

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SONY COMPUTER ENTERTAINMENT AMERICA LLC

Petitioner

v.

APLIX IP HOLDINGS CORPORATION

Patent Owner

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Case No. IPR2015-00229

Patent 7,667,692

Case No. IPR2015-00230

Patent 7,463,245

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DEPOSITION OF DR. GREGORY F. WELCH

VOLUME I, PAGES 1 - 230

JULY 28 and 29, 2015

(The following is the deposition of DR. GREGORY F. WELCH, taken pursuant to agreement of counsel, at the Hyatt Regency Orlando International Airport Hotel, Orlando, Florida, commencing at approximately 9:02 o'clock a.m., July 28, 2015)

STEWART S. ASSOCIATES

APLIX EXHIBIT 2021  
SCEA v. APLIX  
IPR2015-00229

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13 ALSO APPEARING:  
 14 Callie Pendergrass, Senior Technical  
 15 Advisor, Erise IP

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1 **A. That's correct.**  
 2 Q. Have you heard patents referred to by their  
 3 last three numbers, "the '245 patent," for example?  
 4 **A. Yes.**  
 5 Q. And will it work for you today if we refer  
 6 to the '245 and the '692 patents?  
 7 **A. Yes.**  
 8 Q. All right. I don't necessarily intend to  
 9 refer to the IPR number every time. I'll probably  
 10 refer to the '245 petition and the '692 petition.  
 11 Will we be communicating if I do that?  
 12 **A. Yes.**  
 13 MR. GILBERTSON: Okay. So just for the  
 14 record, I'll note we will have one transcript for this  
 15 deposition for these two IPR proceedings and that  
 16 transcript can be submitted in connection, per our  
 17 agreement, with any of the IPR proceedings.  
 18 MR. KEAN: Yeah. Just to be clear, that  
 19 works for me, and the only thing I'd ask is that we  
 20 try to be clear about which declaration we're  
 21 referring to just so the record's clear as we go  
 22 through it.  
 23 MR. GILBERTSON: Makes sense.  
 24 BY MR. GILBERTSON:  
 25 Q. Dr. Welch, when were you retained by SCEA,

1 PROCEEDINGS  
 2 (Witness sworn.)  
 3 DR. GREGORY F. WELCH  
 4 called as a witness, being first duly sworn,  
 5 was examined and testified as follows:  
 6 ADVERSE EXAMINATION  
 7 BY MR. GILBERTSON:  
 8 Q. What's your name?  
 9 **A. Gregory Francis Welch.**  
 10 Q. And where do you live?  
 11 **A. Longwood, Florida.**  
 12 Q. You've been retained as an expert witness by  
 13 Sony Computer Entertainment America LLC?  
 14 **A. That sounds right, yeah.**  
 15 Q. And you represent Sony in connection with  
 16 seven different interparties' review proceedings  
 17 involving patents owned by applicants?  
 18 **A. That sounds right, yes.**  
 19 Q. Two of those, for the record, are IPR  
 20 2015-00230, that's for the U.S. Patent No. 7,463,245;  
 21 and the second one is IPR 2015-00229, that's for U.S.  
 22 Patent No. 7,667,692.  
 23 I take it, Dr. Welch, you're here to give  
 24 your deposition in connection with those two IPR  
 25 proceedings.

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1 Sony Computer Entertainment America?  
 2 **A. I don't recall.**  
 3 Q. What's your best estimate?  
 4 **A. Probably three, four months prior to the**  
 5 **submission of the IPR I would guess.**  
 6 Q. I believe you submitted your declarations in  
 7 this matter -- these two matters on November 7th of  
 8 2014. Does that sound right?  
 9 **A. I couldn't tell you without looking at them.**  
 10 **I really don't remember.**  
 11 Q. Okay. We've got some exhibits here that are  
 12 materials SCEA has submitted, including your  
 13 declarations. Let me get those out for you.  
 14 I'm handing you a copy of Exhibit 1010 from  
 15 the '245 IPR proceeding. Is that a copy of your  
 16 declaration in the '245 IPR?  
 17 **A. It appears so, yes.**  
 18 Q. And now I'm handing you a copy of Exhibit  
 19 1008 in the '692 IPR proceeding. Is that a copy of  
 20 your declaration from the '692 IPR?  
 21 **A. Yes.**  
 22 Q. And in both cases are your declarations  
 23 dated November 7th, 2014?  
 24 **A. Yes.**  
 25 Q. So your best recollection is that you were

