UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,	)	
	)	
Petitioner,	)	IPR2023-01172
	)	
vs.	)	IPR2023-01173
	)	
AUTONOMOUS DEVICES, LLC,	)	U.S. Patent
	)	11,055,583
Patent Owner.	)	
	)	

Deposition of ELI SABER, PH.D., taken in the above-captioned cause, remotely via Zoom, before Rachel F. Gard, CSR, CCR, RPR, CRR, Notary Public, commencing at the hour of 10:00 a.m. Eastern on Friday, June 21, 2024.

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TESLA 1011
Tesla, Inc. v. Autonomous Devices LLC
IPR2023-01172

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E X H I B I T S

EXHIBIT	REFERRED TO	PAGE
Number 1001	U.S. Patent 11,055,583	8
Number 1005	Grotmol reference	8
Number 1007	Hickman reference	8
Number 1009	Hoffman reference	8
Number 2007	Declaration of Eli Saber, Ph.D.	8

(Witness sworn.)

WHEREUPON:

ELI SABER, PH.D.,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

CROSS-EXAMINATION

BY MR. STEPHENS:

Q Welcome back, Dr. Saber. As I just noted offline, my name is Nick Stephens. I'm an attorney with Fish & Richardson, and I'll be taking your deposition today on behalf of petitioner, Tesla Inc.

MR. STEPHENS: Would counsel for patent owner like to make their appearance?

MR. McCOMMAS: My name is Stuart McCommas with the law firm McKool Smith, and I represent Autonomous Devices, the patent owner, in the case. And with me today is also Arvind Jairam, my colleague.

MR. STEPHENS: We're here today regarding the IPR proceedings identified as IPR2023-01172 and IPR2023-00173 involving the '583 patent.

Q Do you understand that, Dr. Saber?

A I think you misspelled the last one. It's 01173, not 00.

Q Thank you.

A If I heard you correctly, I thought I heard a 00.

Q Yes, that's correct. So the second proceeding is IPR2023-01173.

A That is correct.

Q Thank you. This deposition is being transcribed today.

Do you understand that?

A I do.

Q To ensure a clean record, I'll aim not to interrupt while you're providing your answers. I ask you do the same as well while I'm providing the questions.

A I will do that.

Q If you need a break at any time during the deposition, please feel free to let me know. But in general, I'll aim to take a break every hour or so.

Does that sound okay?

A That sounds great.

Q Great.

Can you please state your full name.

A Eli Saber.

Q And where is your city of residence, Dr. Saber?

A I live in Webster, New York.

Q Do you understand that you're under oath for today's deposition?

A I do.

Q Is there any reason that you cannot give truthful and accurate testimony today?

A No.

Q For the clarity of the record, I'll define several terms that I may use throughout the day. When I use the terms "patent owner," "Autonomous Devices," "Autonomous," or "AD," I'm referring to Autonomous Devices, LLC.

Do you understand?

A I do.

Q And when I use the term "petitioner" or

"Tesla Inc." or "Tesla," I'm referring to Tesla Inc.

Do you understand?

A I do.

Q When I use the term "'583 patent," I'm referring to U.S. Patent 11,055,583, which has marked as Exhibit 1001 in this proceeding.

Do you understand?

A I do.

Q And when I use the term "POSITA," I'm referring to a person of ordinary skill in the art at the time of the alleged invention.

Do you understand?

A I do.

Q I also may refer to a number of exhibits over the course of the day, so I'd like to just reference a few of them now.

First, do you have with you copies of the exhibits or other papers from the record in these IPRs?

A Counsel sent binders of hard copies, but I prefer to have electronic copies. They're too big

and hard to manage, so an electronic copy would be what I would like to have.

Q Sure. Could I drop them in the chat right now and you can download them?

A Absolutely. Please do.

(Exhibit Number 1001.)

Q The first document I've uploaded is Exhibit 1001.

A I see it, and I'm downloading it.

(Exhibit Number 1005.)

Q Great. The next document will be Exhibit 1005, which is Grotmol.

A I see it, and I'm downloading it.

(Exhibit Number 1007.)

Q And now I've uploaded Exhibit 1007, Hickman.

A I have it.

(Exhibit Number 1009.)

Q And Exhibit 1009, Hoffman.

A I have it.

(Exhibit Number 2007.)

Q Great. And finally, Exhibit 2007, which is the declaration that you submitted, Dr. Saber.

A Will be asking any questions about my CV?

Q I don't plan to today.

A Okay. So I have Exhibit 1001, 1005, 1007, 1009, and 2007.

Q Perfect. And so when I refer to "Grotmol," just to be clear, I'll be referring to Exhibit 1005.

When I refer to "Hickman," I'll be referring to Exhibit 1007.

When I refer to "Hoffman," I'll be referring to Exhibit 1009.

And any references to your declaration will be a reference to Exhibit 2007.

Do you understand?

A I do.

Q Okay. And the physical copies with you, are they annotated or have you put any notes on them?

A No, I have not. They're binders that were shipped from counsel.

Q Can you please describe how you prepared for today's deposition?

A Yes. I read through my declaration. I read through the patent and the prior art. And I met with counsel.

Q Approximately how much time did you spend preparing for the deposition?

A Oh, I can't recall off the top of my head. Somewhere between 10 and 20 hours.

Q And what documents did you review in preparation for the deposition?

A I reviewed my declaration. I reviewed the patent and the prior art that you just uploaded. I reviewed obviously the petition or the patent owner responses.

Q And that's the petitions for independent responses in both IPR proceedings?

A That's correct.

Q Can you describe the process by which you prepared your declaration?

MR. McCOMMAS: Before you answer, Dr. Saber, I'll just caution the witness not to

reveal the substance of any attorney-client communications. But you can answer the question.

A So typically I review the documents very carefully. I prepare a first draft. I have discussions with counsel. And then it's a collaborative and iterative effort to yield the final document, which I carefully review and then sign.

Q You carefully reviewed your declaration before signing?

A I carefully review every document that I receive.

Q Are you currently aware of any errors that exist in your declaration?

A No, not off the top of my head. There might be a couple minor typos that I noticed while I was reading it.

Q Were there any specific examples of typos?

A Not that I recall or I have kept track of.

Q They were not, in your view, material to the ability to understand your opinion in your declaration?

A No, they were not.

Q Have any of your opinions changed since the time that you -- regarding the topics addressed in your declaration since the time that you signed your declaration?

A No, they have not.

Q All right. I'll refer to your declaration, and let's start with paragraph 73. Just let me know when you're there.

A I am.

Q And paragraph 73 begins with your discussion of claim 7, correct?

A That is correct.

Q You reproduced at least part of the claim language from claim 7 in paragraph 73, correct?

A That is correct.

Q Please feel free to take a moment to review that claim language.

A I have reviewed it.

Q And you emphasized the last clause that recites: Determining at least partial match between one or more objects detected in the new

one or more digital pictures and one or more objects detected in the one or more digital pictures, correct?

A That is correct.

Q The next paragraph, the last two sentences, you state: Once the objects are detected in pictures as claimed in claim 7, they are separate from the pictures themselves and are therefore different than images or portions thereof in Grotmol. Grotmol does not disclose comparing anything detected in images that is separate from the images and only discloses comparing images or portions, i.e., features, thereof, in my opinion.

