

VUZ

VUZ on the Way to the Future

News from the European Leader in Rail Testing and Certification



Výzkumný Ústav Železniční, a.s. (VUZ) is a Czech company specialised in providing professional services and complex solutions in the field of assessment, certification and testing of rolling stock, railway systems and railway transport.

VUZ already ranks among the European market leaders, however, it has a vision and ambition to become a truly innovative international company gaining ground not only in the railway sector but also in other transport

and industrial segments. The following text will guide you through the steps the company has taken to achieve its goal.

Obtaining Designated Body Accreditation in Slovakia and Estonia

VUZ has extended its activities into two additional EU countries: Slovakia and Estonia. VUZ's Slovak subsidiary has successfully met all the requirements of the accreditation process and VUZ Slovakia, s.r.o. is now, next to other activities performed so far, authorised to provide services of an

accredited Designated Body (DeBo) for the Slovak Republic (assessment of compliance of European railway system products with the Slovak national rules), and services of an ECM certification body within the European Union (certification of maintenance systems of railway rolling stock and rolling stock maintenance functions).

Similarly, at the beginning of December 2021 the Estonian Consumer Protection and Technical Regulatory Authority approved VUZ as a Designated Body (DeBo) for several projects falling under its competence.

Click [here](#) to watch our video.

Selection on Lines for Hydrogen-Powered Trains

VUZ is taking part in the Regional Hydrogen-Powered Trains on Czech Railways project and is working to select railway lines suitable for operation of hydrogen-powered trains in the Czech Republic. The project objective is to analyse the Czech railway lines and localise areas where hydrogen-powered trains would constitute a technological, financially efficient and environmentally friendly solution compared to other technologies. VUZ is involved mainly in collection and analysis of data for the purpose of selection of Czech railway lines where possible use of hydrogen-powered trains can be assessed.

A technological / financial analysis of selected regional lines will be carried out within the project and individual train propulsion systems (diesel, battery, hydrogen and hybrid) will be compared. The output will enable identification of preferred areas with positive technological, financial and environmental results for deployment of hydrogen-powered trains and replacement of diesel trains that will be put out of operation in the future on non-electrified railway lines.

Cyber Security in Railway Transport

VUZ, as the European leader in the field of railway assessment and evaluation, offers a new cyber resilience assessment service to the railway industry. Cyber

resilience and security are tested in accordance with the strict VUZ standards and in accordance with CENELEC 50701. This standard implements a consistent approach to cyber-security management applicable to all railway applications (management, security, ETCS, rolling stock and electric traction for railways). Within cyber-security testing and assessment, VUZ experts provide risk analysis, implementation of protective measures, real-time risk monitoring and employee training. Testing of cyber-security resilience is crucial to rolling stock manufacturers, rolling stock operators and those subjects that order transport services (for example the regional authorities of the Czech Republic).

The increasing level of railway digitalisation makes cyber security a hot topic. VUZ services in the field of cyber security are provided by a team of experienced professionals: ethical hackers. Tests are carried out by means of simulated hacker attacks and continuous monitoring of the existing systems' reactions.

The entire testing process is monitored and recorded, and its output is an assessment report and a certificate issued by VUZ according to the VUZ standard, in accordance with ISO 27000, IEC 62443 or TC 50701.

Cyber-Security Testing: Vehicle, Train, Train Unit

Consulting services:

- Consultation and an IT architecture proposal from the cyber-security perspective
- External examination of the cyber-security architecture
- Assessment of the cyber-security documentation

sales@cdvuz.cz

cdvuz.cz



VÝZKUMNÝ
ÚSTAV
ŽELEZNIČNÍ, a. s.



A European Leader in Rail Transport Testing

Railway vehicle testing
Dynamic component testing
ETCS testing
Interoperability assessments
Safety assessments
Accredited certifications

17 km of railway test tracks
Covered by GSM – R signal
Equipped with ETCS L1 and L2 signalling systems
All major European power supply systems supported
10,000+ vehicles tested
1 500+ certifications issued
50 years of experience



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