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Projectlist BaSystem Martin Raabe

This list contains all projects sorted by topics and customers:

- I. Long Term Development Projects**
- II. Training Projects**
- III. Short Term Development Projects**
- IV. Complex Consulting**

Status: July 8th, 2014

I. Long Term Development Projects

1. BaSystem Martin Raabe, Bechenheim, own engagement

Co development of the knowledge management and collaboration system „TWiki“

Details: Perl, HTML, Open Source Community

Duration: 2002 until today – 2 hours per week – total ca. 400 hours

Co development of the knowledge management and collaboration system „FOSWIKI“

Details: Perl, HTML, Open Source Community

Duration: October 2008 until today – 2 hours per week – total ca. 180 hours

2. IBM Deutschland, Mainz

Introduction of a RTOS and BSP abstraction layer for an already implemented telemetric application for trucks

Details: pSOSystem ARM C/C++

Duration: 10 months in 2003-2004 – 16 hours per week – total ca. 750 hours

3. Siemens PSE, Wien

Evaluation of an alternative compiler environment for the ARM SDT 2.5.1 for pSOSystem

Details: Diab 5.2, RVCS 2.1 ARM C/C++

Duration: 3 months in 2004 – 20 hours per week – total ca. 300 hours

Evaluation, selection and introduction of a debugging environment for JTAG ARM with pSOS awareness

Details: Trace32 ARM C/C++

Duration: 3 months in 2004 – 20 hours per week – total ca. 300 hours

Design, implementation and test of a memory manager for a telemetric device for trucks

Details: pSOSystem ARM C/C++

Duration: 3 months in 2004-2005 – 12 hours per week – total ca. 160 hours

4. IBM, Mainz

Consulting for and adaptation of the real time operating system embOS and of the file system embFile for a telemetric device for cars

Details: CPU Philips (NXP) LPC2292/ARM 7

Duration: 3 months in 2006 – 12 hours per week – total ca. 160 hours

Evaluation of the real time operating system smxOS and of the file system smxFile for a telemetric device for cars

Details: CPU Philips (NXP) LPC2292/ARM 7

Duration: 3 months in 2006 – 12 hours per week – total ca. 160 hours

5. Tektronix, Cambridge, UK

Adaptation of a complex embedded C++ application to a new version of C++ Compiler/ STL library

Details: Wind River Compiler PowerPC 5.5, Nucleus 1.1.2, Lauterbach Trace32

Duration: 4 months in 2007 – 8 hours per week – total ca. 75 hours

6. Sirona Dental – X-Ray, Bensheim

Design, implementation and test of a network protocol for a 2D X-Ray device for dentists

Details: VxWorks PowerPC Diab 5.4 C++ / Win32 Visual Studio 6 C++

Duration: 4 years in 2003-2005 – 32 hours per week – total ca. 2900 hours
(four days per week: two days on site – two days remote)

Further development, maintenance and test of a network protocol for a 3D X-Ray device for dentists

Details: VxWorks PowerPC Diab 5.5 C++ / Win32 Visual Studio 6 C++

Duration: 18 months in 2005-2006 – 32 hours per week – total ca. 2800 hours
(four days per week: two days on site – two days remote)

Further development, maintenance and test of a network protocol for an intra oral X-Ray device for dentists

Details: VxWorks PowerPC Diab 5.4 C++ / Win32 Visual Studio 6 C++

Duration: 2 years in 2006-2008 – 32 hours per week – total ca. 1300 hours
(four days per week: two days on site – two days remote)

7. Sirona Dental – Super Sonic, Bensheim

Creation and maintenance of a style guide – including the definition of the software development environment - for C programmers for medical devices

Details: ATMega128, Eclipse, Subversion

Duration: 4 months in 2008 – total ca. 240 hours

Team size: 5 developers of embedded hardware and software

8. Bombardier Transportation, Mannheim

Development, maintenance and test of data acquisition software (onboard data base) for trains - multi platform project for: VxWorks 5.4, VxWorks 6.x, µC-Linux, Linux, Wind River Linux, Windows – IA32, PowerPC, ARM, 68K.

Details: C/C++, release responsibility

Duration: 24 months in 2008-2010 – 35 hours per week – total ca. 1300 hours
(four days per week: two days on site – two days remote)

Handling of review and release meetings and processes of software (data base) for trains - onboard firmware and PC software - multi platform project for: VxWorks 5.4, VxWorks 6.x, μ C-Linux, Linux, Wind River Linux, Windows – IA32, PowerPC, ARM, 68K.

