

Summary

Technical Software Manager with 20+ years of experience in software architecture and development and full life cycle processes, specializing in project management, real-time embedded design, C, C++ and protocols. Excellent programming and interpretation skills. Fast learner and Team builder who enjoys any kind of challenge.

Technical Skills

<i>Systems</i>	GreenHills Integrity RTOS, VxWorks/Tornado, Linux, NetBSD (user space, kernel), Microsoft Windows CE, Texas Instruments DSP/BIOS
<i>Languages</i>	C and C++, object-oriented, embedded, C#, Matlab, Tcl, Perl, HTML, javascript
<i>Processors</i>	Texas Instruments (OMAP2430, OMAP3430, C64x, Sitara AM335x, MSP430) Motorola (68k, PowerPC), Intel (i386, Pentium, Xscale), ST Micro (STM32Fx Cortex M3/M4) ARM7, ARM9, PIC
<i>Protocols/ Norms</i>	Telecom: TCP/IP, SONET/SDH (ANSI T1.105, G.707, LCAS), Gigabit Ethernet (802.3), GFP, HDLC, Frame Relay (Q.921, Q.922), ATM Multimedia: DVD-VIDEO, DVD-ROM, DVD-R, UDF, MPEG-2, SMPTE
<i>Tools</i>	Subversion (SVN), ClearCase, ClearQuest, CVS, StarTeam, Synchronicity, RCS, Klocwork, SQuore IAR, Keil, MULTI, VisualStudio
<i>Methodology</i>	V-model, DO178B, EN50128, EN62304, UML (use cases, class, sequence, component diagrams)

Professional Experience

ELSYS Design – Technical Software Manager

April 08 – Present

Grenoble / FRANCE

- *As part of ELSYS Design technical management team, performed hands on embedded software projects management of fixed price contracts. Expertise includes pre-sales customer relations, projects planning and multi-site projects management.*
- *Provided support to business managers from all ELSYS locations in their efforts to prospect for new customers.*
- *Led all software technical aspects of RFP bids, by analyzing customer needs, providing technical solutions, estimating man-days, determining required team size and experience, and consolidating project plannings. Also responsible for the quality and relevance of software RFPs produced by our software engineers.*
- *Built teams, helped hire new software team members, and trained software engineers and team leads with our company quality process. Gave internal and external presentations of our software accomplishments.*
- *Managed project leaders or acted as project leader for software fixed price projects.*
- *Provided direct expertise and debug on ongoing projects.*
- *Led our capitalization effort by retrieving data on lessons learned from closing projects, producing project presentation slides, actively participating in a technology watch activity on latest technologies, methodologies and tools.*
- *Participated in ISO-9001-2000 internal audits and customer quality audits.*
- *Technical environment:*
 - *Device drivers, embedded applications, real-time software, control software, code optimization, porting, algorithmics, small graphical interfaces, C, C++, C#, Qt, Matlab.*
 - *Separation RTOS (INTEGRITY, VxWorks), RTOS, proprietary OS and sequencers*
 - *Embedded Linux (2.4.x, 2.6.x and 3.x kernels), Windows, MacOS X.*
 - *All types of targets from DSP, ARM, MIPS, PPC, x86 and 8-, 16- or 32-bit microcontrollers.*
 - *Quality standards from ISO-9001 to DO178B (avionics), EN50128 (railway) and EN62304 (medical).*
 - *Teams from 1 to 10, Projects from 5 man-days to 30 man-months, mono or multi-sites.*

RASW Engineering SARL for Texas Instruments – OMAP Speech / Audio Software Engineer

