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1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 SONY COMPUTER ENTERTAINMENT AMERICA LLC
4 Petitioner
5 v.
6 APLIX IP HOLDINGS CORPORATION
7 Patent Owner
8 Case No. IPR2015-00396
9 Patent No. 7,218,313
10 Case No. IPR2015-00533
11 Patent No. 7,218,313
12 Case No. IPR2015-00476
13 Patent No. 7,218,313
14 * * * * *

15 DEPOSITION OF: GREGORY WELCH
16 DATE: December 17, 2015
17 TIME: COMMENCED: 11:26 a.m.
18 CONCLUDED: 12:38 p.m.
19 TAKEN BY: Patent Owner
20 PLACE: Hyatt Regency Orlando International
21 Airport
22 9300 Jeff Fuqua Blvd
23 Orlando, Florida 32827
24 REPORTED BY: Mae Fisher, RMR, CRR
25

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1 I N D E X
2 TESTIMONY OF GREGORY WELCH
3 CROSS-EXAMINATION BY MR. GILBERTSON 4
4 REDIRECT EXAMINATION BY MR. KEAN 27
5 CERTIFICATE OF OATH 30
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8
9
10 E X H I B I T S
11 (NONE)
12
13
14 S T I P U L A T I O N S
15 It is hereby stipulated and agreed by and
16 between counsel present for the respective parties, and
17 the deponent, that the reading and signing of the
18 deposition are hereby RESERVED.
19
20
21
22
23
24
25

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1 P R O C E E D I N G S
2 THE COURT REPORTER: Do you solemnly swear or
3 affirm that the testimony you are about to give in
4 this cause will be the truth, the whole truth, and
5 nothing but the truth?
6 THE WITNESS: I do.
7 GREGORY WELCH,
8 a witness herein, having been first duly sworn, was
9 examined, and testified as follows:
10
11 C R O S S - E X A M I N A T I O N
12 BY MR. GILBERTSON:
13 Q. Dr. Welch, we're here for a deposition in
14 connection with supplemental declarations that you have
15 provided in IPR2015-00396, IPR2015-00476, and
16 IPR2015-00533. Is that your understanding?
17 A. That's correct, yes.
18 Q. And I know I asked you this just a little earlier
19 in connection with the other deposition, but are you
20 able to give accurate testimony today?
21 A. I am, yes, thank you.
22 Q. Do you have those three supplemental declarations
23 in front of you?
24 A. I do.
25 Q. Let's just note for the record what they are. In
the 00396 matter, Exhibit 1042 is your supplemental

