

TIMOTHY R. GEIS, P.E.

SUMMARY

Mr. Geis is an established Electrical Engineer designer with over 41 years of engineering development work in leading edge technology. His area of expertise includes but are not limited to the following areas of system designs, engineering forensics, department and design management, customer interface, teaching, and high-technology company start-ups. Timothy has to date worked on a variety of projects that have utilized DSP's, embedded microprocessors, RF, networking, ASICs, CPLD's digital, gate arrays, communications, sensor interfaces, and analog/power subsystems. Mr. Geis experience with hardware's ranges from concept design through production documentation, including block diagrams, circuit design, PCB layout, BOM's and assembly drawings. Software development has spanned assembly through "C" for several microprocessors and DSP's, operating system design, network interface, user and peripheral interface, and high level application code.

EDUCATION

Master of Science in Electrical Engineering, Rensselaer Polytechnic Institute, Troy, NY 1976
Bachelor of Science in Electrical Engineering, Rensselaer Polytechnic Institute, Troy, NY, 1975

SYSTEM EXPOSURE

Analog Devices Blackfin DSP family
RedCellX RTOS/TCPIP stack on Blackfin DSP
Intel 80C196/296, 8048, 8086 and 960 families
USNET TCP/IP stack implementation on microcontroller
TI TMS370, Microchip PIC's (12F, 16C, 16F, 18F, 24F)
Assembly, Basic, Fortran, C, Forth, Visual Basic
NEC 30K gate ASIC's using Verilog
Xilinx XDM, X3000 gate array using Viewlogic Workview
Altera MAX II Family using Verilog
Verilog design (Cadence and Altera)
INMOS T800 transputer family, AMD 2901
MS Word, Excel, Access, WordPerfect, LotusWorks, dBase
ORCAD schematic capture
PADS PCB layout software

ASSOCIATION/MEMBERSHIPS

Institute of Electrical and Electronics Engineers, Member

REGISTRATION AND LICENSES

Professional Engineer, Maryland – Lic No.: 50352

CAREER HISTORY

Forcon International Corp., Annapolis, MD – Independent Electrical Engineer Consultant
Conducting electrical and electronic engineering analyses for forensic investigations.

Anne Arundel Community College - Arnold, MD – Adjunct Professor

Teaching EE103 course, Introduction to Electronics as adjunct professor. Course content from Ohm's law through transistors with significant math in a 3 hour class and 3 hour lab per week.

Xcellon Control Technologies, Inc. - Orlando, FL - Founder

Founded Xcellon to design and manufacture control home automation equipment. Developed Intel 80C196 based distributed control module using Ethernet network port, PIC based switch pad, LCD display, multi room sensor and octal lighting driver modules. Developed and implemented distributed control algorithm, Ethernet based embedded network communication and supervision (IP compatible), and single pair peripheral communication.

IntelliNet Corp. - Orlando and Naples, FL – President

Founded IntelliNet and was responsible for developing business, hiring employees and securing venture capital. Designed System Aladdin, a high performance home automation system that controls residential lighting, HVAC, security, entertainment and miscellaneous systems. Personally designed all hardware and firmware components including distributed token passing network, PC interfaced network controller, network interfaced thermostat for HVAC control and AC load power delivery system using microcontroller driven phase control of TRIACs and power MOSFETs.

Mead Corp. - Imaging Division - Miamisburg, OH - Department Manager

Managed team responsible for designing products to utilize Mead Cycholor color printing paper. Designs included logic and firmware to accomplish high-speed color image generation, processing, storage and writer output functions. Worked with several other companies, including British, German and Japanese, to coordinate their designs for equipment to use the paper.

Burroughs Corp.

Peripheral Products Group - Orlando, FL – Electrical Engineering Department Manager

Managed electrical engineering group of 20 individuals during full design cycle of a 30 page per minute laser printer. The product development cycle from concept to market included competitive product evaluation, full process, system and subsystem design, coordination with other Burroughs groups for system software design, and a complete release to manufacturing. Product utilized 8048, 8086 microprocessors, 2900 series bit slice and high-speed STTL state machines.

Office Products Group - Rochester, NY - Senior Engineer

Designed control subsystems for document processing equipment marketed to the banking industry.

KEY CONSULTING EXPERIENCE

Interclipse Corporation – Hanover, MD

Developed proprietary Windows CE processor board for embedded application.

Action Engineering Company – Bristol, PA

Circuit, embedded microprocessor, PCB design.

Rothfuss Engineering Company – Jessup, Md
Electronic forensics engineering.

Trident Engineering – Annapolis, Md
Electronic forensics engineering.

EMX Corporation – Melbourne, Fl
Several designs involving microprocessor driven camera platform control with video overlay for visible and IR cameras using both NTSC and digital HD standards. Most recent OSD design utilized a CPLD driving high speed SRAM for HD video text and graphics overlay.

Tanenhaus & Associates, Inc. – Annapolis, Md
Several designs involving DSP controlled MEMS gyros and accelerometers. These designs included DSP based circuit design utilizing rigid/flex PCB technology and code development.

Intelligent Wireless Products, Inc. (Janizary Holdings, Inc.) – Seattle, WA
Numerous RF designs, released to manufacturing and manufacturing support on microprocessor controlled wired and wireless cellular repeater systems.

System Excelerator, Inc. – Crofton, MD and Longwood, FL
Designed dual Analog Devices Blackfin DSP based board with multiple memory arrays, A/D converters, PCI bus and 10/100/1G EtherNet to PC104+ standard, targeted to military and commercial applications. Designed accompanying I/O board, incorporated RedCellX RTOS, developed code. Previously designed Intel 80296 processor board for use in several military projects that included memory, Ethernet interface, and numerous peripheral components. Developed operating system and components of application code.

Teleserve Communications, Inc. - Orlando, FL
Developed analog, digital, microprocessor and DSP based hardware for audio, video, telephone and control-oriented product. Using system design requirements, selected hardware and software implementation, designed hardware and PCB layout packages, developed microcode and subsystem interface specifications for several projects.

A. P. Buck, Inc. - Orlando, FL
Designed pumps, flow meters and calibrators. Utilized 80C196, 80296 and PIC microprocessors, battery power regulation and conservation techniques, pump drive control using analog differential pressure flow measuring. Designs included numerous sensor designs, user LCD interface, logging firmware, stored table interpolation algorithms and self re-programmable flash code memory.

Koos Technical Services - Longwood, FL
Designed and developed high performance imaging board for use in high-speed medical monitoring applications. System utilized Intel 960 processor, Number Nine graphics accelerator, S3 graphics accelerator, fiber optics communications link and a PCI bus interface. Designed, simulated and fully implemented NEC ASICs and Xilinx X3000 gate arrays for digital satellite

audio decoder products. Developed and simulated subsystems in Verilog to implement full encoder/decoder functions.

Ameriware Technologies, Inc. - Bonifay, FL

Utilized the 80296 processor and its support hardware and software with new analog interface electronics for HVAC and refrigeration system monitoring, utility company load measurement and shed control, and home automation functions. Developed Visual Basic user interface package for configuration and control.

Signal Technologies Inc. - Longwood, FL

Designed ASICs for use in military secure communications applications. Designs included pseudo random code and Gold code generators, synchronizers and decoders.

Mead Corp., Imaging Division - Dayton, OH

Completed design of digital image generator peripheral for MicroVAX to generate color image data for print engine.

Central Florida Tech Services - Orlando, FL

Designed and prototyped fast (8.3 msec refresh), high resolution (4096 x 4096 x 24 bit) color video generator for use as the output subsystem of a military flight simulator.