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

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APPLE, INC.,)	
)	
Petitioner,)	
)	CASE IPR2016-01372
vs.)	Patent 8,659,571
)	
IMMERSION CORPORATION,)	
)	
Patent Owner.)	
<hr/>)	

DEPOSITION OF PATRICK M. BAUDISCH, PH.D.
San Diego, California
Tuesday, August 15, 2017
VOLUME I

Reported by:
ELAINE SMITH, RMR
CSR No. 5421
Job No. 2677339
PAGES 1 - 48

1 UNITED STATES PATENT AND TRADEMARK OFFICE
 2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
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 4 _____)
 5 APPLE, INC.,)
 6)
 6 Petitioner,)
 7) CASE IPR2016-01372
 7 vs.) Patent 8,659,571
 8)
 8 IMMERSION CORPORATION,)
 9)
 9 Patent Owner.)
 _____)
 10
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 12
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 14
 15 Deposition of PATRICK M. BAUDISCH, PH.D.,
 16 Volume I, taken on behalf of Patent Owner, at
 17 401 B Street, Suite 1700, San Diego, California,
 18 beginning at 9:01 a.m. and ending at 1:36 p.m., on
 19 Tuesday, August 15, 2017, before ELAINE SMITH, RMR,
 20 Certified Shorthand Reporter No. 5421.
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 23
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Page 2

1 APPEARANCES:
 2
 3 For Petitioner Apple, Inc.:
 4 DLA PIPER LLP (US)
 5 BY: ROBERT C. WILLIAMS, ESQ.
 6 401 B Street, Suite 1700
 7 San Diego, California 92101-4297
 8 (619)699-2820
 9 robert.williams@dlapiper.com
 10
 11 For Patent Owner Immersion Corporation:
 12 IRELL & MANELLA LLP
 13 BY: MICHAEL R. FLEMING, ESQ.
 14 JAMES A. MILKEY, ESQ.
 15 1800 Avenue of the Stars, Suite 900
 16 Los Angeles, California 90067-4276
 17 (310)277-1010
 18 mfleming@irell.com
 19 jmilkey@irell.com
 20
 21
 22
 23
 24
 25

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1 San Diego, California; Tuesday, August 15, 2017
 2 9:01 a.m.
 3
 4 MR. FLEMING: I'm Mike Fleming, with Irell &
 5 Manella, on behalf of the Patent Owner. And with me is
 6 James Milkey, also on behalf of the Patent Owner. This
 7 is IPR2016-01372 challenging U.S. Patent No. 8,659,571.
 8 MR. WILLIAMS: I'm Rob Williams, with
 9 DLA Piper, representing Petitioner Apple.
 10 THE WITNESS: My name is Patrick Baudisch. My
 11 middle name is Markus, with a K, and I'm the expert
 12 witness.
 13
 14 PATRICK M. BAUDISCH, PH.D.,
 15 having been administered an oath, was examined and
 16 testified as follows:
 17
 18 EXAMINATION
 19 BY MR. FLEMING:
 20 Q Can you state your home address for the record.
 21 A Yes. My home address is Oranienburger Str. 17,
 22 10178 Berlin, Germany.
 23 Q Doctor, do you understand that you have just
 24 taken an oath to tell the truth?
 25 A Yes.

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1 Q You understand that this oath has the same
 2 force as if given in a court of law before a judge and
 3 jury?
 4 A Yes.
 5 Q Is there anything preventing you from giving
 6 full and accurate answers today?
 7 A No.
 8 Q Is there any reason you cannot give your best
 9 testimony today?
 10 A No.
 11 Q If you do not ask me to clarify a question,
 12 I'll assume you understood the question. Is that fair?
 13 A Yes.
 14 Q Are you represented by counsel today?
 15 A Yes, Rob Williams sitting next to me.
 16 Q You understand that you're under oath even when
 17 we take a break?
 18 A Yes.
 19 Q You understand that when you are under oath you
 20 are not to discuss this case while on break or with
 21 anyone outside of this room?
 22 A I understand.
 23 Q You understand that when you are under oath
 24 your counsel cannot coach you, act as an intermediate,
 25 interpret the questions or help you answer the

