UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LULULEMON ATHLETICA CANADA INC. and LULULEMON USA INC. Petitioners, v. NIKE, INC., Patent Owner.	)	CASE NO. IPR2023-00189

REMOTE VIDEO DEPOSITION OF DR. KEVIN LYNCH

JULY 27, 2023

9:04 a.m.

Los Angeles, California

Reported Remotely By:
Brandi R. Celestino
CSR No. 13640

lululemon athletica inc. et al. v. Nike, Inc.
IPR2023-00189
Patent No. 9,278,256
Ex. 2006

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VIDEO DEPOSITION OF DR. KEVIN LYNCH, TAKEN ON BEHALF OF THE PATENT OWNER NIKE, AT 9:04 A.M., THURSDAY, JULY 27, 2023, VIA REMOTE VIDEOCONFERENCE, BEFORE BRANDI R. CELESTINO, CSR NO. 13640.

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WITNESS: DR. KEVIN LYNCH

WITNESS INSTRUCTED NOT TO ANSWER

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DR. KEVIN LYNCH

Lululemon, Inc. v. Nike, Inc.

Thursday, July 27, 2023

LOS ANGELES, CALIFORNIA

THURSDAY, JULY 27, 2023, 9:04 A.M.

THE VIDEOGRAPHER: Good morning. We're going on the record. The time is approximately 9:04 a.m. in the Pacific time frame.

This is the video deposition of Dr. Kevin Lynch taken by the patent owner in the matter of Lululemon Athletica Canada Inc. et al. versus Nike Inc. filed in the United States Patent and Trademark Office. Case number is IPR2023-00189. This deposition is being held at 707 Wilshire Boulevard, Suite 6000, Los Angeles, California 90017.

My name is Peter DeFrank. I'm a notary public and a legal video specialist. The court reporter is Brandi Celestino. We're representing Kusar Lexitas located in Long Beach, California. Please note that audio and video recording will continue to take place unless all parties agree to go off the record.

Starting with the noticing attorney, counsels and all present will now state their appearances and affiliations for the record, after which the court reporter will swear in the witness.

MS. STAUBACH: I'm Lindsey Staubach of Arnold

& Porter on behalf of patent owner Nike, and with me is cocounsel Aaron Bowling.

MR. McCLELLEN: My name is Forrest McClellen. I'm here with my colleague Mehran Arjomand, both from Morrison & Foerster. We represent petitioner Lululemon and also for the purposes of this deposition Dr. Lynch.

THE VIDEOGRAPHER: Thank you.

At this time will the court reporter please swear in the witness.

DR. KEVIN LYNCH,

having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MS. STAUBACH:

Q Thank you for joining us today, Dr. Lynch.

Can you first please state and spell your name for the record.

A Kevin Lynch, K-e-v-i-n, L-y-n-c-h.

Q Thank you.

I'm going to be asking you a series of questions today, so I want to go over a few ground rules first.

If you don't understand a question that I asked, please let me know and I'm happy to repeat or rephrase. If you don't hear me, also let me know, and I'm happy to repeat myself. But I will assume that if you answer me, you did understand my question, and you answered it to the best of your ability.

To make a clear record, please do your best to answer questions verbally, so no head nodding, if you can help it. And if you need a break at any point, please just let us know; otherwise we'll plan to take regular breaks.

And you understand that you're here today to give deposition testimony in this IPR?

A Yes.

Q Is there any reason today that you can't give accurate or truthful deposition testimony?

A No.

Q Okay.

When were you retained for this case?

A In 2022. I don't remember the exact month.

Q Do you have an estimation?

A I would be speculating.

Q You can't say whether the first half of the year or the second half?

A I don't know. Sitting here right now, I

don't know.

Q Okay.

Do you remember who reached out to you?

A Forrest McClellen, I believe. Most of my communication was with Forrest.

Q Okay.

And what was the reason you were told you were being retained?

A First we had -- well, first there was an email communication --

MR. McCLELLEN: Okay. Hold on a second.

Objection. Privilege.

Dr. Lynch, you can answer to the extent that you can provide testimony about -- actually, I'm sorry. I think this question calls for privileged information.

Dr. Lynch, I instruct you not to answer.

(Witness instructed not to answer.)

THE WITNESS: Okay.

BY MS. STAUBACH:

Q Well, I'm asking about before you were actually retained. What was the reason you were told you were going to be retained?

MR. McCLELLEN: Same objection.

(Witness instructed not to answer.)

BY MS. STAUBACH:

Q How many conversations did you have with Forrest or any other counsel before you were retained?

A I think one, possibly two.

Q Are you currently being retained by Lululemon for any other matters?

A Yes. There's one other IPR matter.

Q And so you're working on another patent with Lululemon?

A Not currently, but I did spend time on that patent.

Q Which patent is that? Do you know?

A I would be speculating. I don't know the number offhand.

Q Do you remember the subject matter that it relates to?

A I haven't looked at that in quite some time, so I know it has to do with exercise equipment, but I...

Q Is this your first deposition?

A No.

Q How many times have you been deposed before?

A Twice.

Q And when was the last time?

A 2020.
Q What case was that for?
A Powerbond versus Wahoo Fitness, Foundation Fitness, and others.
Q Which side were you on?
A The plaintiffs.
Q So petitioner -- wait. Was that a district court case, or was that an IPR?
A It was not an IPR.
Q Okay.
Was that a patent case?
A Yes.
Q And what was the actual technological subject matter there?
A So, it's been a few years since I looked at that in any detail, but the subject matter was methods for making an exercise bicycle feel like it's being ridden in an actual outdoor environment with hills, et cetera. So haptic feedback to the user.
Q And you said you were deposed once before that.
What case was that for?
A That was -- so I don't remember the order of the parties involved, but it was scientific games and -- I've actually forgotten the name -- the various

names of the other side.

Q Was that also a patent case?

A Yes.

Q Have you ever been an expert in a case that wasn't dealing with patents?

A Yes, but it's been quite a while.

Q And what was that case about?

A There was a case regarding tariff classifications for technology for imported goods, and that was maybe 20 years ago.

Q And for what expertise were you retained in that case?

A For my expertise in robotics and understanding of the technology that was being considered for tariff categorizations.

Q What did you do to prepare for your deposition today?

A I reread my own declaration, as well as the other documents that I refer to in my declaration, other documents, and I met with Forrest McClellen and Mehran Arjomand.

Q So you said documents that you refer to in your declaration.

Do you mean, like, the prior art in this case?

A So in my declaration, I indicate --

(Telephonic interruption.)

THE WITNESS: Sorry that's me.

In my declaration, I indicate which documents I referred to in writing my declaration, and so those are the ones that I mean.

BY MS. STAUBACH:

Q So you -- is this a copy of your declaration?

A Yes. I have it here in front of me.

Q Did you bring any other documents in with you?

A No. This was given to me by Forrest McClellen. I didn't bring anything with myself -- for myself.

Q Are there any annotations in there or highlighting or anything of that sort?

A This was just given to me, but I don't see anything.

MR. McCLELLEN: It's a clean copy of his declaration.

MS. STAUBACH: Thank you.

BY MS. STAUBACH:

Q So in your meetings to prepare for the deposition -- when were those meetings?

A Over the past few days.

So I think the first meeting -- over the past few days. Maybe the first meeting was Saturday, a few days ago.

Q How many days did you meet?

A I -- we met by videoconferencing two or three times, and then I flew to L.A., and I've been here since Tuesday morning. This is Thursday.

Q So how many hours total would you say you spent preparing for this deposition?

A A lot of it was reading the documents again, and so it's definitely been more than 10, definitely less than 100. So double digits, but I don't have a more detailed accounting.

Q Who was present in your meetings to prepare?

A Forrest McClellen and Mehran Arjomand.

Q Anyone else?

A Alex Yap stopped by for 10 minutes or so.

Q You said that you looked at your declaration, you looked at other documents that you list in your declaration, and then you said the third bucket of documents, just other documents.

What were those?

A The primary were the Court's decision on the

petition, and the declaration of Dr. Tony Bulgar.

Now, I have not heard her name pronounced before, so is that a correct pronunciation?

Q I say Bulgar, and I hope I'm right.

A Dr. Tony Bulgar. So I'll say Tony Bulgar.

So those two documents.

Q Okay.

So you've also reviewed the petition in this case; right?

A Actually, I have not.

Q You've never read the petition?

A I've seen it, but I've never read it.

Q In what context did you see it?

A It was a part of a package of documents that was given to me, but I was told that I didn't need to read it.

MR. McCLELLEN: Objection. Privilege.

THE WITNESS: I'm sorry.

MR. McCLELLEN: Dr. Lynch, you can tell Lindsey that you received the petition. You can talk about whether you reviewed it, but don't describe what we discussed about it.

So go ahead with that instruction.

THE WITNESS: I did not read the petition or the patent owner's response.

BY MS. STAUBACH:

Q When did you receive the petition?

A At least last week. If I received it before then, I'm not recalling it.

Q So you didn't read it, but you looked at it?

A I looked at the front page. I was aware of it.

Q And you said you did review the institution decision?

A Yes.

Q Have you reviewed all of the prior art in this case? Let me rephrase.

Have you ever referred to a reference called Tagliabue?

A No.

Q Arrasvuori?

A Yes.

Q Watterson?

A Yes.

Q Ellis?

A Yes.

Q With regard to those last three references -- so Arrasvuori, Watterson, and Ellis -- would you say that you are very familiar with those references at this point?

A I focused on pieces of those references. So I'm familiar with all of it, but only very familiar with bits of it.

Q All right.

I want to turn to your CV, if you would. I'm just going to walk through some of your background and qualifications.

You're a professor of mechanical engineering at Northwestern University; right?

A That's correct.

Q How long have you held that position?

A I started at Northwestern in 1997, and then progressed through the ranks of assistant, associate to full professor, but I've been at Northwestern for 26 years.

Q What did you do before that?

A Immediately before that, I was a post-doc at a government research lab in Japan. Before that, I was received my Ph.D. in robotics at Carnegie Melon, and before that, I got my undergraduate degree in electrical engineering from Princeton.

And, of course, other things are mixed in there too.

Q Are you still actively teaching?

A Yes.

Q What courses do you teach currently?
A I teach courses in robotics and systems modeling. So dynamics and systems modeling.
Q Do you do research as a part of your position?
A Yes.
Q So you do more research than teaching?
A Much more.
Q Okay.
What kind of research do you focus on?
A So my research in robotics spans several fields, but examples include network robotic systems, swarm robots, so that refers to multiple robots that cooperate and collaborate with each other by communicating over a network. So that's swarm robotics.
I also work on human robot interaction. So this is where humans and robots physically couple with each other to perform tasks. So we have to sense human intentions. We have to apply sensors to the humans, sensors to the robots, and design robots and control systems that allow humans and robots to work safely and productively together.
I also do research in robotic locomotion.
COURT REPORTER: Say that again.

THE WITNESS: Research in robotic locomotion, which refers to legged robots and how they can walk or run over uneven or soft terrain.

I also do research in robot manipulation, and this refers to how robots can use hands or other end effectors to usefully manipulate the world. Those are examples. I work on other things also.