Details: release responsibility

Duration: 2 months in 2011 – 20 hours per week – total ca. 130 hours
(two days per week: one day on site – one day remote)

9. DePuySynthes, Innomedic, Rheinsheim

Development and migration PC software (Calculation of 3D visualization of medical systems from X-ray images)

Visual Studio 2008 and 2012, C++ (unmanaged and managed code) , C#, DirectX, OpenGL, vtk, Qt, .Net, WCF.

Details: Porting of an algorithm incl. GUI from C#/DirectX to C++/Qt/OpenGL/vtk and C++ (unmanaged and managed code)/.Net/WCF/Unity

Duration: 45 months in 2011 bis 2014 – 32 hours per week
(four days per week: zero to one day on site – three to four days remote)

II. Training Projects

Lectureship for the Multimedia-Akademie Mainz e.V.:

Professional training class networking

Details: Basics of networking for web developers

Customer: Multimedia-Akademie Mainz e.V.

Duration: 4 days in 2003

Participants: 14

Training of a software development team in English language:

SNiFF+ - user's and administrator's training

Details: Interdisciplinary software development in the team

Customer: Wind River Germany, Ismaning, for the customer Siemens, Birmingham

Duration: 3 days in 2005

Participants: 12 embedded software developers

Training of a software development team:

SNiFF+ - user's and administrator's training

Details: New paradigms of the software development in the team

Customer: Sirona Dental Systems, Bensheim

Duration: 2 days in 2005

Participants: 10 developers of embedded software

Training of a group of developers of hardware related software in English language:

Tips and Pitfalls in the Software-Development of 16-bit MCUs

Details: Renesas M16C29, R8C1B

Customer: Neueda, Bristol, UK, for the customer Kostal, Ireland

Duration: 2.5 days in 2007

Participants: 8 developers of embedded hardware and software

Training of developers of hardware related software:

Introduction into UML Embedded

Details: UML Tools for deeply embedded device software

Customer: ml-consulting, Cologne, for a manufacturer of building automation equipment

Duration: 1 day in 2008

Participants: 12 hardware and 12 software developers of deeply embedded devices

Training of developers of hardware related software:

Introduction into Real Time Operating Systems

Details: Software for deeply embedded devices, FreeRTOS, PIC, ARM, IA32, PowerPC
Customer: ml-consulting, Cologne, for a manufacturer of building automation equipment
Duration: 1 day in 2008
Participants: 12 hardware and 12 software developers of deeply embedded devices

Training and consulting of a complete development department for hardware related software:

C-Programming of micro controllers – Basic and advanced classes

Details: PIC, ARM, IA32, PowerPC, department size 36 persons
Customer: ml-consulting, Cologne, for a manufacturer of building automation equipment
Duration: 5 times 2 days in 2008 + 5 days consulting
Participants: 12 hardware and 12 software developers of deeply embedded devices

Training of the version control system CVS for members of different teams:

User's and administrator's training

Details: Development process, version control system, team work
Customer: Moog, Böblingen
Duration: 2 days in 2008
Participants: 10 software developers und testers of embedded devices

Lectureship of the University of Applied Science Mannheim, for the Summer School 2008

Introduction into Real Time Operating Systems.

Details: PowerPoint slides, interactive exercises, source code examples FreeRTOS
Customer: University of Applied Science Mannheim
Duration: 2 days in 2008
Participants: 12 students

Lectureship of the University of Applied Science Mannheim, for the Summer School 2009

Introduction into Real Time Operating Systems and Leadership.

Details: PowerPoint slides, interactive exercises, source code examples FreeRTOS
Customer: University of Applied Science Mannheim
Duration: 2 days in 2009
Participants: 12 students

Lectureship of the University of Applied Science Mannheim, for the Summer School 2010

Introduction into Non-Violent Communication and Leadership.

Details: Multimedia material, interactive team games
Customer: University of Applied Science Mannheim
Duration: 2 days in 2010
Participants: 12 students

Lectureship of the University of Applied Science, Mannheim, for the Summer School 2010

Introduction into Real Time Operating Systems and Leadership.

