

VTG AG POLICY BRIEF

June 2018

ON-TRACK INNOVATIONS: NEW TECHNOLOGIES FOR SMART RAIL FREIGHT TRANSPORTATION

Dear Sir or Madam,

Innovative developments in relation to road transport are nothing new. Hand brakes, ignition locks and window regulators are all set to be a thing of the past and so much can be fully automated or controlled at the touch of a button.

Yet, achieving this level of technical innovation is somewhat more of a challenge when it comes to rail. In this policy brief, we explain the reasons behind these difficulties and show what we, along with the government and our partners, are doing to modernize rail freight transport. Our teams work extremely hard every day to make rail even easier, quieter, more efficient, more ecological, and more digital. All of this is geared



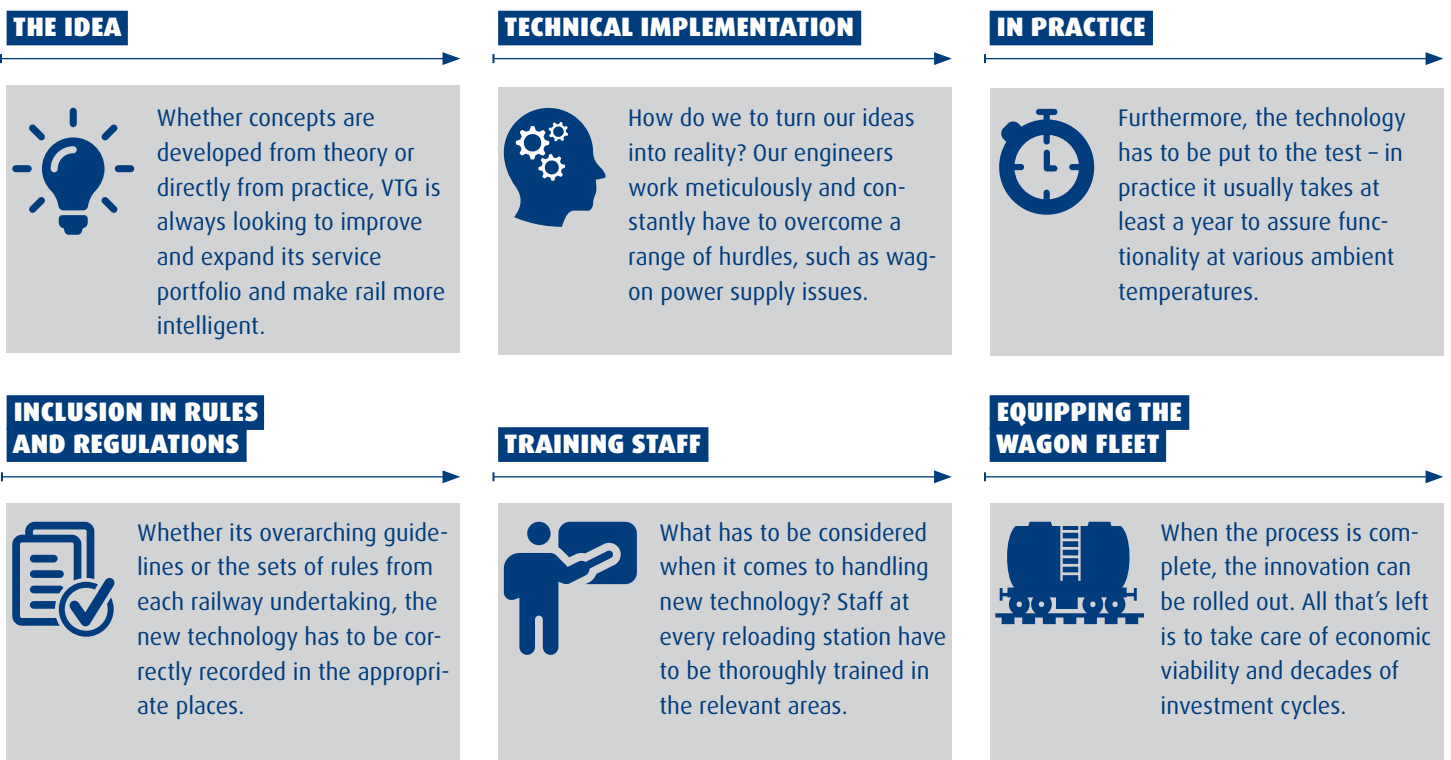
towards the interests of our customers, but, of course, they benefit the environment and society at the same time. I hope that you find the brief to be an interesting and stimulating read.

Dr. Heiko Fischer
Chairman of the Executive Board

150,000
ROUTE KILOMETERS

The distance VTG and DB Cargo's innovative freight wagons are set to cover by the end of 2018. Find out more about this exciting project on the next page.

FROM CONCEPTION TO TRACKS: THE LONG ROUTE TOWARDS NEW TECHNOLOGIES



TOMORROW'S RAIL TODAY – THE “INNOVATIVE FREIGHT WAGON” PROJECT

Commissioned by the German Federal Ministry of Transport and Digital Infrastructure (BMVI) and in cooperation with DB Cargo, VTG is testing innovative developments on the railcar of the future and will continue to do so until the end of 2018. Innovative features are being tested on a total of four different wagon models – including a VTG tank car and container carrier – to make rail freight transportation quieter, more energy efficient and, at the same time, more economical.

DIGITAL BRAKE INDICATOR

Facilitates control of the brakes, thus increasing safety.

POWER LINES

To take full advantage of digitization potential.

AUTOMATIC CENTRAL BUFFER COUPLING

Accelerates block train connection, saving time and costs.

BOGIES

With rubber suspension which has a positive impact on noise, energy consumption and wear and tear.

DISC BRAKE

Significantly lighter than previous models, creating higher loading capacity.



All wagons are fitted with modern telematics modules. This hardware already allows VTG to offer new, digital services today and, in doing so, makes rail freight transport even more attractive.

WHY IS IT OFTEN SO DIFFICULT TO IMPLEMENT SIGNIFICANT INNOVATIONS FOR RAIL? EXAMPLE: AUTOMATIC CENTRAL BUFFER COUPLING

Even today, it is still not possible to connect a block train without human intervention. It's a strenuous activity that has hardly changed since the introduction of screw coupling in Europe in the mid-1900s. The comprehensive introduction of automatic central buffer coupling is **ONE OF THE GREATEST HURDLES WHEN IT COMES TO INCREASING THE EFFICIENCY OF RAIL OVERALL**. The idea is not really new: efforts to introduce this technology were already made in the 1960s. These

failed because practically the entire European rail transportation network would have had to convert their wagons overnight – a logistical and financial impossibility. With its partners, VTG is currently working on stand-alone solutions to generally advance the technology. In the meantime, some systems can be introduced gradually, as they are also compatible with the old screw coupling system. **THE GREATEST OBSTACLE IS STILL THE FINANCING:** costs amount to

approx. EUR 8,000 to retrofit a wagon and EUR 5,000 in additional costs for newbuilds. This financial burden affects wagon keepers, while others benefit from increased efficiency. **TARGETED GOVERNMENT FUNDING FOR THE CONVERSION** – ideally at European level – could contribute significantly to advancing rail transportation in this area and strengthen rail as a mode of transport over the long term.

CONTACT VTG

Let's engage in active dialog!
Feel free to contact us with all of your rail freight transport-related questions and queries. We would be glad to assist you and provide you with the facts, figures and estimates you may require.

YOUR CONTACT PERSON

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