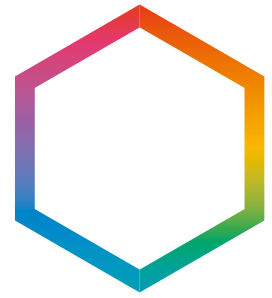


Axxon One is a scalable video management platform that unifies surveillance and physical security.

INTELLIGENT VIDEO  
MANAGEMENT PLATFORM



axxon  
ONE

# Axxon ONE

## AI Analytics

Pre-trained models  
and custom AI training

## Any Scale

From one site to nationwide,  
with unlimited servers,  
workstations, and devices

## Integration

A wide range of physical  
security systems and  
open communication  
protocols

axxonSOFT

axxonsoft.com

# Contents

3	<b>System Architecture and Management</b>	Hybrid Distributed Architecture • Fault Tolerance and Updates Adaptive Video Streaming • System Health Monitoring • License Management User Management and LDAP Sync • Cloud Configuration Backups Web Configurator • AxxonNet Cloud Service
6	<b>Command and Control</b>	Video Wall Management • Interactive Map • Bookmarks • Advanced Export Capabilities • Three Types of Client Applications • Alarm Handling (Alarm Board) Reports and Dashboards
8	<b>Integration and Automation</b>	Access Control Management • Fire and Intrusion Systems Integration IP Device Integration • POS Integration • Integration Protocols Scenario Automation
9	<b>Video and Audio Analytics</b>	<b>Situational Awareness and Safety</b> Scene Analytics • AI Object Tracker • Multi-Camera Tracking PPE Detection • Behavior Analytics (Pose & Fight Detection) Fire and Smoke Detection • Video Clarity Detector • Area Occupancy Detector Operational Monitoring • Audio Analytics
12		<b>People, Traffic, and Retail Intelligence</b> Object and People Counting • Retail Analytics (Visitor Counter, Queue Detection, Heat Map, Demographics) • Traffic Analysis
13		<b>Search, AI Customization &amp; Performance</b> Facial Recognition • Similarity Search • ANPR and Vehicle Search Barcode Detector • Natural Language Detection and Search • Smart Event Search Neural Network Training (On-Demand & TIY) • GPU Acceleration
15	<b>Cybersecurity and Data Privacy</b>	Secure Communications • Data Encryption • Privacy Masking Strong Security Policies • System Integrity Checks CVE™ Numbering Authority (CNA)

## About AxxonSoft



AxxonSoft develops video management software (VMS), a physical security information management (PSIM) platform, cloud solutions, and in-house AI video analytics. These solutions are built on high-performance computing platforms, including Intel® technologies, to ensure scalability, reliability, and efficient AI-driven video processing.

Headquartered in Cork, Ireland, AxxonSoft operates over 30 offices worldwide, ensuring global visibility, 24/7 support, and rapid response for partners and customers. More than 25,000 organizations in 140+ countries rely on AxxonSoft to safeguard critical operations, protect people and assets, and enhance operational efficiency through video intelligence.

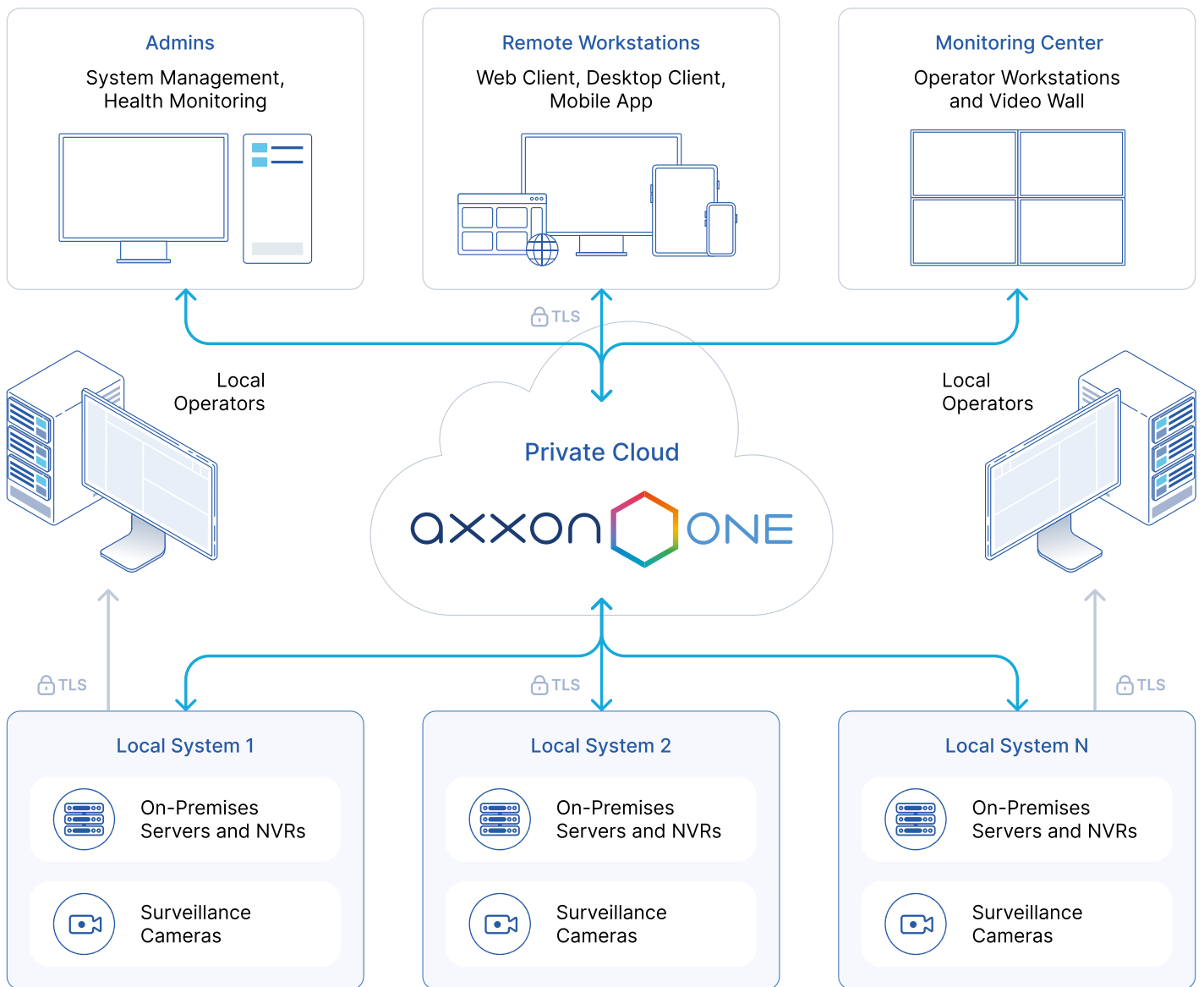
For more details on AxxonSoft solutions, reach out to us:

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Website: [www.axxonsoft.com](http://www.axxonsoft.com)



# System Architecture and Management



## Hybrid Distributed Architecture

Axxon One scales from a few cameras to state-wide networks spanning hundreds of sites and tens of thousands of cameras. It supports on-premises, cloud, and hybrid deployments.

In a private cloud, any number of sites can be integrated under centralized management and monitoring. Unlimited client workstations may connect, and command-and-control rooms can be set up. Third-party NVRs and VMS systems can also be connected.

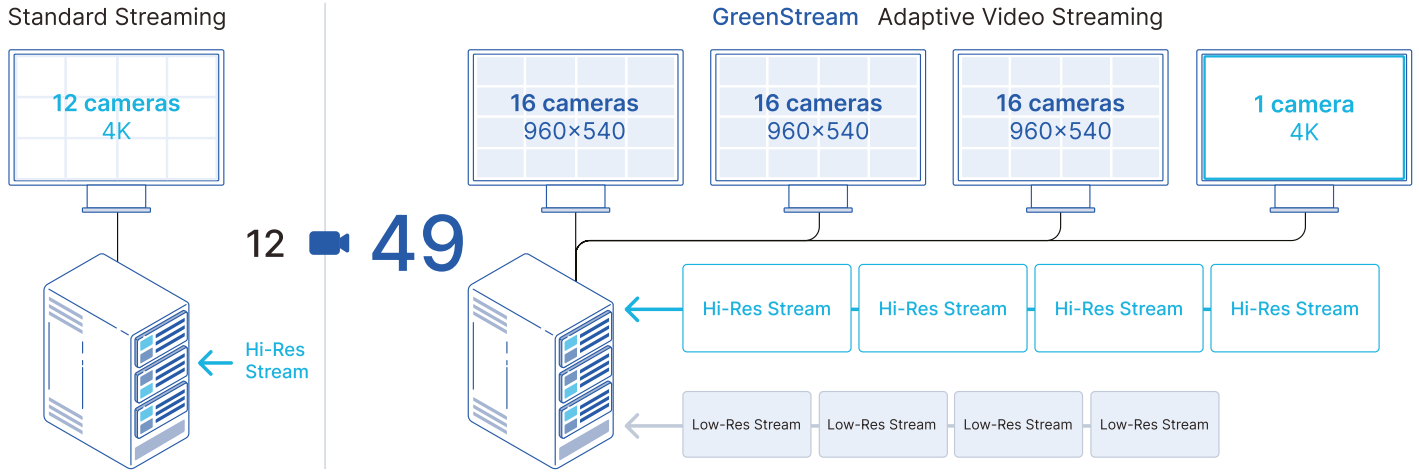
## Fault Tolerance and Updates

Axxon One VMS servers form failover clusters, with logical nodes distributed across physical servers. If a server fails, its nodes migrate to available machines, restoring video streaming and recording immediately.

