Daniel Gonzalez Valero

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Career Summary   I am an experienced real time software developer, educated to Masters level in Telecommunications Engineering. I have eigth years of work experience in projects directly related to the telecom business, mainly as a developer, but also in activities ranging from research, testing and support to commissioning engineering. I have been consulting in several telecom companies in Europe during the last six years, in Embedded, Real Time and Distributed Systems. I have also good understanding of telecommunications protocols.

Experience

Nokia Networks GmbH in   *Software Engineer Consultant*
Düsseldorf, Germany   **since October 2000**
Member of the Software group. I have been involved in two main projects:

- PDH/SDH cross connect: *(Since January 2004)* System consisting of a combination of up to six boards based on `MPC8xx series`. The crossonnect has E1, T1 and STM-1 interfaces, and interfaces to a point to point radio link with a capacity of up to 16x2 Mbit/s each. I have been involved in maintenance and testing activities.

- PDH Point to Point Microwave Radio Link: to link base stations in Mobile Networks. The system is based in a `MPC850` processor controlling three ASICs in charge of processing the PDH signal and transmitting through the air interface. The system represents the evolution of a previous radio device, the main improvement being the reduction of the bandwidth utilized by using a different modulation technique. The tasks in which I have been involved are:

  - Porting of the application software from a `MC68302` based system to our `MPC850` system. This has been performed in several phases, in coordination with the HW group: use of an existing `MPC860` control block to perform the first tests, use of several prototypes with old ASIC mounted and finally tests in prototype with newly designed ASIC mounted.
  - Design and implementation of a boot strategy.
  - Development of new features.
  - Implementation of driver for new ASIC.
  - ASIC testing to locate major defect which prevents the product from working.

  The product features two different modulation techniques, 32-point Trellis Coded Modulation, predistortion, pilot insertion / detection, Wiener filters, Viterbi decoder.

Alcatel BELL in   *Telecom Consultant*
Antwerp, Belgium   **May 1999 - October 2000**
Member of the Hardware dependent Software group, working in the development of a backbone IP switch. The integration card which the group is developing is a termination link intendend to support in an early phase IP traffic both over SDH/SONET (PoS) (STS-4/STM-12) and GENET interfaces. The project as a whole involves over 200 software and hardware engineers, with 70 engineers being directly involved in the Termination Link. The HdS group of which I am a member is in charge of providing a consistent hardware shielding layer to allow access to the different devices present in the board: IP forwarding machine, IP traffic manager, SONET/SDH terminators, APS manager, GENET terminator, on-board processors... I have been involved in the following tasks:

- Specification and implementation of stress traffic tests to verify the functionality of the link termination card. The board contains several commercial components and two in-house developped ASICs:

  - A Switch Interface for the Packet Processor. This component enables the transfer of traffic with widely divergent QoS requirements, i.e. real-time traffic as well as bursty non real-time/non-QoS guaranteed traffic, without endangering the switch protection.
  - An integrated switch element, which implements the multi path switching strategy.

- Definition and implementation of a build strategy in order to support different targets and configurations. The processor used is a `PQ-II` with advanced communication capabilities.

- Port of a `SANDisk` driver to our platform
- Development of software components for the `OSE RTOS` in order to interact with the HW.
- Definition and implementation of a boot up strategy.

The tool chain used in the development process is the following: `ClearCase`, Target debuggers (Emulators, such as `PowerTAP`), `GreenHill` compiler, `OSE RTOS`.

Switching Test Solutions (STS), a   *Telecom Consultant*
Wavetek Wandel und Goltermann
(WWG) company
Zurich, Switzerland.   **July 1998-April 1999**
Development and support of testing systems, both distributed and standalone, covering all major telecom signalling protocols. I was involved in four major projects:
- Network Capacity Planning for a distributed system.
- Port of a multithreaded distributed application from `Unix` to `NT` based on ONC RPC (TCP/IP user). Implementation of a reduced Unix API to be used in the `NT` system. Implementation of a pthread library wrap to allow using `NT` threads without modifying the original code. Integration of the `NT` and `Unix` version of the code.
- Support of Telecom Test Equipment (`A8619`). The main capabilities of the product are the following:
  - Monitoring of all major signalling protocols at all levels in the OSI stack: ISDN (DSS1, SS), V5.x, SS7, GSM.
  - Emulation of Network Elements, with limited performances and exclusively from the signalling point of view: AN, LE, STP, SSP.
  - Conformance Testing of Telecom Equipment, by using TTCN test suites.
  - Traffic generation.

