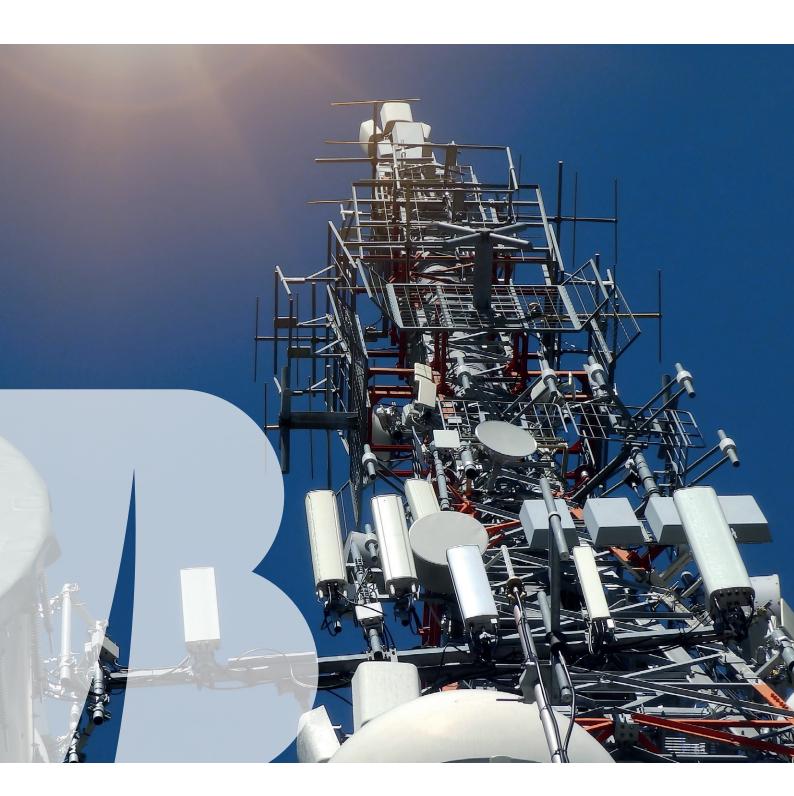
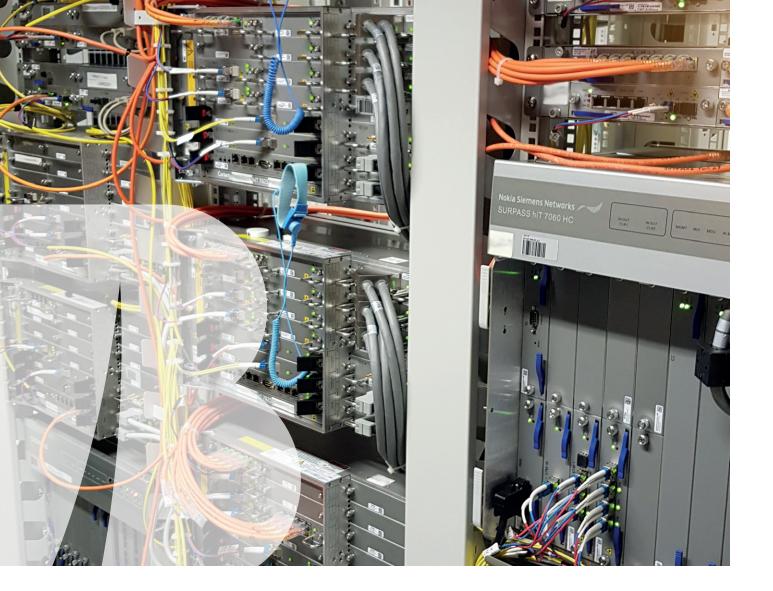


## ELECTRICAL ENGINEERING





Phasing out fossil energy can only succeed by increasing the share of renewable energy sources and improving the efficiency of energy conversion processes. Electricity plays an important role here.

In the future, electricity will be generated increasingly by water, wind and solar power. High and low voltage networks ensure efficient power distribution. Chemical energy storage and conversion into gases and heat facilitate the management of the networks. In addition, smart consumption measurement systems promote the efficient use of energy.

The generation, distribution, storage and economical use of energy require the integration of all processes with powerful network infrastructures and data processing with modern information technologies.

The electrification of railways and the introduction of electromobility in public and private transport relieves the environment of greenhouse gases. The transmission of information about timetables and road and traffic conditions leads to an efficient use of the operational facilities.

**ABOUT US** 



# ELECTRICAL ENGINEERING

#### RAILWAY ENGINEERING

We support you in the implementation of railway projects with detailed solutions for overhead lines or conductor rails, earthing and return current routing systems, signaling, ETCS, GSM-R or train running checkpoints, in stations, depots, workshops and operation control centers.



To cope with the growing traffic volume, we support you with modern concepts for traffic signal and traffic control systems, tunnel safety and emergency call systems, lighting and control technology, as well as toll, monitoring and enforcement systems.

#### **ENERGY TECHNOLOGY**

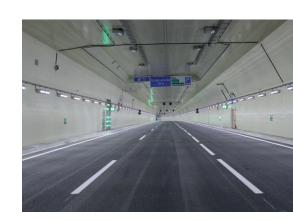
Our design approaches for high-voltage systems, rectifier stations and power-to-mobility solutions (which also take into account electromagnetic compatibility and electrical safety equipment) help you to build reliable and safe critical infrastructure facilities and supply networks.

#### **AUTOMATION TECHNOLOGY**

We advise you on the design of SCADA, MCT and PLC systems to solve and link your complex telecontrol and communication requirements.

#### **OUR SERVICES**

- Implementation of projects for AC and DC railway electrification for local and long-distance traffic
- Development of solutions for wired and radio-based communication networks
- Preliminary and detailed concepts for electromobility applications
- Planning of electromechanical equipment for infrastructure
- Project control, monitoring und local site supervision
- Design of power supply and distribution systems
- Planning of transformer and conversion stations
- Support during acceptance and commissioning
- Feasibility and comparative studies
- Power flow simulations







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