Servers can be taken offline for maintenance or updates. Entire clusters can be updated sequentially with zero downtime. Client software upgrades automatically when connecting to a server running a newer Axxon One version.

## Adaptive Video Streaming

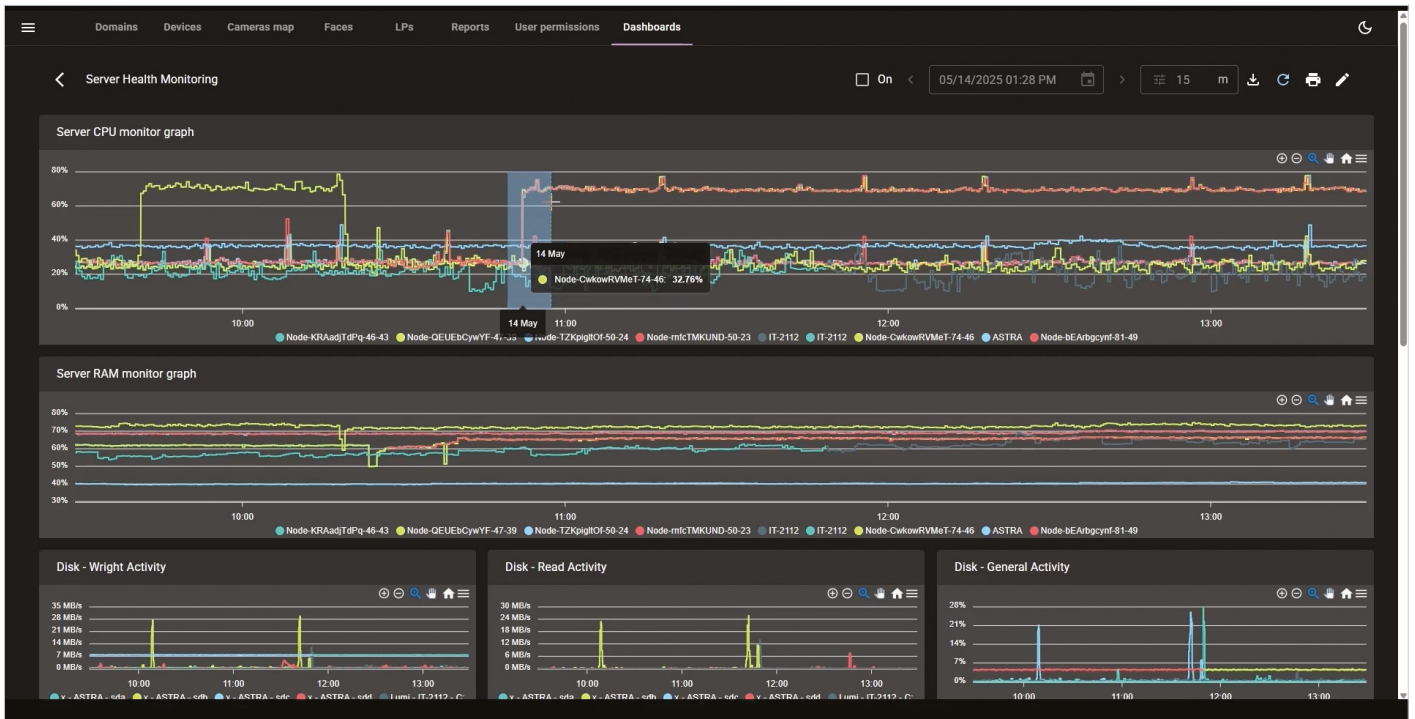
GreenStream automatically selects the lowest-resolution stream needed for display — such as when multiple cameras appear in one layout — and switches to high-resolution when a camera is viewed full screen. This reduces network bandwidth and client resource usage without compromising quality.



## Health Monitoring

System Health Monitoring is a cloud-native module that delivers real-time visibility into your entire surveillance infrastructure. It gathers telemetry from cameras, servers, archives, and domains — on-premises, cloud, or hybrid — and presents it in a unified, interactive interface.

Custom dashboards with intuitive widgets — counters, graphs, and tables — help detect anomalies via color-coded alerts, set thresholds, and analyze historical trends to minimize downtime and boost reliability.



## License Management

The License Server simplifies license management for systems of any size. A single license file enables flexible camera allocation across VMS servers and seamless camera migration between them. Available as a public service for ease of use, it also supports local or private cloud deployment to meet strict security requirements.

## User Management and LDAP Sync

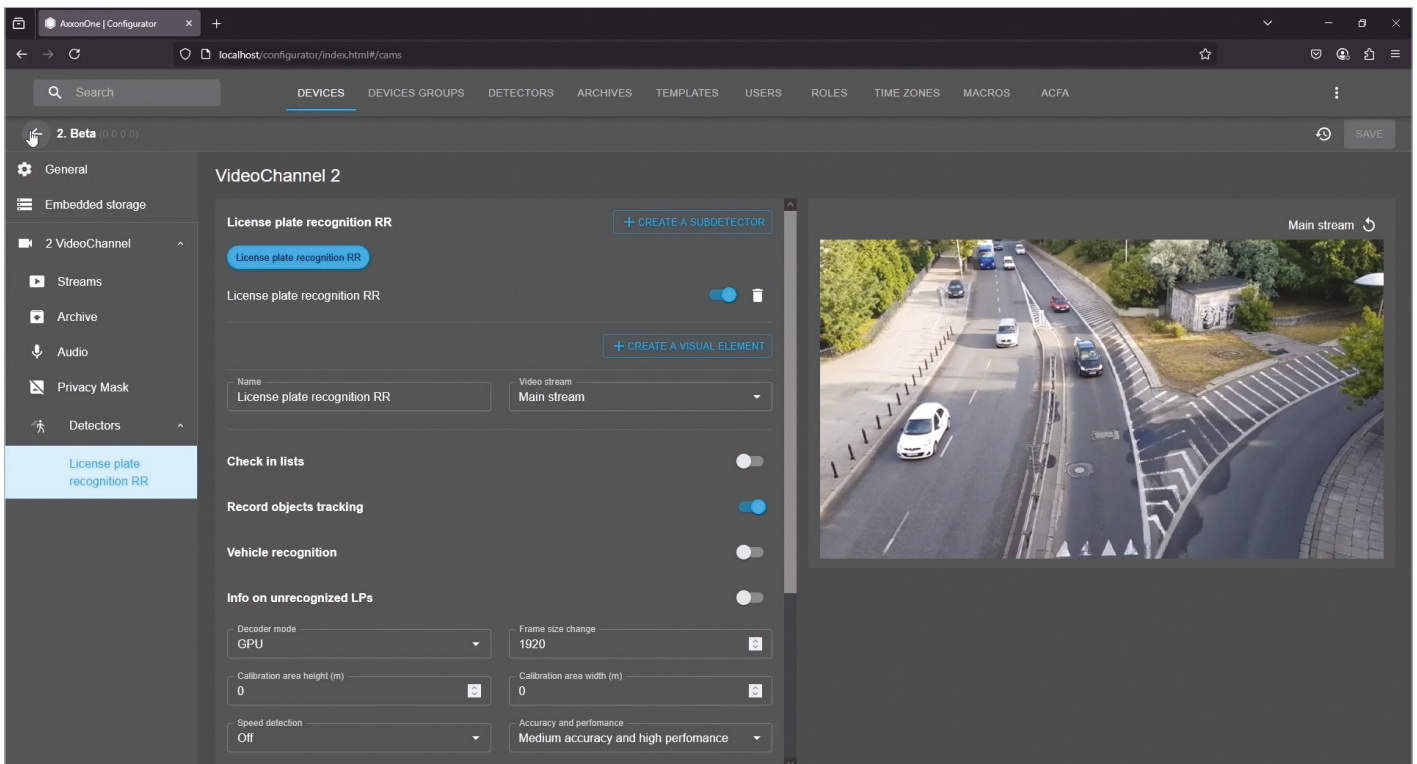
Axxon One simplifies user rights management in large systems. Assign one or more roles per user, with role-based access to devices and functions. Camera group rights let you quickly grant access to entire groups for specific roles. LDAP integration enables automatic user account creation, deletion, and role updates through manual or scheduled directory sync.

