



## ITK Engineering drives the development of fully automated trains

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Autonomous cars are trending, but the development of driverless trains is also picking up steam. ITK Engineering has joined forces with partners in industry and science in a "Digitale Schiene Deutschland" research project entitled "AutomatedTrain". This initiative goes to enable fully automated staging and stabling runs for trains. The German government is providing 42.6 million euros in funding for the project up to 2026.

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A train arrives at its destination. Passengers and driver disembark, and the train pulls into the siding in a seamless, fully automated process. What sounds like a visionary leap toward fully automated, driverless rail travel could become a reality thanks to "AutomatedTrain", a government-funded project. Experts from ITK Engineering are working with Deutsche Bahn and other partners to advance digital rail services as part of an industry initiative called "Digitale Schiene Deutschland". Over the next three years, the partners will test fully automated staging and stabling runs for trains. Equipped with intelligent sensors, the trains are able to detect their surroundings and react automatically to obstacles.

### Smart environment recognition to enable automated driving

"Fully automated driving has great potential for railway transportation," says ITK Engineering CEO Frank Schmidt. "We are delighted to be playing an important role in AutomatedTrain with our expertise in sensor technology and environment

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recognition. The goal is to safely and accurately determine the position of trains on the track and enable automated runs to and from depots.”

Two prototypes will be equipped between now and 2026 – a Siemens Mobility train and a train operated by the Stuttgart commuter rail system. The latter will also gather data in the operating environment to be used for obstacle detection. ITK Engineering's MAROS sensor solution provides the basis for this capability. "It is a key component in the AutomatedTrain project in combination with environmental detection technologies," says Andreas Hohl, head of the Rail business unit at ITK Engineering. "Our aim is to reimagine train localization and take it to a higher level."

### **Localizing trains with MAROS**

MAROS – short for Magnetic Railway Onboard Sensor – is an innovative on-board sensor that needs no additional infrastructural components such as balises or cameras. The benefits of that are clear: It is very cost effective to install and run. MAROS works on all metal tracks worldwide, regardless of weather or GNSS signals. "Our development is thus a perfect reflection of the AutomatedTrain project's core objectives, one of which is to use intelligent sensor technology to enable fully automated staging and stabling runs for trains," says Hohl. MAROS provides safety and reliability for train control systems such as ETCS Level 3, Automatic Train Operation (ATO), and Communication-Based Train Control (CBTC).

AutomatedTrain is a research and development project funded by the Federal Ministry for Economic Affairs and Climate Action with a grant of around 42.6 million euros. Nine companies in various industries and a university are working on the project alongside ITK Engineering: DB InfraGO AG, Bosch Engineering GmbH, Codewerk GmbH, DB Regio AG, duagon Germany GmbH, IAV GmbH, Red Hat GmbH, Siemens Mobility GmbH, and Dresden University of Technology.

## Press Release

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**About ITK Engineering**

ITK Engineering GmbH, founded in 1994 as an “engineering firm for technical cybernetics,” is an internationally operating technology company in the software and systems engineering field. Thanks to its strong methodological expertise, ITK covers the entire spectrum – from embedded systems to cloud computing. With around 1,300 employees, the company is an innovative force in digital engineering. Customers in sectors ranging from automotive, industrial, and railway engineering to medical systems, agricultural/ construction machinery, and motorsports count on ITK to instill intelligence in highly complex systems. Some 1,300 employees currently work for ITK worldwide, at the company headquarters in Ruelzheim in Germany’s Rhine valley, at nine additional branches located across Germany and in Austria, China, Japan, Spain and USA. The company has been a wholly owned subsidiary of Robert Bosch GmbH since 2017.

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