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<p>1 declaration?</p> <p>2 A. That's correct.</p> <p>3 Q. And the last page has your signature?</p> <p>4 A. Yes.</p> <p>5 Q. And in the 00476 matter, Exhibit 1042, likewise,</p> <p>6 is your supplemental declaration in that matter?</p> <p>7 A. Yes.</p> <p>8 Q. And the last page has your signature?</p> <p>9 A. Yes.</p> <p>10 Q. And also, it's Exhibit 1042 in the 00533 matter.</p> <p>11 That's your supplemental declaration?</p> <p>12 A. Yes.</p> <p>13 Q. And the last page of it has your signature?</p> <p>14 A. Yes.</p> <p>15 Q. Are there any aspects of those supplemental</p> <p>16 declarations that you feel a need to clarify?</p> <p>17 A. The only thing for the record, which we discussed</p> <p>18 off the record, was the exhibit number clarification,</p> <p>19 which should be really supplanted by the new exhibit</p> <p>20 that we entered in the previous proceedings. I'm not</p> <p>21 quite sure how to characterize that, but maybe you can</p> <p>22 do that better than I did.</p> <p>23 Q. Well, the two sides have a point of difference on</p> <p>24 that in that I object to the new exhibit, so I would not</p> <p>25 say that -- I would not agree that it would be</p>	<p>1 declaration to paragraph 14, please.</p> <p>2 A. Okay.</p> <p>3 Q. Would you agree that those two paragraphs are</p> <p>4 substantively the same?</p> <p>5 A. Again, both from memory and from looking at it</p> <p>6 here, I believe that is correct. I believe they are</p> <p>7 substantively the same.</p> <p>8 Q. And in general, those paragraphs refer to US</p> <p>9 Patent 7088342, to Rekimoto, R-E-K-I-M-O-T-O, and</p> <p>10 others; is that right?</p> <p>11 A. That's correct.</p> <p>12 Q. And I'll just -- I'll note that in the 00396</p> <p>13 matter, Rekimoto was marked by your client Sony as</p> <p>14 Exhibit 1004, and the exhibit -- excuse me, in the 00533</p> <p>15 matter, it was marked as Exhibit 1056. In the 00533</p> <p>16 matter, you refer to Exhibit 1056 at page -- in</p> <p>17 paragraph 1 of your supplemental declarations; is that</p> <p>18 right?</p> <p>19 A. Yes. I believe that's correct, yes.</p> <p>20 Q. And are you aware that this Rekimoto reference</p> <p>21 was submitted by Sony in its 00396 petition as one of</p> <p>22 ten pieces of prior art over which Sony argued that the</p> <p>23 313 patent should be held invalid?</p> <p>24 A. I don't recall the details, but I do recall or</p> <p>25 believe that it was -- as I stated here, was already</p>
<p>Page 6</p> <p>1 supplanted. But I think we could note here for the</p> <p>2 record that the testimony you gave in your deposition</p> <p>3 earlier today in the '245 and '692 matters about the Lim</p> <p>4 exhibit applied as well to the 00533 matter; and in that</p> <p>5 matter, the exhibit we were talking about is</p> <p>6 Exhibit 2036. Am I right about that, that the Lim</p> <p>7 exhibit we were talking about in terms of the 00533</p> <p>8 matter was Exhibit 2036?</p> <p>9 A. Correct. And the corresponding Mr. Lim</p> <p>10 declaration, I believe, is Exhibit 2009. And the two</p> <p>11 paragraphs where he cites the article are, I believe,</p> <p>12 paragraphs 48 and 54, and it's the article that he cites</p> <p>13 there that I'm referring to and included as a new</p> <p>14 exhibit, or attempted to include as a new exhibit.</p> <p>15 Q. And given that the testimony that you gave</p> <p>16 earlier this morning in the '245, '692 matter is</p> <p>17 available to the judges to be used in the 00533 matter</p> <p>18 as well, is there anything else about that issue that</p> <p>19 you feel you would like to clarify?</p> <p>20 A. No. I hope I made it clear earlier, and it would</p> <p>21 be the same for the 00533.</p> <p>22 Q. Okay. If you could turn with me, please, to your</p> <p>23 00533 supplemental declaration paragraph 13.</p> <p>24 A. Okay.</p> <p>25 Q. And, also, turn in your 00396 supplemental</p>	<p>Page 8</p> <p>1 cited in other proceedings related to this, but I don't</p> <p>2 remember the details.</p> <p>3 Q. And are you aware that in the 00396 matter, the</p> <p>4 board opted to go forward with the proceeding relating</p> <p>5 to seven of the ten pieces of prior art but not</p> <p>6 including Rekimoto?</p> <p>7 A. That sounds right, yes. I mean, I don't remember</p> <p>8 the specific orders, but that sounds right.</p> <p>9 Q. And are you likewise aware that the Rekimoto</p> <p>10 reference was also submitted by Sony in its 00476</p> <p>11 petition as one of the pieces of prior art over which</p> <p>12 Sony argued that the '313 patent should be held invalid?</p> <p>13 A. That is correct. Again, for all of these, I</p> <p>14 think, just to make clear, I'm not relying on these in</p> <p>15 any way other than just as background art that I offer</p> <p>16 in response to, in this particular case, some opinions</p> <p>17 offered by Dr. MacLean. So I don't mean to imply that</p> <p>18 there's anything beyond that.</p> <p>19 Q. And you're likewise aware that the board opted in</p> <p>20 the 00476 proceeding to go forward on some of the pieces</p> <p>21 of prior art that Sony had offered but not Rekimoto?</p> <p>22 A. Again, I don't remember the details of the order,</p> <p>23 but that sounds -- that sounds right, just sitting here</p> <p>24 right now from memory.</p> <p>25 Q. And are you likewise aware that the Rekimoto</p>

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1 reference was not submitted by Sony in connection with
2 its 00533 petition?

3 **A. I can't tell you one way or the other. I don't**
4 **know.**

5 Q. Is it your opinion that the Rekimoto reference
6 was so well known that any person of ordinary skill in
7 the art of -- as of 2003, would have known about it?

8 MR. KEAN: Object to the form.

9 THE WITNESS: Hard for me to say, but I will
10 say that Jun Rekimoto has been around for a long time,
11 and his papers and all of his work, I think, is very
12 well known. He's a pretty famous researcher in this
13 area, so I think people would generally be familiar
14 with his name, probably, and his work.

