

What if your factory wasn't just a facility, but a facilitator?

AI Vision Solutions for Smart Factories

SMART TECH

Canon

Contents

Executive summary 3

The future of manufacturing 4

Unlocking business value with Canon's AI camera solutions 5

Canon's AI vision portfolio 7

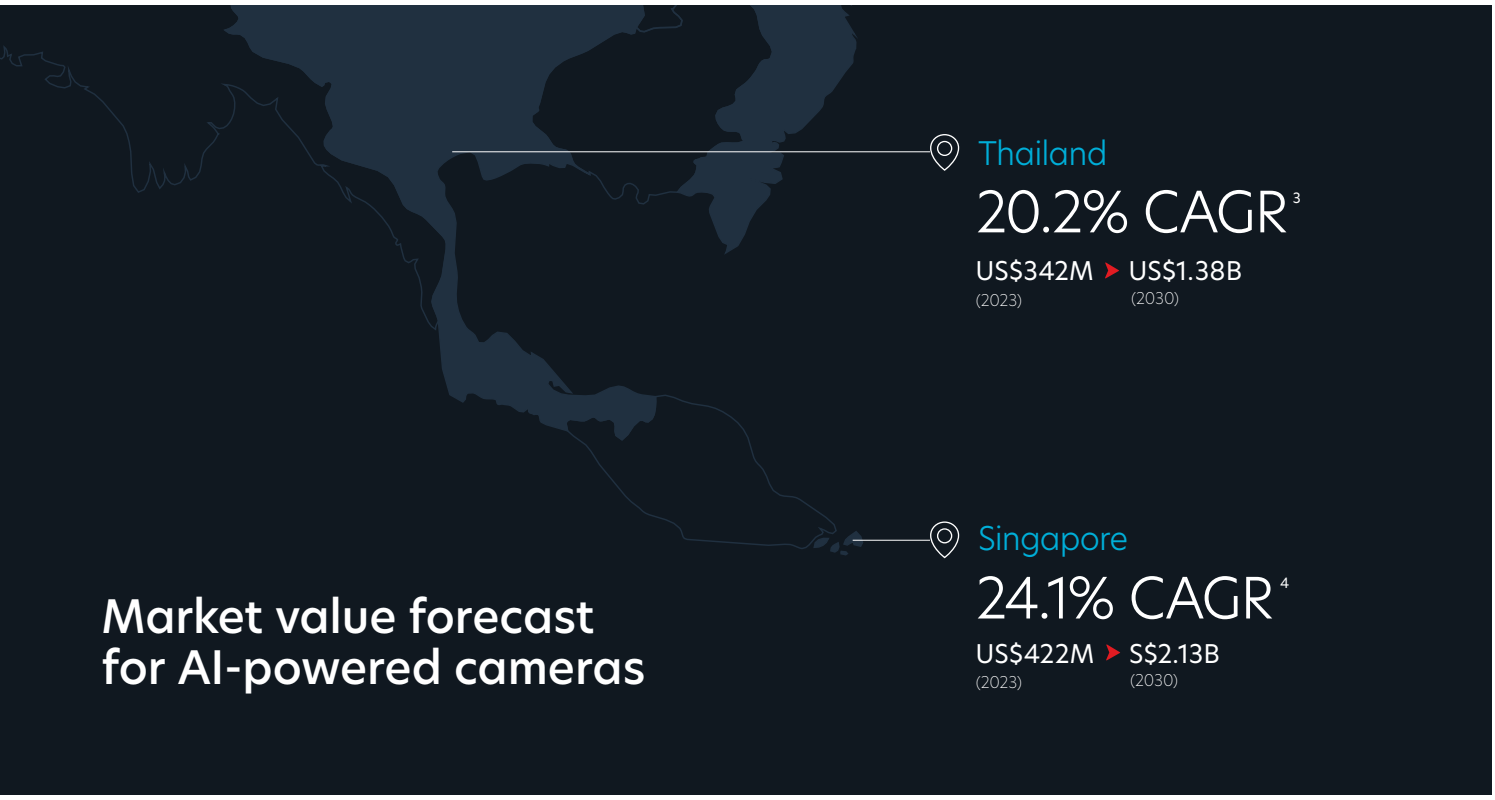
Get in touch 9

AI-powered cameras: a cornerstone for Industry 5.0

The journey into Industry 5.0 is marked by a stronger focus on people—creating workplaces that are not only efficient, but also safe, resilient, and sustainable. While automation and digitalisation have transformed production in past decades, protecting the human workforce remains a critical challenge. In Singapore, for example, manufacturing plants still saw 125 fatal and major injuries in 2024, making up 20% of the nation's total workplace fatal and major injuries for the year[1].

