Richard M. Goodin, PE

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Goodin & Associates, Inc., Cary, NC. *February 1990 – Current.*
President/Chief Consultant - consulted on various projects including the following:

Hardware:

● Developed an electronics package for an underwater rebreather. Responsibilities included system electronics architecture, board design on all system boards, board bringup, firmware architecture and gas control firmware implementation.

● Provided VGA expertise to design team designing new VGA core for client's graphics accelerators.

● Developed an FPGA based system on chip implementation for military applications. Responsibilities included system electronics architecture, board design on all system boards, FPGA synthesis, and board bringup.

● Architect and implement a 2D graphics and video accelerator for palmtop to light laptop use. Responsibilities included system architecture and system design in Verilog.

● Architected and implemented a high reliability 10GigE Fabric Link for an MPLS switch. Responsibilities included Verilog design and synthesis.

● Testing and analysis of extensions to current graphics architecture to meet Xbox graphics requirements.

● Developed a high performance 32 bit VGA module in synthesizable Verilog designed to provide VGA compatibility for 3D systems. Responsibilities included design, compatibility testing and synthesis. Eventually resold implementation to 6 companies with a variety of simulation, synthesis and verification requirements.

● Architected and assisted in design of a hardware add-on processor to accelerate OpenGL and DirectX 7 transform and lighting.

● CDRAM evangelist. Promoted and assisted adoption of Mitsubishi's CDRAM technology for use in graphics systems.

● Architected and assisted in design of a medium performance 3D accelerator chip using embedded DRAM technology.

● Participated in the simulation, testing and development of a high performance graphics accelerator for the DEC Alpha architecture.

● Architected and developed a Verilog based multiprocess hardware simulation environment for hardware verification.

Software:

● Implemented 2D Windows 2000 and Windows XP drivers for Peritek hardware.

● Architected OpenGL and DirectX firmware for massively parallel MIMD implementation. Responsibilities include development of software architecture, software functional simulator and development of interface software for Verilog simulation.

● Implemented an OpenGL port for Voodoo graphics hardware optimized for game requirements.

● Participated in the architecture and development of Data General's Aview graphics library.

● Developed high speed anti-aliasing algorithms targeted at an Intel i860 based multiprocessor graphics accelerator.

05/06/15

Litigation:

- Software/non-infringement analysis in support of a non-infringement case in the areas of graphics rasterization.

- Software analysis in support of a case in the areas of chip to chip communication.

- Non-infringement analysis in support of a non-infringement case in the areas of sign printer/cutters.

- Infringement analysis in support of an infringement case in the areas of touchscreens, device, OS and user interface features of smartphones.

- Software analysis in support of an infringement case in the area of internet television.

- Software analysis in support of a non-infringement case in the area of texture compression.

- Software analysis in support of an infringement case in the areas of digital cameras and image processing.

- Software analysis in support of an infringement case in the areas of digital flat panel television.

- Software analysis in support of an infringement case in the area of digital imaging.

- Software analysis in support of an infringement case in the areas of video scaling, user interface and digital audio.

- Verilog analysis in support of an infringement case in the area of DMA devices.

- Analyzed Intel processor and chipset implementations in IHDL and VHDL to look for infringing implementations.

- Analyzed Intel and Via chipset implementations in VHDL and Verilog source to look for infringing implementations.

Apple Computer, Cupertino, CA. *November 2004 – October 2006.*
Senior Engineer:
  Lead engineer responsible for architecture and implementation of Apple's proprietary EFI graphics extensions across Nvidia, ATI and Intel based platforms. Responsibilities included system architecture and driver design. Implemented Intel drivers for two generations of Intel graphics architectures. Represented Apple in negotiations with EFI group at Intel. Interfaced with driver developers at NVidia and ATI.

Raydiant, Inc., Santa Clara, CA. *January 1999 – October 1999.*
Chief Scientist:
  Lead hardware and software architect for advanced scalable PC graphics accelerator. Responsibilities included research and development of hardware acceleration of advanced graphics features and managing architecture group.

