

# Edge-Based Vision Positioning for Rail Networks

## RailLoc

Machines With Vision's RailLoc is a camera-based positioning system designed for railway measurement and inspection where Global Navigation Satellite System (GNSS) coverage is unavailable or reliability is limited.

During an initial survey run, onboard cameras capture a unique digital fingerprint of the route, which is post-processed using standard survey techniques to create an accurate geographic reference. Subsequent measurement runs use this fingerprint to deliver highly repeatability positioning across the entire network, including tunnels, cuttings, and urban environments with poor or no GNSS coverage. RailLoc operates at speeds of up to 125 mph, generating positioning data in near real time to support continuous inspection workflows.

A companion mobile application allows maintenance engineers to navigate directly to recorded defects, reducing time on site and eliminating slow, error-prone searches compared with manual methods or crack detection computer vision models alone.



## Key Intel-Enabled Features



High-Accuracy Vision



Fast Defect Location



On-Device Inference



No GNSS or Cloud

## Accelerate Business Transformation with Optimized, Ready-to-Deploy, Intel-Powered AI Partner Solution

- Deterministic, high-throughput vision processing using integrated AI acceleration.
- Low latency matching and inference via OpenVINO-optimized, on-device models.
- Consistent accuracy at speed through local processing and reduced pipeline overhead.
- Robust, field-ready performance on energy-efficient Intel® edge platforms

## Intel Products and Technologies

- [Intel® Core™ Ultra 7 Processor 258V](#)
- [OpenVINO™ Toolkit](#)

### Notices & Disclaimers:

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*High-precision rail positioning without **GNSS**, cloud, or compromise.*

### Ordering Guidance:

- [Machines With Vision | Contact Us](#)

**Country/Geo:** United States; Canada; Europe, Middle East, and Africa; Asia Pacific, Japan, Australia & New Zealand

**Edge Verticals:** Transportation

**Edge Use Cases:** Smart Rail

### Learn more:

- [Machines With Vision Website](#)