Smart Transportation Solutions from Hitachi Vantara: Intelligence to Improve Mobility

Improve Traffic Flow, Parking Availability and Passenger Safety

Rising traffic congestion, lack of parking, inadequate public transit, failing infrastructure, freight distribution and safety issues in public areas impact rapidly growing metropolitan areas, worldwide. With urban populations expected to rise from 3.6 billion to more than 6 billion by 2045 [1], these concerns will increase, along with stress on existing infrastructure and the need to manage it more efficiently.

Transportation officials know that to address these concerns, they must utilize technology such as video cameras, license plate recognition systems and other internet of things (IoT) devices. However, the flood of information from these disparate systems can impede a unified approach.
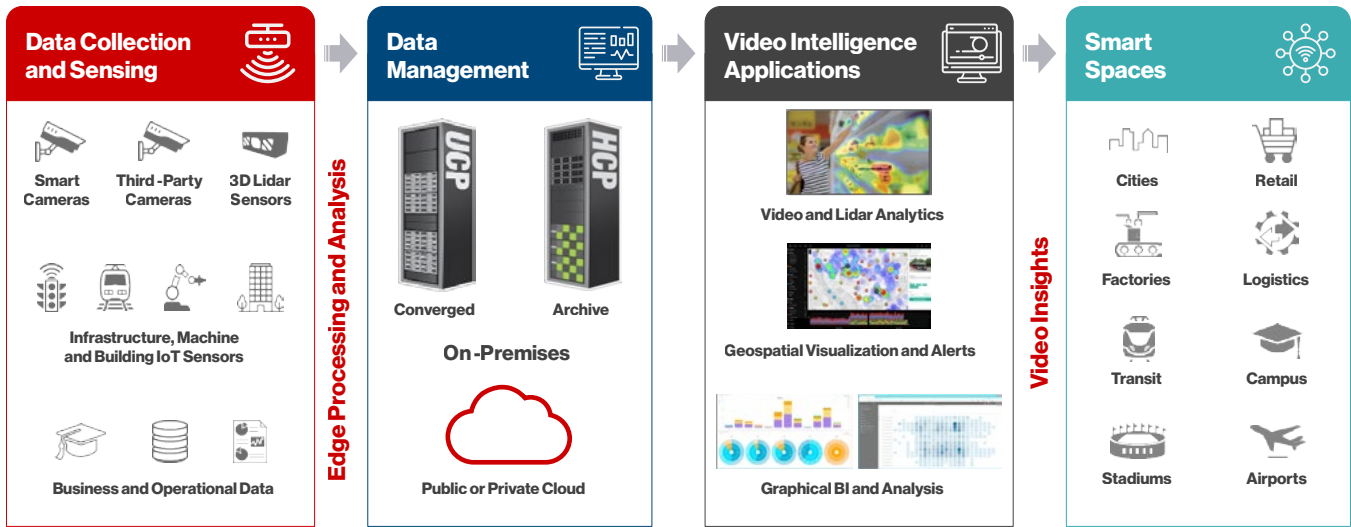
To make urban transportation more responsive, predictive and automated, city officials need an end-to-end urban intelligence solution. They need to leverage innovative IoT-enabled analytics to deliver real-time insights that support faster responses to traffic flow, parking availability and passenger safety.

Ensure Efficient Transportation with Hitachi Smart Spaces and Video Intelligence

Ensuring traffic flow, adequate parking, available public transit and citizen safety are all top of mind for transportation officials. By utilizing big data integration and reporting and integrating video feeds, event data and other sources, like social media, Hitachi Smart Spaces and Video Intelligence provides real-time information. Transportation officials can act on this data to make cities run smoother and improve mobility.

1   United Nations, World Urbanization Prospects, 2014.

Data Collection and Sensing

Smart Cameras

Third-Party Cameras

3D Lidar Sensors

Infrastructure, Machine and Building IoT Sensors

Business and Operational Data

Edge Processing and Analysis

Data Management

UCP

HCP

Converged

Archive

On-Premises

Public or Private Cloud

Video Intelligence Applications

Video and Lidar Analytics

Geospatial Visualization and Alerts

Graphical BI and Analysis

Video Insights

Smart Spaces

Cities

Retail

Factories

Logistics

Transit

Campus

Stadiums

Airports

Intelligent Data Operations: Orchestration, Governance, Security, Privacy Protection and Compliance

Hitachi Smart Spaces and Video Intelligence combines IoT devices from Hitachi and third parties, both on-premises and cloud platforms, and applications and analytics solutions that deliver real-time situational awareness and historical insights to transportation officials.

