Inno Route®

Creating Successful Products

Smart Product Development and Consulting

Digital design and software development services

Developing marketable smart products in a cost-, quality- and risk-aware manner is our passion.

You can count on our technical expertise, when evaluating your design options, estimating project and lifecycle properties, or when you need to guarantee system performance.

Our teams of highly skilled hardware and software engineers achieve even challenging time to market targets and are available on demand. We contribute to all development steps, from small ad-hoc tasks to full-scale projects: you can rely on us.

Focus fields:

Digital design and rapid prototyping

IIoT, industrial and embedded systems

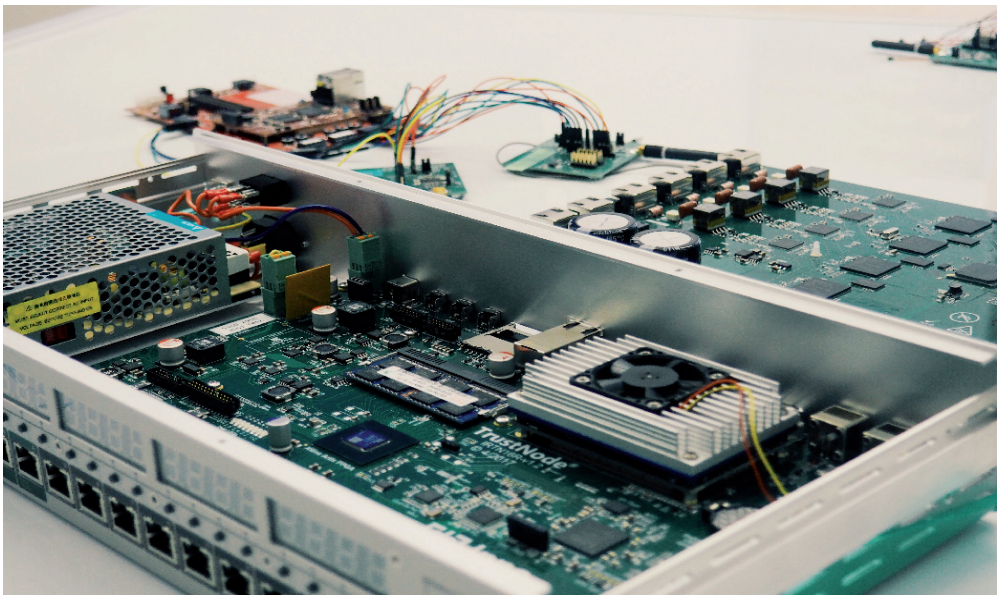
Hardware-software co-design, Xilinx ® Zynq ®

Printed Circuit Board design and review

Digital design for your FPGA, SoC, FPGA-SoC, or ASIC

The experts at InnoRoute provide leading-edge specifications, designs, and implementations. Their combined experience, knowledge, open-mindedness, and willingness to provide you with the best solution make the difference.

- Low-cost prototyping of devices, ICs, or IP cores
- Implementation in VHDL, Verilog, SystemC, or HLS
- Multi-level trade-off analysis
- Simulation and modeling for FPGA, SoC, and ASIC
- Standards compliance evaluation, .e.g., TSN