February 06 – January 08

Villeneuve-Loubet / FRANCE

- *Freelance consultant working as part of Texas Instruments France OMAP Multi-Media team, performed design, implementation, validation and support of DSP Audio Software Framework (DASF) on OMAP2430 and OMAP3430, following a CMMI level 3 process.*
- *Performed validation and enhancements of PCM, NbAMR and WbAMR decoder and encoder socket nodes. Integrated Sample Rate Converter algorithm into DASF on both record and playback path*
- *Enhanced DASF by adding customer-critical features such as stereo recording support and software sidetone. Reduced overall power consumption in all playback and record scenario by modifying the EDMA to McBSP (Multi-channel buffered serial port) interface. Reduced CPU load by one third by performing C64x-targeted optimization. Implemented a multimedia mixer capable of mixing multiple input streams onto one or more output streams, therefore allowing any mixing scenario of playback and record stream, such as multi-media playback on top of a 3-way GSM or VoIP tele-conference.*
- *Prepared OMAP3430 wakeup activity performing pre-silicon validation on Virtio VPOM3430 simulator platform. Responsible of OMAP3430 wakeup activity for speech/audio multi-media team. Released first official release.*
- *Completed porting effort of DSP Component Test Framework (DCTF) to Linux platform.*
- *Supported remote Multi-media teams in their integration effort of DASF and Audio/Video Synchronization Components. Debugging required on both DSP and ARM side.*
- Technical environment:
 - *C and C64x assembly under DSP/BIOS, C/C++ under SymbianOS and Embedded Linux, OMAP2430, OMAP3430, Virtio VPOM3430, McBSP, EDMA, Code Composer Studio*

Triverity Corporation (then RASW Engineering SARL) – Senior Design Engineer

August 04 – December 04 (full time employee)

Chantilly, VA / USA

January 05 – November 05 (freelance consultant)

Saint-Cézaire-sur-Siagne / FRANCE

- *Performed design, implementation and validation of all embedded software for Triverity's XtremeX3 in-vehicle multimedia data acquisition system, targeted towards motor sports.*
- *Wrote the initial version of all embedded software: drivers for basic register accesses, LCD display, push-button, image sensor, MPEG-2 encoder, NTSC encoder, GPS device and 5 FPGAs; embedded applications for user-interface, telemetry acquisition and post-processing. Implemented code in C as a proprietary simulator under cygwin then ported to Windows CE and validated on the X86 emulator. Integrated on real-hardware running on Intel 80200. Code written portable across multiple embedded OS.*
- *In parallel, performed design, implementation and validation of a proprietary DVD authoring software. Starting from the MPEG-2 encoder output and the acquired telemetry file, this patent-pending authoring tool quickly generates the final DVD VIDEO_TS folder.*
- *Interfaced with the DVD Format/Logo Licensing Corporation to obtain the DVD-VIDEO and DVD-R specifications and discuss licensing issues. Inserted each video/data captured in vehicle as a title on the DVD. Divided each title into chapters based on statistics captured in telemetry file. Displayed telemetry data on a multi-page DVD menu. Custom-generated menu pages required decoding and encoding of MPEG-2 video stream, as well as authoring of DVD sub-pictures. Implemented bulk of DVD generation tool in C/C++ under cygwin, then ported to Windows to generate the final executable. Some image processing software implemented in C#. Validated generated DVDs on both software and hardware DVD players as well as using Philips "DVD-Video Verification tool".*
- *Patent US 20070031112 A1 "Fast generation of a personalized DVD from a common template"*
- Technical environment:
 - *C under Cygwin and Windows CE, C/C++/C# under Windows XP, device drivers, DVD-Video, MPEG-2 transport, Philips DVD-Video verifier, Microsoft Visual Studio, CVS.*

Hyperchip USA, Inc. - Software Designer

May 03 – June 04

Reston, VA / USA

- *Performed design, implementation and support of Internal Routing Protocols and In-Service Scaling Updates for Hyperchip's next generation core IP router (PBR-1280). Implemented code in C and C++; unit-tested on simulated environment; integrated on Hyperchip's Core router running both VxWorks and NetBSD Operating Systems on a Motorola PowerPC; system level stress tests performed at line rate using Agilent OC-192, OC-48 and GE Router Tester Ports; NetBSD implementation required modifications in both kernel and user space.*
- *Worked on the Internal Routing Protocols simulator. This in-house simulator is multi-threaded and based on Berkeley sockets to fully simulate hardware fabric topology discovery and all internal protocols leading to full fabric configuration up to a 1.2 Terabit system.*

- *Responsible for hardware fault detection, monitoring and notification. All faults are piped through sockets and a pseudo-device written for both BSD and Vxworks with a common interface library.*
- *Responsible for stability of the entire platform software code by running stress and overnight regression tests. Summarized test-result and coordinated problem resolution by interfacing directly with the designers, which were all located in a remote-site.*
- *CVS administrator for platform software team in a multi-branch environment. Performed code releases and re-baseline to high-level software code.*
- Technical Environment:
 - *C/C++ under VxWorks and NetBSD (user land and kernel), multi-thread, pseudo-device driver, CVS, internal routing, continuous integration, UML*

