HCLTech | Supercharging Progress™

VisionX 2.0

Shaping the next era of industrial AI

Overview

Organizations across various sectors particularly transportation, logistics, manufacturing, energy and utilities, retail, mining and smart cities, are under increasing pressure to boost operational agility, safety and efficiency. With growing digital complexity, even minor disruptions, cyber threats or safety lapses can quickly escalate into major operational and financial setbacks.

Simultaneously, the sheer volume of data generated by IoT sensors, cameras and industrial equipments, overwhelm traditional and cloud-based analytics systems, which often fall short due to bandwidth, latency and security limitations. As a result, organizations globally are actively seeking AI-driven technology solutions to overcome these obstacles and maintain a sustainable competitive edge.

Our Solution

HCLTech VisionX 2.0 is a repeatable, edge-to-cloud AI platform that delivers real-time intelligence where it matters most—at the industrial edge, while extending enterprise-wide visibility and governance through the cloud.

The platform processes video feeds, images and sensor data in real-time to deliver fast, on-site AI insights. By analyzing data at the source, it reduces delays and enables quicker decision-making. The edge layer handles low-latency AI processing, while the cloud layer provides centralized visibility across locations and integrates insights into existing enterprise systems.

Built with zero-trust security and zero-touch provisioning, the platform integrates seamlessly with existing camera networks, IoT sensors and video management systems. Powered by NVIDIA GPUs and Dell NativeEdge OS, the platform supports real-time AI applications such as predictive maintenance, automated workflows and proactive monitoring—helping organizations operate smarter, faster and more securely.

Solution Features

Multi-modal intelligence and AI capabilities

Analyzes images, videos, audios, texts and sensor data in real-time to deliver complete operational insights. Includes 60+ pre-built deep learning models and AI agents that automatically interpret events, reduce false alerts and trigger the right actions.

AI-driven safety and predictive monitoring

Continuously monitors environments to detect safety risks, compliance violations, unauthorized access and equipment failures. Enables predictive asset health tracking to minimize downtime and support proactive maintenance.

Optimized performance

Built on NVIDIA and Dell NativeEdge OS technologies to run AI workloads faster and more efficiently, ensuring reliable real-time performance.

Seamless integration

Easily connects with existing video management systems, IT service tools and enterprise applications through standard APIs.

Industrial-grade security and scalable infrastructure

Employs zero-trust architecture and zero-touch provisioning for secure, rapid deployment and scaling.

Data privacy and security

Built with HCLTech's advanced cybersecurity software, the platform uses strong encryption and secure data protocols to protect sensitive information and ensure compliance with global privacy standards.

VSS event reviewer for reliable verification

AI-based validation using NVIDIA Cosmos Reason to minimize false positives and strengthen decision accuracy.

Solution Benefits

~90% **faster issue resolution –** Real-time alerts and automated workflows reduce the time from detection to corrective action.

~60% **higher productivity –** AI-driven automation accelerates decision-making and streamlines operations.

~40% **improvement in worker safety –** Continuous hazard detection and proactive risk prevention create safer environments.

~30% **greater operational visibility –** Enterprise-wide monitoring delivers actionable operational transparency.

~30% **lower operational costs –** Reduced manual oversight and optimized workflows improve efficiency.

~20% **reduction in manual effort –** Automated validation minimizes human intervention and errors.

NVIDIA Integration Stack for VisionX 2.0

Vision AI/Deep learning models for Industrial AI
Pre-trained industrial AI models powered by NVIDIA Metropolis for advanced video analytics.

