

Trespass Detection and Reduction in Rail (Without the False Alerts)



Trespass is frequently the second largest cause of train delays. A single incident in 2023 resulted in delay costs in excess of £161,000.



Trespassers at depots and CNI sites can cause criminal damage, vandalism & theft. In a single UK city area in 2024, theft caused 13,485 minutes of delay, costing £725,000.



Technology solutions for the detection of trespass are often challenged by false detections, with responders losing confidence in these systems and ignoring alerts.

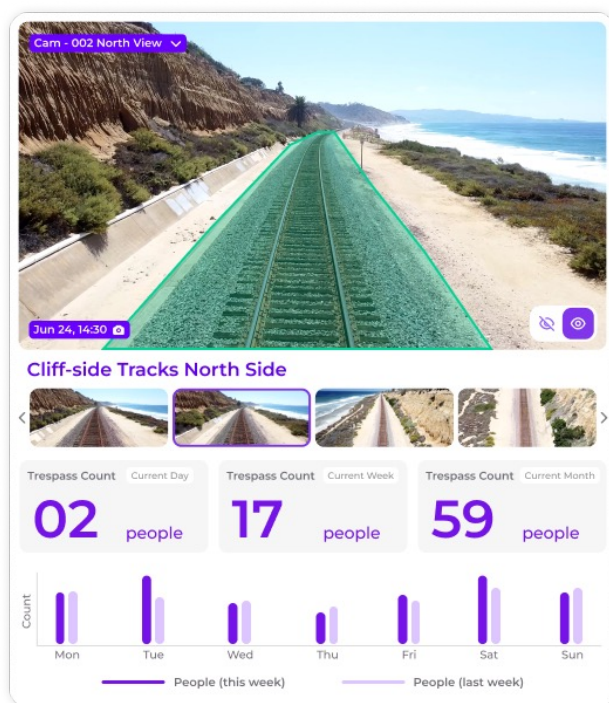
The Importance of Trespass Detection

SIYTE leverages advanced AI technology to analyse real-time CCTV, from existing cameras, to identify potential trespassers and alert appropriate responders. This system has been proven to work on the railway, with firm evidence of both detecting and reducing trespass.

- **Deterrent:** Trespass detection can be linked to automated announcements from speakers embedded in cameras or external speakers to deter trespassers.
- **Real-time Alerting:** SIYTE alerts stakeholders to events via SMS, Email or Mobile App), with redacted snapshots/videos, and can add context (e.g. wearing PPE).
- **Data Insights:** Logging and reporting of trespass events for analysis for better decision making (e.g. informing a business case for improved fencing).

Why SIYTE is different: SIYTE works with any camera system and vastly reduces false alerts, enabling responders to trust the system.

- **Removing False Alerts:** SIYTE re-analyses each detection using AI to remove false alerts.
- **Added Context, Better Decisions:** SIYTE can add context to alerts, such as detecting PPE, providing staff with valuable context.
- **Any Camera:** SiYtE can work with smart cameras, basic cameras that send email alerts or cameras with no capability at all.
- **GDPR Compliant Alerts:** SiYtE alerts stakeholders to events (via SMS, Email or Mobile App), redacting faces from the image

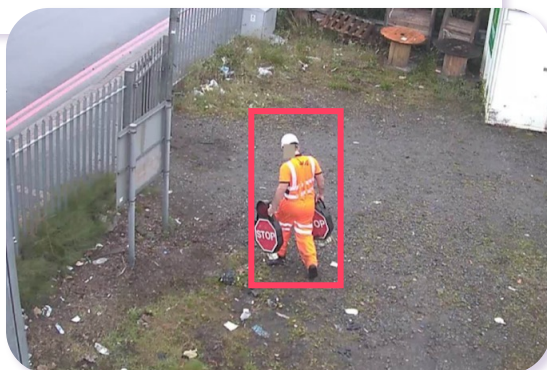


Under the Hood: SIYTE Trespass Detection



Person detected on tracks without required PPE for more than 5 minutes

Leeds



AI-Powered False Alert Prevention

Proven on the UK railway to reduce 98% of false alerts, SIYTE leverages its Cloud Inference Engine to analyse every detection and remove false positives before recording events and alerting staff:

- **Misdictions:** SIYTE re-analyses every detection to check it really is a person.
- **Reflections in Trains:** SIYTE checks that the person is not a reflection, in a train window or boarding a train.
- **Misplaced Detections:** Where platforms are crowded, SIYTE ensures people are not misplaced due to being partly hidden from the camera.
- **Engineering Work:** SIYTE can check what the trespasser is wearing, filtering out engineering workers through detecting their PPE (both in the daytime and nighttime).

Consistent Trespass Detection on Any Camera

- **Smart Cameras:** SIYTE can re-use the capabilities of smart CCTV cameras, where the camera provides the initial detection and SIYTE's cloud service removes false alerts and provides a reporting and alerting service
- **Basic "Email Alert" Cameras:** These cameras detect people using machine vision or motion are notoriously "noisy". SIYTE can receive the email alerts, and its Cloud Inference engine will remove false alerts.
- **"Dumb" Cameras:** Where cameras have no smart capability (e.g. analogue cameras running through encoders), SIYTE's on premise compute can analyse camera streams, detecting people, effectively making them smart.

