

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TVISION INSIGHTS, INC.,
Petitioner,
v.

THE NIELSEN COMPANY (US), LLC,
Patent Owner.

IPR2023-01014
Patent 11,470,243 B2

Record of Oral Hearing
Held: October 16, 2024

Before TERRENCE W. McMILLIN, JOHN A. HUDALLA, and
GARTH D. BAER, Administrative Patent Judges.

IPR2023-01014
Patent 11,470,243 B2

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SAL KAROTTKI
JUSTIN COOK
GREG HUFFMAN

The above-entitled matter came on for hearing on Wednesday,
October 16, 2024, commencing at 1:00 p.m., via video teleconference.

P R O C E E D I N G S

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2 JUDGE McMILLIN: We are convening for oral argument in
3 IPR2023-01014, which pertains to the patentability challenges of claims in
4 U.S. patent number 11,470,243. I am Judge McMillin. Also appearing are
5 Judge Baer and Judge Hudalla.

6 We'd first like to take appearances of the parties. Maybe before we
7 start that, can everyone see me and hear me? If you can't, (inaudible) in
8 some way. If you (inaudible) problems with seeing or hearing or being seen
9 or heard during this oral argument, please try to let us know. The court
10 reporter, can you see us and hear us? Great, I'll assume so.

11 MR. BATTS: Your Honor, this is -- Your Honor, this is Harper Batts
12 for Petitioner. It sounds like your voice is a little distorted, particularly
13 when you start speaking closer to your screen. I don't know if others are
14 having the similar issue.

15 THE COURT REPORTER: Yes. This is the reporter. It was the
16 same for me. Thank you.

17 JUDGE McMILLIN: I haven't used it for a while but do you think it
18 might help for me to put on my headphones?

19 THE COURT REPORTER: It may. I think we should try.

20 JUDGE McMILLIN: Okay. I'm sorry for the problem. I will -- this
21 is a test of my ability to try to find my equipment quickly. Excuse me.
22 That's just great. Let's see if that's any better?

23 THE COURT REPORTER: It seems to be quiet but much clearer.

24 JUDGE McMILLIN: Is that better?

25 THE COURT REPORTER: Yes, thank you.

1 JUDGE McMILLIN: Okay. We'll give it a go this way. If, again,
2 anyone has trouble hearing me please let me know. Notice that my
3 microphone is wagging around because my headphones are broken, but we'll
4 hope for the best.

5 Petitioner, I'm sorry for the break. Could we get appearances from the
6 Petitioner?

7 MR. BATTS: Yes, Your Honor, Harper Batts on behalf of Petitioner,
8 and also with me in the room is Fred Qiu, the LEAP practitioner who will
9 also be joining in the argument today.

10 JUDGE McMILLIN: All right. Oh, you and Mr. Qiu will both be
11 talking?

12 MR. BATTS: Correct, Your Honor.

13 JUDGE McMILLIN: Okay, thank you.

14 And for Patent Owner?

15 MS. BAILEY: Good afternoon, Your Honor. This is Jennifer Bailey
16 representing the Nielsen Company. I have with me Robin Snader and
17 Megan Redman as co-counsel and then representatives from the Patent
18 Owner are Sal Karottki, Justin Cook, and Greg Huffman.

19 JUDGE McMILLIN: Who will be speaking on behalf of Patent
20 Owner today --

21 MS. BAILEY: I will --

22 JUDGE McMILLIN: -- Ms. Bailey?

23 MS. BAILEY: I will, Your Honor.

24 JUDGE McMILLIN: All right and just you?

25 MS. BAILEY: And just you -- and just for me, yes, correct.

26 JUDGE McMILLIN: I understood what you said.

1 MS. BAILEY: Thank you, Your Honor.

2 JUDGE McMILLIN: We're going to begin with Petitioner who has
3 the burden of proof in this proceeding. And we have designated in the oral
4 argument order that each party will get 60 minutes of argument time.
5 Because Petitioner has a LEAP practitioner, Mr. Qiu also participating, they
6 get an extra 15 minutes of argument times for a total of 75 minutes. Each
7 party can reserve for their rebuttal and/or on behalf of the Patent Owner their
8 surrebuttal up to half of their argument time.

9 Does Petitioner wish to reserve rebuttal time?

10 MR. BATTS: Yes, Your Honor. I think we'll plan for 50 minutes for
11 our opening time and see how much time is actually taken and take it from
12 there.

13 JUDGE McMILLIN: All right, so that would give you 25 minutes of
14 rebuttal time. Who's going to start first, Mr. Batts?

15 MR. BATTS: I'll be starting, Your Honor.

16 JUDGE McMILLIN: All right. Give me a second to access the timer
17 on my cellphone. Go ahead, Mr. Batts.

18 MR. BATTS: Thank you, Your Honors. Well, I'll just start with our
19 slides on slide 2 to, kind of, give a quick framing of the issues before we go
20 to specific issues. So as you're aware, we have two remaining instituted
21 grounds for this particular proceeding, one based upon a combination of Lu
22 and Tian and a second ground 3 combination of Nielsen, Steinberg, and
23 Tian.

24 And if we go to slide 5, at the highest level ground 1 is, keeping in
25 mind that this is a priority date of 2011, a pretty late priority date, this is a
26 combination of a primary reference Lu, which is an audience measurement

1 system which we combined with Tian for Tian's teachings about improving
2 facial analysis.

3 And similarly for ground 3 on slide 6, we combined the Nielsen-372
4 reference with, again, with Tian and also another reference Steinberg for
5 face detection and face recognition teachings.

6 So to clarify where we're going today, kind of road mapping, the good
7 road mapping not bad road mapping because that term is used in other ways
8 at the PTAB, slide 8, kind of, gives an overview of what we view as the
9 remaining issues in dispute for discussion today. I planned to be handling
10 the first issues, the issue of whether Tian teaches reducing a resolution and
11 the second issue of the motivation to combine in Tian, and then my
12 colleague, Mr. Qiu, will be handling the remaining issues.

13 So, to start off, if we go to slide 9, as identified in the petition and
14 recognized in the institution decision, Tian has a clear teaching of reducing a
15 resolution when it states that the lower resolution images are downsampled
16 from the originals. And note that that sentence is in the present tense.

17 And if we go to slide 10, as you may recall, the institution decision in
18 this proceeding actually involved the compelling merits analysis and the
19 institution decision credited that teaching under the compelling merits
20 analysis and found that Tian plainly teaches reducing resolution.

21 JUDGE McMILLIN: Mr. Batts, there's a dispute between the parties,
22 it appears, as to interpretation of this sentence, "The lower resolution images
23 are downsampled from the originals." By my count that appears in Tian
24 three times in exactly the same way so it doesn't appear that any of those
25 three times provide any greater insight. How do you interpret that sentence?
26 One way would be that the lower resolution images were taken from the

1 image database and the other way is we downloaded images from the
2 database and then Tian created lower resolution images by downsampling?
3 How do you interpret that sentence?

4 MR. BATTS: I think it's clear the second interpretation applies. I
5 agree with you, Your Honor, that the sentence -- that the teachings that
6 we've pointed to in Tian are consistent teachings and similar wording
7 teachings throughout Tian.

8 But I think I want to walk through Tian, as well as the other evidence
9 that we pointed to, that makes it clear the second interpretation is correct.
10 So, I think, you know, we pointed out on slide 11, that's a quick one, but it's
11 just that both side's experts agree that by 2011 people were well, very
12 familiar with different downsampling techniques, right, resolution reducing
13 techniques including various (inaudible). So, and what we see on slide 12,
14 what I do want for framing the issue for your discussion, what you were
15 pointing out, is in the Patent Owner response. Originally, Patent Owner
16 argued that Tian does not create downsampled images, but what you see is a
17 shift in the surreply, in the language that we've included here in the surreply.
18 They're no longer contending that Tian doesn't teach it. Now they're
19 contending, well, the teaching is ambiguous so it doesn't necessarily
20 preclude another alternative, like getting them from the alternative source.

21 But we think that's wrong when -- and I'm going to walk through Tian
22 itself, which is Exhibit 1005 and why Tian itself negates that as well as the
23 other evidence that we've submitted in the proceeding. And I think a good
24 place to start is just slide 14 to give you context of what I'm going to walk
25 through.

1 We didn't -- we relied on various pieces of evidence to negate their
2 argument about the clear teaching of Tian saying they are downsampled and
3 that includes Tian's explanation, so I'm going to talk about the database 3.1,
4 Tian's other, even the abstract as well as the Table 1 teachings that they
5 identified in their briefing, as well as their Paper 16 that's referenced in Tian,
6 and Dr. Doermann's testimony, including his factual testimony about what
7 was in the database at the time.

8 So I'm going to walk through those in turn. So, if we look at slide 15
9 and Exhibit 1005, page 5, there's the discussion that we cited to for the
10 database itself, Section 3.1 of the database. And what you see in that section
11 and what we've highlighted for language here or for the sentence is the
12 image sequences began with the neutral face.

13 Notice the past tense, "were digitized into 640 resolution," so a past
14 tense sentence about what was in the database and same resolution images,
15 640 resolution images. And we've included on this slide the equivalent
16 testimony or the similar testimony from both the experts about the original
17 images that were in the database being these 640 resolution images.

18 If you go then to slide 16, we also see that the parties have discussed
19 Table 1, which is located on page 2 of Exhibit 1005, and Table 1 itself refers
20 to the original image so it has that 288 resolution, which is the subset, the
21 face of the 640 image, and it explains -- even what they point to is noting
22 that the original image was before the lower resolution images were
23 downsampled from the original.

24 And I do think that's consistent also when you ask this question about,
25 well, what was their -- how do you read Tian with the consistent use of that
26 same sentence? If you go back to the abstract on Page 1, the abstract, if you

1 read it, it has that same logical progression of what the scientists were doing
2 in this paper and what they were researching.

3 So if you look at halfway through the abstract it says, "This paper
4 explores the effects of different image resolution for each step of facial
5 expression analysis." So, it talks about explores and then it talks about the
6 next sentence "are compared," and then the last sentence, again present
7 tense, "a total of five different resolutions of the head are studied based on a
8 widely used database. The lower resolution images are downsampled from
9 the originals."

10 So, contrast that present tense language with the past tense language
11 of Section 3.1. And the evidence that we cited to doesn't stop there because
12 if you look at slide 17, we pointed specifically to in that 3.1 section of Tian,
13 the last sentence also says that "if you want to know more, more details
14 about the database can be found in Paper 16."

15 And going to Paper 16, Paper 16 is consistent with our position and it
16 talks about a single resolution of images being found in that database, the
17 640 resolution images, no reduced resolution images.

18 And then we have Dr. Doermann's testimony. So, if you go to slide
19 18, and this is something that they really sidestepped, kind of, under
20 sidestepped in their briefing. They never addressed this head on, which is
21 Dr. Doermann specifically said that he reviewed the database and that the
22 database was consistent with his recollection of what was in the database.

23 So, he recalled the database as having only the 640 resolution images
24 and they did not ever rebut that. They never provided any contrary factual
25 testimony or arguments about that. So, there we have un rebutted factual
26 testimony that that's what was in the database at the time period, and that's

1 consistent with he actually went and then checked the database and said,
2 yeah, that's what's in the database 640 images.