BY MS. STAUBACH:

Q And you're currently the director for the Center for Robotics and Biosystems; right?

A At Northwestern, that's correct.

Q What are biosystems?

A Biosystems for us means technological or artificial systems interfacing with biological systems.

So for the examples that I gave you, human robot systems would be an example; haptic interfaces; understanding how animal control systems work and interrogating them using technological tools. So basically anything where a biological system and a technological system, usually something to do with robots, interface.

Q So can you tell me what you mean by measuring human intentions?

A Yes.

So when a human is interacting with the robot, to make that interaction safe, it's important for us to be able to understand what the human's objectives are because safety is obviously the highest priority, and then functionality comes after that.

In addition to those kinds of human robot systems, we also use robots to understand the human motor control system. And so for all of these, we need sensors to understand what the human is doing. As one example, we're working on lower body exoskeletons, so these are robots that you wear on your legs and help you to walk, perhaps if you're recovering from stroke or other injury.

So one thing we might do there is have the human walk on a conveyor belt that's implemented with force plates so we can understand the forces they are applying. We might have EMG sensors on their muscles so that we can understand how activated their muscles are. We might have accelerometers to detect motion. We might have motion capture or tracking systems, usually cameras that are arrayed around the subject watching what the subject is doing. We might use inertial measurement units, often shortened IMUs, and then various other sensors that will help us understand what the human is doing and what they are

trying to do.

Q Do you have any experience with measuring human fitness data?

A My work is not towards -- generally towards human -- so -- so when we do studies of human fitness, we're normally looking at people who've suffered a stroke or a spinal cord injury, and so we're evaluating their progress under those circumstances, or if we're talking about a human walking in an exoskeleton, we're evaluating their motor learning as they interact with the system.

But we're not -- usually or ever -- working with high performance athletes to understand their performance. Not in my research anyway.

Q So your particular research is a little bit different than measuring users of some kind of network system or measuring system that are -- that's measuring, like, how fast humans are going in a race, say?

A We do research on competitive situations, where two people are attached to robots that are then virtually coupled with each other, and the two humans compete with each other on playing various games on a video screen with their interaction with robots.

None of those have been a running race, for

example.

Q Would you say that your particular experience is more hardware-based or software-based?

MR. McCLELLEN: Objection. Form.

THE WITNESS: As a roboticist, we do everything.

BY MS. STAUBACH:

Q And I think on page 15 of your CV -- let's see -- at the bottom there, it lists -- and onto the next page -- three patents on which you're an inventor.

A Yes.

Q Did you have an active role in procuring those patents?

A Yes.

Q Were you involved in the prosecution before the USPTO?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So these patents are issued to Northwestern University because they are based on research that I did at Northwestern. So we worked with Northwestern lawyers, and the lawyers for the most part are interfacing with the patent office, although I have been involved in phone calls with the patent examiner with a lawyer present.

BY MS. STAUBACH:

Q So you've been in interviews with the patent examiner?

A Yes.

Q And would you say you learned a lot about the patenting process?

MR. McCLELLEN: Objection. Form.

THE WITNESS: By going through these patent processes, yes, I learned a lot.

BY MS. STAUBACH:

Q All right.

So you've got your declaration there.

Who wrote that declaration?

A This was a joint effort between me and Forrest or -- I think Forrest here at Morrison Foerster.

Q So which portions did you write?

MR. McCLELLEN: Objection. Calls for work product and privilege.

Instruct the witness not to answer.

(Witness instructed not to answer.)

BY MS. STAUBACH:

Q So you said it was a collaborative process, so some combination of you and counsel drafted this.

Would you agree with that?

A Everything in here I signed my name to, so everything is mine.
Q At the time that the declaration was filed, did you agree with all of your opinions in it?
A Yes.
Q Do you still?
A There are a few inconsequential typos that I noticed upon rereading in the past week, but nothing of substance.
Q Would you like to make any corrections on the record?
A Sure.
Q You want to point me to those.
A So paragraph 87 refers to -- at the last sentence refers to 272 A to 272 N, but those should be 252 A to 252 N as shown on -- at paragraph 84, the figure at paragraph 84.
Q Anything else?
A Repetitions of that mistake a few times. So paragraph 88 has it right in the next sentence, and I probably will not be able to be exhaustive now, but I believe it's confined to the next several paragraphs, but it does recur at least a couple of more times.
Q But other than typographical errors, you stick by your opinions in the declaration?

A Yes.
Q How many hours would you say you spent putting this declaration together?
A Double digits, not triple.
Q Close to 100?
A I don't know, sitting here right now.
Q In the declaration, you say you were compensated at your standard consulting rate. That's paragraph 3.
What is that rate?
A $400 an hour.
Q Is there a reason you didn't put it in here?
A No.
Q What percentage of your annual income would you say comes from your expert consultant work?
A It varies wildly. Close to zero some years, and possibly close to a third other years.
Q All right.
I'm going to hand you the 256 patent, which is the challenge patent.
MS. STAUBACH: We can mark that as Exhibit 1.
(Exhibit 1 marked.)
THE WITNESS: This is also marked Exhibit 1001 at the bottom.
BY MS. STAUBACH:

Q It is Exhibit 1001 from this IPR proceeding. Will you understand if I refer to this as the 256 patent today?
A Yes.
Q Have you read this patent?
A Yes.
Q How many times?
A I've read portions of it several times and portions perhaps once.
Q When's the last time you reviewed this patent?
A I reviewed portions of it yesterday.
Q Have you reviewed the claims?
A Yes.
Q Have you reviewed the claims in their entirety?
A I have not provided, nor was I asked to provide, an analysis of the claims in their entirety, but I did review the claims in their entirety.
Q So in forming your opinions in your declaration, you didn't consider the claims in their entirety?
A In my declaration, I was not asked to go element by element through the claims, but rather provide my opinions on certain aspects of the

technologies in this, as well as the other references.

Q Did you not think it was important to analyze the limitations of the claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I'll refer you to paragraph 15 of my declaration. It says, "I am not a lawyer, and I will not provide any legal opinions; rather I have been asked to provide any technical opinions based on a person of ordinary skill in the art would have understood various references before the 256 patent's March 3, 2008, priority date. And although I am not a lawyer, I have been advised to apply certain legal standards in forming my opinion," and then there's listing of some legal standards.

I was not asked to perform a comprehensive analysis of any one of all -- any one of the claims, but rather to look at certain aspects of the technology.

BY MS. STAUBACH:

Q My question was a little bit different than that.

Did you think it was important to analyze the limitations of the claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: My job here was not to be a

lawyer, but rather to review the technology, given what I know about it and what a person of ordinary skill in the art would know about it. So I was not asked to do, for instance, an invalidity analysis that was comprehensive.

BY MS. STAUBACH:

Q So you've been an expert in two patent -- at least two patent cases before; is that right?

A Yes.

Q Have you worked on invalidity topics in those cases?

A Yes.

Q In those cases, did you provide opinions based on claim limitations?

A Yes.

Q And if you provided those opinions before, why didn't you provide them this time?

A Before I was asked for that. This time I was not asked for that.

Q So you did not analyze the claims as a whole?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I did not perform a comprehensive analysis of the claims element by element.

BY MS. STAUBACH:

Q But you've read the claims?

A Yes.

Q You're a skilled artisan in this field?

A Yes.

Q And do you have some understanding of what the claims mean?

A I have not performed a claim construction on all the terms, but I have a general understanding of what they could mean.

Q All right.

Let's look at Claim 1.

I want to focus on the last limitation, but in order to get there, I just want you to read through the entire claim. So if you want to take a moment to do that, you can let me know when you're done.

A I'm done.

Q You've read the entire Claim 1?

A Yes.

Q Okay.

So that last limitation, I'll just repeat, says, "Continuously generate and simultaneously communicate in realtime to the first user at the first location and the second user at the second location and interface indicating whether the challenge has

been met."

Did I read that correctly?

A Yes.

Q And did you consider this claim limitation in rendering your opinions?

A In my declaration, I referred to individual terms in this claim limitation.

Q So you picked out specific words from the last claim limitation that I just read?

A Well, I was asked to consider this claim limitation generally in the context of --

COURT REPORTER: Of what?

THE WITNESS: Sorry. Should we call this A? Do you want me to spell it? A-r-r-a-s-v-u-o-r-i, and I'll be pronouncing that as Arrasvuori. Sorry.

BY MS. STAUBACH:

Q Do you have some understanding of what this claim limitation means?

A As I mentioned, I have not performed a claim construction within the context of the specification of this paper of this -- of this patent, but I do have, you know, in the context of Arrasvuori, I can see elements from this claim limitation represented in Arrasvuori's disclosure.

So I don't have an opinion, sitting here now,

as to the entire scope of this claim limitation, but I can recognize prior work that satisfies the claim limitation by any reasonable definitions, any reasonable claim constructions.

Q Is it your opinion that all of the terms in these claims are given their ordinary and customary meaning?

A I think it has to be interpreted in the context of the specification. For example, the word "continuous" has multiple meanings depending on context. So it has to be construed; however, there are certain definitions -- there are certain features, for example, continuous that will have to be in any final definition.

Q And you've read the claims, and you've read the entire specification at least once?

A Yes.

Q And you hold yourself out as a person of ordinary skill in the art at the relevant time, and so, sitting here today, you must have some opinion of what this limitation means.

MR. McCLELLEN: Objection. Form.

THE WITNESS: I have opinions as to technology that may satisfy this limitation, but I have not done an analysis in my declaration of the

full scope of that claim limitation.
BY MS. STAUBACH:
Q Well, let's --
A So I can recognize an example of it, but I can't tell you everything that's not an example of it.
Q Let's break it down a little bit.
So in this limitation, it includes the phrase "in realtime."
Do you have an understanding of what "in realtime" means?
A Again, without having done the analysis in the context of the patent, I will withhold a definitive answer, but a common definition for "realtime" would be something with low latency, where latency -- low latency is defined by the particular task or application.
Q What does "low latency" mean?
A So if I may quote this claim element, it says, Generate and communicate in realtime to the users.
Is that okay as paraphrasing?
Q You can paraphrase how you wish.
A Generate and communicate in realtime to the users.

So I -- here I would talk about latency being the time from the generation to the communication. That would seem to be what's implied.

Q And what's the difference between generation and communication?

A I would understand generate to mean creating some data and communicate to be communicating some data.

Q So is what you're saying communicating is the actual displaying of the data?

A I am not going to -- I don't agree with that.

Q What would you say communicating means?

A I would say it means that one device is communicating to another device. That's generally what communicate means.

Q Okay.

I'd like -- I'm going to hand you the petition in this case. And I know you haven't taken a close look at this, so feel free to peruse now and let me know when you're ready.

A Well, I don't think I'm going to read it sitting here, but -- so I guess I'm ready.

MR. McCLELLEN: Lindsey, do you want to give this an exhibit number?

