SAIMOS LiDAR

3D LiDAR-based security solutions are becoming more and more popular thanks to their improved reliability, reduced false alarms, and ability to streamline operations.

LiDAR, or Light Detection and Ranging, is a time-of-flight sensing technology that uses low-power, eye-safe lasers to classify humans and vehicles and show their location in real-time.

Similar to sonar and radar, which use sound waves and radio waves to map objects, LiDAR sends out pulses using low-power, eye-safe lasers. It then measures the time it takes for the laser to reach the target and reflect back to the transmitter. This data is then used to accurately calculate the coordinates of reflections and create a 3D point cloud image to reliably detect and track moving objects – for instance, to calculate the number of people in a space or to track a vehicle that has breached a secure area.

SAIMOS Video Analytics, which utilizes Intel's OpenVino™, complements SAIMOS LiDAR to provide enhanced situational awareness by combining Milestone XProtect, sensor data, and video analytics with geospatial analytics within a GIS environment. It enables great flexibility, advanced vision capabilities, and deep learning inference using CPUs and VPUs for video analytics.

Intel's robust portfolio of vision products helps SAIMOS enhance AI capabilities for cost-effective surveillance

In today's fast-paced world, businesses need to compute vast streams of visual data and obtain actionable insights in real-time. Many organizations are looking to deploy cutting-edge smart vision solutions to process huge amounts of vision data on-premise and run vision analytics to gather actionable insights. This allows these organizations to address security and safety challenges and gain business intelligence while limiting budgetary impacts considering most cameras do not have sufficient hardware resources on board for advanced video analytics.

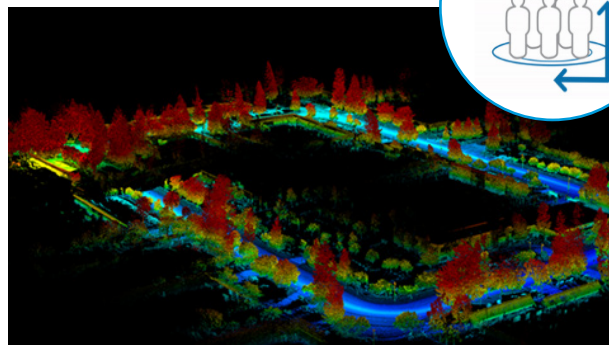**To address these unique challenges, organizations require a vision solution that:**

- Enables responsive, real-time visual analytics by processing at the near-edge (local on-prem units)
- Enhances near-edge AI capabilities and on-premise monitoring without replacing expensive hardware and infrastructure
- Complies with General Data Protection Regulation (GDPR) requirements without collecting PII (Personally Identifiable Information), while integrating and scaling with enterprise systems

SAIMOS leverages geospatial data from any source for complete situational awareness

SAIMOS by ONG-IT has its roots back in 1997, in Vienna, Austria, and today is a leading manufacturer of solutions and standard products within the areas of AI-based video analysis, machine- and deep learning, and Geographic Information Systems (GIS). With 20+ years' experience automating and optimizing processes based on geospatial information and geo-analytics, SAIMOS is now spearheading the usage of intelligent Video Analytics and GIS for situational awareness, critical infrastructure, and security.

SAIMOS Video Analytics uses cutting-edge technologies like machine learning-based video analytics, and state-of-the-art AI systems optimized for Intel® CPUs (Xeon Silver, Xeon Gold, Xeon Platinum, Core i5 & i7) and Intel® Movidius™ Vision Processing Units.

Their WebGIS-based SAIMOS Control Center is an integrative platform linking geo-data with data from other sources offering operators enhanced situational awareness. In addition, the SAIMOS LiDAR integration offers effective security protection for your critical infrastructure 24/7— in all light and most atmospheric conditions. This highly accurate and reliable solution combines industry-leading LiDAR sensors with SAIMOS smart near-edge-based AI Video Analytics seamlessly integrated into Milestone XProtect.

SAIMOS LiDAR is ideal for high-security building applications that require a high level of accuracy and a low rate of false alarms. It's possible to extend the capabilities of your solution by integrating with a wide range of smart near-edge-based AI video analytics available in the SAIMOS portfolio. For instance, when integrating access control systems with SAIMOS Face Analytics and SAIMOS 3D Gate, it's possible to block tailgaters and ensure only authorized personnel enters secure areas. And, thanks to full Smart Client integration, intrusion and perimeter alarms are displayed in the XProtect alarm manager. With all this real-time information and analysis, SAIMOS LiDAR offers security and protection at the highest level.

OpenVINO™ unlocks advanced vision capabilities

Using the Intel® Distribution of OpenVINO™ toolkit, SAIMOS has enhanced the performance of AI capabilities at the near-edge.

Without the need to replace infrastructure or hardware, SAIMOS customers can now leverage computer vision and deep learning capabilities on their existing cameras and near-edge devices. This allows these devices to count people, protect perimeters, recognize license plates as well as faces, create heatmaps, and dynamic blurring with processing at the near-edge. By bringing deep learning to a variety of hardware platforms, SAIMOS is increasing the accuracy and value of its insights. In addition, the Intel® Distribution of OpenVINO™ toolkit helps SAIMOS reduce the cost of cloud processing, hosting, and maintenance for their customers.

This is because the toolkit improves the speed, scalability, and performance of vision processing at the edge. Furthermore, SAIMOS delivers vision solutions to customers that are built to operate in real-time and under even the most unique scenarios. Of course, for best results, different camera angles or lighting and atmospheric conditions are important to consider.