Embedded systems and software

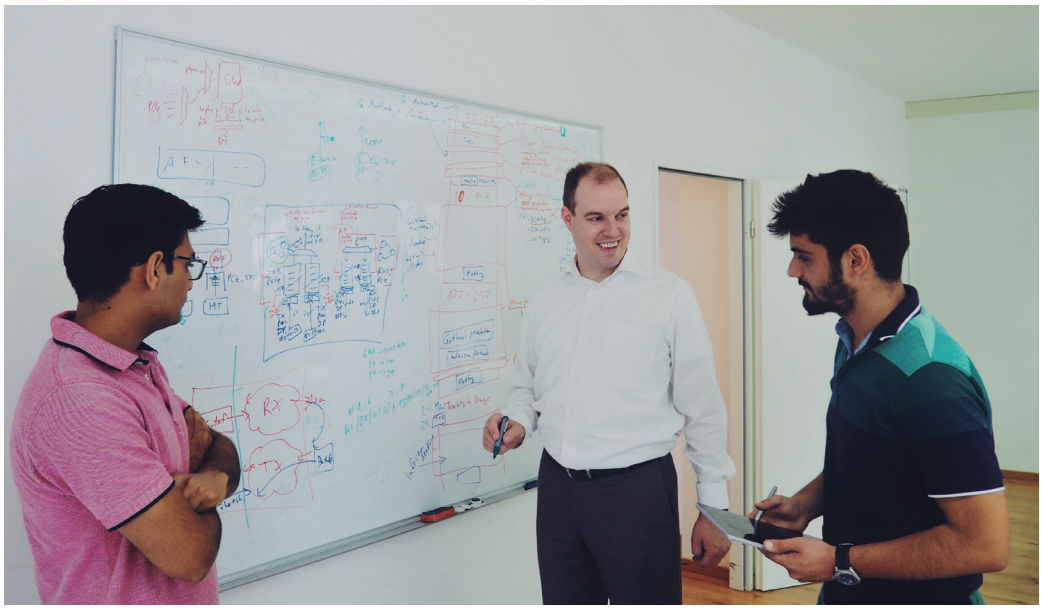
Software from high-level frameworks on Linux down to low-level assembly code on RTOS/ bare metal processors, from Zynq ® SoCs to micro-controllers, device drivers etc. for your smart product: we turn your specification to functional designs, help meeting standards and performance targets, and manage external dependencies.

Hardware-software co-design

We are experts in both soft-ware and hardware and use sophisticated infrastructure and best-practice processes. Our expertise improves decision making, leads to faster design space exploration and improved function split. We support cost/benefit estimations, troubleshooting, create new products, and make existing products stable/cheaper.

PCB design and review

Custom PCBs, integration of COTS PCBs, or new variants of existing PCBs: we have expertise in circuit and schematic design, component selection/ replacement, and layout. We support bring-up and make your solution market ready. Our design reviews and transparent iterative development mitigate risk.



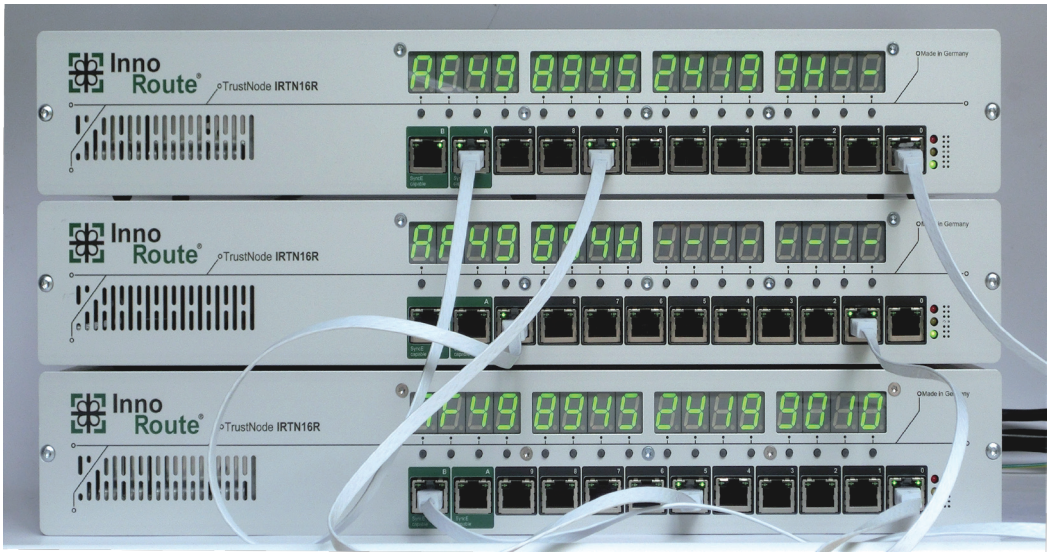
Our teams

InnoRoute is based in Munich, with a second office in Leipzig. Our teams consist of senior engineers that have 12+ years of professional experience, PhD students, and young impact driven talents.

