

APPLE, INC. vs MULLEN INDUSTRIES LLC
Harry V. Bims, Ph.D. on 05/23/2023

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

3
4 APPLE, INC.,)
5)
6 Petitioner,) Case No. IPR2022-01389
7 vs.) U.S. Patent No. 11,190,633
8)
9 MULLEN INDUSTRIES LLC,)
10)
11 Patent Owner.)
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DEPOSITION OF HARRY V. BIMS, Ph.D.
Tuesday, May 23, 2023
Menlo Park, California
8:59 a.m. - 2:41 p.m.

REPORTED BY JACQUELINE A. MONTANA, CSR NO. 11023

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6 Petitioner,) Case No. IPR2022-01389
7 vs.) U.S. Patent No. 11,190,633
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11 Patent Owner.)
12 _____)

13 Deposition of HARRY V. BIMS, Ph.D., taken
14 remotely on behalf of Patent Owner, at Stanton,
15 California, on Tuesday, May 23, 2023, from 8:59 a.m. to
16 2:41 p.m. before Jacqueline A. Montana, Certified
17 Shorthand Reporter in and for the State of California,
18 County of Orange, pursuant to Notice.

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1	I N D E X		
2	THE WITNESS: HARRY V. BIMS, Ph.D.		
3	EXAMINATION:		PAGE
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5	BY MR. SANDERS		85
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8	EXHIBITS		
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10	1	United States Patent No. US 11,190,633 B2; 11 pages	9
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1 HARRY V. BIMS, Ph.D.,
2 having been first duly sworn, was examined and testified
3 as follows:

4 -o0o-

5 EXAMINATION

6 BY MR. SCHELLER:

7 Q Good morning, Dr. Bims. How are you today?

8 A Doing great.

9 Q Can you hear my audio okay?

10 A Yes.

11 Q All right. Great. Please state your full name
12 for the record. I'm curious what your middle name is
13 because I know it starts with a "V."

14 A Harry Vaughn Bims.

15 Q Okay. Thank you. And did you meet with anyone
16 to prepare for today?

17 A Yes.

18 Q And who did you meet with?

19 A I met with counsel for Apple.

20 Q Okay. And what are the names of those specific
21 counsel for Apple?

22 A That would be Vanessa Bell, Cory Sanders and
23 John Alemanni.

24 Q Okay. Did you mean Carl Sanders, or did you
25 mean Cory Sanders, just for clarification purposes?

1 A Carl Sanders.

2 Q Okay. And I've taken a look at your CV that
3 was attached to your declaration in this matter, and it
4 looks like you've got quite a bit of testifying
5 experience; is that correct?

6 A Yes.

7 Q This is not your first deposition, am I right?

8 A That's correct.

9 Q Okay. So you know the to and fro and how this
10 is going to go in terms of you being under oath, me
11 asking you questions, and you providing answers;
12 correct?

13 A For that part, that's correct, yes.

14 Q Okay. And you can take a break whenever you'd
15 like. I usually break on the hour for the witness, but
16 you can take a break whenever you like. The only thing
17 I would ask is that we finish the question. We don't
18 leave any question pending.

19 Does that sound good?

20 A Yes.

21 Q Okay. So what is your understanding, Dr. Bims,
22 of why you are here today?

23 A So I'm here today because counsel for Mullen
24 has requested my deposition.

25 Q And what is your understanding of the matter

1 that this deposition concerns?

2 A Well, I would imagine this deposition would at
3 least concern the contents of my declaration that I have
4 submitted to the court in this case.

5 Q Okay. And that declaration was submitted in
6 what I'm going to call an inter partes review before the
7 patent office.

8 Would you agree with that?

9 A Yes.

10 Q Okay. Now, I'm going to be passing you some
11 exhibits today. And if it's okay with you and if it
12 works for you, you can look at them on the screen, you
13 can pull them out of the chat, or if you have hard
14 copies you can look at them as well.

15 Does that sound good?

16 A Yes.

17 Q Okay. And you mentioned Mullen earlier, and
18 this concerns, "this" meaning this matter and this
19 deposition concerns a patent to Mullen; correct?

20 A You're saying this deposition in particular?

21 Q Yes.

22 A From what I understand, the purpose of this
23 deposition includes questions concerning my expert
24 declaration and --

25 Q Uh-huh.

1 A -- includes opinions with respect to the '633
2 patent.

3 Q Okay. That's perfect. That takes me right to
4 my next question. The '633 patent has a named inventor
5 of Jeffrey Mullen.

6 Would you agree with that? And this isn't a
7 memory test. I can pass that patent to you if you'd
8 like to see it.

9 A So on the face of the '633 patent it describes
10 the applicant and inventor as Jeffrey David Mullen.

11 Q Okay. And it looks like you're looking at
12 something.

13 Are you looking at a hard copy of the patent?

14 A Yes.

15 Q Okay. Is that a clean copy, Dr. Bims, or are
16 there personal notes on that copy of the patent?

17 A That's a clean copy.

18 Q Okay. Do you have any personal notes in front
19 of you for the deposition today?

20 A No.

21 Q Okay. So Jeffrey David Mullen, had you ever
22 heard of Jeffrey David Mullen before you were engaged by
23 Apple for this proceeding?

24 A Not to my knowledge.

25 Q Okay. And is it safe to say that you had never

1 seen this '633 patent before you were engaged for this
2 matter or this proceeding?

3 A I don't recall seeing the '633 patent before
4 this proceeding.

5 MR. SCHELLER: Okay. So I'd like to mark as
6 Exhibit 1 the '633 patent.

7 (Discussion held off the record.)

8 (Patent Owner's Exhibit 1 was
9 marked for identification.)

10 BY MR. SCHELLER:

11 Q So let's talk about the '633 patent which we
12 have just marked as Exhibit 1.

13 You recognize this document; correct?

14 A Yes.

15 Q And have you reviewed the '633 patent?

16 A I have looked at it before, that's true.

17 Q Okay. Have you reviewed the '633 patent within
18 the past week?

19 A I have looked at parts of it within the past
20 week, yes.

21 Q Okay. What field of technology does the '633
22 patent concern in your opinion?

23 MR. SANDERS: Objection to form.

24 THE WITNESS: So in my expert declaration that
25 I've filed in this case I do not provide an expert

1 opinion about the field of the '633 patent.

2 MR. SCHELLER: And let's mark, Jackie,
3 Dr. Bims's declaration as Exhibit 2 since he just
4 referenced it.

5 (Patent Owner's Exhibit 2 was
6 marked for identification.)

7 BY MR. SCHELLER:

8 Q Dr. Bims, were you just looking at your
9 declaration?

10 A Yes.

11 Q Were you looking at a particular page?

12 A No. I was looking through the report for
13 evidence in which I state my opinion about the field of
14 the invention.

15 Q Okay. So let's go to your declaration which
16 we've marked as Exhibit 2 and specifically the section
17 about the '633 patent which starts at paragraph 43,
18 page 11.

19 A Okay.

20 Q Are you there?

21 A Yes.

22 Q Okay. Great. So in paragraph 44, at the top
23 of page 12, you state, "The '633 Patent states in its
24 summary of the invention that the disclosure relates to
25 systems and methods for allowing a user to recognize

1 incoming calls or other cell phone events or
2 notifications..."

3 Do you see that?

4 A Yes.

5 Q So would you consider that as a statement of
6 the field of technology that the '633 patent is directed
7 to?

8 A In paragraph 44 of my declaration I am citing a
9 statement made by the '633 patent about what it
10 considers to be a summary of the invention.

11 Q Okay. So do you have any opinions in this '633
12 section, which is paragraph 43 to paragraph 57, that
13 identifies the field of technology to which the '633
14 patent is directed?

15 MR. SANDERS: Objection to form.

16 BY MR. SCHELLER:

17 Q And please take as much time as you need to
18 review those paragraphs.

19 A So in paragraphs 43 through 57 of my
20 declaration --

21 Q Uh-huh.

22 A -- I quote various parts of the specification
23 of the '633 patent. And along the way I offer opinions
24 regarding parts of the disclosure and the specification
25 that are ambiguous or vague to a person of ordinary

1 skill in the art.

2 Q Okay. Anywhere in those paragraphs, Dr. Bims,
3 do you state what the field of technology is for the
4 '633 patent?

5 MR. SANDERS: Objection to form.

6 THE WITNESS: Within the context of paragraphs
7 43 through 57 I do provide citations and quotations of
8 sections of the specification in which the '633 purports
9 to describe the field of technology.

10 BY MR. SCHELLER:

11 Q Okay. Let's take a look at Exhibit 1, the '633
12 patent, and specifically Column 1, line 18. Let me know
13 when you're there.

14 A Column 1, line 18, yes, I'm there.

15 Q That says, "The present invention relates to
16 cellular notifications."

17 Do you see that?

18 A Yes.

19 Q Okay. Would you agree with me that the field
20 of technology to which the '633 patent is directed is
21 cellular notifications?

22 MR. SANDERS: Objection to form.

23 THE WITNESS: I don't see that language
24 expressly stated in the '633 patent specification.

25 ///

1 BY MR. SCHELLER:

2 Q I'm sorry, which language?

3 A The language in your question.

4 Q Oh, you mean the word "field"?

5 A Well, the entirety of the question you were
6 asking does -- in my opinion, does the '633 patent
7 disclose that. What the '633 patent discloses in this
8 sentence is a statement that "The present invention
9 relates to cellular notifications."

10 Q I see. Okay. Give me one moment, please.

11 Right. So you just said, "The present invention relates
12 to cellular notifications." That's what's stated right
13 there on line 18, Column 1.

14 Let me ask you, as a skilled artisan in this
15 space, do you agree that that's what the invention
16 described in the '633 patent relates to, namely cellular
17 notifications?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: I would agree that's what it
20 says, but I have not rendered an opinion in this case
21 with respect to that first sentence.

22 BY MR. SCHELLER:

23 Q Okay. Well, that's okay. You can still answer
24 the question. Your counsel can object in terms of it
25 being outside of the scope of your report or your

1 declaration.

2 But what do you think? I know that's what it
3 says. What do you think the invention relates to? Do
4 you agree that it relates to cellular notifications?

5 MR. SANDERS: Objection to form.

6 THE WITNESS: Well, as I said earlier, I have
7 not expressed an opinion in my declaration about what
8 the '633 patent relates to. What I have stated in my
9 report are references in the specification of the '633
10 patent that describe various aspects that the '633
11 patent purports to be the technology of the invention.

12 In my review of the sentence we've been
13 discussing --

14 BY MR. SCHELLER:

15 Q Uh-huh.

16 A -- at Column 1, line 18, there's no indication
17 of exclusivity to cellular notifications nor is it clear
18 in the rest of the specification how the rest of the
19 specification ties to the first sentence.

20 Q So do you understand the '633 patent to concern
21 cellular notifications?

22 MR. SANDERS: Objection to form.

23 BY MR. SCHELLER:

24 Q I understand that you're saying you don't have
25 an opinion about it in your report. I'm asking you now

1 here at the deposition.

2 A Well, I believe I've answered this question
3 already, which is that in -- not only do I not have an
4 opinion of that in my report, but in looking at the
5 sentence that we're discussing, the sentence itself does
6 not in my mind provide for a disclosure of exclusive
7 relationship between the, quote, unquote, "present
8 invention" and cellular notifications nor in my quick
9 review sitting before you of the rest of the
10 specification is it clear that the specification is
11 teaching that the, quote, unquote, "present invention"
12 is related exclusively to cellular notifications.

13 Q Okay. Excellent. Thank you. Let's go to
14 Column 5 in the '633 patent, which is Exhibit 1, and in
15 particular lines 10 to 26. There's a paragraph there.

16 A Okay.

17 Q Well, you know what, before we do that I
18 apologize for jumping around. So let's go back to the
19 cover of Exhibit 1, the '633 patent, and I just want to
20 make something clear on the record. And I want to make
21 sure you and I agree that the provisional application
22 for this patent was filed on March 14, 2003. You're
23 going to see that on the left side at reference numeral
24 "(60.)"

25 Do you see that, and do you agree with me?

1 A I see that on the face of the patent.

2 Q Okay. So in light of that, would you agree
3 that your testimony in your declaration as well as today
4 in terms of being a skilled artisan is at the time of
5 that date, March 2003?

