

Portable mobile mapping system for infrastructure monitoring

Maintaining railway infrastructure is crucial, especially with aging tracks and a shortage of skilled workers.

HMAX for Infrastructure by Hitachi Rail uses sensors on trains or other vehicles to monitor track health, ride quality, and more, integrating data into a single platform. Leveraging machine learning and AI, HMAX reduces operating costs and enhances railway reliability.

Following the acquisition of Omnicom Balfour Beatty in 2025, HMAX now offers new train-borne monitoring of rail infrastructure capabilities, including:

► Mobile monitoring

► Mobile measurement

► Remote monitoring



Mobile Measurement

From rotating lasers to traditional Total Station, our measurement systems **automate geomatics**

With our **growing ability to plot trends** over time, clients compound their **value with us** over years.



Surveying



Mobile mapping

Each unit contains **two high-speed laser scanners**, an inertial measurement device, and an imaging system.

The **vehicle mounted geomatic hardware** is synchronised to **capture high density spatial point cloud data**, removing the need for manual surveying of the network.

Used in the UK, Ireland, Canada, and Australia.



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Case Study

Toronto

Track surveys enhance decision making for new work planning and the asset lifecycle, **improving safety** and **reducing cost** and **carbon emissions**

Mobile Measurement for:



Surveys



Signal
Sighting



Vegetation/
Fencing/



Clearance &
Gauging



Driver Route
Learning



Line-side
assets

Compatible with **industry-standard** CAD tools.

A **single pass** is enough

▶ **2 million**
points a
second

▶ **Survey
grade**
accuracy

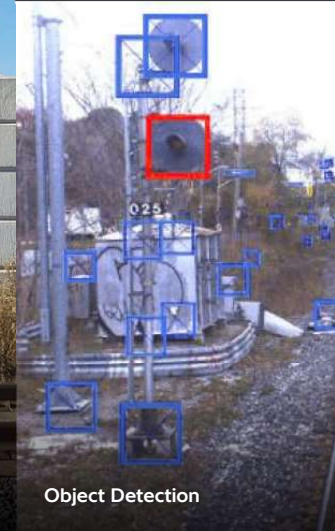
▶ **360° scan**
combined with
positioning data



Portability gives flexibility



High-speed laser scanner



Object Detection

“

Survey once, and use the data over the asset lifespan. Reducing boots on ballast and creating a benchmark to track changes.”



Ruth Brukwicki
Data Services
Lead,
Hitachi Rail

Talk to an executive or schedule a demo:



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