

InnoTrans 2024 – The future of mobility

Berlin, September 24-27, 2024

Record exhibition.

- ▶ InnoTrans, the world's largest transport technology exhibition, set several records at its 14th edition from 24 to 27 September 2024. It **occupied all the exhibition halls** as well as the entire outdoor and road area of the Messe Berlin exhibition complex and **offered the largest exhibition space** since InnoTrans was founded in 1996. InnoTrans 2024 became a real record exhibition both in terms of exhibition space and the number of visitors. This year, around **170,000 visitors from 133 countries** came to the Messe Berlin exhibition complex. InnoTrans has convincingly demonstrated that it is the world's leading exhibition of transport technology and mobility.



Exhibition in numbers.

Segments of the exhibition.

- ▶ **InnoTrans** has once again become an event of the world railway industry. With fireworks of innovation and **226 world premieres**, the exhibition attracted visitors from all over the world. **2,940 exhibitors from 59 countries** presented their latest products and services **in five exhibition segments**: railway technology, railway infrastructure, public transport, interiors and tunnel construction. This year the exhibition has become even more international. About **600 new exhibitors** took part in it, and with them **new countries** such as Morocco, Malaysia, Indonesia and South Africa. Exhibitors from all over the world presented 133 vehicles on 3,500 meters of track. At the bus exhibition in the Summer Garden, expert visitors were able to see eleven buses in action on a 500-meter track.



Theme of the exhibition. Artificial intelligence.

- ▶ The main themes of the exhibition this year were sustainable development, electrification, digitalization and, above all, artificial intelligence (AI). AI is also becoming increasingly important in the transportation industry. InnoTrans has taken this development into account by creating a **new exhibition area - AI Mobility Lab**. It was absolutely the right decision. The demand for AI and cybersecurity solutions has been huge. 42 exhibitors from 17 countries presented their expertise in the field of AI, robotics, data protection and cyber security. The next InnoTrans will be held on the territory of the Messe Berlin exhibition complex from September 22 to 25, 2026.



About 90 companies were visited in 4 days

- ▶ EU-Trans representatives managed to visit about 90 companies from various industries. There were both highly specialized companies and those that provided products/services in several industries at once, here are a few examples:

1. **Jiangsu Railteco Equipment Co., Ltd.**, China. Specialization: design, manufacture, maintenance, sale and service of railway equipment products, such as freight wagons, axles, wheels, bogies, frames, wagon bodies and braking equipment, passenger wagons, freight and passenger wagons accessories, car interiors and accessories locomotives; is responsible for the design, processing, integration and project management of the railway automation system.

About 90 companies were visited in 4 days

- 2. Jekay International Track Pvt Ltd., India.** Specialization: production of freight wagons, building materials for infrastructure, turnouts, railway bogies and tracked machinery.
- 3. TURASASŞ-Türkiye RAIL SYSTEM VEHICLES INDUSTRY INC., Turkey.** Specialization: production of freight and passenger wagons, diesel trains, electric trains, locomotives, Sgns 90, Sggmrs, battery wagons.
- 4. Bitcomm Technologies Pvt. Ltd, India.** Specialization: focuses on providing innovative technological solutions for railways and metros. Using the latest advances in artificial intelligence / machine learning.



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OF THE FUTURE TO THE PRESENT
GELECEĞİN TEKNOLOJİSİNİ GÜNÜMÜZE TAŞIYORUZ.

TURASAS



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JEKAY GROUP

The major industrial partner to the Railway
Developers, Government, and Non-Government
organizations since 1980



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Enterprises (including from China, Turkey, India) manufacturers of wagons and locomotives:

