🏠 **Directory**

Track & Infrastructure

DSRailTech

- Innovative railway company located in Czech Republic with operations since 2015
- Specialises in delivering diagnostics and safety systems to the railway industry with a huge scalability potential and innovative factor
- DSRT solutions bring more accurate results compared to existing solutions together with a broader range of metrics and rail coverage with a single system

About DSRailTech

- Our mission is to improve safety in the railways to protect lives and save costs
- DSRailTech is a mid-sized company with highly skilled and experienced professionals specialising in delivering diagnostics and safety systems to the railway industry

Our Solutions – Railways

- Disruptive deep-tech safety and diagnostics system helping railway operators and infrastructure owners to monitor train movements and detect precursors present or developing in the tracks and on rolling stock, thus increasing railway safety
- Detecting anomalies by analysing the vibrations propagated in the rail over longer distances
- Providing critical information to operators
- Integration with ERTMS and other systems
- DSRT solutions are able to detect accident precursors in advance and in very early stages, monitor their development and severity over time, thus playing a crucial role in preventing accidents from happening

DSRailTech Applications

- Rail occupancy monitoring
- Rolling stock monitoring

- Axle derailment monitoring
- Rail defect monitoring
- Track obstruction monitoring
- Flat wheel detection
- Intrusion detection application
- Switch condition monitoring application (dynamic effects)
- Portable warning system
- Rail buckling monitoring
- Hot box detection
- Hot wheel detection

New Applications Launching in 2025

Our R&D department is constantly working on the improvement and innovation of our solutions.

Rolling Stock Weighing

- Rolling stock weighing application measures the load on every wheel of any rolling stock, regardless of speed, informing the operators of any deviations from their set default values

Flood Detection

- Detects the presence of water and generates alarms whenever the water reaches dangerous levels
- Informs when the water retracts (sensors are not submerged anymore)
- Detects whether the water is flowing or still
- Detects solid materials in the water

DSRailTech Diagnostic System - DMP Platform

The DMP platform is composed of outdoor components and components which are housed inside an enclosure.

Installation of external cabinet, DMP Rack located in SolarXBox

The outdoor components are:

- **DXMD** – sensing element of the platform. It is responsible for detecting vibrations both from afar, and locally on top of the DXMD
- **DXIR** – IR detector for hot box, hot wheel and hot brakes detection
- **DACT** – vibration generating element of the platform used for rail defect and rail buckling monitoring
- **UNEX** – responsible for grounding and protecting signal and power lines against electrical surges

The rest of the components are either inside the DMP Rack, the main processing unit of the platform, or in a cabinet/enclosure together with the DMP Rack.
The DMP Rack can be housed in a SolarXBox provided by DSRailTech where the complete solution is powered solely by solar energy.

Installation

- Installation of DXMD, DXIR and DACT is quick, does not require interruption of traffic on the track and can be done by a single person

Portable Warning System – PWS

- The PWS (portable warning system) enables maintenance work to be carried out without restricting track operation and at the same time without endangering the health of the workers. The PWS is easy to operate without the need for lengthy training, is compact and portable, reliable and most importantly helps prevent serious injuries to people during railway maintenance.
- The PWS is housed in a briefcase which can be easily transferred to a maintenance site. After attaching the sensors under the head of the rail

Installation of DXMD and DACT

PWS portable warning system

using integrated magnets, the device is ready to detect the approaching train and report this fact to the two-way radio transmitter.

- The system can be connected to two-way radio transmitters from various manufacturers and can operate in PTT (push-to-talk) or VOX mode. The reports are available in several languages, including English, German and Spanish, and contain track identification and the state of the device. The reports are repeated until the danger passes. It is also possible to connect a beacon and a siren to the system wirelessly.
- It is possible to connect eight PWS briefcases together to form one system using cellular network and/or LoRa.
- RALM wireless visual and audio alarms can also be connected to the PWS briefcase. These alarms have a built-in beacon and siren. Up to 16 RALM alarms can be connected to a group of PWS briefcases.

Advantages of Our Solutions

- More reliable broader range of metrics than other systems on the market over further rail distances
- Significant reduction of procurement, installation and maintenance costs
- One system can cover up to 4 tracks using a single DSRT Rack
- Up to 3 applications can run on one system depending on the combination of the applications and the number of covered tracks
- Installation time is within hours, based on the number of covered tracks, and does not require

service interruption on the rail track
- The systems are self-learning which ensures high autonomy and extended categorisation of events
- The systems are modular with self-diagnostic capabilities which decrease the time needed for maintenance and service works to a minimum
- Web-based portal where our clients have a real-time overview about their installations

Unique and Innovative Approach to Acoustic Sensing

- The term 'acoustics' is usually associated with sound as perceived by a human; however, acoustics extends to the study of mechanical waves, not necessarily perceived by humans
- DSRailTech solutions are based on this extended expertise in acoustics and other dynamic measurements (such as temperature, displacement and acceleration)
- The sensors (DXMD) are finely tuned, and precisely positioned on the rail to acquire even the smallest vibrations travelling through the rails, as well as huge vibrations induced by a passing train
- By implementing these principles, we achieve that our sensors are the most sensitive, cover the spectral density which is the richest in relevant information and thus significantly increasing the reliability and reducing false positive alarms
- At the same time, by building the evaluation algorithms on deep and machine learning, we provide extended categorisation of events

Our Certifications

- Our company has successfully implemented and is certified in accordance with the internationally recognized ISO 9001, ISO 14001 and ISO 27001 standards

- We are currently preparing for SIL certification and the ISO 45001 (OH&S) certification

Our Ambition

To become one of the leading innovative companies in safety and diagnostics systems in the railway industry adopted across the world.

www.dsrailtech.com