Intel delivers the most comprehensive array of intelligent vision capabilities

The Intel® Vision Products portfolio is comprised of silicon, software tools, deep learning frameworks, and libraries that are uniquely positioned for the next generation of AI. Intel Vision Products helps you make sense of your data, from the edge to the cloud, so you can act in real-time, make decisions faster, and implement new operational strategies to drive immediate results. At the hardware level, Intel offers the most comprehensive selection of acceleration silicon in the industry.
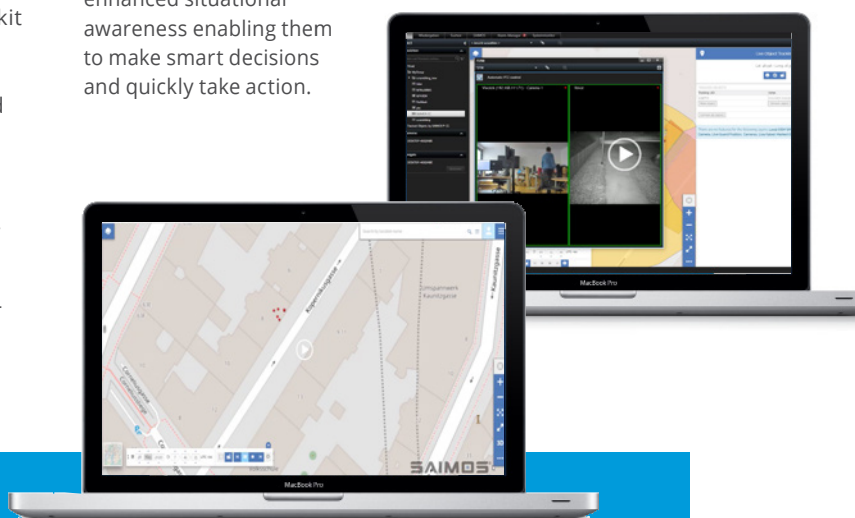
The Intel® Distribution of OpenVINO™ toolkit is a free, downloadable toolkit within the Intel® Vision Products portfolio. It delivers highly accurate vision analytics performance and computing efficiency. This end-to-end suite helps integrate vision capabilities across your entire end-to-end infrastructure. It's optimized for multiple Intel® Architectures and works with Intel® CPUs, CPUs with integrated graphics, Intel® FPGAs, and Intel® Movidius™ VPUs. SAIMOS is one of the first organizations offering Intel's OpenVINO in its commercial products. This allows SAIMOS customers to benefit from all of these advantages.

Accelerated computer vision with great flexibility

By leveraging the Intel® Distribution of OpenVINO™ toolkit, SAIMOS accelerates computer vision performance, shortens vision solution development including R&D, and streamlines deep learning inference and deployment. The toolkit helps SAIMOS fast-track the development of high-performance computer vision and deep learning applications. It allows SAIMOS to significantly improve the inference runtime and increase vision data processing and performance at the near-edge. Designed to quickly run and analyze several, extensive streams of data simultaneously at the edge in real-time, it reduces the cost of hardware for SAIMOS customers. They can run SAIMOS's video analytics on a light, cost-effective edge appliance without latency.

Available both on-premise as well as in the cloud, SAIMOS Video Analytics has integrated the Intel OpenVINO™ toolkit enabling great flexibility, advanced vision capabilities, and performance, and deep learning inference using CPUs and VPUs for video analytics. This is complemented by the WebGIS based SAIMOS® Control Center as well as the SAIMOS LiDAR integration to provide operators a common operational picture (COP). By connecting existing surveillance cameras to SAIMOS Video Analytics, customers can quickly process vision data and identify potential security risks through intrusion detection and facial recognition capabilities. This is especially useful for safety and security applications in energy, utilities, and other critical infrastructure industries to help protect critical assets.

In addition, SAIMOS video analytics supports fog computing (combination of on-prem and cloud) for assets distributed in space. SAIMOS Video Analytics and SAIMOS LiDAR deliver information collected from sensors for Perimeter protection, Cross-Camera Tracking incl. PTZ-camera control, 2D/3D Counting, Occupancy, Heatmapping, Object Detection, Face Analytics, and License Plate Recognition (LPR), and many more. This plug-and-play solution empowers security personnel with the tools and information they need to respond to threats confidently. Organizations can quickly derive insights and make informed decisions to secure their critical assets. For instance, when adding the SAIMOS Control Center's map user interface seamlessly integrated into Milestone XProtect, operators can experience an enhanced situational awareness enabling them to make smart decisions and quickly take action.

Key features of SAIMOS Video Analytics & SAIMOS LiDAR:

- **Perimeter protection** of assets, buildings, remote and unmanned sites
- **Safeguard assets** for uninterrupted operations
- **Detect and recognize faces –** ideal to complement access control solutions
- **Detect and track objects** when intruding – even cross-camera
- **License plate recognition** for car parks and freeflow traffic scenarios

SAIMOS is easy to deploy, configure, and manage. It does not require expensive GPU's, and with less hardware and labor cost it offers a lower Total Cost of Ownership (TCO) compared with a traditional video analytics deployment. For example, the approximate required Intel CPU-based hardware costs for SAIMOS Perimeter are less than EUR 40,- per channel. Furthermore, SAIMOS LiDAR delivers anonymized data on detected individuals helping protect privacy.

**To learn about the Intel® Distribution of OpenVINO™ toolkit
and SAIMOS products and solutions, visit:**

SAIMOS Homepage **Click here**

Intel® Distribution of OpenVINO™ Toolkit Homepage Click here