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. IPR2015-00476
Patent 7,218,313

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SUPPLEMENTAL DECLARATION OF DR. GREGORY F. WELCH

I, Gregory F. Welch, hereby declare the following:

1.   I have been asked to respond to certain issues raised by Patent Owner ("PO") and their experts, Dr. Karon MacLean and Mr. Peng Lim, in Patent Owner Aplix IP Holdings Corporation's Response to the Petition dated August 27, 2015 ("Paper No. 15"). All of my opinions expressed in my original declaration dated December 23, 2014 (**Ex. 1009**) remain the same. I have reviewed the following additional materials in connection with preparing this supplemental declaration:

- Paper No. 11, Decision Institution of *Inter Partes* Review dated June 22, 2015;
- Paper No. 15, Patent Owner Aplix IP Holdings Corporation's Response to the Petition dated August 27, 2015;
- **Ex. 2007**, Declaration of Dr. Karon MacLean dated August 27, 2015;
- **Ex. 2009**, Declaration of Peng Lim dated August 27, 2015;
- **Ex. 2025**, Elo Touch Solutions: *Tyco Electronics Introduces the Industry's First Multi-Touch Gestures Technology for Analog Resistive Touchscreens*, December 4, 2008;
- **Ex. 2030**, PCMag.com review: *Fingerworks iGesture Pad*, February 3, 2004;
- **Ex. 1029**, James Orr, *FingerWorks Announces the iGesture Pad – A mousepad with a brain.,* Fingerworks Inc. dated October 22, 2001, http://web.archive.org/web/20020426094703/http://www.fingerworks. com/press_release_2.htm (accessed 11/19/2015);
- **Ex. 1030**, Sally McGrane, *No Press, No Stress: When Fingers Fly*, The New York Times, January 24, 2002, http://www.nytimes.com/2002/01/24/technology/no-press-no-stress-when-fingers-fly.html (accessed 11/19/2015);
- **Ex. 1031**, SK. Lee, W. Buxton, K.C. Smith, *A Multi-Touch Three Dimensional Touch-Sensitive Tablet*, ACM CHI '85 Proceedings, April 1985, pp. 21-25;
- **Ex. 1033**, Greg Welch and James P. Williams. The easy chair: A microprocessor-controlled wheelchair for children with muscular disorders. Purdue University, E.E.T. 490/491 Senior Design Project, Final Report, May 1986;

- **Ex. 1034**, Greg Welch. The infrared touch-pad. Purdue University, E.E.T. 421 Report, February 26, 1986;
- **Ex. 1035**, Greg Welch and James P. Williams. The easy chair: A microprocessor-controlled wheelchair for children with muscular disorders. Purdue University, E.E.T. 490/491 Senior Design Project, Preliminary Report, December 1985;
- **Ex. 1036**, James Williams and Greg Welch. The pressure sensitive touch-pad. Purdue University, E.E.T. 454 Project Report, April 30, 1985;
- **Ex. 1037**, Transcript of the deposition of Dr. Karon MacLean taken in IPR2015-00396, IPR2015-00476, and IPR2015-00533, November 20-21, 2015;
- **Ex. 1051**, *AMD Élan™SC400 and ÉlanSC410*, Advanced Micro Devices, Inc., Publication No. 21028, Rev. B, December 1998;
- **Ex. 1052**, *ARM610 Datasheet*, Advanced RISC Machines Ltd, Document Number: ARM DDI 0004D, August 1993;
- **Ex. 1053**, Acorn Computers Limited. Acorn RISC Machine (ARM) IOC Datasheet, September 1986; and
- **Ex. 1054**, Advanced RISC Machines (ARM). ARM250 Datasheet, August 1992.

