PLC Development
Programmable Logic Controller

Sokratel has many years of experience in the **planning, implementation and testing** of applications in the **automation sector.** In addition to the **conception, implementation and development of prototypes** of new products, we also support the further development of existing products.

Our portfolio of programmable logic controller (PLC) development, among others, includes Beckhoff, Bachmann, Siemens and Phoenix Contact.

Our Competences

We also have detailed knowledge about the **field busses** used for connecting programmable logic controllers, e.g.:

- OPC-UA
- EtherCAT®
- PROFINET®
- PROFIDRIVE®
- CAN
- FlexRay®

We develop in **classic low-level programming languages** used on PLCs, as well as in the **established high-level languages**, e.g.:

- IEC-61131-3
- MATLAB®/Simulink®
- Java
- C / C++ / C#
- Python
- Go

Applications with **Real-Time** requirements are an important part of automation. Through many years of experience, we have developed an excellent understanding of real-time applications and applications that run alongside real-time.

In addition to existing solutions, new products or their further development often also require special solutions for the given requirements. Therefore, in addition to programs and function blocks (e.g. in IEC61131-3, C++ or C#), Sokratel also develops **specialized communication protocols,** e.g. based on Layer2 communication.

In addition to the user applications, Sokratel also develops the **underlying firmware and driver level** for various products on the market.

- Real-time Applications
- Non real-time Applications

Applications

In recent years, we have assisted a **wide variety** of customers with diverse challenges, from sensor value calculations like wind sensors to developing programs for platforms such as PLCnext store. Our expertise includes Wind Turbines, Wind Parks, Grid Protection, and Solar Parks.

With experience across multiple PLC manufacturers and numerous projects, we can evaluate different combinations. Our PLC benchmarks provide information on whether a project can be implemented on the desired platform and on the limitations, a crucial aspect particularly early in development that should not be underestimated.

Model-based design and **automatic code generation** for PLCs, particularly via MATLAB Simulink, have gained importance. We have developed expertise in this area, creating **Simulink targets and S-Functions in C/C++ for PLCs and other hardware.** This enables us to combine the features of MATLAB Simulink with the respective PLC's and use the benefits gained from both worlds in an optimal way.

Tim Krause
Sokratel GmbH
Head of Division Automation

Thomas Frei
Sokratel GmbH
Managing Director

Contact: contact-automation@sokratel.com

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