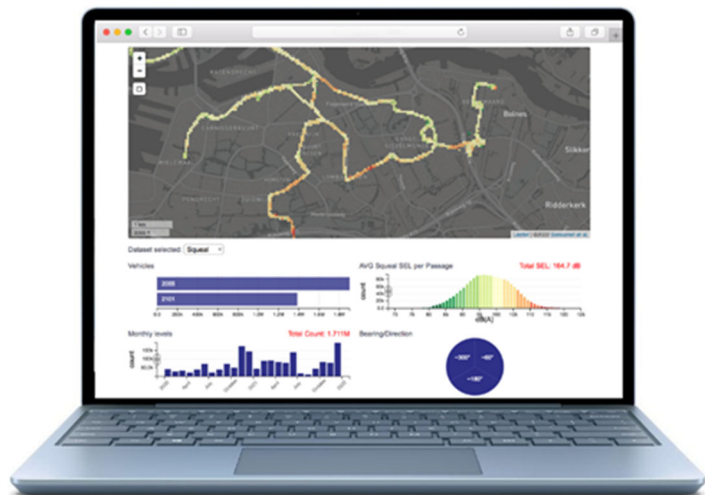


Noise and Vibration (N&V) Monitoring System for Rail track

Overview

RS Clare Noise & Vibration systems can optimise wheel & rail asset management through providing predictive maintenance indicators. Helping operators to determine suitable mitigation strategies such as Friction Management which can lead to Improved Passenger and driver comfort & reduced complaints.

Data output is via easy to use dashboards providing critical information on the noise and vibration levels in the network highlighting hotspot's for further evaluation. Other optional dashboards provide information on corrugation (based on ISO 3095), screech and gauge face noise. Data can be stored and compared over varying time scales.



Features & Benefits

The train borne monitoring system efficiently gathers extensive data on track condition visualised on user-friendly dashboards. This data output is a critical feature in a predictive maintenance regime to allow for condition based decisions reducing unnecessary maintenance helping to improve resource allocation efficiency.

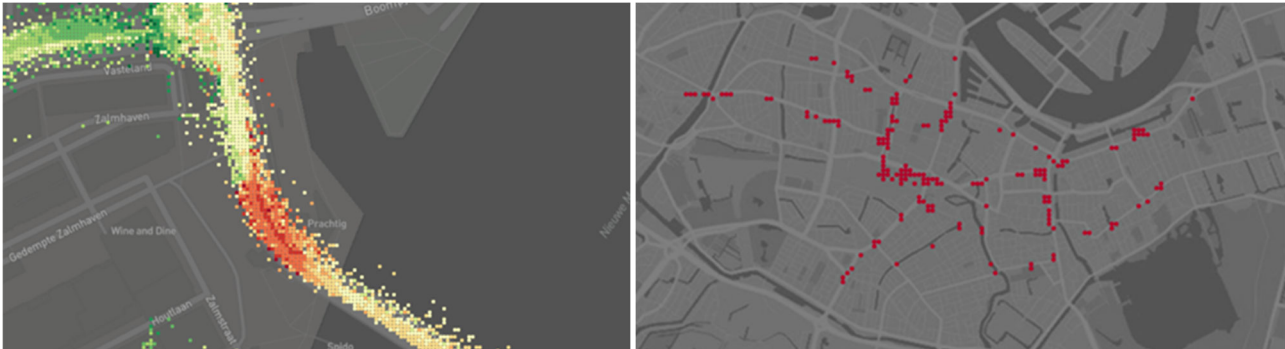
Data is stored and via algorithms, Artificial Intelligence (AI) and neural networks, information can be extracted to help detect early faults before rail track damage occurs.

Systems are retrofit enabled, compact and robust to cope with seasonal variations of temperatures, water, ice, chemicals and other contaminants, Maintenance is minimal and system or software updates are provided remotely under the leasing agreement.

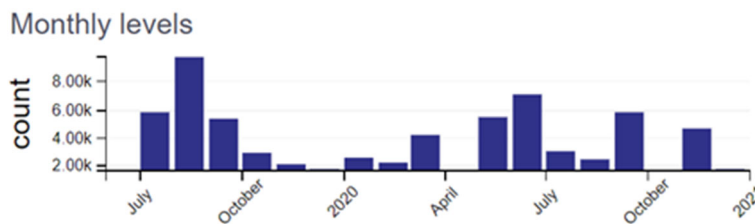
An additional Wayside mounted monitoring system is available to provide the same data to identify problematic rolling stock.

Infra dashboard – example of collected data from reference vehicles

- Problematic hotspots or regions of the network with suspicious characteristics.
- Comparisons between months helps to track the efficiency of implemented measures.



Average network noise and vibration compared to filtered hot spot regions



Twelve month filter between years

Type	Options	Train borne Monitoring
Function	Monitoring of which assets	Track
Hardware	Noise and MP3 data	◆
	2 x vibration sensor	◆
	Humidity Sensor	X
	Radar	X
	Track temperature	X
	UMTS without SIM	◆
	Battery 98 Wh (10-12 h)	◆
	Voltage 12V-36V or 230V	X
Options	MP3/MPEG3, FLAC Data	◆
	Spectrogram	◆
Dashboard Module	Boxplot	X
	Pantograph surveillance	◆
	Vehicle trends	X
	Messages/Limits	◆
	Module Direction	◆
	Module Difference	◆
	Module Screech	◆
	Module ripple	◆
Data	Availability	Up to 3 months after end of contract

◆ - Included with system, x - Excluded from system