Smart Transportation Solutions are Designed for Effective and Safe Transportation

Hitachi Smart Spaces and Video Intelligence provides transportation officials with an integrated view of traffic, parking and safety issues. It provides intelligence to propel faster, more informed decisions, from deploying more buses to helping people find parking. It also allows GPS tracking of moving assets, viewing of data from trains, stations and infrastructure, counting and tracking of passenger activity in stations and public areas, and prevention of crime, accidents and vandalism.

Enhance transportation operations with vehicle counting, traffic analysis, parking space detection and license plate recognition features. Rely on policy-driven, automated alerts from Hitachi Video Analytics, when traffic problems, parking issues, rail-crossing blockages or suspicious activities are detected.

In addition to IoT solutions, Hitachi Vantara provides turnkey intelligent transportation systems, such as high-speed rail and autonomous trains to help improve mobility in cities around the world.

Smart Transportation, Traffic and Parking Management for Growing Cities

One View for All Transportation Data and Intelligence

Hitachi Visualization Suite's geospatial software and smart edge-capture devices are integrated to provide a map-based view. This view includes video, operational data, GPS tracking of moving assets, data from buildings and vehicles, social media and other sources, along with native analytics and workflow automation.

Provides a single-screen view to monitor and proactively respond to issues in real time. Delivers greater situational awareness and data-driven insights to improve safety, passenger experience and operations.

Traffic Analysis

Hitachi Video Analytics uses video data to count and classify trucks, cars, buses and bikes on highways, city streets and at premises with carpools or parking garages. The solution counts up to four vehicle lanes while classifying vehicles into distinct categories.

Enables traffic managers to identify traffic volume, transportation trends and motion patterns, to improve transportation planning and make faster, more informed decisions to improve traffic flow.

License Plate Recognizers

Hitachi Video Analytics recognizes vehicle license plates and matches them with blacklisted or whitelisted records in local databases for access control in parking lots and tracking stolen vehicles. The solution distinguishes plates from more than 130 countries.

Allows public and private organizations to automate vehicle access to specific areas. Accelerates identification of stolen vehicles to support law enforcement.

Parking Space Analysis

Hitachi Video Analytics automatically detects whether a parking space is occupied, parking duration by space, as well as vehicles parked in no-parking zones. Supports parallel, perpendicular and angle parking for any number of spaces, as long as they are clearly marked.

Simplifies parking area management by detecting occupied parking spaces and how long a vehicle has been there. Automatically triggers an alert for vehicles parked too long or in a no-parking zone.
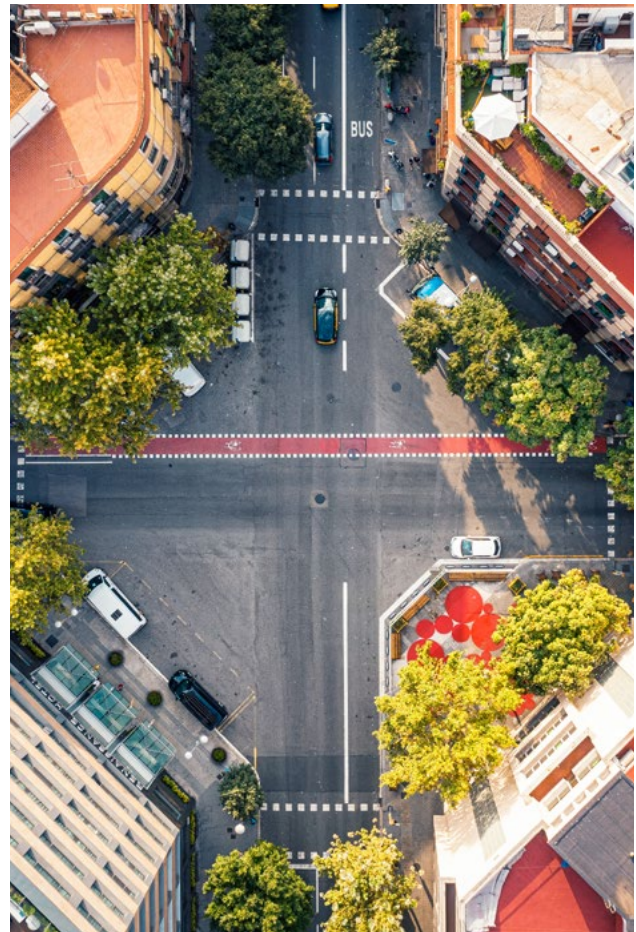
Enterprise-Scale Video Management