MS. STAUBACH: I don't think so. We didn't

do that with the declaration.
BY MS. STAUBACH:
Q Page 56 -- actually, let's go to page 55.
This is the discussion of this same claim limitation which begins, "Continuously generate and simultaneously communicate in realtime in the context of Arrasvuori-based grounds."
And on page 56, there's a discussion of generating the interface. So this begins, in that first paragraph on page 56, "The server generates the interface that it sends to the user wireless nodes and/or computers."
Did I read that right?
A Yes.
Q So this says the server generates the interface.
Do you agree with that?
A That's what it says.
Q And is that how you understand generate within this claim term?
A Is -- I'm sorry. Is what how I understand it?
Q A moment ago you said generate was measuring data or gathering data.
A I think I said creating data, but --

Q Okay. Fair.

Creating data.

Here it says, "The server generates the interface." So is generation referring to data or the interface?

MR. McCLELLEN: Objection. Form.

THE WITNESS: The interface is data.

BY MS. STAUBACH:

Q Can you expand on that a little bit more.

A Sure.

So the server is sending information to the user wireless nodes so that the user wireless nodes can display something to the user, and that data that it's sending encodes the interface.

Q Okay.

So for the rest of this paragraph, it says, "Arrasvuori discloses a server might make leaderboards available for receipt by user wireless nodes and/or other computers, which, in turn, could provide leaderboard display to their users via GUIs and/or other interfaces. The phrase 'make leaderboards available for receipt' and the verb 'display' confirm that the server generates the leaderboards."

Do you see any discussion of data in here?

A So GUI is G-U-I for graphical user interface.

Q Uh-huh.
A So the server transmits data to the user wireless nodes, and that data encodes the leaderboards or possibly other GUIs that are displayed by the user wireless nodes. That would be commonly understood.
Q Do you include a discussion of that in your declaration?
A Some things are so obvious I did not point them out in my declaration. This would be an example.
Q So it's --
A I don't know. I'd have to go through my entire declaration to see if I say that an interface is encoded by data, but that is definitely something that I would assume to be common knowledge.
Q Well, it's up to your knowledge. It's not in your declaration?
MR. McCLELLEN: Objection. Form.
THE WITNESS: I would have to review the whole thing with that question in mind to know for sure, but I would not be surprised if I didn't feel the need to say that explicitly.
BY MS. STAUBACH:
Q So what does it mean within the context of the 256 patent to say, Providing an interface in realtime?

A Is that phrase written somewhere? Should I be referring to something, or are you paraphrasing?

Q Let me rephrase.

What would it mean within the context of the 256 patent to generate and communicate an interface in realtime?

A So again, my analysis was not to delineate everything that's encompassed by that, but rather to look at specific examples and ask if that is an example of that claim language. So that's the analysis that I did.

I did not do, you know, setting the bounds of what that limitation must mean, but rather identifying, for example, that Arrasvuori discloses continuously generating and simultaneously communicating in realtime, but, again, only in the context of the individual terms in there.

So just as a reference, Arrasvuori -- and I don't have it in front of me -- but Arrasvuori is a patent application written in the context of multiplayer video games, which were very well-known in 2007. And so it was very clear what sorts of things are being referred to there, and Arrasvuori discloses that also. The realtime, the simultaneous, and the continuous generation.

Q So you didn't exactly answer my question.

My question was, what would it mean within the context of the 256 patent to generate and communicate an interface in realtime?

A So I think I did answer your question. I'll try again.

I did not try to put a boundary around everything that that could possibly mean in my declaration. Instead what I did was I looked at other prior art and asked the question whether that would satisfy any reasonable definition of some of the terms in this claim limitation.

Q So in order to say a prior art reference, like Arrasvuori, generates and communicates an interface, which in paragraph 72 of your declaration you say is a leaderboard, in realtime, how can you make that determination without having an understanding of the claim language?

A Well, I think I said earlier -- I'll say it again -- that realtime, a reasonable definition of "realtime" will almost certainly mean low latency between one event and the next. In this case, the events are generating and communicating.

So most definitions or all definitions -- all reasonable definitions I can think of of realtime

would have a notion of low latency. And what low latency means has to depend on the application or the task. So again, it's context-dependent.

But in the context of multiplayer video games as were common in 2007, many very popular ones, people around the world are playing in realtime shooting at each other, and those things have to be done with low latency. It has to be continuously generated. It has to be simultaneously communicated with an appropriate definition of those terms.

Arrasvuori discloses similar sorts of interfaces looking at paragraphs 52 and 53, for example, and I do not have the reference in front of me. But if you read those, you'll see a disclosure of exactly that sort of system where players are playing and getting feedback from each other in realtime.

Q So would you agree that your opinions in your declaration are based on reasonable definitions of these terms but not in the context of what the 256 patent says?

A My opinions in my declaration --

MR. McCLELLEN: Objection. Form.

Sorry. Please continue.

THE WITNESS: So my opinions in my declaration are based on any reasonable definition of

those terms, but I did not try to delineate everything that could be captured or excluded that by last claim element because I did not do claim construction, and I did not do a careful invalidity of analysis of entire claims.

Instead, I was looking at individual terms, and understanding what they have to mean without trying to say what else they could mean.

BY MS. STAUBACH:

Q So you've been an expert in patent cases before. In those cases, have you given opinions based on reasonable definitions that aren't deduced from the relevant patent in the case?

A So my reasonable definitions are based on the specification 256, as well as my own engineering understanding, but, again, I did not try to come up with a clear delineation between everything that's included by that element and everything that's excluded by the element.

So I did consider 256 when I looked at Arrasvuori and determined whether it was generating an interface in realtime.

Q In what way did you consider the 256 if you didn't try to delineate what the claim limitations mean in light of the specification of the 256 patent?

A I'll try to explain one more time.

So what I am saying is that Arrasvuori is an example of what's disclosed in this last claim element. What I'm not saying is everything that can be excluded by this last claim element. So those are different things.

And my determination that Arrasvuori is disclosing what's in this claim element is based on my own engineering understanding, what a POSITA would know, and the specification of the 256 patent. P-O-S-I-T-A, person of ordinary skill in the art.

Q All right.

Can you tell me all the reasonable definitions you're aware of for the phrase "realtime"?

MR. McCLELLEN: I'm sorry to interrupt. This sounds like this might be going on for a little bit. We've been going for about an hour.

Do you want to take a break first?

MS. STAUBACH: After this question.

MR. McCLELLEN: Okay.

BY MS. STAUBACH:

Q Can you tell me all the reasonable definitions you're aware of for the phrase "realtime"?

A I believe any reasonable definition will have

some notion of low latency built into it, and what low latency means has to depend on the task or the application. So I can't tell you every definition, but I can tell you all definitions will probably have that -- I believe would be that in it.

MS. STAUBACH: All right. Thank you.

We can go off the record.

THE VIDEOGRAPHER: Going off the record. The time is approximately 9:59 a.m.

(Recess taken.)

THE VIDEOGRAPHER: We're back on the record. The time is approximately 10:11 a.m.

BY MS. STAUBACH:

Q Okay. Welcome back.

So as we previously discussed, you did not perform an analysis to determine the scope of the claims in the 256 patent; is that right?

A I did not perform a detailed analysis of the claims, just some of the individual terms.

Q Did you perform any analysis to ascertain the scope of the full claims?

A That's not what I was asked to do.

Q So the answer to that would be no?

A That's right.

Q Sitting here today, you can't provide me with

a definition of the phrase "realtime" within the context of the 256 patents claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Just refer to my previous answer. I know what it has to include, that definition, but it may include other things potentially. But it definitely has to include some notion of low latency.

BY MS. STAUBACH:

Q How can you understand whether the Arrasvuori reference teaches a claim limitation, such as this realtime limitation, if you don't understand the scope of the claims themselves?

A Arrasvuori teaches low latency, and it also teaches realtime, and those two are consistent with each other.

Q But is low latency how realtime is -- let me rephrase.

Is low latency the definition of "realtime" as it appears in the 256 patent claims?

A It definitely means low latency, and it may mean other things too. So I haven't done a claim construction within the 256 patent's context, but it's clear from the specification that realtime in the 256 context means that there's low latency, in this case

between generate and communicate. So it means at least that.

Q When you were considering Arrasvuori, you only considered whether Arrasvuori meets certain technological aspects of the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I was asked to provide an analysis of Arrasvuori and what it teaches, and also certain obvious combinations.

BY MS. STAUBACH:

Q So if we look at your declaration table of contents on page I, Section 7(A), there are subsections titled, "Network Architecture," "Game Initiation and Gameplay Operations," "Monitoring and Feedback Operations."

Do you see that?

A Yes.

Q And "Compensatory Operations."

So in these sections do you agree that you gave overviews of how Arrasvuori teaches these concepts?

A So those sections are primarily summarizing important -- important passages from Arrasvuori and also giving my own understanding of what they mean. And the structure is mirroring the structure of the

Arrasvuori disclosure, game initiation and gameplay operations, monitoring and feedback operations, and compensatory operations are listed in that order in the Arrasvuori disclosure.

Q And did you select these specific categories of information to discuss with regard to Arrasvuori?

MR. McCLELLEN: Objection. Calls for privilege and work product.

Instruct the witness not to answer.

(Witness instructed not to answer.)

BY MS. STAUBACH:

Q Did you analyze any particular claim limitations from Arrasvuori in these sections?

A I did not analyze Arrasvuori's claims.

Q I'm sorry.

I meant, did you analyze any of the 256 patent's claims with regard to Arrasvuori in these sections?

A Particular terms, yes, but not entire claims or even entire claim elements as they are defined.

Q And can you point me to the terms that you analyzed?

A It may take some time, but I will just flip through my declaration.

Q Well, you start discussing Arrasvuori on page

23.

A Okay.

Q Let me be a little bit more specific. So let's go to page 23, the section entitled, "Network Architecture."

Does this section analyze any claim limitations from the 256 patent?

A This section is primarily telling you how Arrasvuori works, and it may use language from the claims, but it was not conducted to address any particular claim element.

Q So this section doesn't address any particular claim limitation from the 256 patent?

A Section -- this section 48, paragraph 48 on, is describing how it works -- how Arrasvuori works in terms of its network architecture.

Q But you agree that it doesn't discuss any specific claim limitations from the 256 patent?

A So my understanding from the district -- sorry -- from the review board is that Claim 1, for example, is broken into a number of claim elements: A, B, C, D, et cetera. And in my description of the network architecture, I do not address any one of those claim elements in its entirety.

Q How about the next section, Game Initiation

and Gameplay Operations on page 24?
A Uh-huh.
Q Does that address any particular claim limitations from the 256 patent?
MR. McCLELLEN: Objection. Form.
THE WITNESS: Again, this will be the same answer. It's addressing aspects of the claim limitations, but it is not taking a single, say, 1(D) and saying, Does Arrasvuori disclose claim element 1(D). I do not do that in this -- in my declaration.
BY MS. STAUBACH:
Q So I'll ask you the same question for the next section, Game Initiation Operations.
Does this section discuss any particular limitation from the 256 patent claims?
A It uses language from the claims, but does not address a complete claim element.
Q What language from the claims does it use?
A Which -- which section are you talking about?
Q Page 25, Game Initiation Operations.
A So there's quite a few words in common between that text and the claim text.
Q Are any of those words intended to be in common?
MR. McCLELLEN: Objection. Calls --

Dr. Lynch, you can answer the question to the extent you don't describe communications between myself and you or with Mehran.

THE WITNESS: Can you ask the question one more time.

