

# Bringing AI to vision: the next generation of video surveillance

We partnered with Hanwha to bring AI-powered object recognition to their video surveillance software—enhancing operational control, boosting user confidence, and unlocking new business potential through intelligent analytics.

## About Hanwha Vision

Hanwha Vision is a global leader in next-generation video surveillance. As part of the Hanwha conglomerate—a diversified multinational enterprise—Hanwha Vision delivers high-performance cameras, video processing infrastructure, and integrated security systems across sectors.

Their continuous pursuit of excellence in the global security landscape aligns with our values and mission, motivating us to partner in the creation of innovative solutions that push the boundaries of security technology.



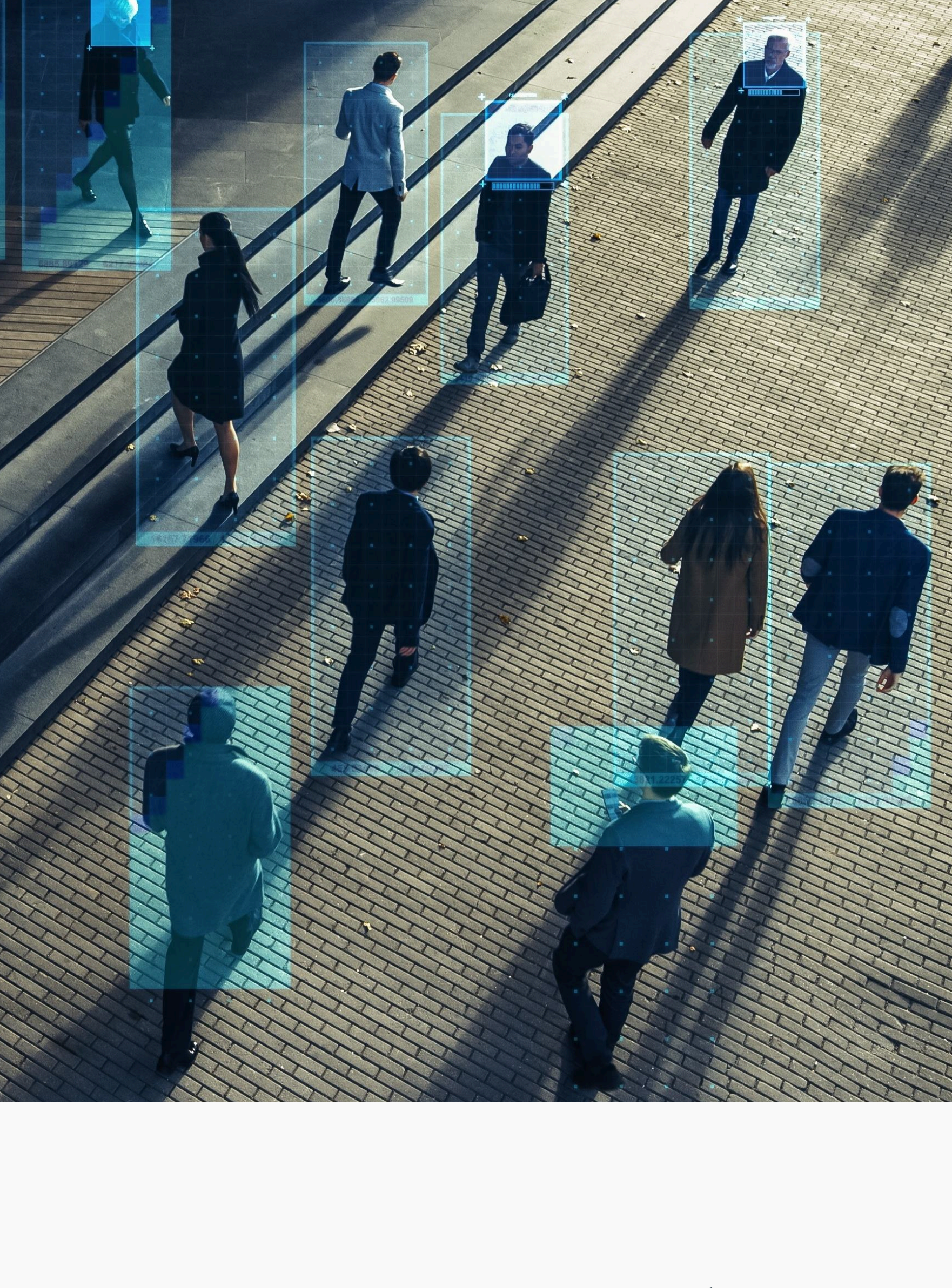
## Outcomes

85%+ object classification accuracy

Smarter video alerts and bandwidth optimization

Improved detection enabling more efficient alerting

Customizable and adaptable detection models



## Strategic objective: tackling real-world losses with AI

Hanwha's Innovation Center came to us with a clear challenge: use AI to reduce operational losses—starting with a surprisingly costly issue in retail. Supermarkets were losing millions annually due to stolen or misplaced carts.