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1 questions?
 2 A Yes.
 3 Q Do you understand your counsel cannot instruct
 4 you not to answer the question unless it's necessary to
 5 preserve privilege?
 6 A I understand.
 7 Q You understand that unless your counsel
 8 instructs you not to answer in order to preserve
 9 privilege, you must answer the question?
 10 A I understand.
 11 Q Did you do anything to prepare for this
 12 deposition?
 13 A I did. I reread my own declarations, responses
 14 on both sides, the involved patents.
 15 Q Did you meet with your attorneys?
 16 A Absolutely.
 17 Q Did you meet with your attorneys last night?
 18 A We had dinner last night. I don't know if that
 19 counts.
 20 Q How long did you meet with your attorneys to
 21 discuss preparing for this deposition?
 22 A I'd say a little bit more than a day, like over
 23 the past weekend.
 24 Q Did you review any documents in preparation for
 25 this deposition?

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1 A Yes. I just said I reread my own declarations,
 2 responses on both sides and the involved patents such as
 3 the -- including the '571 Burrough, maybe others.
 4 Q Did any of these documents refresh your
 5 recollection?
 6 A Yes.
 7 Q What documents were they that refreshed?
 8 A As I was just saying, the particular '571
 9 Burrough, multiple reports and replies, declarations on
 10 both sides.
 11 Q Did you bring any documents with you today?
 12 A I've got a binder here, but given that we've
 13 done this before, my understanding is that I will just
 14 leave it where it is.
 15 Q And that I'll provide you the documents?
 16 A If you'd be so kind.
 17 Q Have you ever been deposed before?
 18 A This would be my fifth deposition.
 19 Q And were these all IPR depositions?
 20 A The first deposition was in the context of
 21 Apple versus HTC.
 22 Q Are your opinions complete for this record?
 23 A Yeah. I'd say that my combination of the two
 24 declarations should have my complete opinions.
 25 Q Did you write your declarations yourself?

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1 A I did, with support from counsel.
 2 Q So did you write the first draft?
 3 A There was back and forth by phone and e-mail
 4 exchange. I don't recall who wrote the first draft.
 5 Q What modifications did you make to the
 6 declaration to correct inaccuracies?
 7 A I definitely corrected inaccuracies. There
 8 was, as I said, multiple iterations back and forth.
 9 Q Doctor, I'm presenting you Exhibit 1014.
 10 A Thank you. It says, "Reply Declaration of
 11 Patrick Baudisch."
 12 Q Do you recognize this document?
 13 A Yes. I think this is my reply declaration.
 14 Q Was this the document that was submitted for
 15 the IPR for the '571 patent, IPR206 -- I'm sorry,
 16 IPR2016-01372?
 17 A Yes.
 18 Q I'd like to present you Exhibit 1005.
 19 A Thank you.
 20 Q Do you recognize this document?
 21 A Yes. It says, "Publication No.:
 22 US 2010/0156818 A1, multi touch with multi haptics."
 23 And the first inventor is Burrough.
 24 Q May we refer to this document as Burrough?
 25 A Please.