  My main activities related to this project have been the following:
  - Support of the existing `A8619` equipment at the customer premises, involving worldwide travelling.
  - Presentations of the system to potential new customers.
  - Organization of the support activities at STS.
- Qualification test and user manual production for the `WWG 8620 SS7 Surveillance System`.

MEFF Services, Spanish Financial   *Telecom Consultant*
Futures Market
Barcelona, Spain   **January 1998 - May 1998**
Involved in the development of a distributed system (WAN) with `Unix` servers and `MS-DOS` clients. Development of a distributed application used by the financial Spanish authorities to access the real time Futures Market. My main activities in this project were the following:
- Development of `Unix` scripts and C code for the `Unix` systems running the market processes.
- Design and configuration of the network structure used to send the real-time market information.

GMS, Gesellschaft für Multilinguale   *Software Developer*
Systeme
Barcelona, Spain   **July 1997 - December 1997**
Development of `Visual C++` software for `NT`. Network Administrator (`Solaris`, `NT`). The project consisted on implementing language analysis algorithms.

LEP, Laboratoire d'Electronique Philips   *Telecom Research*
Paris, France   **April 1996 - August 1996**
Development of a Very high-speed Digital Subscriber Loop modem (VDSL technology); programming of a simulation software (using C++ in a `Solaris` environment) to test the performances of several designs. The main goal of the project was to evaluate the performances in terms of BER of several designs of equalizers intended for use in VDSL modems. (Detailed documentation is available on request).

Suplec, Ecole Superieure d'Electricite   *Telecom Research*
Paris, France   **November 1995 - March 1996**
Wireless communication project between two digital devices ; Hardware design and Assembler programming of the DSP TMS-320. (Detailed documentation is available on request)

Educational Qualifications	***Erasmus Grant*** in Ècole Supérieure d'Èlectricité (Supélec) Paris, France (1995 - 1996): Specialization in radio communications and telecom networks. GPS, TCP/IP.
	Telecommunications Engineering in the Politechnical University of Catalonia (ETSETB, UPC), Barcelona, Spain (1991 - 1995): Main subjects related with fundamental physics, digital electronics, radio communications, OSI layers, computer science, antennas, transmission techniques and telecom networks .
Engineering related skills	***Protocols / Standards***: ATM, TCP/IP Stack (familiar/experienced with UDP, TCP, IP, RIP, OSPF, BGP, ICMP, SLIP, ARP, RARP), PPP, Frame Relay, ISDN, xDSL, HDLC, V5.x, SS7, X.25, GSM, UMTS.
	Networks: Token Ring, Ethernet, OSI.
	Engineering Software: Matlab, AutoCad, Gnuplot.
	Embedded Systems: debugging tools (Lauterbach Trace 32, PowerTAP emulator, RiSC watch)
Computer Skills	***Programming Languages***: C, C++, Unix Scripts, Pascal, Assembler (PowerPC, 80x86, DSP TMS-320, Z80, 68000, RISC Alpha-DEC), Java, Lisp, Basic.
	Scripting Languages: awk, perl, Shell (bourne). ***Processor architectures***: Very good Power PC and derivatives (MPC850, MPC860, ...).
	Operating Systems: Very good Linux & Unix (Solaris).
	ASICs/layouts: familiar with testing, measurements, layout, schematics and data sheets.
	Distributed Computing: RPC, Corba.
	RTOS: OSE, VxWorks.
	Object Oriented: C++ & Java, UML.
	Project Engineering: IDE: KDevelop, Eclipse, Emacs. Source control packages - very good Clearcase.
	Others: vi, regular expressions, LaTeX, HTML.
Professional Interests	VOIP, Distributed computing, Embedded Systems, Telecom Networks Management / Planning, ATM Networks, TCP/IP.
Other Skills	***Languages***: fluent French, English and German. Spanish and Catalan mother tongues.
	Experience in customer relationship: presentations, live system demonstrations. Experience in training of medium sized groups.
	Installation/Administration: of Unix, Linux and NT.
	Web server administration (Apache).
	Integration of Unix and NT (Cygnus, Samba).
References	Available on request.