

Objective	Develop critical real-time embedded software.
Experience/ Qualifications	Over 20 years extensive and progressively responsible experience specifying, implementing and verifying critical real-time embedded systems and software while refining processes and driving deliverables to completion.
Education	BS Electrical Engineering , University of Washington Ground School Flight Training , Rockwell Collins Seattle, WA Cedar Rapids, IA
Skills	<ul style="list-style-type: none">▪ Languages – C, C++, Java, ADA, PERL, HTML▪ Protocols – MS 1553, APEX, ARINC 429, 629, 661, 653, 664, TCP/IP, CAN, AFDX, 1394 Firewire.▪ Operating Systems –VxWorks, Integrity, LINUX, Windows▪ Analysis/Design – Unified Modeling Language (UML), Yourdon/DeMarco Structured Development, Capability Maturity Model Integration (CMMI), Object Oriented Technology In Aviation (OOTIA), Design Approach to Real-Time Systems (DARTS), Personal Software Process (PSP), Team Software Process (TSP), Strategies for Real-Time Systems Hatley/Pirbhai.▪ Tools – Verotrace, GIT, Eclipse, Workbench, OCD, ICE, Rhapsody, Rational Rose, Matlab, SIMULINK, Rational Test Real-Time, Multi, Tornado, GDB, SingleStep, Clearcase, ARM Developer Suite, Java Development Kit, Visual Studio, Code Warrior, Visio, DOORS, Requirements Gateway, MS Project, PVCS, Code Composer Studio, LDRA, VectorCast, Livelink, Visual Source Safe, TortoiseSVN, Subversion, Cockpit, EDMS, Synergy, Synergy▪ Hardware – XDS510 Emulator, TMS320, F281x, Pentium, X86, PPC, ARM, DSP, Coldfire, 68k, board & chip level diagnostics

Employment/Contract Experience

Senior Contract Software Engineer, Guerbet/Liebel-Flarsheim/Mallinckrodt Cincinnati, OH (6/15 – 4/18)

Specified, designed, implemented, released IEC62304 compliant software for medical devices using C and C++ in embedded devices. Troubleshoot HW/SW servo loop, performance. Resolved production line issues. Reviewed Software Tests per ISO 14971 Safety Standards. Contributed to CAN4 and DICOM 6 working groups.

Senior Contract Software Verification Engineer, Verocel Boston, MA (1/14 – 9/14)

Verified tests for Part 25 ADA software for Commercial Avionics Flight Management System (FMS) to DO-178 FAA standards for level B flight applications. Utilized Boolean algebra. Analyzing requirements. Trained engineers.

Senior Contract Embedded Software Engineer, L-3 Communications Cincinnati, OH (4/13 – 8/13)

Robust space comm app: designed ISR/GPIO based device driver using VxWorks 6.7 shared memory (shmem) and semaphores per NASA specs and standards, ethernet, Object Oriented C++ for MS1553 on PCI and R/F link. Implemented C++ classes for MS1553 and PCI bus structures. Exposure to VxConnect, FPGA/software integration.

Senior Contract Software Engineer, Beckman Coulter, Diagnostics Indianapolis, IN (10/12 – 3/13)

Developed embedded C++ code for a C3 medical diagnostics application targeted to an FDA Major Level Of Concern hazard environment. Guided the team to compliance to FDA standards and software consistent with the risk analysis and the safety assessment. Developed to the Integrity OS with Green Hills Software (GHS) development tools for the Power PC processor. Versioned and merged using GIT. Used the Eclipse IDE, EDMS and Cockpit. Trained in Vectorcast, PSP and TSP.

Senior Contract Software Engineer, Cobham Aerospace Seattle, WA (2/12 – 8/12)

Developed embedded C Language helicopter application using VxWorks653 with Workbench, In Circuit Emulation

(ICE), Wind River's On-Chip Debugger (OCD). OS-Aware, task level debugging. High-level, Low-level Software Requirement Specifications for DO-178B Level C Avionics application: Multi-Function Display (MFD). Re-factored requirements model. Created trace model to achieve compliance with FAA traceability requirements. Performed internal audit and created certification gap report. Analyzed a Board Support Package (BSP) and estimated cost for certification based on factors such as SLOCs and organizational efficiency.

Senior Contract Software Engineer, Honeywell AES San Diego, CA (1/11 – 8/11)

Implemented CH-47 helicopter engine maintenance displays for Rockwell Collins MFD using ARINC 611, VxWorks.

Senior Contract Software Engineer, Honeywell AES Phoenix, AZ (6/10 – 11/10)

Verified and validated flight controls software for the Boeing 787 Dreamliner written in the C language. Used Green Hills Integrity OS, Multi Integrated Development Environment and Rational Test Real-Time.

Senior Contract Software Engineer, IMS Company Long Beach, CA (11/08 – 3/10)

Northrop Grumman: Analyzed software changes as critical part of Navair Flight Clearance process for the Fire Scout autonomous air vehicle (helicopter) real-time embedded software. Built custom Access database.

Boeing: Built web enabled document/literal binary file upload client/server pair using Apache AXIS2 SOAP, JDK.

Northrop Grumman: For GMR program, tested JTRS JWIN network config and encryption software, using SELinux.

Senior Contract Software Engineer, Bell Helicopter Fort Worth, TX (6/08 – 10/08)

Performed DO-178B Level B signal management real-time embedded C software unit test. Consulted on circular I/O buffers, non-volatile access, memory and text processing. Resolved errors in floating point library, string utilities and status reporting.

- Achieved decision/condition coverage using VectorCast code coverage analysis.

Contract Senior Verification/Validation Engineer, Hamilton Sundstrand Corp. Rockford, IL (1/08 – 5/08)

Wrote DO-178B test cases test scripts to verify Dreamliner engine controls. Built an openSUSE LINUX platform.

Contract Senior Software Engineer, Crane Co. - Aerospace Group Seattle, WA (10/07 – 12/07)

Produced real-time embedded C language DO-178B ARINC 653, 615 comm sw, VxWorks.

Contract Senior Software Engineer, Parker-Hannifin - Aerospace Group Irvine, CA (8/07 – 10/07)

Evaluated automated test and analysis tools. Increased readability, implementability and maintainability of designs for DO-178B real time embedded military system. Conducted trade study of VectorCast and LDRA.

- Automated testing using VectorCast. Restored hooks in the link map that allowed instrumentation of the target.

Contract Senior Engineer, Systems, Rockwell Collins, Inc. Cedar Rapids, IA (6/06 – 8/07)

DO-178B test plans, procedures, requirements. System architectural requirements, fault tolerance, DO-178B RTOS.

Contract Senior Engineer, Software, Lockheed-Martin Binghamton, NY (4/06 – 6/06)

Specified and designed C software for next generation helicopter flight displays using ARINC 653, 429, VxWorks.

Senior Principal Engineer, Software, L-3 Communications, Avionics Systems Dayton, OH (9/04 – 2/06)

Specified and implemented C++ software to provide fault tolerant flight displays and ship's clock using the Integrity real-time embedded operating system under Visual Studio, VectorCast and Green Hills Multi debuggers.

Contract Senior Systems/Software Engineer, Avtech Corporation Seattle, WA (8/04 – 9/04)

Specified, designed, implemented, tested and released DO-178B C language display format converter software.

Contract Senior Software Engineer, Meggitt Safety Systems, Inc. Simi Valley, CA (6/04 – 7/04)

Modified PSAC. Built schedule. Installed Razor CM/problem tracking system, customized development life cycle.