As production speeds up, the stakes of safety incidents rise—impacting both people and business continuity. AI-powered surveillance brings a proactive approach to safety, using intelligent detection to prevent risks and breaches before they escalate, supporting the Industry 5.0 vision of human-centric manufacturing.

The safety machine vision segment is projected to grow fastest from 2025 to 2032, driven by rapid advances in AI-powered image recognition and automation[2]. As manufacturers embrace Industry 5.0, safety vision systems are enabling proactive monitoring and predictive insights to protect workers and boost resilience. With AI-powered camera adoption in Asia forecast to rise by over 20% CAGR through 2030, intelligent vision technology is fast becoming essential for safer, smarter factories.



In this report, you will learn about major factory safety trends in Asia, discover the business value of proactive safety powered by AI, and explore how Canon's portfolio of industrial cameras and AI video analytics solutions can help better protect your workers, production, and reputation.



The future of manufacturing: AI vision will move from edge case to essential

Manufacturing by nature is a high-risk sector. Even with strict workplace safety regulations in place, manufacturers in Singapore still saw 123 major injuries in 2024[1], reinforcing that traditional safety measures alone are no longer sufficient.

Additionally, data privacy regulations are also getting increasingly prescriptive about collecting and storing video that contains personal data[5].

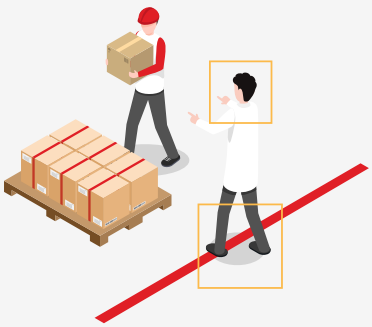
Together, these are strong signals that there is an industry-wide imperative to move beyond passive surveillance systems to proactive AI vision solutions.

And this doesn't have to be a cost just to keep pace—a comprehensive and versatile AI camera solution like Canon's can deliver business value across multiple fronts, reducing downtime, enhancing worker safety, and protecting your brand.

Unlocking business value with Canon's AI camera solutions

It is impossible to assign a business value to protecting the lives of your factory workers. However, Canon's AI-powered surveillance and video analytics solution deliver much more.

Protecting your workers and your brand



Autonomous detection of safety hazards and breaches, such as:

- Workers missing PPE in hazardous zones
- Unauthorised entry or unsafe behaviour in hazardous areas

Safety breaches trigger real-time alerts, giving supervisors and floor managers the ability to swiftly respond, keeping your workers safe and minimizing collateral impact to the business and the brand.

In addition, heatmaps can also be generated and analyzed to monitor activity in sensitive areas, detect unusual patterns, and quickly identify security risks.

Increase efficiency and minimize downtime



Canon's network cameras integrate with industrial control systems such as MES/SCADA, allowing you to:

- Verify alarms and monitor processes even in hard-to-access or hazardous areas
- Analyze data collected to optimize predictive maintenance schedules

With the ability to quickly detect, assess, and respond to anomalies, your factory workers will be able to respond to situations as they develop to reduce unplanned downtime.

Smart manufacturing powered by Canon

Beyond intelligent surveillance, Canon's industrial cameras and AI-powered video analytics solutions bring greater efficiency and safety across your entire production facility to accelerate your Industry 5.0 transformation journey.

