



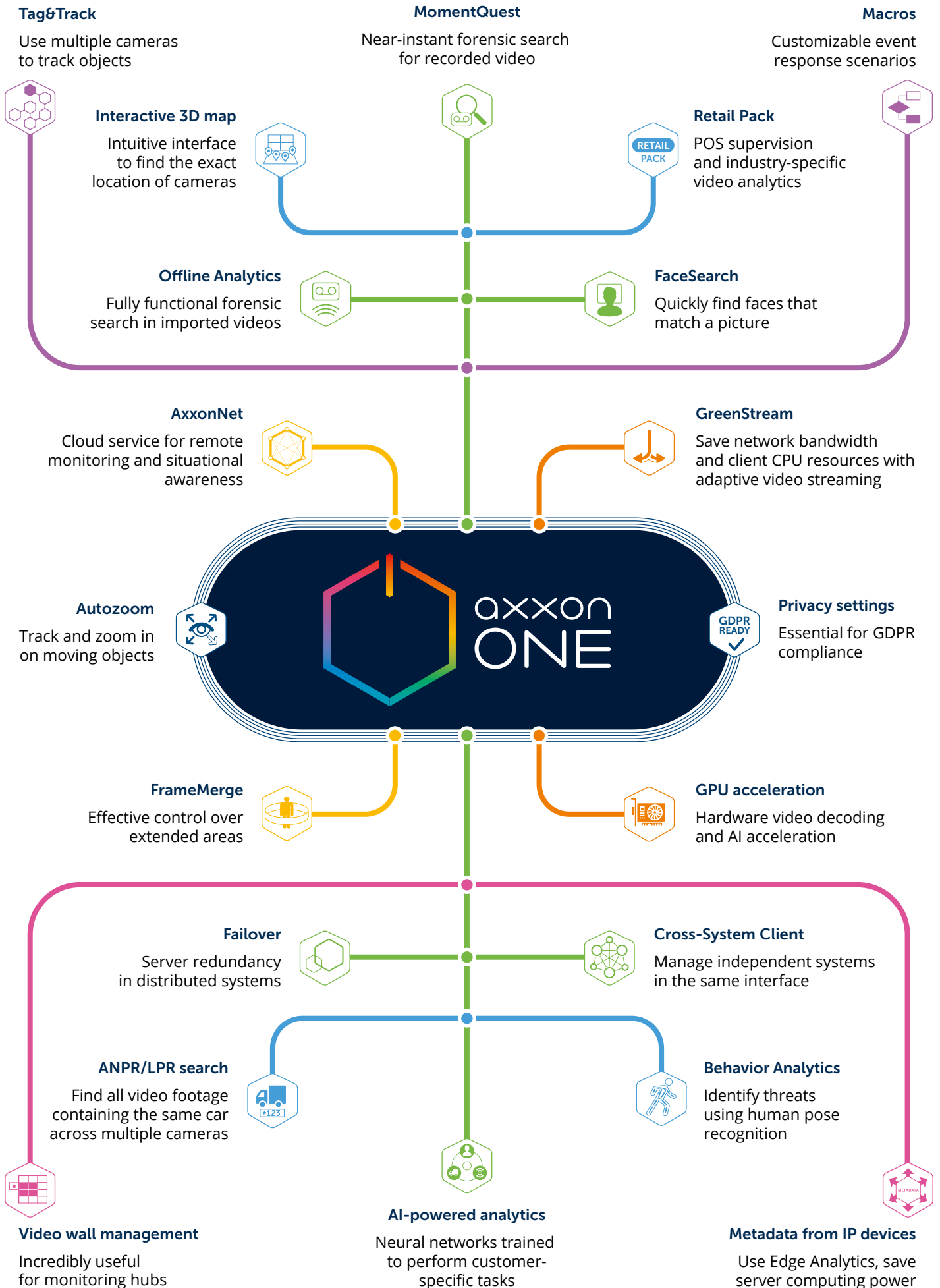
AXXON ONE

Axxon One is a limitlessly scalable Video Management Software that combines comprehensive support for 10,000+ IP devices and a streamlined user interface. Axxon One offers unique value through features like smart forensic search in recorded video and customizable video analytics powered by artificial intelligence.



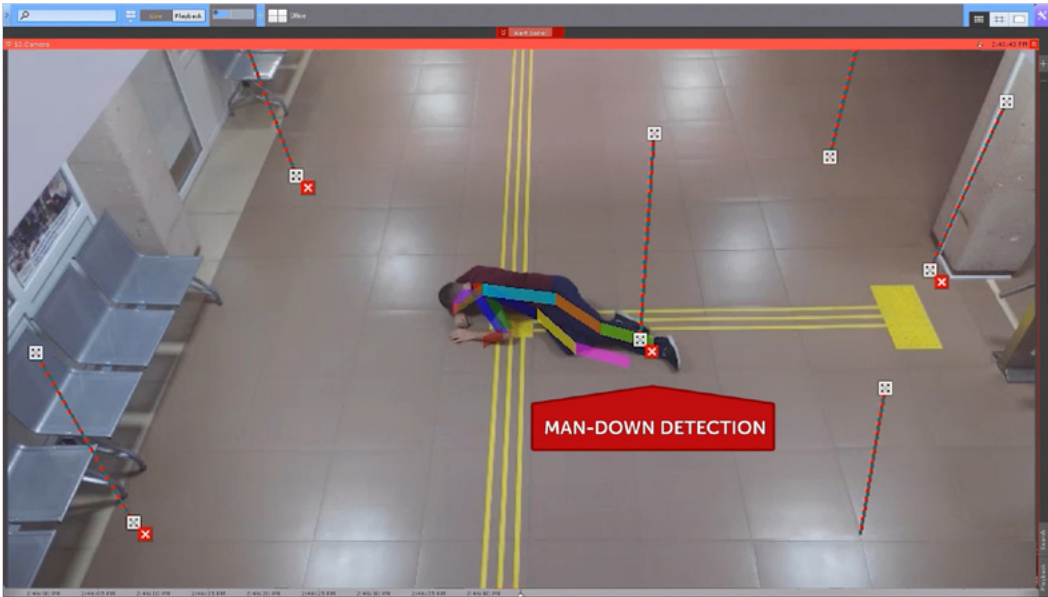
CONTENTS

AI-Powered Analytics	4–5
Behavior Analytics • Tracking and counting specific object types • Smoke and fire detection Number plate recognition • Hardware AI acceleration	
Smart Forensic Search	6–7
MomentQuest • Face and number plate search • Standard search options • Offline Analytics	
Axxon One Retail Pack	8–9
Live Video Mode	10–12
Interactive 3D map • Tag&Track • FrameMerge • Autozoom • Image dewarping Video wall management	
Video Footage Management	13
Support for edge storage • Archive replication via Interoperability Driver • Export functions Privacy settings	
Remote Access	14–15
Cross-System Client • Web Client • AxxonNet cloud service • Mobile clients	
Performance and Resource Optimization	16
GreenStream • Metadata from IP devices • Client-side GPU acceleration • UDP and multicasting	
Integration and Automation	17
External event support • Macros	
Fault Tolerance and Administration	18–19
Failover • System update • Security policy • LDAP authentication	