BY MS. STAUBACH:

Q Sure.

Are any of the words in this Game Initiation Operation section intended to be in common with the 256 patent claims?

MR. McCLELLEN: Objection. Form.

Same caution, Dr. Lynch.

THE WITNESS: In the sense that I'm describing technology similar to the technology described in the 256 patent, there's naturally going to be some common words used.

BY MS. STAUBACH:

Q But there are no phrases lifted verbatim from the 256 patent claims.

Would you agree with that?

A I agree with that. I was not trying to lift claim language and then do comparison against it explicitly.

Q And I'll ask for one time for the next section, Game Play Operations. The same question.

Do you address any specific claim language from the 256 patent claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I would give the same answer; that because I'm describing similar technology in Arrasvuori as appears in the 256 patent, there would naturally be some overlap in words, but I did not lift an entire claim element from the 256 patent and analyze that.

BY MS. STAUBACH:

Q So when considering whether Arrasvuori has realtime feedback, you used a reasonable definition of the phrase "realtime."

Do you agree?

A I used an understanding of realtime --

MR. McCLELLEN: I'm sorry.

Objection. Form.

Please continue.

THE WITNESS: I used an understanding of realtime that any reasonable definition would also have as part of it -- and I mentioned this before -- low latency.

BY MS. STAUBACH:

Q Did you similarly use a reasonable definition for the term "communicate" as used in the 256 patent's

claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So I believe communicate has a fairly clear meaning.

BY MS. STAUBACH:

Q What is that meaning?

A That a communication was achieved. So in this case two devices somehow are talking to each other.

Q So in the context of two devices talking to each other, a second device received a communication from the first device or vice versa?

MR. McCLELLEN: Objection. Form.

THE WITNESS: The way in which a communication is performed, there's many ways that can happen, but there will be a sender, and there will be a receiver.

BY MS. STAUBACH:

Q But you don't have a definition of the term "communicate" as it appears in the context of the 256 patent claim?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It must mean that two devices are talking to each other, as I said earlier.

BY MS. STAUBACH:

Q So is that your opinion of what the plain and ordinary meaning of the term "communicate" is as it appears in Claim 1 of the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I believe two devices have to be talking to each other, at least two devices.

BY MS. STAUBACH:

Q So that's the scope you're giving to the term "communicate" within the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Just to be clear, I am not giving a scope of any of the terms. What I'm saying is that any reasonable definition would have to have that as part of it.

BY MS. STAUBACH:

Q How about the phrase "simultaneously communicate"? What's the reasonable definition of that that you considered?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So simultaneously communicate in this claim element is not completely clear, so I can't say what the scope of that is; however, as I mentioned in the Arrasvuori disclosure, there is a notion of the server communicating with user devices.

BY MS. STAUBACH:

Q So it's not entirely clear to you what the phrase "simultaneously communicate" means in the context of the 256 patent's claims?

A It's ambiguous.

Q You didn't offer any opinion on that in your declaration; correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Again, my declaration was not based on studying or providing an analysis of the claim elements, but rather studying prior art and seeing if it would be an example of any of the terms used here.

BY MS. STAUBACH:

Q And how can you understand whether Arrasvuori teaches communication without being able to understand what that means in the 256 patent's claims?

MR. McCLELLEN: Same objection.

THE WITNESS: As I mentioned, communication must involve one device talking to another device, and that's clearly happening in Arrasvuori.

BY MS. STAUBACH:

Q Let me reask that.

How can you understand whether Arrasvuori teaches simultaneous communication without being able to understand what that means in the context of the

256 patent?

MR. McCLELLEN: Same objection.

THE WITNESS: So the use of "simultaneously communicate" in Claim 1 -- the last claim element of Claim 1 in the 256 patent is ambiguous. But according to any definition that I can think of, Arrasvuori discloses it.

If you want me to show you paragraphs 52 and 53, I can explain, of Arrasvuori. I don't have it in front of me.

BY MS. STAUBACH:

Q What does "continuously generate" mean to you in the context of the 256 patent?

A Again, it's not -- I haven't done a claim construction for that in the context of the 256 patent; however, I would understand continuously generates in this case to mean something to generate recurrently. It's not done once.

So one idea is that you generate the interface once, and that's clearly not continuously generating it. If you do it multiple times, then that can be continuously generating.

Q So when you say "recurrently," if the interface was generated once every hour, in your opinion, is that continuous?

A That would depend on the application.

In any case, as any engineer knows, there's a difference between continuous time and discrete time. Continuous has a very strong definition to an engineer, which is clearly not what's being used in the 256 patent. And so now we have to resort to more colloquial understanding or commonsense understandings of what continuously might mean.

And so that would depend on the context. It could have many different meanings.

Q Well, let's talk about the context of the 256 patent and activity tracking.

What does "continuous generation" mean in that context?

A As I said, it means recurring, at least. It could mean other things, but it at least means recurring. It definitely means recurring.

Q But it doesn't have to be recurring with any particular frequency?

A No. That would depend on the task and the application.

Q All right.

Let's talk about Arrasvuori and Arrasvuori's computer video game.

What would satisfy continuous generation in

that context?

A So as an example --

I don't have Arrasvuori in front of me. Would you like to give that to me, or should I do it from memory?

Q Sure.

This is Exhibit 2.

(Exhibit 2 marked.)

THE WITNESS: Should I start answering, or would you like to ask the question again?

BY MS. STAUBACH:

Q Do you need me to repeat it?

A Please.

Q What would satisfy "continuous generation" in Arrasvuori's context?

A Okay.

So there are -- again, I did not focus on the word "continuous" in my declaration because, honestly, it's quite obvious, but I will pick out one example here. Paragraphs 52 and 53.

I read, "As another example with completion of and/or during performance of a real world fitness task, display might be provided wherein graphical indicators corresponding to users that are performing and/or that have performed a real world task" --

sorry -- "fitness task are positioned relative to one another, a goal corresponding to the task, and/or a root corresponding to the task. Such display might, for instance, provide a game world depiction and/or be presented via one or more GUIs and/or other interfaces provided by wireless nodes and/or other computers of users. Such display might, in various embodiments, take into account quality of real world fitness task performance."

So paragraph 53 then gets more to the heart.

"For example, in the case where a stage of a game requires that users reach a game world landmark by performing a real world fitness task of running and/or jogging, display might provide a graphical representation for each user performing the task and show the graphical representations as progressing along a game world route, terminating in the game world landmark. A user viewing such display might, for instance, be able to determine how close each participating user was to the goal and/or how well each such user was competing relative to other such users."

So that was a long quotation. I think I got it mostly right.

The point here is that, as an example,

multiple competitors are competing in a running or jogging race. They are seeing in realtime a graphical representation showing how each of the competitors is progressing along a game world route, and that terminates in a game world landmark. So by watching this display, I can see how well I'm doing compared to others.

So this has to be continuously generated, the interface. It has to be simultaneously communicated. And, again, simultaneously here is an impossible definition by a strict theoretical viewpoint, but communicated simultaneously could mean as soon after as reasonable that you've generated the interface; that could be simultaneous, and/or it could be simultaneously communicated to all of the users.

So those are two different possible uses of "simultaneously," both of which are here. And in realtime, this interface would be useless unless there is low latency between the data being received at the server and then be displayed on my GUI. So by any definition I can think of for "continuously generated," "simultaneously communicated," by at least those two definitions and provided in realtime, paragraphs 52 and 53 very clearly disclose that.

And so in my own declaration when I did not

focus on the "continuous" aspect of it, to my mind it was so obvious that it did not need to be a focus of my declaration.

Q So in paragraph 53 where Arrasvuori discusses users "reaching a game world landmark by performing a real world fitness task of running or jogging and showing graphical representation for each user," does Arrasvuori ever say how frequently the graphical representations are updated?

A No. Again, that's where it has to be task dependent; what it means to be realtime, what it means to be continuously generated.

And so for this task, if it's a running race that lasts a minute, an interval of one minute between updates would not suffice. It would not be realtime. It would not be continuous. If the running race lasted ten years, then a one-minute update might be fine.

So it has to be interpreted in the context of its usage because continuous has many meanings. So it has to depend on how it's used in context.

Q So what you're saying is that, in the context of Arrasvuori, if the race is, let's say, an hour long, a one-minute refresh rate for progress is too slow to be continuous generation?

MR. McCLELLEN: Objection. Form.

THE WITNESS: What I'm saying is that for this to be useful, for it to be satisfying for the users, for me to want to use it, it has to be refreshed often enough, and whether it's, you know, a millisecond or 100 milliseconds or something else is something that would be of focus of a user study, for example.

In any case, it's not zero. It's not continuous by the mathematical theoretical engineering definition. It's something that recurs. So the word "continuous" has to be interpreted in context.

BY MS. STAUBACH:

Q So let's say that Arrasvuori's running or jogging race described here lasts -- is a distance of one mile.

Could you put a time span on what it would mean to be continuous generation in that context?

A I think --

MR. McCLELLEN: Objection. Form.

Go ahead.

THE WITNESS: I think the ultimate purpose of bothering to write a patent is to disclose something that somebody might want to use, and so this is telling us that there is a colloquial meaning of

continuous refresh, which means continuous generation, simultaneous communication, realtime; so this is disclosing that.

And then if you want to ask what is the refresh rate, I would say that is a subject for a user study and is not something explicitly here.

BY MS. STAUBACH:

Q So Arrasvuori doesn't explicitly teach this refresh rate idea; correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Again, this is in the context of multiplayer video games, which were very well-known then. So my reading of this, which I'm sure is the correct reading, is that this patent application is geared towards giving people some exercise while they play video games, which they are motivated to do.

So for them to be motivated to play a video game, they would need to have an interface that was fun to use, and if it were overly delayed, nobody would use it. And again, we have plenty of examples of multiplayer games, people playing around the world, shooting games, for example, where if I shoot at you and I don't know what happens for a minute, I'm not going to play that game.

So that's the context in which this is being

provided. So this is disclosing effectively continuous in the context of the task.

BY MS. STAUBACH:

Q What do you mean by "effectively continuous"?

A I am just hedging against the theoretical definition.

So anybody who is an engineer, including people in this room, have seen the word "continuous time" and have seen it differentiated from discrete time, and computers, which all of this is based on, are running in discrete time. So they can't satisfy that theoretical definition.

So instead we're left with reasonable definition, colloquial definitions, definitions that make sense in the context of the application. So as you read this, there's no way to interpret it other than that the feedback that the interface is being continuously generated, simultaneously communicated, and in realtime.

There's no way to read this; otherwise, this would not disclose anything that anybody would want to do.

Q But sitting here today, in the four corners of Arrasvuori you can't point to any disclosure where

Arrasvuori gives such a refresh rate; correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So if you ask me questions like, Is it anywhere in the disclosure, I probably will not be able to answer without reading the whole thing. But I will say that I am not aware of it saying 10 milliseconds anywhere, for example.

BY MS. STAUBACH:

Q Do you see anything like that in the paragraphs that you pointed me to, paragraph 52 and 53?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It's a description of a user experience, so it's not giving me what the low latency means in this application.

BY MS. STAUBACH:

Q So it doesn't tell you a frequency with which the data is generated --

A Correct.