Seamless & Safe Access Control Via Facial Recognition

Contactless & Secure access into premises

Occupancy Management

Live tracking of occupancy for emergency evacuation

Intrusion Detection

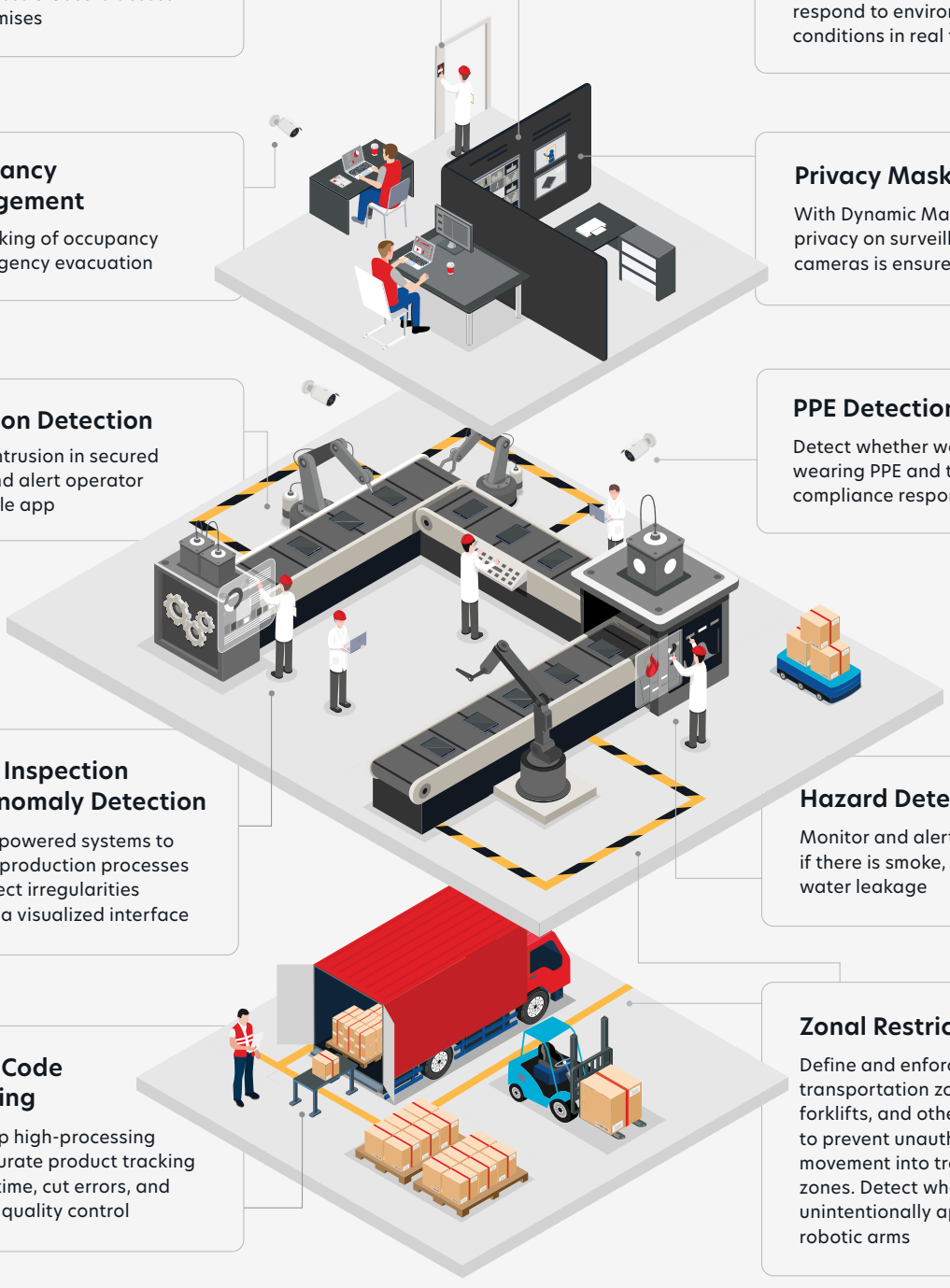
Detect intrusion in secured areas and alert operator via mobile app

Smart Inspection and Anomaly Detection

Uses AI-powered systems to monitor production processes and detect irregularities through a visualized interface

Batch Code Scanning

Speed up high-processing and accurate product tracking to save time, cut errors, and improve quality control