- ▶ **Jiangsu Railteco Equipment Co., Ltd.** (China, production and service of freight (tanks, platforms, covered, semi-wagons, hoppers, for the transportation of ore and cars) and passenger wagons and locomotives, components (axles, wheels, bogies), machines for working with wheel pairs), <http://www.railteco.com/>;
- ▶ **TURASASŞ-Türkiye RAIL SYSTEM VEHICLES INDUSTRY INC.** (Turkey, freight (platforms, hoppers, covered, semi-wagons, tanks, covered with sliding walls, fire wagons, for the transportation of cars, ore, magnesite and special purpose wagons) and passenger wagons, bogies, trains, locomotives), <https://www.turasas.gov.tr/>;
- ▶ **Đuro Đaković Special vehicles** (Croatia, production and repair of wagons (covered, platforms, tanks, boxes) and wheelsets), <https://duro-dakovic.com/>;
- ▶ **Titagarh Rail Systems Limited** (India, freight (platforms, hoppers, tanks, covered, brake wagons, for the transportation of cars and special purpose) and passenger wagons, bridges, shipbuilding, electrical equipment), <https://www.titagarh.in/>;

Enterprises (including from China, Turkey, India) manufacturers of wagons and locomotives:

- ▶ **TransANT GmbH** (Austria, innovative freight wagons and superstructures on fitting platforms), <https://www.transant.com/>;
- ▶ **TATRAVAGÓNKA as** (Slovakia, freight wagons of various types and bogies), <http://www.tatravagonka.sk/>. 78 years of experience in railcar construction, high quality welding works, own design and construction department, innovative technical solutions, one of the market leaders;
- ▶ **Erciyas Rail Raylı Ulaşım Araçları San.** (Turkey, production of passenger and freight wagons and components), <https://erciyasrail.com/>. Products: Y25LS-1K bogies, hoppers, tanks, fitting platforms, bodies for passenger wagons, wagons for transporting cars;
- ▶ **Gok rail - GÖK YAPI SANAYİ VE TİCARET A.Ş.** (Turkey, production of freight wagons: tanks, gondola cars, fitting platforms, hoppers; production of trolleys Y25Ls), <https://gokrail.com/>.



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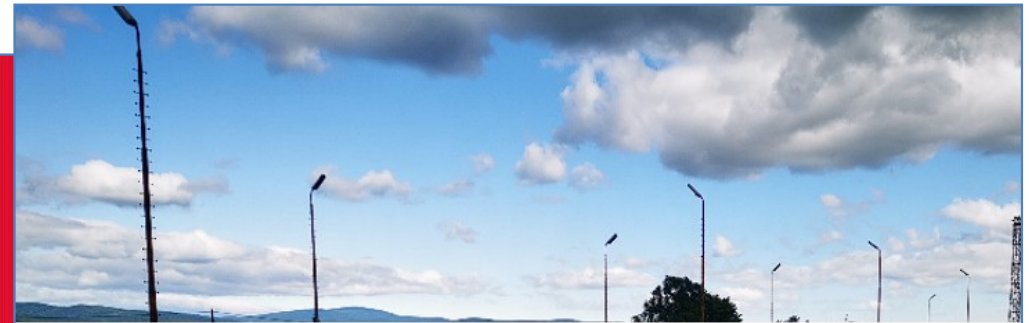
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We were founded in 2003 as RC Engineering, to design and manufacture railway and road vehicles and its components.

Innovative development of materials and structures of wagons together with NRR + SOFT:

- ▶ **TransANT GmbH** (Austria, innovative freight wagons and superstructures on fitting platforms), <https://www.transant.com/>;
- ▶ **Lucchini RS S.p.A.** (Italy, production of innovative steel, axles and wheels), <https://lucchinirs.com/>. The company specializes in the design, manufacture and assembly of all types of wheels for passenger and freight rail transport, such as monobloc, tire, elastic and low-noise wheels with diameters from \varnothing 300 to \varnothing 1500. Lucchini RS produces steel of the highest quality, which is constantly improved and improved. Moreover, steel grades are selected according to customer requirements and local conditions during operation;
- ▶ **Shenyang Quick High Robot Co. Ltd.** (China, robotics, artificial intelligence). Specializes in the design and production of non-standard automated production equipment and special machines. Products: automatic welding machines, robotic saddle welding workstation, pipe grouping machine, robotic loading and unloading, robotic palletizing, automatic weighing.
- ▶ **Cyient GmbH** (Germany, data analysis, collection and forecasting; vehicle control / automation and safety; signaling equipment; cyber security / encrypted communication; infrastructure monitoring, control and maintenance), <https://www.cyient.com/>.