AI-POWERED ANALYTICS

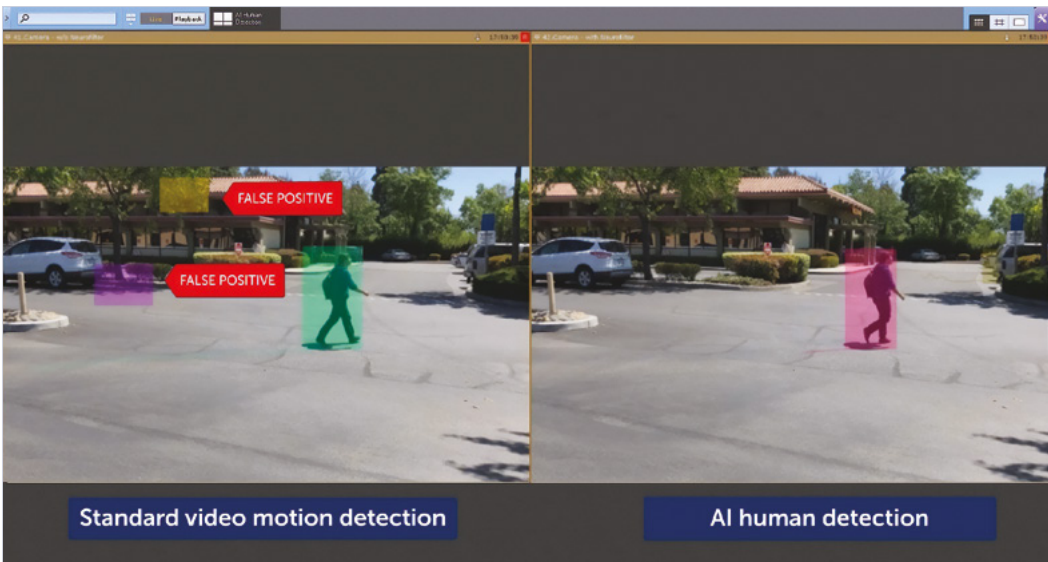
Behavior Analytics



Human pose recognition

Behavior Analytics recognizes situations of risk early on by detecting specific human postures: for example, an individual lying down, a cashier's raised arms, or a person crouching by an ATM. Handrail holding detection helps in labor safety enforcement at production facilities, construction sites, working at height, etc.

Tracking and counting specific object types



Neural networks trained to perform customer-specific tasks

When applied to the **Object Tracker**, the neural network accurately detects specific types of moving objects, e.g. humans or vehicles. This technology can filter out false alarms in busy scenes where multiple moving objects might interfere with the results. You can apply any conventional video analytics (loitering, line crossing, object appearance and disappearance, etc.) to the detected objects.

The **Neural Counter** counts moving or static objects of a specific type within the scene, e.g. cars in a parking lot, people on the sales floor, wares moving on a conveyor belt, etc. This is a valuable tool for non-security-related solutions.

Neural networks can meet the needs of a particular facility by learning from video material obtained onsite.

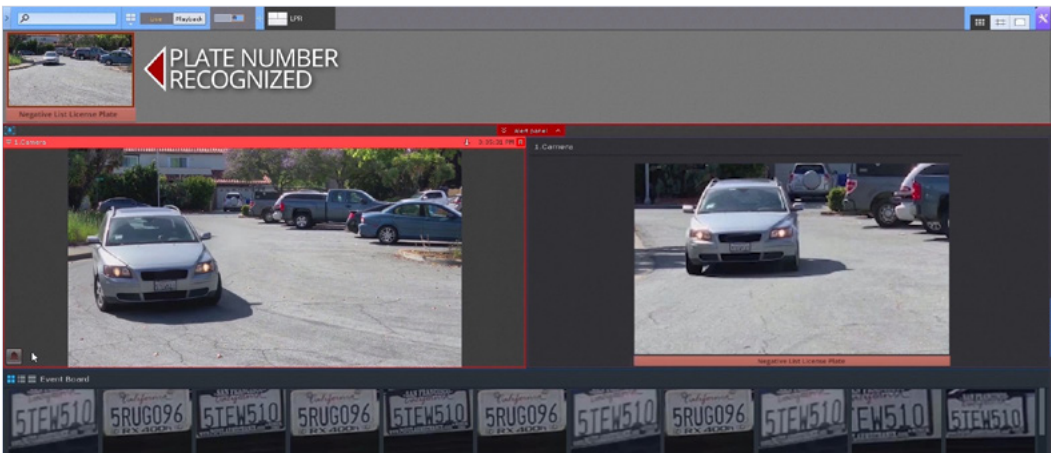
Smoke and fire detection



Detect fire early in open, and large enclosed spaces

Intelligent fire and smoke video detection operates in areas where other types of sensors are ineffective, e.g. in open spaces. It provides early detection of fire hotspots which leads to a significant reduction in damage.

Number plate recognition



Positive/negative watchlist support

Configure automatic scenarios when a match is found. For instance, notify the operator when the recognized number is on the negative watchlist or open the barrier when the number is on the access list. ANPR runs on the server side or on supported LPR/ANPR cameras.

Hardware AI acceleration

Axon One can perform hardware video decoding on integrated Intel® GPUs and NVIDIA graphics cards. For AI acceleration, it supports graphics cards, dedicated AI accelerators, and embedded CPU capabilities:

- Integrated GPUs and AI acceleration technologies in Intel® CPUs.
- Intel® Movidius™ VPU.
- NVIDIA GeForce, Quadro, Tesla, etc.

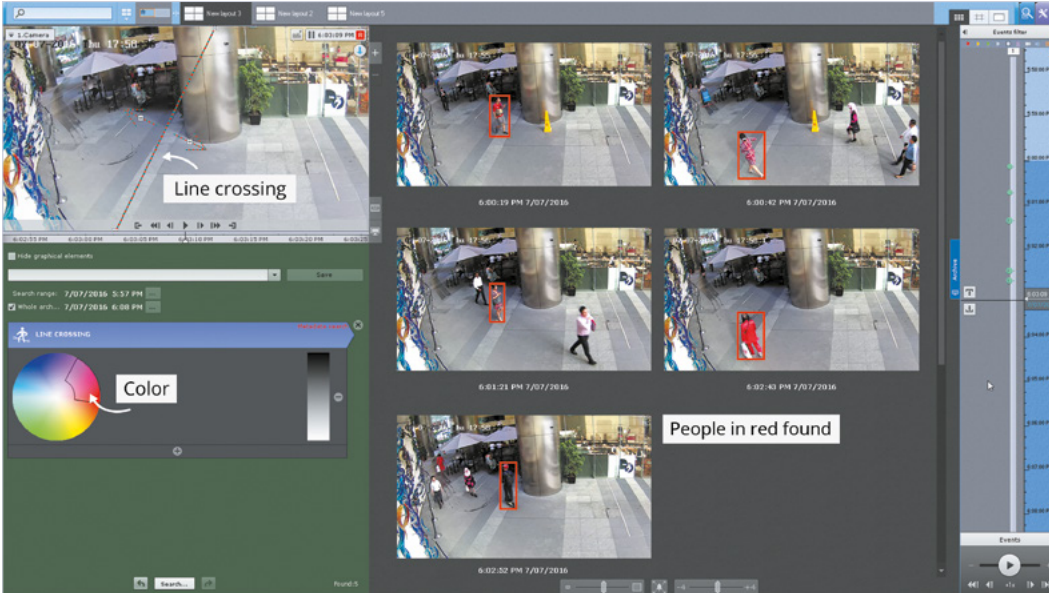
Using hardware acceleration increases server performance, which helps reduce the cost of an intelligent video surveillance system and its maintenance.