## Cloud Configuration Backups

Back up Axxon One VMS server configurations — manually or on schedule — and store them securely in the cloud for fast recovery. After a failure or hardware upgrade, restore the same configuration on a new machine quickly.

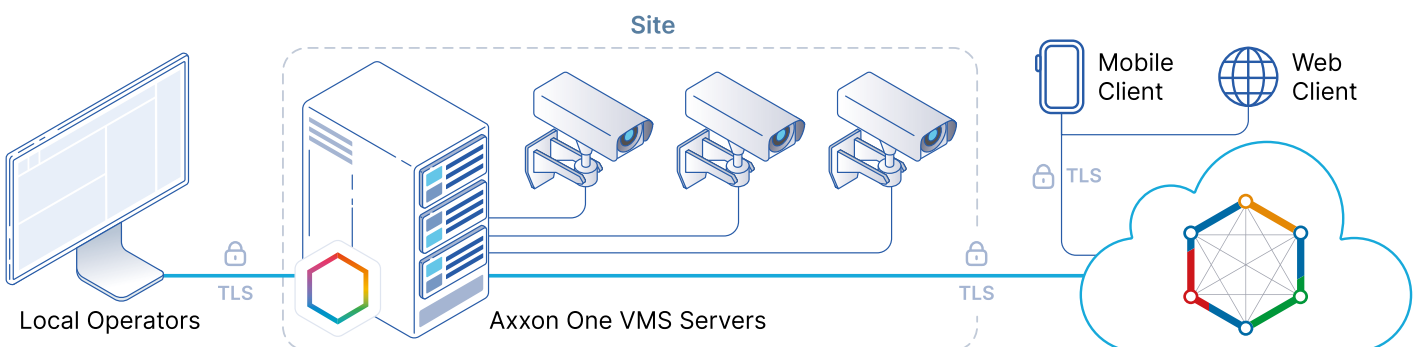
## Web Configurator

The Web Configurator enables comprehensive system configuration from a standard web browser. Always up to date, it simplifies deployment of administrator workstations for systems of any scale.



## AxxonNet Cloud Service

AxxonNet is AxxonSoft's public cloud service for remote access to on-premises Axxon One systems via web and mobile clients. It supports unlimited sites, integrated reporting and dashboards, and offers Web Configurator, System Health Monitoring, and configuration backups as add-ons. Secure connections, password hashing, reCAPTCHA on login, and other measures protect data and ensure reliable operation.



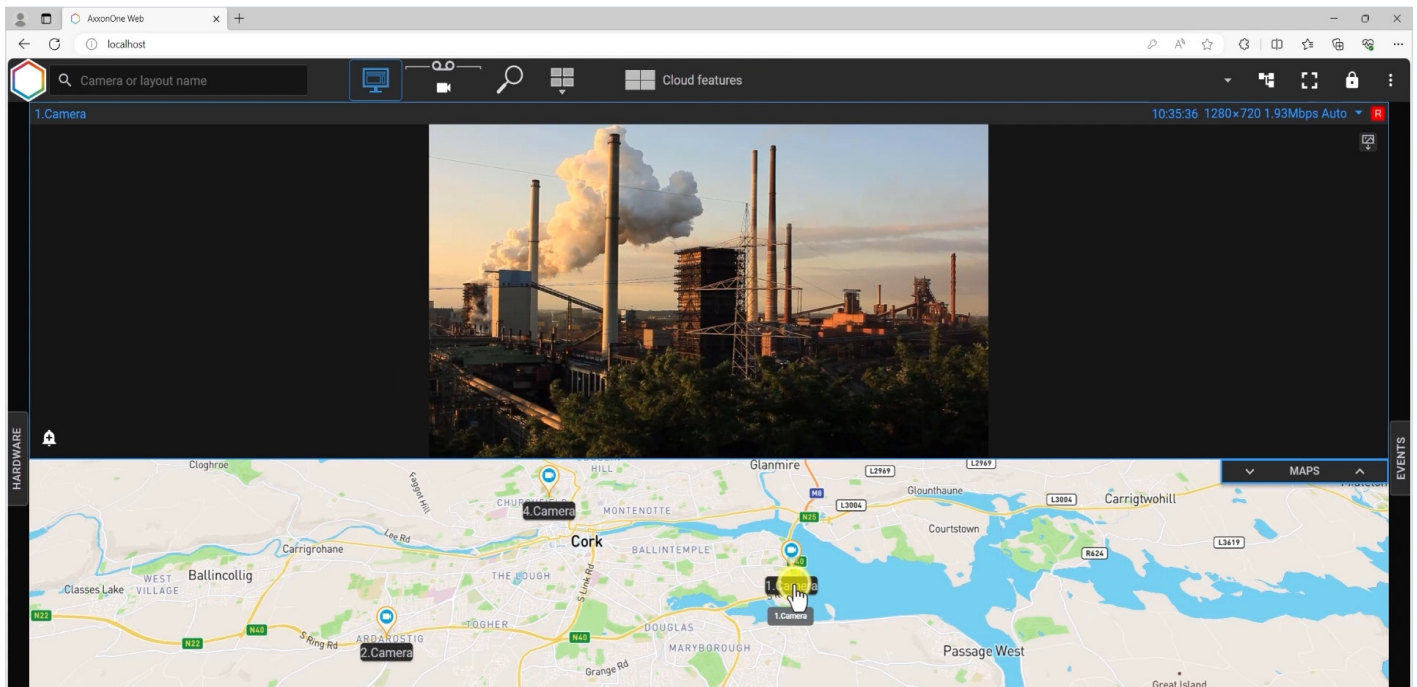
# Command and Control

## Video Wall Management

Designate one or more client computers as a video wall — no dedicated hardware required. Configure multi-computer, multi-monitor layouts and manage them from any workstation. GPU-accelerated video decoding enables large video walls using just a few client machines.

## Interactive Map

Provides a unified view for monitoring and controlling security devices, locating alarms, and viewing video. Supports bitmap floor plans and geo-maps such as OpenStreetMap and Google Maps — essential for large or distributed sites. Multi-level maps simplify navigation in multistory buildings.



## Bookmarks

Bookmarks protect critical archive fragments and help build a searchable, categorized catalog of key incidents. Each bookmark can include single- or multi-camera recordings with comments and area highlights — including dynamic overlays that follow moving objects.

## Advanced Export Capabilities

Export video from multiple cameras as a single file or separate clips. All exported frames and videos are digitally signed. Add comments, display or hide object tracks, mask sensitive areas, and overlay metadata — timestamp, camera name, geo-coordinates, and user info. Choose codec, compression level, and frame rate. Output files can be password-protected, include an embedded player, or be uploaded to the cloud for secure sharing via link with authorized personnel.

## Three Types of Client Applications

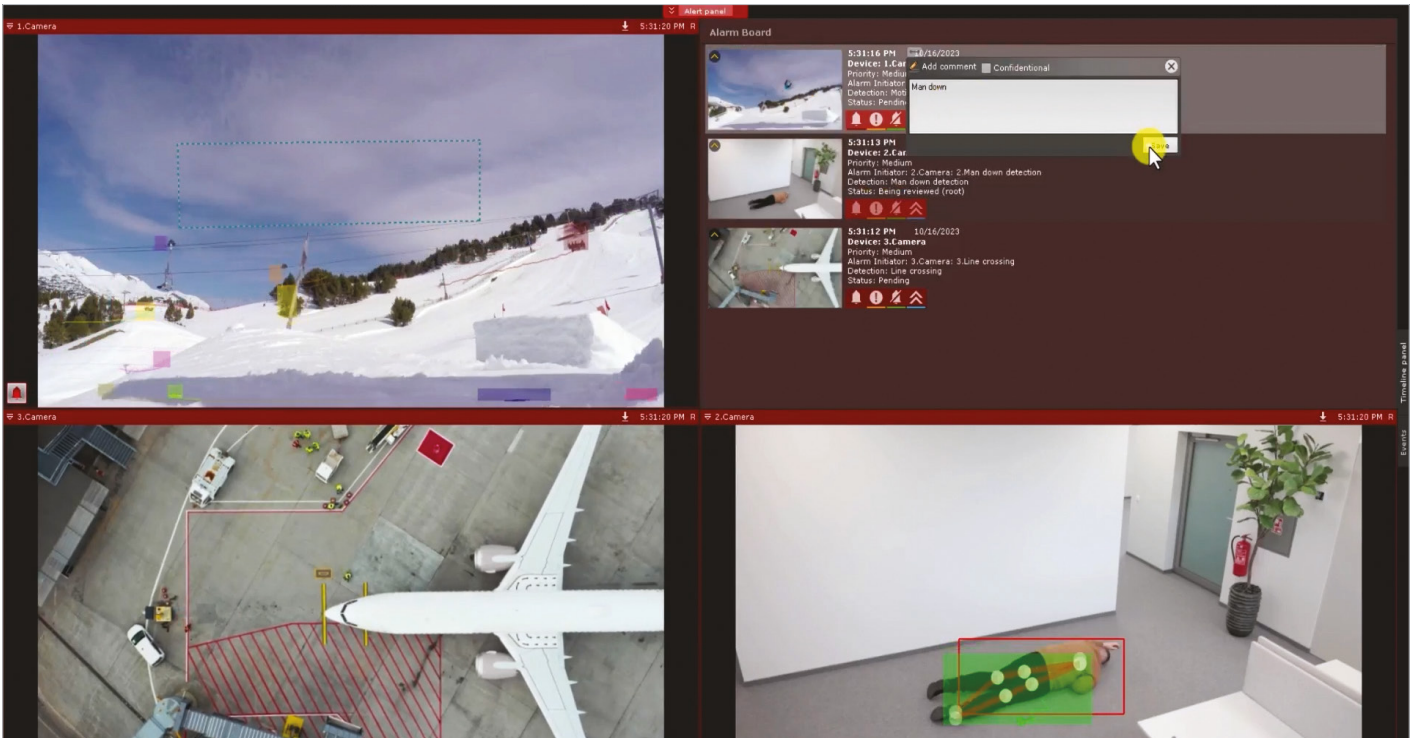
The **Desktop Client** delivers full monitoring, control, and configuration capabilities and can connect to unlimited sites — directly or via the cloud.

