

Tap into Enhanced Video Analytics using Intel® SceneScape Software on Axis Cameras



About Axis Communications

Axis Communications is the leader in network video solutions, enhancing security and business performance with video surveillance, access control, intercom, and audio systems. Supported by intelligent analytics and high-quality training, Axis collaborates globally with partners. Their open standards and developer-friendly tools are scalable, allowing easy cloud integration and device management.

In today's fast-paced business environment, effective monitoring, tracking, and analysis of your surroundings are crucial. Location intelligence, or spatial awareness, involves understanding physical spaces and the activities within them—such as machines, people, and objects—to optimize operations, enhance security, and make informed decisions.

As of December 2023, approximately 328.77 million terabytes of global data were generated daily, with video accounting for 53.27 percent of that total—and this proportion continues to rise.¹ But simply collecting video data from a single source is no longer enough. Analyzing videos shot by shot and piecing them together often results in an incomplete understanding. It's not just about knowing what is happening, it's about understanding why and how to act on that knowledge. For example, in a retail environment, monitoring foot traffic alone doesn't reveal why certain areas are more crowded or why sales are declining in specific sections. By integrating multiple sensor technologies, businesses can gain insights such as peak shopping times, the effectiveness of store layouts, and customer behavior patterns, leading to targeted marketing strategies and optimized store design.

Intel® SceneScape represents a groundbreaking approach to multimodal sensing and data integration. Unlike traditional unimodal solutions, Intel® SceneScape extends beyond vision-based AI to achieve spatial awareness through sensor data. It provides a comprehensive 4D digital twin of physical spaces, allowing users to monitor and manage multiple use cases from a unified view. This advanced software integrates data from various sensors for real-time, predictive, and historical analysis, overcoming the limitations of single-use sensor systems by providing a holistic understanding of an environment through detailed contextual data mapping. Intel® SceneScape is a key component of the Intel® Tiber™ Edge Platform. This platform enables enterprises to build, deploy, run, manage, and scale edge and AI solutions with cloud-like simplicity.

Integrating High-quality Video Data with Axis Cameras

Intel® SceneScape relies on superior image data to reach its full potential, and this is where Axis cameras excel. Axis Communications, a leader in network video technology, provides cutting-edge CPU-based edge computing cameras known for their exceptional image quality and edge-to-edge pixel density. These capabilities are essential for Intel® SceneScape to function optimally. Axis cameras capture high-quality video and process it on-site, reducing latency and enhancing real-time responsiveness. This data is then transmitted to Intel® SceneScape, where it is compressed to optimize bandwidth usage. The software integrates this high-quality video with information from additional sensors to create a detailed, real-time digital twin of the monitored area, aiding in predicting issues, and analyzing past events.

Elevating Performance with Axis Cameras and Zipstream Technology



Durability and Robust Build: Axis cameras are renowned for their durability, designed to withstand harsh conditions such as water, vibrations, impacts, and humidity. This robust build supports Intel® SceneScape's advanced analytics and multimodal integration, ensuring reliable performance and effective data analysis.



Bandwidth and Storage Efficiency: Axis cameras incorporate Zipstream technology, which reduces bandwidth and storage requirements by an average of 50% or more while preserving essential forensic details. This technology, combined with industry-standard compression methods, optimizes data processing by lowering latency and enhancing real-time responsiveness.



Energy Efficiency: The integration of Axis cameras with Zipstream technology not only boosts Intel® SceneScape's analytical capabilities and operational efficiency but also minimizes environmental impact and costs. By generating less heat, this combination enhances image quality and extends the lifespan of the cameras.

Integration Benefits

Enhanced Data Quality

Axis devices provide rich metadata—including object ID, trajectory, time in area, counting, tracking, color, confidence levels, 3D spatial data, and approximate distance—that ensures high-quality inputs for Intel® SceneScape, improving the accuracy and reliability of analytics.

Improved Detection with Fusion Cameras

Axis fusion cameras, equipped with radar, offer superior tracking data and image verification in various weather conditions, enhancing Intel® SceneScape's object detection, recognition, and tracking capabilities.

Seamless API Integration

Open API from Axis facilitates integration with PTZ cameras, audio devices, and strobe lighting, enabling real-time communication with Intel® SceneScape for better environmental control and responsiveness.

Enhanced Situational Awareness

Axis cameras integrate Intel® SceneScape data into video feeds, using GPS positional data to tag and display objects in real-time, providing clearer insights and improved operational awareness.

Effective Privacy Protection

AXIS Live Privacy Shield dynamically masks faces, people, and objects to ensure GDPR compliance and maintain privacy standards while enriching real-time visualizations. Intel® SceneScape maintains privacy by not collecting or storing personally identifiable information, using non-descript figures in its digital twin.



Gain Profound Operational Insights

Example Outcomes



Smart Cities

Simulate traffic patterns to optimize traffic light timings, reducing congestion and enhancing urban mobility and safety with real-time monitoring.



Healthcare Facilities

Predict patient influx and resource needs by simulating patient movements and interactions, optimizing hospital layouts and improving care.



Industrial Sites

Model production processes to identify inefficiencies and anomalies that could lead to costly downtime or safety incidents.



Emergency Services

Simulate disaster scenarios and emergency responses, improving preparedness and coordination by integrating real-time video feeds and predictive analytics.

Summary:

The collaboration between Axis Communications, and Intel® SceneScape offers a powerful solution for modern video analytic solutions. Resilient hardware from Axis, coupled with Intel® SceneScape’s sophisticated awareness technology and advanced computing capabilities, delivers unparalleled insights and operational efficiency. For more details, or to explore specific deployment scenarios, please reach out to [request a demo](#).

Learn more:

- [Intel® SceneScape Website](#)
- [Axis Communications Website](#)

Source

1. Twelve Labs, [Multimodal AI and How Video Understanding Will Revolutionize Media](#), April 22, 2024.

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