3 Now, contrast that with -- on slide 20, we asked Dr. Saber, well,
4 what's in the database? You know, you're making this argument what's in
5 the database? What does the database have? He didn't have any personal
6 knowledge and he didn't have any -- he didn't he didn't go check. He didn't
7 bother to check whether the database had a single resolutions, a single set of
8 resolutions or different resolutions. So, all of that evidence favors the
9 Petitioner in the plain reading of Tian, which is that they are downsampled.

10 Any questions on that before I move to the motivation to combine
11 section?

12 JUDGE McMILLIN: I don't believe so. Thank you.

13 MR. BATTIS: So, if we go to slide 21 to frame the issue there, I am
14 going to be focused, to be clear, on there are a number of arguments that
15 Patent Owner has raised about the motivation to combine Tian, whether for
16 ground 1 or ground 3, because it's in both grounds. That's the motivation to
17 combine I will be talking about, and my colleague will talk about
18 motivations to combine for the Nielsen, Steinberg motivations that they also
19 attacked.

20 So, on motivations for Tian, if we go to slide 22, I'd like to remind the
21 Board that in the petition and in the accompanying declaration we provided
22 a slew of different motivations to combine for why the references should be
23 combined, why Tian's teaching should be combined for both grounds 1 and
24 3. And Patent Owner did not dispute the majority of those motivations to
25 combine.

1 And the one -- and as to motivation six that we've included here, it
2 looked to be abandoned -- their arguments looked to be abandoned in reply.
3 So, we have numerous motivations to combine that stand unrebutted. And I
4 will remind the panel that the panel actually noted it in the institution
5 decision that Patent Owner had failed to address those other motivations to
6 combine at the institution stage, and they continued to fail to address those
7 motivations to combine post-institution. So, that reason alone we should
8 prevail on this issue.

9 But I still want to address their arguments as to seven motivations to
10 combine seven and eight. And so if we go to slide 24, at the highest level in
11 our opening papers and in the petition we explain that there would be
12 reasons to combine Tian specifically. Dr. Doermann explained that
13 processing resources would be saved by having this image resolution take
14 place before the facial recognition is performed.

15 Now, in surreply I think this, kind of, crystallized the remaining
16 arguments that Patent Owner has. They identified what they called four
17 alleged errors. And, so, if you look at slide 25 I've tried to include on each
18 of the slide -- the four alleged errors from their surreply and walk through
19 each of those errors and answer any questions that you have about their
20 arguments.

21 So, first error, they said we failed to compare the cost of the resolution
22 plus the cost of the facial analysis on the reduced image versus the cost of
23 facial recognition -- facial analysis on non-reduced, non-resolution reduced
24 images. That's simply not true because, as I noted, I showed in slide 24 we
25 did perform that analysis and included that analysis in the petition and

1 accompanying declaration. And then again on slide 26, Dr. Doermann did
2 provide that exact analysis in paragraph 8 of Exhibit 1034.

3 But beyond that, he did include that analysis. I don't think that ends it
4 there. I think I'd like to provide a little more context to that argument and
5 why that argument doesn't work. So, if we go to slide 27, I think everybody
6 agrees Patent Owner's materials here at the top, their own exhibit, their
7 expert, our expert, everyone agrees that it's computationally complex to
8 perform facial analysis. I don't think that is an issue that we'll hear any
9 dispute on.

10 And slide 28 we have similar testimony from our expert about that
11 being a computationally complex calculation. If you look at slide 29, Dr.
12 Saber's, so Patent Owner's expert, explained that facial detection requires 25
13 multiplications and 24 additions for each pixel. So, when we looked at this
14 he also admitted on slide 30 that if you reduce the resolution you would have
15 significant process -- savings of processing resources and vice versa. If you
16 have a much larger image you're going to have much more processing
17 required.

18 So, if we go to slide, oh, here (inaudible). So if we go to slide 32,
19 which again is this example of the computations that are required, I don't
20 think this is too complicated to think about the concept that was explained
21 by Dr. Saber that one of the examples you can do is just to downsample it to
22 lower the resolution of the image, is you just pick one out of every four
23 pixels. So, you're reducing basically three-fourths of the computations that
24 are going to be required because you're only using one out of the four pixels
25 rather than having to do the computation on four pixels.

1 So, if you go to slide 34, I think my point here, and I would just
2 remind the panel I'm sure you've seen this case law before, this is the Fed
3 Circuit has made clear again and again that you don't have to always have
4 the best option. It only needs to be a suitable option. We've shown that
5 there was a motivation to combine on many different reasons and bases and
6 reducing it it's clear from the Patent Owner's materials, the Patent Owner's
7 expert's testimony, and our expert's testimony that there are significant cost
8 savings in doing the facial recognition analysis on fewer pixels on a lower
9 resolution image.

10 So, that's the first alleged error that they raised in their surreply. The
11 second alleged error is on slide 35, which is about that they said, "The
12 Petitioner did not analyze the computational cost of anti-aliasing." So, we
13 failed to consider anti-aliasing when making our arguments in our petition
14 and our papers and that's a reason that somebody would not be motivated to
15 combine.

16 I think slide 36, kind of, sums up at a high level why this argument
17 fails. Their argument is actually blown up by their own expert's testimony
18 and positions for multiple reasons.

19 First, he said the claims of the '243 patent, the challenged claims, don't
20 require anti-aliasing. He also noted that in the '243 specification that you
21 could perform resolution reduction. There's different techniques for
22 resolution reduction that didn't require anti-aliasing. And he also said that
23 Tian itself doesn't perform anti-aliasing.

24 So, and I'm going to walk through the evidence. I said that at the, you
25 know, on the slide, but I want to walk through each of those so you see the
26 evidence. If we look at slide 37, the top of that slide is where Dr. Saber was

1 asked about the challenged Claim 4 and whether you can perform it without
2 anti-aliasing. Yes. He said yeah. He said that you can just meet the claim
3 by reducing the resolution.

4 We then asked him about the specification, the examples in the
5 specification such as the pixel binning that the institution decision also
6 discussed, and again, no separate anti-aliasing step. You can perform the
7 image resolution without anti-aliasing.

8 And I think most importantly is slide 38, and I want to spend a little
9 more time on slide 38 since I think it is a good one for, kind of, foreclosing
10 this argument in this issue.

11 So, if you look at the top of the slide 38, we included paragraph 20
12 from Dr. Saber, and I'm going to walk through that paragraph because first,
13 he admits in the first sentence there, he says that "Tian's disclosure of using
14 images that are only downsampled without any other disclosed
15 preprocessing step," (Inaudible) agree that would be anti-aliasing. So,
16 you're saying Tian is performing this without anti-aliasing.

17 And then he goes on in that same paragraph, the last sentence, to say,
18 "Downsampling is vulnerable to artifacts resulting from anti-aliasing." And
19 he's saying, well, that could be an issue, but again, it isn't using anti-aliasing.
20 There shouldn't be an issue with motivation to combine when you're not
21 using anti-aliasing.

22 And then look at the bottom of the slide to see the results ,because Dr.
23 Doermann explained and Tian itself confirms that when you're performing
24 the facial recognition process that Tian teaches you have great results. One
25 hundred percent on the reduced resolution of 36 by 48 you're getting 100
26 percent facial recognition and 97.8 percent accuracy. So, Tian has the

1 teachings for face detection and certainly without anti-aliasing that
2 forecloses this argument.

3 Then Patent Owner's alleged error 3 on slide 39 was that we
4 improperly analyzed the cost for facial analysis using convolution, but not
5 Tian's neural network approach. I don't think there's much to be said on this
6 one, but on slide 40 I think I would point out three issues with this argument.

7 As an initial matter, we relied upon Tian's head pose estimation but it
8 didn't limit it to a neural network approach. So, they're saying, well, the
9 neural network approach. We didn't limit our arguments to a neural network
10 approach so this argument fails for that reason alone.

11 And then second, again, Patent Owner's expert is inconsistent with
12 Patent Owner's argument because he confirmed in his testimony that we
13 included on the bottom half of this slide that neural networks are also
14 dependent on features.

15 And then lastly, I mean, this was a new argument that they raised in
16 their surreply. It wasn't before. But this argument doesn't make any sense
17 because I think it's commonly known that neural networks are known as
18 convolution neural networks. So, to say it's a neural network and not
19 convolution makes no sense whatsoever.

20 Alleged error four, this is the last of their alleged errors, and they say
21 that Petitioner didn't account for the fact, and this is slide 41, Petitioner did
22 not account for the fact that the resolution reduction process would be
23 performed more often than the head orientation determination process could
24 be skipped. The problem with this argument is it doesn't match what's
25 required by the claim.

1 So, if we go to slide 42, the claim was just talking about a single
2 image not multiple images. And so, what we did is confirm is that when
3 performing face detection or head pose estimation on a reduced resolution
4 image, the system saves processing time and that's all we were required to
5 do for the claim that we are challenging.

6 The last issue I want to address is on slide 43, motivation to determine
7 the head orientation. And so, maybe I'll give some context to that. Probably
8 -- maybe I'll start with slide 45 real quick just to give a little context to that.

9 Slide 45, Patent Owner's argument is that selectively performing face
10 recognition would undermine performance by reducing the opportunities
11 that you would have for face recognition if you're not always performing the
12 face recognition.

13 And so, if I go back to 44 for a second, we explained that selectively
14 performing face recognition based on orientation would improve
15 performance. And we have -- I don't think they've contested that we have
16 that argument or that evidence in the record here, including what we pointed
17 to here from the petition, as well as Dr. Doermann's supporting testimony on
18 this point. Different poses can improve the accuracy of identification.

19 And then going back now to slide 45, in fact, I think both experts'
20 testimony supports our position on this because not only do we have Dr.
21 Doermann's testimony in the top of this slide, that certain poses are not
22 going to be suitable for face recognition, but Dr. Saber agreed with that.

23 And I don't think that this is a complicated argument to see why it's
24 flawed because it's as simple as if I turn my back on you, having somebody's
25 head turned around when you're trying to do facial recognition would not be
26 fruitful or useful. There's going to be certain poses, certain angles that are

1 going to be more conducive to a proper facial recognition or match than
2 others. So, I think this one we have the for testimony on both sides, but I
3 don't think it even requires expert testimony to realize the flaws in Patent
4 Owner's argument on this point.

5 And that's the arguments that I had for addressing before I turn over to
6 my colleague, so I wanted to check to see any questions on those arguments
7 before I turn it over to my colleague for the remaining issues?

8 JUDGE McMILLIN: I don't see any. Thank you, Mr. Batts.

9 MR. BATTS: Thank you.

10 JUDGE McMILLIN: Mr. Qiu, welcome.

11 MR. QIU: Good afternoon, Your Honors.; Yeah, let's move on to the
12 motivation to combine Nielsen-372 and Steinberg. That starts on slide 48 of
13 our deck. Please go to slide 49.

14 So, the combination of Nielsen-372 and Steinberg applies two aspects
15 of Steinberg's teachings to Nielsen-372. The first aspect is to use a camera
16 to capture images of individuals, as highlighted in blue on the slide. And the
17 second aspect concerns what happens after the images are available. It
18 applies Steinberg's approach of identifying individuals by detecting and
19 recognizing faces, as highlighted in green in this slide.