PMC-Sierra, Inc. – Senior Software Design Engineer

April 99 – April 03

Gaithersburg, MD / USA

- *Performed full life cycle device driver development for PMC-Sierra's cutting-edge high-speed broadband communications semiconductors. Designed and wrote the customer-ready driver design documents; implemented code in ANSI C; unit-tested on a simulated environment; integrated on a Motorola compact-PCI platform running Tornado's VxWorks Real-Time Operating System (RTOS) on a Pentium Single Board Computer; wrote then executed the driver test plan using Tcl scripts; produced development, alpha, beta and production releases for internal and external customers; supported all driver releases.*
- *Mentored and acted as peer-reviewer of software design engineers located in both local and remote sites, for all phases of their driver development.*
- *Contributed to the overall design of the PMC-Sierra device driver architecture. Wrote and maintained the driver documents and code templates that are used by all PMC-Sierra software engineers as the base line of the driver design and implementation. Drivers designed to be independent of both hardware platform and RTOS.*
- *Wrote and supported the Software group intranet page, using HTML and JavaScript on IIS server.*
- Technical Environment:
 - *ANSI-C under VxWorks, SONET/SDH, Gigabit Ethernet, HDLC, GFP, drivers, Agilent/HP OmniBER 37318 test equipment for SONET/SDH, NetCom Systems Smartbits 2000 for Gigabit Ethernet*

Alcatel U.S.A. - Software Engineer

Nov 97 - Jan 99

Ashburn, VA / USA

- *Worked in the Alcatel 1100 HSS R&D software department.*
- *Modified, tested and supported the Q.922 LAPF/LAPD Common Element subsystem (LLCE). Worked on the frame relay Line Driver subsystem (LDR) of a new 8-port T1/E1 board, that uses the PMC-Sierra FREEDM chip HDLC controller.*
- *Finished writing the line driver, adapted the original code to use a proprietary simulation software that I used to detect and fix more than 70 bugs. Modified and improved the line driver for performance. Modified the Frame-Relay Subsystem (FRS) to double the data transfer performance.*
- Technical Environment:
 - *C and PowerPC assembly under a proprietary OS, PureCoverage, RCS and ClearCase on Sun workstation, Alcatel 1100 HSS and NMS, PMC-Sierra components, DAS and HP analyzers*

Radio communications and Signal Processing Laboratory (L.R.T.S.) - Research Assistant

Nov 95- Oct 97

Québec, QC / CANADA

- *Improved a proprietary simulation software to predict electromagnetic wave propagation at 1 GHz, at low altitude, in the troposphere.*
- *Used the "Split-Step Fourier" algorithm to solve the parabolic equation of propagation, and "ray-tracing" techniques to include wave reflection over the surface. Extended the software to simulate propagation over a non-flat terrain. Used C and matlab on a Sun workstation.*
- *Worked in close relations with the Defense Research Establishment of Valcartier (CRDV-DREV).*
- *Wrote a thesis using Frame Maker and obtained MSc in Electrical Engineering from Université Laval and Diplôme d'Etudes Avancées (DEA) (1-year french MSc) in "Signal-Image-Speech" from Institut National Polytechnique de Grenoble (INPG).*
- Technical Environment:
 - *Programming and simulations on Sun workstation in C/C++ and Matlab*

Education

Master of Science

- 1997 University Laval Québec, QC / CANADA
M.Sc. in Electrical Engineering with Dr. Michel Lecours at the Radio communications and Signal Processing Laboratory (L.R.T.S.).
- 1996 Institut National Polytechnique (I.N.P.G.) Grenoble / FRANCE
Diplome d'Etudes Avancées (D.E.A.) in Signal-Image-Speech, a 1-year french M.Sc., obtained with honors.

Bachelor of Science

- 1996 Ecole Nationale Supérieure d'Ingénieurs Electriciens (E.N.S.I.E.G.) Grenoble / FRANCE
B.Sc. in Electrical Engineering, obtained with honors.

Languages

- French Mother tongue
English Bilingual