1 retained somewhere around July or August of 2014?  
 2 **A. It's not a recollection, that would just be**  
 3 **a guess. I really don't remember. So I know we**  
 4 **worked on these for a few months, as I recall, so --**  
 5 **I don't remember. You know, could have**  
 6 **been -- I could have been retained a year before and**  
 7 **only worked on them right before. I really don't**  
 8 **remember.**  
 9 Q. You don't remember whether you were retained  
 10 in 2014 as opposed to 2013?  
 11 **A. Again, I don't remember. I mean it seems**  
 12 **reasonable that I would have been retained in 2014. I**  
 13 **find it hard to imagine it would have been earlier.**  
 14 Q. How much time have you spent on this project  
 15 of working on the declarations in the '245 and the  
 16 '692 IPRs?  
 17 **A. So again, I don't remember precisely. Yeah,**  
 18 **I don't remember precisely.**  
 19 Q. Okay. If you don't remember precisely,  
 20 what's your best estimate of how much time you've  
 21 spent?  
 22 **A. Again, I think it may have been a few months**  
 23 **of work off and on, some numbers of hours per week, so**  
 24 **it could be anywhere from, I don't know, 50 hours to a**  
 25 **hundred to more or -- probably not less. But I really**

1 **don't recall. I don't recall it being an inordinate**  
 2 **amount of work for me. I have another full-time job,**  
 3 **so I do this on the side.**  
 4 Q. What's your other full-time job?  
 5 **A. A professor at the University of Central**  
 6 **Florida.**  
 7 Q. And what are you a professor of?  
 8 **A. I have three appointments: I'm a professor**  
 9 **in the College of Nursing, in Computer Science, and**  
 10 **the Institute for Simulation and Training.**  
 11 Q. Do you have records somewhere that would  
 12 show you how much time you've spent on the '245 and  
 13 '692 proceedings?  
 14 **A. Certainly. At least certainly for the IPRs**  
 15 **as a whole, and probably they are specific to the**  
 16 **patents, yes.**  
 17 Q. And how have you been compensated for your  
 18 work in this case?  
 19 **A. Pardon me?**  
 20 Q. How have you been compensated for your work?  
 21 **A. I don't understand. How I've been paid, on**  
 22 **an hourly basis, is that what you're asking?**  
 23 Q. Sure.  
 24 **A. Yeah.**  
 25 Q. And what's the hourly rate?

1 **A. I don't recall. I think --**  
 2 **Is it stated in my declaration? I think**  
 3 **it's -- I think it's 500, but I don't recall. Could**  
 4 **be 450, could be 500 per hour.**  
 5 Q. Have you done expert witness work before?  
 6 **A. Yes.**  
 7 Q. How much of that have you done?  
 8 **A. Since 2008, it's hard to say. I've**  
 9 **testified in probably seven or eight cases maybe --**  
 10 **might be more, might be less, I don't recall -- and**  
 11 **then done research for some clients on cases where I**  
 12 **did not testify or submit any reports or declarations**  
 13 **or anything.**  
 14 Q. What type of research?  
 15 **A. Research related to a variety of matters**  
 16 **that are related to my areas of expertise.**  
 17 Q. The seven or eight matters in which you've  
 18 testified, what kinds of cases were those?  
 19 **A. Let's see. The first was Nintendo versus**  
 20 **Hillcrest. It was an International Trade Commission**  
 21 **matter.**  
 22 **Some were civil cases and some have been**  
 23 **IPRs.**  
 24 Q. Have they all involved patents?  
 25 **A. They have all involved patents, yes. I'm**

1 **working on a case right now that does not involve a**  
 2 **patent, but I have not yet testified in that matter.**  
 3 Q. The seven or eight patent-related cases in  
 4 which you have testified, can you give me a sense of  
 5 the technology involved in those cases?  
 6 **A. Sure. And to be clear, seven or eight is a**  
 7 **guess. I could tell you, I do have records, but**  
 8 **sitting here right now I don't remember.**  
 9 **The technology would involve various**  
 10 **handheld devices and everything from the user-**  
 11 **interface aspects to motion-tracking aspects, so**  
 12 **everything from mobile phones to game controllers**  
 13 **to --**  
 14 **I guess in testifying, that's probably it,**  
 15 **actually.**  
 16 Q. Besides the matters involving APLIX and  
 17 SCEA, what other cases have you testified in relating  
 18 to game controllers?  
 19 **A. Again, I'm only going from memory here. As**  
 20 **I mentioned, the first case, that I remember because**  
 21 **it was really the first substantial case I had ever**  
 22 **worked on, that was Hillcrest versus Nintendo, and**  
 23 **that was, again, an ITC case. For Nintendo I've also**  
 24 **testified on a case that was UltimatePointer versus**  
 25 **Nintendo, ThinkOptics versus Nintendo, Motion Games**

1 versus Nintendo, and I think there were some IPRs  
2 probably in the same matters related to the same -- to  
3 those civil cases. Apple -- or I'm sorry, I guess it  
4 was HTC versus Apple, and one case at least with --  
5 also with Sony, a previous case, that was G -- GTC  
6 versus Sony.