20 Patent Owners may attack on the motivation to combine. It's for the
21 limitation requiring that the sequence of images are obtained by a camera.
22 For this limitation, Patent Owner contends that the combination relies on
23 Nielsen-372's camera and it will require turning the camera away from the
24 television to the audience. This characterization is wrong.

25 Let's go to slide 50. It is clear from the petition, which is shown in the
26 bottom of this slide, that the combination relies on Steinberg's teaching of

1 using a camera to capture images of people. For the limitation of obtaining a
2 sequence of images by camera, the petition cites to Steinberg only. This was
3 also noted by the Board in the institution decision.

4 Next, let's move to slide 52. So, Patent Owner mainly relies on the
5 passages shown on this slide to support its contention that the combination
6 relies on Nielsen-372's camera. These sentences discuss applying
7 Steinberg's approach on Nielsen-372's system that includes a computer and a
8 camera.

9 So, what is new -- Steinberg's approach? Let's go back to slide 49 to
10 look at Dr. Doermann's explanation.

11 Here, Dr. Doermann explains that Steinberg's approach is first to
12 identifying individuals by detecting and recognizing faces, as highlighted in
13 green in this slide. This approach is the second aspect of Steinberg's
14 teaching that's applied to Nielsen-372. It does not refer to the first aspect of
15 using a camera to take photos.

16 Next, please go to slide 53. In his declarations, Dr. Doermann
17 explains that a POSITA would have found it obvious to implement the face
18 detection normalization and recognition teachings of Steinberg of the
19 computer or camera of Nielsen-372. This is because Steinberg teaches
20 performing these image analysis steps using either computer or an image
21 acquisition device.

22 Nielsen-372's system also includes a computer and a camera and they
23 would have the processing capabilities to perform these analyses.

24 So, what we're trying to say is that Patent Owner conflates the two
25 aspects of Steinberg's teachings in contending that Petitioner proposes to

1 physically implement Steinberg's camera in Nielsen-372's camera. This is
2 not, simply not the theory presented.

3 So, Patent Owner's argument based on this characterization is that the
4 combination would require turning Nielsen-372's camera away from the
5 television to point to the audience and this would frustrate the purpose of
6 Nielsen-371. So, in addition to mischaracterizing the theory Patent Owner's
7 arguments should also be rejected because it resorts to a physical
8 incorporation. Basically, none of the claims require a certain physical
9 configuration of a camera. They only require that the images are taken by a
10 camera.

11 Let's go to slide 55. So, Patent Owner essentially argues that the only
12 way to implement the camera is to turn Nielsen-372's camera around. I want
13 to show that this assertion is wrong.

14 For example, when asked on deposition, Dr. Saber did not say images
15 can only be taken in one direction, so if there's a camera you have to turn it
16 around. He testified that it was known that two cameras pointing at different
17 directions can be connected to the same computer. He also testified that
18 cameras in 2011 offered the capability of capturing images of different
19 directions.

20 Let's move on to slide 57. Here I want to address another argument
21 from Patent Owner. So, this challenge is that it's about a purported principle
22 for operation of Nielsen-372. So, Patent Owner contends that the principle
23 for operation of Nielsen-372 is voluntary audience measurement.

24 However, the only basis for that seems to be Nielsen-372 discloses the
25 embodiment that prompts the user to indicate their presence in the room.
26 However, there's no basis to say that just because a reference discloses an

1 embodiment that embodiment is the principle for operation of that reference.
2 And it is the disclosure of Nielsen-372 further confirms that voluntary
3 audience measurement is not his principle for operation.

4 For example, when talking about his people meter, which is the device
5 that measures the audience, it says the function of the people meter is to
6 capture information about the audience. This goal can be achieved if the
7 audience is automatically measured, for example, based on images taken of
8 them. So, and also in the disclosure of Nielsen-372 it uses the word "may"
9 when discussing the approach of prompting the audience to indicate their
10 own presence.

11 So, this word indicates that the disclosure is not limited to this
12 particular method. Nielsen-372 does not mention the concept of voluntary
13 audience measurement and does not discuss any benefit of such an approach.
14 So, as -- and also as explained in the petition replacing this particular
15 approach with an automatic audience measurement approach based on facial
16 analysis would be beneficial. For that let's go to slide 58.

17 So here, one of the benefits is that replacing the prompting method
18 with an automatic method would have improved the accuracy of audience
19 measurement. Dr. Saber in his declaration admitted that using the prompting
20 method, the audience members would have been allowed to arbitrarily
21 decide whether they want to be identified or not by simply not responding to
22 the prompts. Dr. Doermann explains that the automatic approach prevents
23 this inaccuracy from happening.

24 Unless Your Honors have further questions on this issue, I'm thinking
25 I'll move on to the next issue of some of the dependent claim limitations.

1 JUDGE McMILLIN: I don't see any questions. Please move on, Mr.
2 Qiu. Thank you.

3 MR. QIU: Okay, thank you. Please go to slide 59. So, the next issue
4 I want to address is Patent Owner's argument that grounds 1 and 3 does not
5 teach certain limitations that require two images. Please go to slide 60.

6 So, the claims at issue are Claims 5, 6, 12, and 19. Claims 5 and 6 are
7 shown on this slide as examples. So, the concept at issue here is to perform
8 face recognition on region of a second image that corresponds to a location
9 near first image. Please go to slide 61.

10 So, rather than analyzing the language of the claims at issue, Patent
11 Owner created a new concept called a two-frame process. This concept was
12 created so that Patent Owner can import a negative limitation to the claims.
13 For example, as shown in the lower half of this slide, Patent Owner argues
14 that Tian updates the location of the head for each frame, but Patent Owner
15 claims that as long as the combination determines the location of the head in
16 the subsequent frame before performing face recognition on that frame, it is
17 a single frame access that cannot satisfy the limitation at issue.

18 As shown in the upper half of this slide, what Patent Owner
19 essentially is trying to do is to import a requirement that no determination of
20 where the head is can be performed on a second image where facial
21 recognition is performed. This added negative limitation seems to -- simply
22 has no basis in the claim and should be rejected.

23 Please go to the next slide 62. And, in fact, Patent Owner's own
24 expert disparaged this way or this approach. Dr. Saber explains that after
25 head location is determined in a first image, if the location is blindly applied
26 to a second image it can decrease the performance of facial recognition

1 because the head may not be there in the second image. This shows Patent
2 Owner's negative limitation, which prohibits determining a head location in
3 the second image, would not work, which provides another reason to reject
4 this negative limitation.

5 So, let's go to slide 63. Without improperly importing this negative
6 limitation, there can be no dispute that the prior art combinations satisfy the
7 limitations at issue. Undisputed teachings of the prior art includes
8 performing face recognition at a high location and also performing head
9 tracking.

10 So, for this point, Dr. Doermann explained that the head location often
11 does not change across a sequence of images such as video frames because
12 those images are taking a short amount of time. And a lot of times the
13 person's head doesn't move in that amount of time.

14 And the technical face tracking is applicable to that scenario. It
15 confirms if a head location determined in an earlier image is applicable to
16 subsequent images by tracking changes to facial features. When there is no
17 change, the head location of our earlier image is applied to a subsequent
18 image for face recognition. And in that case there is correspondence
19 between the region where facial recognition is performed and the head
20 location in previous image.

21 So now, let's look back -- go back to slide 60 to look at the claim
22 language. Here the claim language clearly requires that there to be a
23 correspondence between the region where face recognition is performed at
24 the location of the head in the earlier image. So, undisputed teachings of the
25 art show this correspondence exists.

1 Let's move on to slide 64 of the petition. Here, Dr. Doermann
2 explains that Tian's face tracking can serve to confirm when it is proper to
3 analyze a region in the second image that corresponds to the head location in
4 the first image. That is when facial feature changes are not detected.

5 Please go to the next slide, slide 65. Dr. Doermann further explains
6 the benefits of performing Tian's face tracking. For example, it can help
7 reducing processing costs because after detecting the head in a first image
8 you don't need to analyze the entirety of the second image. You analyze a
9 localized region to confirm that the head stays the same and then apply the
10 location from the first image.

11 Next, let's go to slide 66. So, rather than providing support for this
12 negative limitation that Patent Owner seeks to add to the claim, the surreply
13 accuses Petitioner as reading out the corresponding to limitation. This is
14 simply not the case.

15 The combination teaches using the head location from a previous
16 image for face recognition in a later image. in the case when the head does
17 not move. So, in this case, Patent Owner has no explanation why the
18 analyzed region in the subsequent image does not correspond to the head
19 location in the previous image.

20 Yeah, so that's my discussion of this issue. And I want to check, Your
21 Honors, whether you have questions for this issue?

22 JUDGE McMILLIN: I don't believe we have any questions, Mr. Qiu.

23 MR. QIU: Okay. Thank you, Your Honor. In that case, we will
24 reserve our remaining time for rebuttal.

25 JUDGE McMILLIN: All right. It's 1:44 so you used 37 minutes,
26 which is about half of your 75 minutes. You have half of your time left.

1 MR. QIU: Thank you, Your Honor.

2 JUDGE McMILLIN: Thank you.

3 Ms. Bailey, are you ready to proceed?

4 MS. BAILEY: I am, Your Honor. I would like to reserve 20 minutes
5 for rebuttal, please.

6 JUDGE McMILLIN: Okay. You have 40 minutes then. Please
7 proceed, Ms. Bailey.

8 MS. BAILEY: Thank you. May it please the Board, I am happy to
9 jump around to any issues that the Board would like to discuss and, of
10 course, please ask any questions as I proceed.

11 I want to start with the argument regarding Tian not teaching the
12 resolution reduction of Claim 4. The one thing the post-institution phase of
13 this IPR has elucidated is the ambiguity of the evidence regarding whether
14 Tian teaches reducing the resolution as recited in Claims 4, 11, and 18. We
15 do not know when Tian reduces the resolution of the images, and we do not
16 know where Tian obtains the reduced resolution images from.

17 The parties' experts disagree on how to read Tian and Petitioner does
18 not provide any rebuttal evidence that clarifies Tian's ambiguities.

19 JUDGE McMILLIN: Ms. Bailey, does it make any difference? *KSR*
20 instructs us that a person of ordinary skill in the art is not an automaton, that,
21 you know, they have common sense and everyone seems to have agreed.
22 Perhaps we should confirm with you that Tian does teach or at least
23 referenced a way to get reduced resolution images--downsampling. And so,
24 I'm wondering why it makes a difference whether those reduced resolution
25 images were downloaded or created?

1 MS. BAILEY: Thank you, Your Honor. I appreciate that question.
2 So, I have two comments in response. Putting forward (phonetic) is actually
3 a fairly narrow limitation. It's requiring that the resolution of the reduction
4 of the image happened preceding to the head orientation determination. And
5 this all has to be done as part of the audience measurement system.

6 Yet the evidence of record is that intentionally reducing the resolution
7 in advance of performing facial analysis is not desirable. Usually, you're
8 going to want to do -- work your facial analysis, for example, head
9 orientation determination, with the full resolution image. So, right there out
10 of the gate we have to go, okay, why is the skilled person looking at Tian
11 going, hmm, I'm going to understand that Tian is going to actively reduce
12 the resolution of the images prior to head orientation determination?