6 MR. SANDERS: Objection to form.

7 BY MR. SCHELLER:

8 Q And if you don't understand my question I can
9 rephrase it.

10 A So it's my opinion that at the relevant time of
11 the '633 patent that I possessed the qualifications of a
12 person of ordinary skill in the art.

13 Q Okay. Okay. And you're looking at
14 paragraph 63 of your declaration; is that right?

15 A Yes.

16 Q Okay. And that relevant time frame, so we're
17 on the same page, is 2003; correct?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: I have not established in my
20 report that March 14th, 2003, is the relevant time frame
21 of the '633 patent.

22 BY MR. SCHELLER:

23 Q Okay. When you wrote that phrase in
24 paragraph 63 what did you mean?

25 A So I meant the relevant time of the patent

1 which includes, for example, the filing date and the
2 publication date. But again I have not specifically
3 reviewed the provisional application to determine
4 whether or not that falls within the relevant time
5 frame.

6 Q Okay. The reason I'm asking you is because I'm
7 going to be asking you a lot of questions about the
8 technology of various components at the time of the '633
9 patent when it was filed originally in March of 2003.
10 And I just want to make sure when you answer my
11 questions you're putting a hat on as a skilled artisan
12 at that March 2003 time period, not a different date,
13 for example, 2015.

14 Do you understand what I'm trying to establish?

15 MR. SANDERS: Objection to form.

16 THE WITNESS: Yeah, I would say that I am a
17 person of ordinary skill in the art prior to 2003.

18 BY MR. SCHELLER:

19 Q I would agree with you. All right. I'll just
20 ask every question so we're clear with specific dates.

21 How does that sound?

22 A Sure.

23 Q All right. Let's go back to Column 5, lines 10
24 to 26, in the '633 patent. And if you would, please
25 take a moment to read that paragraph.

1 A Okay.

2 Q Okay. So I'd like to specifically direct your
3 attention to the term "control circuitry" which I
4 believe first appears on line 16.

5 Do you see that?

6 A Yes.

7 Q How would a skilled artisan like yourself have
8 understood that term at the time that this patent was
9 filed in March of 2003?

10 MR. SANDERS: Objection to form.

11 THE WITNESS: So the term "control circuitry"
12 from the perspective of a person of ordinary skill in
13 the art is a term that is rather vague in terms of the
14 physical components that would make up, quote, unquote,
15 "control circuitry," as well as the functionality of the
16 control circuitry, and as well it's vague to a person of
17 ordinary skill in the art as to the results produced by
18 control circuitry.

19 BY MR. SCHELLER:

20 Q Okay. In terms of it being vague, is it the
21 word "control" or the word "circuitry" or both that
22 causes that vagueness?

23 A So my response was with respect to the term
24 "control circuitry" as a unit.

25 Q I'm sorry. What -- oh, those words together.

1 Okay.

2 Let me ask you, what does "circuitry" mean to
3 you, or what would it have meant to you in 2003 in the
4 context of this paragraph?

5 MR. SANDERS: Objection to form.

6 THE WITNESS: So the term "circuitry" does not
7 have the qualifier of "control" in front of it; so the
8 term "circuitry" would be on its own a vague term to a
9 person of ordinary skill.

10 BY MR. SCHELLER:

11 Q Okay. Can you give any meaning or definition
12 to that term?

13 A So the term "circuitry" relates to physical
14 structures that form an electrical circuit. But the
15 actual definition of that structure or the function of
16 that structure or results produced by that structure are
17 unknown.

18 Q Okay. Would it be correct to say that
19 "circuitry" refers to a system of circuits?

20 MR. SANDERS: Objection to form.

21 THE WITNESS: That sounds like a circular
22 definition.

23 BY MR. SCHELLER:

24 Q Why is that?

25 A Your definition is that a circuit is a system

1 of circuits. Sounds circular to me.

2 Q I asked you if it would be accurate to say that
3 circuitry is a system of circuits? Does that make a
4 difference?

5 A No.

6 Q Okay. So does "circuitry" mean "circuit"?

7 A It could.

8 Q Okay. So let's go to line 18 in that same
9 paragraph, and there's a sentence that starts on that
10 line. That sentence states, "Such control circuitry
11 may, for example, be able to distinguish ambient motion,
12 (e.g., the soft-motion of somebody walking or a single
13 hard-motion of a purse hitting a counter-top) from a
14 vibrating cell-phone motion, (e.g., a high-frequency,
15 hard, repetitious motion)."

16 Do you see that?

17 A Yes.

18 Q So the patent, '633 patent, is teaching
19 distinguishing ambient motion and cell phone vibrations
20 using circuitry comma; is that correct?

21 A So this passage is saying that one of the
22 functions of control circuitry could possibly be, for
23 example, to distinguish between ambient motion and a
24 vibrating cell phone motion.

25 Q So the term "ambient motion," they give two

1 examples in the patent, but is that a term that, you
2 know, someone skilled in the art in 2003 would have
3 known or have heard before?

4 MR. SANDERS: Objection to form.

5 THE WITNESS: The term "ambient motion" may
6 have been a term that a person of ordinary skill in the
7 art would have heard before, although to a person of
8 ordinary skill in the art in the relevant time frame the
9 definition of that term would be vague.

10 BY MR. SCHELLER:

11 Q And why do you say that?

12 A Because there is no specific technical
13 definition of an "ambient motion" term as applied to all
14 circumstances.

15 Q How would skilled artisans at the time of the
16 invention in 2003 have used circuitry to distinguish
17 between ambient motion and cell phone vibrations?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: That's a question that appears to
20 not be fully answered in the specification of the '633
21 patent.

22 BY MR. SCHELLER:

23 Q Okay. Do you have an answer for me as one of
24 ordinary skill in the art in 2003?

25 MR. SANDERS: Objection to form.

1 THE WITNESS: As a person of ordinary skill in
2 the art in the 2003 time frame, there isn't a particular
3 implementation that comes to mind for a control
4 circuitry that can distinguish between ambient motion
5 and a vibrating cell phone motion.

6 BY MR. SCHELLER:

7 Q As a skilled artisan in 2003, would you have
8 been able to design such circuitry to have that
9 functionality?

10 MR. SANDERS: Objection to form.

11 THE WITNESS: So given the ambiguous
12 requirements in this hypothetical, there would not be
13 enough information for me to design control circuitry
14 that can distinguish between ambient motion and a
15 vibrating cell phone motion as a person of ordinary
16 skill in the art in the relevant time frame.

17 BY MR. SCHELLER:

18 Q Okay. So what information would you need?

19 A Well, typically before circuitry is designed by
20 a person of ordinary skill in the art there is a
21 technical document that is produced that describes in
22 detail the technical requirements of the circuit design.
23 And those requirements would include multiple factors.
24 As such, the requirements document might be quite long.

25 And in addition to that, that requirements

1 document is usually followed by an architecture document
2 that provides for a detailed technical description of
3 the architecture for the circuit that needs to be
4 designed.

5 And after those two documents are produced then
6 the skilled artisan would apply various techniques to
7 design a circuit within the constraints of the
8 requirements document and the architecture document and
9 any additional constraints that may come to bear on the
10 implementation of the circuit.

11 **Q Got it. So it sounds like you have done this,**
12 **but let me ask you, have you designed a circuit or**
13 **circuitry in your career that detects vibrations?**

14 MR. SANDERS: Objection to form.

15 THE WITNESS: Yes.

16 BY MR. SCHELLER:

17 **Q And did you do so in and around the 2003 time**
18 **period?**

19 A Yes.

20 **Q Okay. So tell me more about that. What**
21 **exactly did you design in that time period?**

22 MR. SANDERS: Objection to form.

23 THE WITNESS: So as mentioned in my curriculum
24 vitae --

25 ///

1 BY MR. SCHELLER:

2 Q Yep.

3 A -- once I graduated from Stanford University,
4 my first work assignment was to work for a company
5 called Wireless Access. And as one of the original
6 employees at Wireless Access, I was a member of an
7 engineering team that was responsible for designing a
8 mobile communications device that included several
9 components including a vibrating unit.

10 Q Okay. But I'm asking about detection of
11 vibration.

12 Is that what you mean by saying, "a vibrating
13 unit"?

14 A The vibrating unit that was incorporated into
15 the mobile communication device --

16 Q Uh-huh.

17 A -- would generate an output that was detected
18 by the mobile communication device. And circuitry
19 inside the mobile communication device was responsible
20 for sensing the various vibrations that would occur from
21 the vibrating unit.

22 Q Okay. You said Wireless Access group.

23 Is that the same thing or an affiliation with
24 the Glenayre Technologies entity? I'm looking at your
25 CV.

1 MR. SANDERS: Objection to form.

2 THE WITNESS: Yes. Originally the Wireless
3 Access Incorporated company was a small startup company
4 that was an independent company, and when I started
5 there were only half a dozen employees. Subsequently
6 the company grew over time until such point that it was
7 acquired by another company called Glenayre
8 Technologies.

9 BY MR. SCHELLER:

10 Q Okay. And what device, if any, did that
11 vibration detecting circuitry go into?

12 MR. SANDERS: Objection to form.

13 THE WITNESS: So there were a number of
14 products produced by the company. They were mobile
15 communication devices including the AccessMate, and
16 there were a couple of other products whose names escape
17 me, but I remember the AccessMate was one of them.

18 BY MR. SCHELLER:

19 Q And what was the AccessMate?

20 A So the AccessMate was designed to be a mobile
21 communications device that could operate as a personal
22 communication device that could transmit and receive
23 messages over a two-way paging network that was
24 implementing a wireless protocol called ReFLEX, and
25 ReFLEX50, and ReFLEX25.

1 Q Okay. So at that time how did a circuit or
2 circuitry detect vibrations exactly?

3 MR. SANDERS: Objection to form.

4 THE WITNESS: So a vibration is a movement of a
5 physical structure, and, generally speaking, the
6 movement of a physical structure can be converted to an
7 electrical signal using what's called a piezoelectric
8 effect such as what you might find, for example, in an
9 electret microphone in which the diaphragm in the
10 microphone vibrates based on the influence of sound
11 waves, and the sound waves influencing the vibration of
12 the diaphragm causes the -- an electric circuit to
13 receive a signal of electrons.

14 BY MR. SCHELLER:

15 Q And is piezoelectric the technology that you've
16 used in the AccessMate to detect vibration?

17 A Yes. That's how, generally speaking, vibrating
18 motion is converted to electricity in a circuit.

19 Q Okay. What about detecting walking, Dr. Bims,
20 for example, like in a Fitbit, is it the same concept?

21 MR. SANDERS: Objection to form.

22 THE WITNESS: Not necessarily.

23 BY MR. SCHELLER:

24 Q Okay. Why do you say, "Not necessarily"? Are
25 there other ways or other technologies to detect

1 walking?

2 A Yeah. Walking is a fairly complex motion and
3 can be fairly difficult for a device to determine. So a
4 person of ordinary skill in the art would have to
5 experiment with a number of approaches to try to
6 determine whether or not a person is walking. And the
7 person of ordinary skill in the art in the relevant time
8 frame would understand the difficulty and complexity of
9 attempting to determine when someone is walking and
10 would understand that a variety of approaches would need
11 to be experimented with to determine which approach or
12 combination of approaches would be optimal for a
13 particular use-case scenario.

14 Q Okay. To your knowledge or recollection, was
15 there circuitry that existed or was invented at the
16 relevant time period that could detect walking?

17 MR. SANDERS: Objection to form.

18 THE WITNESS: To my knowledge, in that time
19 frame there had been attempts to develop circuitry to
20 determine when a person is walking to various degrees of
21 success because of the difficulty in making that
22 determination.

23 BY MR. SCHELLER:

24 Q Okay. And you said, "attempts." Can you tell
25 me, to the best of your recollection, what specific

1 attempts you're thinking of when you say that.

2 MR. SANDERS: Objection to form.

3 THE WITNESS: So, for example, in the area of
4 fitness devices that would, for example, count the
5 number of steps that a person has taken through the day
6 might rely on a number of approaches to compute whether
7 a person is walking to various degrees of accuracy.

8 BY MR. SCHELLER:

9 Q Okay. Were there commercial products at the
10 time, relevant time, that could actually do that?

11 MR. SANDERS: Objection to form.

12 THE WITNESS: I don't recall such devices. I
13 did not research that in my report.

14 BY MR. SCHELLER:

15 Q That's fair. Did you work on any such devices
16 at that time period yourself?

17 MR. SANDERS: Objection to form.

18 THE WITNESS: I can't say for sure.

19 BY MR. SCHELLER:

20 Q Okay. You mean you don't remember, sitting
21 here today?

22 A Meaning the devices that we produced had a
23 variety of functions built within them, and, sitting
24 here today, I'm not recalling whether or not those
25 devices were ever used for the purpose of counting

1 steps.