Lucchini RS SpA

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hall | stand



Hall 7.1a | 160
Exhibitor



product groups



Robotics
in Artificial Intelligence Mobility
in Services



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Cold solutions - insulation, wagons, IT services:

- ▶ **Gerb Schwingungsisolierungen GmbH & Co.KG** (Germany, vibration isolation systems), <https://www.gerb.com/>. The company develops isolation systems for vibration and body noise control based on steel helical spring elements, viscoelastic dampers (VISCO dampers), vibration absorbers (tuned mass dampers, TMD), closed-pore polyurethane elasticity solutions (NOVODAMP). Another innovative quality product is closed-cell polyurethane, which meets the highest quality requirements and the strictest quality control standards;
- ▶ **Ayvaz AS** (Turkey, manufactures expansion joints, metal hoses, condensate traps, level indicators, fittings and fire protection products for all construction, heating, ventilation and air conditioning projects, as well as for all industrial applications), <http://www.ayvaz.com/>. Ayvaz thermal insulation jackets with insulating airgel material are the ideal solution for valves, condensate traps and compensators.

Tare, containers: Placement of cargo, mechanization and automation of NRR (bulk (coal), cars):

- ▶ **TransANT GmbH** (Austria, innovative freight wagons with reduced tare and superstructures on fitting platforms), <https://www.transant.com/>. For the first time, topology optimization is applied to freight cars. The most important design principles: weight optimization, standardization and modularity in production and maintenance, as well as the use of high-strength structural steel;



Flat BOX 70ft



Cover BOX 70ft



Multi BOX 48 ft



Bulk BOX 33 ft

- ▶ **San Engineering and Locomotive Co. Ltd.** (India, shunting locomotives, road machines, power units, gears), <http://www.san-engineering.com/>. Our diesel-hydraulic shunting locomotives are designed for the ages. Powered by a CUMMINS or CATERPILLAR engine with hydrodynamic transmission designed by VOITH and manufactured by SAN in India, the locomotives are robust, high performance and low downtime. What sets the SAN family of modular locomotives apart is their technology, diversity, performance potential, economy and sustainability.



Gerb Schwingungsisolierungen GmbH & Co.KG

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13407 Berlin
Germany



GERB Schwingungsisolierungen GmbH & Co. KG has been working in the fields of vibration isolation, vibration reduction and earthquake protection since 1908. This includes the elastic mounting of machines, systems and buildings as well as the vibration damping of large structures (e.g. stadiums, bridges, chimneys, floors, buildings) using vibration absorbers.

GERB supplies various stages of engineering, products and assemblies from a single source, including all necessary emission forecasts and verification measurements. Another focus is on the vibration isolation of all types of track (e.g. subways, trams, elevated railways).



Ayvaz AS

Mustafa Inan
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Ayvaz manufactures expansion joints, metal hoses, condensate drains, level indicators, valves and fire protection products for all construction and HVAC projects and all industrial applications.



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Bogies and the technology of wheel pairs when changing the size of the track (freight, passenger):

- ▶ **Talgo Patents SL** (Spain, production of passenger trains and locomotives and their maintenance). New - **Locomotive Br 105**, capable of operating on any terrain and suitable for high speed service. Featuring a modular design and easily configured to rail operator specifications, the **Br 105** represents Talgo's cutting edge traction technology (more details → <https://www.talgo.com/en/locomotive>).
- ▶ **LLC TATRA-YUG** (Ukraine, production of 7 types of trams and tram equipment, which includes traction converters, current receivers and electric motors. The design of the equipment is based on the latest technologies (for example, converters with IGBT transistors), more details → <https://tatra-yug.com.ua/pro-nas/>);
- ▶ **Kolowag AD** (Bulgaria, manufacturer of freight wagons (platforms, tanks), as well as wheelsets and axles). The company received a patent for the installation of a high-voltage electrical system on a wagon for powering refrigerated containers and trailers (more details → <https://kolowag.com/>);
- ▶ **Đuro Đaković** (Croatia, production and repair of axle units and gearboxes for various purposes such as trams, subways, trains, etc., production and repair of wagons (covered, platforms, tanks, boxes) and wheelsets), <https://duro-dakovic.com/>;

