

## Project-/ Bachelor-/Master-Thesis

# Development of a maintenance robot for mechanical vegetation control on railway tracks

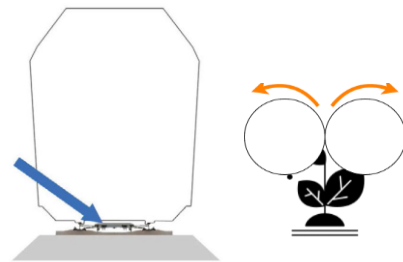


Photo: Der Eisenbahningenieur

### Current situation

The functionality and safety of railway tracks is affected by the growth of various wild plants. The IFS has developed a weeding system for the ballast bed that is pulled by a two-way vehicle. The working speed of the system is less than 20 km/h, which interferes with rail traffic. Mechanical weeding can therefore only be used when the line is closed or in a time window without rail traffic.

Integrating the weeding system into a robot that moves outside the vehicle gauge would allow the plants to be treated independently of rail traffic. As part of this work, based on the VDI 2221 product development process, the weeding system is to be modified for the space between the tracks and outside the vehicle gauge line.

### Your tasks

- Definition of requirements and system functions
- Research and evaluation of relevant solutions
- Selection and CAD modeling of the new concept

### Your profile

- Study program mechanical engineering, rail vehicle engineering or similar
- High motivation and reliable way of working
- Previous knowledge of Solid Edge advantageous

The subject area can be adapted in consultation. If you are interested, please contact us by e-mail with a brief introduction and a grade transcript.

### Head of Institute

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### About us

The Institute for Rail Vehicles and Transport Systems (IFS) at RWTH Aachen University specialises in research and teaching on rail vehicles and their components. It deals with issues in the areas of lightweight construction and structural integrity, driving dynamics and vibration comfort, wheel/rail interaction, assisted and driverless driving and condition monitoring. The IFS carries out studies, computer-aided simulations and practical tests on the above-mentioned topics. To carry out the practical tests, the IFS has its own track system with a connection to the public Deutsche Bahn network.