

MONITORING RAILWAY INFRASTRUCTURE SECURITY



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The Sensonic Security Application supports railway operators and security managers in protecting critical railway infrastructure components:

- Prevent disruptions to railway operations
- Maintain safety of railway assets and passengers
- Prevent damage or loss of railway property

The Sensonic Solution monitors entire routes for activities that may pose a threat to security. These include human footsteps, digging, or cable tampering. This information helps railway personnel respond to imminent danger. It also enables railway security officers to build intelligence over time regarding trends and patterns of suspicious activities along the railway network.

VIBRATION-BASED INSIGHTS FOR SECURITY SURVEILLANCE

- 24/7 covert surveillance of rail assets
- Realtime comprehensive monitoring of long and remote areas
- Base security intelligence on activity patterns and trends
- Target preventative security measures effectively based on risk data

SYSTEM IMPLEMENTATION



24x7 monitoring



Notification of suspicious activity with location

Proactive



Threat patterns are analysed



Reactive



Security personnel take action



Security personnel verify alerts



Security measures are in a targeted manner



INFORMED DECISIONS TO BEST UTILISE **SECURITY RESOURCES**

DECREASE COMPLEXITY

- One system to covertly monitor multiple threats
- Minimum hardware requirement
- One system monitors up to 80 km of network

INCREASE EFFICIENCY

- Direct security resources in a targeted way
- Prevent incidents with pre-emptive action
- Reduce danger, damage, and downtime

MAXIMUM SAFETY

- Minimise on-track time for security staff
- Maximise safety for train operations

THREE STEPS TOWARDS **SECURITY**



1. IDENTIFY SUSPICIOUS ACTIVITIES

Human walking, digging, cable tampering



2. ASSESS AND BUILD RISK-PROFILE

Threat determined using combination of different activities: Type, duration, time and place of activity



3. RESPOND

Review live notifications and action an accurate and appropriate response



SENSONIC SECURITY DETECTION



CABLE TAMPERING DETECTION

- Copper cable theft is a problem for railway operators and is often associated with fibre damage caused by careless digging
- Identify theft risk to mission-critical copper cables along railway network
- In the event of cable damage, the solution provides the location of the damage/intrusion



IDENTIFYING GROUND DIGGING ACTIVITIES

- Manual digging activities near rail tracks indicate potential risk to railway assets
- Immediately locate damages to fiber-optic cables



TRESPASS DETECTION

- The high sensitivity of our Security solution enables us to detect people walking on or near the fiber
- Technology originates from securing other long linear assets such as borders and pipelines
- No hiding place from covert and tamper proof sensing element.

Risk profiles are customisable to provide the optimal level of protection for individual routes.

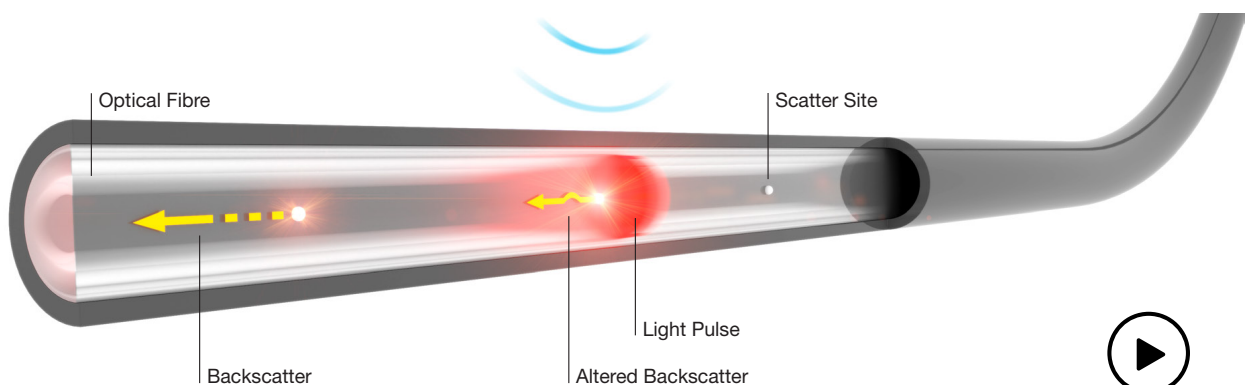
TECHNOLOGY

Sensonic pioneers new technologies, making it possible to monitor your entire railway network. From the vibration along your network, we create a digital SonicTwin® and derive highly valuable, actionable information that will take your operations to the next level.

