

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. IPR2015-00396  
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. 1013**) 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. 2049**, Certified English Translation of Japanese Unexamined Patent No. 2002-77357 to Ishihara et al. by Patent Translations, Inc.;
- **Ex. 1028**, U.S. Patent No. 5,181,030 to Itaya et al.;
- **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](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. 1032**, Alan Freedman, *The Computer Desktop Encyclopedia*, Amacom, 1996 pp. 869-870;
- **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;
- **Ex. 1054**, Advanced RISC Machines (ARM). ARM250 Datasheet, August 1992; and
- **Ex. 1055**, *Super Mario 64™ Instruction Booklet*, Nintendo Co., Ltd. 1997.

## I. OPINION

### A. Multi-Touch Sensing 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 Ishihara offered in the ‘396 Petition and in my previous declaration (**Ex. 1013**).

See **Ex. 2007** at ¶¶ 73-83. In particular, Dr. MacLean opines that Pallakoff

“requires simultaneous activation of multiple modifier buttons” and that “Ishihara does not teach multi-touch as an interaction technique that its touch-screen is intended for.”<sup>1</sup> *Id.* at ¶¶ 73-74. Dr. MacLean then opines that a person of ordinary skill in the art would understand that the two types of touchpad technologies taught by Ishihara, including resistive and capacitive touchpads, would only sense single touches and would therefore be incapable of detecting simultaneous activation of multiple modifier buttons as required by Pallakoff. *Id.* For reasons discussed below, I respectfully disagree.

3. Dr. MacLean seems primarily focused on alleged issues in three areas related to the touch sensing aspects of the combined teachings of Ishihara and Pallakoff, including: (1) the popularity of interaction techniques such as “multitouch,” (2) specific hardware technology approaches, (3) commercial availability of the technology. I respectfully disagree with Dr. MacLean on all points related to each of these areas.

4. With respect to the first point, it is important to distinguish between the affordances of the *technology* (hardware) and application-specific *interaction*

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<sup>1</sup> There appear to be places where Dr. MacLean refers to *touchpads* as *touchscreens*. See e.g., **Ex. 2007** at ¶ 74. This introduces confusion because a *touchscreen* refers to a touch-sensitive display device while a *touchpad* refers to a touch-sensitive panel that is not a display. See e.g., **Ex. 1032**, *Freedman* at pp. 869-870, which would comport with the understanding of a skilled artisan at the time. To be clear, the Pallakoff and Ishihara combination relies on the touch panel switch 37 (i.e., touchpad) on the back of Ishihara’s handheld electronic device – not on a touchscreen. **Ex. 1013** at ¶¶ 52-53.

*techniques* (software) that make use of that technology. For example, Dr. MacLean states “**Multitouch** variants and interaction techniques that exploited them attained substantial visibility by the mid 1980’s (e.g., **Ex. 2012**, *Buxton*, at p. 1), and appeared in some commercial settings, e.g. air traffic control terminals even earlier, in the 1960’s (**Ex. 2017**, *Walker*, p. 413).” **Ex. 2007** at ¶37 (emphasis added); “The iPhone, responsible for massively popularizing *multitouch input* in handhelds, was released in 2007.” *Id.* at ¶39 (emphasis added); and “No *multi-touch gestures* are alluded to (and indeed these would be unusual, if not unheard of, in 2003).” *Id.* at ¶74 (emphasis added). The “multitouch” and “multi-touch” Dr. MacLean refers to are very distinctive *techniques* for using fingers on touch surfaces or displays to interact with data on a device. Common examples would include the multitouch gesture techniques employing one or more fingers to resize or rotate photos directly on the display of a device. To realize such interaction techniques, the device must of course support the sensing of multiple simultaneous discrete and continuous touch locations. As I discuss below, hardware has had the ability to sense multiple simultaneous touch locations for long before the ‘313 Patent.

5. Dr. MacLean appears to conflate the ability of hardware to detect multiple simultaneous touches with the interaction techniques provides by software to interpret complex multi-finger gestures. **Ex. 2007** at ¶ 74 (“No multi-touch

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