Industrial Work

Dipl.-Ing.(FH) Frank Landgraf

FREELANCE WORK

1/2023-12/2023	**Software Architect/ Coach ASPICE, Architecture and Requirements** *Elmos Semiconductor SE / Area21 Software GmbH* - software architecture micro controller startup code - Training & participation on Requirements creation for micro controller startup code - Training & participation in implementation of Unified Startup-Code - reviews of Requirements, Detailed Design, implementation - Detailed Design and C development on a bare metal system - Mentoring and Coaching the development team on ASPICE, ISO26262, software architecture and requirements *tools and technologies:* *ARM Cortex-M, C, ARM-Assembler, Enterprise Architect, Polarion, ISO26262, ASPICE, Bare Metal*
7/2022-3/2023	**Senior Software Architect** *continental AG* - software architecture for time synchronisation of a multicore system (SoC) over ethernet and CAN - review System architecture documents and requirements *tools and technologies:* *Enterprise Architect, DOORS, Doxygen, plantuml, ISO26262, PTP, AUTOSAR classic, AUTOSAR Adaptive/QNX, SafeRTOS, C++, C*
10/2021-10/2022	**Developer/ Consultant** *MOIA GmbH* - embedded development with C++ 20 - telemetry component for MQTT and AWS Backend - Some/IP component, design and implementation with Franca IDL and common API - bridging Some/IP to ROS2 - bridging ROS2 to MQTT - simulation of Some/IP vehicle API - *tools and technologies:*

ROS2, APEX AI, AWS-SDK, CMake, C++ 20, SomeIP, Franca IDL, Common API

4/2021-12/2021   **Software Architect**
CARIAD SE - design and implement software architecture with AUTOSAR Classic and Adaptive, SWC Extended Charging

tools and technologies:
Enterprise Architect, DOORS, CMake, C++ , C, SomeIP, BAP

10/2019-4/2021   **Software Architect**
Schaeffler Technologies AG & Co. KG

development of bare metal Sensor firmware in C

writing and preparing Scrum stories for developers

writing software requirements and software architecture for QM and ASIL parts of software

Review of System, Software Architecture Documentation and Code
tools and technologies:
AURIX, Tasking, C,
Enterprise Architect, PTC Integrity, Python, Scrum

7/2019-9/2019   **development and software integration**
Behr-Hella Thermocontrol GmbH

AUTOSAR Bsw and SWC Configuration

debugging, integration support and bugfixing in C source-code
tools and technologies:
Greenhills Multi 5/Renesas, Rational DOORS, make, C,
Vector DaVinci, AUTOSAR, PTC Integrity

1/2018-9/2019   **Software Architect**
Valeo Peiker acustic GmbH & Co. KG

service oriented software architecture for telematics control unit platform

review of system architecture documents and requirements

creation of templates for software archtecture documents

architecture, controling of implementation, code review for services GNSS, mobile network registration and lifecycle management

Franca IDL export from Enterprise Architekt, definition of service APIs with FrancaIDL and commonAPI Some/IP Backend

C++ - reference implementations for POSIX IPC mechanisms

tools and technologies:
Enterprise Architekt, Doors, CoreALM, yocto-linux, C++11, cmake, FrancaIDL, Some/IP, POSIX IPC

1/2017-12/2017   **Developer**
VW Infotainment GmbH

security related development for automotive applications

Bluetooth LE - conceptioning of cryptographic procedures

creation and review of security relevant concepts for the usage of mobile phones with Bluetooth LE

creation, extension and review of specifications in this area

code review of security relevant program code (Java, Secure Element, JavaCard-Applet Code) and Trusted Execution Environment Application (C)

extension of a pre-existing product demonstration(python, bluez, Linux)

