

World-first: Automatic Train Operation for regional passenger trains to be tested in Germany

Innovation prize awarded by German Federal Ministry of Economics

27 May 2020 - The German Federal Ministry of Economics has presented Alstom with the "Innovation Prize for Regulatory Sandboxes"*, related to a planned test project to implement Automatic Train Operation (ATO) in daily passenger operation of regional trains. The project will begin in 2021 together with the Regional Association of the greater area of Braunschweig, the German Aerospace Center (DLR) and the Technical University of Berlin (TU Berlin).

After evaluation of the selected tracks and the equipment necessary for automated operation, the testing will be carried out with two Coradia Continental regional trains owned by the Regionalbahnfahrzeuge Großraum Braunschweig GmbH. Alstom has long been a world-leader in ATO for metro systems, but this test will be a world-first for regional passenger trains.

KEY TAKEAWAYS

- Alstom lauded by German Federal Ministry of Economics for start of automatic regional rail project
- Research project starts in 2021, test operation for first automated trains in early 2023
- Second innovative mobility solution tested in Lower Saxony after the world's first hydrogen train

"In the future, automated trains will optimize regional rail operations, reduce energy consumption, and increase ride comfort. In this way, highly automated driving will make a decisive contribution to climate protection and contribute to the development of a modern, attractive railway system. Following the development and successful testing of the world's first hydrogen train Coradia iLint, Alstom is once again the innovative driver in rail transport with the pilot for regional trains in automated operation," says **Jörg Nikutta, Managing Director of Alstom in Germany and Austria**.

For this project, two trains based on Alstom's successful Coradia Continental platform will be equipped with a European Train Control System (ETCS) and additional Automatic Train Operation (ATO) equipment. The equipment will enable the trains to operate automatically, testing different grades of automation (GoA): GoA3 in regular passenger operation and GoA4 during shunting. GoA3 describes a fully autonomous train journey, but with an attendant who can intervene in the operation in case of emergency. GoA4 denotes unattended operation with no staff aboard, but with the possibility of remote control.

Congratulations on the nationwide award of the Innovation Prize were expressed by **Lower Saxony's Minister of Economics and Transportation, Dr. Bernd Althusmann**: "After the successful operation of the fuel cell train in the Elbe-Weser Triangle, the Alstom site in Salzgitter is once again setting standards for tomorrow's local transportation with this project. The fact that we in Lower Saxony are now able to drive forward the testing and further development of automatic train operation in addition to the test field for automated and networked mobility on the road is a decisive step for the future of passenger transport by rail. The new model project promises a high degree of innovation, which we need for

climate-friendly and efficient mobility services. Of course, I am particularly pleased that with Alstom, another company from Lower Saxony underlines our reputation as an important source of innovation". "ATO, or Automatic Train Operation, is one of the most exciting challenges in the railway industry. It gives us the opportunity to shape and significantly change the operational management of the future. But a lot of research is still needed before this is the case, and I am very pleased to be working with Alstom on this project," said **Birgit Milius, Head of the Department of Railway Operations and Infrastructure at TU Berlin**. In the project applied for, she will investigate various aspects, including the integration of humans into the technical system.

Fritz Rössig, Head of the Transport Department of the Regional Association and Managing Director of Regionalbahnfahrzeuge Großraum Braunschweig GmbH adds: "Artificial intelligence is an important technology for making the local rail passenger transport of the future even more efficient and economical. Against this background, the Regional Association of Greater Braunschweig supports this innovative research project and will make its "ENNO vehicles" available for this purpose".

Jörn Groos, group leader in the technology field of data acquisition and information retrieval at the Institute of Transportation Systems Technology at the German Aerospace Center DLR e. V., adds: "Tests under real conditions are indispensable for the development of practical AI approaches for the optimization of the railway system".

The findings from this important project will contribute decisively to the further development of the legal and regulatory framework that will oversee Automatic Train Operation. Lower Saxony will be at the leading edge and is confident that automatic regional trains equipped with GoA3 will soon be ready for series production. In executing the regulatory sandbox, Alstom can rely on its extensive know-how in automated metros and various other ATO projects. The company is leading the European ATO project in Shift2Rail and is involved in SNCF's automated freight train.

* About the programme "Innovation Prize for Regulatory Sandboxes"

Alstom received the prize for its idea of a regulatory sandbox for highly automated train operation in the category "Outlook". Regulatory Sandboxes are becoming increasingly important for Germany as a means for innovation. As test environments for innovation and regulation, they serve to gather experience with digital innovations under real conditions. New technologies and business models that are only partially compatible with the existing legal and regulatory framework are to be tested in experimental environments for a defined amount of time.

About Alstom Leading the way to greener and smarter mobility worldwide, Alstom develops and markets integrated systems that provide the sustainable foundations for the future of transportation. Alstom offers a complete range of equipment and services, from high-speed trains, metros, trams and e-buses to integrated systems, customised services, infrastructure, signalling and digital mobility solutions. Alstom recorded sales of €8.2 billion and booked orders of €9.9 billion in the 2019/20 fiscal year. Headquartered in France, Alstom is present in over 60 countries and employs 38,900 people.

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