13 I also think it's really important to understand how the Claims 1 and 4
14 fit together with respect to the audience measurement system. The
15 combined Claims 1 and 4 require the reduced resolution be performed
16 commensurate in time with the TV viewing and the facial recognition. And
17 this, Your Honors, is something that's getting lost, I think, in Petitioner's
18 mapping.

19 The claims recite, "reducing resolution of an image of the media
20 exposure environment while the media content is presented by the television
21 in an audience measurement system." And I just quoted from several
22 different portions of Claims 1 and 5 at Column 15, Lines 31 through 33,
23 Column 15, Line 57 and the preamble.

24 What this means is if the resolution reduction and facial recognition
25 doesn't occur while the media content is presented on the television, then the
26 audience measurement system simply doesn't work. The audience member

1 must be recognized while viewing the program, otherwise the system just
2 doesn't capture the fact that the audience is viewing the program.

3 And I emphasize this point, kind of, answering your particular
4 question, Your Honor, is that because performing head orientation
5 determination on a pre-reduced image does not satisfy Claim 4. And I really
6 want to stress that point.

7 So, even if we have -- sorry. Go ahead, Your Honor. Did you have a
8 question?

9 JUDGE McMILLIN: Yes. I'm sorry. Thank you.

10 MS. BAILEY: Please.

11 JUDGE McMILLIN: I appreciate your watching me. If Tian teaches
12 reducing the resolution and that you can still determine head orientation
13 from those reduced resolution images, is it enough that it contains those two
14 teachings and that the other references, Nielsen-372 and Lu-577, contain
15 teachings regarding obtaining the first and second images?

16 MS. BAILEY: It is not enough that there is simply use of reduced
17 resolution images in Tian. I'm going to go back to where I was before that it
18 is not enough to meet Claim 4 that Tian uses pre-reduced images. The claim
19 recites a processor perform -- or processor circuitry to do two steps, reduce
20 the resolution prior to head orientation determination, but it has to be done
21 while the image is taken in the media exposure environment and while
22 viewing the media content. If the image is pre-reduced, there is no way for
23 the image to be taken while the user is watching the television.

24 I also want to hit on something that you said, Your Honor, with
25 respect to where Tian obtains its images, its reduced images from, and
26 there's two buckets of evidence here. The first bucket is the ambiguity of

1 Tian's teachings alone and the second bucket of evidence is Petitioner's
2 rebuttal evidence trying to explain Tian's ambiguous teachings. And I want
3 to talk about that second bucket first.

4 In response to these arguments that we put in both the paper and the
5 Patent Owner response, Petitioner has brought in what is Exhibit 1031. So,
6 let me explain what that exhibit is. Tian says that its original images and its
7 reduced resolution, in our opinion, come from what is called the Cohn-
8 Kanade Database. And Tian refers to another paper that discusses this
9 database which Petitioner has introduced as Exhibit 1031.

10 Petitioner argues that Tian teaches reduced resolution because Exhibit
11 1031 doesn't mention reduced resolution images in the database. And this is
12 an important point, Your Honor, because Petitioner has newly introduced
13 Exhibit 1031, so it's late submitted evidence but, more importantly,
14 Petitioner is using Exhibit 1031 to change its unpatentability theory.

15 Petitioner is using Exhibit 1031 to ask the Board to infer a teaching in
16 Tian based on Exhibit 1031 not mentioning reduced resolution images.
17 Federal Circuit case law does not support that a reference teaches a
18 limitation through inference. Petitioner's argument reads like an inherency
19 argument, Your Honors, that the Board must find that Tian necessarily
20 teaches resolution reduction because Exhibit 1031 does not mention reduced
21 resolution images.

22 And I want to just pause there because this is an important part,
23 because they really are changing their unpatentability theory, Your Honor.
24 They don't have the evidence that Tian teaches resolution reduction and so
25 they're relying on secondary evidence to argue that because reduced
26 resolution images or not in the Cohn-Kanade Database, or at least mentioned

1 in this paper, that we must infer that Tian teaches it. That is an inherency
2 argument, Your Honors.

3 It's exactly the same --

4 JUDGE HUDALLA: Counsel?

5 MS. BAILEY: I'm sorry. Was there a question?

6 JUDGE HUDALLA: Yeah, sorry, Ms. Bailey. It's Judge Hudalla. I
7 just wanted to ask regardless of what Tian teaches exactly, regardless of
8 whether they go to -- that these images come from a database downsampled
9 or whether they are, Tian actually did the downsampling after obtaining the
10 images, why does that matter? You know, if I keep reading this sentence in
11 a vacuum it says, "The lower resolution images are downsampled from the
12 originals." Wouldn't a person of ordinary skill just read that and say, wow, I
13 could downsample the images from the originals and obtain some results on
14 the head detection?

15 MS. BAILEY: So, thank you for that question, Judge Hudalla. I'm
16 going to go back to what the skilled person would understand from reading
17 Tian, because I get the impression from Your Honors' questions that you're
18 struggling with the fact that Tian does use reduced resolution images, but the
19 claims require an intentional resolution reduction as part of the head
20 orientation determination.

21 And I go back to where -- what Tian is. Tian is an academic reference
22 for the purpose of studying the effect of reduced resolution images on facial
23 analysis. And Tian, in the abstract, it says in real life circumstances you're
24 actually going to end up starting with reduced resolution images because the
25 images are going to be captured at these lower resolutions because of the
26 camera that's capturing it.

1 And so, Tian wants to study as an academic what's the effect when
2 you have reduced resolution images? So, Tian isn't trying to actively reduce
3 the resolution of the images as part of the facial analysis. Tian starts with
4 already reduced resolution images that are captured that way to determine
5 the effect.

6 So, if we go back to what the skilled person would understand or
7 appreciate from Tian, you're taking a large logical leap that is bound by
8 hindsight. When you look at Tian and say -- and put it into the skilled
9 person that they would understand from Tian that we are going to take the
10 intentional step of reducing resolution prior to facial analysis, especially
11 when it is well-recognized that they want to normally do facial recognition
12 analysis on a full resolution image. So, you're asking the skilled person to
13 read Tian in a way that is counter to the conventional wisdom that you're
14 going to do facial analysis on a full resolution image.

15 Does that answer the question?

16 JUDGE HUDALLA: Even if it is --

17 MS. BAILEY: Oh, go ahead, Judge.

18 JUDGE HUDALLA: -- even if it is counter to conventional wisdom,
19 it says what it says. I mean, aren't we bound to look at the reference for all it
20 teaches?

21 MS. BAILEY: But, Your Honors, there is no affirmative step
22 reducing the resolution. At most, you can pull from Tian that it sources pre-
23 processed, pre-reduced images.

24 JUDGE HUDALLA: Okay. I think I understand the position. I don't
25 know if I agree with it, but please continue.

1 JUDGE BAILEY: I appreciate that, Your Honor. I want to quickly
2 comment on two other points regarding this. One, Dr. Doermann put into
3 his declaration, Exhibit 1034, paragraph 4, this happens to be on our DX-9 if
4 you want to turn to that, and what he did this he went and looked at a 2024
5 version of the database. And when you go to look at this database it's
6 actually administered by Dr. Cohn, which I presume is the Cohn of the
7 Cohn-Kanade Database, and it's not publicly accessible. You have to ask for
8 permission to look at it.

9 And so, you have to fill out a form and this is what Dr. Doermann
10 talks about in his declaration. And when you fill out that form, the form has
11 several requirements. First, you must agree that you're only using the
12 database for academic purposes and that you're an academic. And second,
13 you have to include two citations to the database, a citation to a 2000 version
14 and a citation to a 2010 version.

15 And Dr. Doermann mentions the 2000 version of the database that
16 you must cite but fails to inform the Board that you must also cite to a 2010
17 version of the database. Dr. Doermann's access of the 2024 version of the
18 database is not credible. It's not authenticated. It's late evidence and it
19 should be given no weight.

20 But again, the real key here is that Petitioner and their expert is asking
21 the Board to infer a teaching based on the database allegedly not including
22 reduced resolution images. And I'm going to again stress that I find that this
23 is an inherency finding.

24 I also want to -- perhaps this will address some of your concern, Judge
25 Hudalla, with respect to the opinions provided by the two experts. I want to
26 contrast Dr. Saber's opinions on why Tian doesn't teach what Dr. Doermann

1 says. Dr. Saber has several opinions on why he understands Tian not to
2 teach active resolution reduction. I refer the Board to Exhibit 2001,
3 paragraphs 46 through 50 and Exhibit 2020, paragraphs 4 through 11.

4 And he provides several whys, several because, whereas if you look at
5 Dr. Doermann's opinions he has conclusory opinions. And I'm referring to
6 Exhibit 1034, paragraphs 2 to 3 where he simply restates the language in
7 Tian and then says his opinion. There's no explanation of the why or the
8 because.

9 So, I ask the Board to compare those citations.

10 JUDGE HUDALLA: Ms. Bailey?

11 MS. BAILEY: Yes.

12 JUDGE HUDALLA: I just wanted to put a little finer point on this.
13 So just hypothetically, had Petitioner said something in the petition to the
14 effect that looking at the Tian teachings it would have been obvious to
15 downsample the images, I assume we wouldn't be having this discussion and
16 you wouldn't have this problem. It's more about the way it was posed in the
17 petition. Is that a fair statement?

18 MS. BAILEY: I think that is a fair statement, and I actually think that
19 Petitioner tried to make an obviousness ground in its Petitioner reply. We
20 have this in our briefing. I do think that's a fair statement. If they had made
21 an obviousness argument then we would have a different discussion here
22 today but, Your Honor, they didn't make an obviousness argument and now
23 they are resorting to an inherency finding.

24 And it beholds -- I represent the Petitioner on a regular basis. It is
25 beholden upon the Petitioner to set out their mapping with particularity. For
26 them to change and for the Board to allow them to change this to, well, it's

1 kind of obvious to do this, that completely would have changed how we
2 would have approached this particular proceeding and our arguments and the
3 evidence, and that's simply not what they argued, Your Honor.

4 JUDGE HUDALLA: Thank you.

5 MS. BAILEY: Just in closing on this particular issue, the mere fact
6 that the parties are straining to articulate a specific understanding of Tian's
7 evidence evidences Tian's ambiguities. We are left with no credible rebuttal
8 evidence from Petitioner. We're arguing over the grammar of a sentence.
9 We have conflicting opinions of experts. Petitioner's rebuttal evidence relies
10 on inferring teachings, and nothing in Tian precludes Tian from obtaining
11 preprocessed images from another source.

12 Petitioner's evidence is speculative, it's inferential, and, at best, in any
13 case, that Tian is ambiguous.

14 And if the art is ambiguous, then per the *GMG* case that we cite in our
15 briefing, the Board must find that Petitioner has not met its burden of proof
16 of unpatentability.

17 Before I move to the motivation to combine any further questions on
18 that, Your Honors? I welcome the questions so please ask them. All right.

19 Let's talk about motivation to combine. I want to deal with the
20 motivation to combine arguments for Claims 4, 11, and 18 first. There's two
21 motivation to combine arguments provided by Petitioner. The first is
22 regarding the resolution reduction to save processing resources.