tools and technologies:
Bluetooth LE, bluez, Python, C, Android

2/2016-12/2016	**Software Architect/ Consulting Engineer** *Schaeffler Engineering GmbH* - support on implementation of an AUTOSAR conform software architecture - implementing Modules with UML and IBM Rhapsody - adaption/ reconfiguration Can-MCAL - organisation and implementation of code reviews - review (TSC-SRS) and adaption of safety-relevant requirements - programming IBM Rhapsody Plugins (Java) *tools and technologies:* *Greenhills Multi 5/Renesas, Rational Rhapsody, Rational Rhapsody Gateway, Rational DOORS, IBM Change, IBM Synergy, make, C, AUTOSAR, Tresos Studio/ System Desk, Lauterbach Trace32, QAC/PRQA*
3/2015 - 1/2016	**Software Architect/ Consulting Engineer** *Behr-Hella Thermocontrol GmbH* - analysis of the existent software architecture (partially AUTOSAR based) - definition and documentation of the target software Architecture with UML and Rhapsody - development process definition and integration of interfaces or gateways to other tools (Rhapsody Gateway to DOORS - Model and Requirement Exchange, Vector DaVinci - as "gateway" to AUTOSAR) - development of several IBM Rhapsody Plugins (Java) for Rhapsody-Plugin-(XML-files) and linking Requirements to UML-Model Elements - tool programming in in C++ - debugging and bugfixes in sourcecode (C) *used tools and technologies:* *Greenhills Multi 5/Renesas, Rational Rhapsody, Rational Rhapsody Gateway, Rational DOORS, make, C++, C, java, Eclipse, Vector DaVinci, Vector Geany* *AUTOSAR, PTC Integrity*
4/2012-3/2015	**Consultant/ Senior Developer** *Citech Components AG* - Development of realtime firmware components for cash dispensers and ATMs (sensor communication protocols, UART-communication, can protocols for master and slave controller) with C/ C++ for ARM Cortex microcontroller (STM32) - UML Modeling for firmware Components in the domains of mechatronics, workflow (Statecharts) und accounting transactions *used tools and technologies:* *Greenhills Multi 5/ ARM, ThreadX, STM32/ ARM Cortex M, make, cmake, cxxtest, google-protobuf-c, Rhapsody*

(C/C++/UML), Eclipse, Visual Studio, MKS Integrity

5/2011-3/2012	**Consultant/ Developer**

dSpace GmbH
- C and C++ Component and Test Development for
Hardware-In-The-Loop-Simulators(HIL) on embedded x86
and PowerPC platforms
- testscripts in python
- Test and extension of an a2l-parser module in C#
used tools and technologies:
QNX, gcc, make, Eclipse, Visual Studio, MKS Integrity

since 11/2010	**All-Hands-Person**

self-employed
- Development of Apps for iOS (Chronolog.app and YiJing
Daily.app are in the app store)
- actual development: porting Chronolog.app to Android
and Desktop
used tools and technologies:
*ObjectiveC, XCode, CoreData, git, CoreAnimation, AFNet-
working*

9/2007-3/2011	**Senior Developer**

Wincor Nixdorf International GmbH
firmware development for mechatronic components
- application development with C++/ UML
- Tools for system testing, using CORBA Interfaces in Java
- PC-Simulation of Firmware and mechatronic Components
used tools and technologies:
*Rhapsody (C/C++/UML), Greenhills Multi, ThreadX, MKS
Integrity, Visual Studio, Eclipse, make*

1/2007 - 7/2007	**Developer**

Funkwerk GmbH Dabendorf
Development hands-free kit
- application development in C for the Blackfin-DSP with
main emphasis on DSP/ Audiomanagement and Software-
update
- PC-Tool for Firmware-Update (C++/ Visual Studio)
- creation and adaption of gnu-make based build-system
- launching and administrating bugtracking system Trac
used tools and technologies:
*blackfin/ Visual DSP, Visual Studio, MFC, gnu-make, Trac,
Eclipse*

5/2006-12/2006	**Software integrator, Developer**

Software integration und development for car infotainment
systems
- creating and adapting makefiles (gnu-make) and perl scripts,
cvs- and Subversion administration

- pc-Lint/splint makefile integration, compiler specific adaptions und reporting
- introducing unit-tests with cunit
- setup of a continuous integration server
- development tasks in projects (C, asm)
used tools:
make, perl, svn, cvs, pc-lint, splint, cunit, blackfin / Visual DSP, Visual Studio, mitsubishi/ renesas M32C

