

Profile

- Name: Thomas Michaelis
- Mail: Tom.Michaelis@SysToMath.com
- Web: <http://www.SysToMath.com>
- Residence: Munich, Germany
- Year of birth: 1952

Activity:

- Software development
- Emphases:
 - System software in C/C++ (Unix, Linux, Win32, VxWorks)
 - Real time software (Embedded systems)
 - Generic metaprogramming

Education:

- Study of electro-technics at TU Munich till pre-degree
- Study of mathematics at University of Regensburg
- Certificate: Advanced degree in mathematics

Foreign Languages:

- English: Spoken and written
- French: Basic knowledge

Hardware:

- Real time systems: Motorola 680xx and PowerPC controller MPC805 based
- Mikrocontroller: 8051, MPC805
- Motorola: MC680xx, MPC805
- PC: profound HW knowledge
- SNI RM-Series: RM400

Operating Systems:

- Real time systems: VxWorks
- SUN OS, Solaris
- Unix: SCO, AIX, Ultrix, Digital Unix, SunOS, Reliant Unix, profound system knowledge, device driver
- Linux: Debian, SuSE (Kernel 2.4.x, 2.6.x)
- VxWorks: 5.2, 5.3, 5.4, profound system knowledge, BSP
- Windows: 3.x, 95/98, NT, 2000, XP, profound sytem knowledge, platform SDK, DDK

Programming Languages:

- Assembler: Intel 80x86, Motorola 680xx
- C: MS Visual C, National Instruments LabWindows/CVI, Unix cc, GNU gcc
- C++: MS Visual C++, Unix CC, GNU g++, profound knowledge of the standard ISO/IEC 14882: 2003
- Clipper
- Make: Imake, GNU-Make
- Script languages: sed, m4, awk, XML
- Shell: sh, ksh, bash, csh
- yacc/lex
- Postscript
- LaTeX

Data Base Systems:

- Informix: 7.30
- Berkeley DB
- xBase: Clipper

Data Communication:

- TCP/IP: developed Unix Network driver
- Windows network: Winsock

Produkts/Standards/Experiences:

Experiences in:

- VxWorks (implemented System V Message Queues, adapted BSP, developed xDSL modem device driver)
- Micro controller based real time software development for embedded systems (developed security critical flight guidance software)
- Linux, Unix and Win32 system programming, device driver development (developed Unix network driver)
- Linux und Unix system administration and network management
- Generic metaprogramming (Experience with Boost.Mpl, Boost.Spirit)

Methods:

- UML
- Structured Analysis/Design
- V-Model
- Objekt orientented design/programming
- Functional programming
- Generic metaprogramming

International Standards:

- Posix ISO/IEC 9945-1: 1996
- C++ ISO/IEC 14882: 2003
- C ISO/IEC 9899: 1999

W3C Standards:

- XML, XPath, XPointer, XLink und XSLT
- XML Schema
- XML Information Set, XML Namespaces, XML DOM

Microsoft Standards:

- MFC, ATL
- COM, DCOM, .NET
- Platform SDK & DDK for Windows NT/2000/XP

Tools:

- IBM Rational ClearCase
- Subversion
- Doxygen
- WindRiver Tornado
- Microsoft Visual Studio
- GNU Debugger Gdb
- GNU Toolchain
- Diverse ICE systems and logic analyzers
- Trolltech Qt Library
- Boost C++ Libraries

Industrial Sectors:

- Aerospace: Security critical flight guidance software
- Automation: Machine control
- Communication: Broadband access, UMTS
- Electronics: B2B, TFT controller

Projects:

● 1987 - 2007

Company SysToMath
Project Portable C/C++ Libraries and Tools:
Design, implementation and maintenance of portable C/C++ source code libraries and tools (see <http://www.SysToMath.com>), whose license encourages both commercial and non-commercial use.
Environment Win32, Linux, C/C++, Boost C++ libraries, C++ standard library.

● 07.2007 - 09.2007

Company Distec GmbH
Project Artista:
Design, implementation and integration of an Artista NetBus Linux daemon.
Environment Debian Linux, C++, Boost.Asio library, C++ standard library.

