Sean Vincent Maschue   **+1-619-787-1957**

Embedded Systems Engineer & Project Manager Summary

Put 15 years experience with embedded automotive communications systems to work for your designs; Sean can help you with all the latest 5.9GHz wireless ITS standards and the in-vehicle networks behind the on-board systems!

Experience

1/08 – Present	**Kapsch TrafficCom AG (previously Technocom-Wireless)**

SENIOR EMBEDDED SOFTWARE ENGINEER

- On "Agile" and global teams, Sean develops embedded Linux kernel drivers & systems for 5.9GHz 802.11p (DSRC) wireless safety WAVE (IEEE1609) networking stack for vehicle safety networks (VIIC) These wireless drivers are for various linux distributions and architectures including ARM, MIPS, PowerPC and x86
- Implements SAE J2735 V2V & V2I message based systems for wireless vehicle communication stacks
- Develops wireless linux Wi-Fi drivers, applications and systems for standards-based wireless vehicle to vehicle and vehicle to roadside communication (example products: Kapsch TS3306, and TRX9450)
- Develops drivers & applications for SAE J1939 CAN (and other in-vehicle network) interfaces to heavy trucks for commercial vehicle safety systems
- Creates new and custom interface communication protocols for ITS (Intelligent Transportation Systems) data exchange between Kapsch systems and external customers & partners
- Creates road-side (RSE), on-board (OBU), Android tablet software, and back-office interface software for commercial vehicle screening , vehicle safety (V2X) and electronic fare collection (EFC) customer systems
- Participates in balloting and approval of various IEEE 1609 standards.
- Worked on team creating a battery-powered system open-road tolling EFC Tolling system, and trade-show demo first shown at 2009 ITS world Congress in NYC. (Kapsch TS3304 OBU)
- Managed acceptance of our product's radio protocol compliance and overall product acceptance with US Department of Transportation (USDOT) test labs for 5.9GHz Aftermarket Safety Device (ASD) and the Kapsch Road Side Equipment (RSE). This included GPS, IPV6, SAE J2735 V2V and V2X protocol interoperability testing.
- Developed kernel driver to measure wireless range distance in 802.11p stack.
- Evangelizes 5.9 GHz 802.11p based radio systems. Contact by Skype: svmaschue

5/03 – 8/07	**Peripheral Electronics, AAMP of America**

DIVISION MANAGER, AND CHIEF EMBEDDED DESIGN ENGINEER

- Designed and deployed 3 CES "Innovations Award" winning infotainment products: GMAH, GMAA, PXGM24. Sean reverse engineered various vehicle bus protocols, wiring harnesses and developed firmware for these and other networked products..
- For development of infotainment & telematics products, Sean initiated and managed relationships with Tier 1 Automotive suppliers, analog and digital IC suppliers, Offshore CM's and other ODM's
- As director of product development engineering, Sean managed budgets, personnel and development of small engineering team, and 10 person manufacturing operation.
- Sean designed circuits, wrote vehicle bus interface code for myriad wired vehicle bus standards, (e.g. LIN, Toyota AVC-LAN (NEC IE-bus), J1850, CAN) For dozens of these unique communication protocols & interface, he created mixed digital & analog high fidelity infotainment & telematics products.
- Managed & championed products from initial ideas through full design & development to design verification, beta testing, and manufacturing including the design and construction of functional end of line production test fixtures and software.
- Designed embedded solutions for client/server in-vehicle networks by analyzing and reverse engineering network protocols. For these designs I wrote embedded firmware and network interface device drivers in using ISR's for communications stacks on various microprocessor platforms (Freescale Codewarrior, Atmel AVR, Microchip DSPIC)
- Participated in CEA (Consumer Electronics industry Association) Standards development workgroup for R.6 R-2012 "Serial Communication Protocol for Portable Electronic Devices"
- Bread-boarded experimental designs and tested analog audio electronics, including DC/DC switch mode power supply (SMPS) for a digitally controlled analog signal attenuator.
- 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 gave presentations at trade-shows on interfacing with in-vehicle networks.

- Vendor selection for ODM (Design) and manufacture of electronics sub assemblies.
- Prepared project based, and annual lab operation and growth budgets
- Customer technical support on phone and in-person, authoring product instruction documentation, creating databases for managing application guides.

11/01 – 5/03   **Contract Embedded Systems Engineer (Various)**
- Embedded 8 bit microcontroller for TDG aerospace <u>for safety critical</u> 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 commercial-grade sound analysis tool
- 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
- Controls, electronics & mechanics for combat robots, Rambite & Megabite for [Robotic Death Company](http://www.roboticdeathcompany.com), (October 2001 – present) http://www.roboticdeathcompany.com

6/00
to 11/01   **Sensoria Corporation**
SR. SOFTWARE DESIGN ENGINEER
- Conducted detailed research for executive team, of all wireless networks, technologies and protocols.
- Developed code for unmanned wireless mesh sensor networks, and for production testing/validating our WINSNG nodes which are used for DARPA "SENS-IT" project development
- Created a SAE J1850-VPW device driver (in embedded C) for interfacing to Ford vehicle bus, and access code to access diagnostic trouble codes (DTC's), vehicle ECM re-flashing, etc.
- Automated a Matlab based dynamic spectral analysis for data acquisition product
- Developed C++ device driver for QNX Power PC to Ford CP 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. And wrote Linux on SH4 device drivers to interface to vehicle bus.
- Created universal vehicle bus interface product (supporting multiple OEM network standards) system using PowerPC & SH4 Linux.

1993
to 6/00   **Hewlett Packard- San Diego, CA**
EMBEDDED SOFTWARE ENGINEER
At HP Research & Development, I developed Deskjet & Officejet product firmware. My work organized around consumer product teams. On teams I was fully responsible for various & specific 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 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 custom IC's through analysis, definition and test vector design. Usually this required writing ASIC test code for design validation.
- Authored & maintained C, C++ systems for 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:
- Development, interfacing and benchmarking of diverse wireless & wired network communications
- **Protocol** Analysis reverse engineering

- Full-lifecycle embedded system hardware and firmware solution development
- Understanding and learning complex systems/technical designs and huge existing code-bases and leveraged existing designs. Through analysis of source code, or reverse engineering and/or scientific method where necessary
- Performance critical (cache & bus-bandwidth, CPU bandwidth, memory, ISR latency, etc) critical analysis and design in resource constrained designs.
- Analyzing/designing/programming low-level, real-time, multi-threaded, DMA, hardware-interfacing, interrupt (ISR) software
- Embedded system electrical board bring-up and Emulators, logic analyzers, etc
- Proven ability to work with geographically remote & complex teams
- Enthusiastic about business travel to interfacing with customers and suppliers

Member Society of Automotive Engineers (SAE), and IEEE

Education:

University of California, San Diego BS Computer Engineering (ECE)

US Citizen – Secret Clearance Clearable (No current clearance)

References furnished on request

2013 update