

Machine Vision



AI-enabled video insights for federal agencies

Federal agencies face the vast challenge of ensuring the safety, security, and efficiency of their operations and infrastructure. Traditional methods of monitoring and inspection, such as security personnel or static cameras and manual reviews of their footage, are labor-intensive, costly and prone to human error. CGI Machine Vision provides a powerful video-based decision-making tool to address these challenges.

CGI Machine Vision provides a cutting-edge solution that enables federal agencies to harness the full potential of their data, improve situational awareness and make informed decisions swiftly and accurately, ensuring mission success in a rapidly evolving technological landscape.

This innovative system continuously analyzes video feeds to detect potential issues in real time, alerting personnel so that they can respond appropriately. This reduces the need for manual inspections and enables agencies to focus on their core missions. With CGI Machine Vision, federal agencies can enhance their operational effectiveness, improve safety and compliance and make more informed decisions based on real-time insights.

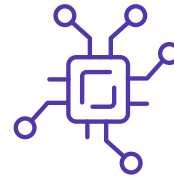


How it works

CGI Machine Vision helps federal agencies through a combination of:



Vision capture or other Internet of Things (IoT) sensors producing data



Generative AI processing at the point of capture



Analysis using AI and machine learning to interpret images and videos in a human-like way, but dramatically exceeding the capabilities of human analysis



Integration of processed information into data operations

The solution can be deployed on a range of embedded IoT devices where image data is captured. This includes edge compute boards with attached cameras; cameras and surveillance equipment; drones; thermal cameras; ultrasonic sensors; highspeed cameras; and night vision recording devices.

CGI Machine Vision operates at the point of data collection, often referred to as “edge computing,” which means it processes data locally on the devices where it is generated. This ensures efficient and immediate data processing without the delays associated with transmitting data to a central server. This combination of cutting-edge AI and localized data processing allows federal agencies to enhance their operational effectiveness, improve safety and compliance, and make more informed decisions based on real-time insights. processes video data to generate actionable insights.

Benefits of CGI Machine Vision

- Enables federal agencies to manage vast and complex data generated by IoT sensors
- Processes data locally at the point of collection, significantly reducing high costs and latency associated with transferring and processing visual data
- Ensures real-time analysis and immediate insights through localized data processing.
- Streamlines the complexity and time required for visual data analysis
- Incorporates robust security measures to mitigate concerns related to edge computing and IoT endpoints, ensuring data integrity and protection
- Features a scalable and flexible architecture that simplifies the deployment of IT solutions
- Facilitates easier integration and utilization of advanced video-based decision-making tools for federal agencies
- Enhances operational efficiency, improves situational awareness, and supports mission-critical activities

CGI Machine Vision can be applied to address a variety of federal agency challenges, including:

Federal workplace security

- Policy compliance: Continuous monitoring of secure facilities, such as federal prisons or secure areas of airports, to ensure compliance with federal security protocols.
- Site safety: Real-time analysis of work environments to detect and prevent safety hazards, ensuring the well-being of federal employees.



Infrastructure monitoring

- Asset management: Continuous inspection of critical infrastructure such as bridges, roads, and federal buildings to detect wear and tear, structural integrity issues, and other maintenance needs.
- Environmental monitoring: Real-time surveillance of natural resources and protected areas to prevent illegal activities and ensure environmental compliance.

Security

- Perimeter security: Continuous monitoring of military bases and defense installations to detect unauthorized access and potential threats.
- Mission support: Real-time video analysis during defense operations to provide situational awareness and support tactical decision-making.



About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. We are insights-driven and outcomes-based to help accelerate returns on your investments. Nearly 7,000 of our experts help the U.S. federal government achieve comprehensive, scalable and sustainable IT and business goals. We enable our clients to execute digital transformation, build the federal workforce of the future, achieve operational excellence, enhance citizen engagement and protect America's assets. As the federal government faces unprecedented challenges, we remain committed to enabling its success, using our deep understanding of clients' goals and missionessential needs to provide consultative insights and develop solutions for maximum results.

For more information, visit

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or email us at info@cgifederal.com.