Bogies and the technology of wheel pairs when changing the size of the track (freight, passenger):

- ▶ **Henan Sulun Rail Transportation Equipment Co., Ltd** (China, production of wheel pairs based on German technologies), <https://www.hnsulun.com/>. The production line allows the company to manufacture products with diameters from 00 mm to 1350 mm, covering the full range of wheeled products currently in demand on the market. Aims to become the world's most important specialized enterprise in R&D, design, production, sales and service of wheels for railway transport, intercity railways, metro and industrial wheels;
- ▶ **VALDUNES INDUSTRIES SAS** (France, production of steel 42CrMo5-04 (very clean, vacuum steel, cleaned in ladle, allows to achieve the necessary properties for long-term strength of components, has very high hardness (up to 550HB), high wear resistance and impact strength)), <https://valdunes.com/index.php/en/>. The company is also engaged in the production and maintenance of all possible types of wheel pairs, of all possible specifications or standards, for freight and passenger wagons, as well as traction units;
- ▶ **KLW Wheelco SA (Interpipe)** (Switzerland, the railway brand of the international tube and wheel company INTERPIPE, production and sale of more than 240 standard sizes of solid wheels and 80 standard sizes of rims for passenger and freight railway transport, metro and rail urban transport), <https://www.interpipe.biz/upload/catalog/201805221114457c8c3a12021e93fa3ffc054a748f5f17.pdf> ;
- ▶ **Era Ozel Civata ve Makine San. Tic. Ltd.** (Turkey, produces small parts of freight cars and bogies: bolts, hinges, plates, gears, pins, brackets), <http://www.bogieparts.com/> .



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Railway Technology

KOLOWAG AD

Our company specializes in:



Henan Sulun Rail Transportation Equipment Co., Ltd

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Railway Technology



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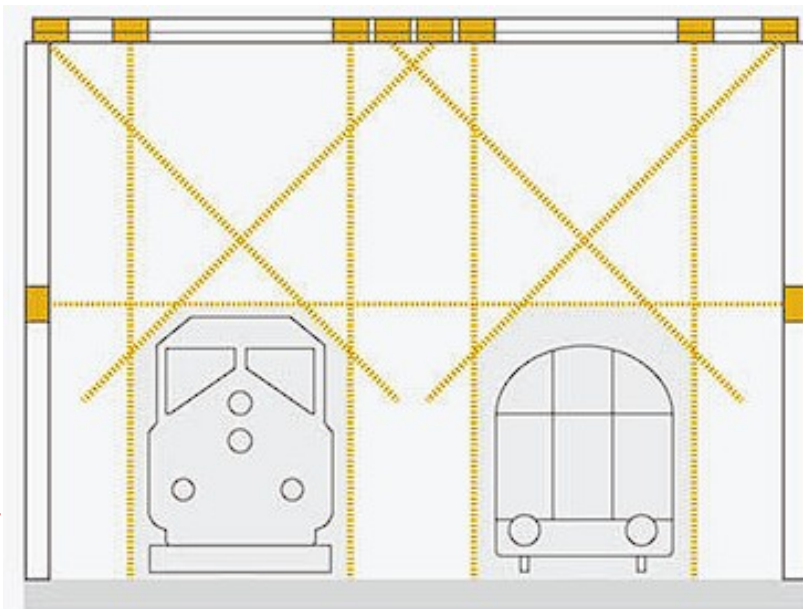
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IT solutions for the calculation of processing work of stations, sections of railways; mathematical modeling, forecasting:

- ▶ **CRRC Corporation., Ltd** (China, specializes in the design, manufacture, testing, commissioning and maintenance of locomotives, various types of wagons (semi-wagons, hoppers, covered, platforms, tanks, specialized, side-loading wagons and tank containers) and track machinery, including according to the client's drawings), <https://www.crrcgc.cc/ru/>;
- ▶ **Bitcomm Technologies** (India, artificial intelligence, infrastructure management systems), <https://www.bitcommtechnologies.com/>. The on-board system improves communication, safety and monitoring of trains. It includes the driver's HMI interface for communication with passengers, OCC and station masters, as well as passenger notification and information systems;
- ▶ **KONUX GmbH** (Germany, artificial intelligence, machine learning), <http://www.konux.de/>. Augmenting artificial intelligence with real-world solutions for predictive maintenance, network utilization and traffic monitoring, as well as rail infrastructure management planning.

