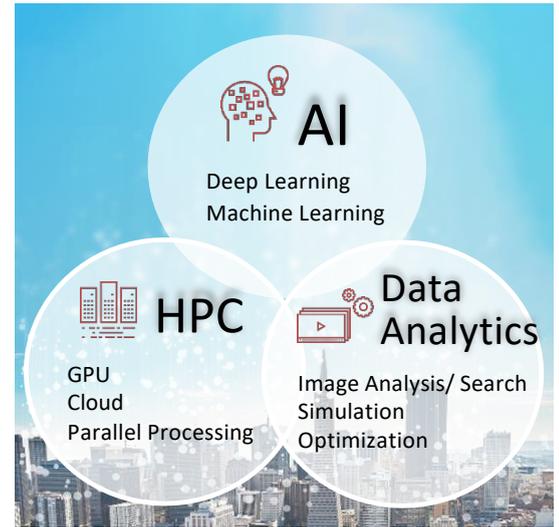


Using AI, Fujitsu can visualize and optimize image data. The power of innovation can be fully leveraged across many scenarios.

By applying AI to image analytics, Fujitsu has devised a way of automatically extracting various types of information from video frames. This enables multi-purpose surveillance, such as both security and traffic monitoring via the same video clip. In addition, using Machine Learning capabilities to analyze high-volume, high-speed video, it becomes possible to visualize the data in 3D and understand the real-time movement of vehicles and people across an entire city.



Advanced Image Analysis



Vehicles



People

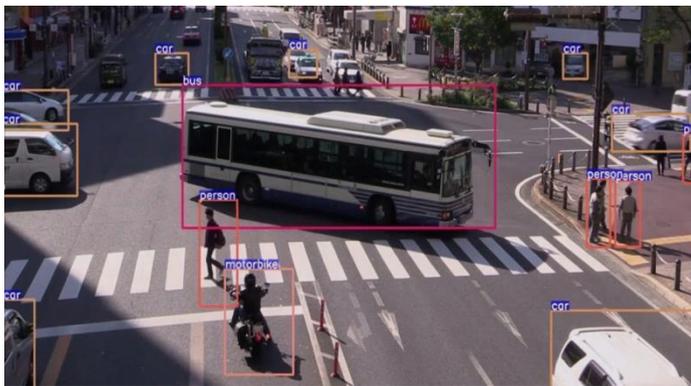


Objects

In essence, this video analytics solution uses advanced AI and HPC technologies to achieve citywide surveillance of a large area while monitoring for specific targets. Currently, three main types of targets can be monitored: vehicles, people and objects. These targets generate data that can be collected and used by the solution for real-time monitoring.

Fujitsu Visual Learning software can detect vehicles in live data, such as from onboard cameras, street-based CCTV cameras, building-mounted CCTV cameras, etc. In addition to using the system outdoors, it can even be used in poorly lit indoor areas. Not only does the system detect vehicles as objects, but it can also determine vehicle types, models, makes and colors.

People can also be detected in live data and the system recognizes clothing types and colors. The facial recognition engine makes it possible to identify pre-registered people.



Vehicle type recognition



People/ facial recognition



Fujitsu Visual Learning Software

List of Functions

AI Detection	Vehicles	Vehicle Detection/ Count (Number, Time of Detection)
		Vehicle Classification (Type, Make, Model, Color)
		License Plate Recognition
	People	Person Detection/ Count (Number, Time of Detection)
		Person Classification (Clothing type on upper and lower body, clothing color)
Operation	Facial Recognition	
Real-time Video Monitoring, Searching of Stored Video Footage, Alert Management		

Monitoring View/ Mobile Navigation

Fujitsu Visual Learning software incorporates Fujitsu's image analysis technologies and provides:

- A GUI (Graphical User Interface) to show the real-time situation of a target area. Users can modify and apply surveillance parameters to real-time footage, or even search through archived video data using filters.
- The mobile version provides real-time information and has an alert notification function for when a predefined situation occurs.

Setting Conditions

Filtering

Monitoring

Real-time situation monitoring **Efficient searching of archived data** **Notification via alerts**

Customer Benefits

Making the invisible, visible

POINT 01 Detection of various situations, not predefined

By applying Deep Learning, objects can be identified in images. Even when objects are not predefined during a search, various types of information can still be extracted from video footage and images. This makes it possible for previously invisible (unnoticed) situations to become visible. More extensive use of the system enables higher detection accuracy and more intelligence leading to new insights.