Q -- on the interface?

A Correct.

Q Could there be a situation where data is generated in realtime but not continuously?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It's possible to define such a

thing.
BY MS. STAUBACH:
Q How would that work?
A Well, so I already referred to continuous-time systems and discrete-time systems. There are also systems called event-based systems.
And so it's possible, for example, when the door closes, for a sensor to sense that the door has closed and then transmit it somewhere in realtime; right? So after the door closes, within some amount of time, I'm notified that the door has closed. So that is something that doesn't have to be continuous.
Q But if that door was opened and closed multiple times, it would then be continuous because it's recurring?
A So an event-based system can have events that are recurring is certainly the case.
Q And is -- any time an event-based system has a recurring event, does that make the event continuous?
MR. McCLELLEN: Objection. Form.
THE WITNESS: Well, I'm not sure how to answer that question. But from a user's standpoint, if all they care about is the event happening, then they may not be able to distinguish between something

being updated at a high frequency and something being updated when the event occurs.

BY MS. STAUBACH:

Q How do you know that Arrasvuori isn't an event-based system?

A Well, event-based systems are very broad and include discrete-time systems, which includes everything that a computer can do. So the event could be a millisecond has passed. That's another event.

Q Earlier you mentioned in the context of video games, video games needing to be enjoyable to the user.

Are you in a position to offer opinions on user preferences or what a user would enjoy in the context of video games in 2006?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I have my own opinions as to what's fun, and I'm sure you do too.

BY MS. STAUBACH:

Q But you're not an expert in that field?

A No.

MR. McCLELLEN: Dr. Lynch, just a reminder. Please pause before answering the question to give me time to object.

THE WITNESS: Sure.

MR. McCLELLEN: So objection, form, to that question.
BY MS. STAUBACH:
Q I'm going to reask a question from earlier because I'm not sure that I got an answer.
How do you know that Arrasvuori isn't an event-based system?
MR. McCLELLEN: Objection. Form. Foundation.
THE WITNESS: So, again, event -- if you think of a Venn diagram, event-based systems is a circle that includes all discrete-time systems. So to call it an event-based system is not limiting.
So the event that can occur is that, for example, a millisecond has passed, and that makes it -- that's an example of a discrete-time system, but none of these are, by an engineering definition, a theoretical definition, which doesn't fit -- it does not fit these disclosures of continuous.
BY MS. STAUBACH:
Q So if an event-based system includes all discrete-time systems, there's Arrasvuori would fall within that; right?
MR. McCLELLEN: Objection. Form.
THE WITNESS: I think everything would, but

the point is that -- I mean, with a computer. But the point is that discrete-time systems can march along at fixed time intervals; event-based systems do not have to.

MS. STAUBACH: Can we go off the record and take a 10-minute break?

THE VIDEOGRAPHER: Sure.

Going off the record. The time is approximately 10:48 a.m.

(Recess taken.)

THE VIDEOGRAPHER: We're going back on the record. The time is approximately 11:03 a.m.

BY MS. STAUBACH:

Q So just to recap, continuously generating an interface in terms of the Arrasvuori reference -- let me rephrase. Sorry.

In your opinion, Arrasvuori discloses continuously generating an interface based on the fact that you think Arrasvuori's video game had to be enjoyable to users; is that correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I'm not -- it had to be appropriate to the task, right; whether it's enjoyable or not is an individual preference and decision. But the continuous generation, simultaneous communication,

and realtimeness of it needs to be appropriate to the task, the application, otherwise it has no value.

BY MS. STAUBACH:

Q So what other considerations, other than whether the video game is enjoyable, are appropriate to the task?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It depends on the task.

BY MS. STAUBACH:

Q Okay.

Let's consider the task is Arrasvuori's video game.

A That's -- okay.

Q What other considerations other than whether a user is enjoying the video game are there?

MR. McCLELLEN: Same objection.

Go ahead.

THE WITNESS: So Arrasvuori discloses many kinds of games, but here is -- the focus mostly is on running in those two paragraphs that I cited.

So are you asking for an opinion on those two paragraphs or --

BY MS. STAUBACH:

Q What is your opinion that Arrasvuori teaches continuously generating an interface based on?

A Based --

MR. McCLELLEN: I'm sorry. One second.

Go ahead.

THE WITNESS: Based on the description in the disclosure and the context of multiplayer games.

BY MS. STAUBACH:

Q What particular portions of Arrasvuori say to you that Arrasvuori discloses continuous generation of an interface?

A So, again, I believe continuous generation must mean that it's generated in a recurrent fashion, so not just once. It happens again.

Q And where does Arrasvuori say that?

A In paragraphs 52 and 53 among many, many other places. And it's clear to -- if it's not stated explicitly, it's clear in the reading.

Q What makes it clear from the reading?

A Because the task is very clearly defined. I'm racing against other runners. I want to see where they are now.

Q So a user that couldn't see where they are now in relation to the other users wouldn't be enjoying Arrasvuori's video game; right?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Enjoying has nothing to do with

52 and 53. I don't want to talk about that. But it's describing here that people need to be able to see where their competitors are to understand their current status in the race.

BY MS. STAUBACH:

Q But Arrasvuori never actually discloses continuous updating of the graphical indicators.

Do you agree with that?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I do not agree with that.

In my own declaration, I did not focus on the word "continuous," again, because it's so obvious, and the same applies in Arrasvuori. You don't need to see the word "continuous" to understand what's being described.

BY MS. STAUBACH:

Q So in terms of choosing which terms from the 256 patent's claims you would address in your declaration, you excluded terms that you thought were too obvious to discuss?

MR. McCLELLEN: Objection. Calls for work product and privilege.

Dr. Lynch, you can answer to the extent you exclude discussions between myself and you and with Mehran.

THE WITNESS: So to reiterate, I did not do a comprehensive analysis of the claim limitations in my analysis of Arrasvuori.

BY MS. STAUBACH:

Q Did you intentionally not consider the term "continuous" because it was too obvious?

MR. McCLELLEN: Same objection. Also, form.

THE WITNESS: There was no reason to focus on it because it's so obvious to anyone of ordinary skill in the art.

BY MS. STAUBACH:

Q Did you exclude any other claim terms from your declaration because they were too obvious?

MR. McCLELLEN: Objection. Form.

THE WITNESS: To reiterate, I did not do an analysis based on the language of the claim limitations comprehensively.

BY MS. STAUBACH:

Q How do you determine if something is so obvious that you don't need to talk about it?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Paragraphs 52 and 53 in Arrasvuori, as an example, among many others, I don't see any way that a reasonable person could read this and not think that the interface is being generated

recurrently, that it's being communicated simultaneously -- by either definition of simultaneously -- and that it's being done realtime. I don't see a way to read that without understanding that.

BY MS. STAUBACH:

Q I think we talked about earlier appropriate to the task at hand, recurrence rates that are too slow could be noncontinuous, in your opinion --

MR. McCLELLEN: Objection --

BY MS. STAUBACH:

Q Do you agree with that?

MR. McCLELLEN: I'm sorry.

Objection. Form.

THE WITNESS: I am certain that continuous in these contexts, in the context of the 256, means recurrent, but I do not see a clear definition of when it stops being continuous based on the interval.

BY MS. STAUBACH:

Q You don't see a clear definition where? In Arrasvuori or in the --

A 256.

Q Do you see a clear definition in Arrasvuori?

A Yes. Implicit in the description of the game that's being performed by multiple users. So it's not

an explicit number, but it's an explicit usage or meaning of continuous in the context of this task.

Q But if whether a system meets this "continuous generation" term depends on the interval of updates -- let me rephrase.

You say there's a clear definition implied in Arrasvuori, but whether a system continuously generates an interface depends on the actual task at hand; correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So, again, any definition of continuous here has to be taken in context, and I'm saying the context depends on the task.

BY MS. STAUBACH:

Q But even within Arrasvuori's disclosure, such as paragraphs 52 and 53 that we discussed earlier, there could be situations where the frequency of updating the interface is too slow to be continuous; right?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I'm not saying that. It could be too slow to be enjoyable.

BY MS. STAUBACH:

Q Well --

A So my definition of continuous must include

recurring, but I'm not applying a standard as to the rate or the events that have to occur.

Q I think previously we discussed if there was a long-term activity that lasted, maybe, for a month, an interval of one minute might be acceptable, but if it was a shorter activity of maybe, like, an hour-long race, then one minute would be far to slow.

Do you remember that?

A I remember saying that it's going to be task-dependent, and what -- one of the factors in that task is the length of time that that task is going to take, but that's not the only factor.

Q But you have to be able to draw a line somewhere; right?

THE WITNESS: I am not drawing a line.

MR. McCLELLEN: Objection. Form.

THE WITNESS: I am not drawing a line. As an example, if I'm trying to balance a pendulum for a million years, I'm still going to need a fast update rate to balance that pendulum, even though the duration of the task is quite long. So it depends on multiple factors, what's appropriate for the task.

BY MS. STAUBACH:

Q But if Arrasvuori's race, as contemplated by paragraph 53, was a one-mile race that was only

updated -- the data on the interface was updated with a frequency of every two minutes, that would be too slow to be continuous.

Would you agree with that?

MR. McCLELLEN: Objection. Form.

THE WITNESS: This is not part of my analysis in my declaration.

BY MS. STAUBACH:

Q You're a person of ordinary skill in the art; right?

A Yes.

Q And you understand the hypothetical that I'm posing; right?

A Yes.

Q So as a person of ordinary skill in the art, would you think that seeing an update on the interface every two minutes in a one-mile race would be too slow to be continuous?

A I would say that --

MR. McCLELLEN: Objection. Form.

Go ahead.

THE WITNESS: That would be too slow to be enjoyable.

BY MS. STAUBACH:

Q Too slow to be enjoyable.

And is that the baseline for determining whether something is being continuously generated?

MR. McCLELLEN: Same objection.

THE WITNESS: No.

BY MS. STAUBACH:

Q And Arrasvuori doesn't say the length of the race; it doesn't say the frequency with which the graphical indicators are updated.

Do you agree?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It does not say those things, not in paragraphs 52 and 53.

BY MS. STAUBACH:

Q Does it say it anywhere?

A Does it say what anywhere?

Q Does it say the length of a race or does it say the frequency with which the graphical indicators are updated?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I'll take the second one.

I am not familiar with anywhere that says what the length of the update rate has to be. Again, this is in the context of multiplayer video games.

BY MS. STAUBACH:

Q You said you didn't review Tagliabue; is that

right?
A That's correct.
Q Why not?
A I wasn't --
MR. McCLELLEN: Objection. Calls for work product and attorney-client privilege.
Instruct the witness not too answer.
(Witness instructed not to answer.)
BY MS. STAUBACH:
Q Did you not think it was important to address Tagliabue in your declaration?
MR. McCLELLEN: Objection. Form.
THE WITNESS: No, I did not think it was something I needed to do because it was not part of what I was asked to do.
BY MS. STAUBACH:
Q So you don't offer any opinions on whether Tagliabue anticipates any claim of the 256 patent; correct?
A I do not.
Q Can you turn with me to page 7 of your declaration.
A Just one moment.
Just to continue my answer to the previous question. In paragraph 46 of my declaration is what I

was asked to do, for reference.