The **Web Client** provides a complete monitoring workplace that requires no installation or local updates. It supports H.264 and H.265 natively and includes PTZ and fisheye camera control, flexible layouts, alarm handling, multi-channel playback, intelligent search, and both raster and geo-map support.

The **Mobile Client** for iOS and Android offers most Web Client features in a streamlined interface.

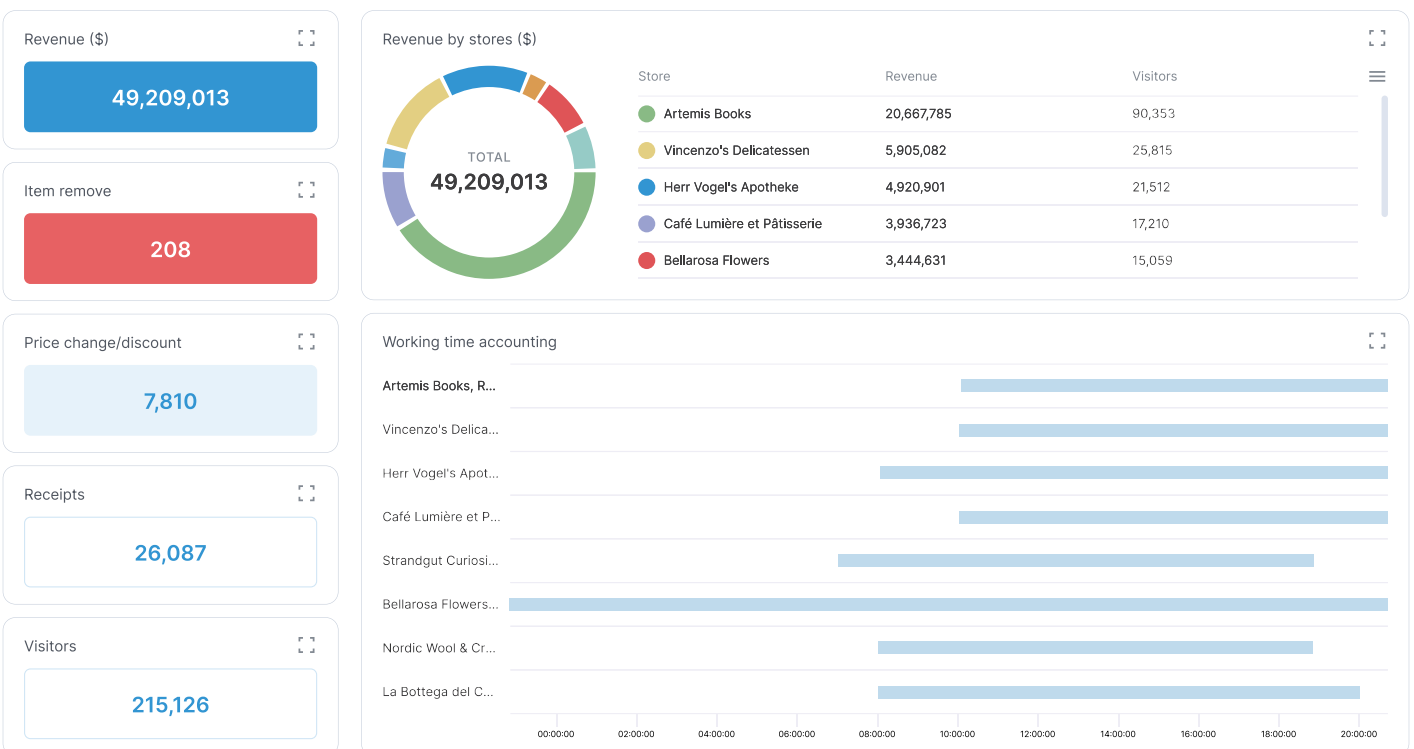
## Alarm Handling

The Alarm Board is a multi-user tool that displays active alarms by priority. Operators can review event recordings, assess alarms, add comments, and escalate them to designated users. A configurable time limit ensures timely response; unprocessed alarms are marked as skipped. Both processed and skipped alarms appear color-coded on the video timeline and can be filtered by status.



## Reports and Dashboards

The web-based reporting and dashboard system consolidates data from multiple sites into actionable insights. Combine video analytics, POS transactions, and event logs to build custom reports — for example, on alarms, policy violations, visitor traffic, or store performance metrics like average receipt value and conversion rate over a selected period.



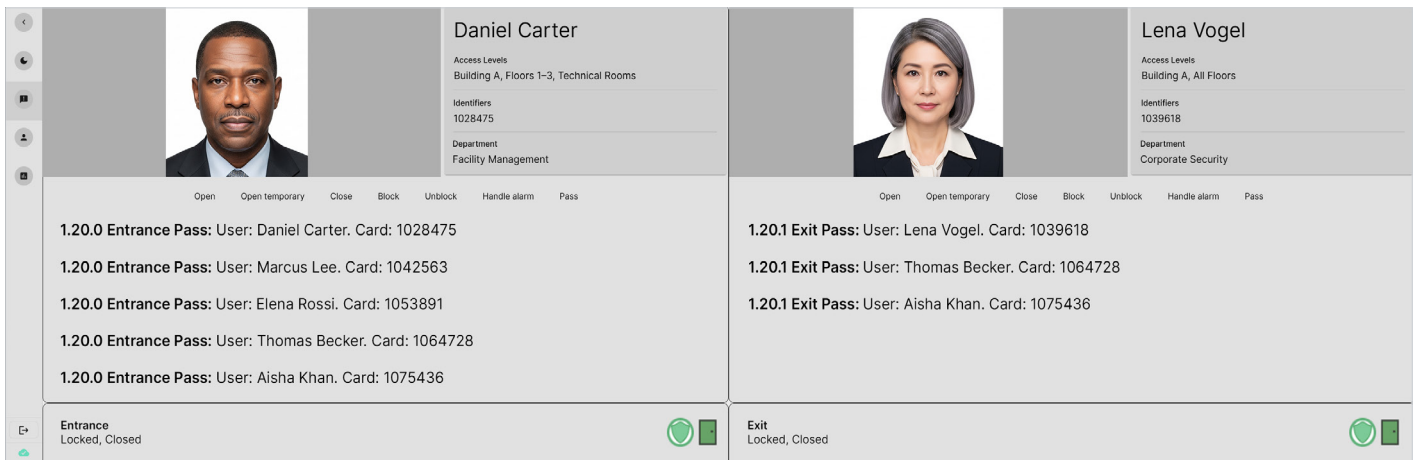
# Integration and Automation

## Access Control Management

Coming Soon

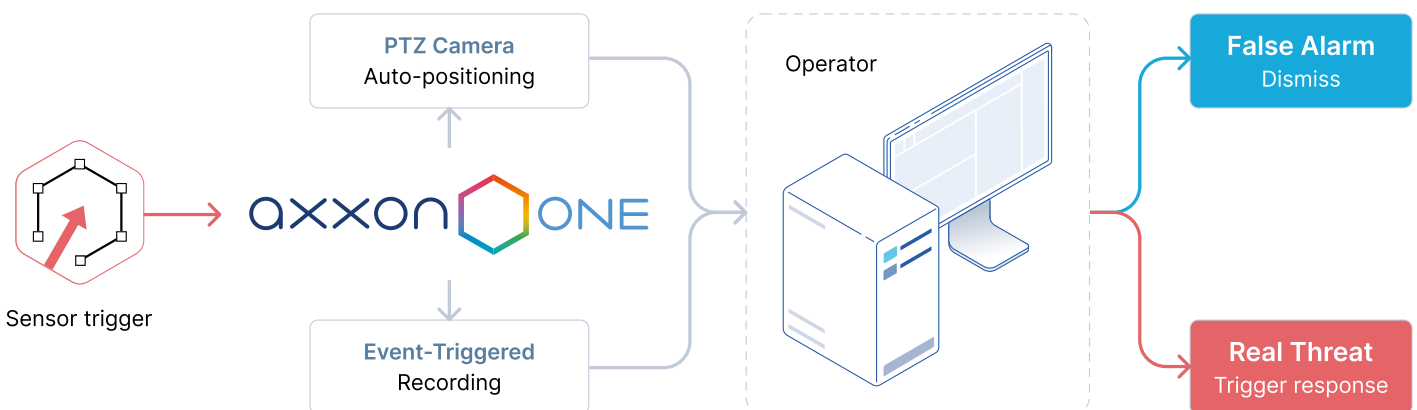
Axxon One unifies access control hardware from multiple vendors into a single management platform and writes access rights directly to controllers. It includes Access Manager for **cardholder administration**, which supports nested department structures for large organizations, lets you assign identifiers (cards, PINs, photos), and configure schedules, regions, and access levels.