POINT 02 Data analytics reduces monitoring and searching workload

Using AI realizes a reduction in workload and optimizes operations by providing autonomous surveillance. Real-time monitoring and highly accurate analysis ensure more robust and secure operations. For example, alert management via SMS achieves rapid communication with security personnel and realizes more efficient resource management.

POINT 03 Uses existing assets effectively

Existing cameras can be used if they have VMS functionality. Images captured to date with those cameras can continue to be used and the investment already made in the existing equipment is not wasted. (* Please confirm prior to use and make setting adjustments to existing cameras if necessary.)

Why Fujitsu?

1. Long History of AI



Fujitsu is developing key technologies under a comprehensive framework called "Human Centric AI: Zinrai." This framework incorporates technology components such as Machine Learning, Deep Learning and Visual Recognition, to provide digital solutions and services. Fujitsu has a long history of developing AI which is central to our capabilities in sensing and recognition; knowledge processing; and decision-making and support. Dynamic and adaptable AI is critical to collecting and understanding large volumes of data, undertaking analysis and making accurate decisions based on insights derived from the data.

2. Expertise in HPC

High Performance Computing



We provide cutting-edge, high availability computing platforms, based on world-leading HPC technology, that are suitable for research and development as well as for building social infrastructure solutions all over the world. We have a long, proven track record of processing various types and enormous volumes of data. HPC technology, especially GPGPU, allows AI to quickly process and learn from large amounts of citywide video footage in real time.

3. Use of Data Analytics



Fujitsu specializes not only in image analysis but also in simulation and optimization techniques based on technologies that use mathematical principles. In particular, we have developed advanced data methodologies for simulating human activities which can be used for many purposes. Such advanced analysis offers new insights previously not seen.

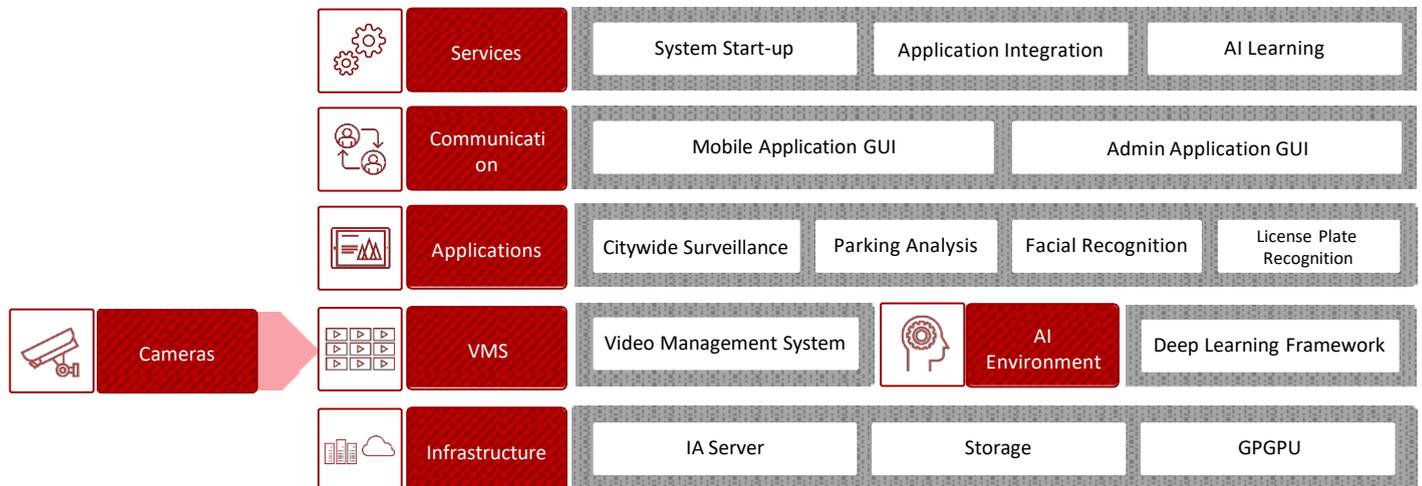
Usage Scenario: Airport



Target customers	Airports, Shopping Malls
Overview	By using video analysis for indoor facilities, security can be enhanced as individuals can be located, suspicious persons can be detected, and so on. To boost marketing efforts and optimize facilities management, various types of information can be determined, such as the flow of people, time tracing, turnover rate, etc.
Customer benefits	Enhanced security, strengthened marketing

Technical Components

This solution consists of vertically integrated components that are delivered via an open platform which combines robust technologies. The Milestone Video Management System (VMS) is a key component. In terms of infrastructure, the system is hosted either on servers and storage on-premise or provided via a cloud platform. The GPGPUs are used both for AI learning and for actual operation of the system.



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