TECH OFFER

Envisioning a Safer and a More Productive World with Video Analytics

KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Artificial Intelligence
Infocomm - Big Data, Data Analytics, Data Mining & Data Visualisation
Infocomm - Video/Image Analysis & Computer Vision

TECHNOLOGY READINESS LEVEL (TRL): TRL9
COUNTRY: SINGAPORE
ID NUMBER: TO174354

OVERVIEW

Monitoring safety and productivity on industrial sites is traditionally manual, error-prone, and resource-intensive. Supervisors often struggle to monitor multiple CCTV feeds, leading to missed incidents and project delays.

This technology leverages AI-powered video analytics to automate the detection of safety violations—such as missing PPE, high-risk behavior, and productivity lapses—without the need for constant human oversight. In Singapore alone, over 3,000 construction-related injuries and 17 fatalities were reported in 2023, underscoring the need for smarter solutions. Beyond real-time alerts, the system delivers actionable insights to support long-term safety improvements and operational efficiency.

The technology owner is seeking system integrators and software companies for R&D collaboration and test-bedding.

TECHNOLOGY FEATURES & SPECIFICATIONS

This technology is hardware agnostic and is compatible with any IP camera or network video recorder to retrieve and analyze the video feed in real-time and provide alerts that can be sent to various messaging platforms.

A server is deployed to provide the full spectrum of services such as running the software, triggering alerts, as well as the dashboard. This technology is enabled by the large construction datasets that powers object detection and tracking. The current range of detection includes scenarios such as barricade removal, workers working at height or under lifted load, safe distancing, and presence of workers in high-risk zones, PPE and more. Besides the detection of high-risk scenarios, this technology can also track productivity insights such as construction floor progress or precast lifting times.

Deployment for existing use-cases can typically be completed within 1 to 3 weeks, allowing for quick integration and value realization. For newer or customized applications, the deployment timeline may vary depending on the complexity of the detection requirements and site-specific conditions.

POTENTIAL APPLICATIONS

This technology can be applied across multiple industries, offering both safety monitoring and advanced analytics capabilities

Construction

- Detection of missing PPE, unsafe behavior, and high-risk activities
- Time-lapse services for project progress tracking and reporting

Manufacturing

- Monitoring worker compliance and detecting workflow bottlenecks
- Enhancing factory floor safety with real-time alerts

Maritime & Port Operations

- Safety surveillance in dockyards and cargo handling zones
- Monitoring restricted area breaches and operational hazards

Oil & Gas

- Detecting proximity to hazardous zones and PPE compliance
- Supporting incident analysis in high-risk environments

Smart Cities & Facility Management

- License plate recognition for access control
- Detection of illegal parking, speeding, and vehicle trespass

MARKET TRENDS & OPPORTUNITIES

Medium to large construction projects are often delayed and experience cost overruns, which can be significantly improved through significant productivity gains, cost savings and early risk identification just by enabling end users to have a better

understanding of their operations wherever they are which would make this a very attractive solution.

UNIQUE VALUE PROPOSITION

- Significantly improve safety hazard detection and compliance with automatic 24/7 monitoring
- Increase in productivity by reducing manual site inspections of up to 50%
- Early identification of risks to plan for mitigation
- Reduce human errors and ensure consistency