The Event Manager UI provides real-time pass event tracking, access point status monitoring, and remote control of those points. It also enables supervised access with photo verification. All pass events are automatically synchronized with video recordings for joint review and investigation. The regional dwell time report shows attendance across locations.



## Fire and Intrusion Systems Integration

Axxon One interoperates with fire, intrusion, and perimeter alarm systems. Alarms and device statuses appear on maps and in a dedicated control board, where equipment can also be managed. Integration enables practical scenarios, such as video verification on alarm, automatic PTZ camera positioning, event-linked recording, security lighting activation, and audio deterrence.



## IP Device Integration

Axxon One integrates with over 10,000 IP devices — including cameras, thermal imagers, NVRs, encoders/decoders, intercoms, network loudspeakers, I/O modules, and sensors. It supports RTSP and ONVIF Profiles S, G, T, and M, as well as generic drivers from multiple vendors. Edge storage can be viewed or replicated, and advanced camera features like embedded video analytics are fully usable.

## POS Integration

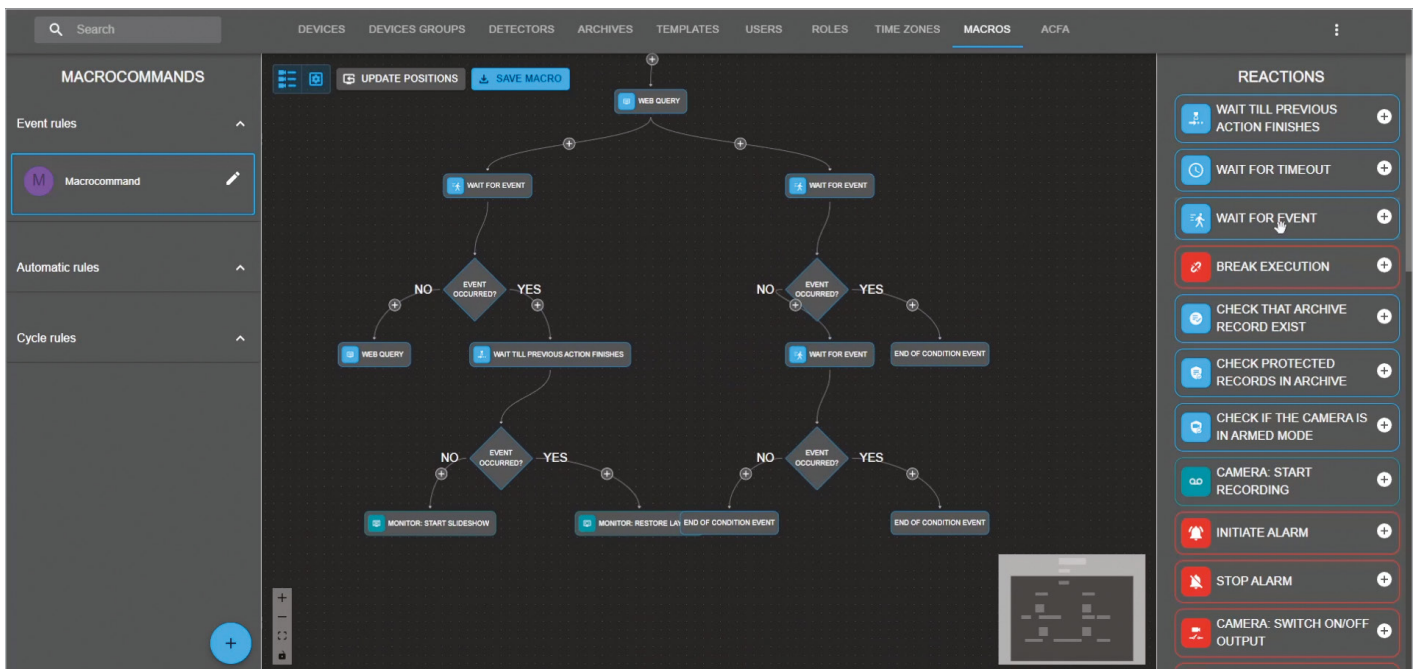
Axxon One receives data from POS terminals and links it to video. Receipt text and register events appear as on-screen captions or in a separate pane. Search by caption — such as item name or price — retrieves matching receipts and associated video, revealing violations that conventional surveillance would miss. Centralized chain-wide reports can also be generated from POS transaction data.

## Integration Protocols

Axxon One supports BACnet, Modbus, OPC, and SNMP for integration with industrial automation, building management, HVAC, and environmental monitoring systems. For integration with external information systems, HTTP API, gRPC API, and an embeddable web component are available. A plugin mechanism with UI customization for third-party applications will be available soon.

## Scenario Automation

Axxon One simplifies automation of event-driven workflows across integrated systems. **Macros** enable no-code creation of complex scenarios from single or multiple event sources, with AND/OR logic. For advanced customization, embedded **Python scripting** will be available soon.



# Video and Audio Analytics

## Situational Awareness and Safety

### Scene Analytics

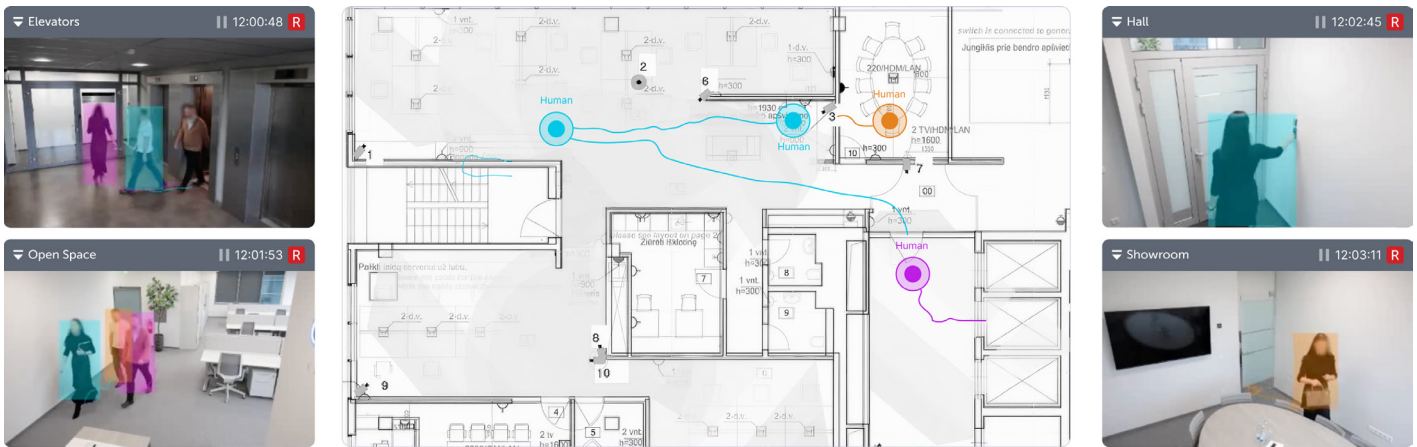
Scene analytics triggers alarms based on object movement within the camera's field of view. Detected events include motion in area, stop in area, area entry or exit, loitering, abandoned objects, line crossing, multiple objects, and movement between areas. Detection can be fine-tuned by object size, speed, color, type, perspective, or AI object tracking.

### AI Object Tracker

The neural network tracker identifies and follows specific objects, reducing false positives in complex scenes. Scene analytics rules can be applied to tracked objects to generate event-based alarms. Axxon One includes embedded pre-trained neural networks for detecting humans and vehicles from various angles.

## Multi-Camera Tracking

Axxon One tracks objects across multiple camera views using appearance similarity. Moving objects appear on the map and are highlighted in the camera view for seamless live tracking. Similar functionality for video archives will be available in upcoming releases.