11/2005-5/2006	**Developer**

Development for a web based CTI- (Computer Telephone Integration) application
- Swing installer user interface
- Cross browser webinterface development with HTML, CSS and JavaScript(AJAX)
used Tools and technologies:
Java, ant, subversion, tomcat, mysql, Eclipse, cruise-control

6/2004 - 7/2005	**Developer**

Software development in a distributed process control environment for the glassmaking industry
- Debugging and Redesign of the multithreaded Swing and RMI part
- serial Interface (RS 485) to an external controller with the Java-Communications-API
used tools and technologies:
Java, ant, cvs, multithreaded Swing, RMI, JDBC und JFreeReports

3/2004	**Consultant and Developer**

Adaption of an Autocad-application for tank and plant builders to Autocad 2004 (from ACAD R14)

1/2004 - 2/2004	**Developer**

Data acquisition and (manual or semi–automatic) creation of shift schedules
used tools:
frontend made with Visual C and MFC,
mysql database connected per ODBC

SYMMEDIA GMBH

6/2003 - 12/2003	**Senior Developer ("Verantwortlicher Entwickler")**
	Application/ applet for calculation of smoke and heat exhaust venting systems according to DIN 18232
	used tools:
	Java, Swing, XML, XSLT, XSLT:FO for print outputs,
	Installshield resp. Inno Setup Compiler

6/2003 - 7/2003	**Architect and Senior Developer ("Verantwortlicher Entwickler")**
	prototypical integration of an embedded system for remote customer service into an existent customer software architecture
	used tools:
	Java, Visual C, netDaCs,
	C programming, control of the Java-middleware from a DLL

1/2002 - 12/2003	**Architect and Developer**
	Embedded Online Services - reference architecture for remote performed services in manufacturing environments
	design, development and extensive design-documentation (architectural description, UML-Design, API-documentation, developer and user guide)
	used tools:
	UML and Together, Java, Tomcat, Servlet, JSP , C/ C++ for JNI-Interfaces, InstallShield

9/2000 - 12/2003	**Senior Developer**
	client-/ server application SP/1 - core product of symmedia GmbH,
	a Java programmed, modular client/ server software for remote access (support, maintenance) to machines and plants.
	used tools:
	UML(Together), Java, Swing, cvs, ant, c/server programming (sockets, proprietary protocol multiplexing through 1 port), database design, SQL, JDBC, mysql, Oracle 8, MS-SQL-Server

9/2000 - 12/2003	**Administrator**
	version control and configuration management
	user training, installation and administration of the server and clients
	used tools:
	cvs, ssh(d), WinCVS, putty

ALTECOM GmbH

1/2000 - 9/2000	**Conceptionist and Developer** architecture and development of a web-based **T**echnical **I**nformation **S**ystem with the modules: document management (Word, PDF, TIFF etc.), drawings management, object management for floor and site plans *used tools:* *apache-tomcat, Java, Oracle, cvs, Prism, PROCHEMC*
9/1998 - 9/2000	**Administrator and Developer** Enrolment, Launch, Customizing and Administration for PROCHEMC - a 3D-CAD-system for plant builders *used tools:* *shell-scripts, integrated basic, C-utilities*
9/1998 - 9/2000	**Programming and Administration RBA-PPS** custom PPS software consisting of the following modules: Project centered material procurement, reconciliation with CAD data Calculation Billing Features: list output into MS-Excel (via MS-COM) bill output into into MS-Word (via MS-COM) reporting with Crystal-Reports *used tools:* *Visual C 5.0-6.0, Crystal Reports, TSQL, MS-SQL-Server*

CITY COUNCIL ASCHERSLEBEN

Enrolment and administration of the geographical information system PolyGIS (Versionen 6.0, 7.x)

Enrolment and administration of the council information systems ALLRIS (Version 3.1)

programming of an inventory control system for the city museum (Microsoft Access/ Visual Basic)