Did I read that correctly?

A You read that correctly.

Q I want to ensure that I understand your opinion here, Dr. Saber. Is it your opinion that claim 7 requires a comparison of objects detected in the images rather than a comparison of the images themselves or portions thereof?

A Could you repeat the question, please?

Q Yes. Is it your opinion in claim 7 that this claim requires a comparison of the objects detected in the images rather than the comparison between the images or portions thereof?

A So if you look at claim 7, the section obviously that we emphasized and you pointed to, see it says determining at least partial match between one or more objects detected in the new one or more digital pictures.

So you detected the objects in the digital pictures, and you're determining at least a partial match in one or more objects detected in the first one or more digital pictures. So you're essentially looking for that partial match between one or more objects detected in the new one or more digital pictures compared to the first one or more digital pictures, but you're comparing objects between those two digital pictures and you're looking for potentially partial matches.

Q And the objects are separate from the digital pictures themselves?

A Well, obviously you've -- so you have

taken a series of digital pictures in the '583 patent. You then have to find the objects, detect the objects. Those objects, as you see in one of the figures, I think it's Figure 17A or Figure 16, you have these graphical representation of the objects. So that, you're now comparing these -- you're looking for a partial match between the one or more objects that you've detected in the new picture and the one or more objects detected in the first one or more digital images. So you're comparing the objects for partial match.

Q How would you do that comparison to determine a partial match between objects?

A So you have a graphical representation of the object as you see in Figure 16A. I think it's Figure 16A. And so Figure 16, not 16A, I was mistaken, Figure 16 and Figure 17A, well, mainly Figure 16, you see in the patent you have a graphical representation of the object. That graphical representation of the object has a certain meaning in the '583 patent.

Then when you're matching that to the

other object from the other series of images, you're matching these graphical representations between those two sets of objects for partial matching because an object may be occluded in one image and not completely visible. You know, the front of the car occluded and you can only see -- you may not be able to see the front tire but you see the rest of the car, for instance.

Q So if we were to determine at least a partial match between objects represented in the digital pictures themselves, then we would have determined a partial match between the objects, correct?

MR. McCOMMAS: Objection. Form.

A No, it is not correct. And you have to be very careful about using -- mixing claim language, which is what you're essentially doing. You have to be careful about mixing claim language from the '583 and its context and meaning to what's disclosed as, obviously in this section, we're talking about Grotmol, so what's disclosed in Grotmol and how it is done.

And if you look at my paragraphs 75, 76, and 77, they describe why that is not the same process, so that's not disclosed in Grotmol. You're mixing -- I'm sorry to interrupt you.

Q No, go ahead. Did you have a further ...

A You're mixing apples and oranges with your sentence, with your question.

Q Now, I'm just referring to the language of claim 7 itself and what appears to be an interpretation of that language in the last two sentences of paragraph 74.

As I understand it, you're saying that claim 7 requires a comparison between objects that have been detected in the digital pictures and that comparison because those are objects that have been detected in the digital pictures, is a comparison between items that is detection of the objects that are separate from the digital pictures themselves.

Does that represent a fair characterization, or is there anything you'd like to add to that?

A Yeah, so if you look at the sentence you read, and you read correctly, you see once the objects are detected in pictures as claimed in claim 7, they are separate from the pictures themselves because you have this graphical representation of the object. It's not just a bunch of edges and features in the images. It's a graphical representation of the object. And so they are separate from the pictures themselves and are, therefore, different than images or portions thereof in Grotmol.

So you have these graphical representations, and those are well suited to do partial matching because sometimes objects are occluded in imagery so they're not always visible a hundred percent.

Q So the partial match in claim 7 is between the detected objects and not between the images themselves?

A That's -- so if you read the language, it says determining at least partial match between one or more objects detected and one or more

object detected. See, it's the doing the partial match between one or more objects detected in the new set of imagery to one or more object detected in the first set of imagery. So you're doing a partial match between these object representations, not in the image themselves as you would see in Grotmol. It's very different concepts.

Q All right. Now, going back to the claim language, which again is reproduced at paragraph 73, it says, starting from the beginning: Wherein the determining the first one or more instruction sets for operating the first device based on the at least partial match between the new one or more digital pictures and the first one or more digital pictures includes, and then we have the last determining.

A Exactly.

Q So if you're saying that the last determining involves a comparison between objects that are separate from the digital pictures, how is that included within the determination based on

a partial match between the digital pictures as recited in claim 7?

A Well, it says wherein the determining at the beginning of that claim, includes the determining and the emphasized portion. So you've got a series of digital pictures. So a POSITA reading this claim would understand you have a series of digital pictures, a new series and a first series. You've detected the object in the new series. You've detected the object in the first series. You have an object representation in the new series. You have an object representation in the first series, and you're doing a partial match between those object representations.

Q Is it fair to say -- I'm sorry. Go ahead.

A Please go ahead.

Q Okay. Yeah. Is it fair to say, then, that this language in claim 7, at least partial match between the new one or more digital pictures and the first one or more digital pictures, can include determining an at least partial match

between something that is separate from the digital pictures?

A I don't understand your question.

Q Well, I guess I'm trying to follow the logic that's stated in your declaration. You're saying that claim 7 requires determining an at least partial match between objects that are separate from the digital pictures but that is also part of the determining of an at least partial match between the digital pictures. So how do you square those two concepts?

A Well, it's clear when you read paragraph 74, you see once the objects are detected in pictures as claimed in claim 7, they're separate from the pictures themselves because you have an object representation as I pointed you to in 16 and, therefore, are different than the images or portions thereof that you see in Grotmol.

So you're comparing the object representations, these graphical representations, and that's distinctively different than what

Grotmol does in his work or in his patent.

Q You used the term "object representations." What is an object representation?

A Well, I meant the graphical representation I showed you in Figure 16. So you have these objects essentially -- if you look at Figure 16, that's what I'm -- that's what I am implying by me saying that.

Q Are you referring to Figure 16 of the '583 patent?

A Yes, sir.

Q This looks like what I see is described in the '583 patent as various artificial intelligence methods, systems, and/or models that can be utilized in VSADO unit 100.

Is that what you intended to refer to?

A Well, if you look at my declaration on page 21, paragraph 55, we give a summarized -- a quick summary version of it. And that kind of describes Figure 16 that I was referring to.

Q I see. What is your understanding of an

image feature?

A A feature in an image for a corner, an edge.

Q Through your experience, have you done any work or research that involves image features?

A Extensive.

Q And can you describe, in general, what would a person of skill in the art understand an image feature to be?

A Well, it depends a little bit on the application that you are doing. For instance, if you're doing segmentation, features could be colors of pixels. Could be corners of edges. Could be vertical edges, horizontal edges. Features could be -- you know, people refer to them differently, slightly differently depending on the context of the application. But it's something that distinguishes whatever you're trying to do in the image.

Q Let's maybe take the example of a corner. What is the feature -- when you're extracting a feature from an image that corresponds to a

corner, how would you express that feature?

MR. McCOMMAS: Objection. Form.

A Well, your question is a little bit vague. But if I'm looking for a corner in an image, a corner is essentially a location or a group of pixels in the image that represent vertical and horizontal edges because that's what makes it a corner or somewhat vertical and horizontal edges because they don't want it to be exactly vertical or horizontal.