Traditional surveillance couldn't solve it. We worked with Hanwha to develop an AI-powered object recognition platform that detects carts and analyzes their movement in real time. The solution is scalable and adaptable, with use cases expanding into logistics, airports, and smart cities.

## Phase 1: Laying the Technical Foundation

The AI-driven software was developed to **detect and classify objects in video footage** with high accuracy. The initial application targeted a specific and costly issue in the retail sector: **the loss of supermarket shopping carts**, which results in millions of dollars in damages annually.

The system was designed to identify carts within video feeds, even in cluttered, real-world environments such as busy store entrances or parking lots.

This capability laid the foundation for more efficient asset monitoring, enabling surveillance systems to move beyond passive recording to actively extract structured data from video.

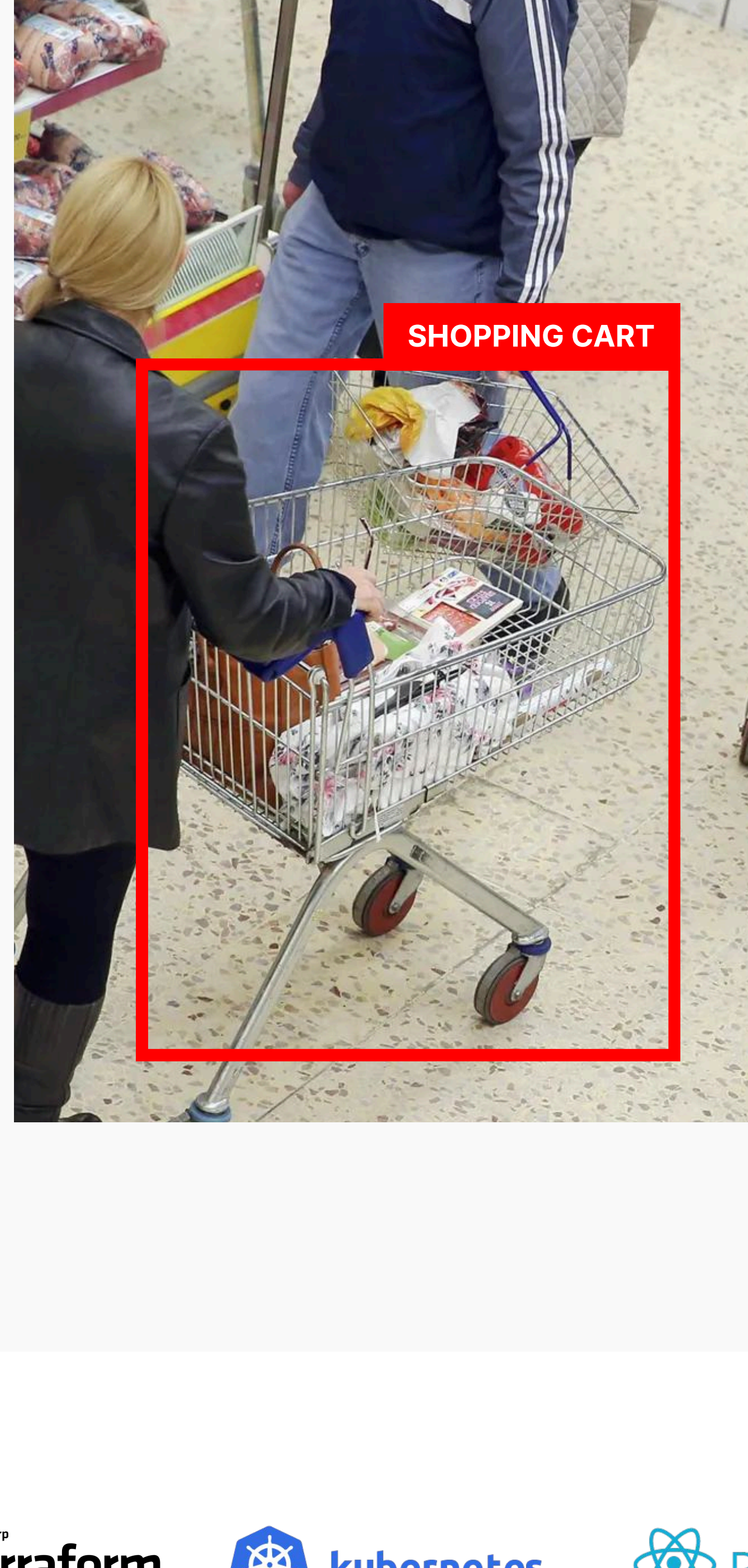
This phase focused on building a scalable architecture capable of supporting additional object recognition use cases across industries with similar environmental complexity.

