



Navigation and Transportation

The integration of key positioning and navigation technologies in transportation holds great potential for research, business and technology.

One of the Galileo Test Bed's distinctive features is its mass transit platform. Tests oriented toward application are conducted in real-time operation for the Hallesche Verkehrs-AG.

The MOSAIQUE mass transit test bed in Halle makes innovative and advanced transportation management accessible. The main focus is on optimally embedding real applications in public and private transportation.

“Virtual Galileo” is a new component in this context. It facilitates flexible and detailed impact analyses based on simulated Galileo and GPS signals under realistic conditions.

The mass transit platform provides a range of high-end technology systems:

- Inertial navigations unit (TALIN 3000)
- Doppler radar
- L1/L2 GPS receiver
- Measured data acquisition systems integrated in Galileo streetcar and Galileo bus
- Precise reference trajectories generated with a high update rate (100 Hz), centimeter accuracy and 100 % availability

Saxony-Anhalt Galileo Test Bed

Development Laboratory for Localization, Navigation and Communication in Transportation and Logistics

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Saxony-Anhalt Galileo Test Bed

Project of the State Initiative – Applied Transport Research / Galileo-Transport

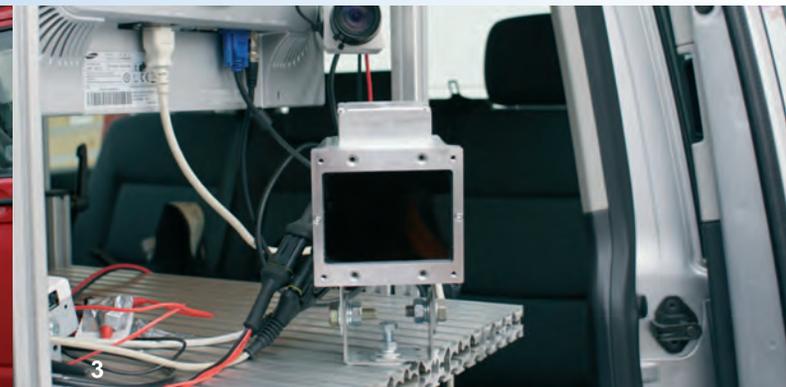
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Innovation through Integration

The Saxony-Anhalt Galileo Test Bed is the most advanced integration platform for applied logistics and transportation research in Germany!

Otto von Guericke University and the State of Saxony-Anhalt are setting a milestone with the Galileo Test Bed, a national and innovative center of transportation expertise in Germany. The Galileo Test Bed is Saxony-Anhalt's reference project in its state initiative "Applied Transportation Research/Galileo Transport".

It combines synergies and key expertise to introduce smart transportation and logistics systems for the future of transportation in Central Germany.

Mobility is the foundation of our modern society and presents new challenges in terms of intelligence, efficiency, the environment and security. Information and communications and satellite positioning and navigation will drive innovations behind future mobility.

The Saxony-Anhalt Galileo Test Bed has a specialized structure that networks expertise:

- Development laboratory / coordination
- Telematics and logistics
- Communication and transportation
- Navigation and transportation

This research and industry network is unique in Germany!

Give us a try!

Saxony-Anhalt Galileo Test Bed: Innovative for logistics and transportation!

Telematics and Logistics

Practical developments that identify, localize and detect the status of logistics assets in the process chain and new designs for new load carriers and handling concepts are priorities. The aim is to provide research and application partners support all the way from an idea through its implementation.

Various technical approaches incorporating radio and video technologies are being pursued – from highly precise localization in large-area port premises to the localization and identification of load carriers or equipment in logistics facilities. Such information is used, for instance, in control centers to better control logistics operations. The Hanse Terminal in the Port of Magdeburg is part of the Galileo Test Bed's logistics platform.

In addition to the interconnection of logistical data throughout international supply chains, the transparency of low-volume urban commercial traffic plays an important role. Technologies developed by the Fraunhofer IFF are used in the cargo space of special swap bodies, which employ RFID to automatically identify freight units and special time-of-flight sensors to measure loading.

The Smart Logistics Zone

Standardized use of optoelectronic and radio systems

City Logistics 2.0

Electric vehicle networks and swap bodies

Airport Logistics

Civil defense at logistics hubs and passenger terminals

Inland Port Logistics

Reliability and transparency in real-time control systems

Communication and Transportation

Research and development have been intensified significantly in response to pressing challenges in the domains of transportation, mobility and the environment. In many fields of application, there are important initiatives to refine smart transportation and assistance systems, especially through technical innovations for localization, navigation and communications.

The global market demands applied and innovative transportation products and services. The test bed enables companies and research organizations to continuously develop and test their solutions and products in laboratory operation and under real conditions. The latest IT infrastructure, radio, communications, measurement and transportation systems and electric vehicles as well as a network of research expertise are available at the test bed.

Innovative products and services:

- Cooperative systems based on vehicle-to-infrastructure and vehicle-to-vehicle communications
- Reliable positioning and navigation systems based on GNSS with vehicle sensor systems
- Development of dynamic transportation and passenger services for mobile terminals and the Internet
- Methods, components and systems for traffic and transportation management, which is environmentally compatible and responsive to demographics
- Mobile and stationary systems, which capture traffic and environmental data
- Methods and systems for the testing of radio solutions' performance, coexistence, compatibility, security and reliability
- Design and implementation of open interfaces, protocols and standards for communication and transportation