- Holistic 24/7 view of all entire routes
- Generate real-time alerts and monitor developing situations

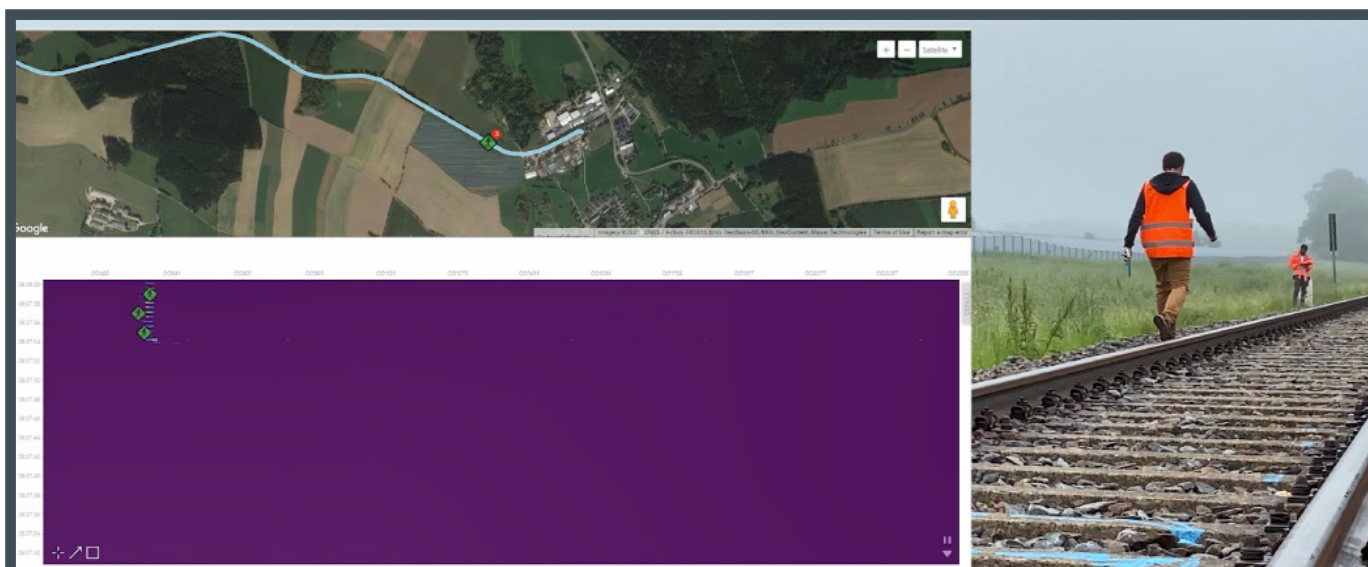
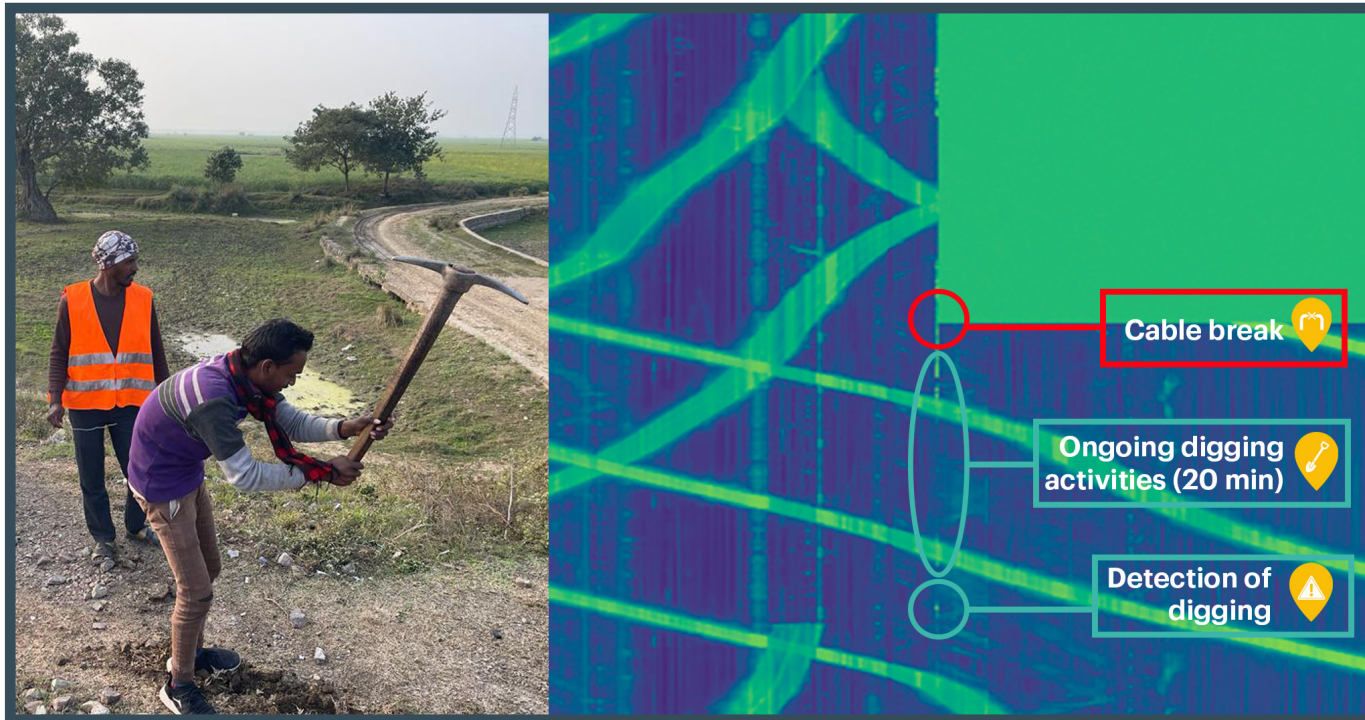
The Sensonic Solution's capability to achieve this is rooted in the use of Fiber Optic Sensing (FOS).

