

Hitachi Video Analytics Enables Smart Public Safety and Operational Intelligence

Transform Security Cameras Into
Smart City Sensors

OVERVIEW

While data is at the core of smart cities, the most underutilized source of data comes from video. Traditional video security systems provide views into many areas at once. However, the number of video cameras necessary to cover large city areas makes it impossible for even an army of people to actively watch all video screens at once.

Create Safer, Smarter Business and Urban Environments

Today's new video analytics technology can turn what was once simply a video camera into a smart city sensor that provides real-world insights for better management of public spaces and businesses. For those who protect people's safety and security, video analytics has become a force multiplier.

Cities that use this intelligent data from video will enable more reliable and efficient transportation, reductions in waste, smarter public safety, and more effective use of public funding. Businesses that use this video analytics data will improve efficiency and customer experience to improve profitability, all while protecting privacy and keeping people and property safe.

Innovation Means Accuracy With Hitachi Video Analytics

High-quality digital surveillance cameras are ubiquitous. As growing concerns from the public spur greater need for security and safety controls, more cameras are being used to capture events in our communities. Applying analytics to video is only part of the solution.

Most legacy products use a single algorithm for all video content analysis applications. Hitachi Video Analytics uses unique, next-generation algorithms specific for each application. Combined with advanced object recognition and noise filtering, these approaches deliver extremely low false positive rates and unparalleled results.



Automated Situational Awareness, Operational Intelligence and Privacy Protection

The pervasive video in our cities and businesses provides an enormous opportunity to gather data from existing systems to provide new insights. These insights can help us to improve operations services and security, all while protecting our privacy.

Video Intelligence for Smarter Operations

In much the same way websites offer granular insights about customer visits, clicks, dwell time and browsing behavior, Hitachi Video Analytics features provide these insights about the physical world.

- **Activity Visualizer:** Makes highly frequented areas in an image instantly visible. This information is used to strategically position products, evaluate popularity of displays and more.
- **People Counter:** Automatically counts people passing through a defined area of a video stream in real time using a 3-D sensor for industry-leading accuracy. This information enables organizations to identify and optimize high-use spaces, times of day and patterns of visits.
- **Queue Detector:** Detects overcrowding and space utilization by analyzing queues (waiting lines), including the crowd and their pace of motion. It alerts operators if a defined queue length is reached so they can deploy more resources to minimize wait times and improve visitor experience.
- **Reporting:** Automatically prepares and emails interactive statistical reports at definable dates and times. Results can also be exported as CSV files for custom analysis. Hitachi Vantara also provides advanced analytics for more in-depth or custom insights.

Enhanced Awareness

To provide comprehensive protection for people, buildings, property and infrastructure, Hitachi Video Analytics offers five key capabilities: It detects intruders, faces and objects, enhances video images and ensures video cameras operation correctly.

- **Intrusion Detector:** Automatically detects intrusion of persons or vehicles into critical areas and generates an alarm to alert security operators. It is effective both in- and outdoors and includes rain and snow filters as well as perspective correction to eliminate false alarms.
- **Live Face Matching:** Immediately detects and alerts when subjects of interest are recognized, improving law enforcement's ability to find suspects.
- **Object Detector:** Considers suspicious or unattended objects like suitcases or backpacks, a concern in public and commercial areas. It detects static objects left unattended. If an object is removed or considered dangerous, an alarm triggers.
- **Video Enhancer:** Optimizes not-always-ideal security camera video. It automatically filters disturbances and artifacts to ensure images are clear and stable.
- **Camera Health Monitor:** Automatically alerts operators if cameras are tampered with, image quality decreases, or recorded video doesn't match the actual scene. It ensures visibility and capture of evidence in case of a crime.

Smart City Operational Intelligence for Traffic

Convenient and efficient mobility is key to the realization of smart cities. Cities that understand the patterns and causes of traffic can better manage it. Hitachi Video Analytics provides insights to help cities, campuses and agencies improve transportation, parking and traffic.

- **Traffic Analyzer:** Counts vehicles on highways, urban streets and premises with car pools or parking garages, with results available per minute, hour, week or month. Counts to four lanes of vehicles, while categorizing vehicles into two-wheel, passenger car and bus or truck.
- **Parking Space Analyzer:** Ideal for parking area management. Detects occupied parking spaces, analyzes how long a vehicle has been parked, identifies vehicles in no-parking zones, and guides drivers to the next vacant parking space.
- **License Plate Recognizer:** Recognizes vehicle license plates and matches them with stored lists (black lists and white lists). Used for access control in parking lots, urban environments and elsewhere. Supports license plate recognition for more than 60 countries.
- **Vehicle Counter:** Automatically counts and classifies vehicles that pass a definable area on a traffic lane, and statistically evaluates and exports results.
- **Direction Controller:** Detects when objects move in a restricted direction, immediately triggering an alarm to notify operators. Identifies even the slightest movement, whether it's used indoors or outdoors.