2 Q I see Okay. So what devices are you referring
3 to when you say, "devices"? Can you just list them for
4 me, and we can talk about them.

5 A Well, there are devices that we designed and
6 built at Wireless Access, some of which are described in
7 more detail in various patents that the company filed.
8 And there were devices that I contemplated during a
9 period of consulting work and then at a company called
10 Symmetry Communications. We were designing cellular
11 network infrastructure that would interact with mobile
12 computing devices which may have had step-tracking
13 circuitry within them.

14 Q Okay. Well, let's start with Wireless Access.
15 You were there until the end of 1998; is that
16 right? Oh, do you have your CV in front of you, Doctor?

17 A No, I don't.

18 Q Oh, okay. I have it. Let me pass it through
19 the chat. Okay.

20 (Patent Owner's Exhibit 3 was
21 marked for identification.)

22 BY MR. SCHELLER:

23 Q Do you see it?

24 A Yes, I see an Exhibit 1004.

25 Q That's it, yeah. You should be able to open

1 that up by clicking on it.

2 A It's asking me to download.

3 Q Yes, that's the process. It will download, and
4 then you'll open it from there.

5 A Got it.

6 Q You can look at your CV, if you don't mind. I
7 want to talk about the different devices when you were
8 at Wireless and T-Span.

9 A Okay.

10 Q So I think my question was, and then we moved
11 to talking about bringing the exhibit over, that you
12 were at Wireless Access until to the end of 1998; right?

13 A December of 1998, yes.

14 Q Okay. And so you were talking about or
15 referring to devices.

16 What devices were you working on producing at
17 Wireless Access?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: As I mentioned, Wireless Access
20 produced a number of mobile communication devices such
21 as, for example, the AccessMate as well as other two-way
22 pager devices that operated over a nationwide paging
23 network that was compliant with the ReFLEX50 and
24 ReFLEX25 protocols. And in addition, I also created a
25 network operations center testing platform for device

1 certification for operation on those networks.

2 BY MR. SCHELLER:

3 Q Okay. So it sounds like at least some of the
4 devices were pagers, is that right, that you invented at
5 Wireless Access?

6 MR. SANDERS: Objection to form.

7 THE WITNESS: At Wireless Access we created
8 what were called two-way pagers --

9 BY MR. SCHELLER:

10 Q Uh-huh.

11 A -- meaning these pager devices had not only the
12 ability to receive a paging message, as was the case for
13 traditional pagers, but were also able to transmit
14 messages into the network.

15 Q Okay. To another device? Transmit messages to
16 another device?

17 MR. SANDERS: Objection to form.

18 THE WITNESS: The messages could be transmitted
19 to another device or to the Internet.

20 BY MR. SCHELLER:

21 Q I see. Okay. And we were talking, just to
22 bring it back to what we were originally talking about,
23 we were talking about detection of vibrations or walking
24 using circuitry.

25 Could this or these pagers detect vibrations or

1 walking?

2 MR. SANDERS: Objection to form.

3 THE WITNESS: So I'd have to go back and
4 refresh my memory about the technical design of those
5 pagers. From what I can remember sitting here today,
6 it's possible that the circuitry in those devices could
7 potentially have been used for that purpose.

8 BY MR. SCHELLER:

9 Q Okay. And moving up a year, looking at your CV
10 again, there's a reference or an entry there concerning
11 T-Span Systems.

12 Do you see that?

13 A Yes.

14 Q What were you doing at T-Span Systems exactly?

15 A T-Span Systems was a startup company --

16 Q Uh-huh.

17 A -- formed by Stanford professors for the
18 purpose of building a Wi-Fi chip that would communicate
19 via a wireless connection with a wireless router using a
20 chip that is an all CMOS design.

21 And my role at the company was to evaluate the
22 potential design of a proprietary wireless communication
23 protocol that could take advantage of the features of
24 this all CMOS chip design for efficient communication to
25 a wireless router.

1 Q Okay. Was the company producing any type of
2 mobile device such as a pager or cell phone?

3 A So the company, as I mentioned earlier, was
4 designing the computer chips that would go into a mobile
5 communications device, and ultimately the company
6 evolved to become rebranded as Atheros Communications,
7 and then ultimately Atheros Communications evolved to a
8 company called Qualcomm.

9 Q Okay. I know that one.

10 A As a result, a huge number of mobile computing
11 devices include the chip technology that was designed
12 and created at T-Span Systems.

13 Q Okay. Actually, I'm looking at the time
14 period. It looks like you were only there for
15 two months; is that right?

16 A Yes.

17 Q And why was that such a short stay?

18 A So based on my analysis of the landscape of the
19 market it was my belief that the last thing that the
20 industry needed was yet another proprietary wireless
21 protocol in the market that could only be purchased from
22 a single vendor. So I disagreed with the approach, and,
23 as a result, felt it wasn't worth it to stay there.

24 Q Okay. And then if we move up to the next time
25 period, September 1999 to March 2001, it looks like you

1 were at Symmetry Communications Systems, LLC; is that
2 right?

3 A Yes.

4 Q Okay. Was that a company you started or a
5 company that you were hired at?

6 A I was not a founder of the company.

7 Q And it says that your position was director of
8 software architecture.

9 What did that entail?

10 A So the company was designing and building 3G or
11 2-1/2G cellular network infrastructure that would be
12 deployed by cellular operators. And, in particular, the
13 company was building SGSN, which is the serving gateway
14 support node, and --

15 Q Uh-huh.

16 A -- the GGSN, which is another gateway support
17 node that interfaces to the Internet as an OEM product
18 offering for companies to sell to various cellular
19 network operators.

20 And in -- as part of the design of those
21 products, we had teams of engineers focused, for
22 example, on the hardware design aspects, as well as
23 several teams of engineers focused on the software
24 design aspect of those products. And my responsibility
25 as the director of software architecture was to oversee

1 the teams of engineers developing the software aspects
2 of those products, starting with the overall software
3 architecture and then translating that software
4 architecture into implementations.

5 Q Okay. Was Symmetry at the time you were there
6 designing, producing any products?

7 A As I mentioned earlier, Symmetry Communications
8 developed an OEM product that was sold through another
9 company into cellular networks.

10 Q Was Symmetry designing and producing any mobile
11 device products?

12 MR. SANDERS: Objection to form.

13 BY MR. SCHELLER:

14 Q At the time you were there?

15 A So at the time that I was there the products
16 that the company produced were specifically designed and
17 purposely built to interact with mobile communication
18 devices and were -- for that reason, we had to
19 understand the behavior of mobile communication devices
20 in our hardware and software designs.

21 Q Got it. So I want to step back to something
22 you said a bit ago, namely that detecting using
23 circuitry, walking was a pretty complex exercise, no pun
24 intended.

25 Do you recall that?

1 MR. SANDERS: Objection to form.

2 THE WITNESS: I don't know that I used those
3 exact words, but I did make a statement about the
4 complexities involved in detecting ambient motion.

5 BY MR. SCHELLER:

6 Q Okay. When you say, "ambient motion," you're
7 referring to walking; correct?

8 MR. SANDERS: Objection to form.

9 THE WITNESS: Well, again, as I said earlier, a
10 person of ordinary skill in the relevant time frame
11 would not have a clear understanding as to what is meant
12 by "ambient motion" as a -- as an independent term.

13 BY MR. SCHELLER:

14 Q Okay. That's fine. I was just using it
15 because you used it. Let me ask it differently. Using
16 circuitry in a mobile device such as a pager at the time
17 of the invention to detect running, was that possible to
18 do at the time of the invention?

19 MR. SANDERS: Objection to form.

20 THE WITNESS: I can't say one way or the other.

21 BY MR. SCHELLER:

22 Q Did you ever do that at that time of the
23 invention?

24 A When you say, "that," what are you referring
25 to?

1 Q Did you ever design circuitry at the time of
2 the invention that was able to detect running?

3 MR. SANDERS: Objection to form.

4 THE WITNESS: So I was part of a design team
5 that designed circuitry that could do a number of
6 things. Is it possible that that circuitry could be
7 used in the context of detecting running? Potentially.

8 BY MR. SCHELLER:

9 Q Okay. And what was that circuitry that you're
10 referring to for? Was it for a specific product?

11 MR. SANDERS: Objection to form.

12 THE WITNESS: I'm thinking in terms of the
13 product portfolio, for example, at Wireless Access in
14 which those devices required the design of chips, the
15 design of circuits, the design of boards, design of
16 software that together performed a number of technical
17 functions.

18 And so my response is that it may have been
19 possible to utilize some of those hardware components
20 and/or software components to create a device that can
21 detect running.

22 BY MR. SCHELLER:

23 Q Oh, I see. Okay. But that circuitry wasn't
24 designed by you and your colleagues to specifically
25 detect running; is that right?

1 MR. SANDERS: Objection to form.

2 THE WITNESS: The circuitry and/or software was
3 designed to build a mobile computing device, and mobile
4 computing devices at that time came in a variety of form
5 factors and performed a variety of functions. And the
6 fitness applications were one category of a number of
7 categories of features that were possible in mobile
8 computing devices.

9 MR. SANDERS: Brad, we've been going a little
10 bit over an hour now, so if we could get to a break here
11 at some point in the next --

12 MR. SCHELLER: Yeah, we can take a break now,
13 Carl, no problem.

14 MR. SANDERS: Okay.

15 (Recess taken.)

16 BY MR. SCHELLER:

17 Q Welcome back, Dr. Bims. We were talking about,
18 before we took a break, using circuitry to detect
19 vibrations as well as walking.

20 Do you recall that?

21 A Yes.

22 Q At the time of the invention in or around 2003
23 how would skilled artisans have understood to use
24 circuitry to distinguish between vibrations and walking?

25 MR. SANDERS: Objection to form.

1 THE WITNESS: So that's an interesting question
2 because a person of ordinary skill in the art in that
3 time frame would not have a clear understanding how to
4 do that without conducting a number of experiments to
5 test various approaches to do so. And from my reading
6 of the '633 patent specification, it does not outline to
7 a person of ordinary skill in the art exactly how to do
8 that.

9 BY MR. SCHELLER:

10 Q So, in your opinion, would skilled artisans
11 have been able to figure out how to do that at the time
12 of the invention in 2003?

13 MR. SANDERS: Objection to form.

14 THE WITNESS: Well, as I mentioned, to a person
15 of ordinary skill in the art there is no clear-cut way
16 to implement that without doing a number of experiments
17 to test various approaches to try to determine what
18 combination of ideas might work to do that.

19 BY MR. SCHELLER:

20 Q Okay. Did you personally ever design circuitry
21 in that time period, 2003, that could do that?

22 A As I mentioned, as a member of a team, we
23 designed circuitry for mobile computing devices that
24 could perform a number of functions along with the
25 software that executed on that device. It's possible

1 that some of that technology that we developed could be
2 used in the context that you described.

3 Q In the context that I described you're
4 referring to detecting vibration --

5 A I believe your earlier question had to do with
6 the distinguishing between ambient motion and other
7 types of motion.

8 Q Yes, I'm sorry. I wasn't finished with my
9 question. I was pausing. It was my fault.

10 So you said you think that it might be possible
11 for the circuitry that you designed to distinguish
12 between vibration and a movement such as walking; is
13 that right?

14 A So as I mentioned earlier, it's possible that
15 the functionality or some part thereof that we designed
16 as a team could be used in the context of distinguishing
17 between different types of motion.

18 Q Okay. But you and the team did not prove that
19 up; correct?

20 MR. SANDERS: Objection to form.

21 THE WITNESS: What do you mean by "prove that
22 up"?

23 BY MR. SCHELLER:

24 Q That's fair. You and the team did not
25 demonstrate that the circuitry you were working on could

1 distinguish between vibration and a motion such as
2 walking?

3 MR. SANDERS: Objection to form.

4 THE WITNESS: I don't remember us demonstrating
5 that the functionality embedded in the products was
6 actually used in the context of distinguishing between
7 ambient motion and other types of motion.