Hitachi Video Management Software (HVMS) is a secure, elegant video solution that works across platforms to provide an intuitive experience.

Simplifies video system deployment and management with an all-in-one, integrated solution. Built from the ground up for video.

People Counting and Activity Analysis

Hitachi Video Analytics provides directional counts of people, queue alerts and activity analysis to support smart transit stations, vehicles and operations.

Enables smarter management of stations and operations, with real-time passenger counts on vehicles and in the station, real-time alerts to long lines at ticket counters or on platforms. Provides historical analytics for better planning, emergency response and improved passenger experience.

As urban centers continue to expand and increase in density, traffic and other transportation challenges become more complex. In today's connected world, Hitachi Smart Spaces and Video Intelligence offers transportation officials a way to use data-driven insights to make cities safer for everyone.

- Provides the tools to leverage data from citywide sensors, IoT, video, social media and more.
- Delivers real-time insights to help cities react faster to transportation issues, improve traffic flows and better predict when and where incidents will occur.
- Enables greater situational awareness to respond more effectively to traffic-related incidents.

Smart Cities are Easy to Get Around in

At Hitachi Vantara, we view cities as interactions of people, communities and technology, places where all of these come together to improve our lives. Hitachi Smart Spaces and Video Intelligence supports smart cities to achieve three primary goals.

- Improve quality of life: Increase public safety, create economic opportunity, and achieve vibrant communities and sustainability.
- Increase resiliency: Enable cities and communities to adapt quickly to ever-increasing changes, now and in the future.
- Operate efficiently: Optimize transportation times, reduce energy consumption, and use technology to reduce costs and help people be more effective.

We leverage the capabilities of Hitachi's deep experience and expertise, to provide solutions ranging from high-speed rail to data-driven solutions for stations and traffic engineering. We help transportation agencies around the globe get people and freight where they need to go, safely and on schedule.

> **"Hitachi Vantara ... allows us ... to monitor traffic in real time as we adjust the signal timing. We have central control software for both traffic management and emergency vehicle pre-emption. Now we can see exactly what's happening, what resources to deploy, and make any changes on the fly."**

Eric Lewis
City Traffic Engineer, City of Moreno Valley

Next Steps

Hitachi Vantara is helping cities and transportation agencies become smarter and safer today. Using IoT, analytics and other proven technologies, smart cities are driving the urban intelligence that increases efficiency and safety, improving the way people work and live. Ready to learn more about the benefits of Hitachi Smart Spaces and Video Intelligence for your organization?

Hitachi Visualization Suite Datasheet:
Correlate disparate data and video systems geospatially, enabling public safety officials to find the assets they need to assess any situation in real time. Download

Hitachi Video Analytics Infographic:
Transform security cameras into city sensors that enable smarter operational intelligence and security. Download

Hitachi Video Management Platform Solution Profile:
Empower video analytics, security and monitoring with a converged video solution that stores and manages video with high availability and fault tolerance. Download

Smart Cities Solution Profile:
Learn how Hitachi Vantara connects data for insight, awareness and better public safety. Download

ABOUT HITACHI VANTARA

Hitachi Vantara, a subsidiary of Hitachi, Ltd. (TSE: 6501), turns data-rich businesses into data-driven ones. For more information, please visit hitachivantara.com.

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To learn more about Hitachi Smart Spaces and Video Intelligence, visit our website or send us an email.

Hitachi Vantara

Corporate Headquarters
2535 Augustine Drive
Santa Clara, CA 95054 USA
hitachivantara.com | community.hitachivantara.com

Contact Information
USA: 1-800-446-0744
Global: 1-858-547-4526
hitachivantara.com/contact

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