Privacy Protection

For schools, healthcare providers, transportation agencies and retailers, ensuring the privacy of individuals is a requirement for video security. With the Privacy Protector feature of Hitachi Video Analytics, organizations can prevent intrusions into personal privacy without compromising security.

Hitachi Video Analytics automatically detects and pixelates all human images in footage while movement and actions remain recognizable, and other analytics can be run normally. If an incident occurs, operators can access encrypted, unpixelated data using chip cards and corresponding PIN codes.

One of the only video analytics products to be awarded the European Privacy Seal by EuroPriSe, the solution also meets Health Insurance Portability and Accountability Act (HIPAA) and other U.S. privacy requirements, while enhancing security and operational intelligence.

A Full Video Solution

For cities and organizations that want to improve operational efficiency and increase security, Hitachi Vantara provides a full end-to-end video solution. To capture video and data, Hitachi Visualization Platform provides smart cameras and edge devices. The Hitachi Video Management Platform was designed for video from the ground up to provide a converged storage and compute solution with high availability and fault tolerance.

The Hitachi Visualization Suite brings together all of a city's video and data, from gunshot detectors, 911 calls, social media, license plate recognition and other sources. It provides the type of situational awareness and insights needed to become a data-driven public safety organization that can prevent or rapidly resolve security issues.

Smart Video Analytics in Action

Businesses, government and urban organizations use video analytics to realize the full value of their camera systems. The use cases below demonstrate how Hitachi Video Analytics improves public safety, uncovers valuable operational intelligence, protects privacy and supports the vision of safer, smarter cities and industries.

Smart and Secure Transportation and Transit

Transportation centers like railway stations, airports and shipping ports need to ensure safe, enjoyable and convenient experiences for passengers. Hitachi Video Analytics automatically detects the intrusion of people or vehicles into critical areas, identifies objects added or removed from a scene, and detects face faces captured in the video. Hitachi Video Analytics can also monitor camera reliability, count people and analyze waiting lines.

Deliver Business Intelligence and Security for Retailers

Retailers must enhance security to prevent theft, vandalism and other incidents, but they also need insight into customer behavior. Hitachi Video Analytics combines the security features that retailers require with the business intelligence they need to be successful. The solution uses space analytics to help retail marketers make improvements to locations such as store designs, test product locations and messaging, all while ensuring the privacy customers demand.

Provide Privacy and Security for Education

Today's schools need video to maximize student security and safety, but due to privacy concerns, many parents and students are uneasy about having these systems in place. The Privacy Protector feature of Hitachi Video Analytics applies military-grade encryption to enable video security and automated alerts in critical areas in and around campus. Campus safety departments can respond quickly, while student privacy is assured.

Smart City Management of Public Spaces and Infrastructure

Cities struggle to understand return on investment (ROI) of investments in parks, downtown areas and infrastructure such as bus stops, foot or bike paths, and park benches. Hitachi Video Analytics counts people, analyzes traffic and provides insights into the usage of public spaces and infrastructure. This approach helps cities make better use of public funds, tracks improvements in usage and performance of these investments, and keeps people and property safer.

Unified Security and Privacy for Healthcare

Healthcare providers face safety concerns ranging from unauthorized entry and theft to abuse and access control. To keep healthcare organizations protected, Hitachi Video Analytics automatically collects relevant data, such as faces at all access points, and tracks dwell time and gatherings in key areas. Hitachi Video Analytics can also create virtual fences to protect patients and employees from potential threats, while complying with HIPAA and EU privacy laws.



Together with the Hitachi Visualization Suite, Hitachi Visualization Platform and Hitachi Video Management Platform, Hitachi Vantara provides a holistic, end-to-end solution for improving people's lives.

Achieve Smarter Outcomes and More Effective Public Safety and Security With Hitachi Video Analytics

In today's world of internet of things (IoT) and wireless sensor networks, data-driven insights make cities smarter and businesses more competitive. Cities can now use this information to keep people safer, improve transit reliability, and manage public space and services more efficiently. Businesses can protect customers and property, while optimizing their operations and improving marketing strategies.

Hitachi Video Analytics offers a smarter approach to overcome traditional video security challenges in our increasingly connected environments.

- Provides organizations the tools they need to take their operational intelligence and security to the next level.
- Delivers valuable insights to help cities, campuses and agencies improve transportation, parking and traffic.
- Allows organizations to prevent intrusions into personal privacy without compromising security.

Together with the Hitachi Visualization Suite, Hitachi Visualization Platform and Hitachi Video Management Platform, Hitachi Vantara provides a holistic, end-to-end solution for improving people's lives. From the boardroom to transit station, from city streets to the university campus, Hitachi Video Analytics is delivering the video-based situational awareness and insights needed for smart cities and smart businesses to tackle the challenges they face today and in the future.

To learn more about Hitachi Video Analytics and how it can take your safety and business operations to the next level, please visit our [website](#) or send us an [email](#).



Hitachi Vantara

Your data is the key to new revenue, better customer experiences and lower costs. With technology and expertise, Hitachi Vantara drives data to meaningful outcomes.

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