23 The second motivation is regarding performing the head orientation
24 determination to allegedly increase the accuracy of the face recognition. I
25 probably won't get to that second argument or second motivation to combine
26 in this argument, so we'll rely on our briefing. I want to spend more of my

1 time on resolution reduction and the argument to allegedly save processing
2 resources.

3 There's several problems with this motivation. First, it fails to
4 properly weigh the advantages and disadvantages of the combination. The
5 Board should disregard Petitioner's continued argument that resolution
6 reduction is less computationally complex than head orientation
7 determination. That is an incorrect calculus. They keep on pushing it
8 because they don't have the evidence that I'm about to talk about. They don't
9 have the evidence to be able to compare.

10 But it is an incorrect calculus to simply say that resolution reduction
11 costs less computationally than head orientation determination. And the
12 reason why is because we do not know from Petitioner's evidence the cost
13 savings between head orientation determination for a full resolution image
14 versus a reduced resolution image.

15 We do not know the cost of performing resolution reduction. And
16 because we don't do those two values, we can't do the mathematical equation
17 to compare them and do an appropriate weighing of the advantages and
18 disadvantages to see if we actually would save processing resources.

19 The second problem with Petitioner's motivation is that they don't -- is
20 that they don't have any consideration of preprocessing costs. So, the
21 evidence of record shows that when resolution reduction is going to occur
22 there must be preprocessing performed on the image.

23 And this particular argument goes to whether there is a reasonable
24 expectation of success in the combination. If the skilled person would
25 understand that the image would be preprocessed prior to resolution
26 reduction so that the facial analysis could be performed, then that needs to

1 be a factor into the motivation to combine. And we cite the *Natera* case for
2 that, Your Honors.

3 It is un rebutted that preprocessing needs to be performed. In fact, Dr.
4 Doermann, Petitioner's expert, has multiple theses of writing confirming that
5 preprocessing before sub-sampling needs to be performed to eliminate
6 aliasing. I refer the Board to Exhibit 2014, page 14, and Exhibit 2015,
7 which is Dr. Doermann's own patent application stating this. This also
8 discusses --

9 JUDGE BAER: Ms. Bailey?

10 MS. BAILEY: Yes.

11 JUDGE BAER: Is your argument that the preprocessing makes the
12 operation more expensive or that the preprocessing means that the whole
13 thing won't work, the whole thing falls apart? There's no reasonable
14 expectation of success in that. But what I want to know is is the reasonable
15 expectation of success about it being more expensive or about it not working
16 at all?

17 MS. BAILEY: Thank you, Your Honors. Let me clarify. It's actually
18 both. So, our argument is that preprocessing needs to be performed to have
19 a reasonable expectation of success in the combination and that as soon as
20 preprocessing is performed that increases the overall processing. And then
21 that overall process, or excuse me, that that processing cost for doing the
22 preprocessing must be considered in the overall advantage or disadvantage
23 of whether we're actually saving any processing resources.

24 JUDGE BAER: But doesn't that run into the case law that says it
25 doesn't have to be the best way to do things? It just has to be a known way
26 to do things. And isn't the idea that you're going to get -- you're going to

1 have to do processing somewhere and there's some benefit, there's some
2 cost-benefit analysis that happens with how much processing you're going to
3 do, for example, and how much accuracy you get. And the point is that that
4 cost-benefit analysis was known so it's known to, kind of, go either way.
5 You don't have to have the best option. How did your argument square with
6 that case law?

7 MS. BAILEY: So first of all, Petitioner actually hasn't made the
8 argument to the extent that you just made it. They cite the case law but they
9 don't make the argument and they don't give us any evidence of what the
10 benefit, even if it's meager, what it would be. Nonetheless, even within that
11 case law you still have to have a reasonable expectation of success. That
12 case law is very well-founded and they haven't established that you would
13 have a viable image to process and to perform the facial analysis on without
14 doing preprocessing.

15 And so I actually want to take this and, kind of, step back and think
16 about it in terms of what really would motivate. We have a skilled person
17 going why. Would you reduce the -- did you have a question, Your Honor?
18 No? Okay.

19 The skilled person looking at this evidence and looking at this art,
20 why would they be motivated to intentionally reduce the resolution for
21 something that's not usually desirable? In other words, in advance of a facial
22 analysis why would you intentionally reduce the resolution?

23 And their response is to say processing resources. So the skilled
24 person is then sitting there going, okay, well, am I really going to save
25 processing resources because now I have to do an extra step in my process?

1 I have to reduce the resolution and I now am unsure. I mean, we don't have
2 the evidence of whether we're actually saving processing resources.

3 And so, with respect, for the Board to simply say, well, it may not be
4 the best option but it's an option, that's a generic case law cite without
5 actually looking at the evidence, which there's quite a lot now from Dr.
6 Saber on how the processing cost would actually not be saved.

7 Question, Your Honor?

8 JUDGE BAER: Thank you, Counsel.

9 JUDGE McMILLIN: If you look at --

10 MS. BAILEY: Yes.

11 JUDGE McMILLIN: I'm sorry. If you look at Petitioner's slide 22,
12 they purport to put up a whole list of the, if you will, the motivations to
13 combine that they've provided, and it is Petitioner's contention that most of
14 them are undisputed. And particularly, motivation number seven saves
15 processing resources is only one motivation of eight. Do you have a
16 response to that argument?

17 I read that argument from Petitioner as, well, okay, even if you're right
18 about the processing resources, say, processing resources motivation, we've
19 got all these other motivations and we still win.

20 MS. BAILEY: So, let's go through each of these motivations then.
21 First of all, several of them are not actually directed to reducing the
22 resolution. They're more of an omnibus discussion in the motivations to
23 combine section of the petition but the first one are similarly directed.

24 It's well-established law that simply because the prior art is directed to
25 a same field does not go to the motivation to combine so you can dismiss
26 number one.

1 Explicitly invites employing known head location and face
2 recognition software. That doesn't address the reduction of resolution so that
3 one doesn't get us anywhere.

4 I mean, I can continue on if you'd like, Your Honor, if this is helpful
5 to you?

6 JUDGE McMILLIN: Well, let's talk about number two, the explicitly
7 invites employing known head location and face recognition software. If the
8 reference says employing known head location and face recognition
9 software and Tian is a known head location and face recognition software,
10 and I know it isn't it, but if it does talk about how to do a known head
11 location and face recognition system, you know, why doesn't that one count?

12 MS. BAILEY: Well, two responses to that, Your Honor. First of all,
13 Tian it's only doing facial analysis and the reduction in the resolution is not
14 active. It is looking at already reduced resolution images. So Tian, and I
15 really want the Board to appreciate this if possible. Tian does not say let's
16 reduce the resolution of the images prior to facial analysis. It simply does
17 not teach that. It looks at --

18 JUDGE McMILLIN: What it says is -- I'm sorry for interrupting you.

19 MS. BAILEY: No, I'm --

20 JUDGE McMILLIN: What it says is, A, we analyze reduced
21 resolution images and we were still able to do head location, face location on
22 those reduced images. And again, why aren't those teachings enough?

23 MS. BAILEY: Because, look, I realize this is not normal oral
24 argument etiquette, but may I ask Your Honor a question back?

25 JUDGE McMILLIN: Sure, go ahead.

1 MS. BAILEY: So, would you agree that Tian is not choosing to
2 reduce the resolution of the image as part of performing its facial analysis
3 software? In other words, to get a good result from its facial analysis
4 software?

5 JUDGE McMILLIN: I don't know. It says you've got an original
6 image and we cut the resolution in half, we cut the resolution in half, we cut
7 the resolution in half, and we cut the resolution in half, and then we look to
8 see whether in that third or fourth cut could we still locate the head? And
9 the answer was yes --

10 MS. BAILEY: So --

11 JUDGE McMILLIN: -- 100 percent of the time.

12 MS. BAILEY: So, what Tian is doing is it's saying it recognizes some
13 images are going to be captured at a lower resolution so they're already
14 captured at a lower resolution these images that Tian --

15 JUDGE McMILLIN: I'm not sure. I'm not sure I agree with that. It
16 seems to say on page 5 and it seems to be the argument of Petitioner that all
17 the images were 640 by 480 pixel rates.

18 MS. BAILEY: But Tian -- let's get back to where we started this line
19 of questioning that Lu invites employing known head location and face
20 recognition software. This would be software to perform facial analysis.
21 Tian is not teaching that you would want to intentionally reduce the
22 resolution prior to performing facial analysis. It is an -- go ahead, Judge.

23 JUDGE McMILLIN: I'm not sure that's true. I think there's a
24 distinction clearly in the challenged patent between doing head location on a
25 reduced resolution image and doing facial recognition on a non-reduced
26 resolution image.

1 MS. BAILEY: So, let's talk about head orientation determination
2 alone, which is what is recited in Claim 4.

3 JUDGE McMILLIN: Thank you, yes.

4 MS. BAILEY: Sure. Tian still is not intentionally reducing the
5 resolution for the purpose of then doing head orientation to determination.
6 Tian is studying what happens when you start out with an image at lower
7 resolution, and I refer to the abstract that talks about images being captured
8 in real environments, images are often at low resolution. It's what I just
9 quoted from the abstract.

10 Your Honors, if I'm, and I mean this please respectfully, I think you're
11 reading into Tian that it is actively reducing the resolution so that it can then
12 perform facial analysis and that's incorrect. Tian recognizes that in real life
13 instances you're going to start with lower resolution images and so therefore
14 it is an academic paper that studies what that effect would be.

15 JUDGE McMILLIN: I think, and maybe it's me who has to apologize
16 this time that you're misreading what we took from Tian, and what we took
17 from Tian is it has a teaching of you can reduce the resolution of an image
18 by downsampling. And if you reduce the resolution you can still do head
19 location analysis and it'll work.

20 MS. BAILEY: Your Honor, you actually just said something in your
21 question that I think is very important. You started out your question saying
22 that Tian obtains images, and that's also in the institution decision and that's
23 the problem. Obtaining reduced resolution images does not satisfy Claim 4
24 because we do not have anything where we have an active resolution
25 reduction as part of audience measurement while the user is watching
26 television.

1 Tian does not have the system architecture. I'm sorry, go ahead, Your
2 Honor, please.

3 JUDGE McMILLIN: We get that from Claims 1, 9, and 16 that, you
4 know, we obtain the image according to the challenged claims; in what's
5 recited in those claims.

6 MS. BAILEY: Are you reading -- just out of curiosity, Your Honor,
7 Claim 1, the limitation that begins, "Obtain content identifying data." Is that
8 where you read in the obtain images? Then if you're looking at the patent,
9 it's Column 15, Line 22, I think.

10 JUDGE McMILLIN: And so, if you look at starting at about Line 30,
11 "the sequence of images obtained by a camera while the media content
12 corresponding to the content identifying data is presented by the television."

13 MS. BAILEY: Okay. So --

14 JUDGE McMILLIN: That's at least one place it says where that
15 sequence of images is obtained.

16 MS. BAILEY: That's different than obtaining a reduced resolution
17 image, which is what Your Honors put into the institution decision, which is,
18 respectfully, incorrect. The way that Claims 1 and 4 work together is that
19 this user is -- or someone is sitting on their couch watching television.
20 There's going to be a sequence of images captured, obtained. Then one of
21 those images is going to have the resolution reduced per Claim 4 and then
22 the head orientation determination is done.

