Sean Vincent Maschue **619-787-1957** **ns07@maschue.org**

Summary:

Embedded C/C++, Linux, VxWorks, Assembly, pSOS, Motorola 68000, Intel 960, coldfire, JPEG, ISR's. Multi-threaded embedded firmware programming, Unix (HPUX, BSD, Linux) programming, flash programming, embedded-systems board bring-up and debugging,, logic analyzers, Bash, in circuit emulators (ICE, EST corp., BDM), Matlab, network embedded systems development, WindRiver Tornado, Wind-view, Ford ACP, SAE J1850, BMW I-Bus, QNX Neutrino, GPS, Environmental Testing, PIC Microchip MPLAB, SCM (Clearcase, RCS, CVS, and others), IAR Embedded Workbench, GM Class-2 (J1850 VPW), GMLAN CAN bus

Experience

5/03 – Present **Peripheral Electronics, AAMP of America (http://www.peripheralelectronics.com)**

DIVISION MANAGER, CHIEF EMBEDDED SYSTEMS ENGINEER

- As director of product development engineering and a 10 person manufacturing operation Sean designed circuits, wrote firmware and productized dozens of automotive aftermarket electronics products, including Bluetooth hands-free phone accessories, LIN, Toyota AVC-LAN (NEC IE-bus) and CAN bus adapters, high fidelity analog audio, iPod control etc.
- Successfully designed and deployed 3 CES "Innovations Award" winning products: GMAH, GMAA, PXGM24. All involving remote teams, reverse engineering protocols, wiring harnesses, embedded firmware development.
- Initiated and managed relationships with Tier 1 Automotive suppliers, analog and digital IC suppliers, Offshore CM's and other ODM's.
- Created interactive electronics displays and worked tradeshows for many years (CES, SEMA, MERA, SAE Convergence) creating strategic partnerships and valuable customers. Participated on discussion panels and presented at trade-shows on interfacing with in-vehicle networks.
- Customer technical support on phone and in-person, authoring product instruction documentation, creating databases for managing application guides.
- Automated various production test steps
- Vendor selection for ODM (Design) and manufacture of electronics sub assemblies.
- Managed successful move and $20,000 tenant improvement project on a 6000 SF Manufacturing, R&D, lab facility under budget and ahead of schedule.

11/01 – 5/03 **Contract Embedded Systems Engineer (Various)**

- Embedded 8 bit microcontroller for TDG aerospace for safety critical fuel pump fault controller. All C-code for interface to CPLD and detecting Arc Fault, and other motor electrical faults.
- Embedded Linux & TI-DSP for complex sound analysis tool customer
- In-flight Avionics GPS navigation mapping system on embedded Linux. Including system integration, board selection, software systems integration
- C & assembly programming for 8-bit Atmel AT90S4414 & AT90S8515 microcontroller firmware with IAR compiler
- Diagnostic tool development using Cygwin on Windows NT
- Controls, electronics & mechanics for combat robots, Rambite & Megabite for Robotic Death Company, (October 2001 – present) http://www.roboticdeathcompany.com

6/00 to 11/01 **Sensoria Corporation (http://www.sensoria.com) - San Diego, CA**

SR. SOFTWARE DESIGN ENGINEER

- Successfully developed production test environment & software. With the Director of Test Engineering, Bob Badgerow: Created $100k budget for production test equipment; ordered and set-up all equipment for volume production of a very complex embedded Hitachi SH product. Created automated self-tests for self-monitoring and diagnosis during active thermal/HALT testing and active burn-in. Invented an embedded CGI based production test environment, for partial automation of production test environment. Built, tested, debugged, and repaired first 100 production units.
- Automated Matlab based dynamic spectral analysis for data acquisition product
- SAE J1850 device driver for interfacing to Ford vehicle bus, and access code to access diagnostic trouble codes (DTC's), and operation parameters and enable vehicle ECM re-flashing.
- Developed C++ device driver for QNX Power PC to Ford ACP bus interface and interfaced to custom 8051 8 bit micro controller bus adaptor. Using Keil compiler, wrote 8051 assembly and c firmware for this bus adaptor. Designed & wrote multithreaded C++ mp3 player for embedded QNX Neutrino to interface to vehicle factory stereo head-units. Reverse engineered Ford ACP protocol for interfacing to in-vehicle network.