IT solutions for the calculation of processing work of stations, sections of railways; mathematical modeling, forecasting:

- ▶ **voestalpine Railway Systems GmbH** (Austria, hardware and software for infrastructure), <https://www.voestalpine.com/>. They focus on optimizing life cycle costs by increasing the reliability, availability, maintainability and security of the asset. Rolling stock monitoring software makes it easier for users to perform specific tasks, such as maintenance scheduling and train management, more efficiently. The company offers systems that need to be installed on tracks or switches and will monitor the condition of wheels and axles, the presence of derailment, intelligent switching of switches, monitoring of train dimensions, and more. The systems will analyze and report any deviations;
- ▶ Train profile monitoring system



IT solutions for the calculation of processing work of stations, sections of railways; mathematical modeling, forecasting:

- ▶ **Kodify Limited** (China, infrastructure monitoring software → <https://kodify.com/products>). Combines advanced LiDAR sensors with high-resolution cameras to scan and obtain 3D images of infrastructure objects in real time.
 - ▶ **Designed for simplicity and efficiency.** Collect, process and analyze spatial data with ease, turning complex tasks into simple operations.
 - ▶ **A comprehensive solution.** From detailed 3D scanning and on-site data processing to sophisticated cloud analytics, all the tools you need are at your fingertips.
 - ▶ **Data becomes a road map for smarter choices.** Our intuitive platform transforms complex spatial information into clear and actionable insights, empowering you to make informed decisions with confidence.

- ▶ **Scanner SpatialSense Capture Reality**

High-precision 3D scanning with wide range and detail.





PERFORMANCE ON TRACK®

Innovative System Solutions for Future-Proof Networks



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Most of the companies we visited were from China, India, Germany and Turkey:

- ▶ China (25), India (21), Germany (13), Turkey (11), Ukraine (6), Poland (6), Switzerland (5), Austria (5), France (3), Slovakia (2), USA (2), Spain (2) and others.
 - ▶ Chinese and Indian companies are present in all industries;
 - ▶ German - specialize in the maintenance of wagons, the production of components for them, as well as software and AI;
 - ▶ Turkish - specialize in the production of wagons, locomotives and components for them;
 - ▶ Swiss - specialize in the production of locomotives and wheel sets;
 - ▶ Austrian - specialize in software and production of wagons;
 - ▶ For other countries, it was not possible to identify a trend.

Classification of all 90 companies into 3 groups according to their specialization:

1. **Topic: Hardware**

- ▶ Components for freight cars - 33 companies (of which: 9 for the production of wheel pairs, 7 for the production of trolleys, 6 for the production of bearings).
- ▶ Manufacturers of freight cars - 11 companies.
- ▶ Manufacturers of functional systems - 11 companies.
- ▶ Production of equipment and technologies for infrastructure - 11 companies.
- ▶ There are 9 companies specialize in repair and maintenance.
- ▶ There are 10 companies that manufacture passenger cars and components for them.
- ▶ Manufacturers of locomotives and components for them (including engines and traction systems) - 18 companies.

Classification of all 90 companies into 3 groups according to their specialization:

2. **Topic: Software**

- ▶ Artificial intelligence, various sensors, control systems and railway applications - 13 companies (see slides 19-21).

3. **Topic: Services**

- ▶ Railway forwarding - **Ost-West Logistic Poland sp. z o.o** (Poland, <https://owlp.pl/>);
- ▶ Terminal services - **Multimodal transshipment terminal Avtokom (Dry Port Yagodyn)** (Ukraine, <https://lad.com.ua/group-structure/autocom>);
- ▶ Financial services – **TAS Group** (Ukraine, <https://tas.ua/>). A modern financial and industrial group of companies specializing in banking and insurance services, logistics and leasing services, agricultural production, energy, industry, real estate and development, venture projects, etc.