## Our Approach: A Human-Centered AI Development Process

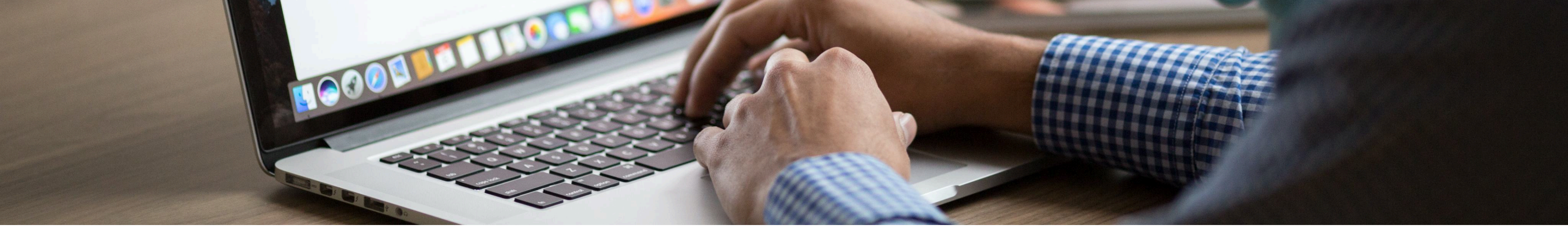
The **core of this project was its AI engine**, developed through an iterative, human-in-the-loop process. Our team worked alongside Hanwha to design and refine a machine learning **model capable of precise object detection in complex, real-world environments**. This development process included:

- **Hypothesis-based modeling**, where assumptions about object movement and classification were translated into algorithmic logic.
- **Data-driven validation**, using real footage to assess system accuracy and detect failure points.
- **Systematic analysis of false positives and negatives**, enabling fine-tuned feedback cycles.
- **Human intervention**, where operators reviewed edge cases and retrained the model with contextual corrections.
- **Probabilistic refinement**, leveraging statistical models to improve recognition accuracy as more data became available.

This process ensured that the AI engine continuously evolved, becoming more precise with each iteration and capable of learning from new, unpredictable contexts.



