

Age Group: 1967

Education: Dipl. - Ing. (University) electronics (Master)
automation and control
IT - (μ C, μ P, DSP)

Languages: German (native speaker), English (fluent), French (extended basics), Romanian (born and 22 years in Romania)

IT - Experience: since 1998 (Engineering)

Availability: October 2011

Salary: EUR depending on duration, location and complexity

IT-Knowledge

Emphasis:

- **Integration and System testing** (embedded, automotive), Testspecification, HIL, **Diagnosis** (KWP2000, UDS, ODX/PDX), Error recognition, bus diagnosis (**CAN, FlexRay, MOST**).
- **Software development and integration** for technical applications (everything, especially with application of general mathematical or physical knowledge, electronics or automation), **embedded, real time** (assembler, emulator, oscilloscope, debugger-simulator) in **C (C++ and Assembler, modular and reusable, QAC, MISRA, etc.)**. **Control Engineering: simulation, control algorithms, identification**
- **Software development PC** (GUI, etc.) **Borland C++ builder, Microsoft Visual Studio C++, Microsoft Visual Studio .Net (2.0 / 3.0) and C#**
- **Test and evaluation:** SW testing (**black box**, but also grey and white, SW evaluation, system and integration testing), **HW tests** (EMC, chemical, mechanical), diagnosis, bus diagnosis (CAN, FlexRay, MOST)
- **Hardware development:** analogue sensor boards, μ C (just in/out), power circuits

Special Experience:

- Test: Software integration testing, system tests, test specification, test automation, requirements, customer interface.
- Programming: ECU μ C programming (C, assembler, embedded), QAC, modular, reusable. Windows application software: C++, C# for .Net, Programming: μ P system IMC05 in C under RMOS3 and BIOS
- Development of new filtering and control algorithms.
- Software Integration: Standard SW, AUTOSAR, reusable, modular.
- Diagnosis: bus diagnosis (CAN, FlexRay, MOST) SW integratin and adaptation of CAN and Diagnostic Layers, KWP2000, UDS, ODX(PDX).
- Identification and optimization (hardware - software): automation and control
- Sensor units (analogue), power circuits, Eagle 4.08

Operating Systems:

MSDOS 6.2

Windows 3.11, Windows 95, Windows NT 4.0, Windows 2000,
Windows 98, Windows XP

RMOS 3

OSEK, OSEK/time

Self made

Programming Languages:

C (ANSI and extended)

Assembler (see hardware)

C++

C# for .NET

Pascal, Turbo Pascal

HTML

Matlab, see also in projects

Python

Perl

Hardware:

μ C: 8048, 8051, 80537, 80C166, M3062, MSP430F – series
MPC/PPC - series, HC12 / S12X, NEC V850

DSP: 96000, 56001, dsPIC30F - series

μ P: 8088 (Intel)

microprocessor board: IMC05 (Siemens)

82526 CAN bus controller, MFR... - FlexRay controller

Software:

MS Office 97, **MS** Office 2000 und XP, **MS** Works
Matlab / Simulink / TargetLink
ControlDesk, AutomationDesk (dSpace)
INCA von ETAS
PADS, Eagle 4.08
Borland C++ Builder 5.0, Microsoft Visual Studio C++
CANape, Canalyzer, CANoe, Mostolyzer
Busdoctor for FlexRay and CAN (HW / SW)
TRACE32 for Lauterbach, different emulator / debugger - SW
MKS, CM Synergy, SCM Surround, **Serena Dimensions**,
VisualODX (In2Soft), Enterprize Architect (SPARX
Systems), DOORS, Innovator, DOORS Analyst, **see also in
projects**

Bus Systems:

Profibus PA
CAN - bus (incl. diagnosis KWP 2000 + UDS, integration)
FlexRay (incl. diagnosis KWP 2000 + UDS, integration)
LIN (only testing)
MOST - bus (incl. diagnosis KWP 2000 + UDS)

Projects

21. *SW Adaptations, Test result processing and error correction, Specification und Requirements, Diagnosis adaptations (SW UDS, ODX / PDX)*

Period: April 2011 - September 2011

Industry / automotive /

Activity: SW - Developer (Engineering), C, Adaptations

Contents: Bootloader and application SW after Test results from customer and the own integration testing department: Error detection and elimination. Communication with specification and requirements responsible intern und extern. Especially diagnosis and conformity to standards. ODX / PDX adaptations. CAPL programming.