So if you're looking for corners, you would do a corner detection using, you know, some type of a convolution or a cross-correlation, and you would find that corner or a series of corners and images that exhibit that change essentially in the vertical direction, which is an edge, a change in the horizontal direction.

Q And is the feature itself just the pixels that correspond to the corner, or could the feature characterize the corner in other ways?

MR. McCOMMAS: Objection. Form.

A Well, the feature would be essentially the

set of pixels that represent the corner so the X and Y location. If you're doing corner detection, an X and Y location of those pixels that represent the corner would be part of your feature. You would say, okay, at this location, I have a corner. If the feature is color, then the RGB value of the pixel would be the feature.

Q So for -- I just want to make sure I understand. So perhaps for every -- for every location in the image, you would have, I guess, your corner feature would indicate whether -- it could be a binary value that indicates whether there's a corner there or not?

A Yes. You would have essentially like a mask or an array that's the same size as the image. And in that array, you would indicate these ten pixels, I'm making the number up, are the corner. If you're looking for, you know, skin color pixels in an image, you would be looking for RGB values that have matching to skin, similarity to skin, and you mark those with a number 1, let's say, where the rest of them might be marked with

the number zero. This is just an illustrative example is what I'm giving.

Q There are different algorithms to determine different types of features?

A Yes. There typically is different algorithms.

Q Why don't we turn to Grotmol at column 28, line 19. Let me know when you have that in front of you.

A I do.

Q Okay. And so I'll just read the sentence that starts at line 19. As used herein the term "feature" may be used to describe one or more integer or floating point values characterizing the input, e.g., the presence or absence of an edge, corner, shape, texture, color, object at particular locations in the image. Values of pixels in an image, patches of color, texture, brightness in the image, and/or image as a whole, properties that are mentioned, features, and it goes on from there.

A You read that correctly.

Q As we were just discussing with the example of an edge, an edge is an example of a feature that could be detected from an image, correct?

A That is correct.

Q Is the corner another example of a feature that can be detected from an image?

A Yes.

Q Is a shape another example of a feature that can be detected from an image?

A Well, as described here in Grotmol, he's referring to the term "feature" to describe obviously edge corner and shape. But typically a shape, we wouldn't technically call it a feature. We would just call it the shape of whatever that you have detected.

Q Is a texture another example of a feature that can be detected from an image?

A Generally speaking, yes.

Q Same with color?

A Generally speaking, yes.

Q Is an object another example of a feature

that can be detected from an image?

A Well, this is where you start to get into generalizations that aren't really very accurate, so this is not an accurate statement. So an object is not really a feature. It's just you might have detected an outline of a car and an image, and you would say, okay, here's an outline of a car, I think I had a car here. So you've detected the outline. That's not really -- we wouldn't call that a feature. But he refers to it here that way, but that's not really technically correct.

Q So he might not refer to it as a feature, but what he's referring to here is detecting an object in the image?

A Well, he's referring to detecting an object. But, you know, the devil is in the details. There are many ways of detecting objects. So the devil is in the details. So he's calling his term "feature" and he's saying, well, that's a corner, edge. It's very -- kind of a general umbrella.

So some of these things, you wouldn't call features in the technical community. You would just call it, you know, the shape of the object or the object itself. It's not really -- it's not really a feature in the same sense as an edge and a corner. So it's a very general statement, and it could have been more accurate.

Q At line 22, when he refers to -- I'm going to piece together from a couple lines above. But he's referring to features being used to describe one or more integer or floating point values characterizing the input, and then we went through a few of those type of features. And then he says at line 22: At particular locations in the image.

Do you see that?

A Yes, I see that.

Q What's your understanding of how an integer or floating point values would characterize the presence or absence of these different features at particular locations in the image?

A It's simple. You have an image, RGB

array. An image is an RGB array, two-dimensional array, and you have three color channels. You have the red channel, the green channel, and the blue channel. For the discussion here, let's just assume it's a grayscale to make it easy. So we have a grayscale image, we have a two-dimensional array, and we have gray values for every pixel in that two-dimensional array.

Are you with me?

Q Yeah.

A The integer or floating point would be, for instance, if I want to notate the corner at pixel location horizontally row 45 and column 16, I would go to that location in the array and I would say I'm going to put an integer of 1 for every pixel that it would be detected as a corner, and I'm going to put an integer of zero for every pixel that is not. So the row and column location would denote the location where that pixel in the image is denoted as a corner.

The floating point would be, like, for instance, the color. If I'm detecting skin color,

right, and, you know, and the RGB value of 123, 135, 176, I'm making these numbers up, at location row 16, column 45, you would say, let's say, you know, you would indicate that as skin color.

Q And then I guess how would the one or more integer floating point values be used to characterize, as he says on line 25, properties of dimensioned features?

A Well, it depends on the feature. So for the corner, it would be here's where it's located. So the location of the corner in the image, so you would indicate that. So when I look at your mask, let's say, or the array where you made those indications, I could see where the corners are relative to the image. So that would be indicating the properties of dimensioned features.

Q All right. Let's forward to paragraph 78 of your declaration.

A Paragraph 78?

Q Yes.

A Yes, sir.

Q Okay. And this paragraph begins your

analysis of claim 9, correct?

A That is correct.

Q And the language of claim 9, at least part of the language of claim 9, is reproduced in paragraph 78. Please feel free to review that for a moment.

A Yes, I have reviewed it.

Q Thank you. And this claim refers to a first learning process and a second learning process, correct?

A Yes, it does.

Q What is your understanding of a learning process as that term is used in the '583 patent?

A Well, you're learning something in a process. I have a person walking in a crosswalk, and you're learning -- your autonomous device is learning something about this particular event, so you're teaching your autonomous device something about this particular event, you know, come to -- slow down, come to stop, don't run over the person.

Q Is your understanding of a learning

process informed by the specification of the '583 patent?

A Yes.

Q Does the term "learning process," is that a term that a person of skill in the art would be familiar with?

A Generally speaking, yes. It's obviously a lot -- a general term, and you'd have to look at the context and the application that is, you know, it's being described in to acquire the details.

Q So learning process could take on different meanings in different contexts?

A Yeah. Generally speaking, yes. I mean, it could have different meanings. But you're learning something. How it's done, the devil is obviously in the details.

Q Sure. Yeah. The next paragraph in your declaration, paragraph 79 --

A Yes, sir.

Q -- in the first sentence, you write: Grotmol fails to disclose the claimed second learning process, in my opinion.

And then the next sentence: Grotmol only discloses one user operating one device and one learning process and, therefore, fails to disclose any second learning process and the claimed at least a portion of the second one or more digital pictures or at least a portion of the second one or more instruction sets for operating the first device is learned in a second learning process that includes operating the first device at least partially by the first user.

Did I read that correctly?

A You read that directly.

Q Would you agree that in claim 9, both the first learning process and the second learning process include, and I quote, operating the first device at least partially by a first user?

A Well, you have an "and" there. So you see it says: Wherein at least a partial of the first one or more digital pictures, or at least a portion of the first one or more instruction sets while operating the first device is learned in the first learning process that includes operating the

first device at least partially by first user. And then it gets into the next "wherein" for the second user.

Q Yes. And that first wherein refers to the first learning process, correct?

A Yes.