- Prototyped vehicle interface system using MontaVista PowerPC Linux on embedded-planet Single board computer.
- Set-up and administered several Linux firewall servers for engineering workgroup on Linux 2.4 kernel: iptables, samba, ppp, NFS, Samba, Sendmail, DHCP, bind, apache, CVS, and Hitachi SH cross compiler environment, etc.
- Conducted detailed survey for executive team, of all North American wireless data networks, carriers, and OEM modules for mobile data connectivity. Interfaced various embedded products to Motorola IDEN handsets on the Nextel network.

1993 to 6/00 **Hewlett Packard- San Diego, CA**

EMBEDDED SOFTWARE ENGINEER

At HP I developed DeskJet & OfficeJet product firmware in various Research & Development labs. My work organized around consumer product teams. On teams I was fully responsible for various components through the full product and software lifecycle from investigation & design through testing & maintenance. On all projects I enjoyed honing my skills with Unix and embedded programming, including the design and product definition. At HP I:

- Designed, implemented and supported real-time Servo & Control systems for temperature, current, motor velocity/position (steppers and other) using Matlab, C & assembly cross-compiled, embedded ISR's for PID, LQG and other control systems. This work was performed on several products, with various processors, assemblers, and cross compilers – including 68000, i960, coldfire and VxWorks.
- Programmed c/assembly language ASIC interface and other performance/space critical embedded ISR's, low level O/S interface and I/O code.
- On all projects at HP I supported ASIC (digital hardware design engineers) designing enormous (1 million plus gates) Verilog on Xilinx custom IC's through analysis, definition and test vector design. Usually this required writing dedicated ASIC test code for quick design verification.
- Designed, developed, implemented, and maintained intranet HTML web sites on Apache and other web servers, using Perl, CGI and other Unix/Linux tools.
- Software configuration management (SCM): used, and worked closely with the support and issues surrounding multi-site/division and multi-platform client SCM systems for complex embedded systems to develop/track-changes in a complex multi-project/multi-platform codebase..
- Authored & maintained C, C++, and Perl color mapping & image processing ASIC simulators on Unix and for embedded targets. Analyzed cost vs. image quality tradeoffs to save cost on ASIC and board design.
- Performance analysis, board bring-up and debug with HP/Agilent in-circuit-emulators, debuggers (GDB, Tornado, logic analyzers, oscilloscopes and other test and measurement equipment.
- Interfaced with manufacturing, marketing, management and research and other teams. Identified and managed technical and schedule risks.

Valuable Strengths:

- Project management
- Complex dynamic consumer electronics products
- Embedded systems engineering through full product lifecycles
- Proficient C/C++ programming for all occasions, (Over 20 years programming experience)
- Analyzing/designing/programming low-level, real-time, multi-threaded, DMA, hardware-interfacing, interrupt (ISR) software
- Performance (cache & bus-bandwidth) critical systems design
- Embedded system electrical board bring-up and debugging using flash, emulators, BDM, RS232 serial, assembly, logic analyzers, etc
- Deep 17-year loving daily relationship with UNIX/Unices based on mutual trust & respect
- Understanding and learning complex systems/technical designs
- Proven ability to work with geographically remote & complex teams
- Enthusiastic about business travel & working with customers

Member Society of Automotive Engineers (SAE), and IEEE

Education:

1993 University of California, San Diego BS Computer Engineering (ECE) 3.6 GPA
Finished this 5 year program in 4 years

References furnished on request