Software: Windows XP Professional, Office 2007, CANoe, CANape, CANdito, SCCM Tool Serena Dimensions, VisualODX (In2Soft) Designer und Checker, VAS, VDT Tester (VW), Enterprize Architect (SPARX Systems).

Hardware: Parking assistance - Control Units, Oscilloscope, EDIC for VAS, CAN Card XL.

20. *SW Test for Control Devices: Dashboard, Multimedia (Navigation, Radio, SAM)*

Period: January 2011 - March 2011

Industry / automotive /

Activity: SW -Tester (Engineering), programming test cases in C#.

Contents: Testcase Development in C# for .Net. Integration- and system testing. Fieldtest und Data analysis. CAN tracing and test, routing, gateway. Card and Key pairing.

Software: Windows XP Professional, Office 2007, Memory Configurator and CanKingdom for Kvaser, CANoe, Visual Studio for .NET and C#, SCCM tool MKS.

Hardware: Kvaser CAN tracer, CANcase XL, HIL with all components of the system.

19. *Engine Control: ECU Software Adaptation for Preliminary Development*

Period: October 2010 - December 2010

Industry / automotive / SW - developer, MISRA, ANSI C, coding guidelines

Activity: (Engineering)

Contents: Adaptation of C code for a test run: removing several modules,

adding other modules, BUILD, test of functionality.

Software: Windows XP Professional, Office 2007, Compiler TC17xx, Eclipse build Environment with DD (data dictionary) and automatic a2I generation, Trace 32 debugger, INCA (ETAS), ControlDesk.

Hardware: Oscilloscope, power supplies, measurement instruments, TriCore TC17xx controller, Lauterbach debugger, AutoBox, other dSpace Simulation HW, ETK from ETAS

18 *Embedded C SW - Development and Test*

Period: January 2010 - September 2010

Industry / Activity: automotive / SW - developer, SW - architect, algorithms, automatic control (engineering)

Contents: SW - development in C for driving a BLDC motor, basic - software, CAN - bus, application, error detection, diagnosis, flash procedure. Activities: system identification and modeling, development of control algorithms, BLDC commutation, driving the motor with gear and actuator. Complete SW development of drivers, application, communication, error detection and diagnosis services. Test on the device. Requirements concretization from customer requirements, specification of the implementation. Commutation and positioning with MR sensor and sensorless commutation for a pump. Algorithms: Improvement for CORDIC algorithm -> 20% faster worst case and 50% in the average on arbitrary controller with same ALU and cycle time independent from DSP engine and fractional format, inclusive scaling and calibration in comparison to the optimized assembler implementation for the DSP engine and using fractional format from Microchip.

Software: SCCM tool MKS, Windows XP Professional, Office XP, Compiler, Debugger Microchip.

Hardware: Oscilloscope, power supplies, measurement instruments, Microchip dsPic30Fxxx Controller, MR sensor.

16 - 17 *SW - Integration Testing*

Period: March 2008 - February 2009 + end of (Mai) June 2009

Industry / Activity: automotive / tester (engineering),

Activity:

Contents: Integration test (Black Box / Grey Box tests) in the engine control area. Specification, test automation and testing. Windows executables through Visual C++ for automated oscilloscope access from AutomationDesk via TekVisa (Tektronix). Programming Matlab

functions for test evaluation. 17: Putting into service of successor, employee and user of the automated test environment developed by me in the project.

Software: SCCM tool Synergy, DOORS, Windows XP Professional, Office XP, AutomationDesk (dSpace), INCA (ETAS), ControlDesk (dSpace), Python, TRACE32, Perl, Microsoft Visual Studio C++, Matlab, etc.