Q And that first learning process, the claim states: A first learning process that includes operating the first device at least partially by a first user, correct?

A Yes.

Q Okay. And then the second "wherein" refers to the second learning process, correct?

A Yes.

Q And the second learning process includes operating the first device at least partially by the first user, correct?

A Yes, you read that correctly.

Q So in claim 9, both the first learning process and the second learning process includes operating the first device at least partially by the first user, correct?

A You read that correctly.

Q So even if Grotmol discloses one user operating one device, you noted in your declaration, these facts would not show that there's only one learning process for purposes of claim 9, correct?

A I didn't understand your question, and you cut out a little bit. Can you come again, please?

Q Sure. I guess you've emphasized in your declaration that, in your view, Grotmol discloses just one user operating one device?

A In one learning process, yes.

Q I'm going to focus on the first two aspects here. One user operating one device.

A Correct.

Q Did that, in your view, inform your impression that Grotmol discloses only one learning process?

MR. McCOMMAS: Objection. Form.

A I think you're mixing concepts. You're mixing apples and oranges, and you're missing the point that the claim is drawing -- is getting at.

Q Well, why would you emphasize these, bold italics, one user operating one device? What was the significance of that to you? Because the next clause in paragraph 79 states: And, therefore, Grotmol fails to disclose any second learning process.

A Yes.

Q So what's the connection between one user and one device and your conclusion that Grotmol fails to disclose any second learning process?

A So you see when you read claim 9, what that claim is getting at is that mixed knowledge. So it's not that you have one user operating a device by itself. It's not -- you're taking that out of context.

Claim 9 is getting at the mixed knowledge part. You have the first user operating the first device in the learning process, and you have the "portion and partially" that you've read correctly. And you've got that same first user operating where a portion and partially, you have a second learning process, and that mixed

knowledge between the two is the important part of the claim. That is not in Grotmol.

That's why you see Grotmol discloses one user operating one device in one learning process. You don't -- Grotmol does not disclose any mixed knowledge from these learning processes. That's what we're talking about.

So if you look at my paragraph 80, on page 35, you see where it says since Grotmol discloses only a single learning process, multiple tasks are learned in single learning process. Nothing in Grotmol suggests that multiple tasks are learned in multiple learning processes as claimed in claim 9. That's essentially what we're trying to get at. It's the mixed knowledge that's -- that mixture of knowledge is not a trivial thing to do.

Q So just to be clear, a first learning process and a second learning process can be performed by the same user on one device?

A Yeah, as you see in claim 9, you see you have the first user performing a first learning

process and the first user performing a second learning process. And it's the mixing of that knowledge that is the important part of the claim and then the correlation obviously with the instruction sets. But the mixing of the knowledge is the important part of that claim.

Q What does it mean to mix knowledge?

A You see if you look at the claim, let's dissect it starting at the first "wherein," you see where it says: Wherein at least a portion of the first one or more digital pictures. So you have a portion of the digital pictures or at least a portion of the first one or more instruction sets for operating the first device is learned in the first learning process. That includes operating the first device at least partially by the first user.

So you have a portion of the first or more instruction sets. Whatever that instruction set is for your autonomous device, person walking in the crosswalk, you've got an instruction set for that particular person, walking in the crosswalk

from the imagery. And I'm simplifying here quite a bit. And then you go to the second "wherein," at least a portion of the second one or more digital pictures, so you have a second one or more digital pictures where at least a portion of the second one or more instruction sets for operating the first device, still that same autonomous car, let's say, is learned in the second learning process.

So you have something that's learned in the second learning process, and you mixed -- you integrated those two seamlessly together in a sense.

Q And integrating them seamlessly together, that's what you're referring to as mixing?

A Yes. So you're bringing that knowledge from the two learning processes together in a seamless manner to obviously have the more, you know, the more -- you know, a better learning process. So you're integrating what you learned from the first learning process and what you learn from the second learning process and correlating,

you know, the pictures with the instruction sets. So that mixture of integration of knowledge is not exposed in Grotmol.

Q So I do think that's a little different from how I was reading your declaration earlier. It seems in your declaration you were arguing Grotmol fails to disclose a second learning process. Now that, we might disagree with that. But let's just say that's true. I think there's a separate issue which you're arguing now as to whether what's learned is mixed, if there's a mixing of what's learned between the first and second learning process.

So I guess is it your contention that Grotmol does not disclose a second learning process? I'll stop there. Is that still your contention?

A Well, if you look at my paragraph 80, you see it says -- so the start of the paragraph says petitioner states that Grotmol describes that multiple training processes can be conducted to learn multiple tasks, and you have a citation

there. Petitioner is wrong since claim 9 specifically recites a knowledge base that includes one correlation learned in one learning process, an additional correlation learned in another learning process.

Since Grotmol discloses only a single learning process, multiple tasks are learned in the single learning process. Nothing in Grotmol suggests that multiple tasks are learned in multiple learning processes as claimed in claim 9. So that's my opinion.

Q And so your opinion is that Grotmol does not disclose a second learning process, correct?

A I think you are misrepresenting my opinion. It says nothing in Grotmol suggests that multiple tasks are learned in multiple learning processes as claimed in claim 9. So it's the multiple tasks, multiple learning processes.

Q I don't want to misrepresent your opinion, so thank you.

I'll read the first sentence from paragraph 79. Grotmol fails to disclose the

claimed second learning process, in my opinion.

A That's correct.

Q Is it your opinion that Grotmol does not disclose the second learning process?

A Well, obviously this is referring to claim -- the context of claim 9. It's not that Grotmol -- it's the context of claim 9 that we're talking about here.

Q Well, I'm trying to understand then. But are you saying that Grotmol might disclose a second learning process but it might not be mixed with what's learned from the first learning process?

A I don't understand what you're asking.

Q Well, you seem to be distancing yourself from the very -- what I think is a clear statement in the first sentence of paragraph 79. You say that Grotmol fails to disclose the claimed second learning process.

Do you agree with that statement still?

A Yes. In my opinion, and I'm talking obviously that, quote/unquote, second learning

process is referring to the context of claim 9.

Q Which is a second learning process, as we reviewed before, a second learning process that includes operating the first device at least partially by the first user, correct?

A Correct. That whole context is important. It's not just by itself. It's, I mean, the quote/unquote here is just referring to claim 9. You could probably quote/unquote the whole thing. The point is it's referring to that whole thing. It's not just a second learning process. It's a second learning process that includes operating the first device at least partially by the first user and then bringing those two things together. That's what we're talking about here in claim 9, and that is what is not disclosed in Grotmol.

Q Okay. I think I understand. Thank you for the clarification.

So I would like to understand better what types of things you assessed in Grotmol to arrive at your conclusion that Grotmol fails to disclose the claimed second learning process.

MR. McCOMMAS: Objection. Form.

A I mean, you're asking a very general question. Is there something specific in Grotmol that you're referring to? I mean ...

Q Well, you provided zero citations to Grotmol in your opinion here. But I think that you review Grotmol to arrive at your conclusion. So what did you look at in Grotmol that led you to the conclusion that Grotmol fails to disclose the second claimed learning process?

A I mean, I studied obviously what Grotmol discloses. I studied the patent in detail. I studied the techniques that are disclosed in Grotmol.

Q Can you point me to some examples?