7 Q. In all of those cases that you just  
8 mentioned, were you representing a company accused of  
9 patent infringement?

10 A. I believe the answer is yes. I am working  
11 on and have worked on cases where I've been on the  
12 plaintiff or complainant's side, but I don't think I  
13 have testified in any of those cases, at least not  
14 yet.

15 Q. The exhibits that are in front of you, your  
16 declarations in the '245 and '692 matters, would I be  
17 right in assuming that they contain a true and  
18 complete recitation of your testimony and opinions --

19 A. Yes.

20 Q. -- in those matters?

21 A. Yes.

22 Q. Have you reviewed them in preparation for  
23 today's deposition?

24 A. Yes.

25 Q. Did you find any errors or changes that you

1 conversations, that the content is all mine  
2 intellectually. Aside from who actually typed the  
3 words in different places, it's -- it all is from my  
4 head, likely based on questions, I don't recall, from  
5 the Sony attorneys, I guess petitioner's attorneys,  
6 but would have been questions and answers, and I would  
7 have given my point of view. And I don't recall --

8 You know, I wrote some. They may have  
9 drafted some if I had asked them to. As I said, I'm a  
10 busy, busy guy.

11 Q. Did you write them?

12 MR. KEAN: Same objection.

13 A. If -- if this were an academic paper, I  
14 would put my name as the lead author on these. These  
15 are intellectually --

16 Again, the content is all mine.

17 Q. But you didn't necessarily write them.

18 MR. KEAN: Same objection.

19 A. I didn't say that.

20 Q. Did you write them?

21 MR. KEAN: Same objection, asked and  
22 answered.

23 A. I mean I would say in --

24 Yes, I wrote them. I mean there are pieces  
25 that were drafted, as I said, by someone else because

1 want to point out?

2 A. Nothing that comes to mind at the moment,  
3 no.

4 Q. How were those declarations prepared?

5 MR. KEAN: Objection to the extent it calls  
6 for privileged information.

7 A. So that's a broad question. Do you mean --  
8 What do you mean, logistically,  
9 mechanically, intellectually?

10 Q. Who wrote them?

11 MR. KEAN: Objection, calls for privileged  
12 information.

13 MR. GILBERTSON: Let's pause there. Are you  
14 asserting an attorney-client privilege over your work  
15 with Dr. Welch?

16 MR. KEAN: I have a work-product privilege  
17 under Rule 26, and it's also captured by 27 CFR 4251.

18 MR. GILBERTSON: Well we'll go back to the  
19 question.

20 Q. Who wrote the declarations in the '245 and  
21 the '692 matters?

22 MR. KEAN: Same objection, and instruct the  
23 witness not to answer to the extent it calls for  
24 privileged information.

25 A. I think I can answer, without compromising

1 I asked them to for a variety of reasons, but  
2 intellectually everything in there is mine. The  
3 background, the opinions, everything is based on my --  
4 my thoughts.

5 Q. Which pieces were drafted by someone else?

6 MR. KEAN: Same objection, and instruct the  
7 witness not to answer to the extent it calls for  
8 privileged information.

9 A. I don't recall. Even if I -- even if I were  
10 allowed to answer, I -- I don't recall. As I said, I  
11 think I said, they may have been drafted and likely  
12 were, but I don't recall.

13 MR. GILBERTSON: I'll note for the record  
14 that I don't think it's a proper objection or  
15 instruction, but we don't have to try to agree on that  
16 today.