Increase server performance when using video analytics

SMART FORENSIC SEARCH

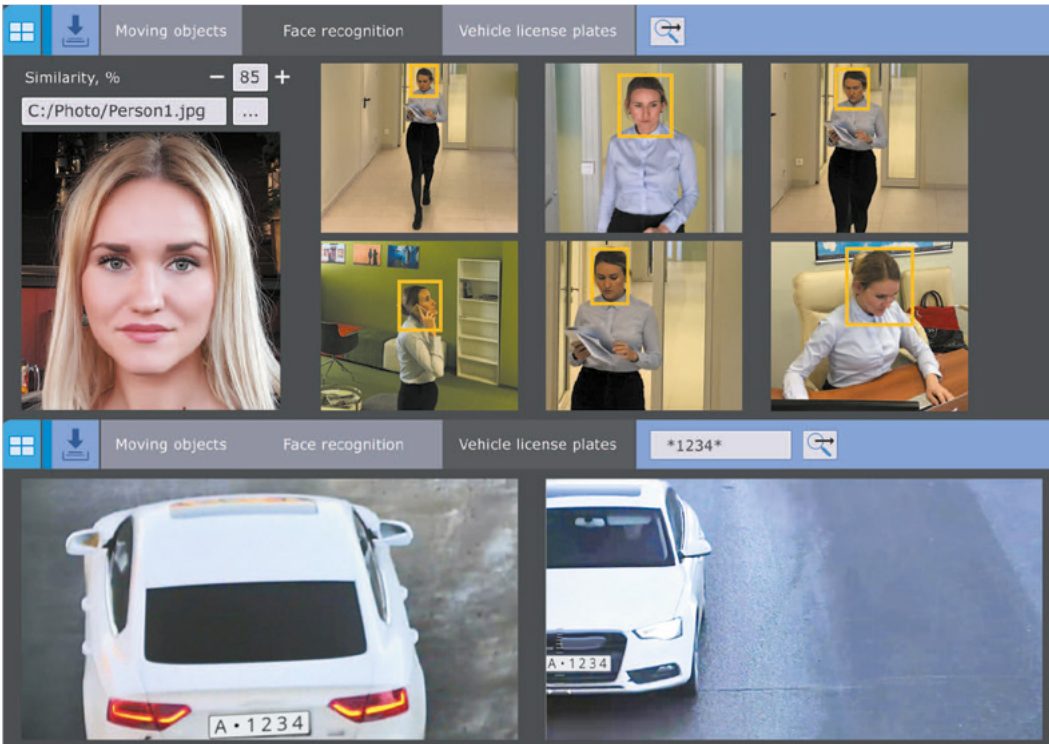
MomentQuest



Near-instant forensic search for recorded video

MomentQuest analyzes live video and generates a stream of metadata — a lean description of moving objects within the scene — which is recorded along with video stream. To retrieve recorded footage of an event of interest, just enter specific criteria: motion in area(s), crossing of a line, object color or size, etc. Within seconds the system displays thumbnails of relevant video episodes. Save a search query for later use on any camera.

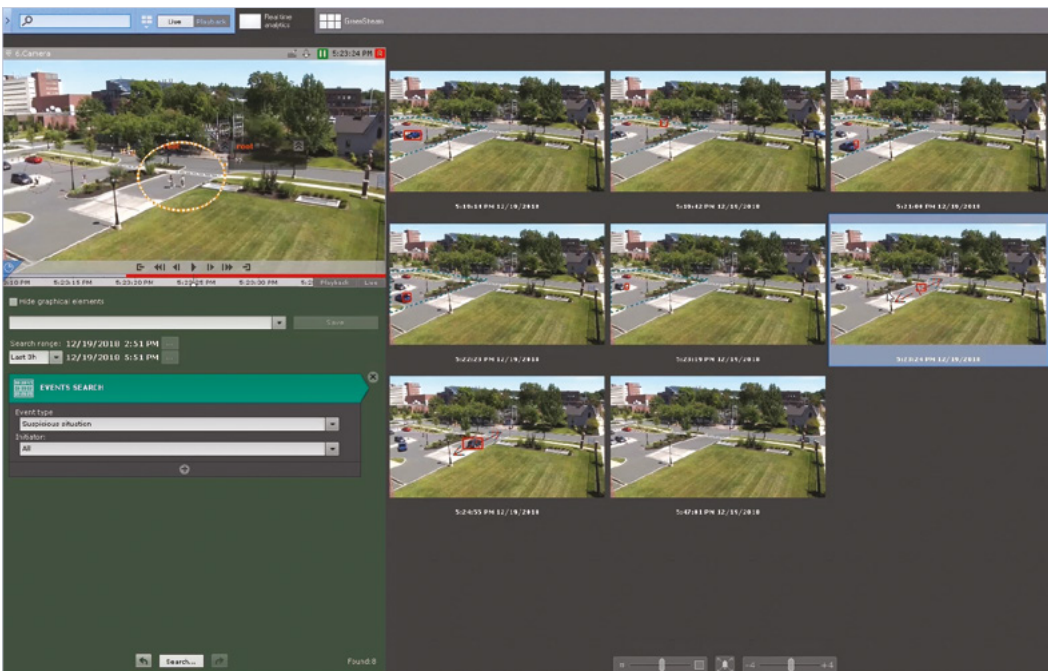
Face and number plate search



Quickly find people and vehicles of interest

Axxon One captures and recognizes human faces and vehicle number plates. You can quickly check a person's photo or a vehicle number, full or partial, against the video footage. Multiple camera search is also possible.

Standard search options



Effective tools to find events of interest

You can quickly find recorded events of interest using simple yet effective functions: search by alarm events, search by bookmarks, and search by time intervals (time slicing).

- Search by alarm events: filter alarms by type and initiator.
- Search by bookmarks: view all bookmarked events, or search by operators' comments.
- Time slicing: split the selected time interval into video fragments of the specified duration.

