Track-Safety Condition Monitoring System

and much more...

enekom

SEPTEMBER 30, 2020

Condition Monitoring through Rail-Based Acoustic Domain

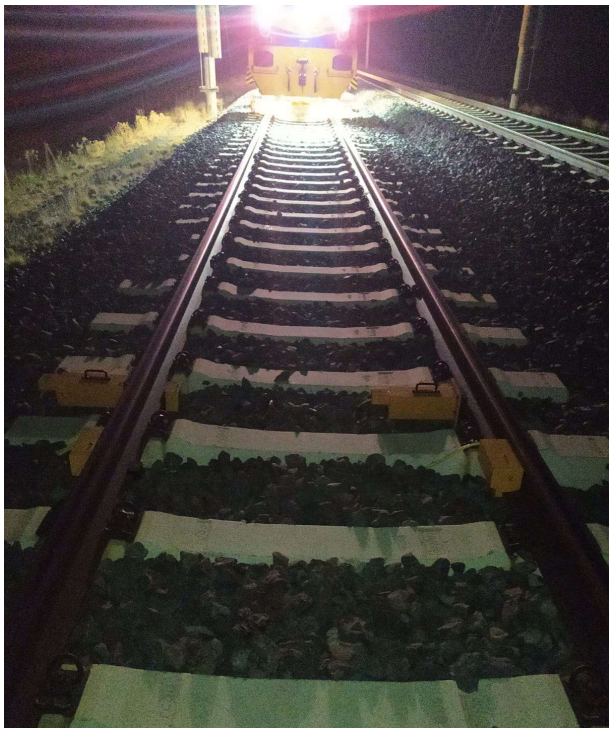
RailAcoustic®

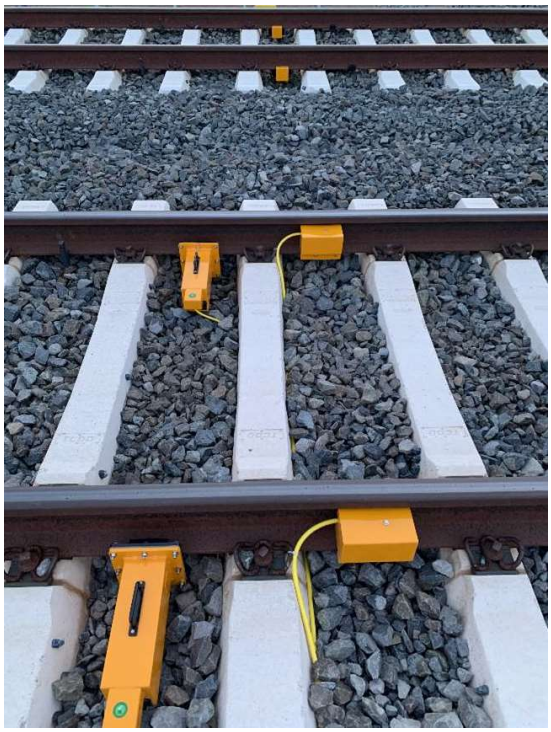
“ACOUSTIC DOMAIN” Technology is Changing the Game in Track Safety!