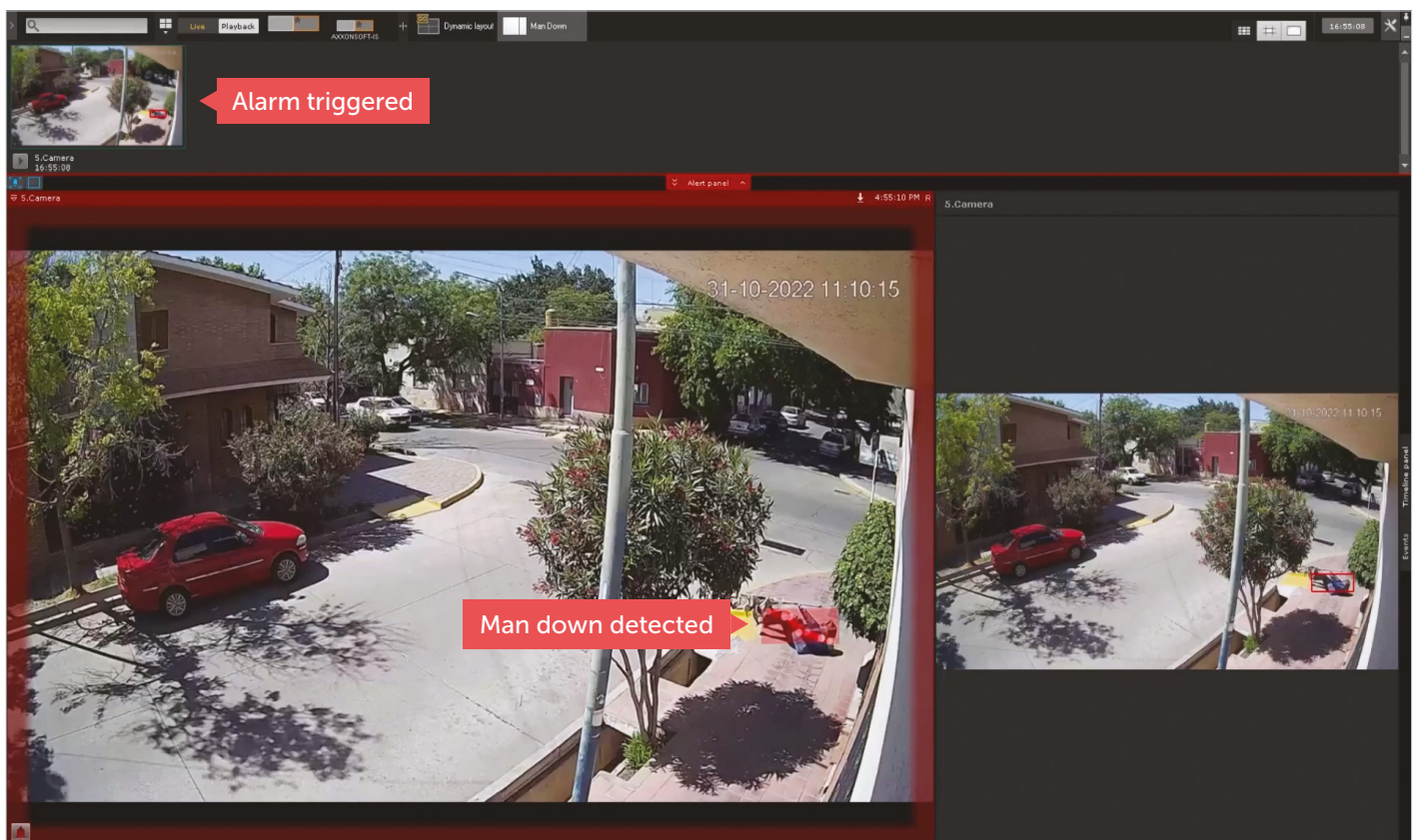


## PPE Detection

The personal protective equipment (PPE) detector enforces workplace safety by identifying missing hard hats, vests, work clothing, or footwear. Embedded neural networks recognize hard hats and vests of various colors. On-demand training allows recognition of non-standard or custom PPE items.

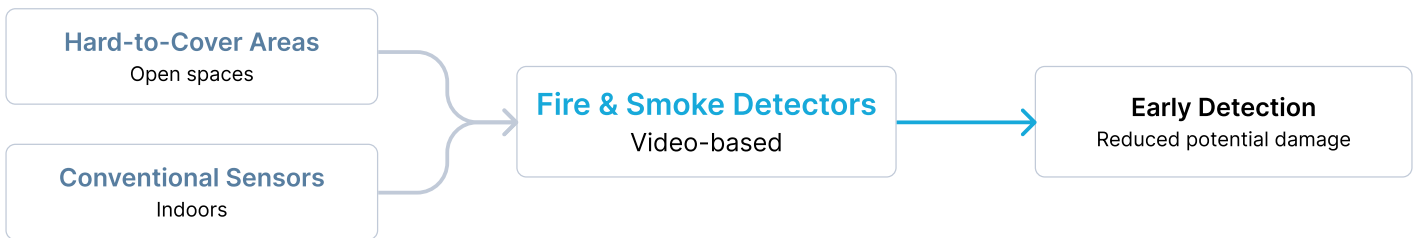
## Behavior Analytics

The **human pose detector** identifies risk situations by recognizing body positions — such as lying down, sitting, raising hands, or not holding a handrail. It also counts people and detects close proximity, which may indicate violations of health or safety regulations. The **fight detector** recognizes physical altercations, enhancing safety in public venues, schools, and transportation environments.



## Fire and Smoke Detection

Video-based fire and smoke detectors operate where traditional sensors are ineffective – such as open areas – and complement them indoors to accelerate hotspot detection and reduce potential damage.

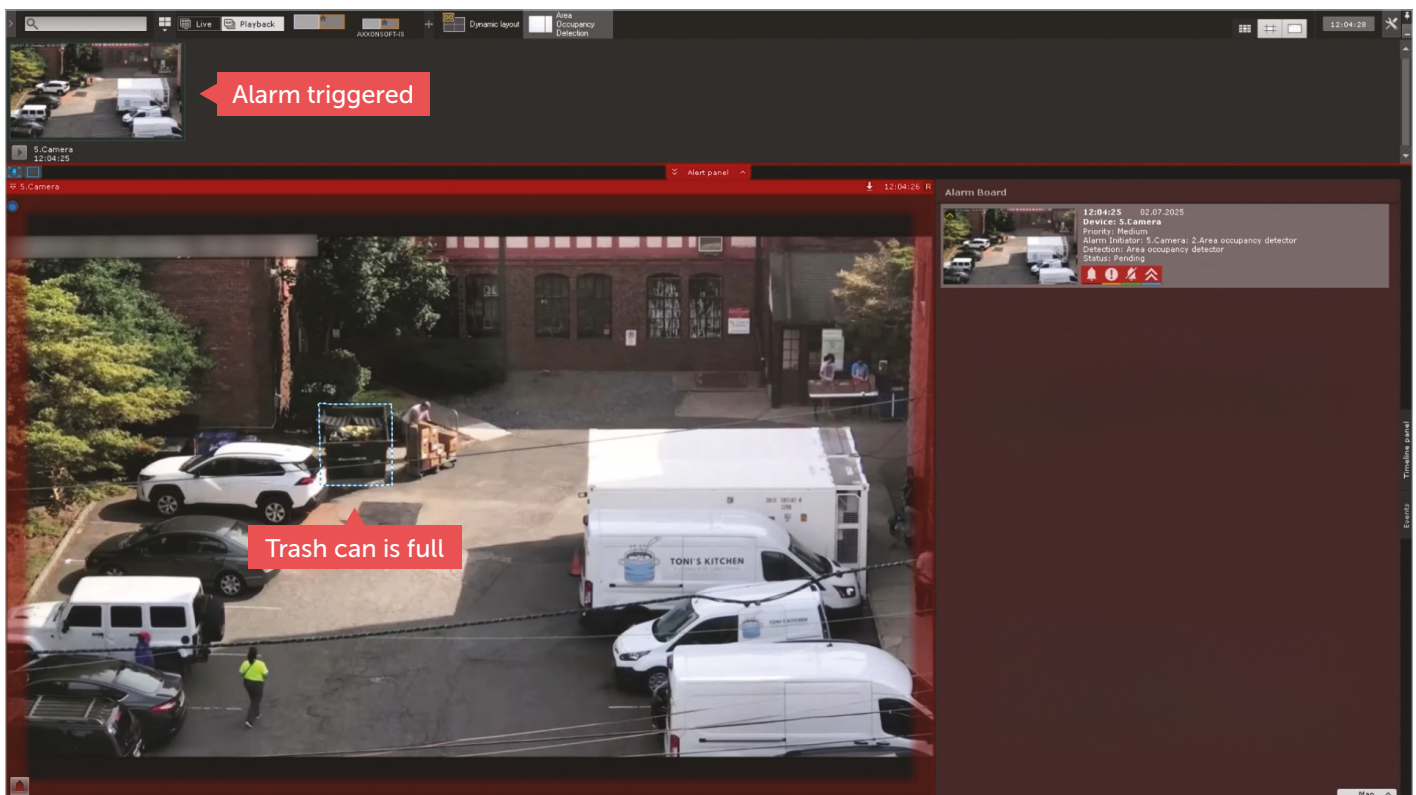


## Video Clarity Detector

Monitors video quality and alerts early to issues such as blurriness, compression artefacts, noise, defocusing, lens flares, or unexpected scene changes indicating camera displacement.