Offline Analytics



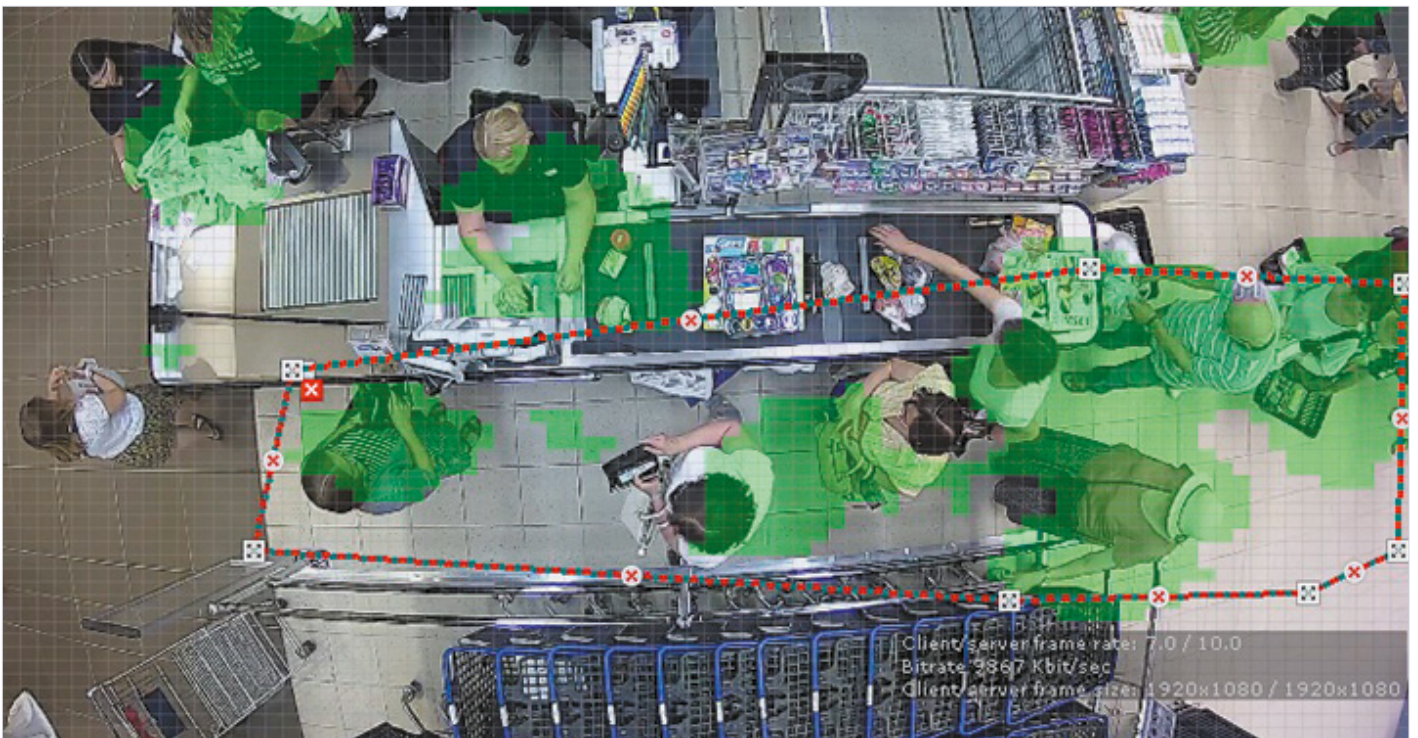
Import any video footage and analyze it with forensic search. The following functions can be applied to imported videos:

- MomentQuest
- Face search
- Number plate search

AXXON ONE RETAIL PACK

POS supervision

Axxon One receives data from cash registers and links it to video feeds. The receipt text is superimposed on the video or displayed in a separate pane. You can also use receipt data to quickly search for POS transaction videos in the recorded footage. This offers a full picture of what's happening at the checkout and helps reveal violations that are almost impossible to detect using conventional video surveillance.



Queue management

The tool detects the number of people in queueing areas. Knowing actual customer numbers empowers you to manage human resources in both the short and long term.

Visitor counter

This tool counts customers entering or exiting the store or a specific area. The information collected may be used, along with sales data, to estimate your sales conversion rate and/or for market research.

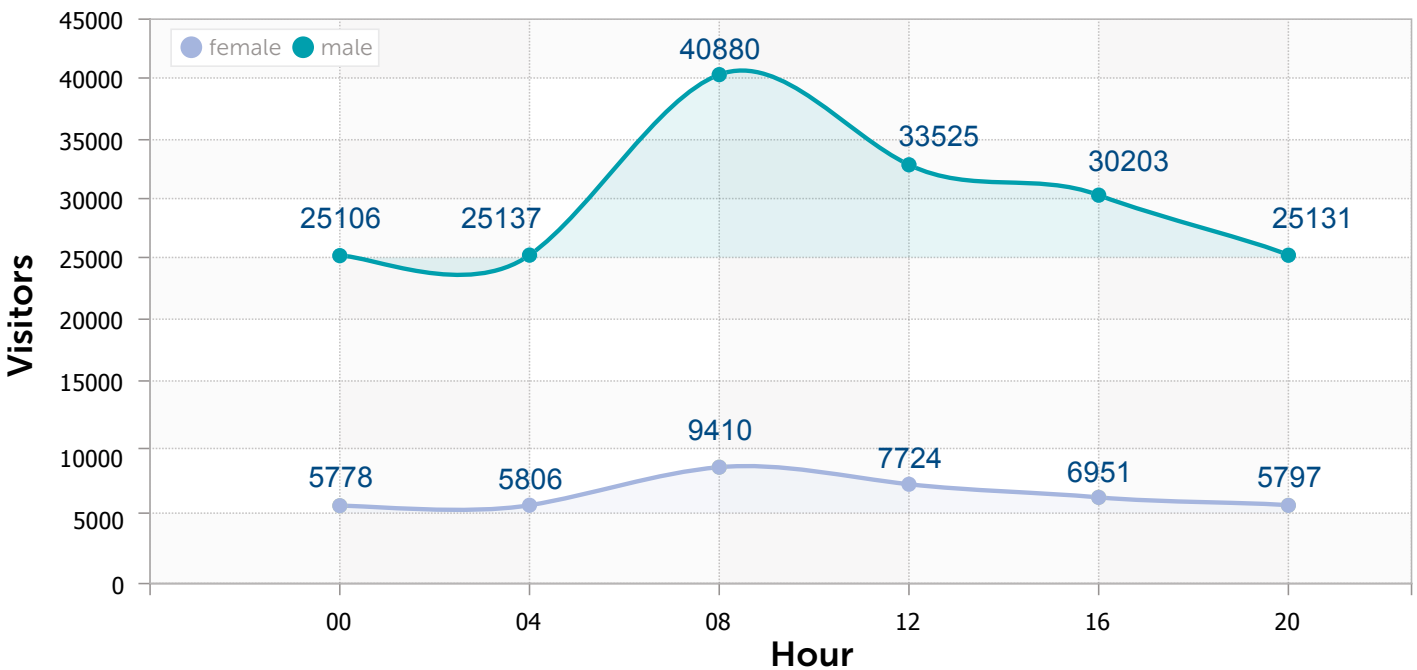


Facial recognition

Configure an automatic scenario when a match is found. The positive watchlist may notify store personnel of regular customer arrivals, while the negative watchlist may indicate shoplifters.

Heat map

A heat map is a graphic representation of visitor activity (visitor numbers/time spent) in different store areas. The heat map can be generated from tracking data for all objects or objects specified with forensic search criteria.



Age and gender guesstimation

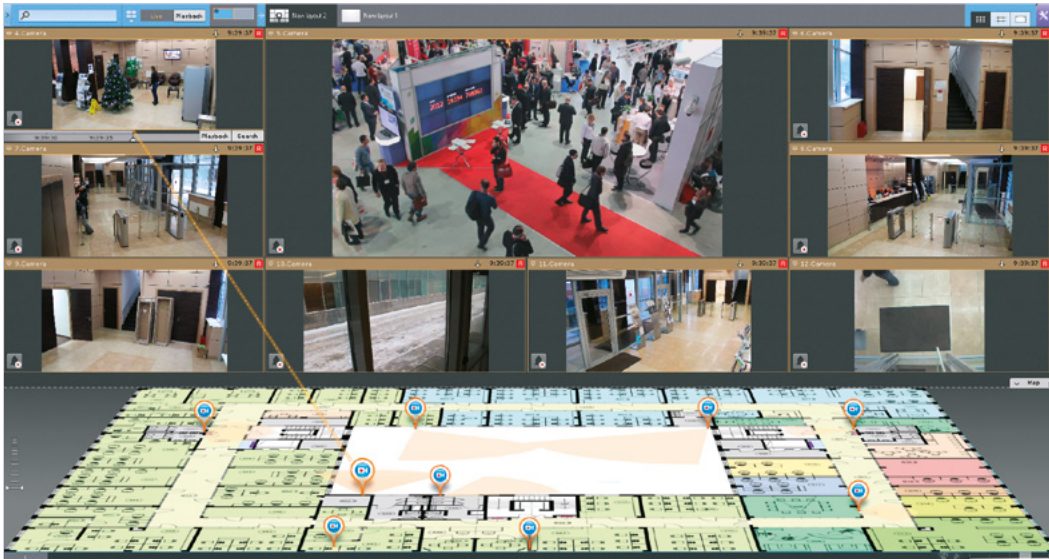
The facial recognition tool guesstimates the age and gender of visitors. The saved data may be used for customer analysis, digital signage targeting, and other marketing purposes.