Environmental Monitoring Systems

Integrates cameras and other technologies to observe and respond to environmental conditions in real time

Privacy Masking

With Dynamic Masking, privacy on surveillance cameras is ensured

PPE Detection

Detect whether workers are wearing PPE and trigger compliance responses

Hazard Detection

Monitor and alert operator if there is smoke, fire or water leakage

Zonal Restrictions

Define and enforce transportation zones for trucks, forklifts, and other vehicles to prevent unauthorized movement into transportation zones. Detect when staff unintentionally approach robotic arms



Canon’s AI vision portfolio

Axis industrial video cameras

Axis Communications—part of the Canon Group—delivers high-definition and 4K cameras in various form factors tailored to differing needs, including panoramic, onboard, thermal, modular, PTZ, explosion-protected, and wearables.

Axis Communications cameras support AI-powered analytics, and seamless integration with Axis or other third-party systems. Whether for a single site or a vast operation, you can manage everything from one intuitive platform, keeping your facilities secure and your operations running smoothly.

- Precision imaging in all lighting conditions
- Intelligent analytics for proactive safety and efficiency
- Rugged performance in demanding environments
- Scalable for small sites or enterprise-wide use

Lean more about Industrial video cameras

Milestone XProtect

XProtect, developed by Milestone Systems—a Canon Group company and global leader in video management systems (VMS)—simplifies the integration between factory systems and building management.

It acts as a central hub that lets different systems communicate and work together, including production equipment, lighting, air-conditioning, and security devices from different manufacturers. XProtect not only improves operational efficiency but also helps reduce downtime and energy costs through automation. And because XProtect integrates with Canon Group's BriefCam AI video analytics, teams can rapidly review hours of footage in minutes and trigger real-time, AI-driven alerts to accelerate investigations and response.

- Seamless integration with PLCs for real time monitoring
- BACnet compatibility for centralized control of building systems
- Automation triggers for energy efficiency
- Visualization of factory floor activity for faster fault detection

Learn more about XProtect

Edge Analytics

Bring advanced intelligence to your factory with Workplace AI—an edge computing solution that adds AI-powered video analytics to your camera network. Workplace AI adapts easily to the unique demands of the manufacturing industry which help to strengthen workplace safety and maximise operational efficiency.

Featuring built-in detectors for shapes, 1D/2D codes, analog meter readouts and number recognition—Canon's Vision Edition image-processing AI enables sophisticated inspection and automation at the edge.

Workplace AI

- Works seamlessly with your existing camera infrastructure
- Runs multiple analytics tasks per camera
- Enables functions such as perimeter security, PPE detection, equipment and environment monitoring, heat mapping, facial recognition, and more

