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Transcript of Michael Allen Jensen, Ph.D.

Date: May 11, 2023

Case: Samsung Electronics Co., Ltd., et al. -v- Smart Mobile Technologies, LLC
(PTAB)

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Conducted on May 11, 2023

<p>1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 ----- 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD 4 ----- 5 SAMSUNG ELECTRONICS CO., LTD. 6 Petitioner, 7 v. 8 SMART MOBILE TECHNOLOGIES, LLC 9 Patent Owner. 10 ----- 11 Case: IPR2022-01249 12 U.S. Patent No. 9,019,946 13 ----- 14 15 Deposition of MICHAEL ALLEN JENSEN, Ph.D. 16 Conducted Virtually 17 Thursday, May 11, 2023 18 9:30 a.m. PST 19 20 21 22 23 24 REPORTED BY: NATALIE PARVIZI-AZAD, CSR, RPR, RSR 25 JOB NO.: CSR NO. 14125 492379</p>	<p>1 A P P E A R A N C E S 2 3 FOR THE PETITIONER, SAMSUNG ELECTRONICS CO. LTD: 4 FISH & RICHARDSON P.C. 5 BY: AAMIR KAZI, ESQ. 6 BY: SANGKI PARK, ESQ. (MINNEAPOLIS) 7 1180 PEACHTREE STREET, N.E. 8 21ST FLOOR 9 ATLANTA, GEORGIA 30309 10 (404) 892-5005 11 12 FOR THE PATENT OWNERS, SMART MOBILE TECHNOLOGIES, 13 LLC: 14 GRAVES & SHAW LLP 15 BY: PHILIP GRAVES, ESQ. 16 355 SOUTH GRAND AVENUE 17 SUITE 2450 18 LOS ANGELES, CALIFORNIA 90071 19 (213) 204- 5101 20 21 ALSO PRESENT: 22 KY SHANKLIN, DEPOSITION TECHNICIAN 23 24 25</p>
<p>1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 ----- 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD 4 ----- 5 SAMSUNG ELECTRONICS CO., LTD. 6 Petitioner, 7 v. 8 SMART MOBILE TECHNOLOGIES, LLC 9 Patent Owner. 10 ----- 11 Case: IPR2022-01249 12 U.S. Patent No. 9,019,946 13 ----- 14 15 DEPOSITION OF MICHAEL JENSEN, PH.D., 16 TAKEN ON BEHALF OF THE PATENT OWNER 17 REMOTELY VIA ZOOM VIDEOCONFERENCING, IN 18 LOS ANGELES, CALIFORNIA, BEGINNING AT 19 9:30 A.M. AND ENDING AT 11:48 A.M., ON 20 THURSDAY, MAY 11, 2023, BEFORE 21 NATALIE PARVIZI-AZAD, CERTIFIED SHORTHAND 22 REPORTER NUMBER 14125. 23 24 25</p>	<p>1 I N D E X 2 3 WITNESS PAGE 4 MICHAEL JENSEN, PH.D. 5 EXAMINATION BY MR. GRAVES 5 6 7 E X H I B I T S 8 EXHIBIT NO. DESCRIPTION PAGE 9 EXHIBIT 1003 DECLARATION OF DR. MICHAEL ALLEN JENSEN 6 10 EXHIBIT 1004 YEGOSHIN REFERENCE; 11 US PATENT NO. 6,711,146 B2 6 12 EXHIBIT 1005 JOHNSTON REFERENCE; 13 US PATENT NO. 5,784,032 15 14 EXHIBIT 1007 BERNARD REFERENCE; 15 US PATENT NO. 5,497,339 54 16 EXHIBIT 1006 BILLSTROM REFERENCE; 17 US PATENT NO. 5,590,133 70 18 19 20 21 22 23 24 25</p>

