



**InnoTrans 2018**  
18–21 SEPTEMBER  
BERLIN



**INNOVATIONS  
AND TRENDS**

## Autonomous track inspection trolley



Motorized, autonomous inspection kart



Inspection trolley with EMAT inspection and robot

Track maintenance is underpinned by non-destructive inspection, using inspection trains for fast track survey, followed by manual inspections in suspect areas. I-moss has developed within the EC research project "AutoScan" an autonomously operating measurement trolley. The self-powered inspection cart can carry various inspection systems. It uses a brushless DC motor with energy recuperation and a GPS-based routing engine to execute preprogrammed inspection routes. Safety is ensured by real-time camera supervision, ultrasonic object detection and front and tail lights. The cart has been applied for the detection of rolling contact fatigue faults via electromagnetic acoustic transducers (EMATs) and for robotic ACFM inspection. A collaborative robot allows for detailed rail head inspection from any desired viewing angle. The cart has also been demonstrated for rail roughness measurement.

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Subject to further change