- Turns existing fiber optic cables into a multitude of vibration sensors along its length
- No plethora of new trackside sensors to install, power and maintain
- One Sensonic sensing unit can cover over 80km of track
- Simple and quick rollout: just power, internet and fiber optic cables are needed



WATCH
VIDEO

APPLICATIONS IN ACTION

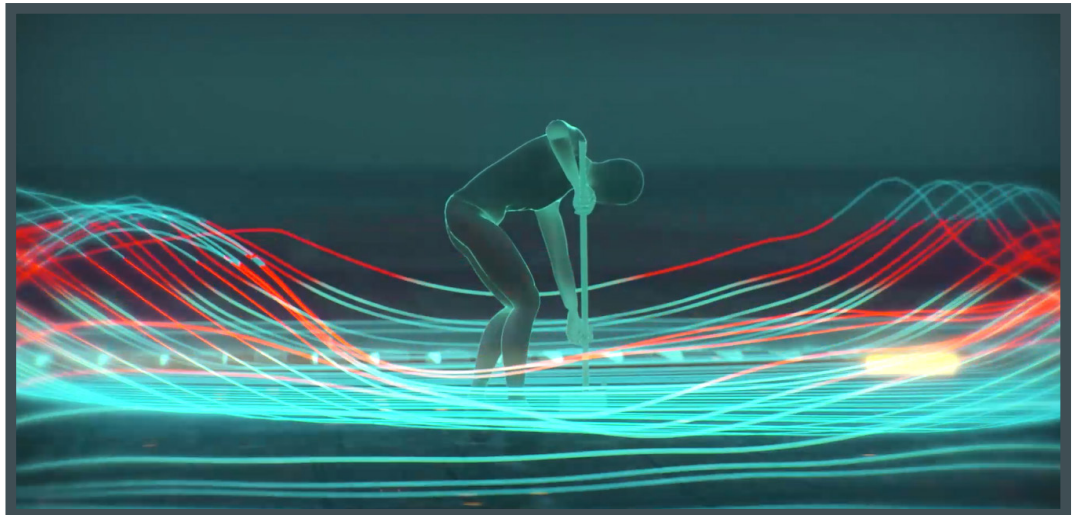




WATCH
VIDEO



VISIT
WEBSITE



2023



Protecting critical railway infrastructure: challenges, solutions, potentials.



DOWNLOAD
WHITEPAPER

WHO ARE WE?

Revolutionising how better decisions are made.

Sensonic is a deep-tech company with locations in India, Austria, the United Kingdom, the USA, the United Arab Emirates, and Brazil. We enable our clients to monitor entire track and fibre optic networks 24/7. We generate a digital SonicTwin® of vibrations along the network using fiber optic sensing. From this, we derive valuable information, using intelligent algorithms trained by latest AI and machine learning approaches. We reveal a previously unattainable depth of insight on various topics, such as track condition, security intrusion by people or animals and safety critical events like landslides or rock falls to avoid accidents. This holistic view revolutionises the way decisions can be made and allows railways to take operations to the next level.