A If you look, for instance, at column 8, starting at, you know, lines 57 where it's disclosing -- discussing Figure 1 of Grotmol, so obviously he's discussing the figure so what is -- what's this figure disclosing? And he says: e.g., a learning apparatus. So you look at the learning apparatus, the sensor, the figure itself

and what's being disclosed.

If you look at column 10, Grotmol disclosed on line 21, Grotmol disclosing the sensor output may be processed by a learning controller. You read through the description of Grotmol, you come to that conclusion. So, I mean, you would have to read the whole thing. There's no discussion of mixed learning in Grotmol. There's no discussion of mixing learning processes as disclosed in the claim 9.

Q What types of -- strike that.

Claim 9, as we've just discussed, refers to a first learning process and a second learning process, correct?

A That is correct.

Q So what types of things would you look for to delineate between a first learning process and a second learning process?

MR. McCOMMAS: Objection. Form.

A Well, again, if you look at the claim, it's not just the first and second learning process. It's the portion, partially the

integration. So it's not just Tom operates the robot in Grotmol, then John operates the robot in Grotmol or Tom operates the robot in Grotmol, then 2 days later Tom operates the robot in Grotmol. That's not a second learning process as claimed here. It's the integration of the learning between the two. How do you seamlessly integrate the learning, the instruction set, the digital pictures. That's the context of claim 9, and that's -- there's no discussion of any kind in Grotmol.

Q My question was focused specifically on a first learning process and a second learning process.

A Yes.

Q So let's take a first learning process that includes operating the first device at least partially by a first user and a second learning process that includes operating the first device at least partially by the first user.

A Go ahead.

Q So two learning processes recited in claim

9, as we've just discussed, that involve operating the same device, the first device, by the same user, the first user, how do you know when the first learning process ends and the second learning process begins?

A That's essentially the innovation that's in claim 9. So you see you have a learning process. It's not like one ends and one begins. It's the integration of the two. So I have a learning process where a person is walking through the crosswalk and I taught my autonomous device to do something and I have a learning process where somebody is wheeled, you know, riding a bicycle through a crosswalk, and I learn something from that. And integration, integrating the two processes, integrating the knowledge from the two processes is the --

Q That wasn't my question, Dr. Saber. Thank you.

I asked specifically not about integration, about the first and second learning processes. You understand how claim

interpretation works, correct, in reviewing patent claims?

A I'm not an attorney. I'm reviewing it, I'm looking at the patent claims from the eyes of a POSITA. Obviously I'm not an attorney.

Q I understand. I'm referring to the first learning process and the second learning process. How do you distinguish between the two, or are you not able to tell me today?

A Well, it's not just a piecemeal. It's the claim 9, you're reading claim 9 as a whole. So you have a first learning process where you have, like as I explained to you, you have somebody walking in the crosswalk where you've taught your autonomous device to do something. You have a first learning process that's taken place. And then you have a second learning process that's taken place.

Q Can I just pause you right there? You said there's a first learning process that's taken process and a second learning process that's taken place. How does one know that those learning

processes are separate?

A Well, they're not done at the exact same second. I mean, you have a first learning process.

Q I'm sorry. Go ahead.

A You have a first learning process that's taken place, and all the portion and partial we're talking about. You have the second learning process that's taken place. They didn't happen at the same instance at the same time.

Q So a temporal separation might be one thing that you would look for to determine that the second learning process is separate from the first learning process?

A Yeah, I mean, generally speaking because you have the same user and you have obviously the same device here. You have the same user, you have the same device. There's a first learning process that's taken place and at seconds later or minutes or whatever, there's a second learning process that's taken place.

Q So the first and second learning processes

would not take place at the same time?

A Well, I mean, you have the first user operating the first device, and you have the first user operating the first device so obviously the first user couldn't operate the first device at the same exact second both times, so they have to be done at separate times. It's the same --

Q Yeah --

A Same user, different learning processes. So you would come to the -- the POSITA would come to the conclusion that they're not done at the exact same time.

Q And if that first user operating the first device were training at different times, the robot to perform different tasks, would those be separate learning processes?

A I think you're mixing -- you're taking claim language out of context, and you're essentially misrepresenting the context. It's not that a first user -- I'm the user of Grotmol. I ran my robot. I learned something. A day later I came in, I ran my robot, I learned something. Of

course those didn't happen at the same time and I'm the same user and same robot.

That's not what's being discussed here in claim 9. It's not that you learn something and a day later you learn something. It's the portions, the partials, that mixed knowledge between the something and something that we are -- that the context of claim 9 isn't just you have two processes. It's the integration of that knowledge is what's the important part here.

Q Well, claim 9 includes a number of limitations, and I'm really just focused on one aspect of claim 9, the first learning process and the second learning process. So granted, there are -- there's -- claim 9 does recite two correlations as you've discussed. What I'm trying to understand is a distinction that you see between the first learning process and the second learning process.

How does a person of ordinary skill in the art know when you have a first user that's operating a first device, when does that first

user transition from the first learning process to the second learning process?

A Well, it's not -- it didn't happen at the same time, right. So you had a first learning process, I'm operating the autonomous device of '583. So if you see, if you look there wherein at least a portion of the one or more digital pictures, acquiring digital pictures, the portion of the first one or more digital pictures or at least a portion of the first one or more instruction sets for operating the first device is learned in the first learning process that includes operating the first device at least partially by first user. So there are more than just -- it's not just a learning process. You have the portions. You have the partial, so ... and that's all happened at some same time instant. Then some time later, the first user operating that first device is doing the second learning.

Q Okay. So the first and second learning processes take place at different times, at least in the context of claim 9?

A Well, they can't be at the exact same time because first user is the first device. So we're looking at the same device, first device, first device, first user, first user. So a POSITA would come to the conclusion reading claim 9 that they're not -- the learning of the first and second isn't happening at the exact time instant. It's happening at separate time instances.

Q Are there any other factors that you would consider in resolving whether that first user operating the first device is engaged in the first versus the second learning process?

MR. McCOMMAS: Objection. Form.

A I don't understand your question.

Q Aside from temporal separation, we've established that because you have the same first user operating the first device in both learning processes, naturally the first and second learning processes would not occur at the same time in claim 9?

A Right.

Q Are there other things that must be

considered to assess whether the first user is engaged in the first learning process versus the second learning process, aside from the temporal separation?

MR. McCOMMAS: Same objection.

A Well, obviously you have a different set of imagery as well. You're not using the exact same set of imagery, right. So you have a portion of the first one or more digital pictures and portion of the first one or more instruction sets is learned in this.

And then you see in the second one, it says at least a portion of the second one or more digital pictures and at least a portion of second one or more instruction sets so it's learned in the second learning process. You also have different pictures are being presented to acquire the learning, so it's not just the temporal. It's also different sets of pictures that are resulting in different instructions.

Q Understood.

All right. We've been going for about an

hour and 20 minutes. Would this be a good time for a break?

A Yeah, I think that would be fantastic.

(A short break was taken.)

Q Dr. Saber, I'd like to -- well, first, did you have any discussions with counsel during the break?

A No, I have not.

Q I'd like to refer to Grotmol, Exhibit 1005.

A Yes, sir.

Q And specifically Figure 4A.

A Yes, sir.

Q Can you describe what is shown in Figure 4A of Grotmol?