We have industry and innovation experience with reference projects in IIoT, industrial communications, network processing, and telecommunications.

Our turnkey platform TrustNode®

The TrustNode® is our development platform for Xilinx ® FPGA-based communication designs. It offers low-latency, high accuracy, high throughput, and is designed for test and evaluation. Find out more on http://trustno.de/



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Inno Route®

Success story: QoS management for VDSL Access Multiplexers

InnoRoute developed the FlowEngine, a versatile FPGA-based traffic management solution and licensed it to the German telecom equipment manufacturer Keymile, who deployed it worldwide in its products. Keymile especially valued InnoRoute's very reactive agile working style and high commitment, in the initial contract as well as in several follow-up contracts. In a later step, the FlowEngine was adapted to G.fast and GPON requirements.

Success story: Premium Customer Premises Equipment

InnoRoute developed a quad-port VDSL bonding solution for SMEs requiring faster internet connection and for mobile base stations. PowerBond allows for gigabit-speeds even with legacy copper lines. InnoRoute started talks with prospective licensees in France and Israel.

Success story: Technical trainings and consulting

InnoRoute successfully trained customers in FPGA technology, programming embedded devices, tool-chains for embedded devices and in the use of the TrustNode platform. InnoRoute provided technical consulting and project funding consulting to various customers.

Success story: TrustNode network processing platform for research & prototyping

InnoRoute developed the TrustNode ®, a powerful, robust network device, based on an Artix ® FPGA and an Atom ® processor. Most of InnoRoute's enterprise customers use the TrustNode as a node in industrial or automotive communication networks, especially with a custom Time-Sensitive Networking extension. One customer even designed a custom processor module for the TrustNode. InnoRoute's academic customers use it for various purposes, like industrial communication networks, general SDN applications, and 5G mobile fronthaul network prototyping. InnoRoute also provides paid custom extensions to the TrustNode and its FPGA code.

Success story: Inventions

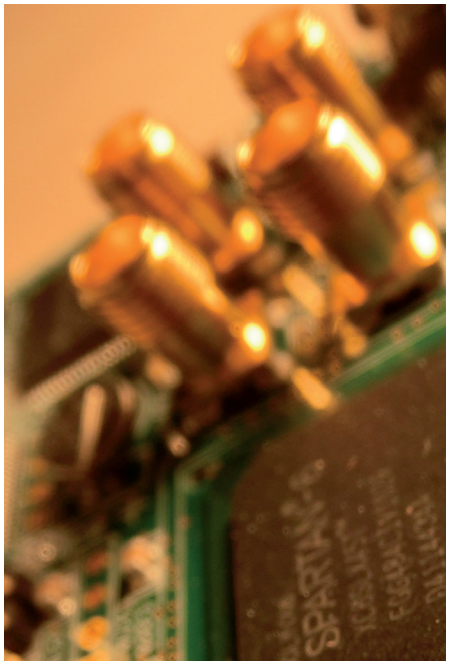
InnoRoute developed YouQoS and 6Tree, two concepts for improved traffic management. The concepts were investigated in-depth in multiple research projects and presented at the respective standardization bodies. YouQoS allows for receiver-controlled traffic management in the access network, 6Tree is an IPv6-based switching scheme that can be a guaranteed fallback solution for IoT and SDN networks and is the basis of InnoRoute's S.A.VE. approach.

Success story: Industrial IoT node for robust sub-GHz communication

InnoRoute contributed to the development of a wireless IIoT sensor network by developing hardware, software, and custom communication protocols for reliable and robust communication in low-latency single-hop sensor networks. An important target was a high timestamping accuracy for sensor data, while minimizing energy consumption for extended battery lifetimes.

Success story: Specifications and technical studies

InnoRoute created the specifications and high-level designs for customers in areas like SME routers and network monitoring, as well as feasibility and scalability studies.



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