15 BY MR. GILBERTSON:

16 Q. Could you turn to -- in the 00396 supplemental
17 declaration, to paragraph 6, please.

18 **A. Okay.**

19 Q. You've got that in front of you?

20 **A. I do.**

21 Q. And this paragraph refers in part, as do some
22 other paragraphs here, to multitouch capability; is that
23 right?

24 **A. In this paragraph in particular, it's multitouch**
25 **gestures, but the phrase multitouch or term multitouch**

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1 **is there and in other places, yes.**

2 Q. And paragraph 6 and some of the other paragraphs
3 of your 00396 supplemental declaration discuss that
4 issue in the context of the Ishihara reference; is that
5 right?

6 **A. Certainly, that appears to be the case in**
7 **paragraph 6. From memory, I don't have the rest of my**
8 **declaration memorized, so it would be whatever it is I**
9 **said, but I'm sorry, I don't remember beyond that.**

10 Q. Sure. That's fine. Let me hand you a copy of
11 the Ishihara reference Exhibit 1007 in the 00396 matter.

12 **A. Okay. I have it. Thank you.**

13 Q. Is it your opinion that there is any explicit
14 teaching of multitouch capability in Ishihara?

15 **A. I don't recall, sitting here right now,**
16 **whether -- how or where it is disclosed, and it being**
17 **the ability to sense multiple touches simultaneously,**
18 **but I believe it is. I don't recall whether I opined**
19 **about that in this document or not, and I don't recall**
20 **where or how it's described in Ishihara, but I believe**
21 **it is. It, again, being the ability to sense multiple**
22 **touches simultaneously on the same surface.**

23 Q. Well, take your time, if you want to look at
24 Ishihara; but if you think that there's someplace in
25 Ishihara that explicitly teaches multitouch capability,

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1 I'd like you to point to that to me, please.

2 MR. KEAN: Objection. Scope.

3 BY MR. GILBERTSON:

4 Q. Well, picking up on that objection, let me ask
5 you this preliminary question, Dr. Welch: Have you
6 offered testimony in connection with the 00396 matter
7 that Ishihara teaches multitouch capability explicitly?

8 **A. I don't recall whether I did or not. I don't see**
9 **it here and I don't recall it here in this declaration.**
10 **I could well have offered that opinion in my original**
11 **opening declaration, but I don't remember offhand here.**
12 **I really focused on these declarations in preparing for**
13 **today.**

14 Q. By these declarations, you mean the supplemental
15 declarations?

16 **A. That's correct. Thank you. Yes.**

17 Q. Makes sense. Well, okay, then, let's go back to
18 the question I asked, and feel free to take what time
19 you need with the Ishihara reference that's in front of
20 you. But do you believe that there's any explicit
21 teaching in Ishihara of multitouch capability?

22 MR. KEAN: Same objection.

23 THE WITNESS: My memory of this, of Ishihara,
24 is that it does teach that; but just glancing through
25 here, I can't remember -- I believe I offered an

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1 opinion about that, but I'm really not sure, or I
2 might have offered an opinion about that in my opening
3 declaration on the '313. So any of the 3 -- '313 IPR
4 matters, but I really don't recall; and just glancing
5 through it right here, I don't see it. So I wouldn't
6 want to speculate at this point about whether it does
7 or does not because I really don't remember.

8 BY MR. GILBERTSON:

9 Q. As of now, having heard my question and looked at
10 Ishihara, there's nothing you can point to brief in
11 Ishihara, I take it, that explicitly teaches multitouch
12 capability; is that right?

13 **A. Sitting here right now, just having really just**
14 **glanced through it, I mean, in the 90 seconds or so I**
15 **took to just look through it, I didn't find the thing**
16 **that I thought I was looking for, but I wouldn't call my**
17 **reading through. Again, I think I opined about that, or**
18 **if it does, I probably opined about it or would have**
19 **opined about it in my opening declaration for any of the**
20 **IPRs related to the '313 patent.**

21 Q. Well, I don't want you to feel constrained to
22 90 seconds, so go ahead and take whatever time you need
23 to look through Ishihara to answer my question about
24 whether you can point to any explicit teaching in
25 Ishihara of multitouch capability.

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1 A. I will look here for a moment, but I don't want
2 to limit any of my opinions at this moment about
3 explicit or not explicit in terms of the teachings. I
4 just don't recall, again, what I said about Ishihara in
5 my opening declaration, whether I said it may teach it
6 in one way, shape, or form, whether it's explicit or
7 not. But I can certainly take some time here and try
8 and reread the entire patent and see if I spot anything
9 at this moment, sitting here.