23 But obtaining reduced resolution images from another source is not
24 what is claimed and does not meet the claims.

25 JUDGE McMILLIN: According to the examples in the patent, at least
26 the way I read it, is you're always obtaining high resolution images. Your

1 camera obtains high resolution images so the original images that you have
2 are at high resolution and then they reduce the resolution by this pixel
3 binning process.

4 And so now you've got a reduced resolution image and then you do
5 the head orientation on that reduced resolution image. And so, the images
6 you obtain, like the original image that's disclosed in Tian, is a higher
7 resolution image.

8 MS. BAILEY: That is not what Tian is doing. Though. Tian at best
9 is obtaining the reduced resolution images from a different source. Even if
10 we were to concede that Tian, which we don't, but let's just assume arguendo
11 that Tian the academic pulls in the original resolution images and then
12 preprocesses all the images to obtain reduced resolution images. That still
13 doesn't satisfy the claim because the images are -- the reduced resolution
14 images are still pre-reduced.

15 And it doesn't satisfy the claim because the image for which the
16 reduced resolution has to be one of the sequence of images that is taken
17 while the user is watching the television.

18 And then Claim 5 comes in and says the second image has to have
19 face recognition performed. If you were to preprocess full resolution images
20 into a reduced resolution and then at some time later perform facial analysis
21 on them, you would not be able to satisfy. That system does not satisfy
22 Claims 1 and 4 and 5 collectively.

23 JUDGE McMILLIN: But if the element we're looking for is reduce a
24 resolution of an image, doesn't Tian teach reduce a resolution of an image?

25 MS. BAILEY: No. It does not teach active -- I'm so sorry, Your
26 Honor. I --

1 JUDGE McMILLIN: No, go ahead. I'm sorry.

2 MS. BAILEY: I thought you were done.

3 JUDGE McMILLIN: No.

4 MS. BAILEY: Please continue.

5 JUDGE McMILLIN: Oh, no, I was done.

6 MS. BAILEY: I'm sorry. The video makes it difficult. I did not
7 mean to speak over you. No. It is our position that Tian does not teach
8 active reduction as part of the head orientation determination and it certainly
9 wouldn't do it in the combination in the media environment that is claimed.

10 JUDGE McMILLIN: Okay. I understand your argument. Thanks.

11 MS. BAILEY: Okay. I see that I'm getting close to my opening time.
12 I do want to move to Claim 5.

13 JUDGE McMILLIN: Go ahead. You've got a couple minutes left.

14 MS. BAILEY: Okay. And I may go ahead and move into my rebuttal
15 period, Your Honor, just so that we can discuss Claim 5 real quickly. This is
16 at our DX-18. You can tell that I'm not really following our slides.

17 So, but I do want to talk about how Tian does not teach Claim 5, and
18 I've got a very strong opinion on this and bear with me while I explain.

19 Tian's tracking method is not the same process as recited in Claim 5.

20 Petitioner argues that because Tian's tracking method has the same result as
21 the claimed invention under certain circumstances then Tian's tracking
22 method teaches Claim 5, but that is incorrect because the claims recite
23 processing steps that are different from Tian.

24 Claim 5 recites locating a head in a first image. The face recognition
25 is then performed on the second image using the region corresponding to
26 where the head was located in the first image,. So, that means that in the

1 claimed invention if the head moves between images one and two, the
2 claimed system is not going to accurately determine the face recognition for
3 image two because it's using the same location in image two where the head
4 was recognized in image one.

5 I just want to pause there, make sure Your Honors are following that
6 because, frankly, it took me a little bit to understand it when I first picked up
7 this patent.

8 JUDGE McMILLIN: Isn't it true of every system if you locate the
9 head in a first image and then the head moves and then you try to perform
10 facial recognition on where the head was but now it's moved, the head's not
11 there anymore. You can't do facial recognition on it.

12 MS. BAILEY: But that's not what Tian's doing. Tian doesn't do that.
13 Let me explain what Tian does then. And you said every system, I don't
14 know honestly how to answer that, Your Honors. I only know how to
15 answer it with respect to what the record has, which is Tian and what is
16 being used.

17 JUDGE McMILLIN: Well, my question was, yeah, that analysis
18 applies to Tian but also doesn't it apply to the claimed system? And so, if in
19 the claimed system you locate a head in the first image and the head's not
20 there for the second image, you can't do facial recognition on it.

21 MS. BAILEY: Correct. And to be clear, the issue with Claim 5 is not
22 whether the process could or could not be performed but you are exactly
23 right, Your Honor, that in the recited claims if the head moves between
24 frame one and frame two, facial recognition isn't going to be performed.

25 And that's because the system is for an audience measurement system,
26 is the claims are to an audience measurement system. It's assuming the

1 person is sitting on their couch and they're not moving a whole lot between
2 frames, kind of, like how I sit on my couch and I'm not moving. So, the
3 system, kind of, assumes that and that's why it's willing to look at where the
4 head was located in frame one because it assumes there's not going to be
5 much movement.

6 That is not how Tian's tracking method works and this is the big
7 difference and why Claim 5 is not taught by Tian. In Tian, the head location
8 is tracked image to image so the head is going to be located in the image one
9 and then for image two the system is going to start locating the head using
10 the region from image one. But then because it's tracking it's going to see
11 where the head moved between image one and image two.

12 So if the head went from image one to image two 10 centimeters over
13 in the frame of view, it's going to find where the head is located in image
14 two and do the face recognition for the new location of the head in image
15 two. That is different than Claim 5.

16 So, what that means in Tian is that if the head does not move between
17 frame one and frame two, then Tian will have the same results as Claim 5.
18 But Tian performs a different process than Claim 5. The Board must give
19 the claimed algorithm of Claim 5 patentable weight. It is legally improper to
20 determine patentability or unpatentability based on Tian's tracking algorithm
21 having the same claim result but via a different algorithm.

22 We do not grant patents simply because the claimed invention has a
23 different result than the prior art, otherwise all my prosecution clients would
24 love me as soon as I could show that we have a different result because then
25 we could get a patent. But that's not the law.

1 We also do not invalidate patents simply because the claimed
2 invention has the same result as the prior art under certain circumstances.
3 These are two different algorithms and the different algorithm that's claimed
4 in Claim 5 has to be given patentable weight, Your Honor.

5 JUDGE McMILLIN: And what specific language in Claim 5 are you
6 referring to?

7 MS. BAILEY: Yes, Your Honor. It is, give me one second, it is the
8 corresponding to a location of the head in the reduced resolution image
9 which is the first image that we've been talking about. So in Tian, it does
10 not generate the facial signature in the second image corresponding to a
11 location of the head in the first image. It generates the facial signature
12 corresponding to a location of the head in the second image because it tracks
13 the head location frame-to-frame.

14 Are there any questions, Your Honors?

15 JUDGE McMILLIN: Well, if the head doesn't move does Tian meet
16 that claim limitation? If the head doesn't move is where it generates the
17 facial signature that region doesn't correspond to location of the head in the
18 reduced resolution image?

19 MS. BAILEY: Two responses, Your Honor. Claim 5 recites a
20 processor circuitry to do this, so it has to be programmed to perform that.
21 What you just asked, Your Honor, is if Tian has the same result does it meet
22 the claim limitation? And that is legally incorrect, Your Honor.

23 The question is not whether Tian has the same result if the head
24 moves or not. The question is whether Tian has the same claimed algorithm
25 of a processor circuitry to do that functionality and it does not.

1 I'm getting low on time. I'd like to bring up a couple of other issues if
2 possible? Okay, great.

3 JUDGE McMILLIN: Well, it's your time.

4 MS. BAILEY: Okay. I'm just going to run through analogous art.
5 First of all, they did not -- Petitioner did not present a reasonably pertinent
6 analysis so we're just left with field of endeavor, and this is on our DX-13 by
7 the way, Your Honor.

8 Petitioner contends that field of endeavor is media analysis. They rely
9 on Dr. Doermann's opinion in Exhibit 1003, paragraph 46. Petitioner never
10 explains why the field of endeavor is media analysis. They just say it.

11 The field of the '243 patent, however, is audience measurement.
12 Petitioner's rebuttal is to comment on Dr. Saber's credentials, but the expert's
13 credentials don't have anything to do with the analogous art analysis. So,
14 our situation here is we have no showing of why the patent is in the
15 identified field of media analysis. We have no showing of how the reference
16 is in the identified field of media analysis, and we have no showing of
17 analogous art.

18 Additionally, Dr. Doermann opines that media analysis includes
19 analysis of audio signals and image signals. There's a conjunctive there.
20 Under this definition, Tian also doesn't meet the field because it doesn't
21 address audio signals.

22 I'm going to move on if there aren't any questions.

23 JUDGE McMILLIN: Well, what if they're wrong? What if it's not
24 media analysis? Can we make our own determination as to what the field of
25 the patent is and what the analogous art is?

1 MS. BAILEY: I don't believe at this point at oral argument without
2 allowing the parties to brief on it that the Board has the authority to do that.

3 JUDGE McMILLIN: Go ahead. Sorry I interrupted you.

4 MS. BAILEY: No. No, of course, I don't mind whatsoever. Finally,
5 I want to talk about the no motivation to combine of what we, kind of, call
6 the internal embodiments with respect to Lu-577. I find this an interesting
7 academic and legal issue. So, Lu-577 incorporates two -- it actually
8 incorporates a lot of references. The petition's mapping relies on two
9 references. I want to focus on the Lert incorporation.

10 The Board in their institution decision at page 32 says that they
11 consider Lert in combination with Lu-577 to be a single embodiment. And
12 the reason that we got here, I kind of jumped into this argument, is that the
13 law is very clear that if there is a combination of embodiments within a
14 single reference there needs to be a motivation to combine. There's lots of
15 case law or law on that.

16 The Board's position in its institution decision was, well, this
17 incorporation by reference is to a single embodiment. So, there actually
18 does not need to be a motivation to combine and said that our position was
19 legally and factually incorrect. And I appreciate where the Board is coming
20 from, but I would like to point out that Lert and the use of Lert actually is a
21 different embodiment.

22 The petition's mapping for Claim 1 using Lu-577 as a base reference
23 relies on what's called the first embodiment in Lu. Lu names this
24 embodiment first embodiment, second embodiment. And Lu zeroes --
25 excuse me. Lert is incorporated for the audio content that is in the claims.

1 Lu-577's first embodiment talks about audio content. It talks about it at
2 paragraphs 37 through 38 of Lu-577.

3 But that discussion of audio content does not mention Lert. Instead,
4 Lert is discussed in Lu-577 in the background to distinguish the old because
5 Lert's method is the old way of doing things under the analog method.
6 So, Lu-577 is saying Lert is the old way of doing audio content and then
7 goes on to talk about its own embodiment of its first embodiment using
8 audio content that is not Lert. So, there's actually two embodiments here
9 with respect to what the Petitioner has mapped. There's the Lu-577 first
10 embodiment, which is their, kind of, primary embodiment for the mapping,
11 and then there's Lert talked about in the background. There should have
12 been a motivation to combine.