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<p style="text-align: right;">5</p> <p>1 REMOTELY IN LOS ANGELES, CALIFORNIA</p> <p>2 THURSDAY, MAY 11, 2023, 9:30 A.M.</p> <p>3</p> <p>4 THE CERTIFIED STENOGRAPHER: Please raise</p> <p>5 your right hand to be sworn.</p> <p>6</p> <p>7 Michael Jensen, Ph.D.,</p> <p>8 having declared under penalty of perjury to tell</p> <p>9 the truth, was examined and testified as follows:</p> <p>10</p> <p>11 EXAMINATION</p> <p>12 BY MR. GRAVES:</p> <p>13 Q. Hello,.</p> <p>14 Dr. Jensen. How are you?</p> <p>15 A. Good morning, Mr. Graves. I'm doing</p> <p>16 fine. How are you?</p> <p>17 Q. I am doing fine as well. So I sat in on</p> <p>18 a number of your depositions. This will be the</p> <p>19 first one that I'm taking. So it's nice to see</p> <p>20 you again.</p> <p>21 You have been -- it's been explained to</p> <p>22 you what the ground rules are for these</p> <p>23 depositions multiple times, so I'm going to assume</p> <p>24 that we don't need to go over all of them. I'll</p> <p>25 just refresh a couple of them.</p>	<p style="text-align: right;">7</p> <p>1 Billstrom reference, the Johnston reference, the</p> <p>2 Bernard reference.</p> <p>3 Do you have copies of those readily</p> <p>4 available?</p> <p>5 A. I have clean copies of all of those and</p> <p>6 they're up in an Adobe Acrobat window.</p> <p>7 Q. Okay. So it's fine with me if you use</p> <p>8 the copies that you have available to you to</p> <p>9 reference during our discussion today, just so</p> <p>10 long as you are only referencing clean copies.</p> <p>11 Is that understood?</p> <p>12 A. It's understood and they are all clean</p> <p>13 copies.</p> <p>14 Q. Okay. Do you have any questions for me</p> <p>15 before we get started?</p> <p>16 A. I don't believe so.</p> <p>17 Q. Okay. What is your hourly compensation</p> <p>18 in this IPR?</p> <p>19 A. \$475 per hour.</p> <p>20 Q. Okay. And can you tell me roughly how</p> <p>21 much money you've been paid for the totality of</p> <p>22 the IPRs that you have been engaged for in</p> <p>23 connection with the litigation between Smart</p> <p>24 Mobile Technologies on the one hand and Samsung</p> <p>25 and Apple on the other?</p>
<p style="text-align: right;">6</p> <p>1 As you know, everything you say is being</p> <p>2 recorded and you are under oath.</p> <p>3 You understand that; correct?</p> <p>4 A. Yes.</p> <p>5 Q. All right. And you are not to have any</p> <p>6 conversations with your counsel concerning the</p> <p>7 subject matter of the deposition until after my</p> <p>8 questions have concluded.</p> <p>9 You understand that?</p> <p>10 A. I do.</p> <p>11 Q. And that includes during breaks, during</p> <p>12 the lunch break, and so on; right?</p> <p>13 A. Yes, sir. I understand.</p> <p>14 Q. Okay. And those communications or</p> <p>15 conversations include both verbal and</p> <p>16 communications over e-mail or text.</p> <p>17 Do you understand that?</p> <p>18 A. I do.</p> <p>19 (Exhibit 1003 marked.)</p> <p>20 (Exhibit 1004 marked.)</p> <p>21 Q. Okay. So I'm going to be asking you</p> <p>22 questions about a number of exhibits, primarily</p> <p>23 your declaration, which is Exhibit 1003. And</p> <p>24 several of the primary references that you cited:</p> <p>25 The Yegoshin reference, Exhibit 1004, the</p>	<p style="text-align: right;">8</p> <p>1 A. Anything would be an estimate. I'm</p> <p>2 assuming on the order of \$80-, \$90,000 over the</p> <p>3 course of this.</p> <p>4 Q. Okay. Did you perform a prior art search</p> <p>5 or multiple prior art searches after you were</p> <p>6 retained for this IPR?</p> <p>7 A. I did some prior art searching, yes, sir.</p> <p>8 Q. Okay. And what did that entail?</p> <p>9 A. When you say, "What did it entail," what</p> <p>10 was my process for conducting the prior art</p> <p>11 search; is that --</p> <p>12 Q. That's right.</p> <p>13 A. It -- generally, internet searches,</p> <p>14 searching in maybe books and references that I</p> <p>15 have on my shelf or here at the local library,</p> <p>16 certainly patent searches through Google Patents.</p> <p>17 That's, I'd say, the main things that I did.</p> <p>18 Q. Okay. Anything else?</p> <p>19 A. That's -- that's what I recall.</p> <p>20 Q. All right. Do you recall roughly how</p> <p>21 many hours you spent?</p> <p>22 A. On prior art searching, I'm sorry, sir, I</p> <p>23 do not.</p> <p>24 Q. Can you give me an estimate?</p> <p>25 A. Over the course of -- I assume, over the</p>