Online comprehensive reports

You can build custom reports based on visitor count, queue length, age and gender guesstimation, and data generated by Axxon One video analytics tools. AxxonNet cloud service enables you to obtain reports from any store within your retail chain using the web interface.

LIVE VIDEO MODE

Interactive 3D map



Show video on a site map

Interactive 3D map superimposes camera locations on a site map and displays camera views in the same window. You can instantly pinpoint where a selected camera is located. Cameras in the current layout are color-coded by their status.

In **Immersion mode**, a semi-transparent video is superimposed on the map. This makes it easy to see where an object is located and where it is going.

Tag&Track



Follow an object of interest, zone by zone

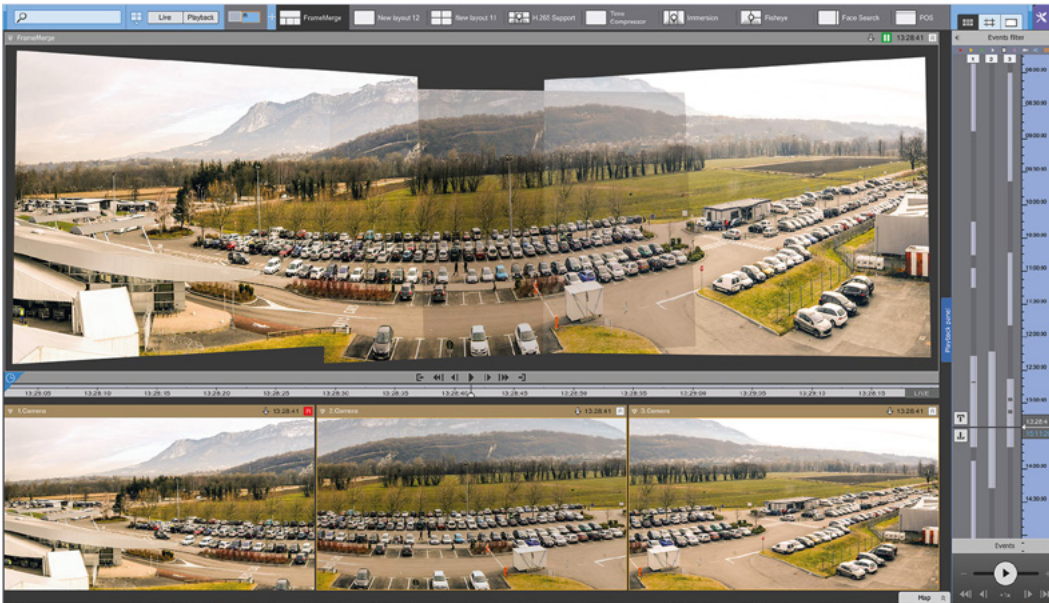
Tag&Track Lite

- All cameras are linked to a site map.
- Operator selects a moving object to track.
- If the object leaves the field of view of one camera, Axxon One predicts where it will appear next.
- The “destination” camera is highlighted in the current layout.
- Tag&Track Lite also works in Immersion and Archive mode.

Tag&Track Pro

- Get the “big picture” of everything happening at a site with fixed cameras.
- Obtain detailed imagery of the objects moving around it with PTZ cameras.
- A PTZ camera automatically tracks objects across multiple fixed cameras.
- Both sets of images can be recorded, which is important for event investigation.

FrameMerge



Effective control over extended areas

With FrameMerge, you can:

- combine a panoramic view from up to 3 camera feeds
- view the resulting video in Live or Archive mode
- export panoramic videos to standard .avi or .mkv files
- select and zoom into any part of the panoramic image in a linked Dialog Board

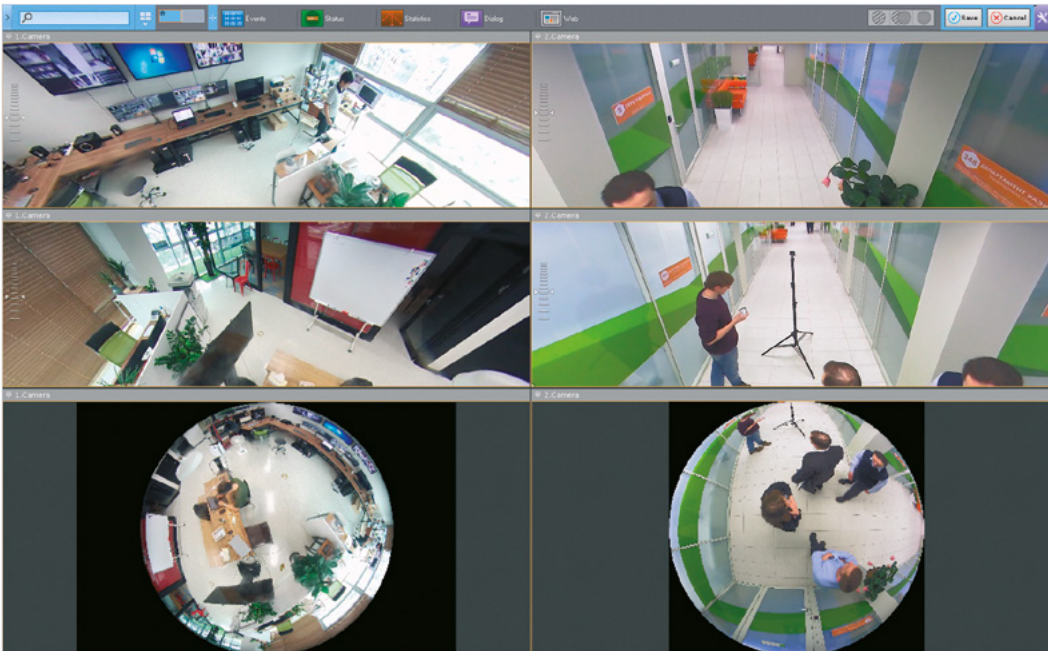
Autozoom



Track and zoom in on moving objects

Autozoom automatically follows objects in the field of view. Enlarges the area of the scene in which moving objects are located and follows the objects as they move. Works both with fixed cameras (via digital zoom) and fisheye cameras.

Image dewarping



Support for fisheye cameras

Image correction (dewarping) is performed on the GPU of the client computer, without any additional burden on the CPU. Several normal, dewarped images with different aspect ratios are displayed on the client screen. Axxon One supports standard fisheye-lens cameras as well as Immervision panomorph lenses.