13 With that, I will save my remaining time for rebuttal.

14 JUDGE McMILLIN: Okay. You have nine minutes left.

15 MS. BAILEY: Thank you, Your Honor.

16 JUDGE McMILLIN: Thank you.

17 Petitioner, you in contrast have lots of time left, 37 minutes.

18 MR. BATTS: Your Honor, I'm just going to get a glass of water here
19 real quick and then start.

20 JUDGE McMILLIN: Okay, thanks.

21 MR. BATTS: I certainly hope we do not need to take up the full
22 amount of time that we have available. I'm going to try to give organized
23 thoughts for the portion that I'm going to address and then I'll let my
24 colleague address the remaining issues.

25 So, the two higher level issues that I want to address is their
26 arguments considering on the teaching of Tian and whether Tian has that

1 teaching and then their arguments about motivation to combine, I think,
2 specifically about preprocessing arguments that they had, including the anti-
3 aliasing.

4 So, I want to start with on the reducing the resolution teaching issue.
5 Patent Owner's counsel made -- a number of different times she -- I tried to
6 write down the language that she used. She said, I think, well-recognized or
7 that it was the usual way, kind of, attorney argument that somehow up until
8 the '243 patent no one had considered using a lower resolution image. And I
9 think there's a number of flaws with that argument that really wasn't made
10 with any sort of evidence. And I do want to point to the evidence that shows
11 the contrary.

12 So, first off, Tian itself is clearly teaching using lower resolution
13 images and is prior art to the '243. So, to somehow say that in the field at
14 the time people didn't know how to do this until the '243 came around, that's
15 exactly why we use Tian to show people looked at using lower resolution
16 images for this purpose. And we didn't stop there.

17 We included other evidence in our petition and declaration that
18 showed that other people in the art were aware of this as well. So, I want to
19 point -- if we go to slide 80 real quick, it's the reason we have some time, so
20 many slides, you never know what comes up, so going to slide 80, we also
21 included Exhibit 1014 in our opening petition and declaration, which was
22 another prior art reference to show that they were teaching subsampling
23 images before performing face detection.

24 Why? Well, well there's the quote, "To avoid a complete higher
25 resolution integral image and to reduce the processing overhead for face
26 detection." So, this -- I think there's a false narrative here that Patent

1 Owner's counsel was attempting of, like, well, this -- nobody knew about
2 this. Nobody had this idea or this concept wasn't known. Well, first, that
3 was made without any evidence and I think the evidence in the record
4 correctly rebuts that point.

5 She also made a number of statements, I didn't get quite the exact
6 language, but I think she tried to say something about the claims require
7 active or actively, and I want to address that language as well for claim -- if
8 we go to slide 76. That it somehow has to be happening during the media
9 content exposure. So, we've briefed this. I'm not going to be repetitive on
10 our briefing. We explained why that isn't the case in our briefing. We have
11 the citations here to our briefing.

12 But I did want to point out that on slide 77 their own expert directly
13 rebutted her argument here. He specifically said that that doesn't need to
14 occur for the claim to be met, so her argument about some, sort of, active
15 occurrence being required by the claim is not only incorrect based on the
16 claim language itself as we've briefed, but also based upon her own expert's
17 testimony.

18 I think the one of the main issues here is there's a false logic going on
19 here with Patent Owner's counsel regarding, you know, we've mentioned
20 how the Patent Owner POR, kind of, shifted to the surreply from there's no
21 teaching of reducing the resolution to, well, now it's ambiguous. There's
22 ambiguity in the teaching.

23 And I think there's a difference here between ambiguity and a short
24 teaching. You know, I had another case went to the Fed Circuit, got
25 affirmed. It was a single sentence in a reference. The reference was, like,

1 80 pages long. That doesn't -- that's not the relevant inquiry of how long the
2 teaching needs to be. It's whether there's a clear teaching or not.

3 We have the sentence in Tian and then we didn't stop with the
4 sentence because I felt like if you don't respond to a Patent Owner's
5 argument and address it in reply and point out to other evidence that shows
6 that we're correct, then when you're asked, well, why didn't you do
7 something more? So, we have the plain teaching. There's nothing
8 ambiguous about it. There's no ambiguity. They just keep on saying it's
9 ambiguous because it's a sentence. That's not the question.

10 And then they didn't address in their presentation, for example, we
11 had Dr. Doermann's factual testimony about what the database did have or
12 didn't have at the time. She just skirted over that issue. She says, oh, well,
13 you looked at the database in 2024? Yes. He looked at the database in
14 2024. And as we noted in our slides, and I can go back to our slides again,
15 that we did actually have the specific testimony from Doermann which is
16 consistent with the papers that are saying this is the case.

17 So, I feel like they're inverting. They're saying, well, it's your burden
18 to show this. The plain teaching shows this. And then not only did we show
19 the plain teaching but we blew up their arguments about, well, it's not a plain
20 teaching and somehow it's ambiguous by having other evidence, including
21 our expert's factual testimony and the other portions of Tian that are
22 consistent with us whether our downsample versus the 3.1 table section
23 where it says these were the images, the original images.

24 So, I think we've more than satisfied our burden. I don't -- I still don't
25 understand this argument how we're somehow arguing inherency or shifting
26 our theory. It's an obviousness theory. We're pointing to Tian's teachings

1 for certain aspects for teaching, pointing to Nielsen's or Lu's teachings for
2 other aspects. I don't think there's been any shift in position on this issue.

3 I did want to address *GMG* just briefly. It was cited in their, I believe,
4 their surreply and, you know, if you go to page -- this is a PTAB decision,
5 and if you go to page 22 of that decision when you're reviewing their
6 arguments, what happened in that proceeding was that Petitioner and their
7 expert were arguing about what disclosure of state information would
8 include. So, you had this appliance that was providing information about
9 what was happening in the appliance.

10 And it goes on to say Petitioner and the expert are "presenting this
11 meaning of metadata as being broad and nonlimiting in scope and thus
12 necessarily includes an indication of an appliance's communication
13 capability," so an inherency argument. They're saying, well, it's so broad it's
14 not limited. It has to include this other information.

15 And then as the decision noted, and as it says, "As Patent Owner
16 observes, however, Lee does not provide explicit examples of state
17 information that seemingly dictate the type of information that is state
18 information, and it's not so expansive. So, the reference itself had
19 counterexamples to this broad interpretation that the Petitioner is taking, so I
20 don't view that case law as being applicable to what we're dealing with here.

21 And if there are no questions on the reducing of resolution I wanted to
22 switch over to the motivation to combine and anti-aliasing arguments/

23 JUDGE McMILLIN: There are no questions.

24 MR. BATTIS: Okay. So, I felt like on this one it was a little bit of
25 ships passing in the night. I'm normally tested at oral argument. I have my
26 evidence. I put it up on the slides. They go back to my slides and they say

1 what's wrong with it or what's missing or what's misinterpreted or
2 something.

3 She made a broad statement again without any citations to evidence
4 about preprocessing is required, and there's no support for that statement.
5 And specifically, we provided in Exhibit 1034, paragraph 9, Dr. Doermann
6 testified that preprocessing wasn't required. And she omitted that point
7 which, again, is evidence in the proceeding.

8 I'd like to go to slide 36 on this briefly. So, there is this argument
9 about anti-aliasing or preprocessing being required. We provided in our
10 opening argument this slide that explained the issue and how they were
11 taking inconsistent positions with their expert. We heard no response as to
12 the inconsistent positions that Patent Owner is arguing from their own
13 expert's statements. And that also falls onto slides 37 and then 38 where I
14 spent the time to walk through these slides and explain, well, their argument
15 about anti-aliasing doesn't match up because the challenged claims don't
16 require it, and Tian doesn't do it. And there was no response to that.

17 Instead, it was just this argument, well, it has to be done, which is
18 attorney argument that's rebutted by the evidence that we've specifically
19 cited to for this point.

20 And then the other argument in this section, which was a flavor of that
21 argument, I think, was this you didn't perform the right comparison. You
22 didn't perform the necessary analysis. And I don't know that I need to repeat
23 myself but I would just point back to slides 26 through 32 that I walked
24 through where we provided Dr. Doermann's opening declaration and
25 explanation about the benefits and the comparison as well as then his reply

1 decoration on slide 28, paragraph 6. And then I walked through the
2 example.

3 There was no response to the example about removing one out of, you
4 know, using only one out of four pixels in the reduction calculations that are
5 necessary and the benefits for that. So, again, it seems like the evidence that
6 was presented in the papers wasn't addressed in argument.

7 I do think a lot of times you want us to end on all sorts of issues that
8 are, like, hey, it doesn't matter and I think I have to go there on slide 22. At
9 the end of the day, as I think Your Honors noted in the questioning, we still
10 have multiple other motivations to combine and arguments that they never
11 addressed or that they abandoned their arguments about during the briefing.
12 So, those are separate bases for which to find a motivation to combine here
13 that are sufficient for purposes of the final written decision.

14 And unless there's any other questions, I'll turn it over to my
15 colleague. Thank you.

16 JUDGE McMILLIN: Thank you, Mr. Batts.

17 MS. BAILEY: Thank you -- oh, I'm so sorry. I apologize. I thought
18 it was my turn. I'm sorry.

19 JUDGE McMILLIN: Go ahead, Mr. Qiu. That's okay, Ms. Bailey.

20 MR. QIU: Thank you, Your Honor. And I would first want to
21 address counsel's argument regarding Claim 5. So, counsel suggests that the
22 claim covers a certain algorithm while the teachings from Tian that we are
23 relying on teaches another algorithm. Let's compare those two algorithms. I
24 believe what counsel characterizes the claim to cover is that you detect
25 where the head is in your first image. You have to not confirm whether the
26 head is at the same place in the second image. You assume that's the case.

1 And then you apply face recognition in that region in the second image.
2 And Tian's face tracking teaches a slightly different approach, which is you
3 detect where the head is in the first image, you confirm it is at the same
4 place in the second image, and then you perform face recognition in that
5 region.

6 So, the only difference between those two algorithms is the
7 confirmation step. Basically, go through the second image and try to detect
8 changes to facial features. And if you detect none, you confirm it is at the
9 same place and it is safe for you to apply face recognition on that region.

10 This is what we talked about as the negative limitation that Patent
11 Owner is trying to import here. So, let's go to slide, sorry, sorry, I'm just
12 looking for that slide, Your Honors. It is slide 61 of Petitioner's deck. So,
13 the issue that Patent Owner is picking on the teaching is not that it does not
14 detect a head in the first image or that it does not perform facial recognition
15 on corresponding region in the second image. It's that the combination
16 includes an additional step of confirming that the head stays at the same
17 place.

18 And there's nothing in the claim that excludes such a step. The claim,
19 which is shown on slide 60, requires that the region where facial recognition
20 is performed corresponds to the location of the head in the first image.
21 Under most algorithms this correspondence exists, and they both meet the
22 claim. So, we cannot limit the claim to a certain algorithm when the claim
23 covers additional algorithms, and this is the case here. The claims -- Tian's
24 teachings certainly fall within the scope of the claims.

25 And then let's go to slide 66 of Petitioner deck. There's a clear case
26 law which Patent Owner does not dispute that prior teachings that sometimes

1 meet the claim limitations is sufficient to show obviousness. And this is the
2 case when the face is detected it could be at the same place, is confirmed to
3 be there, we can perform facial recognition there.

4 So, this is my response about Claim 5 and after this, I would like to
5 briefly address the field of endeavor issue or analogous art issue, unless
6 Your Honors have questions.