## Our Tech Stack Decision

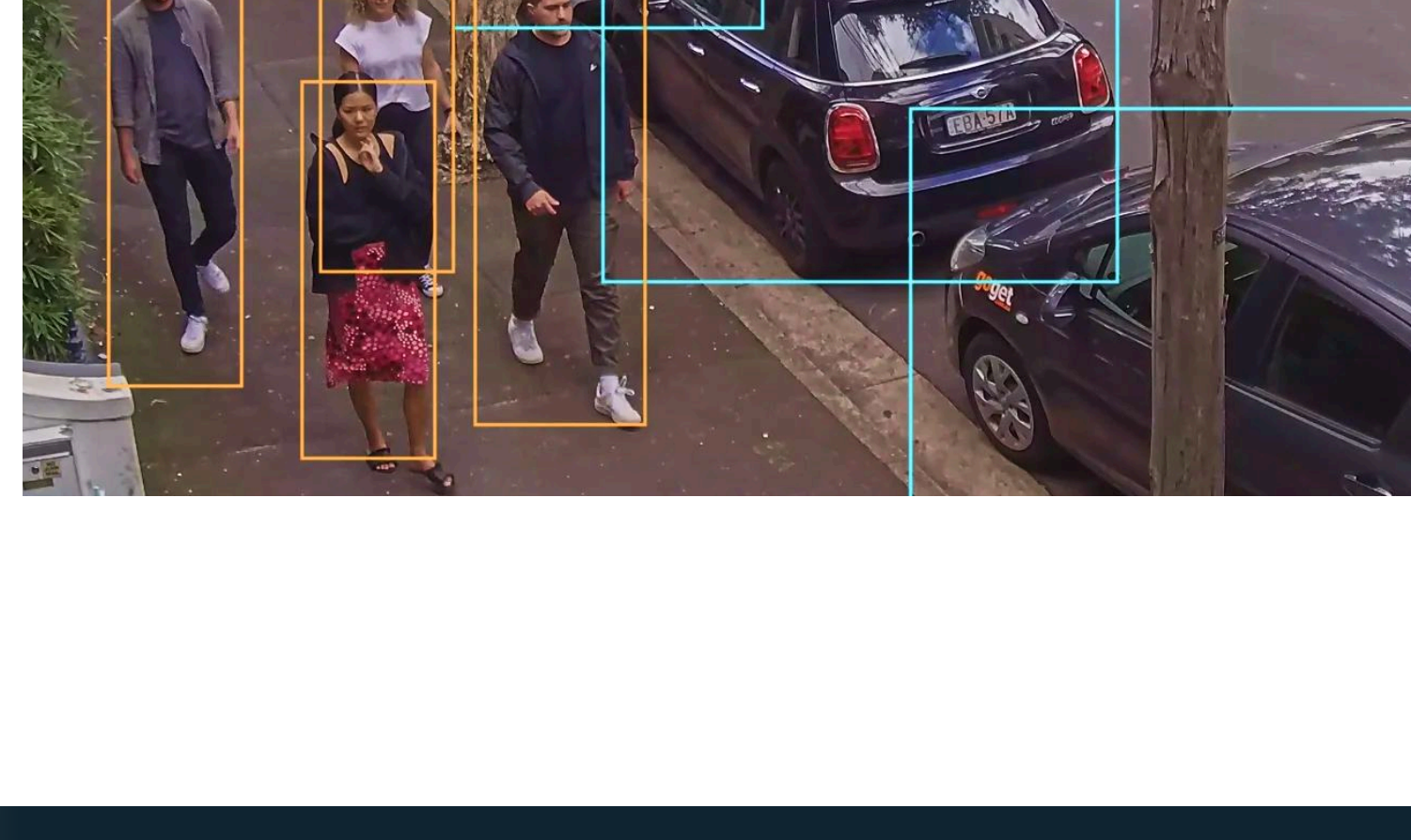


## Phase 2: Expanding use cases across operational contexts

Following the initial focus on shopping cart tracking in retail, the AI platform was extended to address other high-impact use cases across industries, where real-time object recognition could deliver measurable operational benefits.

- 1 **Warehouse environments:** The system was adapted to monitor the movement of pallet trucks and other vehicles, enabling early warnings in predefined transit corridors. By acting as a visual early warning system—similar to collision traffic control—the solution aimed to minimize accident risks and enhance safety in high-density logistics zones.
- 2 **Restricted zones:** The software was also configured to detect unauthorized objects in sensitive areas, supporting perimeter control and compliance protocols. This added a proactive layer to existing surveillance systems by triggering alerts based on object presence, rather than motion alone.

Each of these use cases leveraged the same AI core, highlighting the system's ability to adapt to various environments and operational priorities. This phase validated the platform's potential to scale horizontally across sectors like retail, logistics, transportation, and critical infrastructure—transforming passive video surveillance into an active tool for operational intelligence.



## Industry Engagement

The project's early success was showcased at two of the industry's most influential security technology events: ISC West in Las Vegas and GSX in Dallas. These forums allowed us to share the solution with a global network of innovators, validate the technology with market stakeholders, and spark conversations around pilot deployments in high-impact environments.