8 BY MR. SCHELLER:

9 Q Okay. Let's go back to the '633 patent, which
10 is Exhibit 1 of the deposition. Let me know when you
11 have it.

12 A Okay.

13 Q Okay. I want to go back to that same paragraph
14 which is in Column 5 that we've been talking about, and
15 specifically the last sentence which is lines 23 to 26.
16 That sentence says, "Such control circuitry may be
17 configured for use with a particular phone and may have
18 inputs that allow user to adjust the
19 sensitivity/operation of either device 350 or 330."

20 Do you see that?

21 A Yes.

22 Q How would the control circuitry allow a user to
23 adjust the sensitivity of a device?

24 MR. SANDERS: Objection to form.

25 THE WITNESS: Well, that's a question that I

1 don't believe the '633 patent has answered. It makes
2 this statement, but there's no supporting evidence for
3 how to build such a control circuitry.

4 BY MR. SCHELLER:

5 Q Outside of the '633 patent, would a skilled
6 artisan know how to do that at the time in 2003?

7 MR. SANDERS: Objection to form.

8 THE WITNESS: Well, again this would not be the
9 kind of sentence that they would rely on to go off and
10 build control circuitry. I mentioned earlier a formal
11 process of specifying requirements in detail and
12 specifying the technical architecture in detail as part
13 of the necessary steps that would be required before a
14 person of ordinary skill could then perform a number of
15 experiments to determine the correct solution.

16 BY MR. SCHELLER:

17 Q Okay. Let's take a look at Figure 3 of the
18 '633 patent. Let me know when you're there.

19 A I'm there.

20 Q Okay. Do you see the reference numeral "350"?

21 A Yes.

22 Q Okay. Great. Could you please take a look in
23 the specification of the '633 patent and tell me what
24 "350" refers to.

25 A Block 350 in the specification refers to either

1 an autonomous device, a device, or a notification device
2 whose functionality is described in part in a number of
3 different places.

4 Q Okay. Were you just referring to a specific
5 column and line when you were looking at the patent,
6 Dr. Bims?

7 A I really took a look at the entirety of the
8 specification to determine where it refers to block 350.

9 Q Okay. And is it your understanding 350 is a
10 device that attaches to the cell phone?

11 MR. SANDERS: Objection to form.

12 THE WITNESS: The '633 patent refers to a
13 number of contexts throughout the specification.

14 Which context are you referring to?

15 BY MR. SCHELLER:

16 Q I'm on Figure 3. Is Figure 3 showing device
17 350 attached to a cell phone 301?

18 A In the description of Figure 3 the '633 patent
19 specification shows a number of configurations of the
20 autonomous device 350 connected to various things.

21 Q Okay. And what are those various things? What
22 are you referring to?

23 A For example, autonomous device 350 may be
24 operable to receive a male connector port located at
25 extension 321 for communication between autonomous

1 device 350 and notification device 330, as one example.

2 Another example is extension 321 is between
3 roughly a foot and five feet long, such that a user may
4 easily attach notification device 350 to the outside of
5 a purse. And there are other examples.

6 Q Okay. Were you, as a skilled artisan prior to
7 the time of the invention in 2003, aware of any such
8 autonomous device being commercially available on the
9 market or otherwise publicly known?

10 MR. SANDERS: Objection to form.

11 THE WITNESS: Is your question asking
12 specifically about autonomous device 350 as described in
13 the '633 patent?

14 BY MR. SCHELLER:

15 Q No, more generally in terms of a device
16 attaching to a cell phone as depicted in Figure 3?

17 MR. SANDERS: Same objection.

18 THE WITNESS: Well, the '633 patent says in
19 Column 2, line 62, that "Fig. 3 is an illustration of an
20 autonomous remote cell phone notification device and
21 cell phone constructed in accordance with the principles
22 of the present invention."

23 So in the context of Figure 3 the '633 patent
24 teaches the principles of the present invention. From
25 my understanding at the relevant time frame of the

1 patents there were no products that were implementing
2 the features in Figure 3 in accordance with the present
3 invention.

4 BY MR. SCHELLER:

5 Q Okay. Let's take a look in Column 5 again of
6 the '633 patent and specifically lines 32 to 39. If you
7 could look at those two sentences, please.

8 A Okay.

9 Q So I have another terminology question for you.
10 There's a reference to "control circuitry" in that first
11 sentence.

12 Do you see that?

13 A Yes.

14 Q And then the second sentence says, "Other types
15 of autonomous sensors may also be utilized."

16 Do you see that?

17 A Yes.

18 Q So my question to you is: Would skilled
19 artisans have understood "circuitry" and "sensors" to
20 mean two different things?

21 MR. SANDERS: Objection to form.

22 THE WITNESS: As I mentioned earlier, the term
23 "circuitry" is a term that has a vague definition to a
24 person of ordinary skill at the relevant time frame of
25 the patent. And because of that ambiguity, coupled with

1 the fact that the term "sensor" as a stand-alone term is
2 also a vague term to a person of ordinary skill in that
3 relevant time, it would be difficult for a person of
4 ordinary skill in that relevant time to define a
5 distinction between the two.

6 BY MR. SCHELLER:

7 Q Okay. So both those terms, it sounds like
8 you're saying, at the relevant time period were very
9 general terms; is that right?

10 MR. SANDERS: Objection to form.

11 THE WITNESS: It would not convey to a person
12 of ordinary skill a clear understanding as to what
13 you're talking about.

14 BY MR. SCHELLER:

15 Q Okay. To a person of ordinary skill in the art
16 in 2003 would those two terms mean the same thing, those
17 two terms being "circuitry" and "sensor"?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: Given the ambiguity of those two
20 terms, it could be possible.

21 BY MR. SCHELLER:

22 Q In that last sentence that I read in Column 5,
23 that sentence being "Other types of autonomous sensors
24 may also be utilized," there's a reference to autonomous
25 sensors.

1 Would that have been a recognized term of art
2 in 2003, namely the term "autonomous sensor"?

3 MR. SANDERS: Objection to form.

4 THE WITNESS: No.

5 BY MR. SCHELLER:

6 Q So to a skilled artisan in 2003 what did the
7 term "autonomous sensor" mean?

8 A Well, you'd have to read, for example -- as
9 used in the '633 patent, you'd have to read the context
10 in which it's used to try to get some feel for what the
11 term means because as a stand-alone term it was not a
12 term of art.

13 Q Okay. Okay. Let me ask you, as a skilled
14 artisan in 2003 or at the time of the invention, do you
15 recall any wristwatches containing circuitry that could
16 differentiate or distinguish between two different types
17 of motion?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: I think so, yes.

20 BY MR. SCHELLER:

21 Q Okay. And what are you thinking of in your
22 head when you say that? Are you thinking of specific
23 products?

24 A So, for example, I believe there was an episode
25 in which George Jetson had a wristwatch that could

1 measure motion.

2 Q Okay. I don't remember that episode. Was that
3 wristwatch measuring two different types of motion, or
4 it was just measuring one motion, to your recollection?

5 MR. SANDERS: Objection to form.

6 THE WITNESS: At least one. I don't know if
7 two were in that particular episode.

8 BY MR. SCHELLER:

9 Q Do you have any other recollections of other
10 examples of such a wristwatch?

11 A Sitting here today, I don't have a recollection
12 of that, although, as I mentioned earlier, there were
13 definitely mobile communication devices or mobile
14 computing devices at that time period that were used for
15 fitness activities, and, as such, there may have been
16 such a device that had that capability.

17 Q Okay. Are you thinking of commercial products,
18 Dr. Bims, when you say that?

19 A There might have been products on the market
20 that had that functionality that I'm not recalling at
21 this moment.

22 Q Okay. What are you recalling when you say that
23 there were fitness devices, mobile fitness devices, at
24 that time period?

25 A So in the 2003 time frame, from what I

1 remember, there were at least fitness trackers that
2 could keep track of your number of steps in a day.

3 Q Okay. And let's list those trackers that
4 you're thinking of. What's the first one?

5 A I don't remember the model numbers, but my
6 general sense from what I can remember is those products
7 existed in 2003.

8 Q Okay. I wouldn't remember the model numbers
9 either, but can you be any more specific about names or
10 any other details of those trackers that you're thinking
11 of?

12 MR. SANDERS: Objection to form.

13 THE WITNESS: So unfortunately, 20 years ago I
14 was not into fitness enough to keep track of which
15 companies were producing which types of fitness products
16 that were mobile computing devices.

17 MR. SCHELLER: Okay. I'd like to mark as
18 Exhibit 4 another reference that's involved in the IPRs,
19 and this is a reference that I'm going to call the Vock
20 reference, V, as in vacuum, o-c-k.

21 (Patent Owner's Exhibit 4 was
22 marked for identification.)

23 BY MR. SCHELLER:

24 Q Do you have a copy of that reference in your
25 files, Dr. Bims?

1 A I have a copy of the Vock reference on my
2 laptop which is not with me.

3 Q Okay. I will pass a copy of that through the
4 chat, and then let me know when you've been able to
5 download it and when you're ready.

6 A Okay. I'm ready.

7 Q Okay. So have you reviewed the Vock reference
8 as part of your engagement as an expert in this matter?

9 A Yes.

10 Q So it's safe to say that you've seen this Vock
11 reference before?

12 A Yes.

13 Q When's the last time, to the best of your
14 recollection, that you reviewed the Vock reference?

15 A Can you repeat that question?

16 Q Sure.

17 A You might have dropped out.

18 Q When is the last time, to the best of your
19 recollection, that you reviewed the Vock reference?

20 A I looked at it briefly last night.

21 Q Okay. Well, if you'd like to look at it some
22 more that's fine; otherwise, we can just go right to the
23 questions. I realize it's a longer reference.

24 What based on your recent review or your review
25 in general, what do you understand Vock to be directed

1 to in terms of technology?

2 MR. SANDERS: Objection to form.

3 BY MR. SCHELLER:

4 Q You're not waiting on me, Dr. Bims; right? I
5 just wanted to make sure.

6 A No, I'm scrolling through the Vock reference --

7 Q Okay.

8 A -- because in my report I did not provide, as
9 far as I remember, a specific description of the full
10 scope of the Vock reference.

11 Sitting here at the moment, because of the
12 length of the reference, it would be difficult to
13 summarize the full scope of the Vock reference.

14 The Vock reference does include within its
15 scope a number of disclosures of implements that include
16 mobile computing devices that are in communication with
17 other devices. And those implements are able to detect
18 various types of motion.

19 Q Okay. So Vock is describing, I think, what
20 we've been talking about more recently, which is the
21 detection of fitness movements.

22 Would you agree with that?

23 A Yes.

24 Q Were you aware of this Vock patent before being
25 engaged and getting involved in this particular matter?

1 A No.

2 Q Okay. Let's take a look at the first page,
3 actually the cover page of Vock and, in particular, the
4 Abstract.

5 Do you see in the first sentence there's a
6 reference to "loft time"?

7 A Yes.

8 Q And in the second sentence there's a reference
9 to a "loft sensor."

10 Do you see that, Dr. Bims?

11 A Yes.

12 Q Are you familiar with loft sensors?

13 A Personally, as described in the Vock patent
14 when it describes what a loft sensor is in -- I'm not
15 personally experienced with detecting when a vehicle
16 leaves the ground and when it returns to the ground.

17 Q Okay. So is it safe to say you weren't working
18 with loft sensors in 2003 or around the time of the
19 invention?

20 A Well, again to the extent that a loft sensor is
21 going to detect motion using circuitry, the products
22 that I worked on in that relevant time frame included
23 hardware circuitry and/or software that could be used in
24 the context of sensing motion such as loft.

25 Q So what is a loft sensor?

1 MR. SANDERS: Objection to form.

2 THE WITNESS: One aspect of a loft sensor that
3 is described in the Abstract of the Vock patent is that
4 a loft sensor detects when the vehicle leaves the ground
5 and when the vehicle returns to the ground.

6 BY MR. SCHELLER:

7 Q If I was going to hold the loft sensor
8 mentioned in the Abstract of Vock in my hand, what would
9 it look like?

10 MR. SANDERS: Objection to form.

11 THE WITNESS: The Vock reference has, at least
12 to my count, 90 figures describing the mobile computing
13 device of the Vock reference, including devices that
14 incorporate various sensors including a loft sensor and
15 gives in many of these figures a pictorial
16 representation of such a device with a sensor embedded
17 within it such as a loft sensor in a variety of contexts
18 attached to various objects and people.