## Area Occupancy Detector

Uses a segmentation neural network to identify distinguishable objects within a specified size range and calculate the percentage of space they occupy. Alerts when a configured threshold is exceeded, helping enforce cleanliness, safety, and fire regulations in warehouses, production areas, waste collection zones, and other operational spaces.



## Operational Monitoring

**Glow detector** monitors equipment status by tracking indicator lights (on/off), useful for remote operational control.

**Water level detector** determines liquid levels using a visual scale and triggers alerts when thresholds are exceeded – practical for reservoirs and process tanks.

## Audio Analytics

Audio detection tools expand situational awareness by recognizing sounds such as aggression, gunshots, smoke alarms, child crying, breaking glass, sirens, and dog barking.

# People, Traffic, and Retail Intelligence

## Object and People Counting

The **neural counter** uses embedded neural networks to count humans and vehicles in defined areas, both moving and static. For dense scenes, the **crowd estimation** tool estimates gatherings of up to 10,000 people. Both detectors trigger events when predefined thresholds are exceeded.



## Retail Analytics

**Visitor counter** tracks people entering or exiting a store or zone, with real-time display and time-based reports.

**Queue detector** monitors queuing areas, alerts when thresholds are exceeded, and stores historical data for analysis.

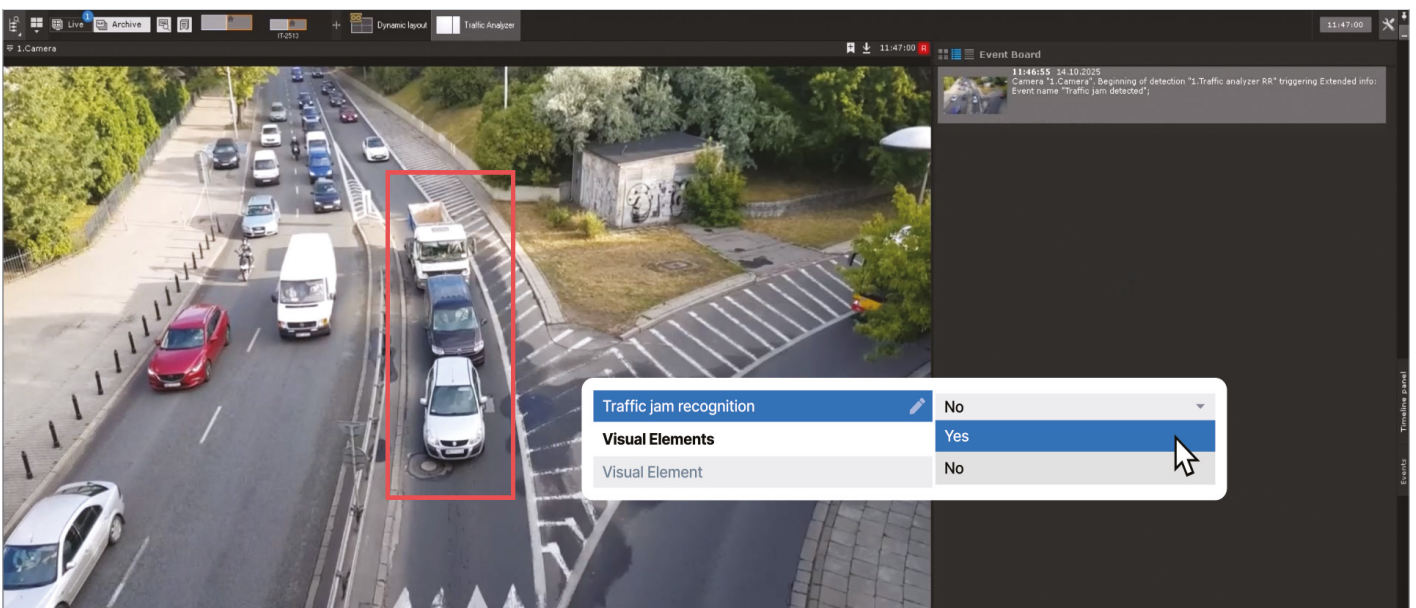
**Heat map** visualizes foot traffic intensity and dwell time across store zones — also useful in non-retail environments for identifying main traffic routes.

**Age and gender estimation** provides visitor demographic insights based on facial attributes.

## Traffic Analysis

Coming Soon

Monitors road conditions in real time and collects lane-specific statistics. Counts vehicles, classifies types, measures average speed, and detects events such as stops, jams, slowdowns, overspeeding, wrong-way driving, accidents, or lost cargo.



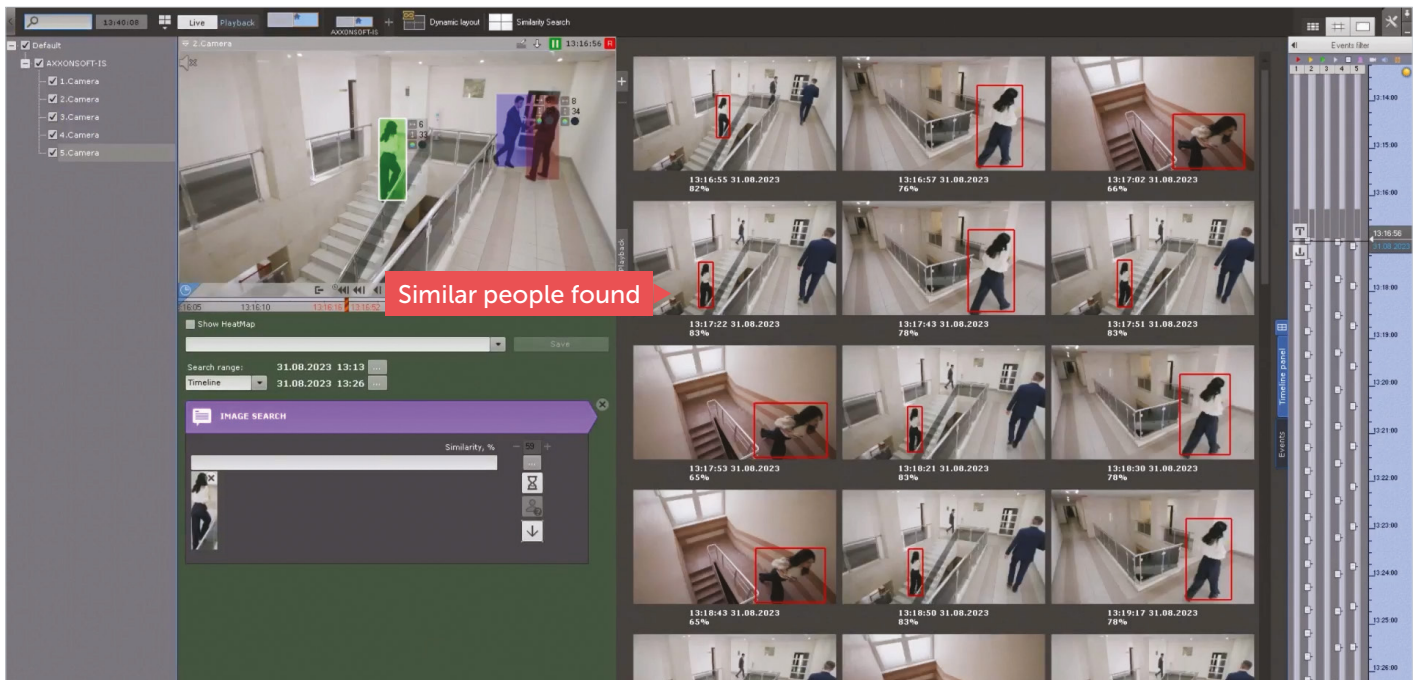
# Search, AI Customization & Performance

## Facial Recognition

Axxon One matches captured faces against watchlists and triggers predefined actions – such as staff notifications. All detected faces can be stored anonymously, enabling rapid photo-based search across multiple cameras. Results appear as video previews and on the map with camera locations, timestamps, and approximate routes. Search can be refined by age, gender, facial hair, glasses, hair color and type, headwear, and liveness verification status.

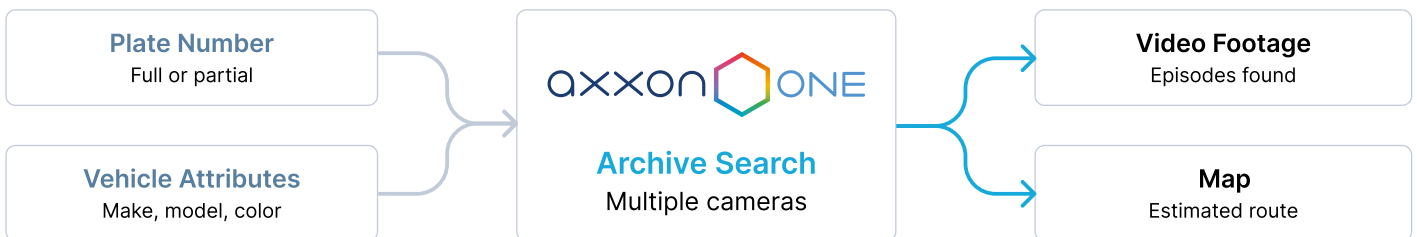
## Similarity Search

AI extracts appearance features – such as clothing, footwear, headwear, and hairstyle – and stores them to enable search. Select a person in the frame or upload a photo to find visually similar individuals across recorded footage from multiple cameras.