A Well, if you look at column 5, starting at line 33, it obviously gives the figure a title. It says Figure 4A is a block diagram illustrating an adaptive control system for use with, e.g., the robotic apparatus of Figure 1 according to one or more implementations.

Q And do you have an understanding of the

operation of Figure 4A?

A Yes, it's described in Grotmol.

Q Can you describe that for me, please?

A If you look at column 15, starting at line 19, Grotmol states Figure 4A illustrates an implementation of adaptive control system 400. So you see if you look at the figure, he's got the number 400 at the top left of the figure.

And then Grotmol goes on to say: The adaptive control system 400 in Figure 4A may comprise a corrector 4A that you see at the top of the figure, and a combiner 414 cooperating to control the robotic platform 430. So you see the combiner 414 and then the robotic platform 430 at the bottom right of the figure.

And then Grotmol states: The learning process of the adaptive predictor 422, which is shown on the left side of the figure, may comprise a supervised learning process, a reinforcement learning process, and/or a combination thereof.

Q And what is the function of the corrector 412?

A So you see if you continue on, so the next sentence, you see it says: The corrector 412, the predictor 422, and the combiner 414 may cooperate to produce a control signal 420 that you see marked on the figure for the robotic platform 410, which is an error. It probably should say 430 there.

Q So the combiner 414 receives as inputs a signal 418 from the adaptive predictor 422 and a signal 408 from the corrector 412 to produce the control signal 420; is that correct?

A That's correct.

Q And that control signal 420 is a corrected version of the signal 418 from the adaptive predictor 422?

A Well, it's combined obviously with the output of the corrector. So the output of the corrector and the output of the predictor, 408 and 418 respectively, are combined in the combiner to produce a control signal 420 that Grotmol is referring to in the figure.

Q Does the combiner 414 modify the signal

418 from the adaptive predictor 422 based on the correction signal 408?

A So you see on column 15, line 29, you see it says: In one or more implementations, the control signal 420 that comes out of the combiner may comprise one or more motor commands, pan camera to the right and turn right wheel forward, et cetera, sensor acquisition commands and/or other commands.

Q So are the motor commands and the control signal 420 modified commands from the signal 418?

A Obviously you're going to receive some signal from 418 and 408. The combiner is going to combine them in some appropriate fashion to produce the signal 420.

Q So the combiner 414 is modifying the control signal 418 based on the corrected signal 408?

A So if you look at column 17, you see starting on line 8, it starts to discuss the combiner stuff. If you look at line 35, you see it says: The combiner 414 may implement a

transfer function H of X where H includes the control signal 408 and the control signal 418. So the combiner would take those two signals, will implement the transfer function, and obviously pass that onto the decoder.

Q And the transfer function, Grotmol states at line 46, may comprise one or more of addition, multiplication, union, illogical "and" operation, illogical "or" operation, and/or other operations, correct?

A Yes.

Q Any of these transfer functions, would they serve to modify the control signal 418?

MR. McCOMMAS: Objection. Form.

A I didn't hear your question.

Q Yeah, I can repeat it.

A Please.

Q Do any of the transfer functions that Grotmol lists here modify the motor commands in signal 418?

MR. McCOMMAS: Objection. Form.

A Well, there isn't any of the transfer

functions. There is -- that transfer function may comprise one or more of, so obviously the addition, multiplication, union, logical "and," and a logical "or" would modify -- would take X as described by Grotmol and which X comprise, you know, 408 and 418 and would produce H of X, which would, you know, be a modification because otherwise it would just say it will pass it along and you don't need a combiner.

Q All right. Let's turn to your analysis of claim 29 in your declaration, which starts at paragraph 114.

A Yes.

Q Would you like to take a moment to review the language of claim 29?

A Yes.

Q Is it your understanding that claim 29 requires three steps for generating the new one or more digital pictures?

A So if you go to paragraph 118, which is obviously talking about claim 29 --

Q 118, I'm sorry?

A 118, paragraph 118 on page 53. So if you'll look there, you'll see -- I state: Claim 29 provides a specific method for generating a new digital picture that is different than simply capturing images, open paren, that happen to have some objects depicted therein, close parentheses, by camera, in my opinion. And you see in the paragraph, there is a "first," three lines later there's a "next," and two lines later, there's "finally." So there's a three-step process that I think you're referring to that's described there.

Q So first an object is depicted in the first device's or the second device's surroundings through processing of information from one or more sensors, including some embodiments from images of a camera?

A You read that correctly.

Q And then next is, you've written: Also through processing, a representation of a detector object is generated that's separate from the sensor information, i.e., original image, et

cetera, in which the object is detected, correct?

A Yes.

Q And then you write: Finally also through processing the new digital picture, generated to include the representations of the detected objects, correct?

A That is correct.

Q So you read -- I guess is it fair to say that the detection step in claim 29 in your view must occur before generating one or more representations of the one or more objects, which, in turn, must occur before generating the new one or more digital pictures that include the one or more representations of the one or more objects; is that correct?

A Well, I'm not a patent attorney obviously. But as a POSITA reading claim 29, you have basically three steps that I described. First, an object is detected. So that's the detecting one or more objects surrounding or second devices surrounding. Then you have the next step, which is next also through processing, a representation

of the detected object is generated, et cetera, as you read. So that's generating the one or more representations. And then, finally, in the last step, the new digital picture is generated. And that's essentially the generating the new one or more digital pictures that include the one or more representations of the one or more objects.

So you have a three-step process that's occurring in that, you know, in that sentence, I guess.

Q Is your understanding of claim 9 informed by your review of the specification of the '583 patent?

A Did you say claim 9 or claim 29?

Q I might have said 9, but I intended claim 29, if I did. Let me repeat that again.

A I listen very carefully, sir. Every word is very important.

Q It is. Thank you.

Did you -- is your understanding of claim 29 informed by the specification of the '583 patent?

A Well, my understanding of the claim would be informed by other claims that it depends from and obviously the specification of the '583. So claim 29 depends from claim 4. And obviously claim 4 depends from claim 1, so there is a dependency there. So you would have to read all of that. And then you read that in light of the specification.

Q Is there a portion of the specification of the '583 patent of which you were aware that describes this process, those three steps recited in claim 29?

A I don't recall exactly. I mean, the patent is pretty large, obviously. I don't recall exactly the exact location of it. I can -- you know, I can sit and read through the whole patent and find it for you. But when you read the patent and you read the claim, you would come -- as a POSITA would come to that understanding.

Q You know, I think that actually would be helpful. If you are -- let's take some time. If you would review the spec and let me know if you

see any disclosure of those processes.

(Witness peruses document.)

A So I'm not able to find exactly because it's a large patent and it will take me several hours to read through it. When you read through the patent context, obviously you would come to that -- you would come to that understanding. But I would have to take several hours to read through where this understanding is disclosed because it's a very large patent and it's hard to find exact disclosures in it.

Q So you were unable to -- it's been about 8 minutes since I asked my question. In that time, and I recognize that the specification is quite long, but you were unable to identify disclosure in the specification that would support these claim features?

A It's quite a large patent, so it's not trivial to locate things in the patent easily obviously because of the length of the patent and so I would have to, you know, read through it carefully to find the disclosures that have led to

that. It would take me several hours to do that.