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1 Q Turning to Burrough, the haptic profile H(d)
 2 depends on the distance between the user's fingers;
 3 correct?
 4 MR. WILLIAMS: Objection to form.
 5 THE WITNESS: Let me maybe try to eliminate
 6 some potential confusion here which results in the fact
 7 that the inventor uses the term "H(d)" in multiple
 8 contexts with slightly different meanings. On the one
 9 hand, he uses the term to refer to the haptic response.
 10 On the other hand, he uses it to refer to the haptic
 11 profile. And if that's okay, I will just read from my
 12 declaration on that, my response.
 13 So I think I'm saying it really precisely here.
 14 It says, "Burrough discloses a dynamic interaction
 15 parameter, haptic response H(d), whose magnitude varies
 16 as a function of the distance between the user's fingers
 17 during the course of a zoom gesture. Patent Owner
 18 argues that haptic response H(d) is 'neither dynamic nor
 19 generated,' because the function represented by H(d) is
 20 stored in memory. Patent Owner's argument, however,
 21 confuses the function that defines H(d), (also referred
 22 to as the 'haptic profile'), with the output of that
 23 function (the 'haptic response'), which changes
 24 dynamically depending on the gesture signals it relies
 25 upon."
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1 So to go back to your question, if you had said
 2 the haptic response H(d) changes dynamically depending
 3 on the gesture signal, I would agree to that. So I
 4 don't know how we're going to do this today, but we
 5 somehow need to find a language between the two of us
 6 how we distinguish the two H(d)s here just to avoid
 7 misunderstandings.
 8 BY MR. FLEMING:
 9 Q So it's your opinion Burrough provides two
 10 different H(d)?
 11 A I don't think he provides two different H(d)s.
 12 I can understand why he uses the same terminology twice.
 13 In one case, he refers to the haptic profile, which is
 14 data stored in memory, and, in the other case, he refers
 15 to when that haptic profile is being applied. I think
 16 that's very common in language, we say things like, you
 17 know, F of X to refer to a function, but then we also
 18 say F of 5 and not refer to the function. It may be
 19 called, in other cases, I mean, the number coming out of
 20 this. So we just have to be very clear so we don't run
 21 into the trap of miscommunication here.
 22 Q So can you define haptic profile H(d) since you
 23 are coining a term?
 24 MR. WILLIAMS: Objection. Form.
 25 THE WITNESS: I don't think I'm coining a term.
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1 I'm just trying to clarify what the inventor, in my
 2 opinion, tries to communicate so that we don't
 3 miscommunicate with each other.
 4 BY MR. FLEMING:
 5 Q So, in your mind, what does H profile H(d)
 6 mean?
 7 MR. WILLIAMS: Objection. Form.
 8 BY MR. FLEMING:
 9 Q To be clear, what is your definition of haptic
 10 profile H(d), so we can refer to it consistently?
 11 A Do you mind if I look at my initial declaration
 12 for that?
 13 Q Doctor, I'm presenting you Exhibit 1002.
 14 A Thank you.
 15 Q Do you recognize this document?
 16 A It says, "Declaration of Dr. Patrick Baudisch"
 17 on it.
 18 Q Is this is your first declaration that was
 19 submitted in the '571 IPR?
 20 A I think so.
 21 Q For the record, I would like to get the
 22 nomenclature clear. When I refer to IPR '571, I'm
 23 referring to IPR2016-01372. Is that okay with you,
 24 Doctor?
 25 A Yes.
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1 Q To be sure that we're not confusing things, I'm
 2 asking you what is your definition of haptic profile
 3 H(d) so that we can refer to it consistently in the
 4 deposition.
 5 A Absolutely. I don't think I need to define
 6 very much here. I think we can just turn to Burrough
 7 and learn about what he means by haptic profile. So in
 8 one passage, he mentions that "haptic profiles for each
 9 of the fingers relating the distance d between the two
 10 fingers to the corresponding haptic response H(d)
 11 experienced at each finger."
 12 So, apparently, a haptic profile is a function
 13 that accepts parameters, in this case, the distance, and
 14 produces the haptic response as output.
 15 Q Can you tell me where you were reading from
 16 Burrough.
 17 A It's paragraph 82 from Burrough.
 18 Q So then the haptic profile H(d) depends on the
 19 distance between the user's fingers; correct?
 20 A That's not exactly what I said. The result
 21 produced by applying the haptic profile, also known as
 22 the haptic response, that may depend, for example, on
 23 the distance between the user's fingers.
 24 Q So the haptic profile H(d) is stored in memory?
 25 A Do you mind showing me the Patent Owner's
 Page 13