## Solution

This collaboration resulted in a robust, AI-powered video analytics solution, enhancing Hanwha's value proposition and enabling new go-to-market strategies. Key achievements included:



**85%+ object classification accuracy** in real-world test environments.



**Improved detection of meaningful video events**, enabling more efficient alerting and response.



**Bandwidth and storage optimization**, thanks to smarter data processing and filtering.

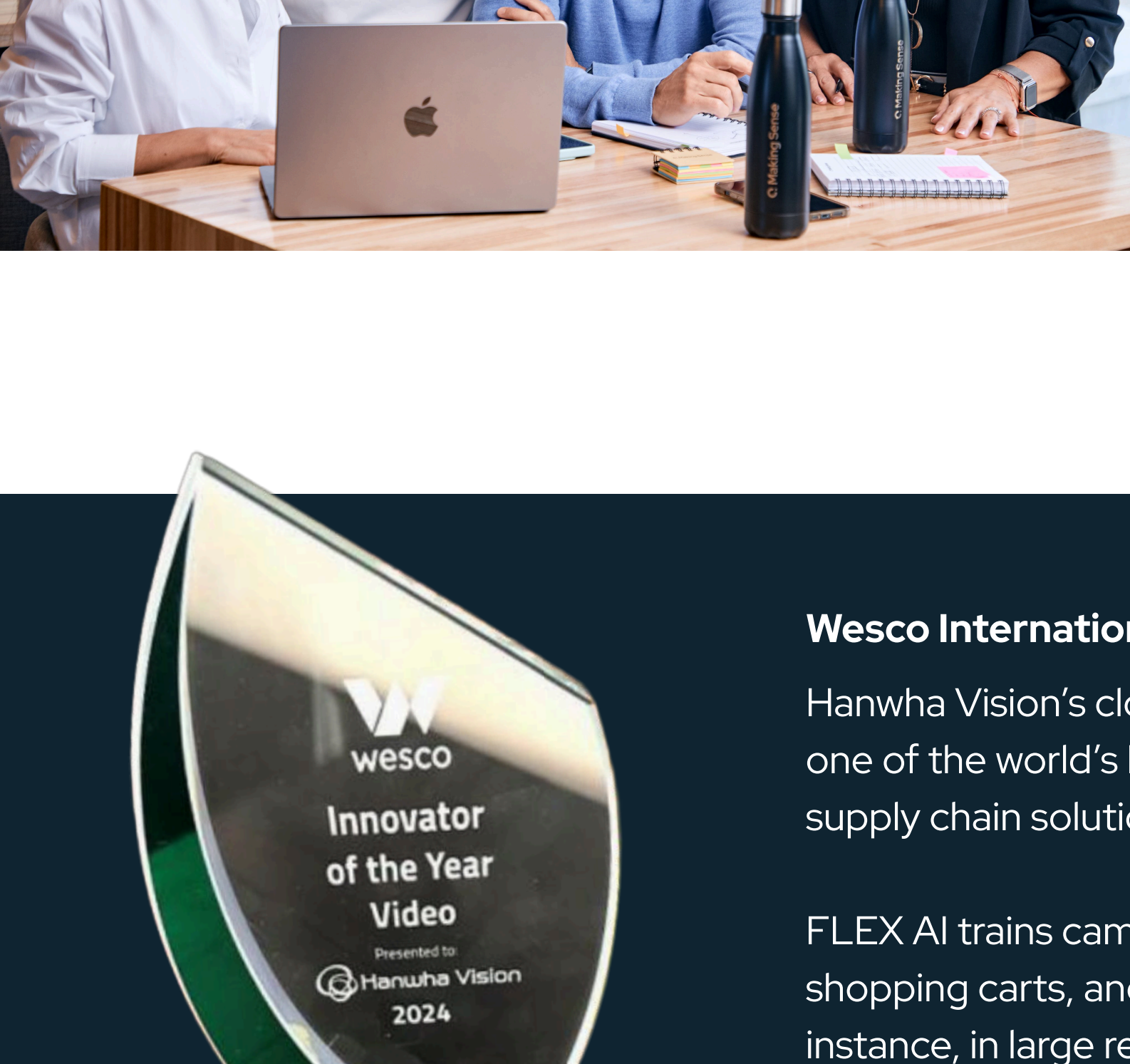
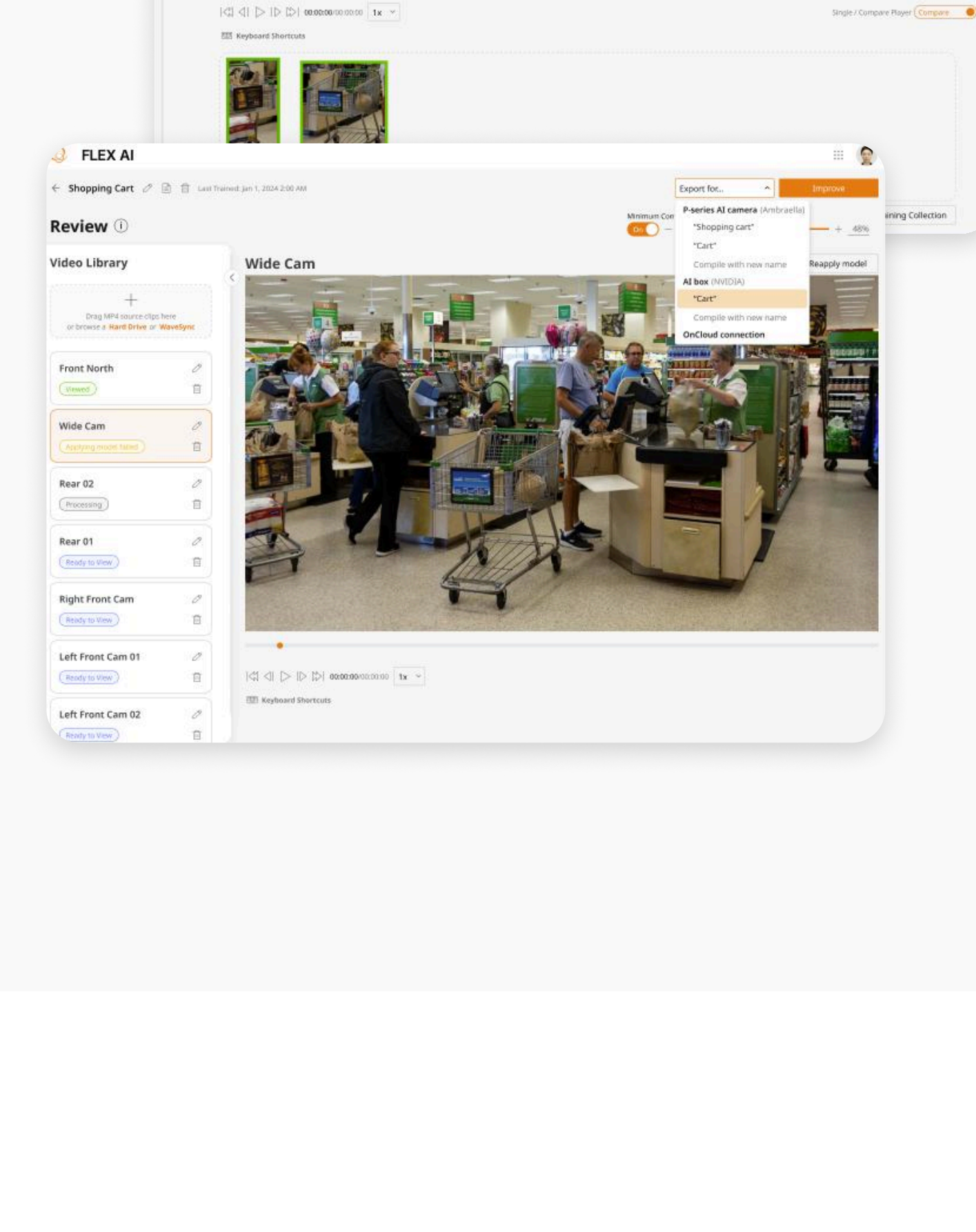


**Customizable detection models**, adaptable to different object types and surveillance needs.

By embedding AI at the core of the platform, this solution set the stage for next-generation surveillance, where cameras don't just record—they understand.