19 In addition, the figures go into detail as to
20 the form factor and circuitry of sensors such as a loft
21 sensor to convey to a person of ordinary skill the
22 physical details that would be incorporated into sensors
23 such as loft sensors and other sensors that are
24 disclosed in the Vock reference.

25 ///

1 BY MR. SCHELLER:

2 Q Do you know what loft sensors, not the device
3 that they go into, but what loft sensors looked like in
4 2003?

5 MR. SANDERS: Objection to form.

6 THE WITNESS: On Column 14, the Vock reference
7 gives one example of what a loft sensor might look like
8 when it says, "In one aspect, the invention provides a
9 system for determining the loft time of a moving vehicle
10 off of a surface. A loft sensor senses a first
11 condition that is indicative of the vehicle leaving the
12 surface, and further senses a second condition
13 indicative of the vehicle returning to the surface. A
14 controller subsystem, e.g., typically including a
15 microprocessor or microcontroller, determines a loft
16 time that is based upon the first and second conditions,
17 and the loft time is preferably displayed to a user of
18 the system by a display, e.g., a LCD or LED display."
19 That's just one embodiment of the Vock reference
20 describing what a loft sensor is.

21 BY MR. SCHELLER:

22 Q Yeah. Okay. Outside of Vock, did you, as a
23 skilled artisan in 2003, know what a loft sensor looked
24 like?

25 MR. SANDERS: Objection to form.

1 THE WITNESS: I don't recall the term "loft
2 sensor" being a term of art to a person of ordinary
3 skill in that time frame.

4 BY MR. SCHELLER:

5 Q Okay. You never worked with one in that time
6 frame; is that right?

7 MR. SANDERS: Objection to form.

8 THE WITNESS: Well, again, as I said earlier,
9 the term "loft sensor" in my recollection was not a term
10 of art to a person of ordinary skill; so I cannot say
11 for sure whether or not a loft sensor, as described in
12 the Vock reference, was a sensor that I encountered in
13 the 2003 time frame.

14 BY MR. SCHELLER:

15 Q Got it. Okay. Let's go back to the Abstract
16 if you're not there anymore, and this is the Abstract of
17 the Vock reference, Exhibit 4, and a reference a little
18 more than midway down to a "speed sensor."

19 Do you see that?

20 A Trying to get back to the top. Okay. I'm
21 there now.

22 Q Okay.

23 A What was your question?

24 Q Whether you saw the term "speed sensor," and
25 you answered it.

1 A Oh, the term "speed sensor"?

2 Q Do you see that there in the Abstract?

3 A So while I was searching for answers to your
4 question about a loft sensor, I did notice that in the
5 specification of the Vock reference there was mention to
6 a speed sensor, even though -- I mean, looking at this
7 Abstract paragraph, it does not expressly disclose a
8 speed sensor.

9 Q So if you look a little bit more than midway
10 down in the Abstract there's a sentence on the
11 right-hand side that says, "In addition..."

12 Do you see that?

13 A Oh, yes, I see that. It says "a speed sensor"
14 there. There it is.

15 Q It does. So that's fine. I just wanted to
16 point you to get us on the same page in terms of that
17 term.

18 Were you familiar in the 2003 time period with
19 speed sensors?

20 MR. SANDERS: Objection to form.

21 THE WITNESS: Well, again the term "speed
22 sensor" was not a term of art to a person of ordinary
23 skill in the art. And so in my view, a person of
24 ordinary skill in the art might have encountered a speed
25 sensor without knowing it because the context of the

1 '633 patent defines what a speed sensor is.

2 BY MR. SCHELLER:

3 Q I'm sorry, I lost you on that last part of your
4 answer. The '633 patent defines what a speed sensor is?
5 Is that what you said?

6 A As used in the '633 patent, the '633 patent
7 defines what it means by a speed sensor. Or, actually,
8 the -- I meant the -- yeah, the '366 patent. That's
9 what I meant.

10 Q Oh, okay, you're talking about the Vock
11 reference?

12 A Yes.

13 Q Okay. So in the context of Vock what do you
14 understand a speed sensor to be?

15 A In the context of Vock there are many
16 descriptions of the speed sensor as used in a variety of
17 embodiments. In the Abstract paragraph that we're
18 looking at the speed sensor's function is described as
19 something that "...can detect the vehicle's speed for
20 selective display to the user."

21 Q Is there a device or was there a device in that
22 time period, 2003, that skilled artisans like yourself
23 would have characterized or considered to be a speed
24 sensor or something that sensed the speed?

25 A And the question again was?

1 Q Yes. What I'm trying to ask you is this term
2 "speed sensor" used by Vock in the context of, you know,
3 mobile devices for detecting or monitoring sport
4 activities, you seem to be saying, well, Vock is kind of
5 using that or making that term up, and if I'm wrong
6 correct me.

7 And I'm wondering if in real life skilled
8 artisans called such a speed sensor by a different name
9 and what that different name was, if that makes sense.

10 A In my review of the Vock reference the
11 technology that it discloses as related to a speed
12 sensor can be used by a person of ordinary skill in the
13 art in a variety of contexts outside of sporting events.

14 Q Okay. Did you ever use in the 2003 time period
15 a speed sensor in any of your work?

16 A Yes.

17 Q Okay. Can you tell me in what projects you
18 used speed sensors.

19 A For example, in projects that I worked on at
20 Wireless Access.

21 Q Okay. And how many projects, to your
22 recollection?

23 A Most every project that involved the design of
24 a two-way pager.

25 Q So, for example, the AccessMate that we talked

1 about earlier today, do you remember that?

2 A Yes.

3 Q Did the AccessMate have a speed sensor?

4 A Yes.

5 Q And did you refer to that component as a speed
6 sensor, or did you refer to it by a different name?

7 A Again the term "speed sensors" standalone was
8 not a term of art to a person of ordinary skill. But
9 the technology of a speed sensor was implemented in the
10 two-way pager designs that we developed at Wireless
11 Access.

12 Q Okay. So when you answered my question yes,
13 the AccessMate contained a speed sensor, what particular
14 component or circuitry are you thinking of?

15 A From my recollection, the integrated circuit
16 that we developed at Wireless Access in combination with
17 the driver software that interacted with that integrated
18 circuit performed the functions of a speed circuit that
19 can detect motion.

20 Q Is that the same integrated circuit that
21 detected the vibrations in the AccessMate?

22 A So that integrated circuit, I believe -- from
23 what I recall, the circuit that was related to sensing
24 vibration was the microprocessor combined with software
25 and circuitry to interface the microprocessor with the

1 vibration unit, which is separate from the integrated
2 circuit that we custom designed at Wireless Access.

3 **Q And how did the integrated circuit that sensed**
4 **speed function to sense speed?**

5 A So one of the purposes of the integrated
6 circuit is the ability to receive, process and decode
7 wireless communication signals that are transmitted from
8 another device. And as part of the signal processing
9 algorithms that were implemented in the integrated
10 circuit to perform the function of receiving wireless
11 communication signals, the integrated circuit had to
12 estimate the velocity of the two-way pager in order to
13 perform proper reception and decoding of the wireless
14 communication signals whose frequency is affected by the
15 motion of the two-way pager.

16 **Q I see. And when you say "velocity" of the**
17 **pager, you mean physically how fast the pager was moving**
18 **through the air; is --**

19 A Correct.

20 **Q -- that right?**

21 A Correct.

22 **Q Okay. And you said that was a custom design;**
23 **is that right?**

24 A At Wireless Access we had a design team that
25 was focused on designing from the ground up a custom

1 integrated circuit that was purposely designed
2 specifically for the two-way pagers that we produced.

3 Q Okay. Do you remember why you and your team
4 incorporated speed sensing into a pager?

5 A So it's common practice for persons of ordinary
6 skill when devising or developing products that have the
7 ability to communicate wirelessly to also design as part
8 of that functionality the ability to detect the relative
9 speed of the wireless device when it's receiving
10 transmissions from another device over a wireless
11 medium. And the reason is because if such functionality
12 were not implemented in the device then the receiver
13 would lose its ability to properly receive and decode
14 wireless message transmissions when the device is moving
15 at a high rate of speed.

16 Q I see. Okay. Did that AccessMate pager
17 provide its user with a display or a readout of speed?
18 For example, you are moving at 25 miles an hour in a
19 car.

20 A The amount of movement sensed by the integrated
21 circuit was available to developers of the product
22 through special interfaces not available to the average
23 user, but nonetheless produced by the chip through a
24 specialized interface.

25 Q Okay. When you say, "specialized interface,"

1 are you referring to a display screen or something
2 different?

3 A What I'm referring to is that in the
4 development of the integrated circuit, there are certain
5 interfaces built into the chip that allows for
6 developers to examine the performance of various
7 components of the chip in order to evaluate the
8 effectiveness of the design. And those interfaces
9 include monitoring the effectiveness of the chip to
10 respond to the motion of the device when it's receiving
11 wireless communication signals.

12 Q Okay. Let's look at the Abstract again in
13 Vock. In the second to last sentence there's a
14 reference to "A drop distance sensing unit..."

15 Do you see that?

16 A Yes.

17 Q Is that another fanciful word that Vock is kind
18 of making up, or is that a term of art that you
19 recognize from the 2003 time period?

20 A So the drop distance sensing unit is another
21 term which the Vock reference explains in the body of
22 the specification to a person of ordinary skill in the
23 art. The term "drop distance sensing unit" standalone
24 was not a term of art to a person of ordinary skill,
25 and, because of this, a person of ordinary skill in the

1 relevant time frame would consult the body of the
2 specification of the Vock reference to understand what
3 the Vock reference meant by the term "drop distance
4 sensing unit."

5 Q Got it. Okay. Thank you for that. So let's
6 go to Column 4 of Vock, and specifically there's a
7 paragraph line 45 to line 53.

8 Do you see that?

9 A Yes.

10 Q Can you please read that and then let me know
11 when you're set.

12 A Okay.

13 Q So there's a reference, and this isn't the only
14 reference in Vock or instance of it in Vock, but there's
15 a reference to "power" in the second line, 46, and
16 there's another reference in line 51 to, quote, unquote,
17 "'power' data."

18 Do you see that?

19 A I see in line 46 the word "power." I'm looking
20 for it in line 51.

21 Q Actually, it's in 50 as well, "power
22 measurement" and "'power' data."

23 A Oh, sorry. I'm looking at the wrong column.
24 You said Column 14?

25 Q 4.

1 A 4. Sorry. Okay. Yes, I see that, yes.

2 Q Okay. As a skilled artisan reading this, what
3 do you understand Vock to mean by "power," measurement
4 of power?

5 A According to Column 3 in the Vock reference,
6 starting at line 11, it says "As used herein,
7 'power'" --

8 (Interruption in the proceedings.)

9 BY MR. SCHELLER:

10 Q That was pretty cool.

11 MR. SANDERS: Sorry, hold on. My computer is
12 giving me technical problems here.

13 MR. SCHELLER: Of all the words to echo.

14 THE WITNESS: Okay. So as I was saying, as the
15 Vock reference describes in Column 3, starting at
16 line 11, it says, "As used herein, 'power' refers to the
17 amount of energy expended by a person or vehicle during
18 a sporting activity, typically over a period such as one
19 ski run. The following description provides several
20 systems, techniques, and methods for determining power.
21 Power need not correspond to actual energy units; but
22 does provide a measure of energy expended by the person
23 or vehicle as compared to other persons and vehicles in
24 the same sporting activity. Power can be used to
25 quantify 'bragging rights' between sports enthusiasts:

1 e.g., one user can quantify that he expended more
2 energy, or received more 'punishment,' as compared to a
3 friend. Power can refer to the amount of 'G's' absorbed
4 during a given period of activity. Power is typically
5 quantified over a period that is selectable by the user.
6 For example, power can be determined over a successive
7 one-second periods, or a successive five second periods,
8 or a successive one minute periods or a successive five
9 minute periods or other periods. Power can also be
10 measured over a manually selected period. For example,
11 two snowboarders can initialize the period at the
12 beginning of a run down a ski slope and can stop their
13 period at the end of the run."

14 BY MR. SCHELLER:

15 Q So before reading Vock did you have any
16 knowledge, particularly back in 2003, of any component
17 or circuitry that had such functionality as you just
18 read?