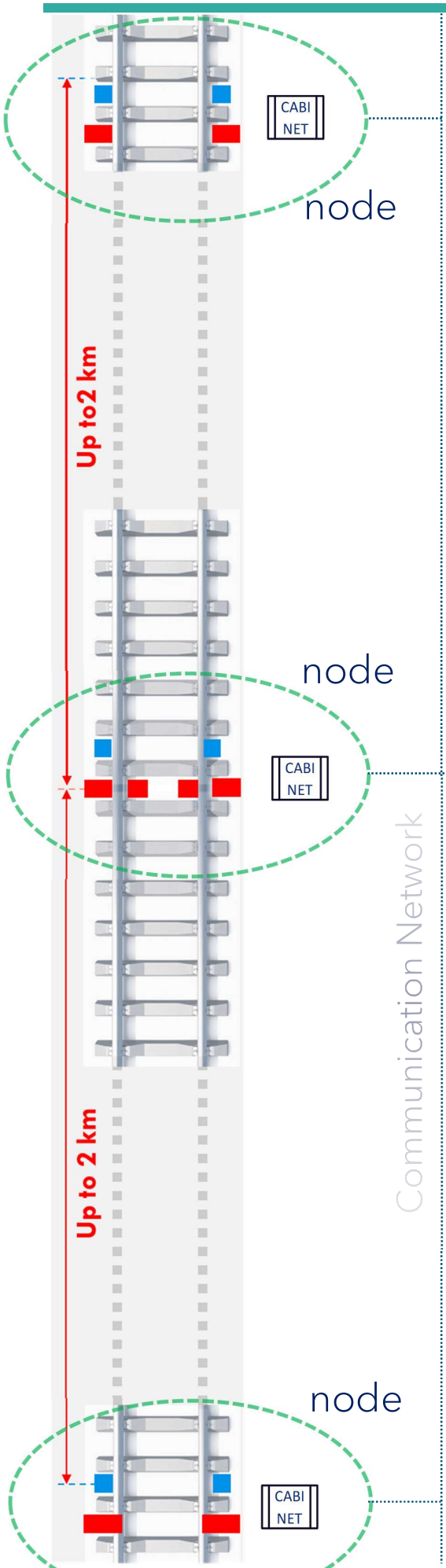
Most Reliable Information gathered through the “RAIL”

The “proven” **RailAcoustic® Track-Safety Condition Monitoring System** is successfully in operation since **December 2018**, at a 90 km double-track High-Speed Line section, with many features such as broken and cracked rail detection, train movement & velocity tracking, landslide-flood detection, flat-wheel detection, rail temperature monitoring and more… The second project implementation is in progress at Slab-Track High Speed Rail for 11 tunnels and planned to be put in operation by the end of 2020. New and prestigious international projects are in the pipeline!

Understanding how real-time, continuous information in the rail body reduces maintenance costs and increase asset availability







All components of the system are connected through an IP-based communication network. RA-Generator (Transmitter), RA-Receiver and track-side RA-Cabinet modules, which are the basic elements of the RailAcoustic® System, are constantly diagnosed by the remote Command & Control Center and the operating status of the system is monitored remotely. At the same time, the central software performs track-safety condition monitoring through ***rail fracture tests***, ***landslide-flood detection***, ***rail temperature measurement***, ***train location & velocity tracking*** *and* ***flat-wheel detection*** *functions and informing the operator or related alarm monitoring system on-screen or remotely, in real time.*

Command & Control Center

1 RA-Generators

node **2** RA-Receivers

3 RA-Cabinet

Automatic Rail Defect Tests

The system itself generates acoustic signals!

1

Acoustic Signal Injected to the Rail Body

2

Acoustic Signal Received from the Rail Body

3

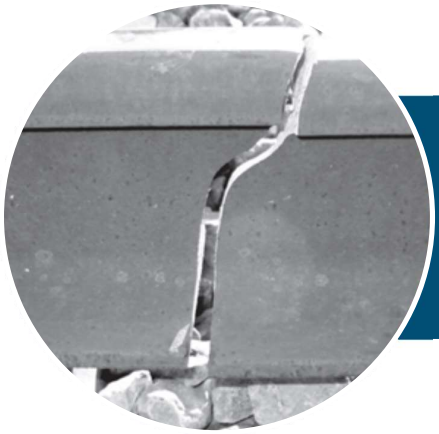
Data Processed and sent to the Control Center

Results shown on the Control Center

4

Without the need for a train to detect the rail defects...

What is detected through Automated or Manual Rail Defect Tests?



Broken Rails

Major Internal Rail Defects

Partial Cracks

Floods

Exact Location of Rail Flaws

Landslides

Major Buckled Rails

...through processing the acoustic signal amplitude changes and acoustic signal reflections, during these tests.

What is monitored in “Stand-By Mode” in Real-Time?

Train Location & Velocity

Rail Temperature

Train Flat Wheels

WHERE to use the RailAcoustic® System?

High Speed Rail (BALLAST)

High Speed Rail (SLAB)

Metro Lines

Modernized Rail Lines

What is required/preferred to deploy the RailAcoustic® System on a track?

If possible, Continuous Welded Rails

Preferably Fiber-Optic Communi-cation Network

110V or 220V Trackside Electric Power

Concrete Sleepers & Plastic Pads

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yaşam için teknolojiler

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