



Mobility

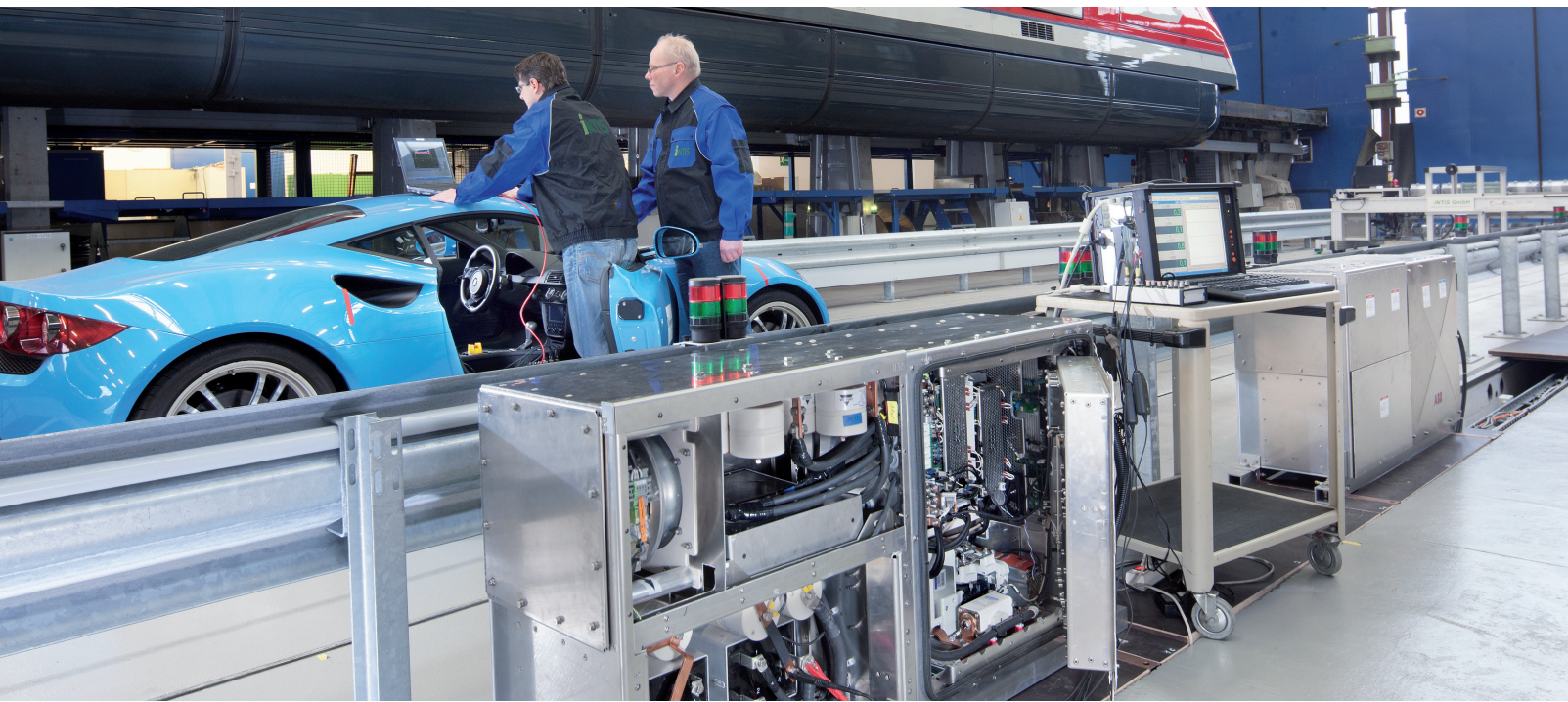


Energy



Environment

The Future is Wireless



Our Testing and Development Services

Wireless inductive charging technology can be seen as a key success factor for the electric vehicle (EV) sector. The technology is automatic, vandalism-proof and takes up no additional real estate.

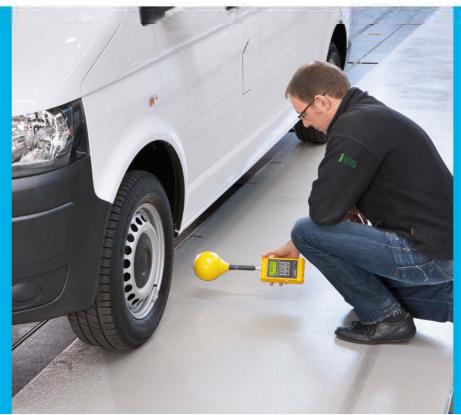
Inductive charging systems vary considerably depending on what application they are being used for (depending on, for example, power, air-gap, installation space, operation environment and mode).

In order to meet application and customer requirements, tailored system design and development is essential. As experts in the field of inductive energy transfer systems, INTIS offers the following services and support to customers:

- ▶ **Systems conception and design**
- ▶ **Finite Element Method (FEM) based Magnetic field simulation**
- ▶ **Laboratory set-ups and tests, construction of functional models and prototypes**
- ▶ **Experimental testing and verification of specified system attributes**
- ▶ **Testing and verification from the component to the system level**
- ▶ **Support during qualification processes and the transition to series production**

What We Test

- ▶ Inverters
- ▶ Matching components
- ▶ Medium frequency cables
- ▶ Communication and positioning systems
- ▶ Primary and secondary topologies
- ▶ Pickup systems
- ▶ Secondary power electronics (e.g. DC-converters)
- ▶ Sensor systems for positioning, object detection, etc.



What We Examine

- ▶ Maximum transmission capacity
- ▶ Lateral susceptibility and air-gap variance
- ▶ System efficiency
- ▶ Magnetic field spread
- ▶ Electric and magnetic interactions
- ▶ Thermal properties



We provide you with the support you need to make your application a reality. Our specialty is the design, development and experimental verification of inductive energy transfer systems. We optimise these systems using state-of-the-art numerical methods, simulation tools and our laboratory facilities. Simulation results are compared at an early stage with results from prototypical component testing. At the end of an iterative process of simulation and laboratory verification, we provide our client with an optimised inductive energy transfer system that is tailored to the application and vehicle, for either stationary or dynamic use.

For the practical examination of technologies, we operate a test centre for inductive energy transfer systems in Lathen (the Emsland), in the northwest of Germany. This test centre is equipped with laboratory facilities, a 25 meter test

road, workshops and modern development tools. We have extensive experience of both stationary and dynamic inductive transfer methods. We can flexibly integrate our clients' systems into the optimisation process, testing and verifying anything from individual components to the complete system.

At our test facility, we can validate system characteristics and features, either at the prototype stage by installing components in experimental carriers, or within the scope of the qualification of inductive energy transfer technology for vehicle series.

Customers can use our mobile test bed as a frame for the installation and testing of vehicle components. Alternatively, complete vehicles can be integrated into our testing environment – from small electric cars to heavy electrified vehicles, such as busses or trucks.

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