Hardware: Oscilloscope, power sources, measurement instruments, dSpace HW, Lauterbach debugger, etc.

15 *Software - System Testing*

Period: July 2007 - February 2008,

Industry / automotive / tester (engineering)

Activity:

Contents: System test (Black Box tests) in the infotainment area. SW system with OSE and MOST - bus. MOST oriented testing.

Software: SCCM tool Synergy, DOORS, Windows XP Professional, Office XP, CANoe, OSE, CANalyzer, Optolyzer4MOST professional SW, customer - own SW-tools, SW for MOST Compliance Tester by GADV.

Hardware: Power PC, CANCase XL, Optolyzer diff. types, oscilloscope, power sources, measurement instruments, MOST Compliance Tester by GADV.

14 *Software - Integration And Test, CM Management*

Period: October - December 2006 (addition: January - March 2007, second addition: June 2007)

Industry / automotive / tester (engineering)

Activity:

Contents: SW integration of components and modules building a system, integration - tests (Grey Box tests) and management of the dynamic project software in the CM System. SW contained OSEK, CAN - bus + LIN bus. Comparison with and extension of SW - architecture, design, UML.

Software: SCCM tool MKS, Innovator, DOORS, DOORS Analyst, Multi - environment for NEC V850, Doxygen, Cygwin, Windows XP Professional, Office XP, CANoe, OSEK, ControlDesk from dSPACE. SW in C.

Hardware: NEC V850 FG2/FG3, CAN - interface, SBC, LED, keyboard, sensors etc., HIL (with CAN and LIN), CANCard X, CANCard XL, MiniCube Debug - interface, oscilloscope, etc.

13***Testing Electronic Devices: HW-, SW-, EMC- Tests etc.***

Period: May - July 2006
Industry / Railed vehicles, automotive / tester (engineering) telecommunication,
Activity: GPS, GSM
Contents: Test of functionality, error detection HW / SW and diff. EMC- and other tests. New test board.
Software: serial interface - terminals, Excel, Eagle
Hardware: Motorola microcontroller, MSP430, different sensor systems, GSM - modules (Motorola, Siemens, Nokia), GPS modules und antenna, DC / DC - converter, RS232

11 + 12***Software - Integration, -Adaptation And Test***

Period: January - August 2005, September - March 2006
Industry / automotive (*car manufacturer*), activity: developer (engineering)
Activity:
Contents: Adapting different software packages to another and to certain HW - platforms, creating new functionalities, placing into operation of bus systems CAN and FlexRay, placing into operation and improvement of diagnosis and error management, working with databases
Software: Several C-Compiler for Motorola microcontroller, Windows XP Professional, CANape, Canalyzer, CAN - bus, FlexRay - bus systems, OSEK, OSEK/time, CM Synergy, TargetLink (training), Best2 Compiler EDIABAS
Hardware: Motorola microcontroller diff. series, EEPROM: external, serial, internal; MFR - components, MOSFET, A/D - converter, PWM, controls, different sensor systems

10***Controller And PC Software Development And Tests***

Period: August 2004 - December 2004
Industry / medical engineering / automotive (Electronic devices for different purposes, also automotive); developer (engineering)
Activity:
Contents: Writing software in C for the MSP430F... TI microcontroller: driving a sensor system, gathering measurement values, processing of measurement data, error detection, functional mode switch, communication through serial interface with the PC, writing a PC - software in C++ with Borland C++ Builder 5.0: user interface, communication with sensor board through COMx, display for received data, automatic communication modes with graphical data representation and storage.

Software: IAR C-compiler, assembler for MSP430F..., Borland C++ Builder 5.0, Windows 98, Windows XP Professional

Hardware: TI MSP430F..., converter serial interface, PC, Schmitt - Trigger, MOSFET, sensors

9 *Development And Simulation of Control- And Filter Algorithms*

Period: January 2004 - April 2004

Industry / automotive / developer (engineering)

Activity:

Contents: Software development for a brushless dc motor control, 5 new control algorithms (1 no standard method, not available in books), new signal filtering algorithm. Simulation in Excel. Implementation in C and Assembler. New method for quick fractional calculations (not from books).