Sorry to interrupt. Where would you like me to go?

Q Page 7.

A Yes.

Q The first full sentence. "Although I'm not a lawyer, I have been advised to apply certain legal standards in forming my opinions."

Do you see that?

A Yes.

Q And then you have the claim construction standards section directly below.

It says that "I understand that claim terms are given their ordinary and customary meaning as would be understood by a person of ordinary skill in the relevant part in the context of the patent's entire disclosure and prosecution history."

Did I read that right?

A Yes.

Q And is this one of the legal standards that you applied in forming your opinions?

A I did not give any special meanings to the claim terms.

Q Did you give them ordinary and customary meanings?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Again, my analysis was not to try to limit or to understand the full scope of any element or any claim, but rather to look at other prior work and explain what they are teaching and how it relates to topics in the 256 patent.

BY MS. STAUBACH:

Q Why is this claim construction standard section in here?

MR. McCLELLEN: Objection. Calls for work product. Attorney-client privilege.

Instruct the witness not to answer.

(Witness instructed not to answer.)

BY MS. STAUBACH:

Q But just to confirm, you did not apply the claim construction ordinary and customary meaning standard in your declaration?

MR. McCLELLEN: Objection. Form.

THE WITNESS: As I mentioned, some of the terms here are ambiguous in the claims and need to be construed in the context of the specification, and what I did was to analyze other prior art to see if it meets any reasonable definitions of certain of these claim terms, not a comprehensive analysis of the claim.

BY MS. STAUBACH:

Q So earlier we discussed the claim phrase "simultaneously communicate," and you indicated that that was ambiguous.

Which other claim terms are ambiguous, in your opinion?

A There are a lot of claim terms. Would you like to point me to any particular ones?

Q Well, in Claim 1 -- I'm happy if you need time to read it again.

Do you see any other claim terms there that are ambiguous?

MR. McCLELLEN: Objection. Form.

THE WITNESS: This was not part of my analysis, so it's not in my report.

BY MS. STAUBACH:

Q I understand it's not in your report.

But sitting here today looking at Claim 1, do you see any other claim terms that you consider ambiguous?

MR. McCLELLEN: Same objection.

THE WITNESS: I'm not prepared to opine on that in realtime.

BY MS. STAUBACH:

Q So earlier when you said there are plural

ambiguous claim terms, you didn't have anything in mind?

A My point was -- so ambiguous I meant to include a case where the meaning depends on the context. So there are multiple terms where the meaning depends on the context.

Q Okay.

Let's go to the next section down on page 7, "Anticipation and Obviousness."

The first sentence of paragraph 17 says, "I understand that a patent claim is invalid if it is anticipated or obvious in view of the prior art. I further understand that invalidity of a claim requires that the claim be anticipated or obvious from the perspective of a person of ordinary skill in the art at the time the invention was made."

Do you see that?

A Yes.

Q Do you provide any further detail on what it means to anticipate a claim?

A No. I was not asked to perform an anticipation analysis.

Q So you haven't drawn any conclusions regarding whether any prior art reference anticipates any claim of the 256 patent; correct?

MR. McCLELLEN: Objection. Form.
THE WITNESS: That's not part of my declaration.
BY MS. STAUBACH:
Q Do you know if Lululemon's petition included anticipation grounds?
MR. McCLELLEN: Objection. Foundation.
THE WITNESS: I haven't read the petition.
BY MS. STAUBACH:
Q And you're not familiar with the grounds in it?
MR. McCLELLEN: Objection. Form.
THE WITNESS: I don't know the details. I'd have to speculate.
BY MS. STAUBACH:
Q You also have a section on obviousness legal standards.
Did you apply the obviousness legal standards in forming your opinions?
A Yes.
Q What did you apply in particular?
A So paragraph 19 gives examples of rationale for obviousness.
Q So you talked about these rationales in your declaration?

A I don't believe I explicitly referred to any of them when I performed an obviousness analysis.

Q Do you ever offer an opinion on whether any prior art reference discloses or suggests any claim limitation from the 256 patent?

A I'm sorry.

MR. McCLELLEN: Objection. Form.

Go ahead.

THE WITNESS: Can you ask that question again?

BY MS. STAUBACH:

Q Sure.

Do you ever offer an opinion on whether any prior art reference discloses or suggests any claim limitation from the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Can you clarify what you mean by "claim limitation"? Are you talking about, for example, 1 A, B, C, D as an example?

BY MS. STAUBACH:

Q Yes, that's right.

A I never did an analysis of all of the words in a single claim element in my declaration.

Q So, similarly, you also -- you also never provided an opinion on whether any prior art reference

discloses any claim as a whole from the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So just referring, again, to what I was asked to do. You can see it in paragraph 46. That's what I was asked to do.

BY MS. STAUBACH:

Q So you were not asked to provide an opinion on whether any prior art reference discloses any claim as a whole from the 256 patent?

MR. McCLELLEN: Objection. Form. Calls for attorney-client privilege and work product.

You can answer to the extent that you've talked about this in a declaration, but please do not discuss conversations with myself and Mehran.

THE WITNESS: I was not asked to consider an entire claim element and perform an invalidity analysis on a claim as a whole.

BY MS. STAUBACH:

Q If you did not consider an entire claim element, then you did not consider an entire claim.

Would you agree with that?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I was not asked to perform an invalidity analysis.

BY MS. STAUBACH:

Q So if you were not asked to provide an invalidity analysis, did you not offer an opinion on whether any prior art reference teaches any claim as a whole of the 256 patent?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I did not analyze any claim as a whole. But the context of the entire patent was relevant to my opinion -- the opinions I do express.

BY MS. STAUBACH:

Q Do you know if Arrasvuori ever discloses the specific hardware of the wireless node?

MR. McCLELLEN: Objection. Form.

THE WITNESS: So paragraph 90 of Arrasvuori talks about a number of different kinds of computers that could be the wireless node.

BY MS. STAUBACH:

Q Does paragraph 90 ever use the term "wireless node"?

A I'd have to read it to see if that word is in there. But wireless nodes are discussed elsewhere in the disclosure.

Q My question is if paragraph 90 uses the term "wireless node"?

A May I read it?

Q Certainly.

A So throughout the patent application, it refers to "wireless nodes and/or other computers" and 90 is listing what could be those wireless nodes and/or other computers.

Q My question was a little bit different.

A Okay.

Q Does paragraph 90 ever use the term "wireless node"?

A Paragraph 90 in isolation does not.

Q Does Arrasvuori ever depict a user wearing a wireless node?

A In the text Arrasvuori does.

Q Does it show it in a figure?

A No. No, I don't believe so.

Q Does Arrasvuori ever talk about a user wearing a wireless node on an appendage?

A Arrasvuori talks about wearing computers and also talks about a computerized watch, which would naturally be on an appendage.

Q That disclosure of computerized watch comes from paragraph 90; correct?

A Yes.

Q Does paragraph 90 ever use the term "wireless node"?

A I believe you asked that already, and the

answer is still no.

Q Do you know if Arrasvuori ever refers to the term "challenge"?

A Yes. Sorry. Yes.

Q Where does that happen?

A Without reading the entire thing, I can't be exhaustive or comprehensive, but at least in paragraph 2.

Q Do you know if Arrasvuori ever uses the term "competition"?

A Yes. It's describing competitions throughout, and it does use the word "competition," but I will not be able to find everywhere. One example is paragraph 36.

Q Does Arrasvuori ever describe the concept of winning?

A Arrasvuori in many places describes leaderboards and depictions of who is in front in a running race, for example, and then also discloses when you move onto the next stage after achieving a goal.

So achieving a goal or a challenge or winning is implicit, but I don't know everywhere it might be talking about winning.

Q Paragraph 20 of Arrasvuori describes a user

being able to form a team or to join a team.

Do you agree with that?

I'm sorry. I meant paragraph 18.

A Yes, I agree with that. Paragraph 18 discloses the ability to join a team.

Q Does this paragraph discuss selecting a competitor in a challenge?

A So paragraph 18 discusses "a graphical user interface that allows one to learn of available users, create one or more teams, select one or more users for one or more new and/or existing teams, to invite one or more users to join one or more new and/or existing teams, to request to join one or more new and/or existing teams, and/or to accept invitation to join one or more new and/or existing teams."

Then it goes on to say, "The users wireless node and/or other computer might act to perform and join operation with a server; e.g., a game server".

Q I'm not sure that answered my question.

Does paragraph 18 describe selecting a competitor for a challenge?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It describes "to select one or more users for one or more new and/or existing teams for example."

So yes is the answer to your question.
BY MS. STAUBACH:
Q So to you, paragraph 18 indicates that the user is choosing a competitor?
A It says "to select one" --
MR. McCLELLEN: Objection. Form.
THE WITNESS: It says, "allows them to select one or more user," so they are selecting another player.
BY MS. STAUBACH:
Q After Arrasvuori -- after a user of Arrasvuori's system chooses a team, the user is allowed to select a game to play; right?
I'm looking at paragraph 20.
MR. McCLELLEN: Objection. Form.
THE WITNESS: Paragraph 20 says that "the wireless node and/or other computer might allow for selection of one or more games to play."
BY MS. STAUBACH:
Q And then paragraph 21 talks about a user being able to vote for a game that they wish to play.
Do you see that?
A Yes.
Q And then paragraph 22, Arrasvuori says, "The user selection of one or more games might affect her

membership in one or more teams."

Do you see that?

A Yes.

Q Does that mean to you that even if a user selects another user to play with or against, if those users choose different games, they might not play against each other anymore?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I understand Arrasvuori to be explaining a number of possibilities. So if your question is -- whatever you said, which I'm forgetting now, is a possibility, that may be so, but I'm not certain.

BY MS. STAUBACH:

Q So if I asked you to play a game with me, and then selected Game A, but you selected Game B, we wouldn't be playing together anymore in accordance with Arrasvuori's paragraph 32?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Again, Arrasvuori is describing many possibilities. So if your question is what you said, is that a possibility, then perhaps.

BY MS. STAUBACH:

Q Did Arrasvuori ever specifically discuss the scenario in which a first user invites a second user

to compete in a specific challenge?
MR. McCLELLEN: Same objection.
THE WITNESS: Yes. Paragraph 18.
BY MS. STAUBACH:
Q Paragraph 18 --
A "Invites one or more," so one user to join a team.
Q And is that first user selecting the gameplay for the second user?
A There are other options, so I can't say what that user would do.
Q So Arrasvuori doesn't say whether a first user is able to invite a second user to compete in a challenge and where that first user selects the challenge?
MR. McCLELLEN: Objection. Form.
THE WITNESS: I would have to read the specification to find that.
BY MS. STAUBACH:
Q So sitting here today, you don't know whether a first user is able to invite a second user to compete in a challenge where the first user selects the challenge for both users?
MR. McCLELLEN: Objection. Form.
THE WITNESS: I believe they can, but, again,

I would have to read. This is not part of my analysis, so I would have to read the whole thing. It's not in my declaration.

BY MS. STAUBACH:

Q Would you agree that that disclosure would come from the game initiation and gameplay operation section of Arrasvuori?