7 JUDGE McMILLIN: We don't. Go ahead, please.

8 MR. QIU: Okay, thank you. So, regarding analogous art at first we
9 want to know that Patent Owner is making a new argument in this oral
10 hearing that Tian does not fall in the field of media analysis. My
11 understanding is this was not presented even in the surreply. And so -- and
12 this argument that doesn't really make sense. So, media analysis includes
13 analysis of different types of media, for example, audio signal is a type of
14 media, image signal is a type of media, and I believe there's no dispute on
15 that.

16 But so Tian undisputedly analyzes images, which is a type of media,
17 so it is nonsensical to argue that because Tian analyzes one type of media
18 but does not analyze another type of media it is not directed to media
19 analysis.

20 I also want to address Patent Owner's field of endeavor of audience
21 measurement. Please go to slide 69 of Petitioner's deck. So, Patent Owner
22 argues or counsel argues that the field of endeavor and the definition
23 qualifications of a POSITA are different concepts. Yes they are different
24 concepts but they are closely related to each other.

25 So here, Dr. Saber in explaining that why he was a POSITA discusses
26 his experience in media analysis and explained that the field of the '243

1 patent includes areas such as digital image video processing o\er computer
2 vision, which are all part of media analysis.

3 Let's go to the next slide, slide 70. Dr. Saber also testified that he had
4 no experience in audience management, but he has knowledge in the field of
5 the '243 patent such as image processing. And this knowledge allows him to
6 testify about audience measurement because it is an application of image
7 processing. So, this is very clear based on Dr. Saber's own admissions.

8 Image analysis is the field of endeavor here and audience
9 measurement is just a special application in that field. A POSITA would
10 look into art in the field of media analysis when working on special
11 applications such as audience measurement.

12 And next I would like to briefly address the incorporation by
13 reference issue, unless you have questions about the last topic?

14 JUDGE McMILLIN: Please, go ahead.

15 MR. QIU: Okay, thank you. So, again, as an initial matter I want to
16 point out that in the surreply Patent Owner did not dispute that the teachings
17 of Lu-000 and Lert were incorporated in the same embodiment of Lu-577,
18 and it is on this hearing that Patent Owner argued for the first time that Lert
19 is not part of that embodiment.

20 And also regarding that argument, let's first go to slide 71 to look at
21 this. So, this is the argument that was made in the reply of Petitioner. We
22 discussed that paragraph 39 incorporates Lu-000's facial analysis and
23 paragraph 40 incorporates Lert's audio signature extraction method. So here,
24 Patent Owner points to paragraph 37 as discussing analysis of audio signals
25 and they argue that this paragraph does not mention Lert. And that is true.

1 So, paragraph 37 is not something that Petitioner relies on. Paragraph
2 37 teaches you one method of identifying the television program using audio
3 signals. And then what's important is that paragraph 40 teaches that Lert's
4 characteristic signature-based approach can be used instead of the approach
5 in paragraph 37. So, the first embodiment of Lu-577 includes two
6 alternative approaches of identifying the TV program and Lert's approach
7 that is one of them. It is in paragraph 4.

8 And Petitioner never relies on both of those approaches throughout
9 the entire petition. Petitioner relies on Lert's approach of identifying the TV
10 program based on audio signatures. So, there's no combination of those
11 alternative approaches and there's no motivation to combine needed in this
12 situation.

13 Counsel also argued that Lert was mentioned in the background
14 section. The background section, paragraph 3, is clear that one possible
15 approach to identify the TV program is based on audio signatures, and
16 paragraph 40 is clear that this audio signature-based approach is used for this
17 first embodiment.

18 I also want to point out that since counsel mentioned there was a shift
19 between analog and digital solutions and they disclosed Lert as a past
20 solution, this is purely attorney argument. However, Petitioner does have
21 expert opinion that there's no indication in Lu-577 that talks -- that shows
22 that Lert's approach is related to this transition from analog to digital. And
23 there's no disparagement of Lert's approach in the entirety of Lu-577 and
24 Patent Owner really doesn't have anything to balance this. And Dr.
25 Doermann's testimony is in slide 72 of the petition.

1 And so, here are all my responses for these issues. Unless Your
2 Honors have further questions, I think that's the end of our rebuttal.

3 JUDGE McMILLIN: Thank you Mr. Qiu, very good.

4 Now, I think it's your turn, Ms. Bailey.

5 MS. BAILEY: Thank you, Your Honor. Okay. I'd like to start with
6 Claim 5 and the discussion. Respectfully, I think that Petitioner is bringing
7 in a new argument with respect to how Tian should be read on its tracking.

8 It's saying that if Tian, that if I understand correctly, that Tian
9 confirms that the head is in the same location as the first image and then
10 takes the image or does the facial recognition relative to the first image. I
11 don't believe that that opinion is in the record, Your Honor. I believe this
12 whole confirmation concept is new and newly presented, and I would
13 disagree that that is what Tian does.

14 In fact, it doesn't actually make sense to do it that way. The whole
15 point of Tian's tracking is that if you were, like, following a head from
16 frame-to-frame you would want to be able to track it as it moves from
17 frame-to-frame. So, in the second frame it's going to newly locate it. In the
18 third frame it's going to newly locate it and so on and so forth. So, that
19 means -- go ahead, Your Honor.

20 JUDGE McMILLIN: I understand the argument differently that Tian
21 teaches that you determine the head location in a first image.

22 MS. BAILEY: Right.

23 JUDGE McMILLIN: In the second image you confirm the head
24 location and then you do your facial recognition on the region where you
25 found the head in the first image, and that I understand their argument is the

1 fact that you confirm that the head is there doesn't change the fact that your
2 analysis is done on the region where you found the head in the first image.

3 MS. BAILEY: So, I disagree, and Dr. Saber has opinion testimony on
4 this that that is what Tian is doing. And I do not believe that Dr. Doermann
5 has that opinion. Dr. Doermann, and I want to correct, it's not the
6 confirmation per se. That's what's being brought up new. It's that the facial
7 recognition is being done on the portion of the region of the first image.
8 Tian does not do that in its tracking method.

9 Respectfully, Your Honors, they're just making that up. Tian does not
10 do that. Dr. Doermann did not opine that, and that is the difference in the
11 claims. They cannot point to it. I do not see anything in Tian that says that
12 it does the facial recognition. When it does the tracking it does the facial
13 recognition on the first image region.

14 JUDGE McMILLIN: Okay. Well, we'll have to go back and look at
15 Tian and see what it says.

16 MS. BAILEY: Yes, Your Honor, I understand.

17 JUDGE McMILLIN: Go ahead, please.

18 MS. BAILEY: Yes. Just to make sure the record is clear, our
19 position is that Tian does its facial recognition on where the head is in the
20 second frame. So, if the head has moved or whether it hasn't moved, the
21 facial recognition is still performed on where the head is located in the
22 second frame, not where the head was located from the first frame.

23 I also want to note, Petitioner has said several times that we have
24 abandoned arguments. So that it is clear, including for appeal, we have not
25 abandoned any arguments. If we have chosen not to respond to an argument

1 in a surreply that does not mean that it should be taken as that we have
2 abandoned it.

3 And I also want to note for the record that we do not present the
4 claims as rising and falling together.

5 With respect to the motivation to combine, I hadn't mentioned this,
6 but that Dr. Doermann's opinions rely on the factual basis in paragraph 69 of
7 his declaration and relies on Exhibits 1013 through 1015. And let me take
8 an opportunity to go through these even though our briefing discusses in
9 detail. I'll refer the Board to Exhibit 2020, which is Dr. Saber opining on
10 this, paragraph 44, 50, 51, and 52.

11 Exhibit 1013 uses a head orientation determination method that is
12 computationally expensive and not for real-time use, so it's not an applicable
13 reference.

14 Exhibit 1014, which counsel brought up on rebuttal, actually uses a
15 special purpose camera, a dedicated hardware to perform its subsampling, so
16 therefore it is going to have fewer processing resources. But interestingly,
17 the facial recognition and the facial analysis is actually performed on the full
18 resolution image, even though the lower resolution images are available.

19 So, even Exhibit 1014 does not indicate. It would actually dissuade
20 the skilled person from intentionally reducing the resolution prior to head
21 orientation determination. But again, it also is not a helpful factual basis for
22 the opinion because it uses special purpose hardware.

23 And then since we're talking about all of the Exhibits, Exhibit 1015 is
24 related to color saturation and so that is irrelevant to the issues here.

25 Then I want to bring up the preprocessing that was discussed. I
26 believe counsel said that this is a new argument. It is not. I refer the Board

1 to our surreply and our Patent Owner response and also Patent Owner
2 response pages 22 through 23. And we also have it in the surreply and then
3 in Exhibit 2020, paragraphs 20 through 21 and 37 through 39 and 41 through
4 43. So, this is actually a discussion, an issue that's been discussed quite at
5 length.

6 Counsel also made several comments regarding inconsistent opinions
7 of Dr. Saber. There's several quotations of Dr. Saber's deposition throughout
8 counsel's slides and each one I very much encourage the Board to go review
9 each of these deposition quotations because counsel is selectively cutting off
10 and not framing the entirety and mischaracterizing Dr. Saber's testimony. I
11 actually went through each of these myself and the reason why I didn't spend
12 time on them because it's clear that they don't support the positions that
13 counsel is proffering. He has not made inconsistent statements.

14 And I'll just, specifically because they called it out, their slide 77
15 where they have yes, there's an entire paragraph that follows that that shows
16 that Dr. Saber is not agreeing with what their question was or their position.

17 Finally, I want to talk about subsampling because that's the only
18 evidence that's left that even closely gets to supporting their saving
19 processing resources. And I want to mention that because they rely on
20 subsampling and they say you could pick one out of every four pixels, which
21 means you'd have 25 percent of the pixels left so that's going to reduce the
22 resolution by quite a bit if you have 25 percent left.

23 That then calls into question whether it is viable to then do head
24 orientation determination and feature tracking. And actually, Tian tells us it
25 is not viable if you reduce the resolution by that much. If you look at Table
26 3, Line G1 of Tian at the resolution of 36 by 48 it says no. In other words,

1 that it can't do the feature tracking that is required. And that feature
2 tracking, we know G1 is feature tracking because the caption to Table 3
3 says, "Do you want to do feature tracking?" That's the feature tracking that's
4 recited and relied on for Claim 5.

5 So, we -- so what Petitioner is proposing is to reduce the resolution to
6 a point where Claim 5 per Tian could no longer be performed. So again,
7 they're suggesting a modification in order to make their, kind of, hindsight
8 modification work. They're suggesting a modification that would not save
9 processing resources and end up with an image that is not viable for doing
10 the very thing that the claims require.

11 JUDGE McMILLIN: You ought to wrap up, Ms. Bailey.

12 MS. BAILEY: Okay.

13 JUDGE McMILLIN: We've been liberal in our granting of time.

14 MS. BAILEY: All right. Well, thank you, Your Honors. I have
15 nothing further. I very much appreciate your time.

16 JUDGE McMILLIN: This oral argument is closed. We'll take the
17 case under consideration and our decision will issue in due course. The
18 record is closed.

19 (Whereupon, the proceedings at 3:11 p.m. were concluded.)

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