Sun Microsystems, Morrisville, NC. *April 1988 - January 1990*.
Member of Technical Staff/Architect:
- Co-architected and implemented the Renderman compliant, high-quality rendering component of Sun's SunVision visualization product.

- Co-architected Sun's XGL proprietary graphics library.

- Developed new approaches for the graphics library and windowing software for a multiprocessor, i860 based, visualization accelerator.

- Ported SunPHIGS to Sun's TAAC-1 application accelerator.

- Implemented NURBS curve and surface extensions to the TAAC-1 graphics library.

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Sun Microsystems, Mountain View, CA. *January 1987 - March 1988*.
Software Manager
    Managed a ten person group developing software for direct surface rendering accelerator.

Quanta Corporation, Salt Lake City, UT. *August 1985 - January 1987*.
Project Engineer/Graphics
    Specifically hired for the purpose of developing a high performance, real-time 3D
    animation system for use in video production.

Racore Corporation, Salt Lake City UT. *March 1985 - August 1985*.
Chief Engineer
    Conceived, designed, implemented and readied for production a very low cost LAN for the
    IBM PC family.

Evans & Sutherland, Salt Lake City, UT. *November 1981 - March 1985*.
Advanced Development
    Worked directly with Vice President of Advanced Development to research and
    develop new graphics directions.

Project Engineer
    Developed three software and two hardware products to integrate the PS300 graphics display
    system into the IBM environment.

Sperry Univac GSD, Salt Lake City, UT. *January 1979 - November 1981*
Project Engineer
    Wrote communications, display and peripheral microcode for a sophisticated terminal
    featuring advanced windowing and virtual communications.

Education:
    Bachelors of Electrical Engineering, University of Delaware, September 1976 – December
    1978. Minor in Mechanical Engineering. Completed 4 year program in 2 ½ years.

Professional:
    Senior Member IEEE
    Senior Member ACM
    Member AIPLA

    Registered to practice before the United States Patent and Trademark Office

    Licensed as a Professional Engineer in the state of North Carolina

Richard Mark Goodin Prior Cases

- *ZiiLabs Inc. Ltd. v. Samsung Electronics Co. Ltd. et al* (E. D. Texas Case No. 2:14-cv-00203-JRG-RSP) on behalf of Samsung (opposing ZiiLabs) 4/21/2014 to 11/28/15. Source Code Review.

- *In The Matter of Automatic Teller Machines and Point of Sale Devices and Associated Software Thereof* (International Trade Commission, Inv. No. 337-TA-958) on behalf of NRT (opposing GCA). 9/22/2015 to 12/23/15. Non-Infringement Expert.

- *Enova Technology Corporation v. Segate Technology* (D. Del Civil Action No. 1:13-cv-01011-LPS) on behalf of Enova (opposing Seagate) 1/12/2015 to 5/2/15. Source Code Review.

- *Heuresis Corporation v. Venture Technologies, Inc.*, C. A. No. MICV2014-08305-J and MIC2014-08511 on behalf of Heuresis (opposing Venture Technologies) 7/21/2015 to 9/9/15. Software and Hardware Development Expert.

- *In The Matter of Certain Electronic Devices, Including Wireless Communication Devices, Computers, Tablet Computers, Digital Media Players, and Cameras* (International Trade Commission, Inv. No. 337-TA-952) on behalf of Apple (opposing Ericsson). 9/7/15 to 9/15/15. Source Code Review.

- *Samsung Electronics Co., LTD., et al v. NVIDIA Corporation* Case No. 3:14-cv-00757 (E.D. Va) on behalf of Samsung (opposing NVIDIA). 10/10/14 to 9/30/15. Source code review.

- *CareCloud Corporation v. Athenahealth, Inc.*, (CBM2014-00143 (PTAB)) on behalf of Athenahealth, (opposing CareCloud). 2/26/2015 to 5/6/2015. Validity Expert.

