UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY COMPUTER ENTERTAINMENT AMERICA LLC
Petitioner

v.

APLIX IP HOLDINGS CORPORATION
Patent Owner

Case No. IPR2015-00729
Patent 7,280,097

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 expert, Mr. Peng Lim, in Patent Owner Aplix IP Holdings Corporation's Response to the Petition dated November 2, 2015 ("Paper No. 21"). All of my opinions expressed in my original declaration dated February 17, 2015 (**Ex. 1009**) remain the same. I have reviewed the following additional materials in connection with preparing this supplemental declaration:

- Paper No. 13, Decision Institution of *Inter Partes* Review dated July 22, 2015;
- Paper No. 21, Patent Owner Aplix IP Holdings Corporation's Response to the Petition dated November 2, 2015;
- **Ex. 2009**, Declaration of Peng Lim dated October 31, 2015;
- **Ex. 2031,** Welch Deposition Transcript dated October 21, 2015;
- **Ex. 1041**, Lim Deposition Transcript dated January 26-27, 2016;
- **Ex. 1032**, Mark R. Mine. *Exploiting proprioception in virtual-environment interaction*. PhD thesis, Chapel Hill, NC, USA, 1998. UMI Order No. GAX98-03637;
- **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**, Greg Welch. *A survey of power management techniques in mobile computing operating systems*. ACM Operating Systems Review (SIGOPS-OSR), 29(4): 47–56, 1995; and

- **Ex. 1038**, Buxton, B., "A Directory of Sources for Input Technologies," Input Devices Sources & Resources, Oct. 1, 2003, retrieved from the internet at http://www.billbuxton.com/InputSources.html, on February 15, 2016, pp. 1-48.

I. OPINION

A. My Working Knowledge of Hand-Held User Input Devices

2. In my original declaration, I proposed definition for a person having ordinary skill in the art, including (among other things), "a working knowledge of computers - including handheld computing devices, and their processing, storage, hardware—including input devices, and software." **Ex. 1009** at ¶ 38. It is my understanding that Patent Owner (PO) has questioned my "working knowledge" of hand-held user input devices. Paper No. 21 at pp. 7-8. With respect to my originally proposed characteristics of a person of ordinary skill in the art of the '097 patent, the PO states that "Aplix generally agrees with this standard provided that 'working knowledge' is construed **in the manner consistent with Petitioner's own expert's testimony**." *Id.* at p. 8 (emphasis added). The PO then narrowly mischaracterizes my testimony, saying that "Despite Petitioner's expert's testimony on this point, his CV reflects no such hands-on experience with hand-held **user input device hardware** in his long career in virtual reality systems, apart from two projects that employed off-the-shelf smartphones. . . . It contains no

evidence that Petitioner's expert ever designed **user interface hardware** as did the '097 inventors and Aplix's expert Peng Lim." *Id.* (emphasis added).

3. The PO is referring to my deposition testimony of October 21, 2015 (**Ex. 2031**) where I discussed "hands-on experience" as it relates to the level of a person of ordinary skill in the art for the '097 Patent. However, the PO is not considering my entire testimony on the subject. For example, during my deposition I indicated that "hands-on" does not necessarily mean "physically manipulating or doing something with hands," but also "could have involved working on, say, a project where a student or somebody was involved in discussions and decisions made about those sorts of devices or needed some knowledge," and "it could have involved **hardware, software**, could have involved just **intellectually being on a team**, but --- it's a little hard to describe, but more than book knowledge, so maybe specific to a real working product or **some real working examples of projects or products**." **Ex. 2031** at 29:19-30:12 (emphasis added). The PO's characterization of my testimony related to hands-on experience is incomplete and mischaracterizes that testimony. In fact, per my complete testimony I have extensive relevant hands-on experience, as characterized in my deposition, including the design of "user interface hardware," and much more.

4. The Patent Owner seems to focus on a couple of specific experiences in my Curriculum Vitae (CV) related to their narrow criteria for "working knowledge." In light of my complete testimony regarding "working knowledge," my relevant experience is much more extensive as I outlined in my initial declaration and as I testified during my deposition. **Ex. 1009**; **Ex. 2031** at 23:5-12. Had Patent Owner's counsel asked me about all of my experiences qualifying under my complete definition of "working knowledge," I would have been happy to explain in detail the experiences listed in my declaration, listed in my CV, and the many other experiences that are not listed in my CV that also demonstrate my "working knowledge."

5. Beyond my undergraduate and graduate education (which included many aspects of human-computer interaction), I have been involved with the hands-on development of many real working prototypes of handheld devices and other input technologies over the years. Each of those devices is either explicitly listed on or could be classified per Bill Buxton's "A Directory of Sources for Input Technologies," which is cited on the face of the '097 Patent. **Ex. 1039**, *Buxton*. This includes at least assistive technologies, touch tablets, digitizing devices, head and handheld device tracking, and motion capture.

6. For example, during my senior year of undergraduate studies at Purdue University in the mid 1980s, I co-developed both resistive and optical touch pads

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.