Overhead Line
Predictive Maintenance Solution

PANTOhealth

Elevating Rail Safety with Cutting-Edge Digital Solutions

PANTOhealth is a specialized clinic dedicated to pantograph and overhead line systems, offering advanced digital solutions.
One of PANTOhealth's key offering is predictive maintenance product suites.
Our predictive maintenance suites are designed to deliver real-time monitoring and proactive diagnostics for your overhead line equipment (OHL).
By integrating cutting-edge sensors, AI-driven analytics, and a user-friendly monitoring dashboard, our solutions help you predict issues before they damage significantly.

If you're an overhead line manager, infrastructure owner, or maintenance company looking to digitize your OHL maintenance and prevent urgent issues, PANTOhealth has the solutions you need.

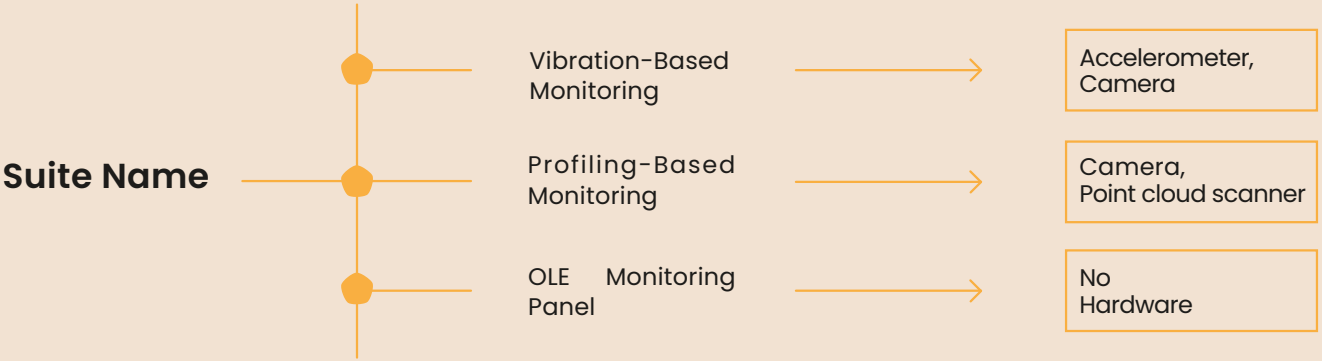
What is PANTOhealth predictive maintenance solution?

PANTOhealth's predictive maintenance solution combines advanced monitoring hardware (Industrial-IoT) with software to gather and analyze real-time and simulation data from railroad OHL infrastructure.

This integrated approach allows us to offer a range of tailored product suites that employ both hardware and software for Optimal maintenance performance.

This data is analyzed to predict potential issues and enable timely maintenance, with the goal of improving OHL infrastructure management, ensuring safety, and enhancing the reliability and cost-effectiveness of operations.

At PANTOhealth's Pantograph and Catenary Clinic, we provide a comprehensive approach to OHL predictive maintenance.



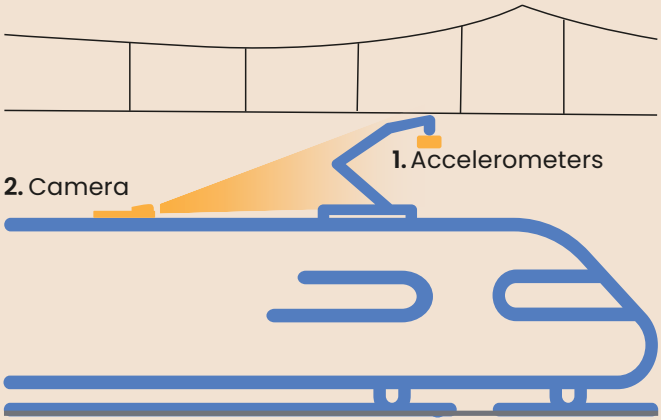
If our default suits don't fit your needs, we are flexible enough to customize a solution with your choice of hardwares. Custom solutions include both software and hardware.

Vibration-Based Monitoring Suite:

Want to boost operation reliability?

The Vibration-Based Monitoring Package equips your vehicle with advanced accelerometers and a high-resolution camera, delivering real-time health insights for your pantograph and OHL, and extending equipment life.

Hardware:



Accelerometers

Camera

Real-Time Insights & Benefits Displayed on Dashboard

Critical Alerts: Immediate notifications with precise impacted geo-location of catenary on the map

Data-Driven Decisions: Continuous acceleration data monitoring and trend analysis to anticipate maintenance needs effectively.

Priority Maintenance: Prioritised recommendations on when to inspect a point before it becomes critical.

Video Evidence: Visual footage of detected issues for deeper analysis.

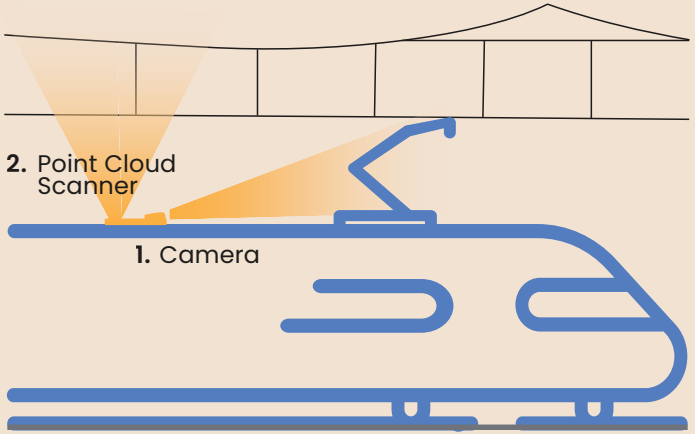
- After detecting the problematic geo-location you can create the maintenance task for it and log the maintenance actions for that specific geo-location.

