

# Transforming to a smart factory with a 5G campus network

Powerful 4G/5G mobile network and edge clouds increase productivity

Reference project



**“The speed and flexibility of our devices and machines are extremely important in ensuring efficient production workflows. The integrated 5G campus solution project allows us to test how we can further expand and optimize this in future with new technologies.”**

Hans-Joachim Schwabe, CEO OSRAM Automotive

OSRAM is a leading global high-tech company with a history going back more than 113 years. With its predominantly semiconductor-based products, the company enables applications such as virtual reality, autonomous driving and networked lighting solutions. In the 2018 financial year, OSRAM generated revenue of over EUR 3.8 billion from ongoing activities with around 26,200 employees. The high-tech company invests in identified future solutions, putting themselves in an ideal position for future markets. The use of digital opportunities is one of the core components of the corporate strategy. Yet tapping into digitalization is not only reserved for the development of new business fields but is also intended to help improve efficiency in production in the long term, leading to Smart Factories.

## At a glance

OSRAM wants to use the potential of digitalization in its production too. The objective: to increase efficiency in production processes. A powerful, secure and flexible mobile network is an indispensable basis for digitalization and the transformation to a smart factory. With autonomously driven transport robots, the possibilities of real-time communication are initially being trialed for campus-internal logistics through a campus network and edge computing.

- High-performance, secure mobile network
- Fast realization of potential usage scenarios
- Real-time communication
- Optimization of production processes
- Tapping potential for a smart factory

**T · Systems ·**

**Let's power  
higher performance**

# Reference in detail

## The challenge

One of the main challenges on any production campus is efficient internal logistics in the indoor and outdoor area. So far, OSRAM has used traditional transport methods for heavy goods at its Schwabmünchen site. OSRAM is now testing the future on its factory premises by using mobile robots. But automated guided vehicles (AGV), as the mobile transport robots are officially known, require intelligence and responsiveness, e.g., to avoid collisions with people. This was not possible with the existing ICT infrastructures. Only a mobile network with guaranteed performance can ensure the efficient operation of AGVs and, at the same time, serve as a basis for the transformation into a smart factory.

## The solution

The OSRAM factory in Schwabmünchen opted for an integrated platform: a campus mobile network in conjunction with a combination of local edge cloud and operator edge cloud, in order to comply with the required minimum latencies for problem-free implementation of the AGVs. With the campus network, OSRAM has a flexible, private mobile network infrastructure based on established LTE technology. It offers the factory in Schwabmünchen a secure, high-performance network, which ensures a guaranteed network service quality. The network guarantees communication between the AGVs and the local computing resources. The processing of mapping and navigation data on the computing resources near the AGVs also ensures low latency in terms of the IT. On this basis, further real-time applications can also be established in addition to the operation of the AGVs. Computing operations that are less time-critical are transferred to the operator edge cloud in the public mobile network. Time-critical calculations or sensitive data remain local in the campus edge cloud.

## Customer benefits

The campus network enables OSRAM to evaluate digitalization projects live in a real production environment at its Schwabmünchen site. The luminaire manufacturer can therefore optimize and accelerate its production processes, not only for logistics. The campus network removes previous network limitations and opens up a wide range of additional usage scenarios for a smart factory.

Other advantages:

- Increased efficiency in production
- Fast trialing of new digital use cases
- Introduction of additional digitally supported processes
- Reliable, high-performance network

The OSRAM logo is displayed in a bold, orange, sans-serif font.

### Contact

T-Systems International GmbH  
Hahnstrasse 43d  
60528 Frankfurt am Main, Germany  
E-Mail: [referenzen@t-systems.com](mailto:referenzen@t-systems.com)  
Internet: [www.t-systems.com](http://www.t-systems.com)

### Published by

T-Systems International GmbH  
Marketing  
Hahnstrasse 43d  
60528 Frankfurt am Main  
Germany