

The logo consists of a stylized, abstract shape in purple and blue, resembling a ribbon or a stylized letter 'E' that curves and extends to the right.

EURAILSCOUT

Inspection & Analysis

FACTSHEET

COMPREHENSIVE ANALYSIS



Comprehensive Analysis: detection of rail defects

Defects in rails can result in rail damage, and, in the worst case, a breakage. To monitor the condition of the rail, **EURAILSCOUT** carries out NDT (non-destructive testing) train measurements on rails. EURAILSCOUT measures the condition of the rail surface and the interior of the rail. They do this by using ultrasonic and eddy current techniques combined with video recordings.

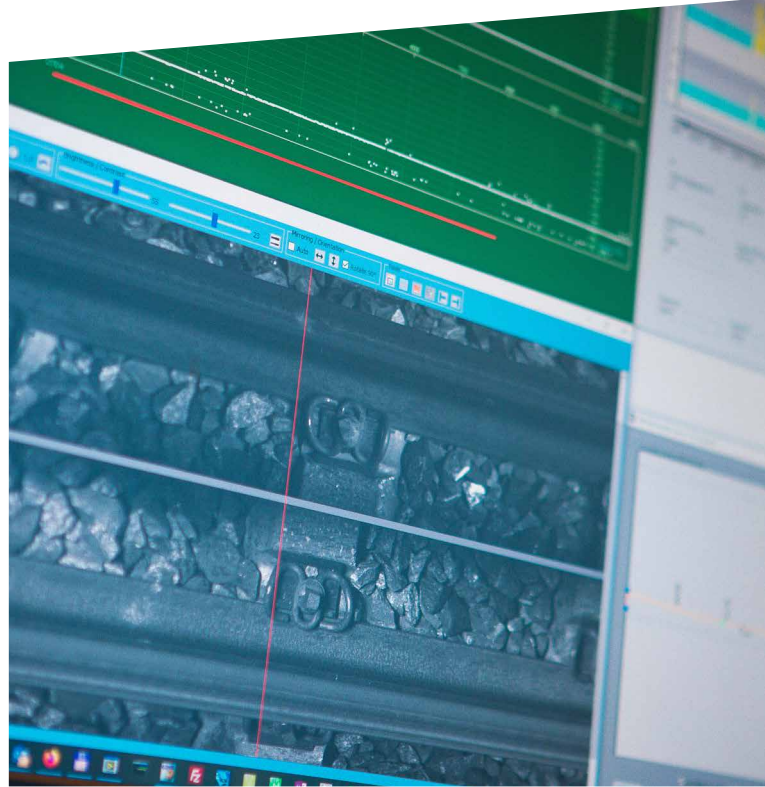
Using ultrasonic technology, the rail is checked for internal defects, such as cracks. The eddy current technique detects the initial formation of cracks in the rail surface, including squats (crack formation that can occur in curves and switches as well as straight sections) and rail head damage (head checks). The video recordings of the rails provide a visual image of possible defects, objects in the track (e.g. welds), and the environment.

Analysis of potential defects

Conventionally, the individual train measurements (ultrasonic and eddy current measurement in combination with video recordings) are analysed independently of one another. The analysis result is then inspected again by performing manual measurements, in order to establish the (potential) defect accurately. The execution of an NDT train measurement, and reconfirmation/verification using a manual measurement, is a conventional procedure in the rail industry, due to the fact that the hand measurements provide a more accurate result of the (potential) defect.

The hand measurements are carried out in a track that has been put out of service. As a result, they extract track infrastructure from normal use. In order to ensure a minimum number of re-inspections that need to be carried out and that the track remains available for normal use, it is important to carry out the initial analysis of the train measurements as accurately as possible.

Combination of three measurement sources in one analysis
In order to achieve the same result, **EURAILSCOUT** has arranged the so-called comprehensive analysis. The three measurements - ultrasonic and eddy current measurement and video recordings - come together in our data processing



and are analysed in parallel. As a result, suspects from one of the measurement streams are assessed in combination, with the support of two parallel measurement streams.

The purpose of the simultaneous analysis is an improved assessment of the defect, in order thus to more accurately determine the current condition of the rail. This enables defects to be detected in time. In addition, the objective is that:

- less manual measurements need to take place outside;
- the defects can be verified better;
- an inspection period is provided that is appropriate to the severity of the suspect through a more accurate classification;
- more responsible handling of failure of measurement systems.