Video wall management



Incredibly useful for monitoring hubs

Effective management of video walls and layouts at large distributed sites:

- Send any available layout to any client computer within the system.
- Draw operator's attention to an event captured by one of the cameras in the layout.
- Show an event to all operators by sending the relevant layout to a video wall.
- Designate any client computer or several computers as a video wall.
- Manage it from any remote client connected to any server within the Axxon One domain.

VIDEO FOOTAGE MANAGEMENT

Support for edge storage

View and sync video on SD cards

Axxon One supports on-camera (edge) storage. On-camera storage is automatically detected by Axxon One when the relevant camera is added to the system configuration. The viewing client can display video recorded to SD cards. You can set up continuous replication of video, audio, and metadata from edge storage.

Archive replication via Interoperability Driver

Centralized storage for vehicle-based NVRs

Video footage can be synced between independent Axxon One systems via the Interoperability Driver. Replication starts automatically when the source server is connected to the destination server. This can be used, for example, to centralize video storage of Axxon-based NVRs installed on vehicles.

Export functions

Enhanced export features for recorded video

- Instant export of still frames and videos from Live Video or Archive mode.
- Export to password-protected .zip file.
- Simultaneous export of recorded video from multiple cameras.
- Manage the size of exported video files: if the file size exceeds the value specified, the video is split into several files.
- Pruning (frame dropping) of exported video.
- Privacy masking: before exporting, select areas to block with solid color in the exported video sequence or image.
- Export of image zones (including dewarped fisheye frames).
- Export of user comments to recorded video.

Privacy settings

Hide objects or faces from those in specified user roles

Privacy settings are essential for compliance with GDPR (The EU General Data Protection Regulation). You can mask any static or moving objects in recorded video from those in specified user roles. You can also hide faces using the face detection tool. The objects or faces will be blocked while viewing and searching the archive, as well as on exported video.

REMOTE ACCESS

Cross-System Client

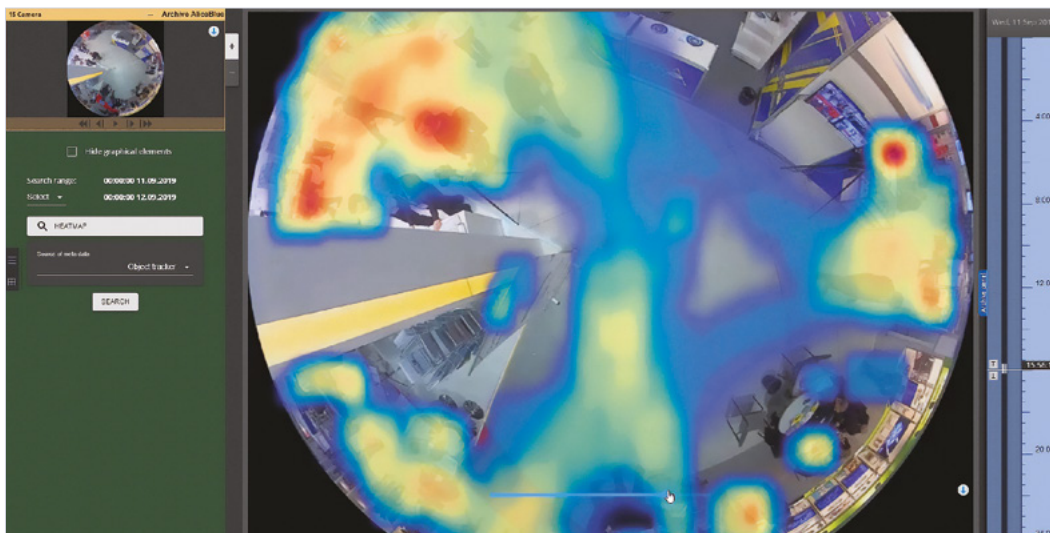


Manage independent systems in the same interface

Cross-System Client is useful at geographically distributed sites or multiple-location chains, such as retail stores or gas stations. You can configure and operate remote surveillance systems on a single client workstation:

- Connect a single client workstation to multiple surveillance servers on different domains.
- All settings and cameras associated with these servers are consolidated in a single convenient view.
- Operators can access multiple independent surveillance systems simultaneously.

Web Client



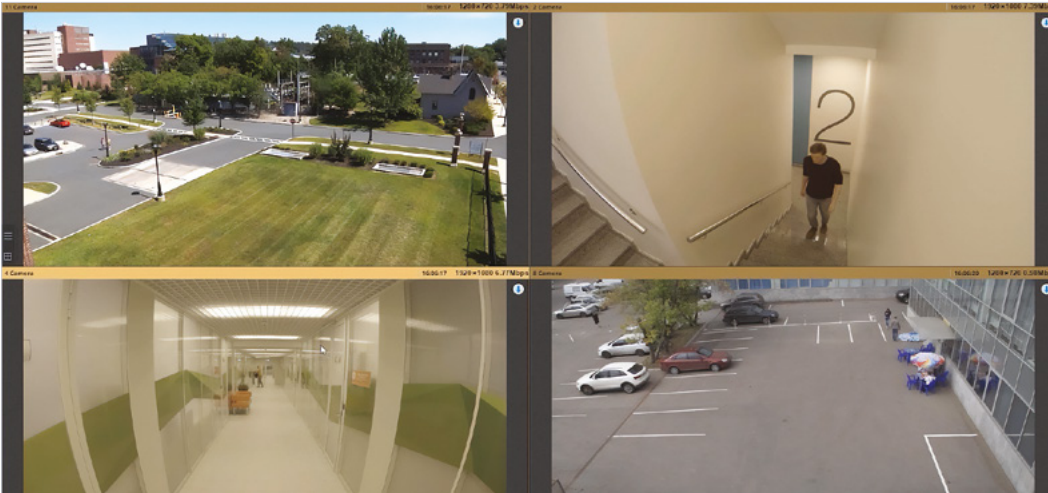
Video monitoring in your browser

Connects securely over the HTTPS protocol.
Supports H.264, H.265, MJPEG, and multi-streaming cameras.

You can:

- Configure various camera layouts.
- Search recorded video by faces, plate numbers, events, criteria (MomentQuest), and time intervals (time slicing).
- View motion heat maps.
- View alarm events.
- Work with bookmarks.
- Control PTZ cameras.
- Apply digital zoom.
- Export still frames and videos.
- View camera and video archive statistics.

Cloud-managed VMS



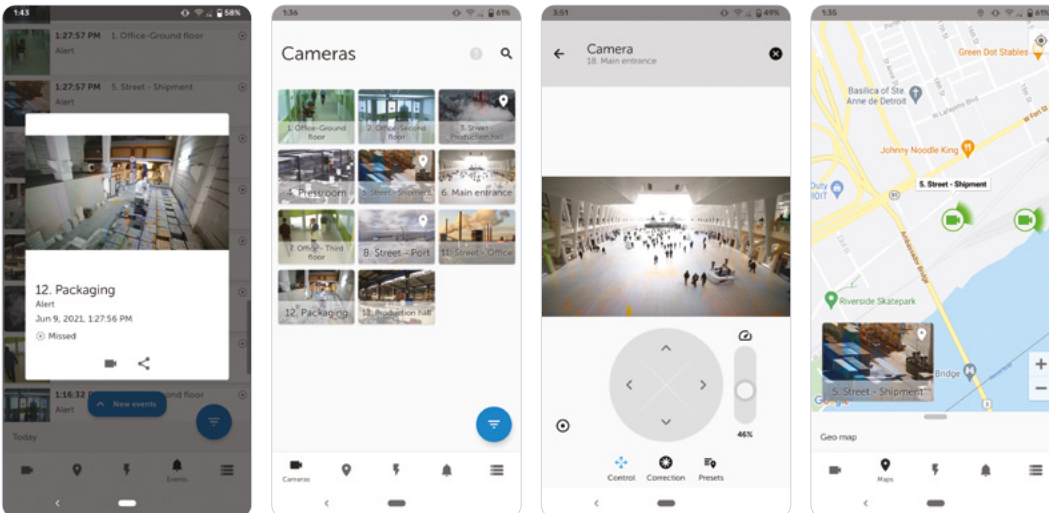
Remote video monitoring and event notification

AxxonNet is a free cloud service that connects to your Axxon One VMS servers via the Internet. HTTPS protocol with TLS encryption safeguards the data transmitted from the server to the cloud, and password hashing ensures the safety of users' passwords.