Details: PowerPoint slides, interactive exercises, source code examples FreeRTOS
Customer: University of Applied Science Mannheim
Duration: 2 days in 2010
Participants: 12 students

**Teacher for the University of Applied Science Bingen
Industrial Automation class for Bachelor of Electrical Engineering**

Details: Lecture and exercises
Customer: University of Applied Science Bingen
Duration: one semester (6 hours per week) in 2012, 2013 and 2014
Participants: 33 students

**Teacher for the University of Applied Science Bingen
Microprocessor Technology class for Bachelor of Electrical Engineering**

Details: Lecture and exercises
Customer: University of Applied Science Bingen
Duration: one semester (6 hours per week) in 2012 and 2013
Participants: 33 students

**Teacher for the University of Applied Science Bingen
Real Time Operating Systems class for Bachelor of Computer Science**

Details: Lecture and exercises
Customer: University of Applied Science Bingen
Duration: one semester (4 hours per week) in 2014
Participants: 12 students

Beginner's workshop Qt for embedded devices in English language

Details: Lecture and exercises
Customer: Automation company in Switzerland
Duration: four days in 2014
Participants: 3 students (one from Thailand and two from China)

III. Short Term Development Projects

Development of a Bus Trap Error Handler for OS-9000/68040

Details: PowerPC, Interrupt Vector Table
Customer: OS-9 user, Hungary
Duration: 2 days in 2003

Introduction into the knowledge management tool „TWiki“ for a software development project with 20 team members

Details: Wiki basics, open document management, team work
Customer: Sirona Dental Systems, Bensheim
Duration: 3 months in 2003 – 2 hours per week

Integration of the Diab Compiler V5.0 into pRISM+ 2.0 PowerPC

Details: Extension of a deprecated development environment
Customer: Wind River Germany, Ismaning, for a customer in Norway
Duration: 10 days in 2004

Development of a subversion adaptor for SNIFF+ 4.2

Details: Extension of an deprecated development environment by an adaptor for the version control system svn
Customer: Kieback & Peter, Berlin
Duration: 80 hours in 2008

Extension and maintenance of a PC application for the 3D handling of a cube and a tetrahedron

Details: Extension and maintenance of a Windows application (GUI, GPL licensed, OpenGL, Qt 4.6) for 3D programming of a LED cube and of a LED-tetrahedron including the construction of the tetrahedron and layout. The application has been ported to Linux.

Customer: BaSystem Martin Raabe, Bechenheim

Duration: 250 hours in 2010

IV. Complex Consulting

Support of the development of drivers of PCI devices (PowerPC) for pSOSystem and VxWorks.

Details: Debugging, concept, architecture and design of device drivers
Customer: Bruker Daltronik, Bremen
Duration: 3 days in 2003

Introduction into the knowledge management system „TWiki“for a small software development company.

Details: Project documentation, collaboration of the members of distributed teams
Customer: uib GmbH, Mainz
Duration: 10 days in 2004

Introduction into the version control system CVS for a small software development company.

Details: Team work, project planning, project controlling, version control
Customer: uib GmbH, Mainz
Duration: 10 days in 2004

Support for the introduction of a new real time operating system for a mobile medical device.

Details: Migration from pSOSystem to VxWorks
Customer: Dräger Medical, Lübeck
Duration: 3 days in 2005

“Fire fighting” for pSOSystem 2.3 PowerPC, network interface card driver, reboot: Analysis and solving of the problem.

Details: Error investigation without source code, 4 error situations per year, highest problem solving pressure, exclusively executed via phone and email
Customer: Siemens, Bern, CH
Duration: 8 days in 2005 (across 8 months – total 50 hours)

Support of the migration of a real time operating system of a mobile medical device.

Details: Migration of boot time, configuration and device drivers from pSOSystem x86 2.1 to 2.5, exclusively executed via phone and email
Customer: Versamed, Israel (GE Healthcare)
Duration: 400 hours in 2002-2006

Adaptation of the software development environment SNiFF+ for a team of 20 members. Migration to Eclipse/SVN/CVS.

Details: Use of development tools in distributed teams
Customer: Robert Bosch, Salzgitter
Duration: 4 days in 2008

“Fire fighting” for pSOSystem 2.3 PowerPC, network pNA+ memory leak problem: Analysis and solving of the problem.

Details: Error investigation without source code, highest problem solving pressure
Customer: Wind River Deutschland, Ismaning, for automotive customer, Stuttgart
Duration: 5 days in 2008