

PRESS RELEASE

Operating Licence for SBB Diagnostic Vehicle

Molinari Rail has successfully completed the operating licence approval for a special diagnostic vehicle of Swiss Federal Railways SBB. Molinari Rail AG conducted the approval process for the modification of this original EuroCity donor vehicle with the Federal Office of Transport (BAV), prepared various simulation analyses and supervised type tests in Switzerland and Germany.

Winterthur (Switzerland), 30th of November 2020 – The increasing use of railway lines in Switzerland requires a more intensive review of the Swiss rail infrastructure. To ensure the availability of rail traffic, SBB AG uses special diagnostic vehicles. One of these is the "pulled diagnostic vehicle" (gDFZ), a converted EuroCity carriage. This vehicle, which has been in test operation on Swiss and German rails since 2018, was granted an unlimited operating licence on the 14th of May 2020.

The Russian company Infotrans, "Scientific and Production Centre for Information and Transport Systems", has equipped this vehicle with measurement technology and converted it into a modern diagnostic vehicle. SBB AG also uses it to carry out interaction analyses between vehicle and infrastructure. For such work, the EC wagon was equipped with sensors and measuring devices on the bogies and the wagon body, as well as two measuring pantographs.

Molinari Rail carried out a running dynamics analysis on the vehicle for Infotrans. Using 3D multi-body simulation, running stability, derailment safety and wheel-rail forces were analysed. The challenge was to ensure optimum running behaviour for the modified wagon up to a speed of 200 km/h in accordance with the requirements of the relevant standard (DIN EN 14363 standard for the test for technical approval of railway vehicles). In addition, a running dynamics analysis for speeds of up to 250 km/h was also carried out to ensure that the diagnostic vehicle could also be used for today's high-speed routes in Switzerland.

Decisive factors for these comprehensive analyses by Molinari Rail were the significant increase in weight and the more stringent requirements for vehicles with pantographs, which necessitated the installation of new primary and secondary springs as well as a new roll stabilisation system.

In addition, Molinari Rail analysed the requirements for homologation based on the valid legal requirements for the converted vehicle, coordinated and agreed with the Federal Office. Based on this, Molinari Rail carried out the homologation process with the Federal Office and all parties involved in the project and completed it with the unlimited operating permit in May 2020.

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About Molinari Rail

Molinari Rail Group is an independent railway technology company with headquarters in Winterthur (CH) and branches in Vienna, Schwaz (A) and Dessau (D). The owner-managed group supplies tailor-made solutions for the global rail industry and supports customers throughout the entire product life cycle: from the design and development of vehicles or subsystems, through production, assembly and commissioning, to certification, maintenance and modernisation. Clients include transport companies, rail vehicle manufacturers, construction companies, banks, leasing companies and public authorities. Molinari Rail has been operating its own production site in Germany since 2016 and also implements major projects. The medium-sized group thus has a comprehensive portfolio with the Technology, Manufacturing and Projects divisions. With over 25 years of experience and more than 500 projects completed, the specialist engineering service provider has established a global presence. The company has bases in Bolivia, Egypt, China, India, Italy, Colombia, Russia, Turkey and the USA.



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