Discover Workplace AI

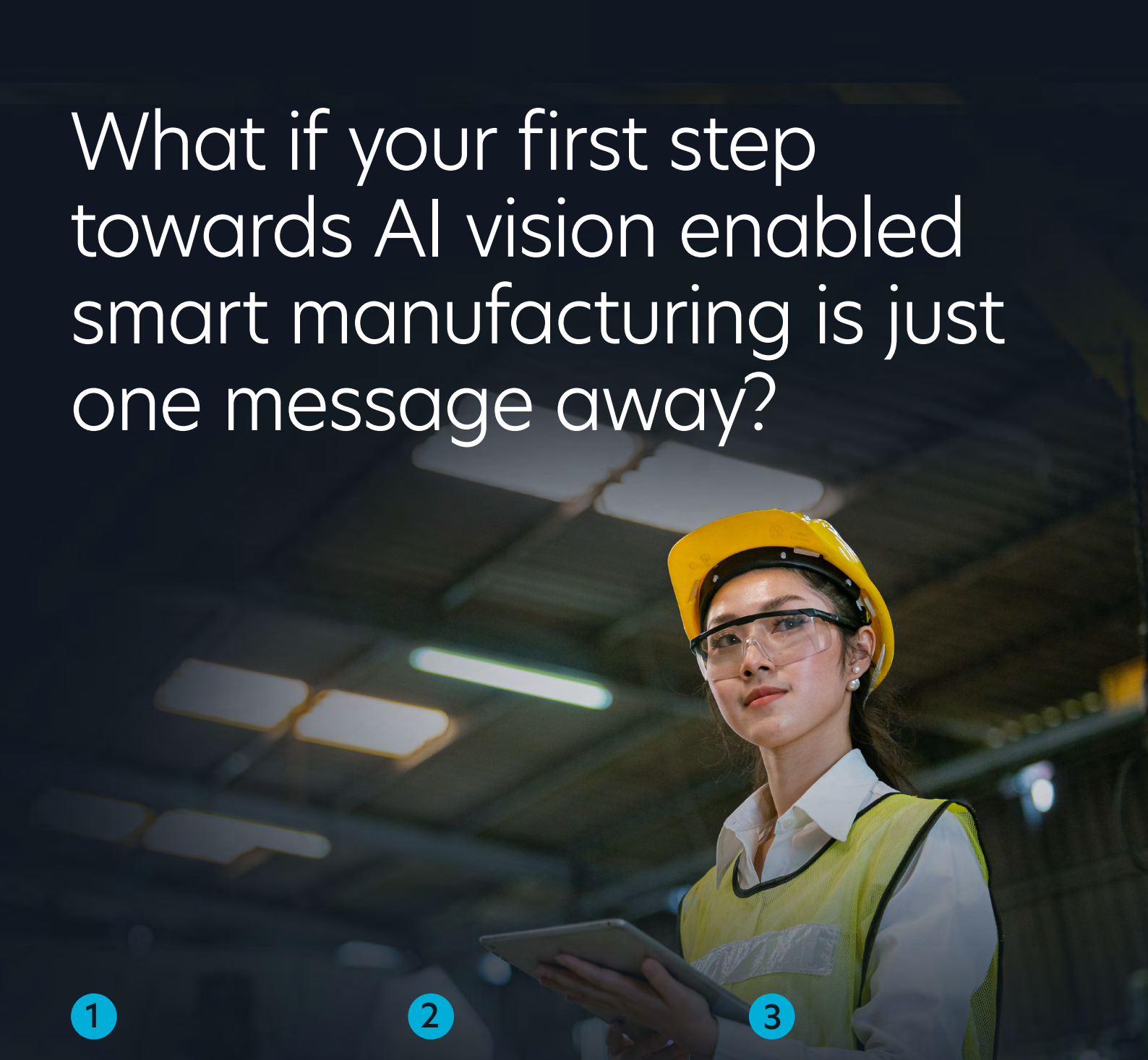
Vision Edition

- Automate visual inspection with 18 different types of image processing detection
- Scalable solution that can be customized to fit different needs

See how Vision Edition works

BUSINESS TECHNOLOGY EXCELLENCE AWARDS 2025
Facial Recognition - Aviation
Canon Singapore Pte. Ltd.
Learn more

What if your first step towards AI vision enabled smart manufacturing is just one message away?



1

With rising safety risks, stricter regulations, and strong industry adoption trends, manufacturers are shifting from passive surveillance to proactive AI vision systems that not only ensure compliance but also cut downtime, boost safety, and protect brand reputation.

2

AI-powered camera and video analytics solution safeguards workers and brand reputation by detecting safety breaches in real time, enhancing security insights, and actively monitoring environments and equipment.

3

Workplace AI integrates with your existing camera infrastructure, regardless of brand, to bring intelligent video analytics direct to your factory floor. The result is a scalable, integrated solution that strengthens safety, enhances security, and drives efficiency across your manufacturing operations.

If you're keen to explore how Canon can support your Industry 5.0 transformation, get in touch and talk to a Canon Smart Tech expert today.

Contact us

References

1 Singapore Ministry of Manpower, *Workplace Safety and Health Report 2024*, March 2025

2 Data Bridge Market Research, *Asia-Pacific Safety Systems Market Size, Share and Trends Analysis Report – Industry Overview and Forecast to 2032,* October 2024

3 Next Move Strategy Consulting, *Thailand AI CCTV Market*, July 2024

4 Next Move Strategy Consulting, *Singapore AI CCTV Market*, April 2024

5 Personal Data Protection Commission Singapore, *Advisory Guidelines on the Personal Data Protection Act (PDPA) for Selected Topics*, May 2024