10 Q. So just for clarity, let me say, I certainly
11 understand your point that you may have said things in
12 your initial declarations that you don't remember off
13 the top of your head right now; that makes perfect
14 sense. My question for you now is, can you point to
15 anything in Ishihara itself explicitly teaching
16 multitouch capability or functionality? And take
17 whatever time you need to answer that.

18 A. Sure. And I will look, but can you tell me, is
19 there something in my declaration now that leads you to
20 ask that question so that I can look and see whether I
21 cited anything in Ishihara at that point, because I
22 don't recall that?

23 Q. Oh, that's actually the whole point. I'm glad
24 you asked that. I didn't see anything about that in
25 your testimony. That's why I'm following up now, just

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1 to ask whether there's anything that you can point to in
2 the reference that explicitly teaches multitouch
3 capability or functionality.

4 A. Okay. That makes sense, because just looking at
5 it, and, of course, from memory and my general sense of
6 my supplemental declarations is that they're solely
7 about responding to things that Dr. MacLean or Mr. Lim
8 said, not offering opinions about the prior art itself,
9 which I would have already done. But I will look there
10 for a few minutes and see if I can spot anything.

11 Q. Thank you.

12 A. (Examining documents.)

13 So in looking at Ishihara a little more
14 carefully, I still haven't found any -- any words that
15 explicitly say that. That doesn't mean that they're not
16 there. I just didn't find them. I'm not very good at
17 doing a linear visual search through documents, looking
18 for words. I usually use a find function in an editor
19 of some sort to help me find those topics, look for key
20 words. I can't do that here, so just reading it top to
21 bottom as carefully as I can, which is not perfect,
22 nothing -- those explicit words don't come to mind, but
23 the things that --

24 Q. Excuse me. The explicit words, teaching
25 multitouch capability? That's what you're referring to?

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1 A. Explicit words, yes, explicit words related to
2 that.

3 Q. Okay.

4 A. Again, the words -- as I've said before, the
5 words of the patent are there for everyone to look at;
6 but the teachings, of course, are, in my mind, what
7 really matters, what the patent itself teaches or allows
8 to a person of ordinary skill who's looking at it. So,
9 for example, paragraphs 40 and 51 in the Exhibit 1007,
10 the Ishihara exhibit, both describe very basic
11 resistive, I believe, touch sensing technology that is
12 very -- very common, very well known at that time, and
13 it's very -- inherently supports multiple touches. And
14 certainly, Ishihara doesn't say anything about it not
15 supporting multiple touches. And as I think I -- or as
16 I did offer opinions through paragraphs 6 through 10, at
17 least in my declaration, all of that would have been
18 well known to a person of ordinary skill, including, as
19 I said, to someone like me, as an undergraduate at
20 Purdue, a junior, who, you know, knew that that same
21 technology could detect multiple touches.

22 So I don't know if the words exactly are in here.
23 I don't remember. I believe I discussed this in my
24 original declaration, but the technical descriptions at
25 40 and 51 in Ishihara, to me, clearly describe

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1 technology that would support multiple touches.

2 Q. Do you believe that in 2003, all touch screens
3 supported multitouch functionality?

4 A. Again, it depends what we mean, to be very
5 careful by multitouch. And so when I say multitouch, I
6 mean literally detecting simultaneously multiple
7 touches. And I would say that I'd be very surprised if
8 there was a technology that did not support the
9 detection of multiple touches. It's possible.

10 The most common ones that I'm aware of, including
11 the one that I developed, which actually looks a lot
12 like some other ones I've seen looking at in this case,
13 would naturally support detecting of multiple touches.
14 Whether an application chooses to make use of those
15 multiples touches or not is a different issue. The
16 question in my mind is whether the underlying technology
17 supports that. And the ones that I'm aware of
18 universally all do, but I wouldn't say that it's a
19 certainty that all would. I really couldn't say.

20 Q. Let me ask you to turn, please, to paragraph 10
21 of your 00396 supplemental declaration.

22 A. Okay. I'm there.

23 Q. In that paragraph, one of the things you refer to
24 is an Exhibit 1028, a patent issue to Itaya, I-T-A-Y-A,
25 et al.; is that right?