<p style="text-align: right;">9</p> <p>1 course of all of the IPRs, it's probably been 20 2 or more hours. 3 Q. Okay. 4 A. These are rough estimates. I just don't 5 recall. 6 Q. Okay. And for this, focusing on this 7 IPR, do you recall roughly how many references you 8 found in the course of your search? 9 A. No, sir, I-- I really don't, I'm sorry. 10 Q. All right. Did you review any of the 11 prosecution files -- strike that. 12 Did you review the prosecution file for 13 the '946 patent? 14 A. I-- I have briefly reviewed the -- the 15 file history for this patent, yes. 16 Q. Okay. And I'm going to refer to the 17 '946 patent frequently in the deposition. Do you 18 understand that I'm referring to US patent 19 number 9019946? 20 A. Yes, sir. 21 Q. Okay. Did you review any of the 22 prosecution files for any of the upstream parent 23 applications for the '946 patent in connection 24 with this IPR? 25 A. Well, what I can say definitively is</p>	<p style="text-align: right;">11</p> <p>1 terms of the '946 patent require a construction in 2 this IPR, as you sit here today? 3 A. I'm not -- I'm not aware of any need for 4 that, at least for the scope of the work that I 5 did. 6 Q. Okay. And the scope of the work that you 7 did required you to have an understanding of the 8 meaning of the claims at issue in this IPR; 9 correct? 10 A. That's correct. 11 Q. Do you believe that a POSITA would be 12 able to understand the plain and ordinary meaning 13 of the claim terms at issue in this IPR with 14 reasonable certainty? 15 A. I believe a POSITA -- really, the scope 16 of my work is to see if prior art fits within the 17 scope of these claim terms. And I think a POSITA 18 is able to do that. 19 What I'm trying to avoid is suggesting 20 that -- you know, that I've defined -- or a POSITA 21 has -- can immediately define the entirety of the 22 scope of any of the terms in the claims. And so, 23 that's why I'm being a little careful here because 24 that really wasn't the -- in what I was asked to 25 do.</p>
<p style="text-align: right;">10</p> <p>1 that, for all of the patents at issue in this 2 family of -- in this IPR family of cases, I 3 reviewed briefly the file history for all of those 4 patents. And I believe, in this case, there was 5 at least one upstream. I don't remember all of 6 the relationships, but I reviewed all those 7 file -- prosecution file histories. 8 Q. Okay. So there -- if there's an upstream 9 parent application from one of the patents at 10 issue, did you review those upstream parent 11 applications as well or no? 12 A. If-- I don't recall reviewing any file 13 histories for patents that were not asserted or at 14 issue here in this case. 15 Q. Okay. Do you believe that any of the 16 claim terms of the '946 patent require a 17 construction in this IPR? 18 A. I wasn't asked to -- to analyze, you 19 know, claim construction here. I don't have 20 anything in my declaration with such an opinion. 21 I-- I'm not prepared to suggest that I have any 22 constructions now or that I-- that I need them. 23 Q. Okay. Well, my question is a little 24 different. 25 Do you believe that any of the claim</p>	<p style="text-align: right;">12</p> <p>1 Q. Okay. But for what you were asked to do, 2 you believe that you understand the scope of these 3 claim terms with reasonable certainty; correct? 4 A. Yes, I believe I was able to make sense 5 of all of the claim terms. There are -- I know 6 there are some claim terms that the parties are, 7 you know, maybe disputing or -- or negotiating on 8 what the construction is. 9 And what I've tried to do is make sure 10 that anything that -- any work that I've done fits 11 within those constructions that really either 12 party has -- has put forward. 13 Q. Okay. And if you believed that a POSITA 14 would not be able to understand the scope of any 15 of these claim terms at issue in this IPR with 16 reasonable certainty, that would be reflected in 17 your analysis in this IPR; correct? 18 MR. KAZI: Objection to the form. 19 A. I'm not sure that's what I'm saying. 20 Again, my work is a little bit more limited in 21 making sure that something fits within the plain 22 meaning. And I think a POSITA would be able to do 23 that as I believe I've been able to do that. 24 I'm -- I'm a little bit nervous about 25 going beyond that and talking about, you know, the</p>