A So the invitation to another user to play a game with the first user would be part of the game initiation and gameplay operations.

Q Would the first user be able to choose the game that the second user would play?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I believe so, but this is not part of my declaration, so I would have to read further.

BY MS. STAUBACH:

Q When you consider the disclosure of Arrasvuori, did you consider that disclosure as a skilled artisan is 2023?

A No.

Q As of what time did you consider the disclosure of Arrasvuori?

A The priority date, which is in 2007.

Q What did you do to place yourself in the

shoes of a skilled artisan in 2007?

A Well, at that point I had been a professor for ten years at Northwestern teaching master's and Ph.D. students who satisfy the definition of person of ordinary skill in the art, so I would put myself in their shoes.

I'm very familiar with what those students were familiar with at that time.

Q What was your experience with video games in 2007?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Can you be a little bit more specific with that question?

BY MS. STAUBACH:

Q Had you done any work with video games?

MR. McCLELLEN: Same objection.

THE WITNESS: Have I done work with video games? Do you mean the popular games, like Call of Duty? What -- I'm sorry.

BY MS. STAUBACH:

Q Did your career in any way focus on video games as of 2007?

A No. We created video games as part of human/robot control studies, so we would make games for people to play. They were not very interesting

games, but they were good for our research.

So we did create games, but my knowledge of games, then, is what somebody -- anybody who would know about games, particularly working with students who played games a lot in terms of these online video games, multiplayer video games.

Q So when you say "we created video games," when was that?

A That's been throughout my career as a professor. So since the late '90s until present. And these are multiplayer games, but nothing anybody would pay to play.

MS. STAUBACH: You all ready to take a lunch break?

MR. McCLELLEN: I see lunch has arrived. Let's take a break.

MS. STAUBACH: Can we go off record?

THE VIDEOGRAPHER: Okay.

Going off the record. The time is approximately 11:47 a.m.

(Lunch recess taken.)

THE VIDEOGRAPHER: We're going back on the record. The time is approximately 12:29 p.m.

BY MS. STAUBACH:

Q All right. Let's switch gears a little bit

and talk about Watterson. In paragraph 85 of your declaration, you point to -- let me know when you're there. Sorry.

You point to user modules that may take the form of other devices including Treadmill 12.

Do you see that?

A Yes.

Q And the next sentence says, "Watterson teaches that Treadmill 12 includes one or more sensors such as a Belt Speed Sensor 230 and Incline Sensor 343."

Do you see that?

A Yes.

Q So Belt Speed Sensor 230, would that be on the treadmill itself?

A Yes.

Q Okay.

Same question for the incline sensor.

Would that be on the treadmill?

A I believe so. I don't have the patent here, but I believe so, yes.

Q Continuing on in paragraph 85, the next sentence says, "The sensors can also gather various operating parameters such as, but not limited to, maximum pulse and heart rate, average pulse and heart

rate, target heart rate, length of workout session and the like."

Do you see that?

A Yes.

Q So a pulse rate sensor, would that be on the treadmill?

A It would be on the user and possibly also attached to the treadmill.

Q So it could be, like, a handle bar that you hold that would take your pulse, for example?

A Can I have the patent?

Q Sure.

Exhibit 3.

(Exhibit 3 marked.)

BY MS. STAUBACH:

Q So that sentence I just read from paragraph 85, you quote, Watterson at Column 25, Line 17 through 20.

A Just give me a moment to catch up. Thank you.

Q Would you like me to repeat the question?

A Yes.

Q So could the pulse rate sensor be a handlebar that you hold to take your pulse on a treadmill, for example?

A I don't remember opining on this in my declaration.

Q So just pointing to paragraph 85, where it says -- again, that last sentence, "The sensors can also gather various other operating parameters such as, but not limited to, maximum pulse and heart rate."

So are you familiar with treadmills?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Generally, yes.

BY MS. STAUBACH:

Q Have you seen treadmills that have, like, metal bars that you hold to take your pulse rate while you're working out?

A I'm sorry. I've not used the treadmill. I can't answer that.

Q Have you seen -- you've never used a treadmill?

A Never used a treadmill.

Q So you don't have an opinion on where the pulse sensor would be?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I'm sorry. I can't speak about treadmills.

BY MS. STAUBACH:

Q All right.

On page 43 of your declaration, you talk about Watterson's competitions.

Do you see that?

A Yes.

Q In paragraph 89, you discuss that Watterson teaches Competition Module 314?

A Yes.

Q And then in paragraph 90, you mention three types of races from Watterson, including the race around the world, the race against the computer, and the personalized race.

Do you see that?

A Yes.

Q All right.

In paragraph 91, you talk about that first type of race, the race around the world; right?

A Yes.

Q And you quote Watterson in that paragraph for "Communication Module 254 tracks the exercise activities of competing users of user Modules 252A through 252N and computes the distance traveled per exercise session and per user."

Did I read that right?

A Yes.

Q In paragraph 92 -- just one second. Sorry.

If you turn over to page 45, it says that "Communication Module 254 may deliver a graphical representation of the user's exercise distance, time, speed, and other information compared against other competitors to the user via Module 252A through 252N."

Do you see that?

A Yes.

Q In the discussion of the race around the world, does Watterson ever discuss comparing any data for users other than distance, time, or speed?

A I chose those as exemplary. I'd have to read through the description to know for sure.

Q So let's turn to Column 40 of Watterson, beginning on line 48. That's where the discussion of the race around the world begins. And it goes until Column 41, line 25. So if you want to take the time to read that.

A Just for clarity, I'm starting at line 37?

Q Column 40, line 48.

A Lines 37 also mentions race around the world.

Q Sure. Line 37.

A What's the question?

Q So in this passage, where Watterson discusses the race around the world, does Watterson mention comparing anything other than speed, distance, or time

of users in the race?

A It also talks about total distance, but I think those are basically the ones that I referred to.

Q Next there is a race around the computer -- race against the computer. I'm sorry. That picks up where the race around the world discussion left off, beginning Column 41, line 25 through line 40.

I'd ask the same question: Does this passage discuss comparing data for users other than speed, distance, time?

A It looks like the user sets a difficulty level, and that can affect the speed, incline, or distance.

Q Does it say that the difficulty level is compared between the users?

A I believe this is the race against the computer.

Q Does it say that it's compared between the user and the computer?

A It talks about giving a head start to the computer or the user, and then the user can race against the computer, so I imagine the user is comparing their performance to the computer's for motivation.

Q The final race type, which is the

personalized race, that discussion begins at Column 41, line 42, and continues until Column 42, line 55. Could you please read that.

A Do you want me to look for anything in particular while I read this?

Q So in your declaration in paragraph 93, you say, "Regarding the personalized race, that Watterson discloses in the personalized race two or more individuals scheduled a live-on-live session, such as in a private room, a personal training Module 312 where they may race against the other while reviewing graphical representations of the distance, time, and speed of the other competitors."

So my question is the same: Does the personalized race discussion of Watterson disclose comparing anything other than distance, time, or speed of the users?

A So you'd like me to read that passage and see if I see anything else there?

Q Yes, please.

A So all I see relevant to your question is it may be appreciated that various other data flows and displays are appropriate and known to one skilled in the art in view of the teaching contained herein.

Q None specifically other than distance, time,

and speed mentioned in that section.

Do you agree with that?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I see those ones mentioned explicitly, and any other ones are mentioned implicitly.

BY MS. STAUBACH:

Q Do you see pulse rate mentioned in this section at all describing races?

A I wasn't looking for it. I don't think so, but I have to hedge because I wasn't looking at it. I don't remember seeing it.

Q Would you like to read it again?

A Would you like me to read it again?

Q If it would help you understand if pulse is mentioned. So that would be from Column 40, line 37 to Column 42, line 64.

A Column 41?

Q Column 40, if we're going to start with the first race.

A So for all three of them, you're asking me now if pulse rate is mentioned anywhere?

Q Yes.

A For Column 40, line -- whatever --

Q 37.

A Okay.

Is there anything else that you would like me to look for while I'm doing this?

Q This will be the last thing that I'll ask you to look for. I won't have you read it ten times.

A I do not see pulse rate cited in the passages you asked me to read.

Q So just to clarify, in Watterson's discussion of the race around the world, the race against the computer, and the personalized race in these columns, there's no mention of pulse rate; correct?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I believe mentions of pulse rate are elsewhere, but not in those passages.

BY MS. STAUBACH:

Q So I know you said you haven't used a treadmill.

Do you have an understanding of how treadmills generally work?

MR. McCLELLEN: Objection. Foundation. Form.

THE WITNESS: Generally, yes.

BY MS. STAUBACH:

Q Do you know how a treadmill would calculate distance run, for example?

MR. McCLELLEN: Same objections.
THE WITNESS: I could guess.
BY MS. STAUBACH:
Q What's your guess?
MR. McCLELLEN: Same objections.
THE WITNESS: I would imagine that it tracks the speed and effectively numerically integrates it with respect to time.
BY MS. STAUBACH:
Q Would a simple calculation of distance on a treadmill take into account a user's pulse rate?
MR. McCLELLEN: Objection. Form. Foundation.
THE WITNESS: The distance that's traveled by the belt would not be affected by the pulse rate.
BY MS. STAUBACH:
Q Have you read the entire Watterson reference?
A I have, but, as I mentioned, I focused on particular places, so it's been a while since I've seen all of it.
Q Would you say that Watterson's disclosure is primarily directed to systems involving treadmills?
MR. McCLELLEN: Objection. Form.
THE WITNESS: Well, I did not evaluate the claims of Watterson, which is -- would tell us the

scope.
BY MS. STAUBACH:
Q So you would need to evaluate Watterson's claims to understand the scope of the Watterson reference?
A Yes.
Q Are the disclosures in Watterson that you rely on in your declaration related to treadmills?
A Yes.
Q In paragraph 112 of your declaration, in the Watterson and Arrasvuori section, you say that "Watterson, however, hints that Watterson's personalized race might not improve every user's motivation to exercise."
Do you see that?
A Yes.
Q And the next sentence says, "When describing a spin class, Watterson states the master may selectively change groups of participants based on various criteria such as participants' heart rates, and change those participants' exercise program while maintaining other participants at the original or different exercise level."
Do you see that?
A Yes.

Q This discussion in Watterson that you point to, Column 49, line 7 through 11, that is not in the section of Watterson discussing races.

Would you agree with that?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I don't believe the discussion of races is confined to the few paragraphs I read earlier. I believe they are either explicitly or implicitly referred to elsewhere.

BY MS. STAUBACH:

Q So are you saying that paragraph 49 -- sorry -- Column 49, lines 7 through 11 of Watterson is directed to a personalized race?

A No. I'm not saying that. I'm saying that it's not necessarily excluded from the personalized race as defined has people go into separate rooms, but there may still be a race going on here in Column 49, 7 to 11.

Q How does Column 49, lines 7 through 11, of Watterson hint that Watterson's personalized race might not improve every user's motivation to exercise?

A The idea is that two people cannot compete directly against each other because they have -- they are put into different groups because they have different skill levels. So I may not be able to

compete directly against somebody who has improved fitness level compared to me. And so that might cause me to be demotivated. I can't compete against that person.