Q In paragraph 118, you noted earlier, the first sentence, you write: Claim 29 provides a specific method for generating a new digital picture that's different than simply capturing images that happen to have some objects depicted therein by a camera, in my opinion. Correct?

A Yes.

Q Based on your review of the specification of the '583 patent, were there any particular advantages or benefits described with respect to this new method recited in claim 29?

MR. McCOMMAS: Objection. Form.

A I'm sorry. I think I heard the second part of your question.

Q Do you recall any advantages or benefits discussed in the '583 patent with respect to the -- what you characterized as a specific method in claim 29?

MR. McCOMMAS: Objection. Form.

A So obviously, I mean, in claim 29, you can see that you have essentially these three steps

described. You have detecting one or more objects, generating one or more representations of the one more objects. So you're detecting the objects, you're generating the representations. And generating new one or more digital pictures that include the one or more representation. So essentially it's like a process of segmentation. So you're generating a new one or more digital pictures that includes the one or more representations of the one or more objects, so ...

Q Can you elaborate on that? How would this relate to segmentation?

A Well, I mean, you're -- if you look at the first step, an object is detected in the first device or second device surrounding through processing of information from one or more sensors, say, images from the camera. So you're detecting the object.

Next, also through processing, a representation of detected object is generated. So now you've generated the representation of the object based on the discussions that we were

discussing before about the representation of the objects. And now that you have this representation, you have this graphical representation of the object and its components, so to speak, the new digital picture is generated to include the representation of the detected object. So now those detected objects and portions thereof, the graphical representation, is essentially superimposed or highlighted in those digital pictures that you've generated.

Q Yeah. And in this example, how are the objects detected?

A Well, you performed the object detection. You know, '583 would perform object detection.

Q And object detection, you could use, for example, an object detection algorithm to detect objects in the digital images?

A Yeah. I mean, you would perform object detection to detect the object.

Q So the objects could be detected in claim 29 from the new one or more digital pictures?

A Well, you're detecting the one or more

objects. So it says: Wherein generating the new one or more digital pictures includes. So you're generating the new one or more digital pictures that includes this three-step process we've been talking about. You detect the objects. You generate the representations. And then you generate the new one or more digital pictures that includes those representations.

Q Can you give me a concrete example of how you would generate the new one or more digital pictures by detecting one or more objects in the first devices surrounding or the second devices surrounding?

A Well, I mean, I'll give you an example. Like so when you detect -- in the first step, you're detecting the object. So you've detected the object. Maybe that's a car. The car has white windows and black tires and red body. So you have the car itself as an object, and you have these sub pieces of the objects. You have an object representation that represents the object and its components. So that's the next step.

So the first step, you've detected the object by processing information. You've done object detection. You found the object. Then you created a representation of the object, so now you have the object and its components in a sense. Now, the new digital picture is generated to include the representations of the detected object. So now in the new digital pictures, you're going to demarcate or highlight or show where the objects are in this temporal series of digital pictures in these imagery.

Q And the one or more objects, they can be detected from the new one or more digital pictures themselves, correct?

A I don't understand your question.

Q In the first step, you've laid out each of the steps in claim 29. I appreciate that.

A Yeah.

Q In your discussion of detection, you said you detect these one or more objects. And I'm curious, what is your view, how are these -- what are you detecting the objects from?

A So in the first step an object is detecting through processing of information -- so you have a series of images. I have a video of a person walking in a crosswalk. So I detect the person. You say that's my object. So in these digital images, you have the person. They've got hands and feet and body and head, so you've detected that object.

So in each of these images, you have essentially the comprehension of the object and its components. So that's the detection part. So you know where the object is. You know temporally how it's moving through the images. So that's Step 1 is you're detecting the object.

Step 2 is you're creating a representation of it, so now you have this Figure 16 representation of the object. So in each of these frames -- and you have that temporal connection in a sense.

Q And are the Figure 16 representations of the objects then included in the new one or more digital pictures?

A So now, yes, now that you're creating -- you know, you're generating a new one or more digital pictures that include the one or more representation. So the new digital pictures you're going to create, you're going to include this representation of the object, the inner-connectivity spatially, temporally of that object.

Q Could we turn to column 3 of the '583 patent?

A Column 3?

Q That's correct. And specifically the paragraph that begins at line 23.

A Line 3, column -- sorry, column 3, line 23, the paragraph that begins at line 23?

Q That's correct.

A Yes, sir.

Q So this first sentence in the paragraph reads: In some embodiments, the first digital picture includes a stream of digital pictures.

Do you see that?

A Yes.

Q And then the next sentence: In further embodiments, the new digital picture includes a stream of digital pictures. Correct?

A Yes.

Q Do you have an understanding of a stream of digital pictures in the '583 patent?

A Yes.

Q What is a stream of digital pictures?

A More than one. Like a video. Capturing, you know, a stream of digital pictures. You understand the video typically is captured at 30 frames a second typically, so your video camera on your phone or whatever camera you're holding is capturing images, frames at 30 frames a second, and each frame has RGB channels. So each frame has three channels, and you have 30 of those in a second, so that would define a stream of digital pictures.

Q So the first digital picture can include multiple digital pictures; is that correct?

A Yes. So you see the first sentence that you read there, sir, is the first digital picture

includes a stream of digital pictures. So your digital picture could be 150 frames and the next one could be 270 frames.

Q And thank you. Going a little farther down in the paragraph, it says: In further embodiments, this is line 29, the first or the new digital picture includes a JPEG picture, a GIF picture, a TIF picture, a PNG picture, a PDF picture, or a digitally encoded picture.

Do you see that?

A You read it correctly.

Q Are you familiar with a JPEG picture?

A Yes.

Q What do you know of that picture?

A JPEG is an algorithm that was -- or a standard that was developed by the Joint Picture Expert Group [sic]. And it's essentially a compression standard for a given image, so you provide an image. It's going to perform compression. So essentially it's going to divide the image into blocks of 8-by-8, do a DCT, a discrete cosign transformation, zigzag --

zigzag basically. I don't want to say coding, but perform a zigzag essentially going through the DCT, and then do a run-length encoding and then variable-length coding to use the Hoffman codes. We teach that in the digital image processing class on a regular basis. I think I even have implementations of JPEGs somewhere in my libraries.

Q And the purpose of using a JPEG format is to compress the file size of a digital picture?

A Yes. So obviously a digital picture may be, I don't know, I'm making this up, one megabyte worth of bits, and then you want to make it a little smaller.

Q And what information, again, would be provided in a JPEG picture?

A What do you mean, what information? I mean, a JPEG is a compressed version of the original picture. Whatever is in the original picture is still there except it's compressed and you have a lossless and lossy version. So if you don't apply quantization, you have a lossless

compression.

It takes advantage of the spacial, basically, redundancy in the image. You know my face or my head isn't a random selection of pixels. There's actually continuity of skin across my face. So the redundancy in the spacial domain, JPEG would take advantage of using the discrete cosign transform.

So that redundancy is what you go after to try to compress the images. Instead of having 100-by-100 image, you have 10,000 pixels, let's say 8 bits per pixel, right, you would compress it to something smaller. So it's a compression mechanism.

Q Compression mechanism?

A Compression standard. But the content of the image is still essentially -- if it is lossless, it would be unchanged. If it is lossy, you would have some minor changes. It's obviously not going to be perfect.

