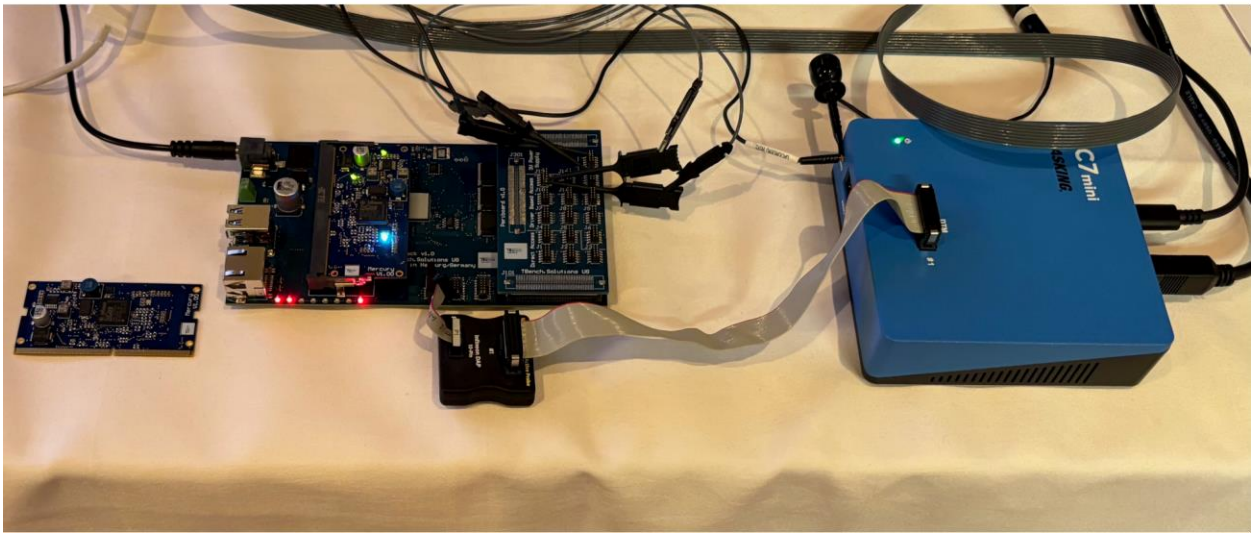
Infineon product based Soft- and Hardware Development, Concepts as well as Trainings from TBench.Solutions UG



# Preferred Design House of Infineon Technologies AG
# Basic & Premium Consultancy Model

## Gold Certified for AURIX™ as well as MOTIX™ products

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# Introduction

**Founded in 2017 as a spin-off from Helmut Schmidt University,** TBench.Solutions UG has spent the past few years delivering critical expertise in microcontroller integration, specifically focusing on IFX technology.

Infineon microcontrollers offer vast functionality and scalability, making them ideal for a wide range of systems. Additionally, Infineon provides an extensive portfolio of system components, including power ICs, automotive system ICs, battery management ICs, sensors, transceivers, and memory devices.

In industrial and automotive applications, functional safety is a top priority. To address these needs, we provide ISO 26262 expertise through our TÜV-SÜD certified automotive functional safety engineer, helping customers navigate complex safety regulations.

Proper testing is essential for every product, whether through black-box or white-box methodologies. The International Software Testing Qualifications Board (ISTQB) embodies everything necessary for these activities. We offer the support of our own ISTQB Certified Tester to ensure proper test handling.

For customers working with embedded Linux systems—whether user-mode or kernel-mode drivers, real-time or non-real-time systems—we provide the technical support needed to bring your application to life. We also offer specialized VHDL support for FPGA programming to customers who require parallelism capabilities.

As a special offering, we provide AI-based consulting services for enterprises that want to understand and optimize their organizational processes to remain competitive, as well as produce models in a more technical context. Finally, we have decided to start developing our own hardware tools. These will help engineers, as well as students and enthusiasts, get into the technology much faster than before.

**Managing Director**

J. Müller


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# Services

## Basic Services

**Our Basic Services provide everything you need for a successful start with your project.** Learning how to set up your TriBoard, ShieldBuddy, or related off-the-shelf PCBs (e.g., UniJack™ and Mercury-Module-FD) is essential for your first steps.

We assist in selecting the right controller for your current and future needs, guiding you through working with the relevant IDE and understanding its features.

Our **PDH Basic Support Model** service addresses key questions, such as:

- How to work with embedded peripherals.
- How many cores are available and reasonable to use.
- How to use dedicated IDEs effectively.
- How to get your evaluation board operational.
- Which basic single-core software development patterns are appropriate to use.
- How to debug effectively.

These services are only available for customers already registered as Infineon customers with dedicated PDH support.

## Premium Services

**Our Premium Services extend beyond the basics.** If you are ready to proceed but require additional coaching or development support, you can select specific services or opt for a comprehensive package. Premium services are fee-based, and a separate agreement will be required.

Our **PDH Premium Support Model** includes:

- **PCB Development:**
  - Schematic and footprint library management
  - Schematic drawing
  - Board layout to customer specifications
- **Software Development**
- **ISO 26262 Automotive Functional Safety Support**


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- **Test Support**
- **Project Management**

**Please be aware that software licenses may need to be purchased separately.** We can also bridge gaps if you prefer to use different tools. Premium services are available only to registered Infineon customers with dedicated PDH support.

We assist with microcontrollers from the following families:

- XMC1xxx (Industrial)
- XMC7000 (Industrial)
- AURIX 1G (e.g., TC2xx) (Industrial + Automotive up to ASIL-D or SIL-3)
- AURIX 2G (e.g., TC3xx) (Industrial + Automotive up to ASIL-D or SIL-3)
- AURIX 3G (e.g., TC4xx) (Industrial + Automotive up to ASIL-D or SIL-3 + AI)

Tell us your technical problem, and we will provide the right technology from Infineon's wide product range. Other components for integration are also available, such as memories, switches, USB interfaces, and motor drivers, which we can assist with.

## Additional Services

For customers working outside the Infineon ecosystem, systems to which ASIL or SIL do not apply are not required to meet overall safety standards. In such cases, a wide variety of different hardware architectures are possible. We provide programming and testing services for ARM-based microcontrollers and FPGAs, along with support for operating systems like embedded Linux. Given the complexities of deploying open-source tools and legal considerations (e.g., GPL, LGPL), we ensure transparency and clarity throughout your project.

Our goal is to assist you at every stage—from setting up your application environment to interfacing with hardware and connecting real-time and non-real-time systems.

**Additional services are fee-based, and a separate agreement is required.**


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# Artificial Intelligence

As an additional service, we offer Artificial Intelligence expertise for enterprises heading toward new technical horizons. As of today, many of these companies have data available, but it is often insufficient or not compatible by design.

Therefore, data must be generated, collected, normalized, and evaluated. Problems need to be defined, and correlations must be identified. If necessary, clusters must be built, and groups identified. If features become more complex, fully connected Artificial Neural Networks (ANNs), or Convolutional Neural Networks (CNNs) for image processing, must be built, trained, tested, and utilized.

Due to the increasing demand for text processing algorithms, Large Language Models (LLMs) have started to play a significant role in current AI developments. Whether it's pure text processing, such as text generation, summarization, Q&A, or sentiment analysis, or speech-to-text applications, LLMs have become powerful tools for both current and future applications.

TBench provides a deep understanding of AI principles, paired with extensive knowledge and tools to solve customers' challenges.

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