● 01.2007 - 06.2007

Company Distec GmbH
Project Artista:
● Design, implementation, test and maintenance of the ArtistaSDK (software development kit) for Win32 und Linux for the Distec Artista USB and ArtistaNET TFT controller family.
● Design and implementation of the ArtistaSDK application ArtistaControlCenter
Environment Windows XP with Microsoft Visual Studio 2005 as well as Debian Linux with g++, programming language C++, Trolltech Qt library, C++ standard library, Boost C++ libraries.

● 04.2004 - 12.2006

Company Siemens AG COM
Projekt UMTS CHC96:
Design, implementation, test and initiation of SW tools for integration and test of the CHC96 channel card.
Environment Windows XP with Microsoft Visual Studio 2003 .NET, programming language C++, used libraries: C++ standard library, Boost C++ libraries.

● 10.2002 - 12.2003

Company Siemens AG ICN
Project XpressLink V3:
Design, implementation, test and initiation of a performance test interface for all XpressLink xDSL DSLAM line cards.
Environment
● PowerPC Controller MPC850 based real time target system under VxWorks, WindRiver Tornado development environment, programming language C++
● National Instruments LabWindows/CVI under Win32, programming language C

● **04.2000 - 09.2002**

Company Siemens AG ICN
Projekt XpressLink V3:
Design, implementation, test and initiation of a device driver for a 16-line SDSL and SHDSL DSLAM line card.
Environment PowerPC Controller MPC805 based real time target system under VxWorks, WindRiver Tornado development environment, programming language C++

● **1998 - 03.2000**

Company Siemens AG SBS
Project CIS (Cargo Information System):

- Planning, acquisition, installation and support of the system platform for development, test and integration.
- Choice and implementation as well as maintenance of SW tools.

Environment RM400, Reliant Unix 5.45, Informix 7.30

● **1997 - 1998**

Company H.P. Design
Project Video sensor CamView-Security:
System programming, design and implementation of the MMI, optimization of the algorithms used.
Environment WIN95/NT industrial computers, C++, MFC, STL

● **1995 - 1997**

Company Dasa Industrieelektronik
Projekt Machine control system MK21:
VxWorks system programming of the Motorola 68040 based real time PCI controller boards and Unix system programming of the host computers.

- Adaption of the VxWorks BSP (board support package)
- Design, implementation, integration and test of a TCP/IP network driver with the backplane bus as transport medium for the Unix systems AIX and Linux at the Unix end and VxWorks at the real time system end.
- Implementation, integration and test of the System V message queue mechanism under VxWorks.

Environment Unix workstation (PowerPC/AIX and Intel/Linux), Motorola 68040 based real time system under VxWorks, programming languages C/C++

● **1994 - 1997**

Company Dasa Industrieelektronik
Projekt Machine control system MK21:
Direction of the Unix system administration and of the network management for the whole company at two sites (Ottobrunn, Berlin)
Environment Unix mainframes, Unix workstations

● **1992 - 1994**

Company Dasa
Projekt Definition and development of a MIL-Bus driver for the hardware components of an anti-aircraft system.
Environment Unix development environment, PC based target system emulation, Motorola 680xx based target hardware components, programming language C

● 1990 - 1992

Company MBB
Project Definition and development of a test environment for mission software modules of the guidance and control unit of an antiaircraft system.
Environment Unix development environment, Motorola 68020 based real time target system, programming language C, Unix tools

● 1990 - 1994

Company MBB/Dasa
Project Unix and PC system administration and network management of the department of flight guidance software development
Environment Unix mainframes, Unix workstations, desktop PCs

● 1987 - 1989

Company MBB
Project Design, implementation, test and initiation of a Unix based development system (macro assembler, linker, loader) for real time target system equipped with an AMD bitslice processor and a project specific instruction set.
Environment Unix development system, programming language C, lex, yacc

● 1985 - 1986

Company MBB
Project Software quality assurance of the mission software of a dispenser system
Environment Unix development system, Motorola 68000 based real time target system, programming language C