Q How about a GIF picture?

A Similar. It's another format of

essentially storing information.

Q Similar for TIF and PNG?

A Yeah, PNG would be native, like you store it in its native raw format typically.

Q Do JPEG pictures include any metadata apart from the information that describes the pixels in the image?

MR. McCOMMAS: Object to scope.

A Well, the JPEG picture itself doesn't include the metadata. You would have to create something -- you know, the application would have to capture the metadata as well. But the JPEG itself, I mean, obviously you have a timestamp and a date and that type of thing for the image. But beyond that, I mean, you would have to do some capturing.

Q All right. Could we take 5 minutes? And then come back for one last session before lunch? Or are you getting -- would now be a good time to break for lunch for you?

A If your session is short after lunch, I think we'll be fine.

Q So do 5 minutes now and then take lunch? 5 minutes now, come back for 30 minutes and we'll take lunch?

A That sounds reasonable.

MR. STEPHENS: Okay. Let's do 5 minutes, and we'll be back on the record soon.

THE WITNESS: I'll be at my desk at 12:30 Eastern.

(A short break was taken.)

MR. STEPHENS: Back on the record.

Q During the break, Dr. Saber, did you communicate with counsel?

A No, I did not.

Q I'd like to turn to paragraph 119 in your declaration.

A Yes, sir.

Q And this begins your discussion of claim 31, correct?

A That is correct.

Q The language that you quoted from claim 31 reads: Wherein the generating the proposed one or more instruction sets for operating the first

device includes generating the first one or more instruction sets for operating the first device as one or more representations of a second one or more instruction sets for operating the first device. Correct?

A That is correct. And I think that's all the language with the exception of claim 4.

Q Yes. Thank you.

What is your understanding of the term "representation"?

A So it means representation. It represents just like an object representation, represents, you know, portions, represents the object or components of the object.

Q And paragraph 120 --

A Yes, sir.

Q And I'm referring to the second-to-last sentence. You state: For example, an instruction set that represents another instruction set in claim 31, includes a more generalized instruction set that can be used more flexibly on more different types of device in my opinion. Correct?

A You read that correctly.

Q And is this an example from the specification of the '583 patent?

A I don't remember off the top of my head.

Q You did not provide a citation to the '583 patent in referencing this example, correct?

A That's correct. There's no citation there.

Q Just to be clear, this is an example of a representation of an instruction set that you provide here in paragraph 20, but claim 31 would not be limited to this embodiment?

A Well, I mean, I state there: For example, an instruction set that represents another instruction set in claim 31, includes a more generalized instruction set that can be used more flexibly on multiple different types of devices.

Q Can you think of other examples that would be consistent with the features recited in claim 31?

THE COURT REPORTER: I'm sorry, that faded out at the end. Consistent with what?

MR. STEPHENS: Yes, I'll repeat the question.

Q Dr. Saber, can you think of other examples that would be consistent with the features recited in claim 31?

A Well, the example I gave you there I think is a very good example.

Q Dr. Saber, I don't see you. There you go.

A I'm here. Sorry, I'm looking at the pages.

Q Can you think of any other examples?

A Sitting here today, off the top of my head, I think the example that you have there represents it fairly well.

Q I'm asking if you could -- if you are able to think of any other examples today.

A Right now I'm not thinking of any -- I would have to step back and do some analysis. But the example I give there I think is fairly well represented.

Q So sitting here today, you're unable to provide any other examples of some areas that

would be consistent with the features recited in claim 31?

A Well, the example I provided you I think is a very good example that talks about the features recited in the claim. You have an instruction set that represents another instruction set, includes a more generalized instruction set that can be used more flexibly on multiple different types of devices. You have a more generalized instruction set, so you can have the flexibility of using that on multiple devices.

Q What type of analysis would you need to perform to be able to provide any other examples?

A Well, I mean, for instance, you may have a -- let's say an autonomous vehicle, Toyota Camry. An autonomous vehicle that's driving, coming up to a crosswalk, and you see person in the crosswalk and you provide an instruction set for the Toyota to slow down in a reasonable amount of time, come to a stop.

You may have a tractor-trailer as a second autonomous device. A similar instruction set can

be applied on that tractor-trailer but the parameters are different because you don't want to brake as fast, perhaps. You want to accelerate slowly. You don't want to swerve. You have essentially a generalized instruction set that you want the device to apply. You want to come to a stop at some point, but each autonomous device would do that differently. So the motorcycle, you know, the three-wheeled motorcycle would stop differently than a tractor-trailer would.

MR. STEPHENS: All right. Thank you, Dr. Saber. We have no further questions.

MR. McCOMMAS: Yeah, sorry about that. Can we go off the record?

MR. STEPHENS: Yes.

(A short break was taken.)

MR. McCOMMAS: We can go back on the record.

Okay. We have no further questions for the witness. This deposition is over. Thank you.

(Witness excused, 12:51 p.m. Eastern.)

C E R T I F I C A T E

I, RACHEL F. GARD, RPR, CCR, CRR, CSR No. 084-3324, No. 9315, No. 1010, a Certified Shorthand Reporter in and for the States of Illinois, Michigan, Nevada at large, do hereby certify that ELI SABER, PH.D., the deponent herein, was previously duly sworn to tell the truth, the whole truth, and nothing but the truth in the aforementioned matter;

That the foregoing deposition was taken on behalf of Plaintiff on the 21st day of June, 2024, at 10:00 a.m. Eastern, pursuant to the applicable rules;

That said deposition was taken down in stenograph notes and afterwards reduced to typewriting under my direction, and that the typewritten transcript is a true record of the testimony given by the said deponent; and that signature was requested by the deponent and all parties present;

That the parties were represented by their counsel as aforementioned.

I do further certify that I am a disinterested person in this cause of action, that I am not a relative or attorney of either party or otherwise interested in the event of this action, and that I am not in the employ of the attorneys for any party.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal on this 8th day of July, 2024.

Rachel F. Gard

COURT REPORTER

Eli Saber, Ph.D., c/o
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Washington, DC 20006

Case: Tesla, Inc. v. Autonomous Devices LLC
Date of deposition: June 21, 2024
Deponent: Eli Saber, Ph.D.

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C E R T I F I C A T E

I, RACHEL F. GARD, RPR, CCR, CRR, CSR No. 084-3324, No. 9315, No. 1010, a Certified Shorthand Reporter in and for the States of Illinois, Michigan, Nevada at large, do hereby certify that ELI SABER, PH.D., the deponent herein, was previously duly sworn to tell the truth, the whole truth, and nothing but the truth in the aforementioned matter;

That the foregoing deposition was taken on behalf of Plaintiff on the 21st day of June, 2024, at 10:00 a.m. Eastern, pursuant to the applicable rules;

That said deposition was taken down in stenograph notes and afterwards reduced to typewriting under my direction, and that the typewritten transcript is a true record of the testimony given by the said deponent; and that signature was requested by the deponent and all parties present;

That the parties were represented by their counsel as aforementioned.

I do further certify that I am a disinterested person in this cause of action, that I am not a relative or attorney of either party or otherwise interested in the event of this action, and that I am not in the employ of the attorneys for any party.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal on this 8th day of July, 2024.

Rachel F. Gard

COURT REPORTER