17 Q. With whom did you work in the preparation of  
18 your declarations in the '245 and '692 matters?

19 A. Mostly with -- in fact probably exclusively  
20 with Callie Pendergrass, who is in this room.

21 Q. How do you spell her name?

22 A. Hope I get it right or she's going to be  
23 upset. C-a-l-l-i-e, P-e-n-d-e-r-g-r-a-s-s.

24 Q. Does she work with you at the University of  
25 Central Florida?

1 **A. No. She works for Erise IP, the firm**  
 2 **retained by the petitioner.**  
 3 Q. The law firm.  
 4 **A. I guess.**  
 5 Q. In connection with your work on the '245 and  
 6 '692 matters, did you interact with any other  
 7 consultants retained by Sony?  
 8 **A. No, I don't think so. Not that I recall.**  
 9 Q. Did you interview anyone?  
 10 **A. Not that I recall, no.**  
 11 Q. What did you do in order to come up with the  
 12 substance that is in the declarations in the '245 and  
 13 '692 matters?  
 14 **A. So I don't recall precisely, but it would**  
 15 **have been -- and I do recall, of course, reading the**  
 16 **patents at issue, in particular the two we're talking**  
 17 **about today, the '245, the '692; I would have reviewed**  
 18 **and considered lots of prior art; I typically also**  
 19 **look at some of the documents that are cited on the**  
 20 **cover page or cover pages of the patent to kind of**  
 21 **refresh my memory with the sorts of -- at least**  
 22 **certainly of the things that the patent owner was**  
 23 **aware of, but also it's a good reminder of the sorts**  
 24 **of things that were known at that time or in the air**  
 25 **kind of at that time; I often go back, so I probably**

1 **A. Specifically in that paragraph I believe I'm**  
 2 **referring to the phrase or the field stated**  
 3 **immediately prior to that, augmented reality,**  
 4 **including the work used -- involving handheld devices**  
 5 **in augmented reality.**  
 6 Q. And what, in general, is the field of  
 7 augmented reality?  
 8 **A. Augmented reality is involved when presented**  
 9 **as a dual to what some people would call or many**  
 10 **people would call virtual reality. So virtual reality**  
 11 **is a field where -- or an area of research and**  
 12 **practice where people attempt to use interactive**  
 13 **devices worn on the head or held in the hands or**  
 14 **somehow on the body or as a part of the body to**  
 15 **present them with a sense of being in some other**  
 16 **place, and augmented reality is similar except that**  
 17 **instead of completely replacing the user's sense of**  
 18 **where they are within a virtual space, in augmented**  
 19 **reality you're either mixing in virtual things with**  
 20 **objects and things I can see in the real world or**  
 21 **sometimes bringing things from the real world into the**  
 22 **virtual space, but it's somehow merging the virtual**  
 23 **and the real. So an example would be holding up a**  
 24 **mobile phone and pointing it down the street, then**  
 25 **having the mobile phone tell you where the Starbucks**

1 **did here, too, looked at my own publications around**  
 2 **the timeframe of the patents at issue to try and**  
 3 **refresh my memory of what was happening in this area**  
 4 **at that time in my life and in this area that I'm**  
 5 **aware of; I probably looked at a couple of textbooks**  
 6 **on user interfaces, again, just to refresh my memory**  
 7 **about what was known at that time; and looked at**  
 8 **probably various things that I considered would be --**  
 9 **would have demonstrated the claims in the patents at**  
 10 **issue.**  
 11 Q. What was that last point?  
 12 **A. Looked at pieces of prior art, I guess you**  
 13 **would call them, articles or other things that I**  
 14 **thought probably practiced the claims at issue.**  
 15 Q. If you could turn, Dr. Welch, in your '245  
 16 declaration to the first section. You've got a  
 17 section in there called "BACKGROUND AND  
 18 QUALIFICATIONS;" is that right?  
 19 **A. Yup, page one.**  
 20 Q. And in paragraph 13 you refer to being  
 21 engaged in the research community. Do you see that in  
 22 the second and third lines?  
 23 **A. Yes.**  
 24 Q. Which research community are you referring  
 25 to there?

1 **is, for example, by showing you a view of the street**  
 2 **as you would see it with the naked eye, so sort of**  
 3 **like a camera viewfinder, and then labels with arrows,**  
 4 **for example, pointing to the Starbucks.**  
 5 Q. Would Hedberg be an example of augmented  
 6 reality?  
 7 **A. I would have to look at Hedberg again and**  
 8 **think about that, but Hedberg, just from memory -- and**  
 9 **if you really want a solid answer from me I would have**  
 10 **to go back and look at Hedberg and think about it --**  
 11 **but from memory, the techniques in Hedberg absolutely**  
 12 **would be used and have been used in augmented reality.**  
 13 Q. And is paragraph 13 where you describe your  
 14 experience in the field of handheld devices?  
 15 **A. It is certainly a place. I don't think it**  
 16 **is the only place. I don't recall.**  
 17 Q. You authored a paper in 1995 surveying power  
 18 management techniques for handheld devices?  
 19 **A. That's correct.**  
 20 Q. Surveying existing techniques, not proposing  
 21 some new technique; is that right?  
 22 **A. I don't recall. I would have to go back and**  
 23 **look at the paper.**  
 24 Q. There's a reference toward the bottom of --  
 25 it spills over from the bottom of one page to the top

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