## Key Benefits: Transforming Security Operations

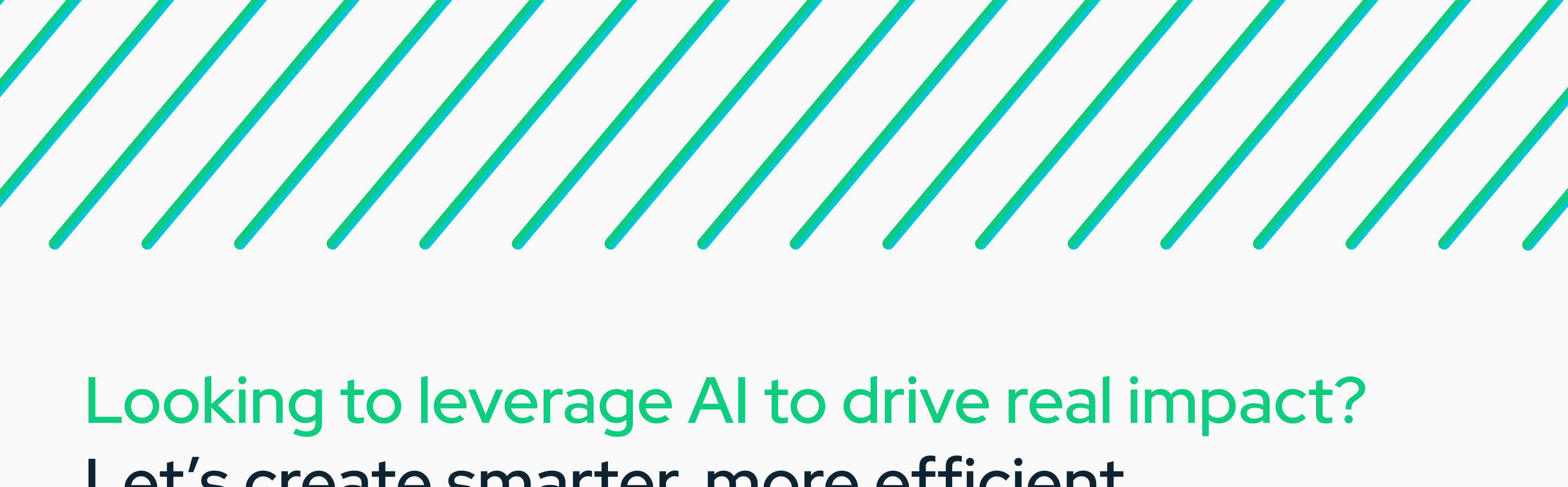
- 1 **Increased Efficiency:** The automated event detection system reduced the operational workload, enabling security teams to focus on critical incidents rather than manual monitoring.
- 2 **Enhanced Innovation:** With AI-driven object classification, the solution provided real-time security insights, enabling more proactive and intelligent responses.
- 3 **Scalability:** The solution's architecture was designed to be scalable, future-proofing Hanwha's security infrastructure and ensuring continuous expansion as new use cases emerge.
- 4 **Improved User Experience:** By streamlining workflows and reducing false alarms, the system enabled security teams to prioritize real threats, enhancing overall security management efficiency.



## Why Making Sense?

Hanwha Vision partnered with Making Sense not only for our technical expertise but also for our ability to integrate complex technologies into scalable, business-ready solutions. Through a data-driven, iterative approach, we helped turn strategic hypotheses into functional algorithms that deliver real value.

When innovation is purpose-driven, measurable outcomes follow.



Looking to leverage AI to drive real impact?  
Let's create smarter, more efficient solutions together.

**Wesco International Innovator of the Year**

Hanwha Vision's cloud-enabled solution, FLEX AI earned top honors from Wesco International, one of the world's leading distributors of B-to-B industrial supplies, logistics services, and supply chain solutions.

FLEX AI trains cameras to automatically recognize and detect specific objects such as forklifts, shopping carts, and more within customers' unique environments with as few as 20 images. For instance, in large retail stores, FLEX AI can train cameras to identify shopping carts, thereby lowering loss rates and preventing safety incidents involving carts.

