

🏠 Directory

< Data & Information

Rail Vision

Pilot Schemes Showcase the Capabilities of Rail Vision's Advanced Safety Systems



Operational trials with Israel Railways and Rio Tinto Iron Ore are demonstrating the capabilities and benefits of Rail Vision's main line system.

Rail Vision provides advanced safety systems that lower accident risks, unplanned downtime and maintenance costs through

advanced obstacle detection and classification technology.

Using the latest artificial intelligence (AI), deep learning and advanced sensor technology, it has developed state-of-the-art systems designed for **main line** and **shunting yard** environments.

These can be engineered to provide bespoke solutions for customers' specific needs.

Advanced Obstacle Detection

AI, paired with electro-optic sensors and deep learning, enables the systems to detect and classify obstacles up to 2km ahead.

Monitoring a predefined area of interest, the system generates real-time visual and audio alerts for both the train operator and the

command-and-control centre, and to date is the only system that can detect and identify a person at risk in time to avoid a collision.

In shunting yard environments operational dead zones can also be monitored. This enables safe and secure wagon coupling that – with Rail Vision’s one-of-a-kind pathfinder technology – can be done remotely.

Big Data Analysis

Rail Vision also offers a **big data service add-on**. This analysis of railway infrastructure and surrounding ecosystems, through GIS mapping, allows ongoing infrastructure inspection, environmental trend analysis and image-based navigation.

Tailored reports are provided that support predictive maintenance, enhancing resource planning and quality assurance.

“By collecting and analysing big data you don’t have to wait until there’s a problem. You can monitor a situation and plan your maintenance ahead of time, which provides savings in terms of costs and downtime,” says Rail Vision CEO Shahar Hania.

Trailblazing Early Adopters

Israel Railways is one of the first rail operators to implement Rail Vision’s technology. This spring the partners completed a three-month pilot of the main line system on a freight rail locomotive operating in southern Israel.



Drivers were taught how the system works and provided feedback throughout the pilot, which tested the system in a wide range of weather conditions from sunshine to fog and rain.

“It was a pleasure working with Rail Vision on this pilot, we received all the support we asked for from installation and training through to operation management,” says Noam Peleg, VP Rolling Stock at Israel Railways.

“We’d had a few collisions with objects and animals in the past and were looking for a solution that would help prevent these happening in the future by enabling the driver to see far enough ahead that they could stop the train in an emergency.”

“But as well as these safety improvements, the system will also help us to predict problems in the areas surrounding the track, such

as bending signs or falling trees,” Peleg adds.

This trial was so successful that the state-owned railway company approached Rail Vision regarding another proof of concept (PoC) trial – this time for its switch yard solution. This will see Israel Railways cargo and rolling stock departments work closely with Rail Vision to test the solution over a 30-day period that – at the time of writing – was scheduled for August 2022.

Ensuring the Safety of Long-Distance Automated Rail Networks

Rail Vision is working on another exciting project, this time on Rio Tinto Iron Ore’s AutoHaul network. This is the world’s first automated, long-distance, heavy-haul rail network. Trains of almost two and a

half kilometres in length, monitored remotely from an operations centre in Perth, travel across a 1,700 km-long network.

Working closely with lead project technology partner and integrator Hitachi Rail STS, Rail Vision's main line system is undergoing a three-month trial in Pilbara, Western Australia, in a pilot that includes an option to extend for an additional six months in different use cases.

“Understandably when they switched from drivers to autonomous train operation (ATO) there were concerns around the fact there wouldn't be a physical driver looking out for dangers. They searched around the world for a

suitable solution and after seeing our technology in action asked us to partner with Hitachi on this pilot straight away,” enthuses Hania.

“Our mainline system is now running in the Australian wilderness, detecting any risk. In the bush this can be anything from geese and cows to kangaroos. With a vehicle of this scale, any collision or derailment would cost tens of millions of dollars, so by preventing just one or two incidents our system pays for itself.

“ATO is the future, and part of our vision is to be the smart eyes for autonomous trains. It was an honour to be chosen by Rio Tinto for this pilot.”

Come and See Rail Vision at InnoTrans

If you're looking to lower the risk of train accidents while also increasing operational efficiency, Rail Vision has the answer.

Visit us at InnoTrans – **Hall 9, Booth 455** – to discuss your unique challenges and how our technology can help.

