

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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INTELLECTUAL VENTURES MANAGEMENT, LLC

Petitioner

v.

XILINX, INC.

Patent Owner

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Case IPR2012-00023

Patent 7,994,609

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**SECOND DECLARATION OF MORGAN T. JOHNSON  
IN SUPPORT OF INTELLECTUAL VENTURES MANAGEMENT, LLC'S  
REPLY TO PATENT OWNER'S RESPONSE**



4. I am familiar with the technology at issue as of the November 21, 2008 filing date of the '609 Patent.

5. I have been asked to provide my technical review, analysis, insights, and opinions regarding the above-noted references that form the basis for the grounds of rejection set forth in the Petition for *Inter Partes* Review of the '609 Patent.

#### **I. Qualifications**

6. I have more than 29 years of experience in the electronic interconnect and semiconductor industries.

7. I earned a Bachelor of Science degree in Graphics from the University of Oregon. My studies included subjects in advanced mathematics related to geodesic domes. I also attended The Art Center College of Design in Pasadena, California, where I majored in Industrial Design.

8. I currently serve as Chief Scientist at Advanced Inquiry Systems, Inc. (AIS), a company that I founded in 2003. As Chief Scientist, my research focuses on tools and interfaces for full-wafer testing of products such as NAND and NOR flash, Dynamic Random Access Memory (DRAM), and certain logic devices. My research is additionally driven by the semiconductor industry's demand for highly-

parallel wafer testing of System-on-Chips (SOCs), such as processors for mobile devices. Through my research, AISI has implemented a device that achieves contact with up to 500,000 pads per wafer during tests. AISI was founded on my patented work in this area and benefits from over 30 issued patents.

9. I co-founded Prototype Solutions Corporation in 1994, a company focused on using advanced interconnect and packaging technology to provide quick-turn prototypes and hardware emulation using programmable logic devices such as Field Programmable Gate Arrays (FPGAs). The technology is used to prototype highly-complex Central Processing Units (CPUs), Graphic Processing Units (GPUs), System on Chips (SOCs), and Application Specific Integrated Circuits (ASICs).

10. I founded LaserPath Corp. in 1983. Laserpath was a semiconductor company focused on laser programmable semiconductor gate arrays. The foundation of this technology was based on my inventions and patents. LaserPath achieved over 200 design wins in the first 9 months of sales—setting a record. LaserPath's technology included Gate Arrays programmed with a laser in a ceramic package, tested, and delivered to customer in as little as two hours and more typically within 5 business days. This rapid Gate Array turnaround time and

large number of design wins drastically shifted the ASIC business from a 12-week delivery to a new standard of 3- week delivery.

11. From 1981 to 1982, I researched controlled impedance, instant turn-around circuit boards for the Cray 2 computer system. My research was funded by Cray Computer Corporation—Boulder, Colorado Team. This research was the genesis for my later-developed technology that evolved into LaserPath.

12. In addition to my semiconductor industry experience, I am an inventor on 36 U.S. patents related to interconnects, high-speed connectors, and semiconductors. Also, I have a faculty appointment as Adjunct Professor in the Electrical Engineering School at Portland State University in Portland, Oregon. I have also been a guest lecturer at the Jet Propulsion Laboratory (JPL) in Pasadena, California.

13. I have provided testimony in the form of a declaration in three other *inter partes* review proceedings:

- *Intellectual Ventures Management, LLC v. Xilinx, Inc.*, Case IPR2012-00018.

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