Software: C, Assembler for DSPic3060..., Excel

Hardware: DSPic3060..., peripherals

7 + 8 *Hard-, Software And Endurance Tests*

Period: March 2003 - July 2003 and August 2003 - November 2003 (similar activities on two different devices)

Industry / pharmaceutical / evaluation, tester (engineering)

Activity:

Contents: Evaluation hard- / software of an electronic device: new test specifications, software for data acquisition and storage and statistical evaluation of the measurement data, endurance tests

Software: Word 2000, Excel 2000, VBA for Excel 2000

Hardware: electronic devices for medical diagnosis

6 *Adaptation And Expansion Of Software In Safety Area*

Period: August 2002 - October 2002

Industry / producer automatic self riveting tools / developer (engineering)

Activity:

Contents: changes in their own software for access in the operation menu when protection circuit is open, with regards to the software and hardware implemented safety directions

Software: C, BIOS for IMC05 from Siemens, RMOS3

Hardware: IMC05 μ P system with 3 communication channels (CAN or Interbus S, RS232, Ethernet), safety hardware, GTO power control

5 *SW Evaluation And Employee Training***Period:** July 2002**Industry /** producer board - computer and handy interfaces for cars /**Activity:** evaluation, training**Contents:** consulting, estimation of the written software, documentation, tests**Software:** C**Hardware:** PIC controller (16 bit), RS232**4** *HW Development Analogue***Period:** September 2001 - Mai 2002**Industry /** engineering office, hard- and software development / developer**Activity:** (engineering)**Contents:** Development of switching and not switching power supplies for a complex electronic circuit with many voltage levels from the 230V / 50 Hz supply and of two analogue sensor systems for the same device.

Extension of an existing homepage.

Software: Eagle 4.08 (hardware development), HTML (direct language commands and Office97)**Hardware:** bipolar and FET transistors, FET - Ops, different semiconductor sensors, diodes, timers, special ICs, passive electronic components**3** *Specifications, Effort Estimation, Planning, HW - Development And Tests***Period:** September 2000 - September 2001**Industry /** Electronic devices, own / management, sourcing, development**Activity:****Contents:** Development of an electronic door system, which should be produced together with partners (reason: money and market). Unfortunately my partners dropped the idea. More on www.henatel.de.**Software:** Matlab, DMM Profilab, Bauelemente - Lager 200 1.20, TARGET! 8.1.2.75, WIN - Elektronik 2.05 (simulation-tool)**Hardware:** FET OP, FET and bipolar transistors, logic circuits, thermistors, IR - transistors, IR - diodes, timer, ISD and other special chips, LED, photo - transistors, etc.

2 *SW Development And Porting***Period:** March 1999 - end march 2000**Industry /** mechanical engineering / developer (engineering)**Activity:****Contents:** Rewriting existing software for a new microcontroller (M3062), development of a new control strategy for a mechanical device, connection of the system to a Profibus, programming the communication through I²C Bus (with EEPROM). Programming in C and in assembler (!). In/Out: LCD, keyboard, Profibus PA, RS232 (Diagnoses).**Software:** simulator, emulator software, debugger M3062**Hardware:** M3062 μ C, emulator, measurement devices, PC**1** *Comparison Of Control Algorithms On A Real System***Period:** July 1998 - February 1999**Industry /** Institute**Activity:****Contents:** Identification and optimisation of non-linear systems. For the implementation of the control algorithms and for the real time in/out of the mechanical system I used **Matlab / Simulink and Real - Time - Workshop (RTW) and Real - Time - Interface (RTI)** from dSpace (communication using a DSP).**Software:** **Matlab / Simulink and Real - Time - Workshop (RTW) and Real - Time - Interface (RTI)** (dSpace)**Hardware:** PC, DSP - DS1102: dSpace, mechanical device