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1 **A. That's correct, yes.**
2 Q. Let me show you that Exhibit 1028. Do you have
3 that in front of you?
4 **A. Yes, I do. Thank you.**
5 Q. Do you find, or do you believe that Itaya,
6 Exhibit 1028, contains any explicit disclosure
7 implementing multitouch on the scale of a hand-held
8 device?
9 **A. So, again, just looking briefly at this,**
10 **because, of course, I don't have this memorized, but my**
11 **memory of it, at least, which comports with a very quick**
12 **but somewhat thorough review of the first page, the**
13 **abstract and a little bit of the introduction, is that**
14 **it's about -- the general teachings are about the**
15 **mechanism for developing resistance film method of**
16 **detecting touch of multiple fingers simultaneously. Not**
17 **obvious to me anywhere that it is indicating anything**
18 **that is a requirement about size or scale or anything**
19 **else, and I believe everything taught in here could be**
20 **realized at a variety of scales and probably was.**
21 So I think the general teachings are agnostic to
22 scale, if that's what you're getting at. At least I
23 don't see anything in there right now looking at it, and
24 I don't recall anything that would be otherwise specific
25 to size or scale.

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1 Q. Let me ask you to turn in your 00396 supplemental
2 declaration to paragraph 19.
3 **A. Okay.**
4 Q. In that paragraph, you cite Exhibit 1051; is that
5 right?
6 **A. That's correct, yes.**
7 Q. In front of you, could you -- you've got some
8 exhibits in front of you as well. Could you turn to
9 Exhibit 1051, toward the back of that set.
10 **A. I see 50, but I don't see 51.**
11 Q. Can I have it back?
12 **A. Yes. There it is.**
13 Q. I might have given you the wrong thing.
14 **A. That's okay.**
15 Q. Sorry. I thought it was at the back of the one I
16 had given you. It's actually at the front of the next
17 one.
18 **A. That's okay. Okay. I have it. Exhibit 1051.**
19 Q. And what, generally, is Exhibit 1051?
20 **A. It is an AMD, which is a company advanced**
21 **microdevices specification sheet for a single-chip**
22 **low-power PC/AT compatible microcontroller.**
23 Q. Could you turn to the second page of
24 Exhibit 1051, please, and read out loud into the record
25 the -- well, let me back up. On the second page, do you

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1 see a section called general description?
2 **A. I do.**
3 Q. If you could please go to the third paragraph
4 and, for the benefit of the record, read the first
5 sentence of that paragraph out loud.
6 **A. The first sentence of the third paragraph of the**
7 **general description section reads, Leveraging the**
8 **benefits of the x86 desktop computing environment, the**
9 **ElansC400 and the ElansC410 microcontrollers integrate**
10 **all of the common logic and I/O functionality associated**
11 **with a PC/AT computing system into a single device,**
12 **eliminating the need for multiple peripheral chips.**
13 Q. Does that description comport with your
14 understanding of this chip that you're discussing in
15 paragraph 19 of your 00396 supplemental declaration?
16 **A. I'm not sure. When you say this chip, in 19, I'm**
17 **referring to the Intel/AMD x86 processor that I believe**
18 **Mr. Lim referred to. I don't recall and I don't have a**
19 **cite here because I'm just reacting to his opinions.**
20 **And, you know, as I state there, AMD offered a family of**
21 **embedded x86 processors. So it's not just one; it is a**
22 **complete line or family of processors, and this is just**
23 **one example from that.**
24 Q. Fair enough. And my use of the singular of the
25 term is probably too limited.

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1 In the sentence that you just read from, the
2 third paragraph of page 2 of Exhibit 1051, is there
3 anything in there that you -- strikes you as inaccurate?
4 **A. I couldn't tell you whether it's inaccurate or**
5 **accurate. I don't know the details at the level of the**
6 **design, architecture, everything of the chip and the**
7 **history to comment on that. I don't have any reason to**
8 **disbelieve anything that is printed here, but it would**
9 **not be the first time, if there was a mistake somewhere,**
10 **but I couldn't tell you.**
11 Q. Let me ask you to turn, please, to exhibit -- or,
12 excuse me, your 00396 supplemental declaration,
13 paragraph 21.
14 **A. Okay. I'm there.**
15 Q. And in that paragraph, you refer to a patent
16 issued to Aebli, A-E-B-L-I, et al., that's been marked
17 as Exhibit 1024; is that right?
18 **A. That's correct.**
19 Q. I have one copy of Exhibit 1024. Let me hand
20 that to you, Dr. Welch. Is this one of the documents
21 that you reviewed in connection with preparing your
22 supplemental declaration in the 00396 matter?
23 **A. Yes. I believe so, yes.**
24 Q. Do you believe that the Aebli reference shows an
25 input controller inside a mobile phone?

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