the simulation of the model as this fabrication process progresses. And we're adding that into Mori's -- or sorry -- into Mazumder's user interface.

Going back to what can be drawn from the district court statements from the Patent Owner. The majority of those statements were made prior to the filing of the IPR, and I think they're indicative of what the Patent Owner believed the claim scope was when the patent was issued at the time the petition was filed, and only now have they adopted this new understanding of the claim scope in order to avoid the prior art.

I want to talk about analogous arts of Henke for a second. If we go to Petitioner's Slide 39, Patent Owner complained that we had not properly identified a problem and compared. We didn't identify a problem and compared it, but I also believe the Patent Owner is getting the test incorrect. What the case law says is you have to analyze whether the prior art has teachings that are reasonably pertinent to one of the problems with which the patent is concerned. You don't have to identify a problem being solved by Henke or even what problem Henke's authors thought they were solving. It's not about comparing the two problems. It's about taking the problem from the '324 patent -- in this case, monitoring and control of a remote automated process, and does Henke have teachings that are reasonably pertinent to that problem and it absolutely does. Nothing in the claims changes the way the

actual physical three-dimensional deposition process works. It's all about observation and a couple of dependent claims about controlling the situation, but it's really about this video camera and the virtual image.

So, Henke is relevant to this because Henke has a video camera showing us the real world process. It has the virtual image of the model, and so these teachings are at least reasonably pertinent to the problem, even if it's considered to not fall under the field of endeavor -- the broad field of endeavor -- of rapid prototyping.

I'd like to just very quickly talk about something that the Patent Owner said in their slides at Slide 46 and they pointed out, well, how do we even know what the field of endeavor is. Petitioner has identified two completely different fields of endeavor here when talking about Henke. The reason we articulate it like this, and maybe we could have been a little bit clearer in our Petitioner's reply, but these two different quotes are quotes from two different sources and are comparing the similarities.

So, this first quote is from the '324 patent whereas the second quote is from Henke. The purpose of this is to compare like, they really are talking about pretty overlapping fields of endeavor. The '324 patent refers to rapid prototyping from computer models. And then the second quote, Henke, is talking about web-based access to control electromechanical prototyping devices. And so, they're using similar terminology. It's remote control, it's computer models, it's prototyping. And so, are these word-for-word identical statements of the field of endeavor? No, but what we were trying to point out is there's a huge overlap in how Henke describes itself with how the '324 patent describes itself. I see that I'm very short on time, so I'll open to questions and otherwise rest.

JUDGE WEATHERLY: I don't have any further questions.

MR. BISENIUS: Thank you, Your Honors.

JUDGE WEATHERLY: Mr. Oaks, I've loaded up 13 minutes for you.

MR. OAKS: Okay, I'm --

JUDGE WEATHERLY: Let me know when you're ready.

MR. OAKS: I don't think I will need that, but -- unless you guys might ask me a lot of questions.

JUDGE WEATHERLY: I won't be upset if you don't use all 13 minutes.

MR. OAKS: All right. I plan to be very brief. So, just briefly, so I'll kind of go in the order that Mr. Bisenius did. So, on Ground 2A, we did get agreement from Petitioner that there is no simultaneous or side-by-side display in Tay and that's fatal to Ground 2A if you agree with our claim interpretation. I just wanted to point that out. With respect to the litigation, so Mr. Bisenius also referred to a claim construction position that was taken.

It was actually Petitioner's claim construction position, trying to construe Claim 1 of this patent, and what you see in the response was simply pointing out that the content of Claim 6 of the '324 patent, which does say that the two-dimensional projections from the video camera, and so the point was, you can't read that out of Claim 1 because that's part of Claim 6. So, that was simply the argument being made there. Again, to my knowledge, there's no -- in the expert reports, for example, in the litigation, there's no argument that this time lapse or same video from the same camera meets this claim. That's just not what's being argued.

And finally, on Ground 1A, we hear, well why wouldn't you just

bring both of Mori's images into Mazumder? Well, it's because there's no motivation to do that. What Mori says is that you display one or the other because if the actual image is being obscured, then it's not good to use, and so you need to show something else -- the virtual image.

So, it would make no sense to display both of those at the same time because it's basically bad data. Also, they said the whole motivation to do that is to compare them to see how the build is going, but Mori doesn't disclose that either. Mori is just showing actual fabrication. It's either showing it by the actual thing that's being fabricated or what it's simulating is the actual thing being fabricated because of the obstruction. It's never showing like a finished product versus the in-progress product. So, there's nothing in Mori about -- that it would motivate a POSITA to put this comparison functionality into Mazumder. So, that's all I had in rebuttal, unless Your Honors have questions.

JUDGE WEATHERLY: I'm seeing heads shaking. I don't have any further questions either.

MR. OAKS: All right. Thank you, Your Honors.

JUDGE WEATHERLY: Thank you.

JUDGE KAISER: Well, thank you, again, to both of the Counsel who argued today. As I mentioned yesterday, we -- I think I can speak for the whole panel and say that we found this very enlightening and well presented. And Mr. Oaks, in particular, thank you for stepping in at the last minute. You did your client a credit by doing so and we appreciate that, and I don't -- by that statement, I don't mean to exclude any of Petitioner's counsel either, but please infer our thanks to all of your teammates and all of your staff who helped with this case. I think with one exception, we're ready

to submit the case. I think we just need to remind the parties to stick around just in case the Court Reporter has any questions for you. And other than that, I think we're adjourned.

(Whereupon, the above-entitled matter went off the record at 2:57 p.m.)

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