Profiling-Based Monitoring Suite:

Looking to enhance your rail inspection capabilities?

Our Profiling-Based Monitoring Package is the perfect solution. Equip even your rail inspection vehicle—without pantographs—with this advanced system and gain unparalleled insights into overhead line maintenance situation.

Hardware:



Camera

Point Cloud Scanner

Real-Time Insights & Benefits Displayed on Dashboard

Contact Wire Monitoring: Real-time data on contact wire height, stagger (zig-zag), and thickness, preventing disruption to daily transport.

Comprehensive Diagnostics: Detailed diagnostics for optimized maintenance planning.

Actionable Alerts: Immediate notifications for abnormalities and critical geolocations.

Maintenance Optimization: Use precise monitoring data for efficient interventions, minimizing operational delays.

- After detecting the problematic geo-location you can create the maintenance task for it and log the maintenance actions for that specific geo-location.

OHL Monitoring panel:

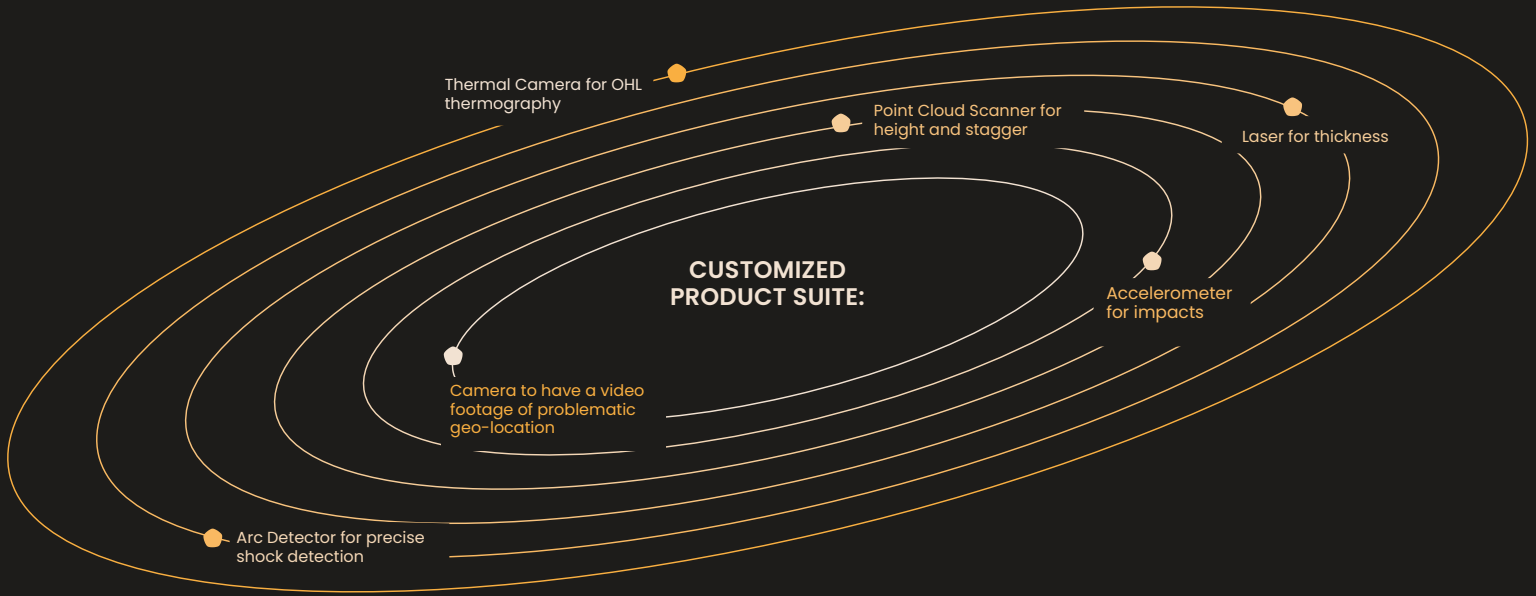
Have you stored years of valuable data in cold storage? It's time to unlock its full potential and move it to our panel. With the OHL Monitoring panel, you gain a powerful, software-driven solution for digitizing and improving your OHL maintenance procedures.

Key features and benefits:

-Data visualisation on map
-Abnormality detection like height, staggering, thickness
-Customised reports and trend analysis
-Transforming raw data into actionable insights
-Reducing costs and time-consuming OHL maintenance processes

Galactic Suite: build up Your Own Monitoring Universe

Imagine your customized solution as your own solar system, where each planet represents a device that you can choose from. Just like selecting planets in orbit, you can hand-pick the devices that best suit your needs. Each device, or "planet," brings its own set of KPIs that will be measured and displayed in real-time on our panel. Build your system by choosing from these devices and let PANTOhealth provide the insights you need to optimize your operations.



What Makes PANTOhealth Predictive Maintenance Exceptional?

Data-Oriented Solution: Transforming raw data into actionable insights.

Customised Data Collection: Tailored data acquisition to fit your unique needs.

Critical Alerts & Priority Actions: Customizable alerts and priority actions for each user, supported by comprehensive technical reports.

We also offer in-depth sessions and workshops, where you can explore use cases and best practices, ensuring you fully leverage the system's capabilities.

Trusted by:

HGK INTEGRATED LOGISTICS GROUP

INFRABEL

KRUCH

DB NETZE

Leipziger Verkehrsbetriebe

Supported by:

Co-funded by the European Union

Pro FIT – Projektfinanzierung Co-funded by the European union

eit Urban Mobility

Co-funded by the European Union

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Scan the QR code to discuss more about the solution.

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