

# GPR RAIL

## NON-INVASIVE AUSCULTATION TECHNOLOGY FOR RAILWAY TRACK INSPECTION



Real-time testing of a prototype of the track inspection vehicle designed

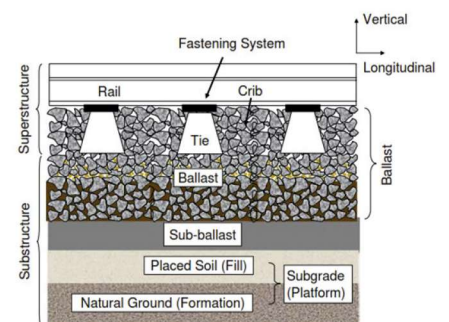
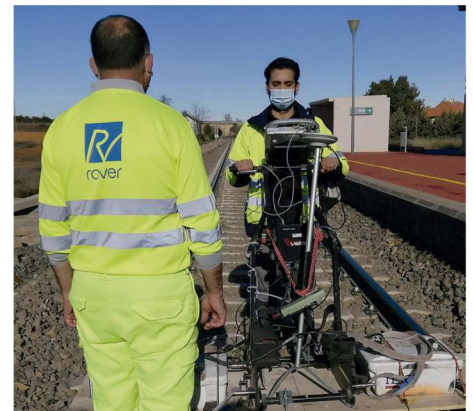
**GPR RAIL** is a dynamic auscultation system created for the evaluation of the level of fouling on the track's ballast.

Railway infrastructure is a network of highly reliable systems that requires constant monitoring to ensure maximum safety and comfort for the passengers. These maintenance plans cover all the aspects and elements of this infrastructure that are responsible for its safety, life extension and service efficiency, where the ballast is one of the main elements that need to be inspected.

The most important kind of deterioration suffered by the ballast is a process called fouling which hinders its performance and causes faults on the railway track whose intensity varies depending on the degree of fouling.

**ROVER'S** extensive experience in the rail sector has enabled it to develop a dynamic auscultation technology based on georadar to determine the extent of ballast's compactness. The exploration system is mounted on a track wagon and features several antennas of different inspection frequency bands that allow for the identification of areas susceptible to local intervention and/or associated geological risk.

Based on this inspection, a new plan is proposed to adapt the current predictive maintenance programme through which we can prioritise the most recommended or immediate actions required for each area, organise the frequency of the repair works and observe the surveillance of other less-affected areas of ballast deterioration.



Layered structure of the ballasted