I.   OPINION

A.   Multi-Touch Sensing Is Explicitly Taught by Liebenow And Was Well-Known in 2003

2.   In her declaration dated 27 August 2015, Dr. MacLean offers various opinions regarding touch sensing as related to the combination of Pallakoff and Liebenow offered in the '476 Petition and in my previous declaration (**Ex. 1009**). *See* **Ex. 2007** at ¶¶ 81-90.   In particular, Dr. MacLean opines that Pallakoff "requires simultaneous activation of multiple modifier buttons" and that "Liebenow teaches a single function for its two back-surface touch panels: data entry through typing. Liebenow makes no mention of simultaneously activating

back-surface keyboard elements." *Id*. at ¶¶ 81-82. Dr. MacLean then opines that a person of ordinary skill in the art would understand that the touchpad technologies taught by Liebenow, including resistive, capacitive, and ultrasonic touchpads, would only sense single touches and would therefore be incapable of detecting simultaneous activation of multiple modifier buttons as required by Pallakoff. *Id*. at ¶¶ 81-83, ¶ 90. For reasons discussed below, I respectfully disagree.

3. Dr. MacLean opines, "Liebenow notably never raises the possibility of multiple simultaneous touches being sensed." *Id.* at ¶ 83. However, Liebenow explicitly discloses this capability—indeed some of Liebenow's teachings rely on multiple simultaneous touches being sensed. In particular, Figure 14 of Liebenow "is a flow diagram illustrating a method of aiding a user in entering information into the digital information appliance by displaying indicia on the display for helping locate the keys of the input device." **Ex. 1005** at [0022]. As depicted in Figure 14, which is reproduced below, Step 606 calls for the touch panels to "SENSE POSITION OF USER'S *FINGERS*" (emphasis added):
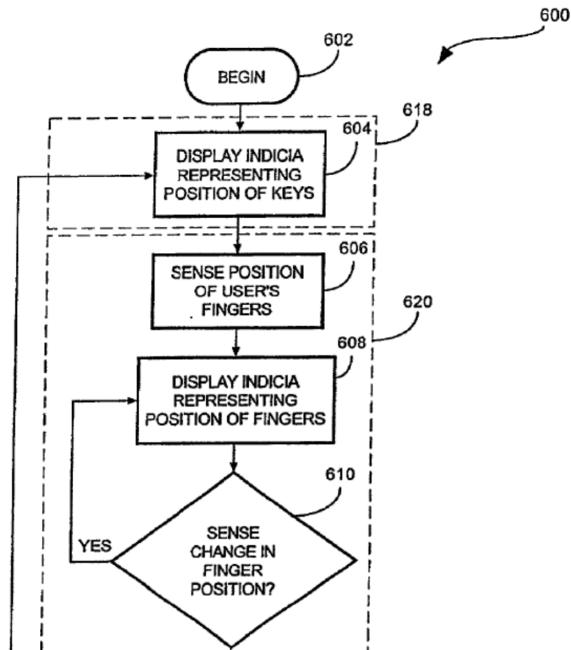
Id. at Fig. 14.

4. Regarding Step 606, Liebenow teaches the following:

Referring again to FIG. 14, in an exemplary embodiment, the digital information appliance may further ***sense the position of the fingers of the user's hand*** relative to the keys of the input device, at step 606. For example, wherein the input device is comprised of a touch sensitive panel utilizing resistive or capacitive touch pad technology, as discussed in the descriptions of FIGS. 3 and 9, ***the touch sensitive panel may detect the position of the user's fingers while resting on or being held in close proximity to its surface. Indicia showing the position of the user's fingers relative to the keys of the input device may then be displayed***, at step 608, as part of the indicia displayed at step 602. As shown in FIGS. 15 and 16, these indicia 710 may in one embodiment be comprised of ***representations 712 of the user's fingers depicting the positions of the fingers*** relative to the keys of the input device. Preferably, the finger representations 712 are lenticular or semi-transparent and overlay the key representations 704 and other information 706 displayed on the display 708 such that the key representations 704 and information 706 remain viewable.

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