You can:

- Use all Web Client's features for live and recorded video and view reports.
- Send reports by email on schedule.
- Receive email notifications on events of specified types and view linked videos stored in the cloud.
- Get push notifications on certain events in mobile clients.
- Create face and license plate watchlists.
- Create users and roles for your Axxon One VMS.

Mobile clients



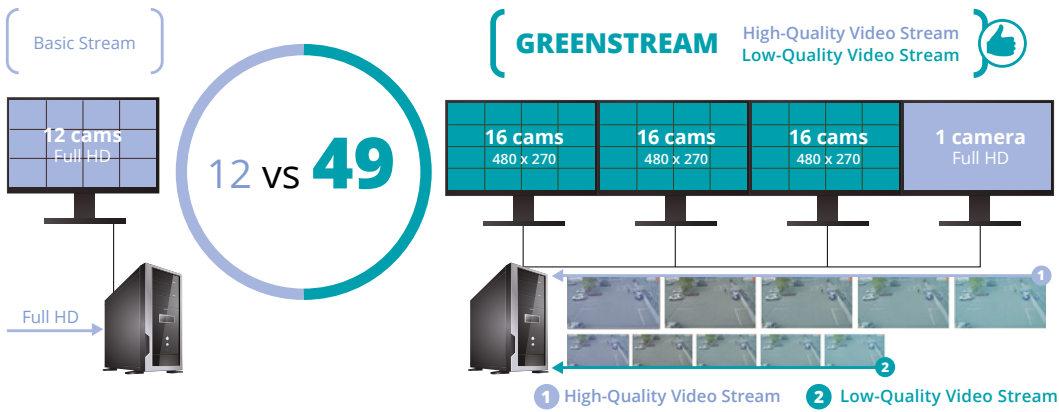
Free apps for iOS, Android, and Wear OS

With our apps, you can:

- View live and recorded video.
- Quickly search for events.
- Control PTZ cameras.
- Work with fisheye cameras.
- Use digital zoom.
- Receive push notifications.
- Run macros.
- Use geo-maps.

PERFORMANCE & RESOURCE OPTIMIZATION

GreenStream



Save network bandwidth and client CPU resources with adaptive video streaming

GreenStream automatically selects a camera stream matching the current resolution of the video on the client screen. For instance:

- On a 1920 x 1080 screen with a 4 x 4 camera layout, each camera screen is only 480 x 270.
- GreenStream eliminates the need to transmit full resolution streams from all cameras.

Metadata from IP devices

Metadata is a lean description of moving objects within the scene. It is used for real-time video analysis or forensic search. Metadata is generated on cameras with embedded object trackers. — No need to decompress video on the server side. CPU burden on the video server is significantly reduced. — Server can handle more video streams.



Use Edge Analytics, save server computing power

Client-side GPU acceleration

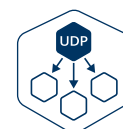


Reduce hardware expenses

- Hardware video decoding on Intel® GPUs and NVIDIA graphics cards.
- Reduced client CPU load, especially when decoding H.265 video feeds.
- Smooth playback of dozens of Full HD videos.
- Using client computers with lower CPU performance specs.
- Building large video walls based on just a few client computers.

UDP and multicasting

Axxon One features a whole range of tools for reducing bandwidth consumption and making security systems more efficient. Live video can be streamed from a server to remote computers via UDP, multicasting is supported as well. Multicasting frees up network capacity and optimizes resource usage.



Frees up network bandwidth

& INTEGRATION AUTOMATION

External event support

Quick and simple integration with third-party systems

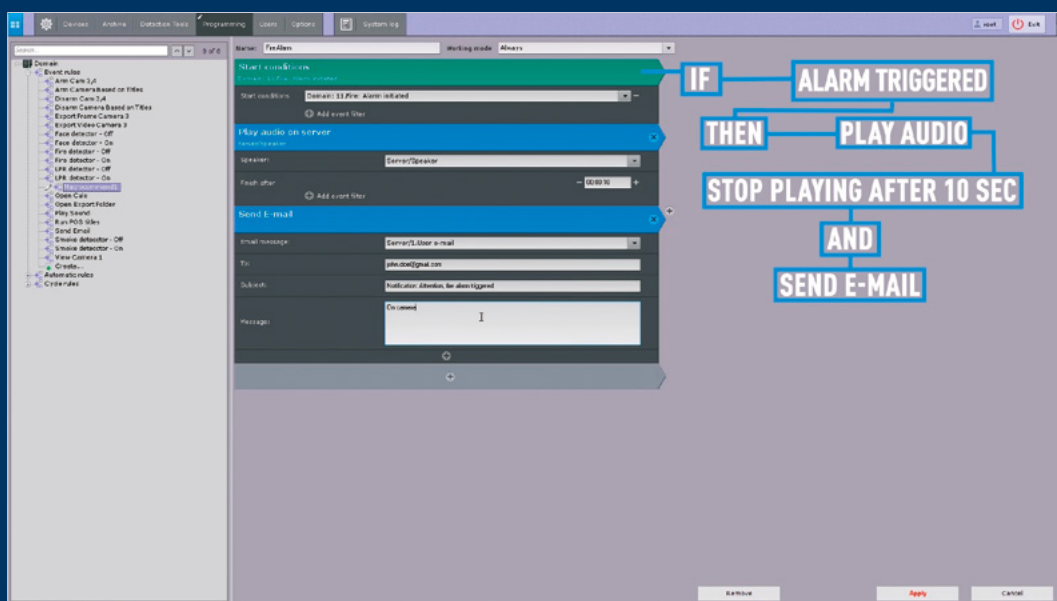
Connect to external devices and systems: access control devices, security control panels, third-party software, and more. Axxon One can:

- receive external events
- save them into its database
- cross-reference events with recorded video
- search events by a character string
- display event data in real time in a separate pane
- show events as captions on top of video