- *EMC Corporation and EMC Israel Development Center, Ltd. V. Zerto, Inc.* Civ. No. 1:12-cv-00956-GMS (D. Del) on behalf of EMC (Opposing Zerto). 10/14/14 to 5/11/15. Source Code Review.

- *Athenahealth, Inc. v. AdvancedMD Software, Inc.* Civ. No. 1:11-cv-11260-GAO (D. MA) on behalf of Athenahealth (Opposing AdvancedMD). 5/7/14 to 12/18/14. Source Code Review.

- *Florida Atlantic University Research Corporation and Domaine Associates, LLC v. Asus Computer International,* Civ No. 9:12-cv-80697-PAS (SD Fla) v. *TPV Technology Limited* Civ. No. 9:12-cv-80701-PAS (SD Fla) v. Acer, Inc. Civ. No. 9:12-cv-80694-PAS (SD Fla) on behalf of Asus, TPV and Acer (Opposing FAU). 5/14/14 to 6/26/14. Source Code Review.

- *Selene Communication Technologies, LLC v. McAfee, Inc.* Civ. No. 1:14-cv-00400 (D Del)

on behalf of McAfee (Opposing Selene). 7/23/14 to 10/8/14. Source Code Review.

- *In The Matter of Certain Set-Top Boxes, Gateways, Bridges, and Adapters and Components Thereof* (International Trade Commission, Inv. No 337-TA-915) on behalf of ViXS. 7/10/14 to 9/11/14. Source Code Review.

- *BRK Brands, Inc. et.al. v. Nest Labs, Inc.,* Civ. No. 13-cv-7900 (ND IL,ED) on behalf of BRK Brands (Opposing Nest) 5/10/14 to 6/22/14. Source Code Review.

- *Certain Point-To-Point Network Communication Devices and Products Containing Same* (International Trade Commission, Inv. No. 337-TA-892) on behalf of Toshiba (Opposing Straight Path). 4/24/14 to 5/2/14. Source Code Review.

- *EON Corp IP Holdings LLC v. Apple Inc.* ,Civ. No. 6:12-cv-00943 (E.D. TX) on behalf of Apple (Opposing EON). 1/23/2014 to 6/3/2015. Source Code Review.

- *Straight Path v. Sony*, Civ. No. 13-427 (E.D. Va.) on behalf of Sony (Opposing Straight Path.) 9/16/13 to 4/24/14. Source Code Review.

- *Certain Point-To-Point Network Communication Devices and Products Containing Same* (International Trade Commission, Inv. No. 337-TA-892) on behalf of Sony (Opposing Straight Path). 9/16/13 to 4/24/14. Source Code Review.

- *Optical Disc Drives, Components Thereof, and Products Containing the Same* (U.S. International Trade Commission Inv. No. 337-TA-897) on behalf of Samsung (Opposing Optical Devices). 11/25/13 to 4/16/2014. Source code review.

- *Telefonaktiebolaget LM Ericsson v. Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Telecommunications America LLP, Civil Action No. 6:12-cv-895 (E.D. TX)* on behalf of Samsung (Opposing Ericsson). 8/30/13 to 10/02/13. Source code review.

- *T5 Labs (Delaware), LLC v. Gaikai, Inc.*, Case No. 1:12-cv-01281-MPT (D. Del.) on behalf of Gaikai (Opposing T5 Labs) 9/30/13 to 11/19/13. Graphics Expert.

- *Ericsson Inc., et. al. v. Samsung Electronics Co. Ltd et. al.,* Civil Action No. 6:12-cv-895 (Eastern District Texas) on behalf of Samsung (Opposing Ericsson) 3/1/2013 to 8/27/13. Source code review

- *Certain Electronic Devices, Including Certain Wireless Communication Devices, Tablet Computers, Media Players, and Televisions, and Components Thereof* (U. S. International Trade Commission, Inv. No 337-TA-862) on behalf of Samsung (Opposing Ericsson) 1/8/2013 to 8/27/13. Source code review.

- *Hybrid Audio LLC v. High Tech Computer Corp:, alk/a HTC Corp., et al.,* Civil Action No.

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