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1 whole breadth or the boundaries of the scope of
 2 terms in the claims, and being definitive here on
 3 record about those, what I've done or what a
 4 POSITA might have been able to do.
 5 Q. Okay. You understand that the patent
 6 owner, Smart Mobile Technologies, and petitioners
 7 have submitted a claim construction briefing in
 8 the parallel District Court litigation; correct?
 9 A. I am aware of that, yes, sir.
 10 Q. Okay. And you've reviewed the proposed
 11 constructions that have been submitted by the
 12 parties in the District Court litigation; correct?
 13 A. Yes, sir, I have.
 14 Q. Okay. And you've reviewed the parties'
 15 proposed constructions of multiplexing; is that
 16 correct?
 17 A. I have, yes, sir.
 18 Q. Do you have any opinion as to which
 19 parties' proposed construction of multiplexing is
 20 more consistent of how a POSITA would understand
 21 the term?
 22 MR. KAZI: Objection to the form.
 23 A. I, sort of, want to answer the same way
 24 that I have. What I made sure was that the art
 25 that I was reviewing, whether or not that would

14

1 fit into the -- to the scope of these claim terms
 2 and the construction. And as I've testified, at
 3 least in my supplemental report declaration, I
 4 found that the art fit into either construction.
 5 And so, that's what I've done. I did not
 6 offer an opinion on which construction would be,
 7 you know, more correct and nor am I -- have I
 8 analyzed that and nor am I prepared to offer such
 9 an opinion.
 10 Q. All right. So I want to be very clear
 11 that my questions today do not concern the
 12 supplemental declaration that you signed. We're
 13 focusing on the declaration that you submitted
 14 with the petition in this IPR.
 15 Do you understand?
 16 A. Oh, okay. That's -- I mean, I understand
 17 that, yes.
 18 Q. Yeah. Your -- you know, just -- just to
 19 explain, the supplemental declaration that you
 20 signed has not been admitted into the record at
 21 this point.
 22 A. I understand.
 23 Q. All right. So I'm not going to be asking
 24 you questions about that and I would appreciate it
 25 if you would direct your responses to the analysis

15

1 and understanding that's reflected in
 2 Exhibit 1003, which is the declaration you
 3 submitted with the petition.
 4 You understand?
 5 A. I understand, yes, sir.
 6 Q. Okay. All right. So let's talk about
 7 the Johnston reference. That's Exhibit 1005.
 8 Do you have that in front of you?
 9 A. Yes, sir, I do.
 10 (Exhibit 1005 marked.)
 11 Q. All right. So Johnston discloses the use
 12 of diversity antennas in a cellular telephone;
 13 right?
 14 A. Yeah, that's a good summary, yes.
 15 Q. All right. So what is the purpose of the
 16 diversity antenna?
 17 A. A diversity antenna? So in general,
 18 antenna diversity is the transmission of -- of a
 19 signal. And it's the same signal over multiple
 20 communication paths, and then that the receiver
 21 being able to use those multiple copies of that
 22 signal to improve the communication in -- in one
 23 form or another. The antenna, the diversity
 24 antenna, therefore is designed to facilitate that
 25 diversity operation.

16

1 Q. All right. So the -- and the improvement
 2 in the communication that you referred to, is that
 3 to mitigate the effects of multipath fading?
 4 A. I mean, yes, that's ultimately what we're
 5 combatting is multipath fading, yes, sir.
 6 Q. Right. Okay. So -- and is the
 7 improvement in combatting the effects of multipath
 8 fading that is made available by diversity
 9 antennas, is that focused on large-scale fading,
 10 as opposed to small-scale fading?
 11 A. It -- it's focused on -- on small-scale
 12 fading, which is the multipath interference.
 13 Large-scale fading is more of a shadowing
 14 phenomenon. Diversity is generally not designed
 15 for that, unless you have very, very spatially
 16 separated antennas.
 17 Q. Okay. And so, what is small-scale
 18 fading?
 19 A. Small-scale fading is when multiple
 20 copies of the signal transmitted from a single
 21 antenna received by a single antenna, there are
 22 multiple copies because of reflections of the
 23 radio wave off of different objects, they all
 24 combine in a way at the receiver that is
 25 destructive or detrimental to the signal quality,

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