Macros

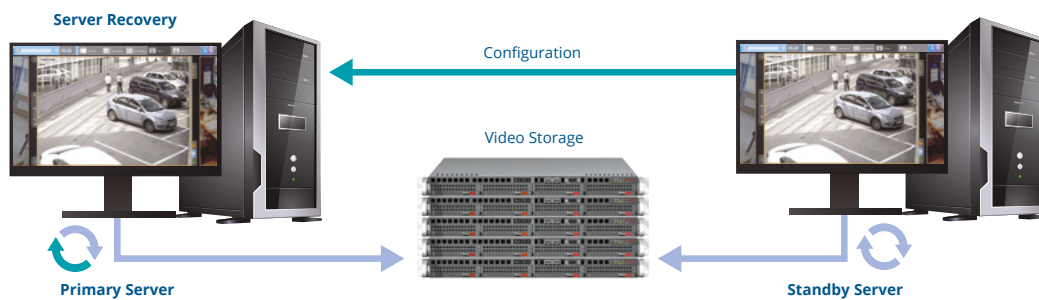
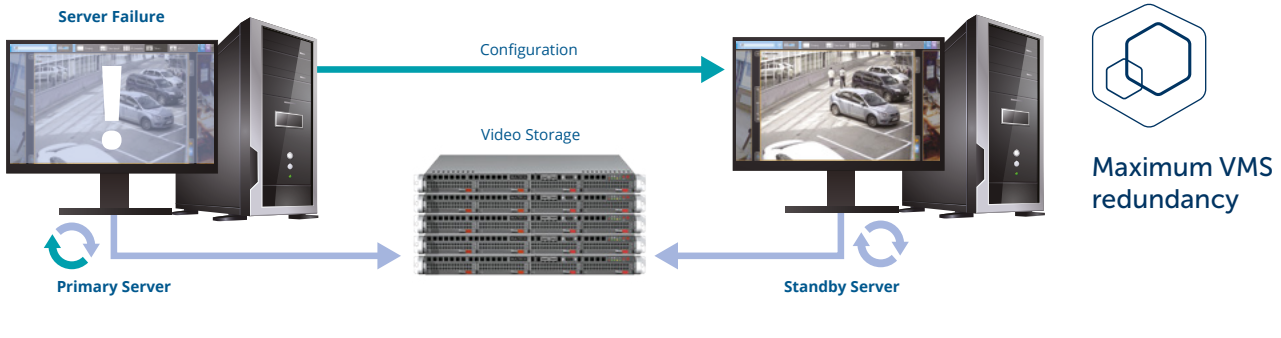
Event response wizard

Axxon One supports flexible configuration of complex system response to any specified set of events. Use IF...THEN logic to create a macro that automatically performs an unlimited number of actions in the system. Macros allow programming reactions to particular events at system and device level.



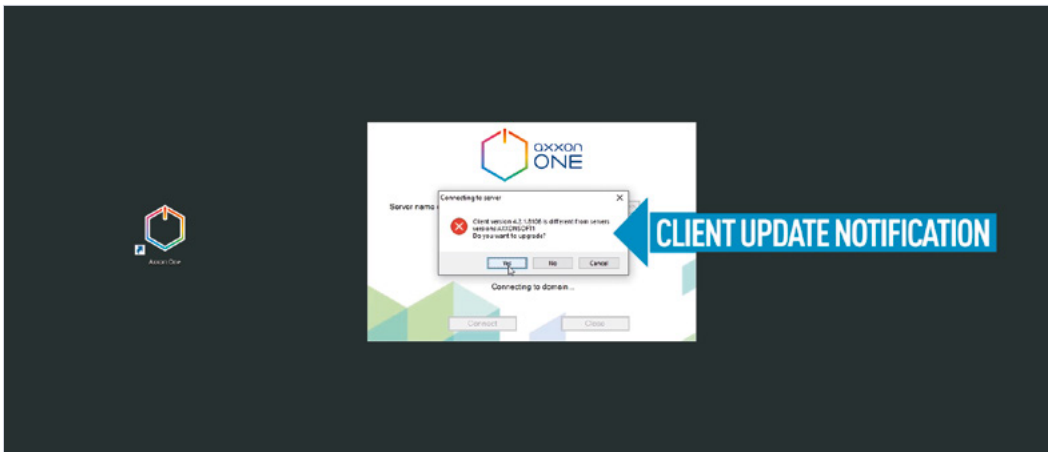
FAULT TOLERANCE & ADMINISTRATION

Failover



Failover quickly switches to a standby server when communication with the primary server is lost. The standby server automatically takes over all functions from the offline or malfunctioning server. Live video streaming and recording resume immediately. You can suspend any server in the cluster with no system downtime, e.g. for maintenance.

System update



Your VMS is always up-to-date

Silent servers update

You can update all servers within a cluster in silent mode. To do this, select the required distribution in the .zip archive or specify a web link. Servers can be updated simultaneously or in turn, which enables continuous system operation during updates.

Automatic client update

When your Axxon One client connects to the server with a newer version of the Axxon One VMS, you will be prompted to update your client software. After confirmation, the update process is performed automatically.

Security policy

The screenshot shows the 'Security policy' configuration window. It is divided into three main sections:

- Password policy:**
 - Minimum password length: 0 character(s)
 - Number of passwords in history: 0 (0 - do not save password history)
 - Password validity period: 0 day(s) (0 - unlimited password validity period)
 - Username and password must meet complexity requirements
 - Prevent multiple logins of the same user account
- User account locking policy:**
 - Maximum failed logon attempts: 0 (0 - user account will not be locked)
 - Account lockout duration: 0 minute(s) (0 - user account will be locked until lockout is removed)
- Filter of allowed IP addresses:**
 - IP address: 10.0.12.1
 - Prefix: 24
 - Buttons: Add
 - Table of allowed IP addresses:

Delete	IP address	Prefix	Filtering range
X	10.0.12.39	32	10.0.12.39
X	10.0.11.31	24	10.0.11.0 - 10.0.11.255



Protect your VMS from unauthorized access

Set up:

- The minimum password length.
- A password validity period.
- The number of passwords in history.
- Password strength control.
- Prevention of multiple simultaneous sessions of the same user.
- Account lockout time/number of failed login attempts.
- A range of permissible IP addresses for client computers.
- Access to the server with administrator confirmation.

Each user-related event includes the user's IP address. When accessing the server, the MAC address of the client computer is registered in the system event log. The Export Start event includes the username.

LDAP authentication

The screenshot shows the 'LDAP authentication' configuration window. It is divided into two main sections:

- User Profile (admin):**
 - Name: admin
 - Map control: Full access
 - Access to Functions:
 - Map management: Full access
 - Access to Search in archive mode: Yes
 - Adding camera to layout in monitoring mode: Yes
 - Adding/editing presets: Yes
 - Alarms processing: Full access
 - Allow comments in archive: Create/Protect/Edit and delete
- LDAP settings:**
 - Name: LDAP IT
 - Server name or IP address: 192.168.33.78
 - Port: 389
 - Base DN: ou=IT,dc=qa,dc=test
 - User: cn=administrator,CN=USERS,dc=qa,dc=test
 - Password: [Redacted]
 - Use secure connection (SSL)
 - Search filter: (&(!(&(objectClass=user)(objectCategory=person))))
 - LDAP templates: OpenLDAP, Microsoft Active Directory
 - Username attribute: cn
 - DN attribute: distinguishedname
 - Test connection: [Button]



Integrate with existing enterprise network services

This feature makes it possible to **deduplicate user administration tasks** for sysadmins at large companies. Operators can log in to a surveillance system by entering their domain credentials. The sysadmin connects LDAP directory to Axxon One and selects which users to add. He can also associate VMS access rights with corporate directory groups. When a user profile is deleted on the LDAP server, it can be automatically deleted in Axxon One.



A world's leading developer of intelligent
VMS and PSIM software

www.axxonsoft.com