Q So back in Column 41 to Column 42, where the personalized race is discussed -- I lied. I'm going ask you to look for something else. I'm sorry.

Does this section ever describe an issue with user motivation?

A I'm not referring to that in my report, and at the moment I'm not seeing it except for implicit that users are motivated to race against each other and try to beat each other, the live-on-live competition. So this is saying that a user would be motivated to compete against someone. I don't believe these passages are talking about the demotivation that would come if they could not compete fairly.

Q But if the disclosure of Watterson at Column 49, 7 through 11, pertains to a personalized race, and if a master in that situation can already group participants based on their fitness level, wouldn't Watterson already propose a solution to this motivational issue?

MR. McCLELLEN: Objection. Form.

THE WITNESS: As an example, if there are two

people and they have different fitness levels, they could each be put in a group of one, and they couldn't compete against each other.

BY MS. STAUBACH:

Q Couldn't the master just change one user to a different exercise level within the personalized race?

MR. McCLELLEN: Objection. Form.

THE WITNESS: This discloses that the master can change the exercise level of the participants but does not disclose that they, then, can compete against each other directly.

BY MS. STAUBACH:

Q And is that because this disclosure is not in the context of races?

A I can't say why it's written that way.

Q But you do agree that Column 49, lines 7 through 11, doesn't mention the personalized race?

A Those lines do not refer explicitly to a personalized race.

Q Do they refer implicitly to a personalized race?

A I'm not certain. It doesn't appear to.

Q So you offer the opinion that Watterson can be combined with Arrasvuori's compensatory functions in order to cure this motivational issue; is that

right?

A So, yes, Arrasvuori provides compensatory operations, which would allow two people of different fitness levels to compete directly against each other and see on a graphical user interface how they are doing relative to each other without the person who has a higher fitness level having a major advantage over the person with a lower fitness level.

Q How would that -- in this combination, how would the users' pulse rates be compared?

A Sorry. I didn't understand the question.

Q Are you proposing in this combination that the users' pulse rates would be compared to one another?

A Not necessarily. So Arrasvuori teaches ways of determining fitness levels, and that information could be used to set up the compensatory operation.

Q In your proposed combination, pulse rate as monitored would be used to compensate a user's performance; right?

A I'm sorry.

Where are you referring to?

Q I'm talking generally about your opinions provided from page 55 to 58.

A So my opinion here is saying that two users

of different fitness levels could compete against each other and have it be a fair competition or a close competition by compensating, for example, by allowing the person with a lower fitness level to have their performance enhanced essentially relative to the person with higher fitness level in the feedback that they receive.

So if the person at the lower fitness level is running four miles per hour and a person of a higher fitness level is running six miles per hour, but those are typical numbers for each of them, then maybe they would be shown as progressing at the same speed in the graphical interface, so that's what I'm referring to here in the section -- there's many different ways that one could do that compensatory operation. It could be based on target heart rates, or it could be based on indicated fitness levels by the users or could be based on the tests that were performed under Arrasvuori to determine the fitness levels, so there's several options for that.

Q So you're not proposing during the race actively monitoring each user's pulse and compensating their performance during the race based on that monitoring?

A That is one of the options, one of several.

Q But you're not proposing any particular solution?

MR. McCLELLEN: Objection. Form.

THE WITNESS: There are many possible solutions. I gave an illustration in my report, but that was just an illustration.

BY MS. STAUBACH:

Q So you're just pointing to Arrasvuori compensatory operation generally, and saying that it would have been obvious to combine those with Watterson in order to level the playing field of the users in a personalized race?

MR. McCLELLEN: Objection. Form.

THE WITNESS: Right. The reader of the Watterson patent might see a deficiency or would see a deficiency that two users of different fitness levels could not compete directly against each other, and then they could turn to Arrasvuori for a solution to that, and a few different options are given there, and one option that I explicitly mentioned is measuring the heart rates of both competitors in realtime.

BY MS. STAUBACH:

Q And so does Watterson teach how that measured heart rate could compensate a user's race performance?

A I'm sorry.

Could you ask that one more time?

Q Sure.

Does Watterson teach how measured heart rate could compensate a user's race performance?

A No. I don't think Watterson says that.

Q Does Arrasvuori teach how measured heart rate could compensate a user's race performance?

A Well, Arrasvuori discloses several possibilities, so give me a moment so I can be as accurate as possible.

So Arrasvuori discloses doing tests to see that user's fitness level or having them specify it and other information that this normalization, this compensatory operation, may be based on. Paragraph 84 includes age, gender, weight, target heart weight range, muscle range, stamina and/or special skills. So the target heart rate range is one way to specify a fitness level potentially. In general, older people would have a lowered target heart rate during exercise than younger people.

Q Does Arrasvuori ever detail how someone would actually compensate a user of Watterson's race based on heart rate?

MR. McCLELLEN: Objection. Form.

THE WITNESS: The description is basically

saying that some specification of fitness level would be used to do the compensation. So there are many possibilities mentioned, including the target heart rate.

BY MS. STAUBACH:

Q So in paragraph 116 of your declaration, you propose an equation here for calculating apparent velocity; right?

A Yes.

Q Does Arrasvuori ever mention this equation?

A This is just one illustration how one measure of fitness could be used to do the compensation. For example here, if the constant I defined HC is a target heart rate, then H divided by HC is the ratio of actual heart rate to the target heart rate, and presumably the higher that is, the better your performance, but mostly I just provided this as a way to make sure that the units for V-prime, the effective or fedback velocity of the user are the same as the velocity of the user. If one is measured in miles per hour, then the other one is measured in miles per hour, because H divided by HC has no units. If someone had a higher target heart rate, they would have to have a higher heart rate for that ratio to be the same as the other competitor has a lower target

heart rate and a lower heart rate.

Q So you said the constant I defined, which is HC --

A HC.

Q What is that constant? What's the value?

A It would depend on the user, and remember, this is just an illustration. So another way this could have been written is that V-prime, which is the compensated velocity, is equal to some function of the actual velocity, and the actual heart rate and some other parameter. So this is one such function. I'm not proposing it as the best one to use by any means. It's just an example. It's an illustration. So in this illustration, HC might be in units of beats per minute. H is in units of beats per minute. So when you divide them, there's no units.

Q So this example that you came up with, a person of ordinary skill in the art in 2007, would have known how to come up with this same equation?

A Not necessarily this equation, although it's one possibility. But rather they would read the compensatory operations of Arrasvuori as saying, I need to adjust the apparent performance of the user, say, with the lower fitness level so that they can compete fairly with a person of a higher fitness

level. So one of them or both of them need to be adjusted so that they can level the playing field. This is just one possibility to do it.

Q So a person of ordinary skill in the art might not have necessarily come up with this solution -- sorry. Let me rephrase.

A person of ordinary skill in the art wouldn't have necessarily come up with this particular solution; right?

MR. McCLELLEN: Objection. Form.

THE WITNESS: A person of ordinary skill in the art might have come up with this or might have come up with something different. Maybe something better.

BY MS. STAUBACH:

Q Can we go off the record?

THE VIDEOGRAPHER: Going off the record. The time is approximately 1:17 p.m.

(Recess taken.)

THE VIDEOGRAPHER: We're back on the record. The time is approximately 1:41 p.m.

BY MS. STAUBACH:

Q Did you ever conduct an analysis of whether Arrasvuori discloses any claim limitation of the 256 patent claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: As I mentioned before, I did not provide a comprehensive analysis of the claimed constructions, but I did look at Arrasvuori in the context of the 256 patent -- and I've forgotten your question now.

BY MS. STAUBACH:

Q The question was, did you ever conduct an analysis of whether Arrasvuori discloses any claim limitation of the 256 patent claims?

MR. McCLELLEN: Same objection.

THE WITNESS: So the analysis that I did was based on the elements from the claim elements and not the entire claim.

BY MS. STAUBACH:

Q So you never analyzed whether Arrasvuori discloses any entire claim limitation of the 256 patent claims?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I just performed an analysis of Arrasvuori relative to some of the definitions or some of the words in the claim. I did not look at the entire claim as a whole in my declaration.

BY MS. STAUBACH:

Q So you didn't conduct an analysis of whether

Arrasvuori discloses the 256 patents, Claim 1, as a whole?

MR. McCLELLEN: Objection. Form.

THE WITNESS: It's not in my declaration, but I do touch on multiple elements in Claim 1 in my Arrasvuori analysis.

BY MS. STAUBACH:

Q But you never conduct that analysis with respect to Claim 1 as a whole?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I did not perform an invalidity analysis for Claim 1.

BY MS. STAUBACH:

Q You also didn't perform an invalidity analysis for any claim limitation within Claim 1; is that right?

MR. McCLELLEN: Objection. Form.

THE WITNESS: I consider many of the terms in the claim limitations, but I did not take an entire claim element and map it onto Arrasvuori.

BY MS. STAUBACH:

Q Why didn't you perform an invalidity analysis?

MR. McCLELLEN: Objection. Calls for work product. Attorney-client privilege. Instruct the

witness not to answer.

(Witness instructed not to answer.)

BY MS. STAUBACH:

Q Did you conduct an analysis of whether any prior art reference discloses any claim limitation of the 256 patent claims?

A My analysis of the prior art was in terms of the terms and the -- within the claims and the claim elements, but I never took an entire claim element and compared or mapped directly against the prior art.

MS. STAUBACH: That's it from us. Thank you.

MR. McCLELLEN: Let's go off the record.

And can we have five minutes just to talk it over?

MS. STAUBACH: Sounds good.

THE VIDEOGRAPHER: Off the record. The time is approximately 1:45 p.m.

(Recess taken.)

THE VIDEOGRAPHER: We're going back on the record. The time is 1:48 p.m.

MR. McCLELLEN: Petitioner has no redirect examination. I think we're done.

COURT REPORTER: You would like an electronic copy; right?

MR. McCLELLEN: Yes. May we please have an

electronic rough.

THE VIDEOGRAPHER: Your video, you guys want synced; correct?

MR. BOWLING: Yes, please.

THE VIDEOGRAPHER: This concludes today's video deposition of Dr. Kevin Lynch. The original media of today's proceedings will remain in the custody of Kusar Lexitas. Going off the record. The time is approximately 1:49 p.m.

(Proceedings concluded at 1:49 p.m.)

DECLARATION UNDER PENALTY OF PERJURY

I, Dr. Kevin Lynch, hereby certify under penalty of perjury that I have read the foregoing transcript of my deposition taken on July 27, 2023; that I have made such corrections as appear noted on the Deposition Errata Page, attached herein, as corrected, is true and correct.

Dated this _____ day of _____, 2023, at _____ , California.

_____

Dr. Kevin Lynch

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES)

I, Brandi Celestino, a Certified Shorthand Reporter, do hereby certify:

That prior to being examined, the witness in the foregoing proceedings was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth;

That said proceedings were taken before me at the time and place therein set forth and were taken down remotely by me in shorthand and thereafter transcribed into typewriting under my direction and supervision;

I further certify that I am neither counsel for, nor related to, any party to said proceedings, not in any way interested in the outcome thereof.

In witness whereof, I have hereunto subscribed my name.

Dated: July 27, 2023

Brandi Celestino

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Dr. Kevin Lynch Dated

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