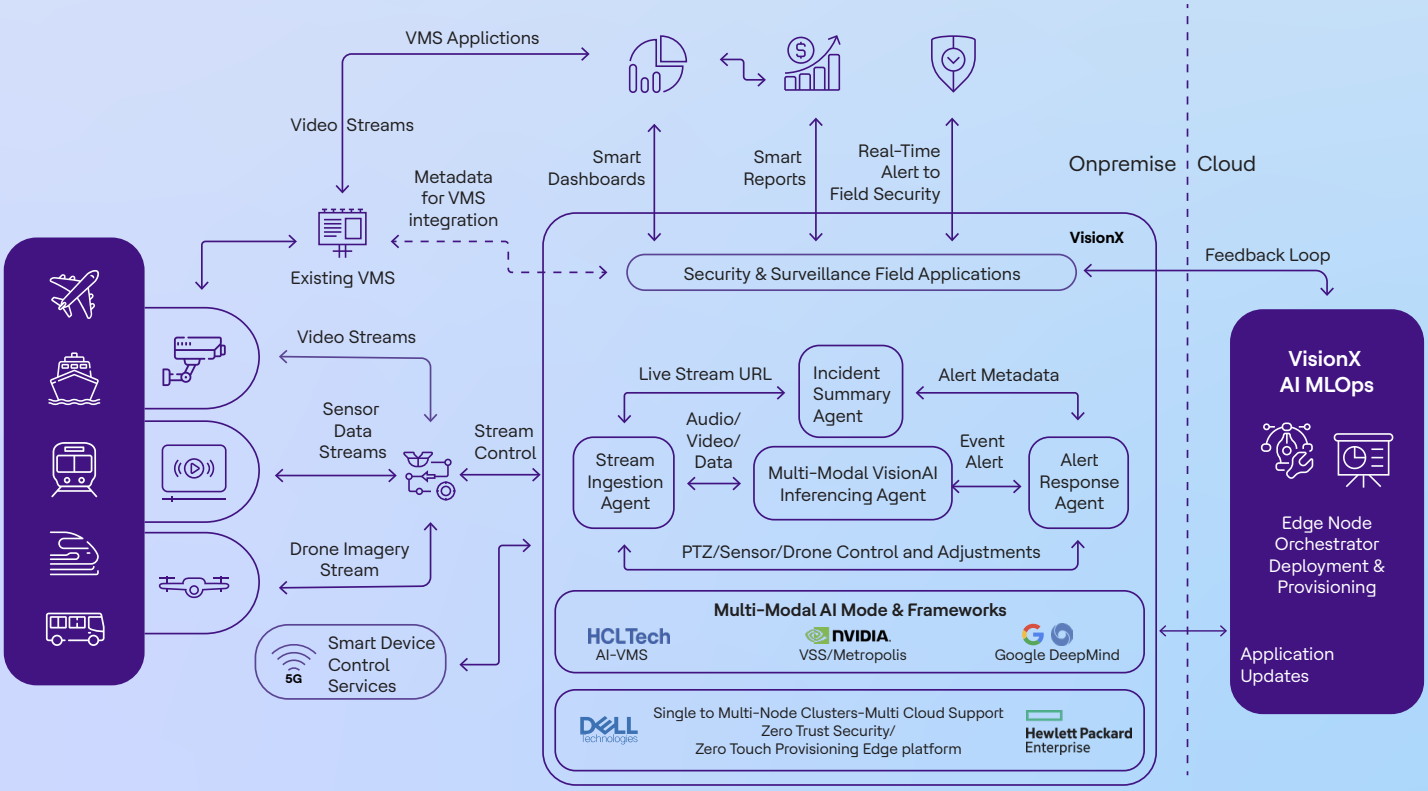
Generative AI (VLM/LLMs)
Next-generation HMIs, predictive analytics and industrial automation powered by large language and vision models.

IoT and Sensor data contextual inferencing
Real-time data ingestion through scalable IoT hubs with pub/sub and REST interfaces.

Virtual simulations and digital twins
Robotics and vision models trained with virtual world simulations using NVIDIA omniverse platform.

Smart MLOps deployment
Optimized AI workload distribution across edge and cloud environments on Intel and ARM platforms.

Solution Workflow



Case Study

Transforming global port operations with VisionX 2.0

Objective

The world's largest independent marine and rail terminal operator set out to modernize and streamline its global port operations by unifying disconnected terminal management systems into a scalable, AI-powered platform—with an aim to improve safety, compliance and operational efficiency across its extensive network.

Solution

HCLTech deployed the edge-to-cloud AI platform integrating cameras, fleet systems and IoT sensors over 5G network for real-time visibility.

The platform enabled:

Better decision-making

AI driven real-time analytics combined from multiple data sources delivered faster and more accurate insights

Simplified compliance

Automated monitoring ensured strict adherence to safety and regulatory standards

Improved operational efficiency

AI-driven workflows continuously optimize performance and productivity

Impact Delivered

- **90%** improved response time driving collaboration for insights and incident prevention.
- **70%** reduced operational costs leveraging automation and AIO-driven insights.
- **30%** operational efficiency gains using multimodal edge computing.

Industry Use Cases

Real-time workforce safety monitoring	AI-powered computer vision ensures PPE compliance, detects unsafe behaviors and monitors restricted zones, issuing instant alerts for falls, intrusions and policy violations.
Smart asset health monitoring	Continuous AI and IoT-based monitoring tracks equipment performance and wear patterns, enabling predictive maintenance strategies that minimize downtime across forklifts, cranes and critical industrial machineries.
Intelligent traffic and infrastructure management	Real-time detection and response to spills, road damages and safety hazards, combined with advanced traffic flow optimization and crowd analytics.
Worker safety and workflow optimization	AI-driven movement analytics assess workforce behaviors, identifies operational inefficiencies and monitors compliance to enhance both safety standards and productivity.
Material flow and logistics optimization	Computer vision and AI track goods across warehouses and production lines, detecting damaged shipments, packaging errors and supply chain bottlenecks to improve throughput and accuracy.

Explore VisionX 2.0 and its impact on business outcomes: **Connect with our AI experts**

Learn more about HCLTech—NVIDIA partnership: **Visit the partnership page**

HCLTech | Supercharging Progress™

About HCLTech

HCLTech is a global technology company, home to more than 226,600 people across 60 countries, delivering industry-leading capabilities centered around AI, digital, engineering, cloud and software, powered by a broad portfolio of technology services and products. We work with clients across all major verticals, providing industry solutions for Financial Services, Manufacturing, Life Sciences and Healthcare, High Tech, Semiconductor, Telecom and Media, Retail and CPG, Mobility and Public Services. Consolidated revenues as of 12 months ending December 2025 totaled $14.5 billion.

To learn how we can supercharge progress for you, visit hcltech.com.