1 response?
 2 Q Before I show you the response, I don't
 3 understand why you need to see our response. You're the
 4 expert. Can you not tell me where in Burrough -- I'm
 5 just simply asking your opinion. The haptic profile
 6 H(d), is it stored in memory?
 7 MR. WILLIAMS: Objection. Form.
 8 BY MR. FLEMING:
 9 Q According to Burrough.
 10 A I can totally give you that answer, but the
 11 fastest answer, I think, is through the Patent Owner's
 12 response, because I'm looking at my own response
 13 declaration, and there's -- and that suggests that the
 14 Patent Owner's response tells me exactly what paragraph
 15 that's in. It just speeds things up. I hope that's in
 16 everyone's interest.
 17 MR. MILKEY: I'm actually not sure that -- for
 18 some reason, I'm not sure we've included it in here.
 19 MR. FLEMING: Can we take a break?
 20 THE WITNESS: Happy to.
 21 (Recess.)
 22 BY MR. FLEMING:
 23 Q Doctor, I'm going to present to you Paper
 24 No. 14.
 25 A Thank you so much.

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1 MR. WILLIAMS: So, just for the record, as a
 2 courtesy, we went ahead and printed out a copy of the
 3 exhibit that opposing counsel requested. I don't see
 4 any reason -- and we did so expeditiously. I don't see
 5 any reason this deposition will go seven hours, but to
 6 the extent it does get close to that, the 15 minutes or
 7 so that we spent preparing the document for counsel will
 8 count against the seven-hour time limit.
 9 BY MR. FLEMING:
 10 Q For clarification, what is the document?
 11 A Oh, yes. It says, "Immersion Corporation's
 12 Patent Owner Response." And thanks for providing it.
 13 MR. WILLIAMS: Is there a question?
 14 THE WITNESS: Yeah. The question is if this is
 15 stored in memory.
 16 BY MR. FLEMING:
 17 Q Is the haptic profile H(d) stored in memory?
 18 A So the Burrough patent at paragraph 51 says,
 19 "By dynamic it is meant that although specific haptic
 20 profiles H stored in haptic profile data base 134..."
 21 So it's stored in the database. I guess this suggests
 22 that this would be in memory.
 23 Q And so then the haptic response H(d) is what is
 24 read out of that memory?
 25 A Well, in part. It seems like a bit more is

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1 happening in the sense that additional factors seem to
 2 be applied. You want the detail on that?
 3 Q Yes, please. I'm trying to understand what
 4 your definition of haptic response H(d) is.
 5 A I thought we were talking about the haptic
 6 profile right now.
 7 Q You said the haptic profile is stored in
 8 memory; correct?
 9 A Uh-huh.
 10 Q And I'm asking is the haptic response H(d) what
 11 is read out of that memory that stores the haptic
 12 profile H(d)?
 13 A I see what you mean. What I'm trying to say is
 14 that the act of producing the haptic response may be a
 15 little bit more than just reading memory.
 16 Q And what more is it?
 17 A So --
 18 Q So the haptic response is not solely dependent
 19 on the haptic profile? Is that what you're saying?
 20 A Well, the interesting part here, I think, is
 21 that the haptic profile can change during the course of
 22 the zoom gesture. So the inventor says in paragraph 82,
 23 "as the zoom factor increases, the haptic profile H(d)
 24 can change by, for example, the slope becoming more
 25 steep as the resolution of the underlying map

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1 increases." I can think of a variety of ways this could
 2 be implemented. But it seems to suggest that a little
 3 bit more is happening around haptic profiles than just
 4 reading memory locations.
 5 Q So is the haptic response H(d) dependent on the
 6 distance between the user's fingers?
 7 A Well, in one particular embodiment, that seems
 8 to be the case.
 9 Q Does the distance include both magnitude and
 10 direction?
 11 A Well, the haptic -- sorry. While the distance
 12 itself is a scalar, the act of producing the distance
 13 may or may not involve magnitudes and directions
 14 depending on what type of gesture signal that was
 15 produced. If it's produced from position data, it may,
 16 for example, not. If it happens to be produced from
 17 what the inventor calls delta T by delta X and delta T
 18 by delta Y in paragraph 51, the production of the haptic
 19 response may have gone through some elements that
 20 include magnitude and direction along the way. But I
 21 agree, at the end, the distance itself is a scalar.
 22 Q So then distance between two fingers cannot be
 23 a vector signal?
 24 A I think it depends on the context, since you're
 25 asking that question. Certainly, it's possible to

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