19 A So prior to 2003 I founded a company called
20 AirFlow Networks --

21 Q Uh-huh.

22 A -- and one of the initial set of engineers that
23 I hired at AirFlow Networks had a previous job in which
24 he designed circuitry for a product that could measure
25 multiple things relating to both velocity, acceleration

1 and power delivered to a golf ball. So I was aware
2 prior to 2003 that such circuitry existed.

3 Q Okay. Were you aware of any mobile devices
4 that contained such circuitry at that time?

5 A From what I recall, such a system, as I
6 described earlier, was transportable, and so it would be
7 considered a mobile computing device.

8 Q Were you familiar with any commercial
9 wristwatches at the time in 2003 that could sense power?

10 A Yes.

11 Q And what commercial wristwatch are you thinking
12 of?

13 A For example, in the 2003 time frame I was aware
14 of wristwatches that could measure the energy expended
15 by a person when they moved their wrist and would
16 harness that energy expelled by a person when they moved
17 their wrist to recharge the internal battery of the
18 watch.

19 Q And what was that product called?

20 A From what I remember, a number of manufacturers
21 had built watches. They typically were high-end luxury
22 watches that had the ability to recharge the battery
23 based on a user movement expending energy.

24 Q Are you familiar with any wristwatches at the
25 time 2003 that could sense speed?

1 A From what I recall in the 2003 time frame,
2 there were wristwatches such as the Garmin wristwatch
3 that could detect both location and speed.

4 Q Were you familiar with any commercial
5 wristwatches at the time in 2003 that could sense loft?

6 A Again the term "loft" as it relates to loft
7 sensors is a term that is defined in the Vock reference
8 as it is not a term of art to a person of ordinary
9 skill.

10 However, what is described in Vock for a loft
11 sensor would convey to a person of ordinary skill that
12 it would encompass a feature such as an altimeter, which
13 can measure altitude. And such a circuit, I'm trying to
14 recall, may or may not have been implemented, to my
15 knowledge, in a wristwatch.

16 Q Okay. So in terms of a wristwatch containing
17 an altimeter, you don't remember whether there was such
18 a thing at the time of the invention, sitting here
19 today; is that right?

20 A Sitting here today, I don't remember the model
21 names of a wristwatch that would include an altimeter.
22 But if there were such a watch I would imagine in the
23 2003 time frame it would be a high-end luxury watch.

24 Q Okay. You referred to the high-end luxury
25 watches just now with respect to altimeters and also

1 with respect to power.

2 Why would those functionalities be cabined to
3 high-end luxury watches?

4 A So, for example, with respect to an altimeter,
5 if one were a SCUBA diver, you would desire a watch that
6 could convey the height or depth of your location. And
7 as such, there were wristwatches on the market that
8 could detect using an altimeter your relative height or
9 depth.

10 Q When you say, "on the market," you mean in the
11 2003 time period?

12 A Yes. These would be divers' type watches that
13 a person would wear when they're ascending or descending
14 in a SCUBA dive.

15 Q Okay. What about altimeters in what I'm going
16 to call everyday watches that someone like you and I
17 would wear, any instances of those that you can
18 remember?

19 A Well, I don't know if you're a SCUBA diver. If
20 such, then you'd probably need one.

21 Q I'm not. Let me rephrase that question.
22 Actually --

23 A So is this a good time for a break?

24 Q Sure.

25 MR. SANDERS: Do you want to get lunch at this

1 break, or do you want to --

2 THE WITNESS: Sure. Yes.

3 MR. SANDERS: Okay. Brad, can we do an hour
4 for lunch here?

5 MR. SCHELLER: Yeah, no problem.

6 (Lunch recess taken.)

7 BY MR. SCHELLER:

8 Q Dr. Bims, welcome back.

9 A Thank you.

10 Q When we broke for lunch we were talking about
11 the Vock reference. Let's stay talking about that
12 reference just for a little bit yet. That is Exhibit 4
13 for the deposition, and if you have it in front of you
14 let's go to Column 40.

15 Do you have a hard copy of that now, or are you
16 still --

17 A No, I'm going to scroll to Column 40. Okay.
18 Looks like Column 40 and 39 are rotated.

19 Q Really? That's bizarre.

20 A Yeah, only that page, but I'll figure out how
21 to rotate maybe.

22 Q Really? What did I pass through the chat?

23 A It says "Rotate View." Here we go.

24 Q Yeah, I passed the exhibit that was included
25 with the petition. I don't know why it's like that.

1 A Counterclockwise. There we go. I'm good now.

2 Q Okay. So I want to direct your attention to a
3 paragraph at lines 48 to 62, and in particular I want to
4 direct your attention to ask some questions about a
5 sentence that starts at line 57. If you want to read
6 that whole section that's fine with me. Just let me
7 know when you're ready.

8 A Okay. I'm ready.

9 Q Okay. On line 57 there is a reference to
10 "Speed measurements."

11 Do you see that?

12 A Yes.

13 Q So that sentence says, "Speed measurements,
14 however, are much more difficult if not impossible to do
15 at these locations because of the lack of certainty of
16 the direction of movement."

17 Do you see that?

18 A Yes.

19 Q And then the next sentence says, "However, with
20 the increased performance and size reductions of
21 guidance systems with accelerometers...even this can be
22 done."

23 Do you see that?

24 A Yes.

25 Q So what is your understanding of what

1 accelerometers do?

2 A An accelerometer is a measurement unit that
3 measures the rate of change in velocity.

4 Q It's a measurement unit, is that what you said?

5 A Yeah, it's a measurement device that will
6 measure the change in velocity.

7 Q Okay. And did you personally work with
8 accelerometers around the time of the invention in 2003?

9 A I was certainly aware of accelerometers, but I
10 don't know if I was designing accelerometers.

11 Q Okay. So we talked a lot earlier today about
12 the work you did with Wireless Access and your team.

13 Did any of that work involve using
14 accelerometers or incorporating accelerometers into any
15 of those Wireless Access products?

16 A I -- I don't remember those products having
17 accelerometers, but I believe our competitor product did
18 have one.

19 Q Okay. And what was the competitor product?
20 What kind of a --

21 A It was a Motorola pager device, you know,
22 similar to the PageWriter. I think that was a ReFLEX
23 product.

24 Q And what did that device use the accelerometer
25 for?

1 A And so if you were to, for example, drop the
2 pager it could do some kind of fall detection and try to
3 shut down the operation of the pager, you know, for
4 things like that, for just -- just for crash safety.

5 Q Okay. Do you recall any commercially available
6 wristwatches around the time of the invention containing
7 accelerometers?

8 A So the way the wristwatches that used arm
9 movements worked is they looked for the rate of change
10 in velocity or acceleration of your arm movements --

11 Q Uh-huh.

12 A -- to convert that into electrical energy to
13 recharge the battery.

14 Q At the time of the invention in 2003 what size
15 was an accelerometer just approximately?

16 A Accelerometers came in a variety of sizes --

17 Q Uh-huh.

18 A -- depending on the application.

19 Q And what's your recollection of how small they
20 could be? You know, what's the smallest size they came
21 in around that time?

22 A I don't sitting here today recall the smallest
23 size of an accelerometer in 2003. What I can say is
24 that accelerometers were small enough to fit into mobile
25 computing devices depending on the form factor.

1 Q Okay. I'm going to mark another exhibit. This
2 will be Exhibit 5. And it is another prior art
3 reference in the IPR, Dr. Bims, and it's called
4 Narayanaswami, N-a-r-a-y-a-n-a-s-w-a-m-i.

5 (Patent Owner's Exhibit 5 was
6 marked for identification.)

7 BY MR. SCHELLER:

8 Q Do you have a copy of this in front of you, or
9 do you need me to pass a copy through?

10 A I think you should send a copy in the chat.

11 Q Okay. And let me know when you're all set with
12 that.

13 A Okay. I have it.

14 Q Okay. And do you recognize this patent?

15 A Yes.

16 Q And I take it that you reviewed it in the past?

17 A Yes.

18 Q And when's the last time you reviewed this
19 patent?

20 A So I leafed through it yesterday.

21 Q Okay. Now that you have Narayanaswami in front
22 of you, let's take a look at your declaration actually,
23 which I think is Exhibit 2, and in particular
24 paragraph 122 of your declaration.

25 A Okay.

1 Q And I have a specific question for you, and it
2 relates to the sentence towards the bottom of page 53.
3 It starts with "A POSITA," P-O-S-I-T-A, "A POSITA would
4 understand..."

5 Do you see that sentence?

6 A Yes.

7 Q So this is your declaration. You say, "A
8 POSITA would understand that Narayanaswami treats calls
9 as an event that triggers a type of alert or alarm and
10 that if the user does not respond to the call, then the
11 watch will provide an alarm at a preset time after the
12 call is missed."

13 Did I read that correctly?

14 A Yes.

15 Q So I didn't see a citation there. I don't see
16 a citation there. So I was wondering if you could point
17 to me where in Narayanaswami there is a disclosure of
18 the watch providing an alarm at a preset time after a
19 call, an incoming call, is missed.

20 A For example, if you look at Column 10 in the
21 Narayanaswami reference it describes, starting at --
22 starting at line 60, for example, "If the user does not
23 tap the alarm a second time within a programmable time
24 interval, the alarm message title disappears after this
25 programmable interval of time and the alarm will be

1 activated again after a programmable snooze interval,
2 e.g., 5 minutes, again displaying the message title."

3 Q Okay. That was Column 10, line 60 to 64.

4 Any other support for that sentence in your
5 declaration?

6 A In Column 11, starting at line 13, it says, "If
7 the user does not interact with the watch at all when
8 the alarm is activated this may mean either: 1) the
9 user did not hear the alarm although the watch is on the
10 wrist, or 2) the watch is not on the user's wrist at
11 all. The watch distinguishes these two cases by
12 periodically monitoring the tilt sensor 72...on the
13 watch. If the watch is on the user's wrist, then the
14 alarm will automatically revert to the snooze setting
15 after a preset time interval."

16 And the snooze setting is something that's
17 described in this patent as being a period of time at
18 the end of which the alarm is reactivated.

19 Q Okay. Is that it?

20 A So in Column 13, starting at line 42 --

21 Q Uh-huh.

22 A -- it says, "After either the audible or silent
23 alarms have been activated at blocks 510 and 520,
24 respectively, the system determines the user response,
25 i.e., whether there was a single touch screen tap, a

1 timeout, a roller wheel selection of another actions,
2 e.g., cancel, set snooze, etc. Thus, for instance if
3 the alarm has timed out indicating no user interaction,
4 then a determination is made at block 530 to determine
5 whether the watch is on a user's wrist, for example, by
6 processing data from the tilt sensor, (Fig. 2). If the
7 tilt sensor indicates that it is possible the watch is
8 on the wearer's wrist, then the system automatically
9 sets a snooze alarm at block 535 and returns to the
10 default clock display."

11 **Q Okay. Anything else?**

12 A In Claim 3 of the Narayanaswami patent it says,
13 "The method as claimed in claim 1, wherein said step c)
14 further includes the step detecting absence of any
15 further user interaction with said touch sensitive panel
16 within a pre-determined time interval, and in response,
17 enabling automatic re-activation of said alarm at a
18 programmable snooze time interval."

19 **Q Okay. Anything else to point to in terms of**
20 **support of that sentence that we're talking about in**
21 **paragraph 122?**

22 A Well, there's a lot more support in the claims
23 of the Narayanaswami patent which has, what, 36 claims.
24 I mentioned a claim 3, but I could also read claim 4 and
25 a number of other claims, maybe -- I don't know how

1 many, but there are many claims that relay this concept
2 of automatically, you know, doing what the sentence says
3 in my report, that "A POSITA would understand that
4 Narayanaswami treats calls as an event that triggers a
5 type of alert or alarm, and that if the user does not
6 respond to the call then the watch will provide an alarm
7 at a preset time after the call is missed." That
8 concept appears in numerous ones of the 36 claims in the
9 patent.

10 Q Okay. How about anywhere else in the written
11 description preceding the claims? You identified three
12 spots, three excerpts: one in Column 10, one in
13 Column 11, and one in Column 13. Any other disclosures
14 in the written description to identify?

15 A Claim -- not claim, but at the bottom of
16 Column 13, starting at line 66, it says "Thus, it is
17 apparent from the described methodology the consistency
18 and simplicity of actions the user needs to take to
19 silence, snooze or view the details for the alarm. A
20 single tap silences the alarm, a double tap cancels the
21 alarm, a single tap and time-out 'snoozes' the alarm."