## ANPR and Vehicle Search

Axxon One reads license plates and checks them against lists to trigger actions like barrier opening or operator alerts. Plates are stored for fast search by full or partial number across multi-camera archives. Results show video previews, camera locations, timestamps, and estimated routes. When the plate is unknown, vehicles can be found by make, model, class, color, speed, direction, or headlight status – all extracted from video.



## Barcode Detector

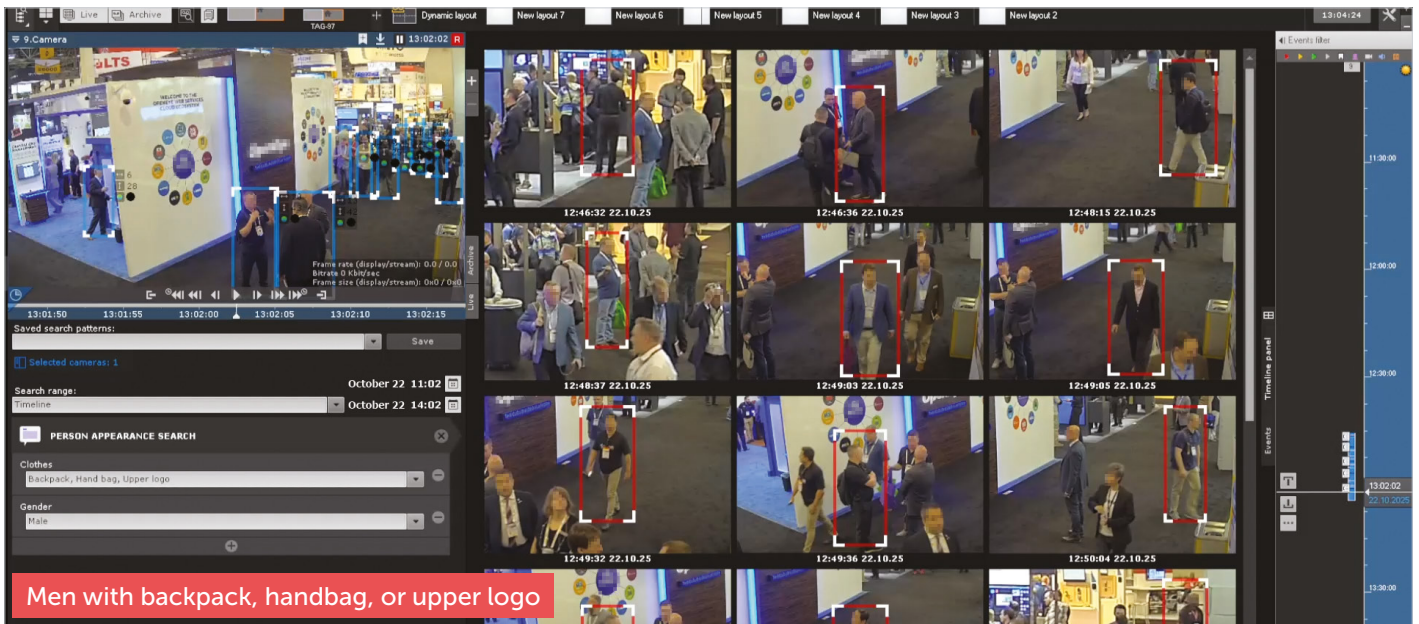
Decodes barcodes in retail, logistics, and production environments, enabling quick video retrieval by scanned value. This helps quickly locate missing items in video and identify where they were last seen or where they failed to reach their destination.

## Natural Language Detection and Search

Powered by a universal AI model, the **Meta-Detector** identifies objects or events using natural language queries — for example, “running human”, “woman and dog”, or “white car at a crosswalk”. Effective queries specify the object, attributes, environment, and scene details like angle or position. **Meta-Search** applies the same approach to video archives, enabling rapid event retrieval even when no real-time detector was configured for it.

## Smart Event Search

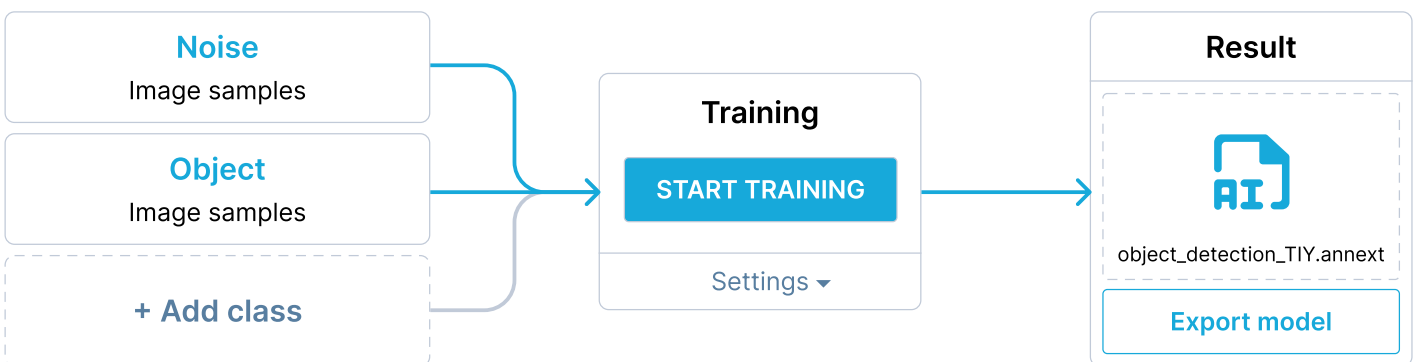
Define an area in the frame to instantly find all motion events within it. Refine results with scene analytics criteria — such as loitering or line crossing. The search uses metadata from the object tracker, neural tracker, motion detector, or smart cameras. Coming soon: with AI human detection enabled, **person attribute search** will filter results by clothing, gender, and facing direction.



## Neural Network Training

AxxonSoft provides on-demand neural network training using on-site video for specialized tasks — such as custom object tracking, non-standard PPE recognition, or enhanced fire/smoke detection.

Through the **Train It Yourself (TIY)** service, users can train networks independently using images, webcam feeds, or Axxon One camera streams. TIY supports training and retraining for object presence and PPE detection.



## GPU Acceleration

Hardware-accelerated video decoding and AI analytics boost VMS server performance and reduce total cost of ownership. AxxonSoft continuously optimizes support for the latest NVIDIA and Intel platforms and microarchitectures to deliver consistent improvements across AI video analytics workloads.

# Cybersecurity and Data Privacy

## Secure Communications

All communications between Axxon One components — servers and clients, whether on-premises or in the cloud — are fully encrypted. The system supports built-in root TLS/SSL certificates as well as customer-provided certificates signed by trusted internal or external certificate authorities, ensuring compliance in strict corporate environments.

## Data Encryption

Credentials and other sensitive configuration data — including user and camera logins and passwords — are stored in encrypted form. This protection extends to configuration backups, preventing unauthorized recovery on other machines, and can also be applied to video archives.

## Privacy Masking

Axxon One helps ensure data privacy compliance by automatically masking sensitive content in live and recorded video. An optimized algorithm masks moving objects with minimal CPU load. AI-based masking can target both moving and static objects — such as people, faces, or license plates — while manual masking is also available, including for moving objects in playback.

## Strong Security Policies

Axxon One enforces strong security policies by default, including a forced password change on first login. Administrators can further adjust settings to meet organizational requirements: configure minimum password length, expiration rules, password history depth, and account lockout after repeated failed login attempts; apply password strength controls; prevent multiple concurrent sessions per user; set automatic client logout after inactivity; restrict access to a defined range of IP addresses; and enable administrator-authenticated server access.

## System Integrity Checks

When servers and clients start, Axxon One automatically verifies the digital signature of all executable files. If verification fails, the event is logged and a pre-configured response is triggered — such as displaying a warning to administrators or all users, blocking non-administrator access, or stopping non-essential services.

### CVE™ Numbering Authority (CNA)

AxxonSoft is a CVE Numbering Authority (CNA) for its own products within the international Common Vulnerabilities and Exposures (CVE) Program. This enables AxxonSoft to assign official CVE IDs to vulnerabilities discovered internally or reported by researchers and customers, validating and publishing them in line with global coordination guidelines. Customers benefit from faster, standardized vulnerability disclosures and can seamlessly integrate security updates into enterprise risk and patch management workflows.

## Contact Information

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Website: [www.axxonsoft.com](http://www.axxonsoft.com)





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