22 Q Okay. Anything else to identify in the written
23 description?

24 A That's all I'm able to come up with on the
25 spot.

1 Q Okay. Now that we've looked at Narayanaswami
2 in detail, where does Narayanaswami disclose providing a
3 notification signal for a missed phone call?

4 A For example, if we turn to Column 8, starting
5 at line 3, it says, "As a further example, caller Id
6 information may be displayed on the Wrist Watch display
7 when the cell phone that belongs to that person rings.
8 Typically, multiple persons are congregated in a room
9 and carry their cell phones in a hand bag or wear them
10 on their belts, have a hard time determining which cell
11 phone is ringing when a ringing tone is heard in a room.
12 This results in every person in the room pulling out
13 his/her cell phone out of their handbag or belt to check
14 if it is the one that is ringing. The caller Id display
15 feature of the Wrist Watch device is particularly
16 advantageous as each wearer may simply glance at the
17 watch and would immediately know if the ringing phone
18 belongs to him/her, in addition, to determining who the
19 calling party is facilitating the decision of whether or
20 not he/she should answer the phone."

21 Q Okay. Do you have any other examples or
22 disclosures in Narayanaswami that you can point to that
23 describes providing a notification signal for a missed
24 phone call?

25 A I would say the passage I read in the Column 8

1 in combination with any of the other passages and claims
2 that I've cited shows that an incoming call can provide
3 an indication on the wristwatch as shown in Column 8 as
4 an alarm. And in the other passages that I recited
5 earlier, in those passages if the alarm is not responded
6 to respond to the call that came in in Column 8, then
7 the watch will after a preset time enter a snooze mode
8 in which the original alarm, which is an alarm in
9 response to an incoming call, is reactivated.

10 So this passage in Column 8 in combination with
11 the alarm passages that I read earlier demonstrates that
12 calls are an event that triggers a type of alert or
13 alarm that if the user does not respond to the incoming
14 call, then the watch will provide an alarm at a preset
15 time after the call is missed.

16 Q Let's stay in Narayanaswami and go to Column 3.
17 And line 49 is a reference to an "altimeter."

18 Do you see that?

19 A Yes.

20 Q We talked about altimeters earlier today.

21 What does an altimeter measure?

22 A An altimeter is a measuring unit that measures
23 altitude.

24 Q And do you know how an altimeter measures
25 altitude, how it does that?

1 A I'm sure there are multiple ways that an
2 altimeter can measure altitude.

3 **Q Do you know any of them?**

4 A One way that an altimeter can measure altitude
5 is by measuring the change in barometric pressure as a
6 way of determining that the altitude has changed.

7 **Q How does an altimeter measure the change in**
8 **barometric pressure?**

9 A Like I say, I'm sure there are multiple
10 approaches to how that would occur. I'm not remembering
11 the various approaches at this moment, but the basic
12 concept is that a change in atmospheric pressure is --
13 can be used to determine that the altitude has changed,
14 either when you're above ground or when the pressure has
15 changed when you're underwater. And that can be used to
16 determine your altitude.

17 **Q Well, your first answer said "barometric**
18 **pressure," and the answer you just said now is**
19 **"atmospheric pressure."**

20 **Which one is it, just so we're clear?**

21 A I don't know that it's one or the other. I
22 mean, one can use any pressure measurement such as that:
23 barometric pressure or the underwater pressure or
24 atmospheric pressure. Depending on what environment the
25 user is in, a pressure change is an indication to an

1 altimeter that the altitude has changed.

2 Q Okay. So measuring the change in pressure is
3 one way that an altimeter measures altitude.

4 Can you think of any other way an altimeter
5 measures altitude, sitting here right now?

6 A Another way that an altimeter could measure
7 altitude is by measuring changes in the gravitational
8 field. As a device moves further away from the earth,
9 the gravitational field reduces. As a device moves
10 closer to the earth, the gravitational field gets
11 stronger. So differences in the gravitational field
12 could be used by an altimeter.

13 Q Okay. What units of measure does an altimeter
14 output or display?

15 A Whatever units of measure it's been designed to
16 produce.

17 Q It's measuring altitude; correct?

18 A The measurement made by the altimeter is
19 usually correlated to an altitude, that's correct.

20 Q Okay. So is the output a distance measurement
21 or a height measurement?

22 A Again it depends on the design. In the design
23 of the altimeter one of the design parameters is to
24 determine what the output of the altimeter would be, and
25 that output would then correlate to an altitude.

1 Q Okay. How about based on the experience that
2 you have with altimeters, what units of measure have you
3 seen in an altimeter output?

4 A Well, at a macro level, for example, if one
5 were in the cockpit of an airplane the output of the
6 altimeter would translate into a display that shows how
7 many feet the plane is above the ground.

8 Q Okay. How about in the context of an altimeter
9 in a wristwatch, what would be the units of measure
10 output in that context based on your experience?

11 A Again it depends on the design. The altimeter
12 might, for example, measure the number of stairs that a
13 person has climbed, or it may measure in other units as
14 well.

15 Q Okay. You personally, what units have you seen
16 in the context of an altimeter in a wristwatch?

17 A So personally some altimeters in a wristwatch
18 form factor might measure in the course of a 24-hour
19 period how many stairs a person has climbed as part of a
20 fitness application or, for example, in a hiking
21 application might determine how many feet or yards or
22 meters the person has climbed to get to the top of a
23 hill or a mountain.

24 Q Okay. And you experienced those scenarios at
25 the time of the invention in 2003?

1 A So at the time of the invention in 2003 I was
2 not climbing mountains but was aware that such
3 applications for altimeters were available.

4 **Q Okay. Do you think that an altimeter senses**
5 **motion?**

6 A It can, yes.

7 **Q And how does it do that?**

8 A So a person of ordinary skill would understand
9 that it would be obvious to measure, for example,
10 changes in altitude as determined by taking multiple
11 measurements of the output of the altimeter as an
12 indication to the vertical motion of the device/user.

13 **Q So are you saying the altimeter measures a rate**
14 **of change of -- I'll leave it at that. Are you saying**
15 **that an altimeter measures a rate of change?**

16 A No. What I'm saying is that the output of an
17 altimeter --

18 **Q Uh-huh?**

19 A -- can be used by a person of ordinary skill in
20 a manner that they would consider obvious to track the
21 altitude of the user/device over any set time period
22 that one wants to measure. And over --

23 **Q Yes.**

24 A -- the course of that time period the
25 collection of altimeter readings can be used by a person

1 of ordinary skill to determine the rates of change in
2 the altitude during that period of time. And that rate
3 of change of the altitude over that period of time is --
4 can be used to determine the vertical motion of the
5 user/device over that period of time.

6 Q Okay. We talked about accelerometers earlier
7 today, Dr. Bims.

8 Would you say that an accelerometer senses
9 motion?

10 A An accelerometer measures the forces applied on
11 the accelerometer, and a person of ordinary skill would
12 use those force measurements to determine the rate of
13 acceleration of the user/device.

14 MR. SCHELLER: Okay. I think we're at a good
15 spot to take another break. If we could come back in
16 about ten minutes that would be great.

17 MR. SANDERS: Okay. Sounds good.

18 MR. SCHELLER: Thank you.

19 (Recess taken.)

20 BY MR. SCHELLER:

21 Q Okay. I'm all finished. I don't have any more
22 questions for you, Dr. Bims, so thank you.

23 A Thank you very much.

24 MR. SANDERS: All right. Can we take just a
25 short break? We're going to maybe do a quick rerack. I

1 want to talk about it briefly with John.

2 MR. SCHELLER: Sure.

3 MR. SANDERS: Okay. Give us about, what,
4 ten minutes?

5 MR. SCHELLER: Okay.

6 MR. SANDERS: Yeah, ten minutes or so, and
7 we'll be back.

8 (Recess taken.)

9 MR. SANDERS: I just have a few questions here.

10

11

EXAMINATION

12 BY MR. SANDERS:

13 Q So, Dr. Bims, I'm going to refer to what I'm
14 going to mark as Exhibit 4, which is the Vock reference,
15 and I've handed you a clean copy of a printed version of
16 Vock just for the record.

17 (Petitioner's Exhibit 4 was
18 marked for identification.)

19 BY MR. SANDERS:

20 Q And the Vock reference, you're familiar with
21 that?

22 A Yes.

23 Q And just for clarity, it's marked Exhibit 3 for
24 purposes of the deposition, but the IPR is marked as
25 Exhibit 1007.

1 And so just looking at the first page of Vock,
2 can you read into the record what the title is?

3 A The title is "Sport monitoring system for
4 determining airtime, speed, power, absorbed and other
5 factors such as drop distance."

6 Q Okay. Great. And do you recall earlier today
7 counsel for Mullen asking you some questions about
8 sensors that related to detecting running?

9 A Yes.

10 Q Okay. And so can I get you to turn to Column 3
11 in Vock, Exhibit 4. And once you get there, if you
12 could look at line 46. And it should be the beginning
13 of a paragraph.

14 A Okay.

15 Q And can I get you just to read that paragraph
16 beginning on line 46 running to about line 54 into the
17 record.

18 A "The invention thus provides systems and
19 methods for quantifying airtime, power, speed and/or
20 drop distance to quantify a user's sport movement within
21 one or more of the following activities: skiing,
22 snowboarding, wind-surfing, skate-boarding,
23 roller-blading, kayaking, white water racing, water
24 skiing, wake-boarding, surfing, racing, running, and
25 mountain biking. The invention can also be used to

1 quantify the performance of vehicles upon which users
2 ride, e.g., a snowboard or ski or mountain bike."

3 Q Okay. Do you recognize any of those activities
4 as being types of human motion?

5 A They all involve human beings doing something,
6 yes.

7 Q Okay. So is running a kind of human motion?

8 A Yes.

9 Q Okay. And so in this paragraph does it mention
10 measuring speed?

11 A In the second line it does mention "speed."

12 Q Okay. And is running one of the activities
13 where speed can be measured?

14 A Yes.

15 Q Okay. Okay. Do you recall earlier discussing
16 circuits with counsel for Mullen?

17 A Yes.

18 Q Okay. Can I get you to turn to Figures 34A and
19 34B, either one. I think they're on separate pages, so
20 either one will be fine. Let's start with 34A.

21 Do you recognize what's on 34A as being a
22 circuit or at least a --

23 A Yes.

24 Q -- diagram of a circuit?

25 A Yes.

1 Q Could you look at 34B.

2 Do you recognize what's on 34B as being a
3 depiction of a kind of circuit?

4 A Yes.

5 Q Okay. Are these diagrams, would you say, more
6 or less detailed than the figures in the '633 patent?
7 And what document are you reviewing?

8 A So I'm reviewing the figures in the '633 patent
9 and comparing them to Figures 34A and B in Vock.

10 Q Okay.

11 A So the figures in the '633 patent provide
12 various blocks without detail. There is a block 471
13 labeled "Control Circuitry," but the contents of that
14 block are not depicted in any of the figures. Whereas,
15 looking at Figure 34A and 34B in the Vock reference, the
16 figures depict in detail a circuit that has, for
17 example, op-amps, diodes, resistors, and capacitors, all
18 of which are discrete elements that are part of a
19 circuit.

20 Q Okay. And so does that mean that the circuit
21 diagrams shown in Vock are in greater detail than the
22 diagrams shown in the '633 patent?

23 A Yes.

24 Q Do you recall earlier counsel for Mullen asking
25 you questions about commercially available sensors?

1 A Yes.

2 Q Okay. Can I get you to turn in the Vock
3 reference, again Exhibit 4, to Column 43, and can you
4 look at around lines 16 to 20. It begins, "The data
5 acquisition system thus permits..."

6 A Yes.

7 Q Do you see that?

8 A Yes.

9 Q Can you read --

10 MR. SCHELLER: I'm sorry, Counsel, where are
11 you? I'm sorry, I lost --

12 MR. SANDERS: Sure. No problem. It's
13 Column 43, line 16, 1-6.

14 MR. SCHELLER: Thank you. Column 43, line 16,
15 "The data acquisition"?

16 MR. SANDERS: That's it.

17 MR. SCHELLER: Okay.

18 BY MR. SANDERS:

19 Q Can you read the first two sentences there that
20 begin, "The data acquisition system thus permits..."

21 A "The data acquisition system thus permits the
22 capture of data real time, to evaluate sensors such as
23 altimeters used in a drop distance sensor, described
24 herein. Two exemplary altimeters, for example, are the
25 SenSym SCX15AN Pressure sensor and the SenSym SCX30AN

1 Pressure sensor."

2 Q Are the two SenSym pressure sensors listed
3 there commercial sensors?

4 A Yes.

5 Q Okay. Can we jump forward a couple of columns
6 and go to Column 46. Can you look at around line 4 --

7 A Okay.

8 Q -- and there's a sentence there that begins --
9 just a second -- at around line 3, and it says, "The
10 system 1100 includes a sensing unit..."

11 Can I get you to read down through line 12
12 beginning at "The system 1100..."

13 A "The system 1100 includes a sensing unit 1100a
14 with housing 1102 mounted to a snowboard 1104
15 (alternatively, the system 1100 can be mounted to a ski,
16 windsurfing board, bike, etc.) and a data unit 1100b,
17 such as a data collection watch 1112 (such as the
18 datawatch by Timex). The housing 1102 forms an
19 enclosure for the sensor, here illustrated as a piezo
20 strip 1108 such as made by AMP Sensors, in
21 Pennsylvania."

22 Q Do you recognize the AMP Sensors as being
23 commercially available sensors?

24 A Yes.

25 Q Do you recall earlier discussing piezos in the

1 context of sensing vibration?

2 A Yes.

3 Q So based on what's here were piezo strips
4 available, commercially available, sensors --

5 A Yes.

6 Q -- at the time of the filing of the '633 patent
7 provisional?

8 A Yes.

9 Q Okay. And if you could jump down in that same
10 column to line 15, the sentence begins "Accordingly, the
11 strip 1108..."

12 Do you see that?

13 A Yes.

14 Q Okay. Can I get you to read from,
15 "Accordingly, the strip 1108..." down through line 23?

16 A "Accordingly, the strip 1108 measures not only
17 sound, but a force-related factor that is used to
18 determine power. In this manner, a microphone, (e.g.,
19 the strip 1108) is suitable to measure both airtime and
20 power. Further, by monitoring the pitch or signal
21 strength of the sound within the box, a speed can be
22 correlated with the sound. Accordingly, by a single
23 microphone such as a piezo strip 1108, airtime, power
24 and speed (or at least motion) are provided. A" --

25 Q That's enough. Thank you very much.

1 And then based on this paragraph you just read,
2 is it your opinion that a piezo can be used to sense
3 other types of data beyond vibration, things like power,
4 speed --

5 A Yes.

6 Q -- et cetera? Okay.

7 Have you worked with piezos?

8 A Yes, piezos are, for example, used in
9 microphones.

10 Q Okay.

11 A Yeah, electret microphones.

12 Q And have you worked with piezos at the time or
13 before the time of filing of the provisional for the
14 '633 patent in 2003?

15 A Yes. In my days at Wireless Access we built a
16 two-way paging product that had a -- a -- well, it did
17 have a speaker which is kind of the reverse of the piezo
18 electret effect, where you have an electrical signal
19 converted into sound pressure waves.

20 There was some experimentation on a device for
21 the inflection network, and in the inflection network
22 you could actually record voice messages that were
23 transmitted from the two-way pager into the network.
24 And for that there was a microphone built into the
25 two-way pager.

1 Q Okay. And so at the time of filing of the
2 provisional application in 2003 you were familiar with
3 piezos or had worked with them?

4 A Yes.

5 Q Okay. If I could get you to in the Vock
6 reference, Exhibit 4, go to Column 4, and we're going to
7 look around line 45 to 53.

8 Do you see that? It begins, "In one preferred
9 aspect...?"

10 A Yes.

11 Q Okay. Could I get you to read that paragraph
12 spanning 45 through 53 into the record.

13 A "In one preferred aspect, the sensing unit
14 provides for the measurement of power entirely within a
15 watch. Manufacturers such as Casio, Timex, Seiko, Fila
16 and Swatch make sport wrist-watches with certain digital
17 electronics disposed therein. In accord with the
18 invention, power measurement capability is added within
19 such a watch so that 'power' data can be provided to
20 sports enthusiasts in all sports, e.g., volleyball,
21 soccer, football, karate, and similar common sports."

22 Q Okay. Based on what you just read was Vock
23 disclosing putting power sensing entirely within the
24 inside of the wristwatch such as one of these
25 commercially available wristwatches?

1 A Yes.

2 MR. SANDERS: Okay. I think that is it for us
3 on redirect. We'll pass the witness.

4

5 FURTHER EXAMINATION

6 BY MR. SCHELLER:

7 Q Okay. I'm sorry, but I have a couple more
8 questions for you in light of that. So based on what
9 you just read to us, Dr. Bims, in Column 4 I just want
10 to make sure I'm clear on your testimony. I don't have
11 the LiveNote here in front of me. So that paragraph
12 starting at line 45, Column 4, of the Vock reference
13 says, "In one preferred aspect, the sensing unit
14 provides for the measurement of power entirely within a
15 watch."

16 Do you see that?

17 A Yes.

18 Q Then it says, "Manufacturers such as Casio,
19 Timex, Seiko, Fila and Swatch make sport wrist-watches
20 with certain digital electronics disposed therein."

21 Do you see that?

22 A Yes.

23 Q And then did you just testify that it's your
24 understanding that those manufacturers made sport
25 wristwatches with power sensing units in them?

1 MR. SANDERS: Objection to form.

2 THE WITNESS: So what I testified is what's
3 written in this paragraph which is that those
4 manufacturers that are listed here make sport
5 wristwatches with certain digital electronics disposed
6 therein. And what the Vock reference is describing is a
7 sensing unit that provides for the measurement of power
8 entirely within a watch such as the watches listed in
9 this paragraph.

10 And then, furthermore, in accordance with the
11 invention, the power measurement capability, such as a
12 sensing unit to measure power, is added into a watch
13 such as the watches listed in this paragraph so that
14 power can be provided to sports enthusiasts.

15 BY MR. SCHELLER:

16 Q Okay. Did Casio make a sport wristwatch at the
17 time of the invention in 2003 that contained a power
18 sensing unit?

19 A So this paragraph does not expressly say that
20 Casio made such a watch. What it does say is that the
21 sensing unit described in the Vock reference is the kind
22 of sensing unit that can be integrated into a Casio
23 watch along with the digital electronics disposed
24 therein.

25 Q Let me restate my question. Do you know

1 whether Casio made a sport wristwatch at the time of the
2 invention in 2003 that contained a power sensing unit?

3 MR. SANDERS: Objection to form.

4 BY MR. SCHELLER:

5 Q Do you know?

6 A My personal experience -- I don't have personal
7 experience with that.

8 Q Okay. Do you know if Timex made a sport
9 wristwatch with a power sensing unit in it at the time
10 of the invention in 2003?

11 MR. SANDERS: Objection to form.

12 THE WITNESS: In my personal experience I don't
13 know the answer to that.

14 BY MR. SCHELLER:

15 Q Do you know if Seiko made a sport wristwatch at
16 the time of the invention in 2003 with a power sensing
17 unit in it?

18 MR. SANDERS: Objection to form.

19 THE WITNESS: So in my personal experience I do
20 not know whether Seiko had a watch with a power sensing
21 unit in it.

22 BY MR. SCHELLER:

23 Q Do you know if Fila made a sport wristwatch at
24 the time of the invention in 2003 with a power sensing
25 unit in it?

1 MR. SANDERS: Objection to form.

2 THE WITNESS: So in my personal experience with
3 the manufacturer Fila I do not know if that manufacturer
4 produced a wristwatch with a power sensing unit in it.

5 BY MR. SCHELLER:

6 Q Do you know if Swatch made a sport wristwatch
7 at the time of the invention in 2003 with a power
8 sensing unit in it?

9 MR. SANDERS: Objection to form.

10 THE WITNESS: In my personal experience with
11 the manufacturer of Swatch I do not know whether Swatch
12 produced a wristwatch with a power sensing unit in it.

13 (Interruption in the proceedings.)

14 BY MR. SCHELLER:

15 Q Okay. So Mr. Sanders took you to Figures 34A
16 and 34B in Vock.

17 Do you remember that?

18 A Yes.

19 Q And asked you about those figures.

20 And those figures both disclosed circuits;
21 correct?

22 A Yes.

23 Q And those circuits are for pressure sensors;

24 right? Actually, I can help you out. Bottom of

25 Column 42, Dr. Bims, line 64.

1 A Yes, I'm looking at that passage of the
2 specification which says that "...the circuit 930" shown
3 in "Figs. 34A and 34B is an example an AIIB 906 for a
4 SenSym Pressure sensor."

5 Q Dr. Bims, what does "AIIB" stand for?

6 A As described in Column 42, starting at line 30,
7 it says that "The Analogue Mother Board (AMB) 904
8 controls the sampling of the data on the Analogue Input
9 Interface boards (AIIBs) 906."

10 Q Oh, I see. Okay. And in that line 65 it
11 refers to "SenSym Pressure."

12 Do you recognize that name "SenSym"? Is that a
13 company?

14 A The SenSym sensor is the same pressure sensor
15 that we spoke about earlier.

16 Q You and me? What do you mean "we"?

17 A In the direct examination earlier.

18 Q Okay. Is SenSym the name of a company or the
19 name of a product, do you know?

20 A It could be both.

21 Q All right. Let me ask you, is SenSym the name
22 of a company, do you know?

23 A I do not know if it's the name of a company or
24 a product or both.

25 Q Okay. Have you worked with a SenSym pressure

1 sensor before, particularly around the time of the
2 invention in 2003?

3 A Around 2003 I do not recall working
4 specifically with a SenSym pressure sensor.

5 Q Prior to reviewing this Vock reference had you
6 heard of a SenSym pressure sensor?

7 A I don't remember hearing of one, although that
8 may have occurred.

9 Q Let's go to Column 46, if you would. I just
10 want to touch upon something that Mr. Sanders asked you
11 about. There's a sentence that starts at line 8 and
12 goes to line 10.

13 Are you there?

14 A Yes.

15 Q And there's a reference to another what appears
16 to be a name, "AMP Sensors."

17 Do you see that?

18 A Yes.

19 Q Is that a name that you were familiar with
20 before reading this Vock reference?

21 A I was not intimately familiar with AMP Sensors
22 prior to reading this reference.

23 Q Were you generally familiar with the AMP
24 Sensors, the name, before reading this reference?

25 A It may have been a name I've come across, but I

1 don't recall.

2 Q Okay. That's all I have. Thank you.

3 MR. SANDERS: Okay. Give me two minutes to see
4 if there's anything else. I don't think so, but just
5 give me two minutes, and we'll be back.

6 (Discussion held off the record.)

7 MR. SANDERS: Nothing further from us.

8 MR. SCHELLER: All right. Well, thank you very
9 much.

10 THE REPORTER: Mr. Sanders, would you like to
11 order a copy of this transcript?

12 MR. SANDERS: Yes, please.

13 THE REPORTER: Mr. Sanders, will the doctor
14 sign the transcript?

15 MR. SANDERS: That's up to you.

16 THE WITNESS: I waive signature.

17 THE REPORTER: Okay. Thank you.

18

19 (Deposition concluded at 2:41 p.m.)

20 ***

21 (Witness's Declaration Under Penalty
22 of Perjury on the following page hereof.)

23

24

25

1 STATE OF CALIFORNIA)
 : SS
2 COUNTY OF ORANGE)

3

4 I, the undersigned, a Certified Shorthand
5 Reporter of the State of California, do hereby certify:

6 That the foregoing proceedings were taken
7 before me at the time and place herein set forth; that
8 any witnesses in the foregoing proceedings, prior to
9 testifying, were placed under oath; that a verbatim
10 record of the proceedings was made by me using machine
11 shorthand which was thereafter transcribed under my
12 direction; further, that the foregoing is an accurate
13 transcription thereof.

14 I further certify that I am neither
15 financially interested in the action nor a relative or
16 employee of any attorney or any of the parties.

17 IN WITNESS WHEREOF, I have this date
18 subscribed my name.

19

20 Dated: May 30th, 2023

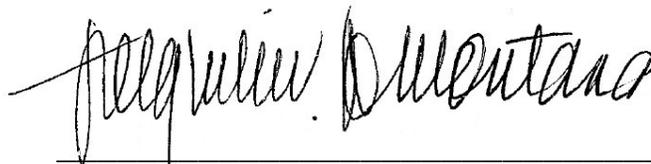
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